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

Our Vision
To be a global leader in rural and remote healthcare.

Pilbara

Health Profile 2022

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

Pilbara Health Profile – Preliminary Version endorsed October 2022

Pilbara Health Profile 2022

Contents

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.

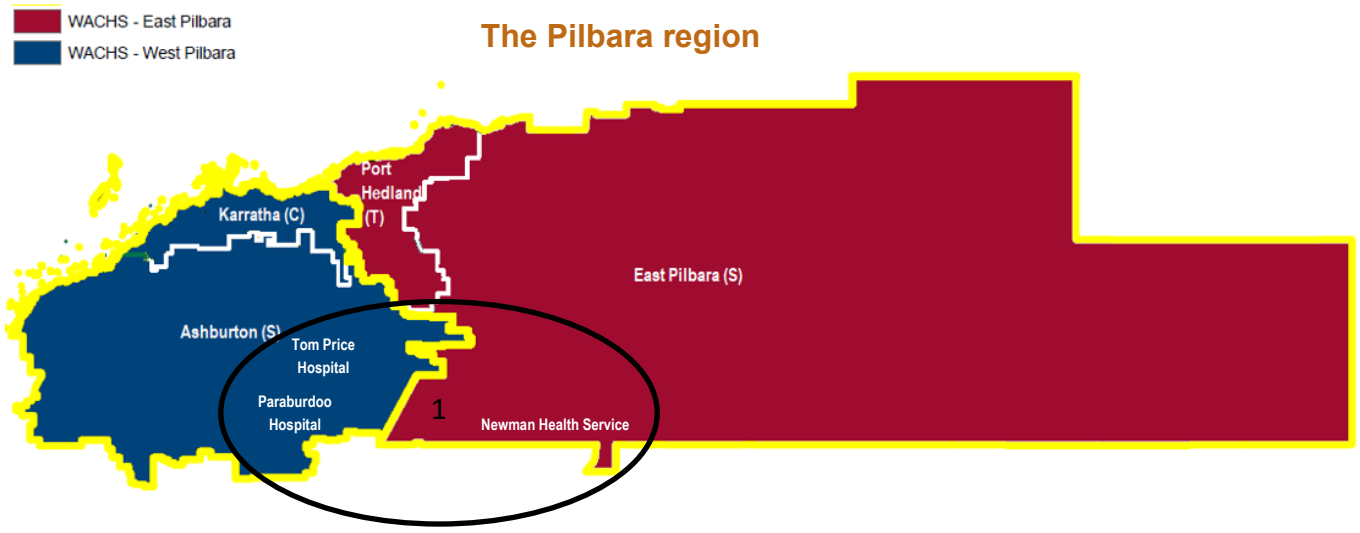
There are many factors that influence a person's health, including genetics, lifestyle and environmental, economic and social factors. The demographics within the Pilbara are very diverse and even the types of local industry can impact how communities' function. For example, a major industry centre or mining area will be very different from a remote Aboriginal 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 Pilbara 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.

Geography and services

- The Pilbara health region has two official WACHS geographic health districts.
- **East Pilbara** is made up of two Local Government Areas – the Town of Port Hedland and Shire of East Pilbara.
- The Town of Port Hedland contains the Hedland Health Campus (WACHS Regional Hospital).The Shire of East Pilbara contains Newman Health Campus (District Hospital) and two Nursing Posts at Marble Bar and Nullagine.
- **West Pilbara** is made up of two Local Government Areas – the City of Karratha and the Shire of Ashburton.
- City of Karratha contains the Karratha Health Campus (District Hospital) as well as Roebourne Hospital (Small Hospital). The Shire of Ashburton contains 3 WACHS Small Hospitals – Tom Price Hospital, Paraburdoo Hospital and Onslow Health Service.

The Pilbara region



Geographic district	Operational district *	Local Government Area (S) = Shire, (C) = City	Hospitals
West Pilbara	West Pilbara	Karratha (C)	Karratha Health Campus
		Karratha (C)	Roebourne Hospital
		Ashburton (S)	Onslow Health Service
	Inland (see map for detail)	Ashburton (S)	Paraburdoo Hospital
		Ashburton (S)	Tom Price Hospital
East Pilbara		East Pilbara (S)	Newman Health Service
	East Pilbara	East Pilbara (S)	Marble Bar Nursing Post
		East Pilbara (S)	Nullagine Nursing Post
		Port Hedland (T)	Hedland Health Campus

* Operationally the Paraburdoo Hospital, Tom Price Hospital and Newman Health Service, fall under the Pilbara Inland Operations Manager. This operational catchment does not fully align with the DoH Geographical Health District or the Local Government Boundaries and therefore it is not possible to present the data in the Profile for the Operational districts. Where possible both Geographic and LGA data has been presented.

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

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 Pilbara and non-Pilbara residents.

District	Hospital	Emergency Department presentations	Inpatient separations	Outpatient service events
West Pilbara	Karratha Health Campus	23,131	4,253	29,297
	Onslow Health Service	1,595	97	2,105
	Paraburdoo Hospital	948	27	461
	Roebourne Hospital	3,471	53	838
	Tom Price Hospital	3,329	389	1,688
East Pilbara	Hedland Health Campus	28,069	11,908	26,177
	Newman Health Service	8,159	796	2,260
	Marble Bar Nursing Post	521		1,803
	Nullagine Nursing Post	296		1,405
Pilbara Total		**69,519**	**17,558**	**66,263**

Pilbara Hospital bed Numbers

District	Hospital	Bed Numbers
West Pilbara	Karratha Health Campus	50
	Onslow Health Service	6
	Paraburdoo Hospital	4
	Roebourne Hospital	10
	Tom Price Hospital	8
East Pilbara	Hedland Health Campus	71
	Newman Health Service	10
Pilbara Total		**159**

Includes neonatal cots. Source: WACHS Planning and Evaluation Bed Capacity Audit document, accessed September 2022.

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 Services to enable patients to receive their care at or closer to home.

Population

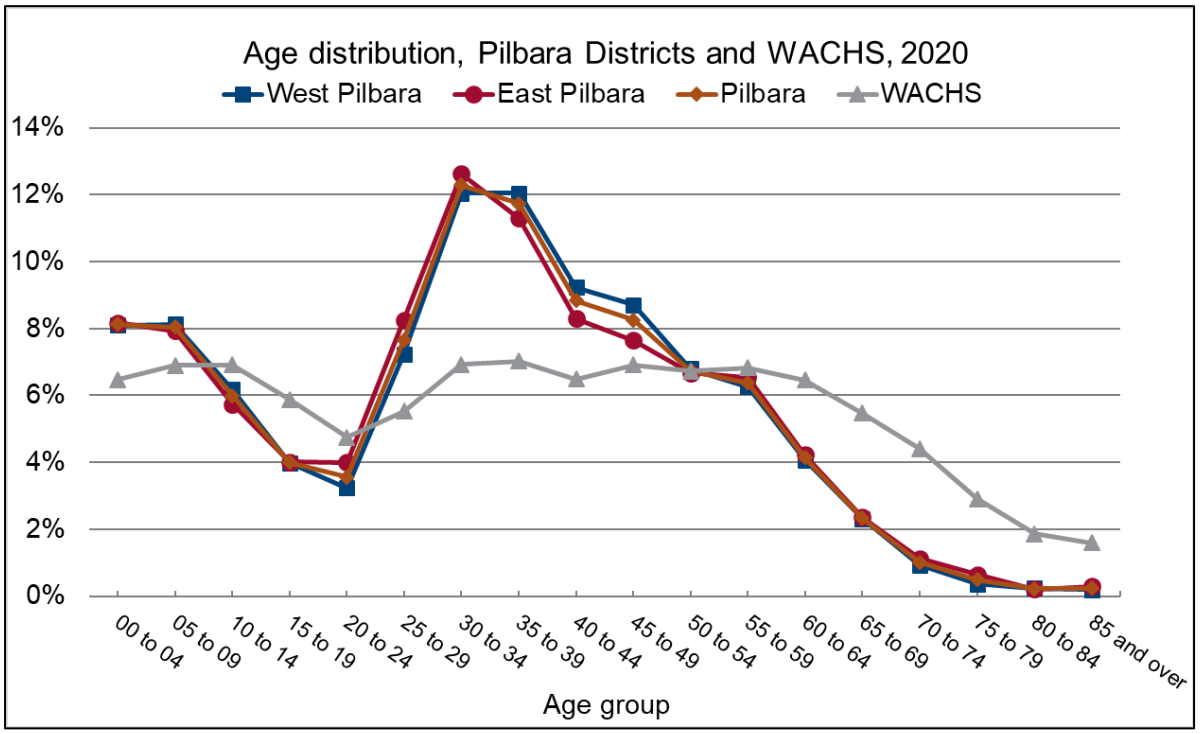
- At 30 June 2020, the Estimated Resident Population of the Pilbara was 62,841 people, with 58% living in the West Pilbara district and 42% living in the East Pilbara district.
- The largest population within the West Pilbara district is in the City of Karratha, with 23,118 people (63% of the total district population).
- The largest population within the East Pilbara district is the Town of Port Hedland, with 15,471 people (59% of the total district population).
- The Pilbara has 19% of its population that identify as Aboriginal, with the East Pilbara having a higher proportion (24%) than the West Pilbara (15%), however both were higher than the WACHS average of 11% and overall WA State average of 3%.

Geographic district	LGA	Aboriginal	Non-Aboriginal	Total	% Aboriginal
West Pilbara	Ashburton (S)	1487	11844	13331	11%
	Karratha (C)	4136	18982	23118	18%
West Pilbara Total		**5623**	**30826**	**36449**	15%
East Pilbara	East Pilbara (S)	2716	8205	10921	25%
	Port Hedland (T)	3580	11891	15471	23%
East Pilbara Total		**6296**	**20096**	**26392**	24%
Pilbara Total		**11919**	**50922**	**62841**	**19%**

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

Age distribution

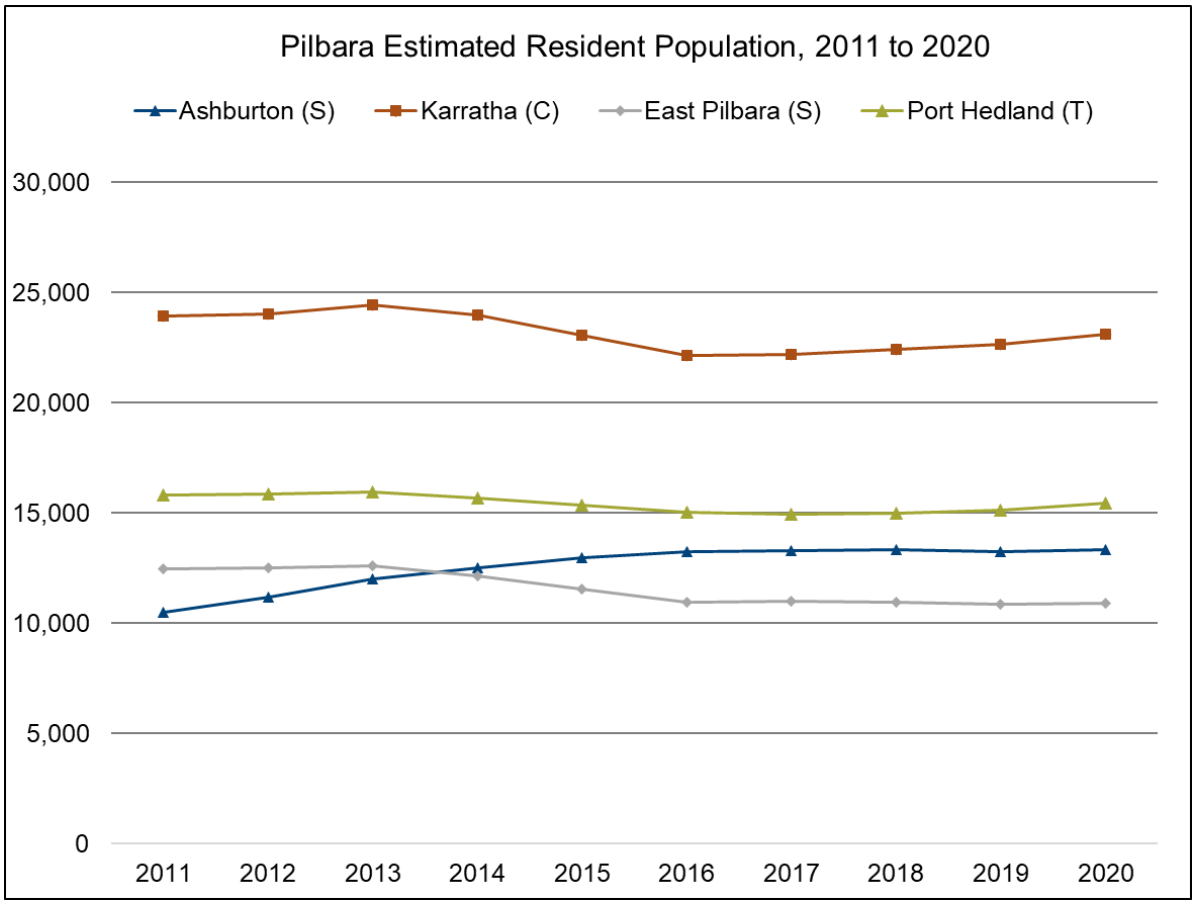
- In 2020, the Pilbara (across both West and East districts) had a much younger age distribution than the WACHS average, with only 4% of its population aged 65 years and over, compared with 16% for the WACHS average. Almost half (49%) of the Pilbara population was aged 25 to 49, compared with 33% for the WACHS average.



Source: ABS Estimated Resident Population, 2020.

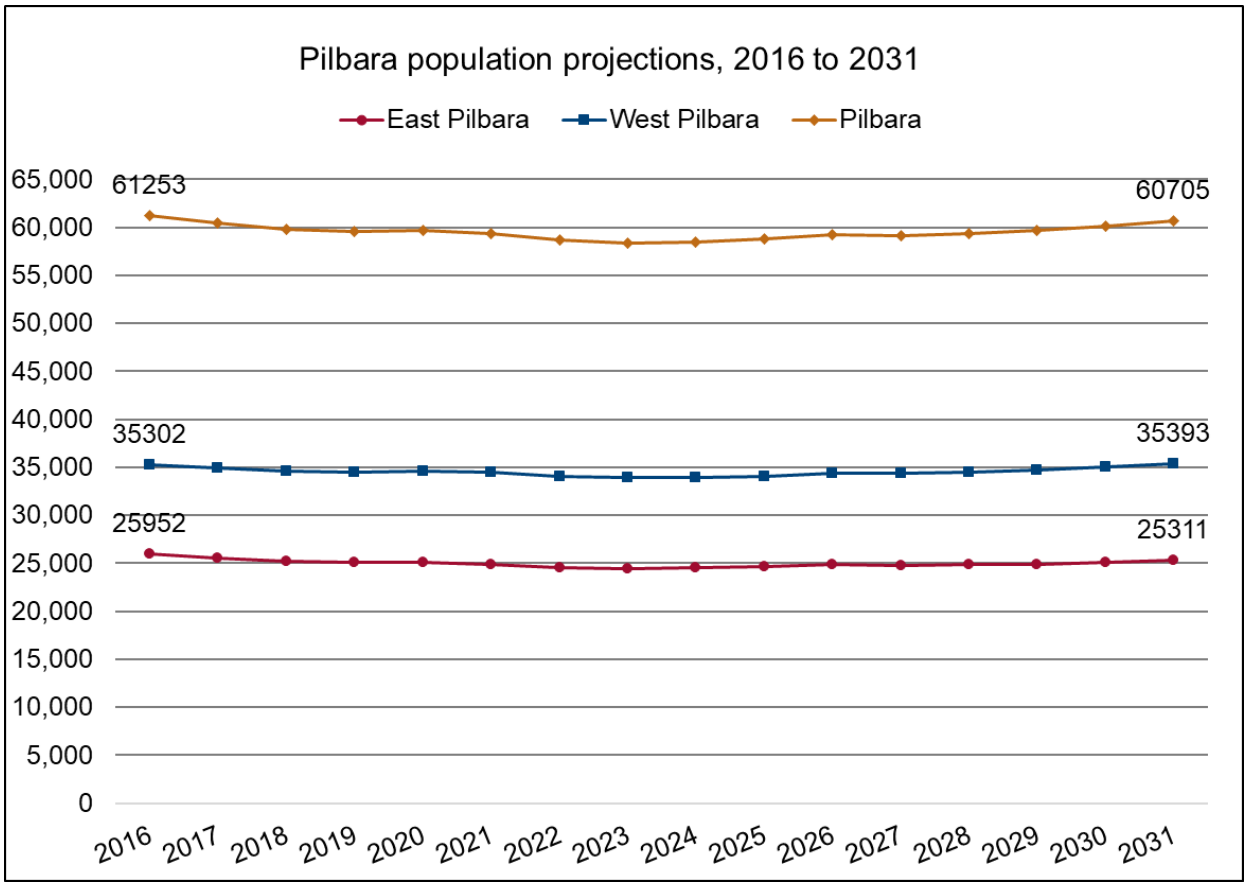
Historical population growth

- The total population of the Pilbara region in 2020 (62,841) was consistent with the population in 2011 (62,736). The population peaked in 2013 at 65,062 before declining to 61,440 in 2017 and then increasing again in the past three years.
- Within the West Pilbara district, between 2011 and 2020 the overall population increased by an annual average of 0.6% (from 34,415 to 36,449). This was driven by an annual average increase of 2.7% in the Shire of Ashburton, offset by an average annual decrease of -0.4% in the City of Karratha.
- Within the East Pilbara, the overall population decreased between 2011 and 2020 by an annual average of -0.8% (from 28,321 to 26,392). This was driven by an annual average decrease of-1.5% in the Shire of East Pilbara, compared with a smaller annual average decrease of -0.3% in the Town of Port Hedland.



Projected population growth

- Between 2016 and 2031, the population of the Pilbara is estimated to decrease by 0.9% (decrease of 548 people). This is driven by estimated decrease of -2.5% in the East Pilbara district (decrease of 640 people) offset by an increase of 0.4% in the West Pilbara district (increase of 92 people).
- 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.

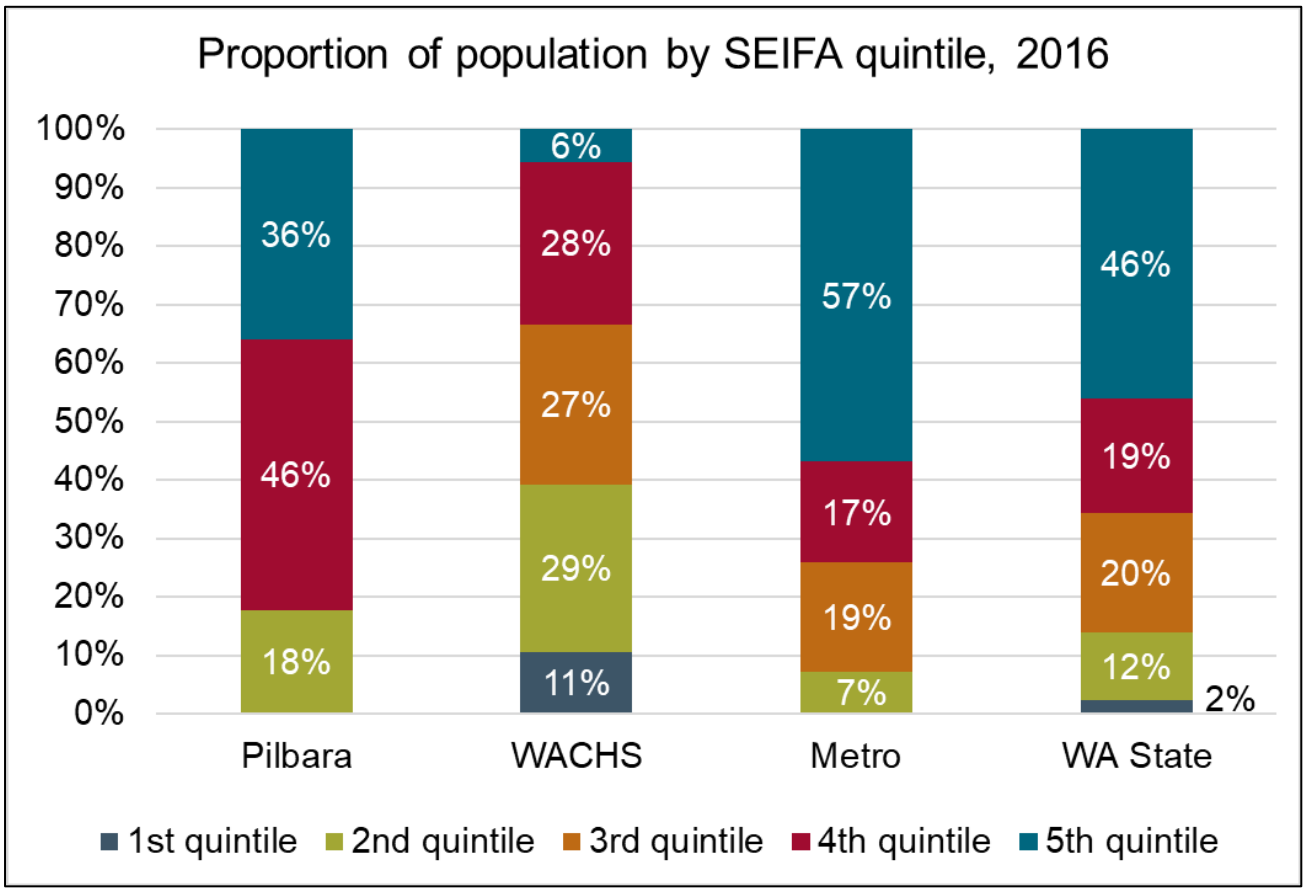
Key Pilbara demographic, social and economic facts

Local Government	LGA	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
West Pilbara	Ashburton (S)	26.6%	11.4%	4%	11%	1.8%	2%
	Karratha (C)	20.6%	12.7%	4.9%	13.7%	2.4%	6%
East Pilbara	East Pilbara (S)	20%	18.6%	5.7%	9%	2.8%	4.2%
	Port Hedland (T)	20.4%	14.3%	6%	12%	2.9%	5.2%
Pilbara		**21.8%**	**13.9%**	**5.1%**	**11.8%**	**2.5%**	**4.5%**
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%**

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 Pilbara had 18% of its population living in areas with SEIFA scores in the two quintiles with the highest relative disadvantage (0% in quintile one), compared with 40% for WACHS overall and 14% for the WA State average. In contrast, 82% of the region's population lived in areas in the two least disadvantaged quintiles (4th and 5th), significantly higher than the averages for WACHS (33%), Perth metro (74%) and WA State (66%).



**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 Pilbara, 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 Pilbara, injury (including suicide, self-inflicted and motor vehicle occupant injuries) is the leading cause of burden of disease (16.9% of total burden) for the community followed by mental health issues (16.5%), cardiovascular (12.8%), musculoskeletal diseases (12.2%) and cancer (8.1%).

Depressive disorders (7.3% of disability adjusted life years), coronary heart disease (6.9%) and back pain/problems (6.4%) are the highest burdens for Pilbara women, while coronary heart disease (11%), suicide/self-inflicted injuries (7.8%) and back pain/problems (6.1%) are highest for Pilbara men.

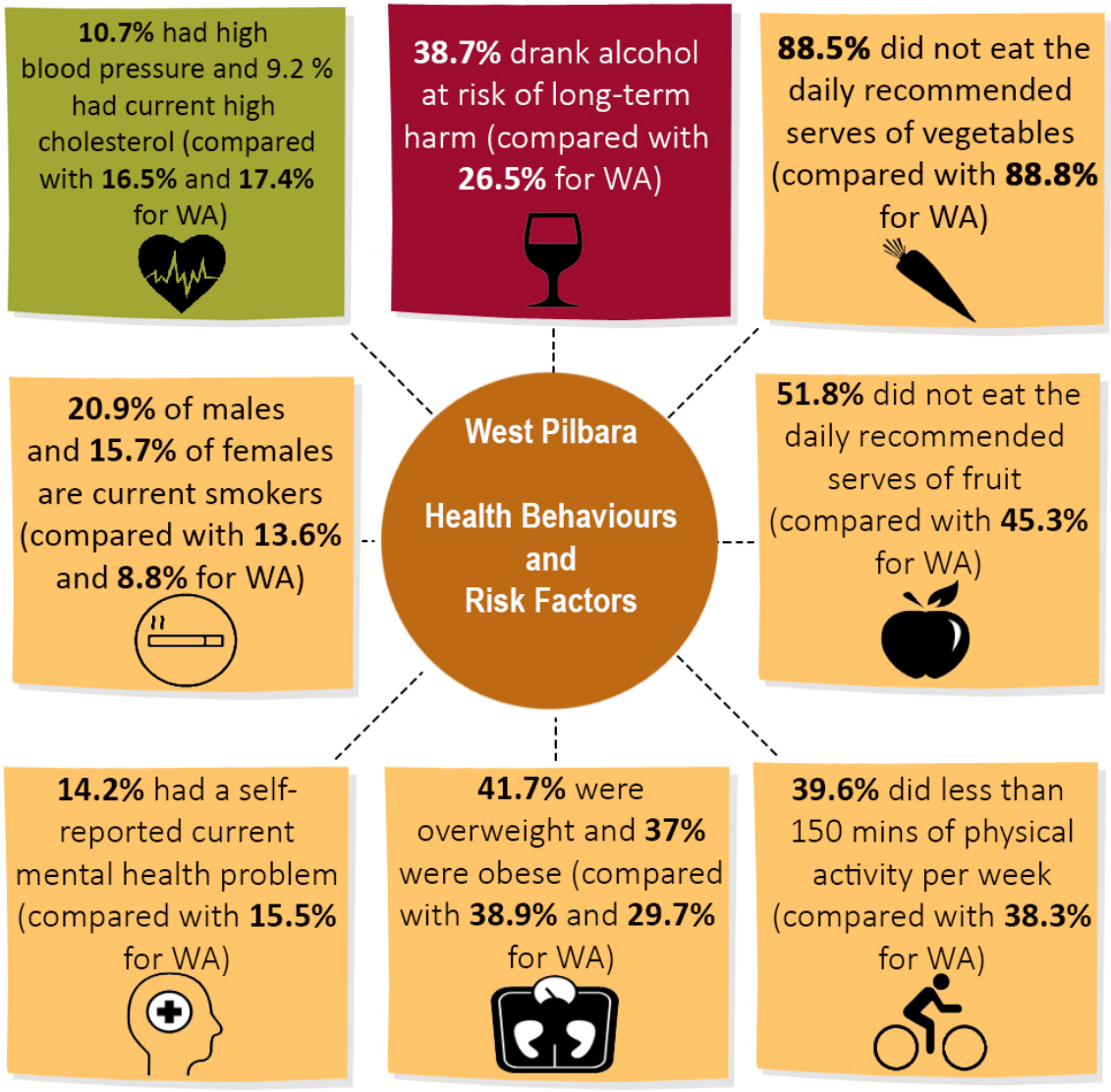
For Pilbara residents aged 15-44, the largest burdens of disease were from suicide/self-inflicted injuries, alcohol use disorders, back pain/problems and poisoning, while for those aged 45 years and over the largest burden was from coronary heart disease, back pain/problems, dementia, and type 2 diabetes.

The below report provides further details on breakdowns for the Pilbara 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

West Pilbara health risk factors

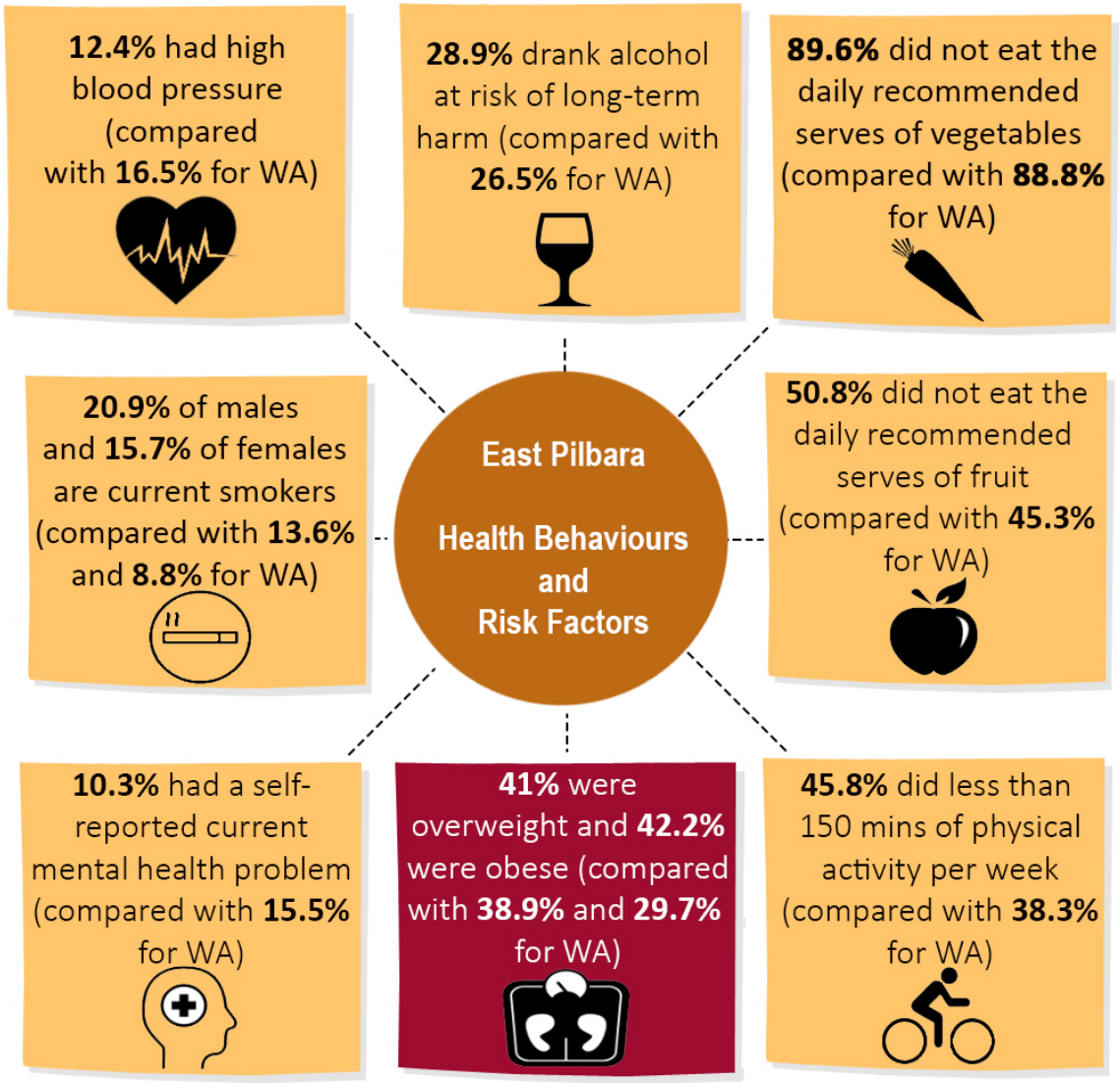
The graphics below highlight the prevalence of key health risk factors for the West Pilbara district. These are self-reported measures collected through the Department of Health's Health and Wellbeing Surveillance System.



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 Pilbara health risk factors

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

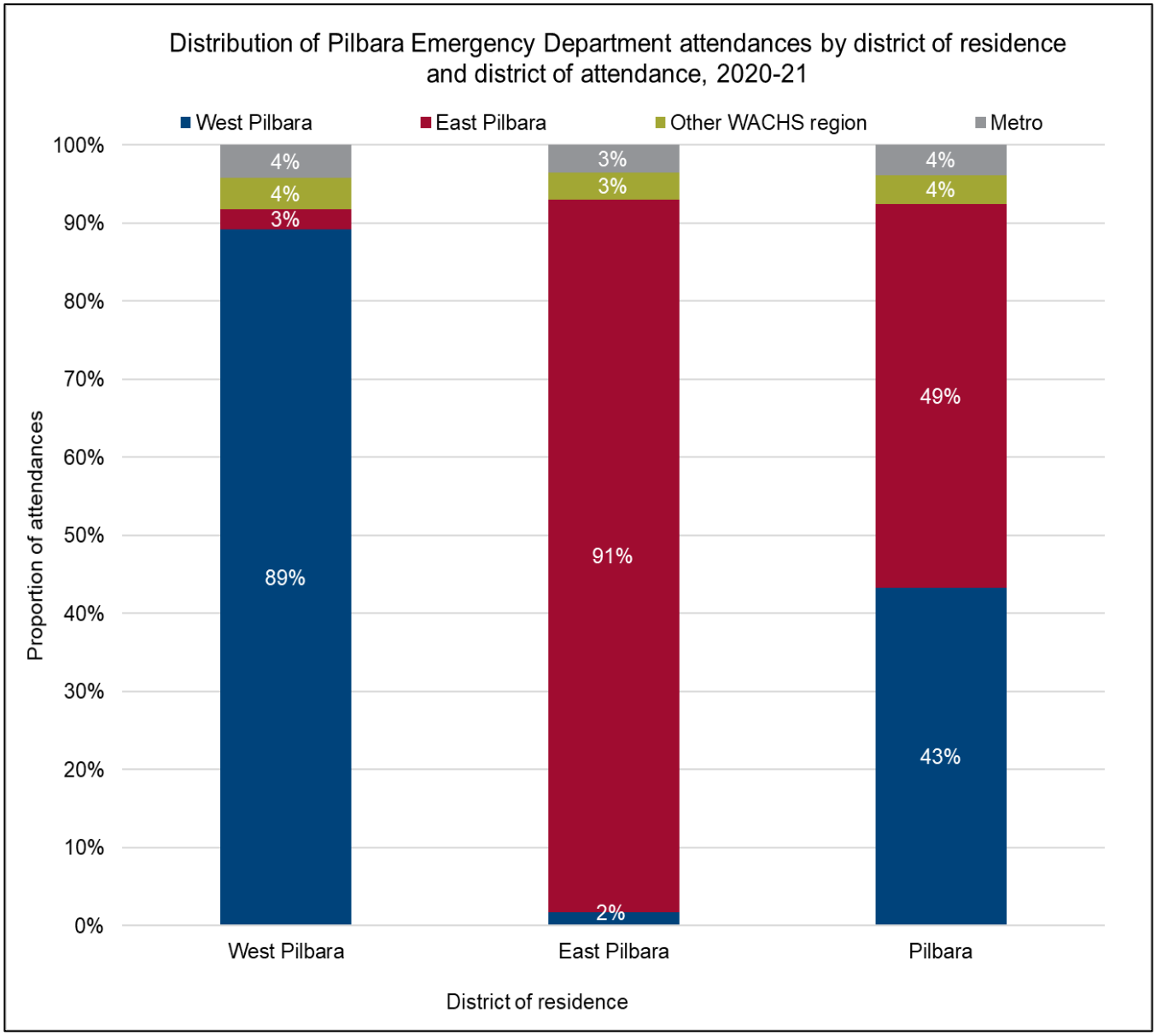


Adults aged 16+, 2015-2019.
Source: Health and Wellbeing Surveillance System, Epidemiology Branch, Department of Health
Note: Colour coding reflects where a District rate is significantly different (red higher, green lower, amber similar) than the State rate. The State rate may still be at a level of concern.

Emergency Department

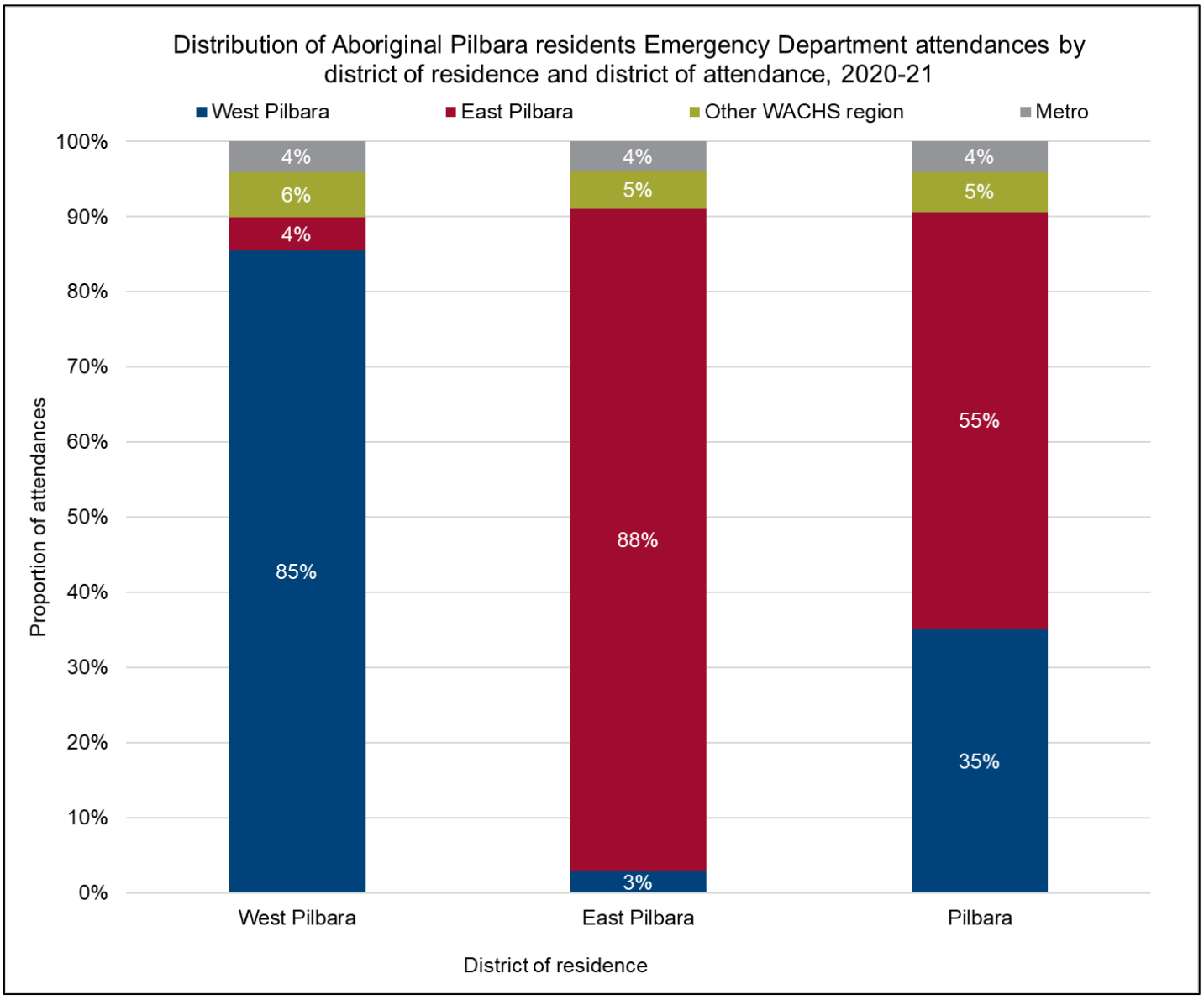
Pilbara summary

- Of the 59,526 emergency department (ED) attendances by Pilbara residents in 2020-21, 92% occurred at Pilbara hospitals (including 39% at Hedland Health Campus, 31% at Karratha Health Campus), 4% in other WACHS regions and 4% at Perth metropolitan hospitals.
- East Pilbara district residents had a slightly higher proportion of ED attendances at a hospital in their own district (28,513 attendances of 91%), compared with West Pilbara residents (25,247 or 89%).



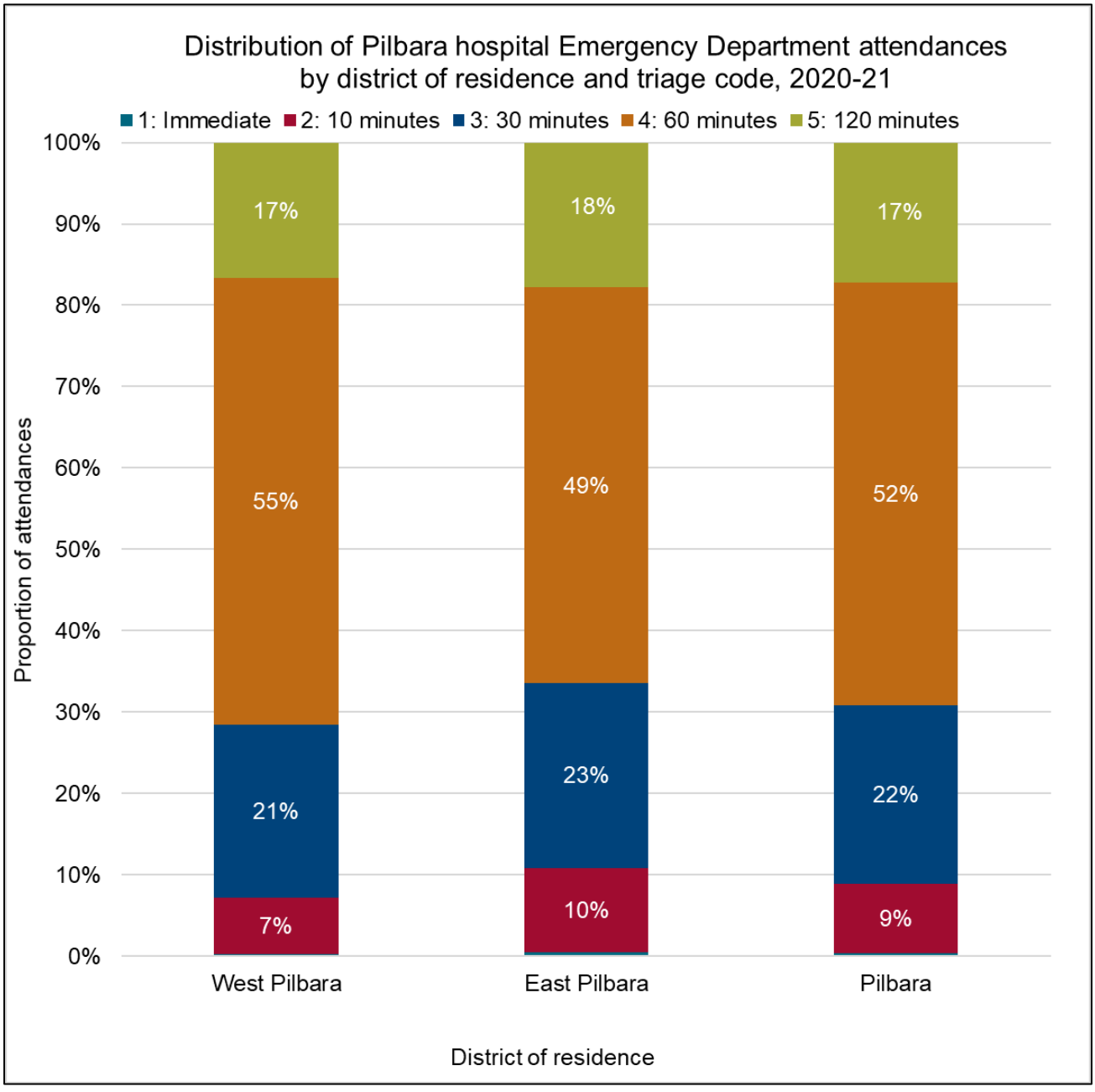
Source: Emergency Department Data Collection, DoH

- For Aboriginal Pilbara residents, of their 22,096 attendances in 2020-21, 91% attended a Pilbara hospital, 5% in other WACHS regions and 4% at Perth metropolitan hospitals.
- The Aboriginal population in the East Pilbara had a higher proportion of attendances in their own district (11,882 attendances or 88%) compared with West Pilbara residents (7,353 or 85%).



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

- Across Pilbara residents attending an emergency department (all hospitals) in 2020-21, 9% were triaged as level 1 or 2 (highest urgency), which was higher for East Pilbara residents (11%) than Central West Pilbara residents (7%).
- For West Pilbara residents, 72% of their emergency department attendances were triaged as level 4 or 5, compared with two-thirds (66%) for East Pilbara residents.



Source: Emergency Department Data Collection, DoH

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

- For Pilbara residents who attended a hospital emergency department in their region in 2020-21 (51,562 attendances), 5% were delivered via the Emergency Telehealth Service.
- Of all Pilbara emergency department attendances by Pilbara residents in 2020-21, 63% (32,668) occurred between the hours of 8am and 5pm, 18% (9,156) (were between 5pm and 9pm, and 19% (9,828) were between 9pm and 8am.
- Of the Pilbara residents who attended a Pilbara emergency department in 2020-21, 84% (43,385) were discharged home, 8% (4,372) were admitted to that hospital, and 2% (1,031) were transferred to another hospital (1% to a metropolitan hospital).
- The Major Diagnostic Categories (MDCs) that made up the largest proportion of Pilbara emergency department attendances by Pilbara residents in 2020-21 were Diseases and disorders of the musculoskeletal system and connective tissue (13%) and Factors influencing health status and other contacts with health services (12%). The most common MDCs that led to a transfer to a metropolitan hospital were Diseases and disorder of the circulatory system (14% of metro transfers) and Diseases and Disorders of the digestive system (12% of metro transfers).

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

Major Diagnostic Category	Attendances	% of total
Diseases and disorders of the musculoskeletal system and connective tissue	6602	13%
Factors influencing health status and other contacts with health services	6436	12%
Diseases and Disorders of the Ear, Nose, Mouth and Throat	6409	12%
Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	5476	11%
Injuries, Poisonings and Toxic Effects of Drugs	4782	9%

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

Major Diagnostic Category	Attendances	% of metro transfers
Diseases and Disorders of the Circulatory System	40	14%
Diseases and disorders of the digestive system	34	12%
Injuries, Poisonings and Toxic Effects of Drugs	33	12%
Diseases and Disorders of the Nervous System	27	10%
Diseases and disorders of the musculoskeletal system and connective tissue	26	9%

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

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

- For Aboriginal Pilbara residents who attended a hospital emergency department in their region in 2020-21 (18,725 attendances), 7% were delivered via the Emergency Telehealth Service.
- Of all Pilbara emergency department attendances by Aboriginal Pilbara residents in 2020-21, 57% (10,657) occurred between the hours of 8am and 5pm, 20% (3,777) were between 5pm and 9pm, and 23% (4,291) were between 9pm and 8am.
- Of the Aboriginal Pilbara residents who attended a Pilbara emergency department in 2020-21, 76% (14,256) were discharged home, 12% (2,262) were admitted to that hospital, and 3% (597) were transferred to another hospital (1% to a metropolitan hospital).
- The Major Diagnostic Categories (MDCs) that made up the largest proportion of Pilbara emergency department attendances by Aboriginal Pilbara residents in 2020-21 were Factors influencing health status and other contacts with health services (14%) 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 for Aboriginal residents were Diseases and disorder of the circulatory system (20% of metro transfers) and Diseases and Disorders of the respiratory system (10% of metro transfers).

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

Major Diagnostic Category	Attendances	% of total
Factors influencing health status and other contacts with health services	2615	14%
Diseases and Disorders of the Skin, Subcutaneous Tissue and Breast	2308	12%
Diseases and Disorders of the Ear, Nose, Mouth and Throat	2170	12%
Diseases and disorders of the musculoskeletal system and connective tissue	1952	10%
Injuries, Poisonings and Toxic Effects of Drugs	1819	10%

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

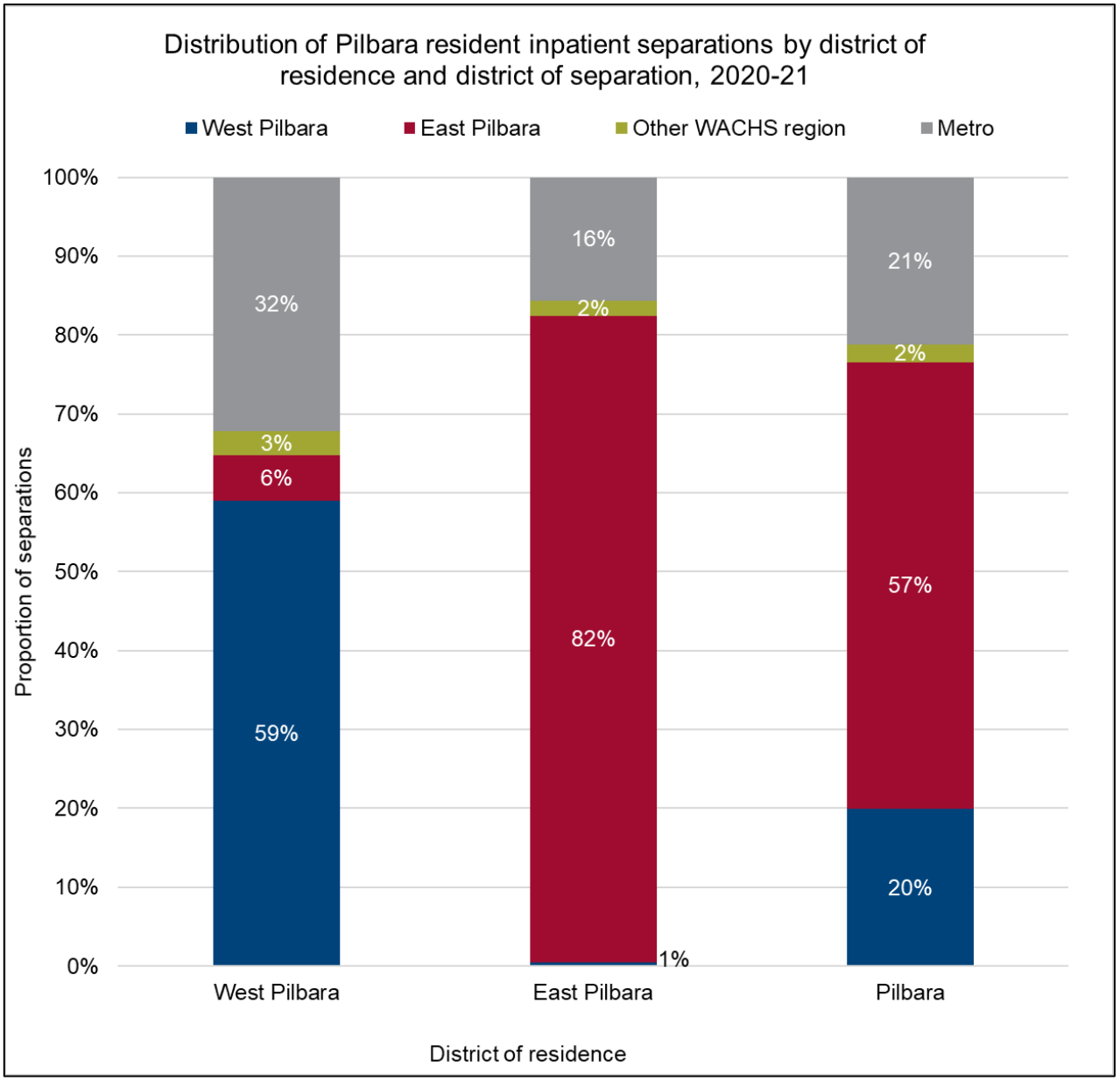
Major Diagnostic Category	Attendances	% of metro transfers
Diseases and Disorders of the Circulatory System	26	20%
Diseases and disorders of the respiratory system	13	10%
Infectious and Parasitic Diseases, Systemic or Unspecified Sites	13	10%
Diseases and disorders of the digestive system	11	9%
Diseases and Disorders of the Nervous System	11	9%

Source: Emergency Department Collection, WACHS Business Intelligence

Hospitalisations

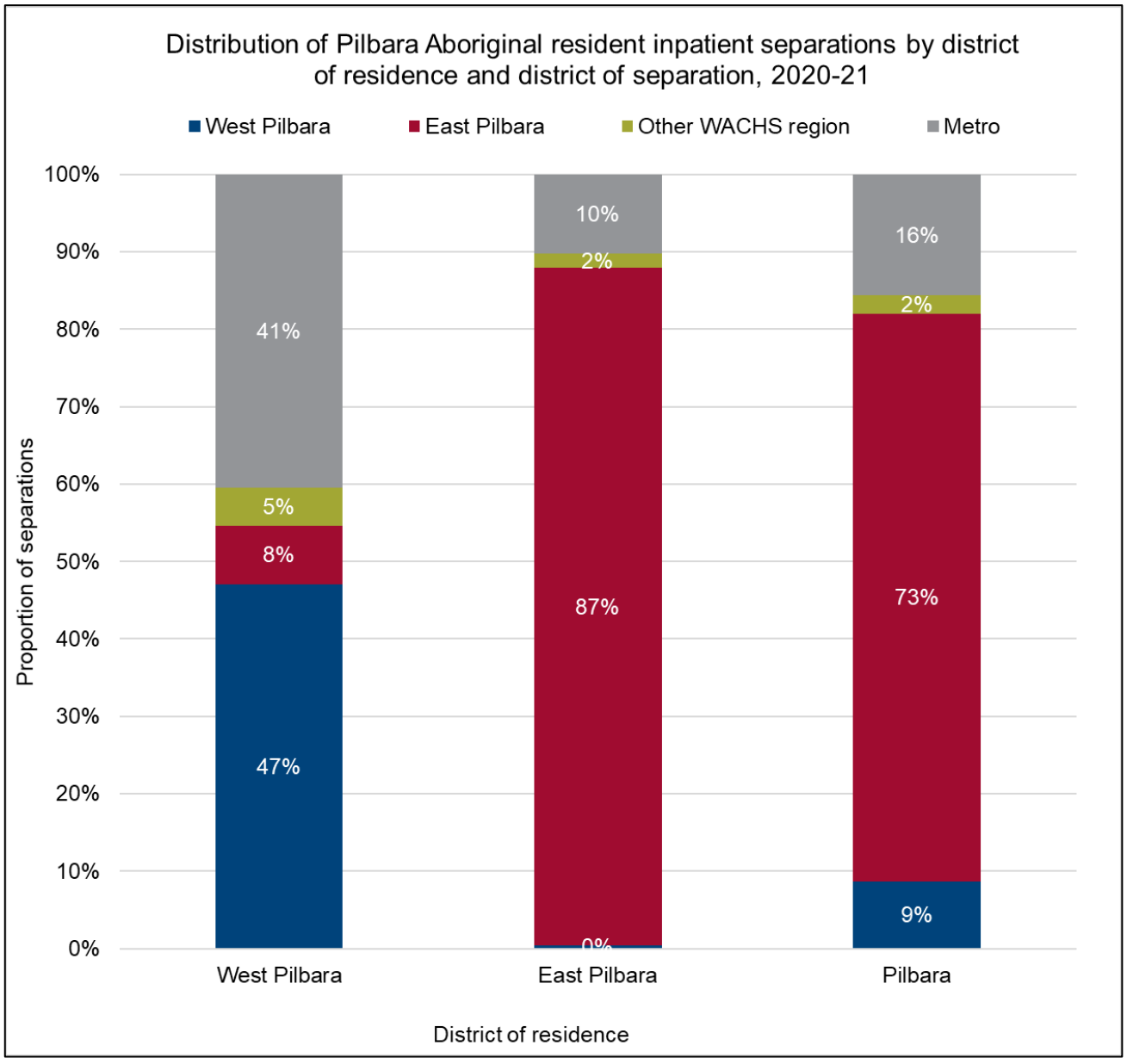
Pilbara summary

- Of the 20,374 inpatient separations by Pilbara residents across WA in 2020-21, 77% (15,598 separations) occurred in Pilbara hospitals (including 54% at Hedland Health Campus and 18% at Karratha Health Campus), while 21% (4,312) occurred in a Perth metropolitan hospital.
- East Pilbara residents had a higher proportion of inpatient separations at a hospital in their own district (82%, 11,138 separations) than the West Pilbara residents (59%, 4,002), due to having the regional hospital (Hedland) in their district. West Pilbara residents had double the proportion of separations at a metropolitan hospital (32%) than East Pilbara residents (16%).



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

- For Aboriginal residents, of their 12,348 inpatient separations in 2020-21, 82% attended a Pilbara hospital (including 71% at Hedland Health Campus and 7% at Karratha Health Campus), while 16% occurred in a Perth metropolitan hospital.
- Aboriginal residents of the East Pilbara had 87% of their inpatient separations at a hospital in their district (8,892 separations), compared with 47% for West Pilbara residents (1,026 separations). Aboriginal West Pilbara residents had 41% of their inpatient separations at a metropolitan hospital, four times the proportion for Aboriginal East Pilbara residents (10%).



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

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

- The most common Enhanced Service Related Groups (ESRGs) for the 20,374 hospital separations (across all hospitals) by Pilbara residents in 2020-21 was Renal Dialysis (37% of separations) followed by Vaginal delivery (3%) and Ante-natal Admission (2%).
- For Aboriginal Pilbara residents, renal dialysis made up two-thirds (67%) of their 12,348 inpatient separations in 2020-21, followed by Cellulitis (2%). For non-Aboriginal residents, the top ESRGs were Vaginal delivery (5%) and Chemotherapy (4%).
- Due to the impact of renal dialysis, 77% of separations for Pilbara residents in 2020-21 were same-day separations (23% multi-day). The proportion of same-day separations was 82% for Aboriginal residents compared with 69% for non-Aboriginal residents.

Pilbara	Separations	% of all separations
042, Renal Dialysis	7625	37%
114, Vaginal Delivery	537	3%
113, Ante-natal Admission	453	2%
028, Cellulitis	383	2%
031, Chemotherapy	376	2%
053, Other Non Subspecialty Medicine	357	2%
117, Qualified Neonate	352	2%
022, Colonoscopy	339	2%
115, Caesarean Delivery	337	2%
083, Other Eye Procedures	319	2%
016, Other Endocrinology	305	1%
101, Digestive System Diagnoses incl GI Obstruction	285	1%

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 Pilbara residents, by top ESRGs, 2020-21

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Pilbara	Separations	% of all separations
042, Renal Dialysis	7604	62%
028, Cellulitis	245	2%
053, Other Non Subspecialty Medicine	170	1%
113, Ante-natal Admission	166	1%
045, Respiratory Infections/Inflammations	150	1%
114, Vaginal Delivery	138	1%
117, Qualified Neonate	137	1%
098, Injuries - Non-surgical	135	1%
049, Other Respiratory Medicine	131	1%
083, Other Eye Procedures	131	1%
001, Chest Pain	124	1%
080, Injuries to limbs - Medical	117	1%

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 Pilbara residents, by top ESRGs, 2020-21

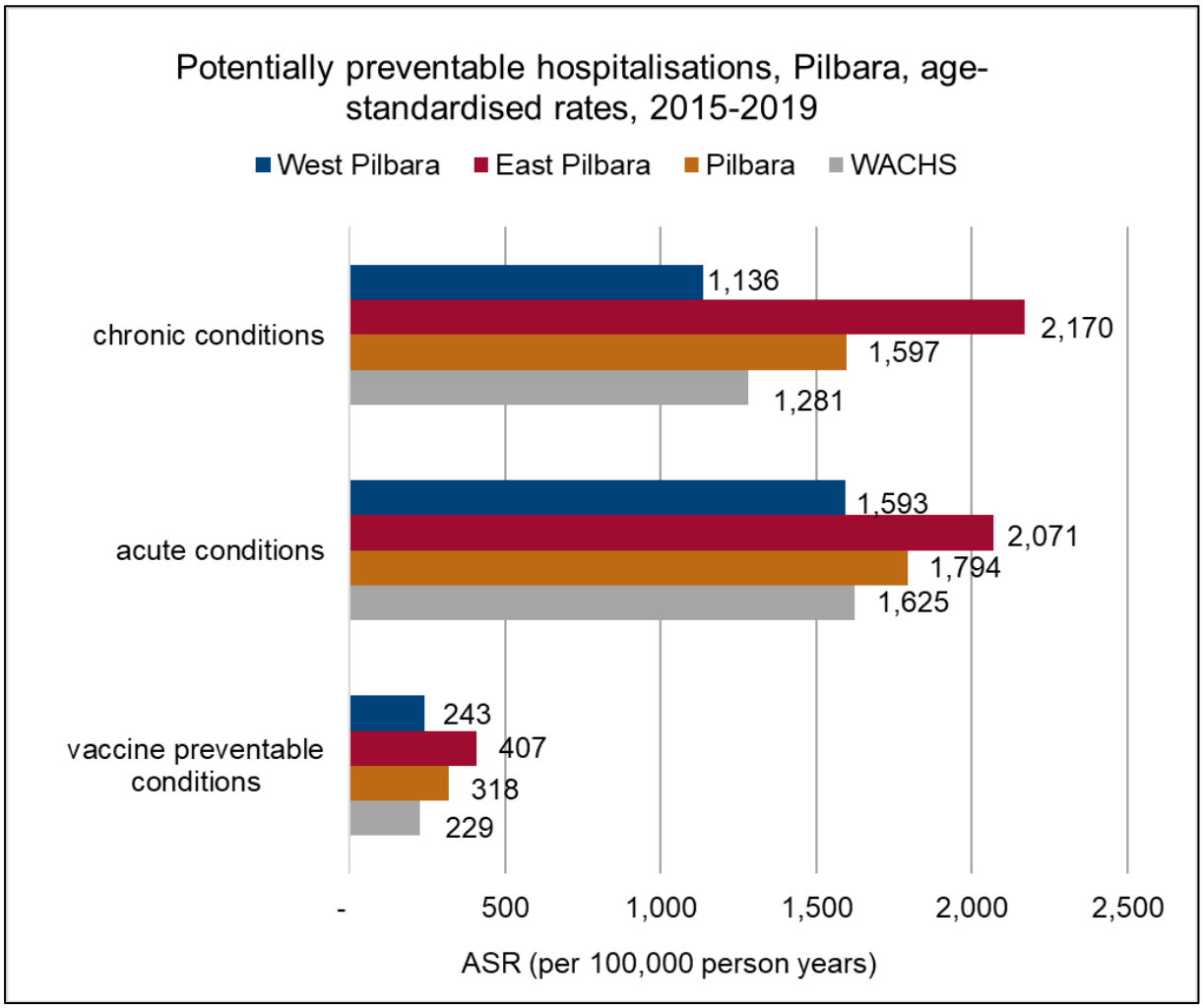
Pilbara	Separations	% of all separations
114, Vaginal Delivery	399	5%
031, Chemotherapy	317	4%
022, Colonoscopy	307	4%
113, Ante-natal Admission	287	4%
115, Caesarean Delivery	270	3%
117, Qualified Neonate	215	3%
086, Skin, Subcutaneous Tissue and Breast Procedures	214	3%
016, Other Endocrinology	212	3%
020, Other Gastroscopy	202	3%
101, Digestive System Diagnoses incl GI Obstruction	201	3%
083, Other Eye Procedures	188	2%
053, Other Non Subspecialty Medicine	187	2%

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.*

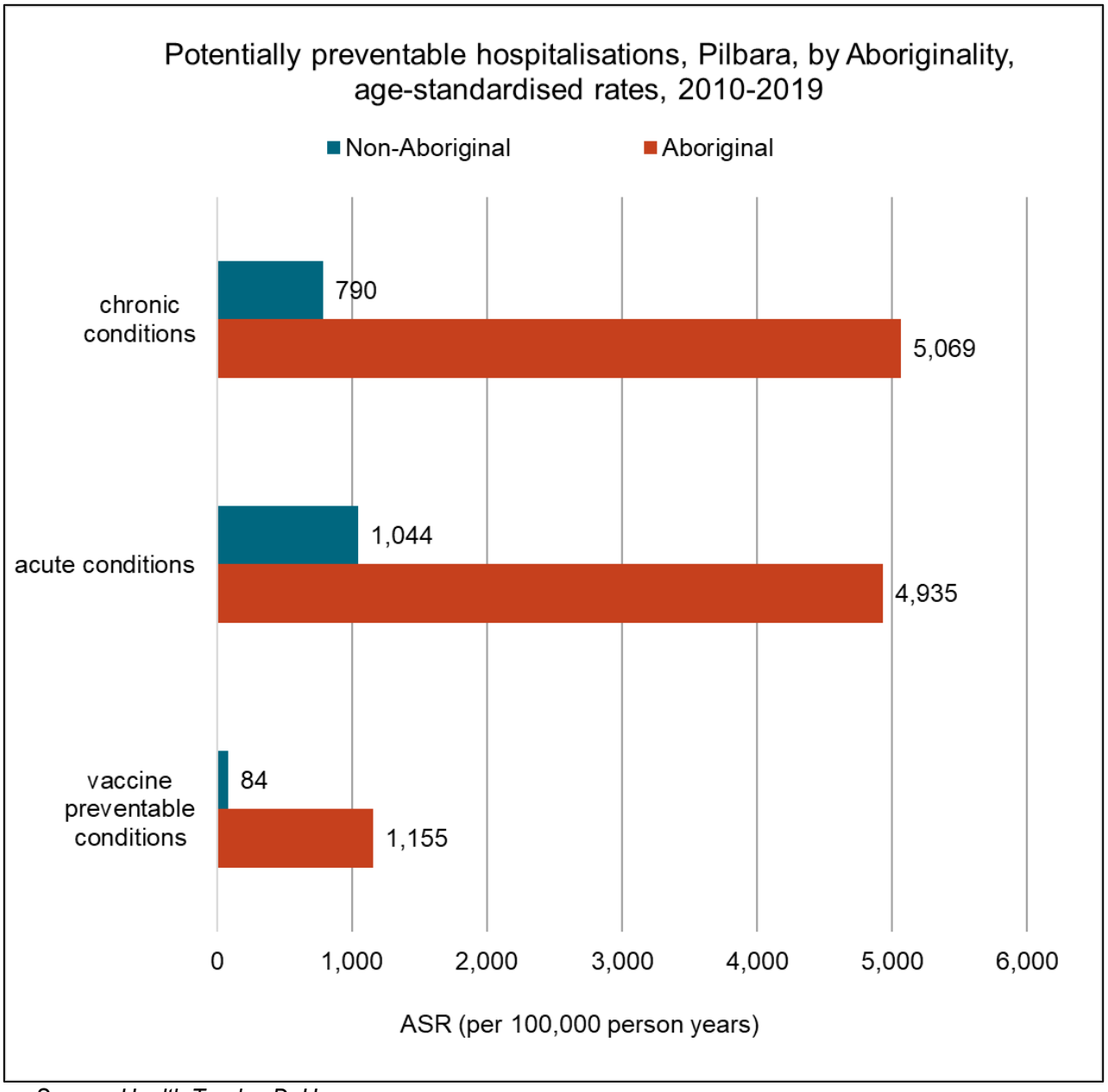
Potentially Preventable Hospitalisations

- 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[1].
- PPHs between 2015-2019 for West Pilbara district residents were significantly lower than the East Pilbara district across all three major condition types, most notably for chronic (1,136 per 100,000 person years, which was 91% lower than East Pilbara) and vaccine-preventable conditions (243 per 100,000 person years, which was 67% lower than East Pilbara). The West Pilbara had lower rates of PPHs than the WACHS average across acute (2% lower) and chronic (13% lower) conditions but was slightly higher (2%) for vaccine-preventable conditions.



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 6.4 times higher, for acute conditions the rate was 4.7 times higher and for vaccine-preventable conditions the rate was 13.7 times higher.



Source: Health Tracks, DoH

Pilbara leading conditions for potentially preventable hospitalisations, 2015-2019

- The leading causes of PPHs for Great Southern residents for 2015-2019 were cellulitis (17% of cases), dental conditions (10% of cases) and ENT infections (10% of cases).
- The incidence of the leading PPHs in the Pilbara compared with the State average was highest for cellulitis (occurred at 2.6 times the State average) and chronic obstructive pulmonary disease (occurred at 2.3 times the state average).

Condition	Type	N	% of all cases	SRR (comparison with State average)
Cellulitis	acute	1,438	17.0%	2.59
Dental conditions	acute	849	10.0%	0.76
ENT infections	acute	846	10.0%	1.66
Urinary tract infections	acute	749	8.8%	1.29
Chronic obstructive pulmonary disease	chronic	596	7.0%	2.34
Diabetes complications	chronic	499	5.9%	1.31
Convulsions and epilepsy	acute	453	5.3%	1.19
Congestive cardiac failure	chronic	425	5.0%	2.29
Asthma	chronic	408	4.8%	1.62
Iron deficiency anaemia	chronic	378	4.5%	0.99

SRR = Standardised Rate Ratio, relative to the WA rate. An SRR lower than 1 is lower than the WA average, an SRR higher than 1 is higher than the WA average.

Source: HealthTracks, DoH

Top 5 PPHs by Pilbara district, 2015-2019

		1st	2nd	3rd	4th	5th	Total*
West Pilbara	*Condition*	Cellulitis	Dental conditions	ENT infections	Urinary tract infections	Diabetes complications	
	No.	711	505	441	339	247	**3,988**
	SRR	2.22	0.78	1.51	1.02	1.13	**1.22**
East Pilbara	*Condition*	Cellulitis	Chronic obstructive pulmonary disease	Urinary tract infections	ENT infections	Dental conditions	
	No.	727	428	410	405	344	**4,492**
	SRR	3.1	3.82	1.64	1.86	0.73	**1.86**

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

- For non-Aboriginal residents over the period 2015-2019, the highest occurring PPH condition was dental conditions (557 PPHs, 16.7% of total PPHs for non-Aboriginal people) followed by cellulitis (513 PPHs, 15.5%).

		1st	2nd	3rd	4th	5th	Total
Non-Aboriginal	*Condition*	Dental conditions	Cellulitis	ENT infections	Urinary tract infections	Iron deficiency anaemia	
	No.	557	513	466	390	274	**3,530**
	SRR	0.64	1.42	1.3	0.86	0.9	**0.88**

Top 5 PPHs for Aboriginal Pilbara residents, 2010-2019

- For the period 2010-2019, the highest occurring PPH condition for Aboriginal Pilbara residents was Cellulitis (1,625 PPHs, 16% of total PPHs for Aboriginal people) followed by urinary tract infections (760 PPHs, 12.5%).

		1st	2nd	3rd	4th	5th	Total
Aboriginal	*Condition*	Cellulitis	Urinary tract infections	ENT infections	Chronic obstructive pulmonary disease	Diabetes complications	
	No.	1,625	760	704	701	681	**8,970**
	SRR	1.46	1.08	1.13	1.14	1.05	**1.12**

Source: HealthTracks, DoH.

Communicable disease notifications

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

- For the period 2014-2018, there were 5,830 communicable disease notifications for Pilbara residents. The rates of communicable disease notifications for Pilbara residents were slightly higher than the State rate (SRR = 1.29).
- The rates for vector-borne diseases (predominately Ross River virus) was the highest above the State rate (SRR = 1.61) while blood-borne infections were the lowest in comparison with the State rate (SRR = 0.72).

Condition	Notifications	SRR
Blood-borne diseases	177	0.71
Enteric infections	924	1.24
Sexually transmitted infections	2,801	1.43
Vector-borne diseases	302	1.61
Vaccine-preventable diseases	1,601	1.19
Zoonotic diseases	0	0
Other notifiable diseases	25	0.91
All notifications	**5,830**	**1.29**

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

Pilbara leading communicable disease notifications, 2014-2018

- The leading cause of communicable disease notifications for 2014-2018 for Pilbara residents was chlamydia (genital) (31% of cases), influenza (17%) and gonorrhoea (16% of cases). Chlamydia was the leading cause across all districts.
- Many of the communicable disease notifications for Pilbara residents occurred at rates higher than the State average. The rates of Mumps notifications for Pilbara residents occurred at 8.9 times the State rate, while the rates of cryptosporidiosis, gonorrhoea, rotavirus and Ross River virus all occurred at more than or close to twice the State rate.

Condition	Type	Notifications	SRR
Chlamydia (genital)	Sexually transmitted infections	1,799	1.21
Influenza	Vaccine-preventable diseases	966	1.38
Gonorrhoea	Sexually transmitted infections	930	2.27
Salmonellosis	Enteric infections	297	1.23
Campylobacteriosis	Enteric infections	293	0.77
Ross River virus	Vector-borne diseases	239	1.98
Mumps	Vaccine-preventable diseases	231	8.88
Varicella (shingles)	Vaccine-preventable diseases	164	0.9
Rotavirus	Enteric infections	126	2.4
Cryptosporidiosis	Enteric infections	109	2.88

Source: HealthTracks, DoH

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

		1st	2nd	3rd	4th	5th	Total
West Pilbara	Condition	Chlamydia (genital)	Influenza	Gonorrhoea	Salmonellosis	Ross River virus	
	No.	834	460	288	159	157	**2,611**
	SRR	1	1.14	1.25	1.15	2.24	**1.02**
East Pilbara	Condition	Chlamydia (genital)	Gonorrhoea	Influenza	Campylo-bacteriosis	Mumps	
	No.	965	642	506	149	148	**3,219**
	SRR	1.46	3.6	1.7	0.91	13.2	**1.65**

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

- For the period 2009-2018, the highest number of communicable disease notifications for non-Aboriginal Pilbara residents was for Chlamydia (genital) (27% of notifications for non-Aboriginal residents) followed by Influenza (23%).

		1st	2nd	3rd	4th	5th	Total
Non-Aboriginal	Condition	Chlamydia (genital)	Influenza	Campylo-bacteriosis	Ross River virus	Salmonellosis	
	No.	773	666	250	219	201	**2,884**
	SRR	0.77	1.29	0.86	2.37	1.11	**0.91**

Source: HealthTracks, DoH. SRR in the table above is a rate ratio comparison against respective Aboriginal populations for Western Australia.

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

- For the period 2009-2018, the highest number of communicable disease notifications for Aboriginal Pilbara residents was for Chlamydia (genital) however this occurred in line with the Aboriginal State rate (SRR = 1.05), followed by gonorrhoea, which occurred at 1.45 times the Aboriginal State rate.

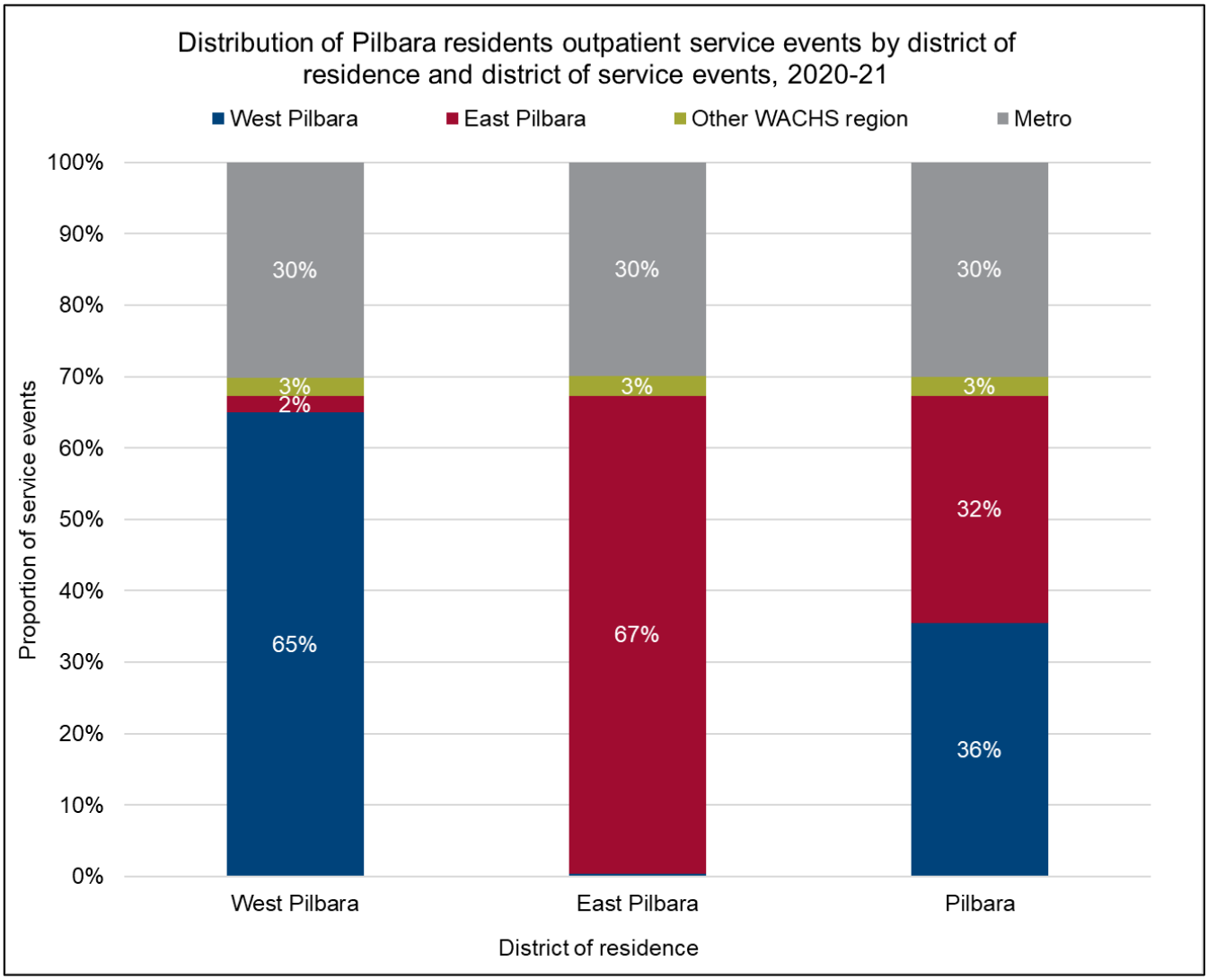
		1st	2nd	3rd	4th	5th	Total
Aboriginal	Condition	Chlamydia (genital)	Gonorrhoea	Influenza	Mumps	Salmonellosis	
	No.	1,915	1,781	410	209	143	**5,325**
	SRR	1.05	1.45	1.08	2.17	1.38	**1.17**

Source: HealthTracks, DoH

Outpatient

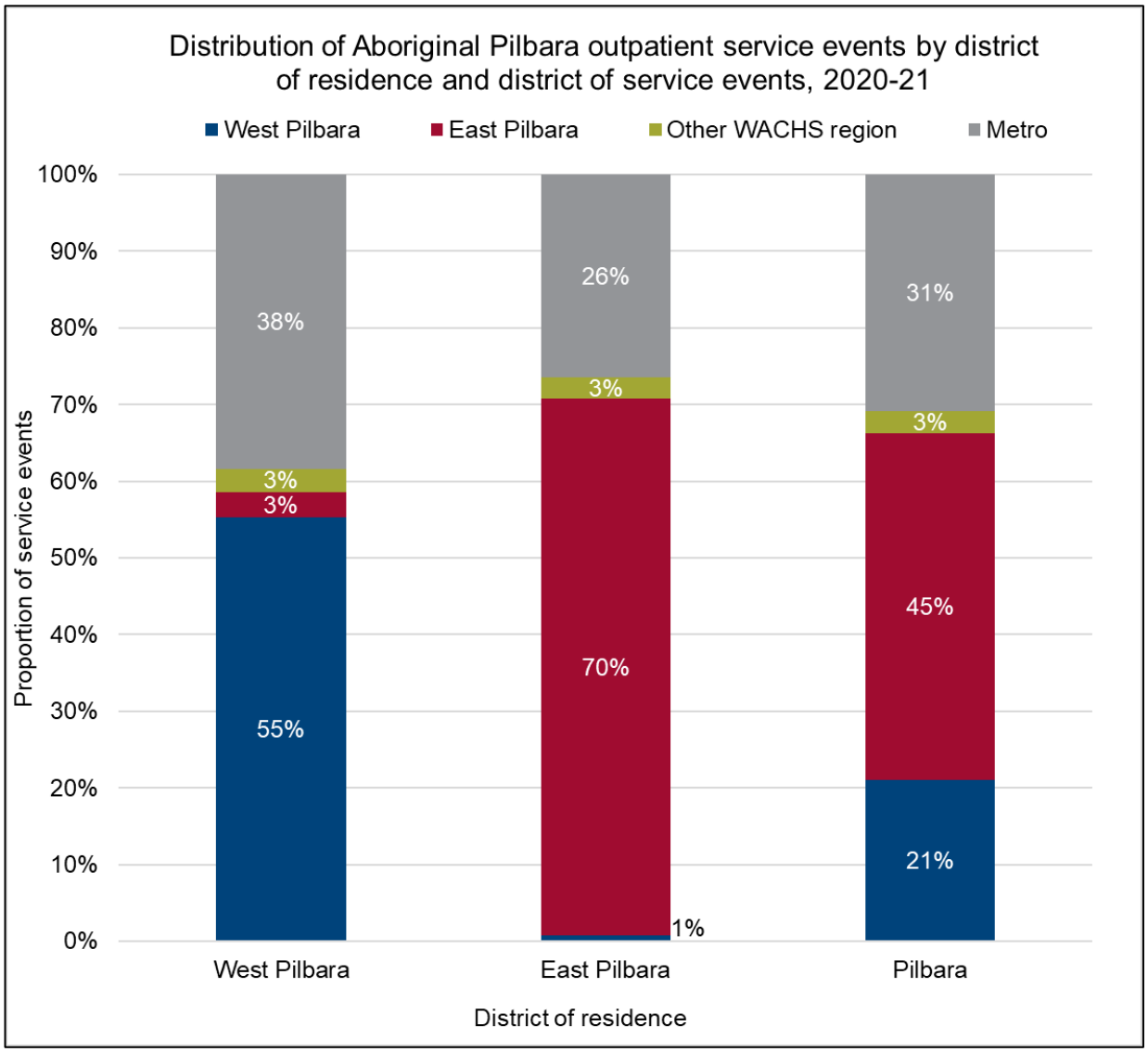
Pilbara Summary

- Of the 72,609 outpatient service events for Pilbara residents across WA in 2020-21, 68% (48,880) occurred at Pilbara hospitals (36% in West Pilbara hospitals and 32% in East Pilbara hospitals), followed by 30% (21,830) at Perth metropolitan hospitals.
- In 2020-21 the overall proportion of appointments for Pilbara residents that were delivered by telephone/telehealth was 21% (15,563) (13% for Pilbara hospitals and 40% for metro hospitals). This proportion of telephone/telehealth appointments was similar for both West Pilbara (22%) and East Pilbara (21%) residents.
- East Pilbara residents had a slightly higher proportion of outpatient service events at a hospital in their own district (67%, 22,137 service events) than West Pilbara residents (65%, 25,665), with both districts having 30% of their outpatient activity at metropolitan hospitals.



Source: Non-Admitted Data Collection, DoH

- For Aboriginal residents, of their 18,461 outpatient service events in 2020-21, 66% attended a Pilbara hospital, with a higher proportion occurring in East Pilbara hospitals (45%) than the overall population, with 31% occurring at Perth metropolitan hospitals.
- Aboriginal residents of the East Pilbara has a higher proportion of outpatient appointments at hospitals in their own district (70%, 8,123 service events) than West Pilbara residents (55% 3,801). West Pilbara residents were more likely to have their outpatient appointments at a Perth metropolitan hospital (38%) than East Pilbara residents (26%). Overall, Aboriginal residents attended 20% of appointments by telehealth (13% for Pilbara hospitals, 36% for metro hospitals).



Source: Non-Admitted Data Collection, Department of Health.

Outpatient service events for Pilbara residents, key characteristics

- For Pilbara residents in 2020-21, the most common Tier 2 Medical code was 20.11 Paediatric Medicine (5% of total service events) and 20.07 General Surgery (4%), while the top Nursing codes (including allied health) were 40.28 Midwifery (12% of total service events) followed by 40.53 General Medicine (9%).
- For Aboriginal Pilbara residents, the most common Tier 2 Medical code was also 20.11 Paediatric Medicine (4% of total service events for Aboriginal residents) 20.07 General Surgery (3%), while the top Nursing codes (including allied health) were 40.53 General Medicine (11%) followed by 40.28 Midwifery (8%).

Outpatient activity, Pilbara 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
20.11 Paediatric Medicine	3450	5%	40.28 Midwifery	8538	12%
20.07 General Surgery	3190	4%	40.53 General Medicine	6599	9%
20.40 Obstetrics	2757	4%	40.09 Physiotherapy	5855	8%
20.38 Gynaecology	2146	3%	40.06 Occupational Therapy	2587	4%
20.29 Orthopaedics	1616	2%	40.13 Wound Management	2343	3%
20.02 Anaesthetics	1362	2%	40.08 Primary Health Care	1965	3%
20.46 Plastic and Reconstructive Surgery	996	1%	40.07 Pre-Admission and Pre-Anaesthesia	1388	2%
20.05 General Medicine	986	1%	40.58 Hospital Avoidance Programs	1190	2%
20.45 Psychiatry	885	1%	40.23 Nutrition/Dietetics	1039	1%
20.18 Ear, Nose and Throat (ENT)	763	1%	40.46 Endocrinology	879	1%

Source: Non-Admitted Data Collection, DoH

Outpatient activity, Aboriginal Pilbara 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
20.11 Paediatric Medicine	672	4%	40.53 General Medicine	2077	11%
20.07 General Surgery	491	3%	40.28 Midwifery	1484	8%
20.29 Orthopaedics	431	2%	40.13 Wound Management	957	5%
20.45 Psychiatry	427	2%	40.58 Hospital Avoidance Programs	863	5%
20.40 Obstetrics	393	2%	40.09 Physiotherapy	839	5%
20.38 Gynaecology	327	2%	40.06 Occupational Therapy	770	4%
20.05 General Medicine	305	2%	40.08 Primary Health Care	568	3%
20.06 General Practice and Primary Care	294	2%	40.11 Social Work	543	3%
20.35 Nephrology	257	1%	40.47 Nephrology	341	2%
20.17 Ophthalmology	246	1%	40.35 Palliative Care	296	2%

Outpatient activity, non-Aboriginal Pilbara 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
20.11 Paediatric Medicine	2754	5%	40.28 Midwifery	7054	13%
20.07 General Surgery	2681	5%	40.09 Physiotherapy	4847	9%
20.40 Obstetrics	2364	5%	40.53 General Medicine	4510	9%
20.38 Gynaecology	1799	3%	40.06 Occupational Therapy	1815	3%
20.29 Orthopaedics	1178	2%	40.13 Wound Management	1386	3%
20.02 Anaesthetics	1122	2%	40.08 Primary Health Care	1383	3%
20.46 Plastic and Reconstructive Surgery	830	2%	40.07 Pre-Admission and Pre-Anaesthesia	1161	2%
20.05 General Medicine	672	1%	40.23 Nutrition/Dietetics	763	1%
20.42 Medical Oncology (Consultation)	562	1%	40.52 Oncology	657	1%
20.18 Ear, Nose and Throat (ENT)	539	1%	40.17 Audiology	559	1%

**40.53 General medicine is the assessment, management, diagnosis and/or research of general medical conditions, where patients are not required to attend a specialist medical consultation clinic or such clinics do not exist.*

Source: Non-Admitted Data Collection, Department of Health.

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.

- Within the West Pilbara district between 2015-2019, the proportion of people with reported high or very high levels of psychological distress (6.1%) was higher than the East Pilbara district (5.3%), but both districts were lower than the averages for WACHS (7.8%) and WA State (8.8%). This trend was consistent across both males and females.

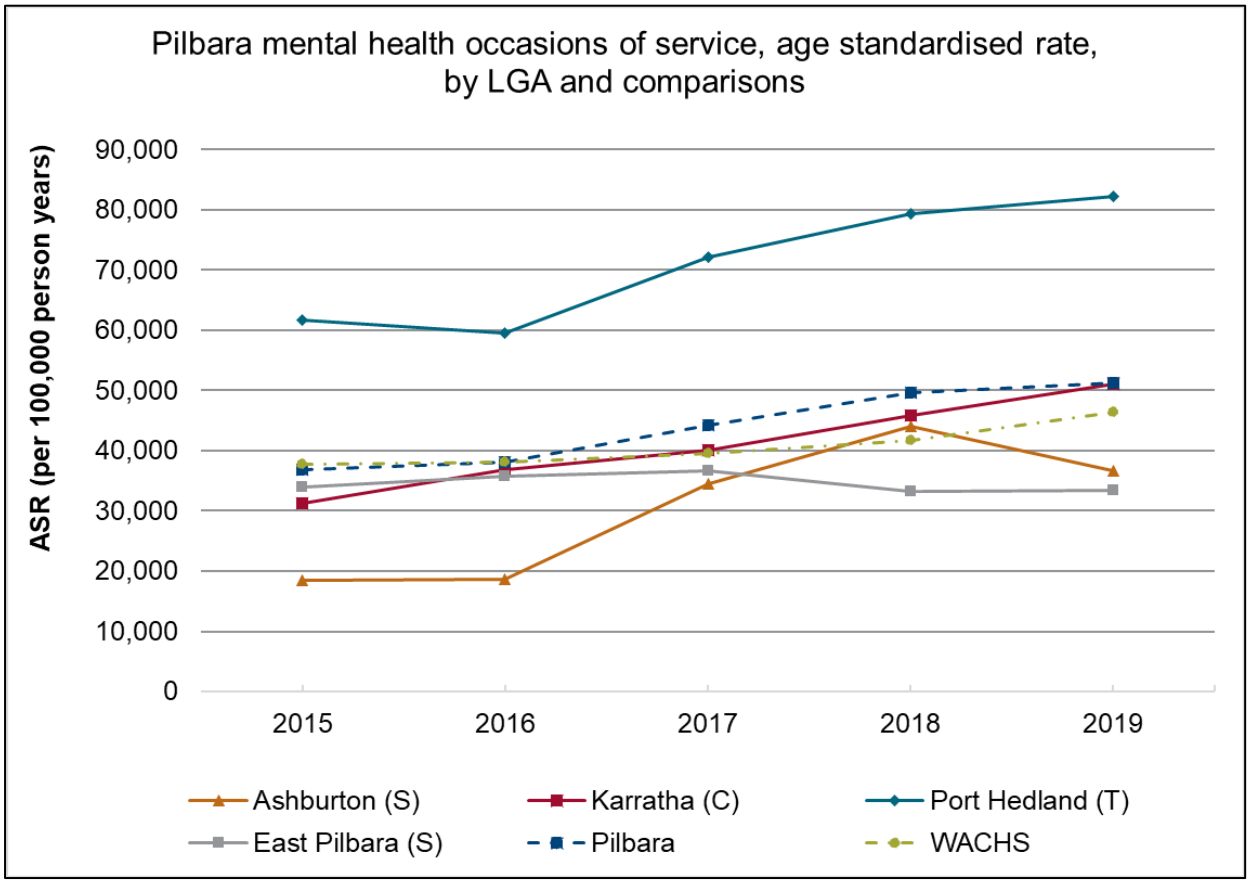
Prevalence of high or very high psychological distress, 2015-2019

Area	Females	Males	Persons
West Pilbara	6.1	6	6.1
East Pilbara	6.9	4.4	5.3
WACHS average	8.1	7.5	7.8
WA State	9.8	7.8	8.8

Source: Health Tracks, DoH

Mental health occasions of service

- Between 2015 and 2019, the rate of mental health occasions of service across the Pilbara increased by an annual average of 9%. This was driven by average annual increases of 19% in the Shire of Ashburton and 13% in the City of Karratha, compared with 7% for the Town of Port Hedland.
- Across the West Pilbara district between 2015 and 2019, the rate of mental health occasions of service increased significantly for both males (annual average increase in the rate of 17%) and females (average annual increase in the rate of 11%).
- Similarly, across the East Pilbara district between 2015 and 2019, the rate of mental health occasions of service increased significantly for both males (annual average increase in the rate of 6%) and females (average annual increase in the rate of 14%).



Source: Department of Health, Health Tracks. Includes all ambulatory/outpatient mental health services provided by publicly funded facilities in WA to WA residents.

Number of mental health occasions of service by gender, Pilbara 2015–2019

District	LGA	Gender	2015	2016	2017	2018	2019
West Pilbara	Ashburton (S)	Males	929	864	877	1,139	1,056
		Females	696	905	1,346	1,402	1,212
		Persons	**1,625**	**1,769**	**2,223**	**2,541**	**2,268**
	Karratha (C)	Males	3,627	3,998	4,583	5,540	6,417
		Females	3,381	3,407	3,709	4,228	4,790
		Persons	**7,009**	**7,405**	**8,292**	**9,768**	**11,207**
	West Pilbara Total	Males	4,556	4,862	5,460	6,679	7,473
		Females	4,077	4,312	5,055	5,630	6,002
		Persons	**8,634**	**9,174**	**10,515**	**12,309**	**13,475**
East Pilbara	East Pilbara (S)	Males	2,033	1,820	1,867	1,838	1,727
		Females	1,152	1,295	1,414	1,219	1,567
		Persons	**3,185**	**3,115**	**3,281**	**3,057**	**3,294**
	Port Hedland (T)	Males	5,158	5,592	6,004	6,087	6,563
		Females	3,617	3,220	4,437	5,223	5,688
		Persons	8,775	8,812	10,441	11,310	12,251
	East Pilbara Total	Males	7,191	7,412	7,871	7,925	8,290
		Females	4,769	4,515	5,851	6,442	7,255
		Persons	**11,960**	**11,927**	**13,722**	**14,367**	**15,545**
Pilbara Total		Males	11,747	12,274	13,331	14,604	15,763
		Females	8,846	8,827	10,906	12,072	13,257
		Persons	**20,594**	**21,101**	**24,237**	**26,676**	**29,020**

Source: Department of Health, Health Tracks

Causes of death

- Between 2014-2018 there were 564 deaths of Pilbara residents, with 23% of these deaths being due to Circulatory diseases and 22% due to Neoplasms (Cancer tumours). These were the leading two causes of death across both Districts.
- The overall rate of death across Pilbara residents occurred at a similar rate to the State rate (SRR = 1.04), with the SRR higher for East Pilbara residents (SRR = 1.22) than West Pilbara residents (SRR = 89).

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

		1st	2nd	3rd	4th	5th	Total
West Pilbara	*Condition*	Neoplasms	Circulatory diseases	External causes of mortality	Endocrine and nutritional diseases	Respiratory diseases	
	No.	71	59	54	18	15	**267**
	SRR	0.72	1.13	0.82	1.61	0.9	**0.89**
East Pilbara	*Condition*	Circulatory diseases	Neoplasms	External causes of mortality	Respiratory diseases	Digestive diseases	
	No.	73	54	52	23	20	**297**
	SRR	1.63	0.69	1.07	1.54	2.21	**1.22**
Pilbara Total	*Condition*	Circulatory diseases	Neoplasms	External causes of mortality	Respiratory diseases	Digestive diseases	
	No.	132	125	106	38	33	**564**
	SRR	1.36	0.71	0.93	1.2	1.61	**1.04**

ASR = age standardised rate per 100,000 person years

SRR = Standardised Rate Ratio, relative to the WA rate. An SRR lower than 1 is lower than the WA average, an SRR higher than 1 is higher than the WA average.

Source: Department of Health, Health Tracks

Maternal and child health status

Births

- For 2019, the age-specific birth rate for LGAs in the Pilbara was highest in the Town of Port Hedland (92.1 births per 1,000 women aged 15-44 years) followed by the City of Karratha (80 births per 1,000 women aged 15–44 years), both of which were higher than the Pilbara (74.3), WACHS (72.2) and State (62.4) averages.
- The proportion of teenage births in 2019 was highest in the Shire of East Pilbara (7.1%) followed by the Town of Port Hedland (4.8%) and lowest in the Shire of Ashburton (3.1%).
- The Shire of Ashburton had the highest proportion of births to women aged 35 years and over (25.5%), higher than the Pilbara (18.6%), WACHS (15.2%) and State averages (24.3%).

Maternity key indicators, Pilbara, 2019

	Indicator	Age-specific birth rate*	Teenage births (%)	Birth in women aged 35 years + (%)
West Pilbara	Ashburton (S)	51.9	3.1	25.5
	Karratha (C)	80	3.6	17.6
East Pilbara	East Pilbara (S)	49.9	7.1	19.4
	Port Hedland (T)	92.1	4.8	17.3
Pilbara		74.3	4.3	18.6
WACHS		72.2	5.1	15.2
State		62.4	2.1	24.3

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

Source: Department of Health, Health Tracks

Numbers of births in Pilbara hospitals

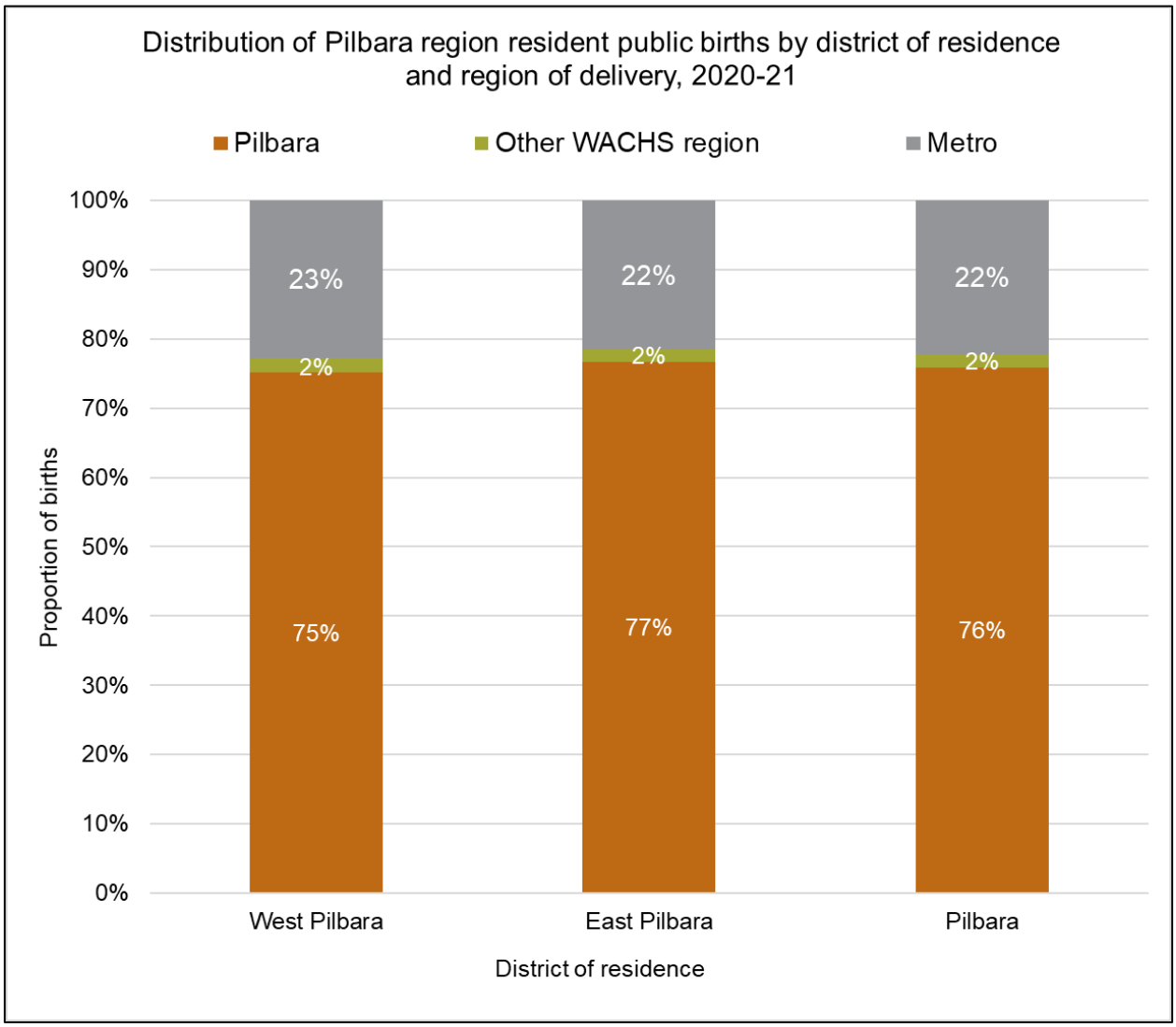
Numbers of Births in Pilbara by Hospital, 2020-21.	
Hospital	**Number**
Hedland Health Campus	338
Karratha Health Campus	331
Pilbara	**669**

Includes births by non-residents

Source: Midwives Notification System, DoH

Births by area of delivery, Pilbara, 2020-21

- Of the 874 public births by Pilbara residents in 2020-21, 76% occurred in Pilbara hospitals (38% at Hedland Health Campus and 37% at Karratha Health Campus), with 20% occurring at a Perth metropolitan hospital and 2% in another WACHS region.
- Residents of both Pilbara districts had similar proportions of births at a hospital in the region (75% for West Pilbara and 77% for East Pilbara residents).

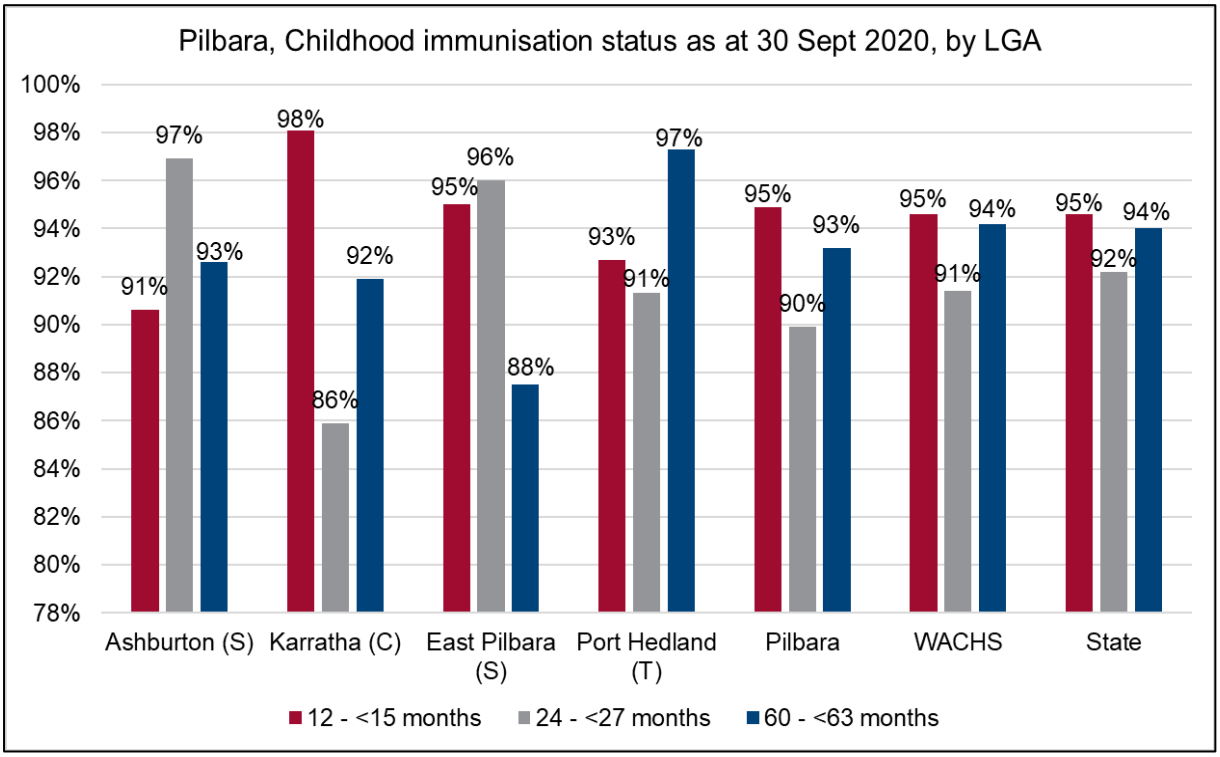


Source: Midwives Notification System, Department of Health

Immunisations

- As at 30 September 2020, the immunisation rate for children at five years of age was highest in the Town of Port Hedland (97%) and lowest in the Shire of East Pilbara (88%). This compares average of 93% for the Pilbara region, and 94% for both WACHS and State.

Pilbara and comparisons childhood immunisation 2020



Source: Department of Health, Health Tracks

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)

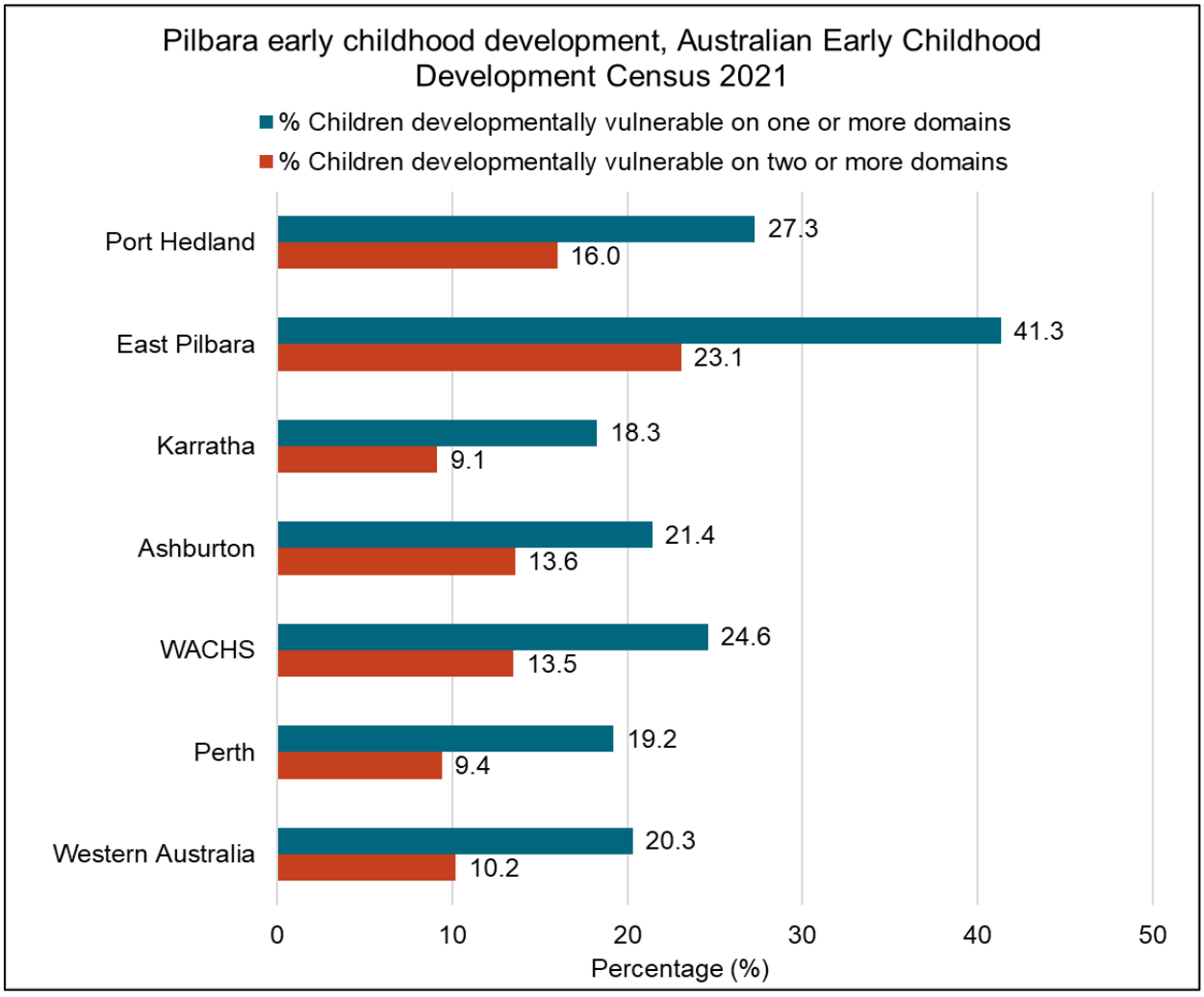
The AEDC uses the early development instrument tool to measure how young children have developed as they start their first year of full-time school.

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.

- Within the Pilbara, the proportion of children rated as developmentally vulnerable on one or more domains of the AEDC was highest in the Shire of East Pilbara (41%) followed by the Town of Port Hedland (27%). The other LGAs were comparable or lower than the WACHS and WA State averages.



Source: Australian Early Development Census

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/)

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