Best for the Bush

RURAL AND REMOTE HEALTH BASELINE 2023

Royal Flying Doctor Service

Acknowledgements

This report has been prepared by the Royal Flying Doctor Service using data and evidence from multiple sources. The report has benefited from review by many staff.

We are also grateful to the many patients who put their trust in the Royal Flying Doctor Service every day.

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About the Royal Flying Doctor Service

The Royal Flying Doctor Service is a national, charitable health organisation delivering primary health care and 24-hour emergency services to people living in rural and remote Australia. Long known as one of the largest aeromedical organisations in the world, the Royal Flying Doctor Service delivers health care where mainstream health services are not available, using the latest in aviation, medical and communications technology, and a far-reaching ground-service fleet.

Our commitment to Reconciliation

The Royal Flying Doctor Service respects and acknowledges Aboriginal and Torres Strait Islander peoples as the First Australians, recognising the significant and ongoing impacts of colonisation and dispossession.

Our vision for reconciliation is a culture that strives for unity, equity and respect between Aboriginal and Torres Strait Islander peoples and other Australians. The Royal Flying Doctor Service is committed to improved health outcomes and access to health services for all Aboriginal and Torres Strait Islander Australians. Our Reconciliation Action Plan outlines our intentions to use research and policy to drive improvement: https://www.flyingdoctor.org.au/download-document/RAP22-24/

Royal Flying Doctor Service research and policy reports include Aboriginal and Torres Strait Islander peoples' data as part of a broader effort to improve health outcomes and access to health services and as a contribution to the Close the Gap campaign, including Closing the Gap reform principles. This report contributes to the aims of our Reconciliation Action Plan, and the Royal Flying Doctor Service will continue to work with and be guided by Aboriginal and Torres Strait Islander peoples in determining how best to address their needs and priorities. Through our strong and committed partnerships with Aboriginal and Torres Strait Islander peoples and communities, we will focus on building local, community-led solutions, recognising that self-determination for Aboriginal and Torres Strait Islander peoples is fundamental to improving health outcomes.

Use of the term 'Indigenous'

The term 'Aboriginal and Torres Strait Islander peoples' is preferred in Royal Flying Doctor Service publications when referring to the separate groups of Indigenous peoples of Australia. However, the term 'Indigenous Australians' is used interchangeably with 'Aboriginal and Torres Strait Islander peoples' to assist with readability. Throughout this publication, the term 'Indigenous Australians' refers to all persons who identify as being Aboriginal, Torres Strait Islander, or both Aboriginal and Torres Strait Islander.

Notes about this report

Age standardisation

Health status, outcomes and service use are associated with age.[1] Age standardisation is a method of adjusting the crude rate to eliminate the effect of differences in population age structures when comparing crude rates for different periods of time, different geographic areas and/or different population sub-groups (e.g. between one year and the next and/or States and Territories, Indigenous and non-Indigenous populations).[2] Age-standardised rates per 100,000 people for national data are used in this report, unless otherwise indicated.

'Healthcare' versus 'health care'

Throughout this document, the Royal Flying Doctor Service has used the words 'health care' when referring to a noun (for example, 'the state of health care in Australia') and 'healthcare' when referring to an adjective (for example, the 'healthcare system' or 'healthcare services').

National data

The most recently published national data are used in Royal Flying Doctor Service publications. There may be occasions when the data are several years old. For example, many nationally representative estimates on risk factors presented in this report are derived from the Australian Bureau of Statistics National Health Survey. During the COVID-19 pandemic, some biometric data (e.g. height, weight, blood pressure etc.) was not collected for the 2021–2022 survey, as the survey was administered online. As a result, the most recent data for some measurements is from the 2017–2018 survey.

Royal Flying Doctor Service data

Royal Flying Doctor Service aeromedical retrieval data have not been age standardised. The observed rate (also called the raw rate) is used to present Royal Flying Doctor Service aeromedical data. This means aeromedical retrieval data are presented at the actual rate at which they were measured.

Noting the Royal Flying Doctor Service is funded by multiple sources, including Commonwealth, state and territory governments and agencies, as well as through donations, philanthropy and partnerships, when presenting service availability and service use data in this report, the Royal Flying Doctor Service does not differentiate services by funding source.

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Foreword

The Hon Emma McBride MP

All Australians, no matter where they live, deserve quality care, close to home.

The *Best for the Bush: Rural and Remote Health Baseline 2023* report details the health disparities between the people living in rural and remote areas of Australia and those who make major cities their home.

They face more heart disease, diabetes, lung disease and death by suicide. For Aboriginal and Torres Strait Islander Australians, these disparities are greater still.

Best for the Bush gives one of the clearest indications we have of the vastness of our national health challenge. The 2022–23 data showing 58,839 RFDS road transportations and 36,937 aeromedical retrievals highlights the importance of connecting people with care across vast distances.

It also shows we must do better in primary care, in preventive health and in health promotion, particularly in rural and remote Australia.

The Australian Government is responding to these challenges by strengthening Medicare right across the country. Our decision to triple the bulk billing incentive in general practice has stopped the decline in bulk billing and seen an increase in the number of general practitioners bulk billing their patients, particularly in regional and rural practices.

We are training more doctors, nurses, and allied health professionals in rural clinical schools, we have expanded incentives for health professionals to live and work in country Australia and we have commissioned major workforce reviews so that these professionals are better distributed around Australia and can work more consistently to the top of their skills and training.

The Australian Government has committed $1 billion over 10 years for the Royal Flying Doctor Service, a significant investment in aeromedical retrieval and primary healthcare services in the bush. In the 2023–24 Budget, we committed a further $29.1 million over two years.

The Government values Royal Flying Doctor Service for the vital role it plays in rural and remote health and for its ongoing advocacy. This partnership is one important part of our shared commitment to rural and regional health.

Once again, I thank the Royal Flying Doctor Service for the '*Best for the Bush*' report which is of great value to policy makers, advocates, and practitioners alike. I look forward to continuing our work in pursuit of the challenge it sets.

The Hon Emma McBride MP

Assistant Minister for Mental Health and Suicide Prevention
Assistant Minister for Rural and Regional Health

Executive summary

This *Best for the Bush Rural and Remote*[a] *Health Baseline 2023* report is the second in the Royal Flying Doctor Service annual report series to detail and benchmark the health of rural and remote Australians.

In the expansive and often unforgiving landscapes of rural and remote Australia, the health of over seven million residents is shaped by diverse and complex geographic, demographic and socio-economic factors. This report identifies and examines the health disparities faced by people living in these communities, and how these diverse and complex factors influence their access to healthcare services.

The Royal Flying Doctor Service has provided essential health services such as primary health care and emergency aeromedical retrievals to rural and remote communities since 1928, and is acutely aware of the health challenges and their impact in the communities it serves. While the Royal Flying Doctor Service is committed to being part of the solution to overcome the challenges in accessing services and improving health outcomes in rural and remote Australia, we must first understand the data. The current report has synthesised public data on the health of rural and remote Australians and presents this alongside Royal Flying Doctor Service aeromedical retrieval data and evidence of service gaps, to identify the issues that most urgently need attention from service providers, funders and policymakers.

This report again demonstrates disparities in the health outcomes and service access for people living in rural and remote areas compared to people living in major cities, and the urgent need for improvement in the delivery of targeted, comprehensive and appropriate services.

There are many factors that contribute to those in rural and remote Australia being able to access appropriate and effective services, and the very first is ensuring they are available and accessible. Lack of funding limits service availability. **For example, a 2023 report by Nous and commissioned by the National Rural Health Alliance identified a gap of $6.55 billion in funding health expenditure between major city residents and rural and remote Australians in 2020–21.[3] This translates to a health funding shortfall of $848.02 per person in rural and remote Australia in 2020–21.[3]**

As recently as 2021, people living in the most remote parts of our country were likely to die 14.3 years earlier than their counterparts in major cities: 13.1 years earlier for males and 16.0 years earlier for females.[4,5] Mortality rates for both males and females in very remote Australia were 1.6 times higher than for people in major cities.[4,5]

The health of Indigenous Australians in rural and remote areas remains poorer than their non-Indigenous counterparts. While 3.8% of Australia's total population identifies as Indigenous, around 47.0% of the total population in very remote areas and 19.5% in remote areas, identify as Indigenous.[6] There is a gap in life expectancy between Indigenous Australians and non-Indigenous Australians, both male and female, which increases with the remoteness of location. The most recent data show the life expectancy of Indigenous males in remote and very remote Australia (combined) (67.3 years) was 12.4 years lower than non-Indigenous males in the same areas (79.7 years).[7] Similarly, the life expectancy of Indigenous females in remote and very remote Australia (combined) (71.3 years) was 12.5 years lower than non-Indigenous females in the same areas (83.7 years).[7]

a This report uses the term 'rural and remote' to cover any area outside of Australia's major cities.

Potentially avoidable deaths, that being deaths that are potentially preventable through primary health or hospital care, are a measure of health system performance, including the quality, effectiveness and accessibility of the health system.[1,4,8] In 2021 **people in rural and remote Australia were more likely to die from potentially avoidable deaths than people living in major cities.** People in very remote areas were **2.7 times more likely to die from potentially avoidable deaths** (1.8 times more likely in remote areas) compared to people in major cities.[4] Meanwhile, Indigenous Australians living in remote and very remote Australia (combined) were **2.3 times more likely to die from potentially avoidable deaths** than Indigenous Australians living in major cities.[8]

Additionally, when compared to **people in major cities, people from very remote areas were 2.9 times more likely to be hospitalised** in a public hospital.[9] It was further shown that these hospitalisations were **2.8 times more likely to be for reasons that are potentially preventable.[9]**

Age-standardised death rates for people in remote and very remote Australia were also considerably higher than for people in major cities. The leading causes of death in Australia, by remoteness area for the period 2017–2021, demonstrated that:

- While ischaemic heart disease was the leading cause of death across all remoteness areas, the age-standardised death rate from ischaemic heart disease in very remote areas was 1.9 times higher than in major cities.[4]
- Diabetes was the second leading cause of death in very remote areas, while only the seventh in major cities – the age-standardised death rate was 3.9 times higher in very remote areas than in major cities.[4]
- People living in remote areas and very remote areas were 1.4 and 1.6 times more likely (respectively) to die from lung cancer than people in major cities.[4]
- In very remote areas, the age-standardised death rate for suicide was 2.3 times higher than in major cities.[4]

In 2022, compared to non-Indigenous Australians, Indigenous Australians living in New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory (combined) were:

- 5.2 times more likely to die from diabetes[10]
- 3.3 times more likely to die from chronic lower respiratory disease[10]
- 2.6 times more likely to die from malignant neoplasm of trachea, bronchus and lung[10]
- 2.6 times more likely to die from intentional self-harm (suicide)[10]
- 2.5 times more likely to die from ischaemic heart disease.[10]

While many conditions can be effectively managed within a primary healthcare setting, rates for the aforementioned conditions also demonstrate that people in rural and remote areas are getting sicker, are unable to access primary health care and are instead being admitted to hospital. When compared to people with these conditions who live in major cities, people living in remote and very remote areas were 1.3 and 1.9 times, respectively, more likely to be hospitalised (public and private hospitals combined), and 2.0 and 2.9 times, respectively, more likely to be hospitalised in a public hospital.[9] **There are opportunities to improve health outcomes through greater access to primary healthcare services, which will in turn reduce hospital admissions.**

People from remote and very remote areas need to travel significant distances to access hospital and specialist services. Meeting this need has seen demand for Royal Flying Doctor Service aeromedical services increase by 9% in the last year. In-depth analysis of Royal Flying Doctor Service data showed that in 2022–2023:

- The Royal Flying Doctor Service conducted 36,937 aeromedical retrievals, equivalent to **101 aeromedical retrievals per day, or four per hour.**
- 26.9% of patients were Indigenous, reflecting the high proportion of Indigenous Australians living in rural and remote areas.
- The top three reasons[b] for an aeromedical retrieval were:
  - diseases of the circulatory system, which includes angina, heart attack and stroke (18.3%)
  - injury, poisoning and certain other consequences of external causes, which includes as a result of falls, motor vehicle accidents, assaults, suicide attempts or exposure to chemicals (16.3%)
  - symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (10.5%).

The Australian Institute of Health and Welfare proposed that to ensure reasonable access to primary health care, people should have access to, at a minimum, general practitioner, nursing, oral health,[c] mental health and Indigenous health services within a 60-minute drive of where they live.[3,15] In this report, this measure has been used as one simple proxy measure for reasonable access to health care.

The Royal Flying Doctor Service, Service Planning and Operational Tool, was used to determine rural and remote Australians' access to primary healthcare services. The Service Planning and Operational Tool found that in 2023, 5% more people in remote and very remote areas had access to some kind of primary healthcare service within a 60-minute drive time compared to 2022; however, there remain significant gaps across key clinical types as follows:

- 234,165 people did not have access to nurse-led services, with the highest numbers of people without access in the regions of Eyre Peninsula and South West, South Australia (33,272 people without access); East Pilbara, Western Australia (23,714 people without access); and Katherine, Northern Territory (20,392 people without access).
- 114,566 people did not have access to general dental services, with the highest numbers of people without access in the regions of Kimberley, Western Australia (9,545 people without access); West Pilbara, Western Australia (7,739 people without access); and Darling Downs, Queensland (7,122 people without access).
- 101,963 people did not have access to general mental health services, with the highest numbers of people without access in the regions of Bourke - Cobar - Coonamble, New South Wales (9,782 people without access); Mid West, Western Australia (7,910 people without access); and West Pilbara, Western Australia (7,739 people without access).
- 32,359 people did not have access to general practitioner services, with the highest numbers of people without access in the regions of Kimberley, Western Australia (4,037 people without access); Alice Springs, Northern Territory (2,889 people without access); and Far North Queensland (2,229 people without access).
- 109,706 Indigenous Australians, or 11.2% of the total Indigenous population, did not have access to an Aboriginal health service.

b Classified using the *International Classification of Diseases and Related Health Problems 10th Revision (Australian Modification).*

c The terms 'oral health' and 'dental health' are used interchangeably in this report.

The locations where critical service gaps occur are supported by a comprehensive needs assessment recently completed by the Royal Flying Doctor Service to identify the primary healthcare needs of rural and remote Australians across the entire Royal Flying Doctor Service footprint.

Recommendations

The Royal Flying Doctor Service makes the following recommendations:

1. Establish an agreed definition of 'reasonable access'

The Australian Government, through the Australian Institute of Health and Welfare, should lead a process to define "reasonable access" to primary healthcare services. Australians living in rural and remote Australia have the right to expect a level of care that addresses primary healthcare needs according to their age, demographic profile and health status.

This definition must consider proximity, as well as affordability, cultural safety, availability, frequency and mode of delivery and will vary by demographic profile and location, and could be achieved through further support for the work already commenced by the National Rural Health Alliance on minimum standards.

2. A targeted plan for rural and remote primary healthcare

The Australian Government should lead the development and publication of a detailed plan to deliver reasonable access to primary healthcare to every Australian living in rural and remote Australia. This plan should be detailed enough to cover every community and every citizen and progress should be reported annually.

There is a critical need to ensure the significant complexity of the rural and remote service delivery environment is recognised and addressed in a specific plan to improve access to primary and preventive healthcare in these areas.

While the Royal Flying Doctor Service encourages governments to accept all recommendations of the *Strengthening Medicare Taskforce Report*[11] and related reviews, and the implementation of resulting strategies in full, doing so must differentiate the rural and remote context. This is also true for recently released key national strategy documents such as *Australia's Primary Health Care 10 Year Plan 2022–2032,*[12] *the National Strategic Framework for Chronic Conditions*[13] and the *National Aboriginal and Torres Strait Islander Health Plan 2021–2031.*[14]

3. Local planning, funding sustainability and flexibility for targeted primary health-care services

The Australian Government, working with State and Territory governments to enact a rural and remote primary healthcare plan, should substantially expand funding to provide more adequate and equitable levels of primary healthcare to rural and remote communities. This should include face-to-face care, fly-in fly-out and drive-in drive-out services, supplemented through hybrid models with videoconference and telehealth services to support more robust rural and remote primary health provision, augment chronic disease management and reduce preventable hospital admissions.

As shown by Nous, funding for rural and remote primary healthcare is currently significantly less than in metropolitan areas, despite the need for higher levels of investment to address poorer health outcomes. There is also little flexibility in current funding structures to provide variable and targeted models of care that are appropriate and address the priority needs of individual communities. This includes a lack of funding, supports and incentives for multi-disciplinary team-based models of care.

4. Specific funding for preventive and health promotion activities in rural and remote areas

The Australian Government should ensure dedicated funding for health promotion initiatives and activities for rural and remote Australians.

Despite the increased prevalence of many preventable and lifestyle diseases in rural and remote areas, there is a lack of availability of and funding for preventive health services and health promotion activities in these areas. Adequate resources, separate to (but integrated with) primary healthcare services must be allocated, with initiatives targeted to areas and health issues shown to be of highest need including factors contributing to cardiovascular disease, diabetes and injury prevention.

5. A National Compact on Rural and Remote Health

The Australian Government, working with State and Territory Governments, should lead the development of a National Compact on Rural and Remote Health.

The Compact should serve as a transparent inter-governmental agreement between the Commonwealth, States and Territories that ensures the agreed level of reasonable access to primary healthcare, oversees the rural and remote primary healthcare care plan and commits necessary funding to improve health outcomes for those living in rural and remote Australia. This is critical to ensure the achievement of improvements and that efforts across different elements of the health system are carefully coordinated, rather than the occurrence of duplication and inefficiency.

Abbreviations and acronyms

ABS	Australian Bureau of Statistics
ACCHO	Aboriginal Community Controlled Health Organisation
AIHW	Australian Institute of Health and Welfare
ASGS	Australian Statistical Geography Standard
FTE	full-time equivalent
GP	general practitioner
ICD-10-AM	International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification
MORT	Mortality Over Regions and Time
MM	Modified Monash
MMM	Modified Monash Model
N	number
RFDS	Royal Flying Doctor Service
SPOT	Service Planning and Operational Tool
WHO	World Health Organization
%	per cent

Tables

Figures

Chapter 1: Health check on rural and remote Australians

1.1 Defining rural and remote Australia

Australia is a vast continent, spanning 7.69 million square kilometres, and the world's sixth largest country by total area.[15]

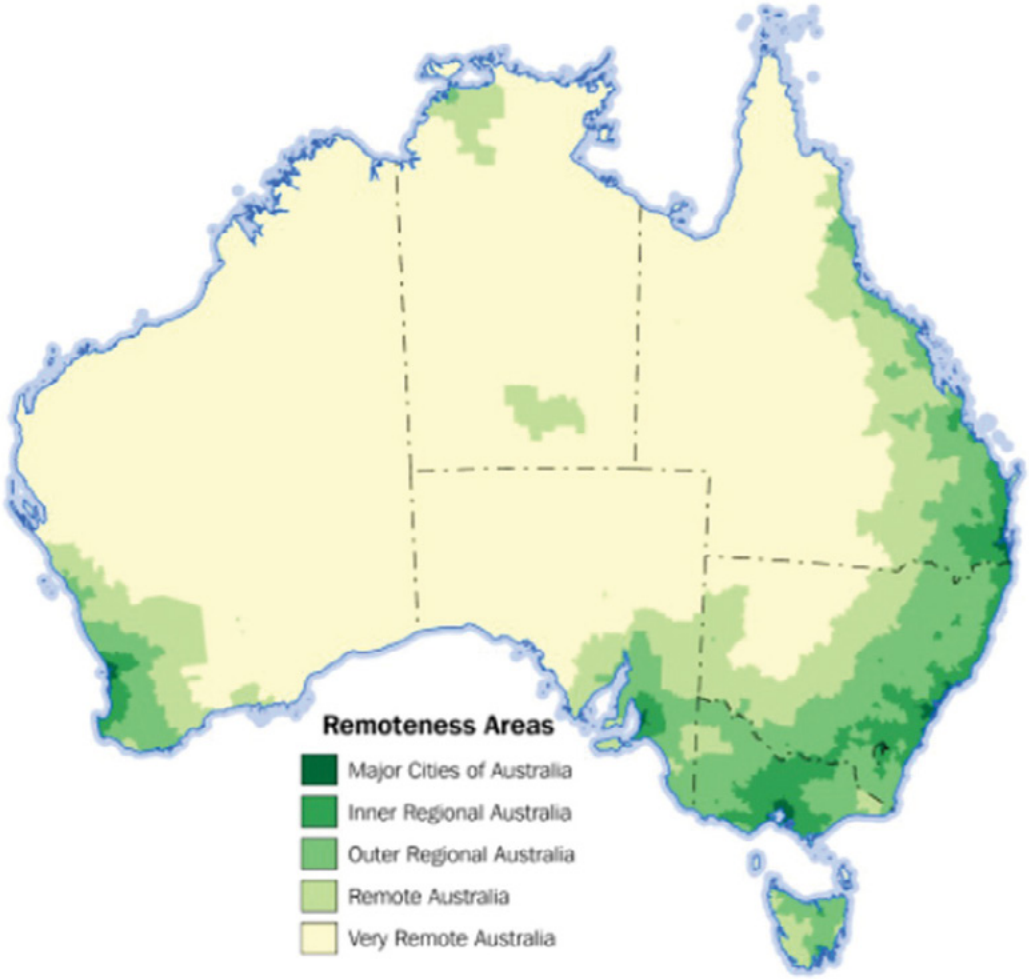
This report uses two remoteness structure classification systems: the Australian Statistical Geography Standard (ASGS) Remoteness Structure[16] and the Modified Monash Model (MMM).[17]

1.1.1 Australian Statistical Geography Standard Remoteness Structure

The ASGS Remoteness Structure divides Australia into five remoteness areas based on a measure of relative access to services:[16]

- Major cities
- Inner regional
- Outer regional
- Remote
- Very remote.

Figure 1.1 Map of remoteness areas in Australia



Source: Australian Bureau of Statistics (ABS) (2023).[16]

These remoteness areas are centred on the Accessibility Remoteness Index of Australia, which is based on the road distances people must travel for services.[16]

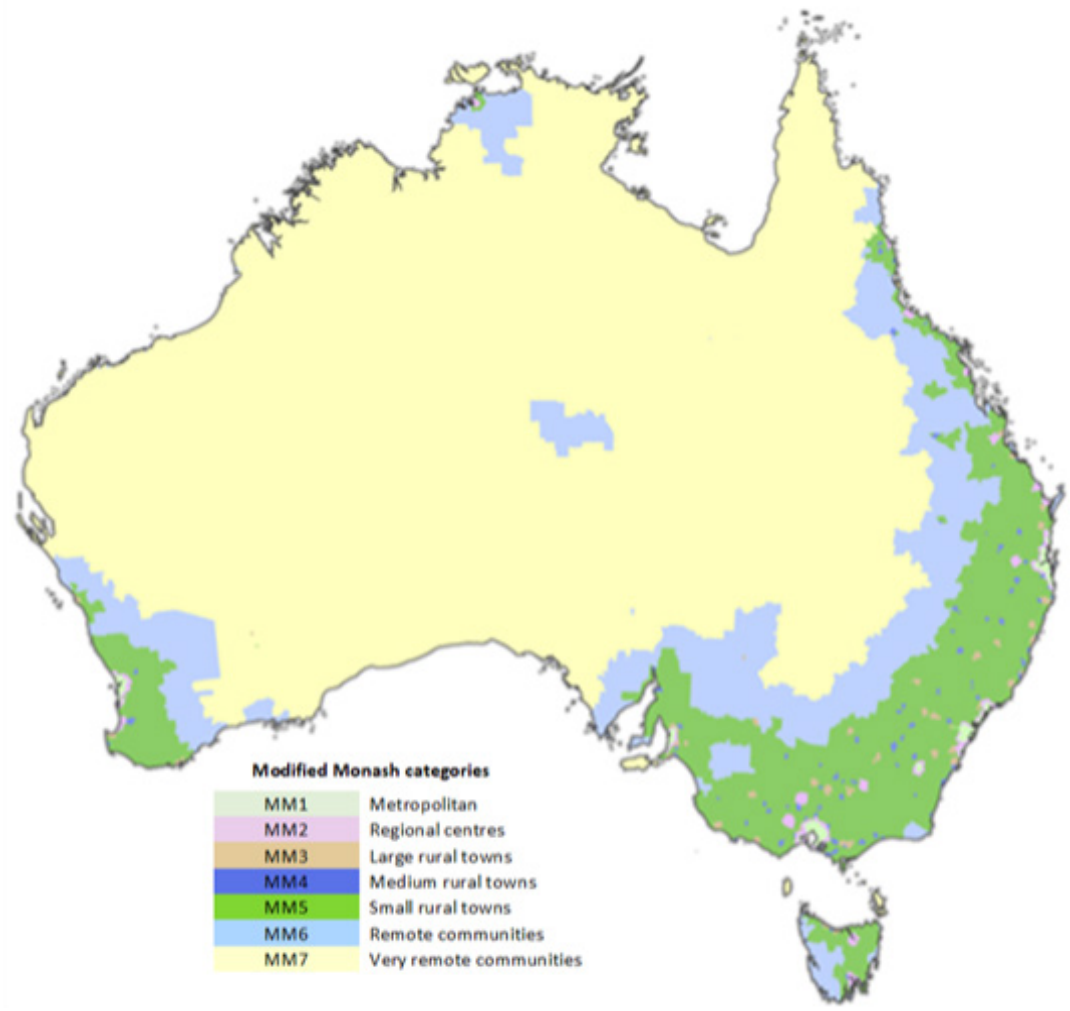
This report uses the term 'rural and remote' to cover any area outside of Australia's major cities.[1]

1.1.2 Modified Monash Model

The MMM is based on the ASGS Remoteness Structure and also town size.[17] The MMM was developed to better target health workforce programs and to attract health professionals to more remote and smaller communities.[1] It classifies metropolitan, regional, rural, and remote areas in Australia into seven categories:

- Modified Monash (MM)1: Metropolitan areas
- MM2: Regional centres
- MM3: Large rural towns
- MM4: Medium rural towns
- MM5: Small rural towns
- MM6: Remote communities
- MM7: Very remote communities (Figure 1.2).

Figure 1.2 Map of MM categories



Source: Department of Health and Aged Care (2023).[17]

Areas classified MM2 to MM7 are considered to be rural or remote.[17]

This report uses the MMM for presentation of access to primary health care and health workforce data.

1.2 Australian population by remoteness

Major cities occupy only 0.3 per cent (%) of Australia's land mass,[18] yet the majority of Australians live in these areas. Of Australia's estimated resident population of 26,005,540 in June 2022, just over seven million people lived in rural and remote Australia, with approximately half a million (497,909) living in remote or very remote Australia (Table 1.1).[19] The remaining population is not evenly distributed throughout the country: 17.8% live in inner regional areas, 8.1% in outer regional areas, 1.2% in remote areas, and 0.7% in very remote areas.[19]

Table 1.1 Australia's population by remoteness areas 2022

Remoteness area	Number of people	Proportion of population
Major cities	18,785,137	72.2%
Inner regional	4,623,207	17.8%
Outer regional	2,099,287	8.1%
Remote	301,686	1.2%
Very remote	196,223	0.7%
Total population	**26,005,540**	**100%**

Source: Adapted from ABS (2023).[19]

1.2.1 Indigenous Australians

Final Census-based estimated resident population data demonstrated that 983,709 people identified as Indigenous in June 2021, representing 3.8% of the total Australian population.[6] The proportion of the total population identifying as Indigenous, increased with remoteness.[6]

Of the 983,709 people who identified as Indigenous, 40.8% live in major cities and the remaining 49.2% live in rural and remote Australia (Table 1.2).6 Forty-seven per cent of the total population in very remote, and 19.5% of the total population in remote Australia, identify as Indigenous.[6] It is estimated that by the year 2031, approximately 1.1 million Australians will identify as Indigenous.[20]

Table 1.2 Australia's population by Indigenous self-identification and remoteness areas 2021

Remoteness area	Number of Indigenous Australians	Per cent of Indigenous Australians	Proportion of total population that is Indigenous
Major cities	401,674	40.8%	2.1%
Inner regional	244,012	24.8%	5.3%
Outer regional	187,150	19.0%	8.9%
Remote	58,727	6.0%	19.5%
Very remote	92,146	9.4%	47.0%
Total	**983,709**	**100%**	**3.8%**

Source: Adapted from ABS (2023).[6]

The age structure of Indigenous Australians is relatively young when compared with non-Indigenous Australians. Data from the 2021 Census show:

- 33.1% (one-third) of Indigenous Australians were aged under 15 years compared with 17.9% of non-Indigenous people in the same age group.[6]
- People aged 65 years and over comprised 5.4% of the Indigenous population compared with 17.2% of the non-Indigenous population.[6]

1.2.2 Life expectancy[d]

In Australia in 2019–2021, overall life expectancy at birth was 81.3 years for males and 85.4 years for females; however, this differed by population group and place of residence.[21]

Table 1.3 demonstrates the life expectancy at birth in 2020–2022, by remoteness areas, gender and Indigenous status. In 2020–2022:

- Both male and female Indigenous Australians had a lower life expectancy than their non-Indigenous counterparts across all remoteness categories.[7]
- The gap in life expectancy between Indigenous Australians and non-Indigenous Australians (both male and female) increased by increasing remoteness:
  - Life expectancy of Indigenous males in remote and very remote Australia (67.3 years) was 12.4 years lower than non-Indigenous males in remote and very remote Australia (79.7 years)[7]
  - Life expectancy of Indigenous females in remote and very remote Australia (71.3 years) was 12.4 years lower than non-Indigenous females in remote and very remote Australia (83.7 years)[7]
  - Life expectancy of women was greater than for men across all remoteness areas, regardless of Indigenous status.[7]
- Life expectancy for Indigenous males living in remote and very remote areas was 5.2 years lower than that of Indigenous males living in major cities (67.3 years compared with 72.5 years). The equivalent comparison for Indigenous females was 4.2 years lower (71.3 years compared with 76.5 years).[22,23]

Table 1.3 Life expectancy at birth (years) by remoteness areas, gender and Indigenous status 2020–2022^,#

	Non-Indigenous	Indigenous	Difference between non-Indigenous and Indigenous life expectancy at birth**
Males			
Major cities	81.0	72.5	8.5 years
Inner and outer regional	79.6	72.8	6.8 years
Remote and very remote	79.7	67.3	12.4 years
Females			
Major cities	84.0	76.5	7.5 years
Inner and outer regional	83.2	76.7	6.5 years
Remote and very remote	83.7	71.3	12.4 years
Differences between males and females*			
Major cities	–3.0 years	–4.0 years	
Inner and outer regional	–3.6 years	–3.9 years	
Remote and very remote	–4.0 years	–4.0 years	

Source: ABS (2023).[7]

Notes: ^Based on the average number of Aboriginal and Torres Strait Islander deaths registered across 2020, 2021 and 2022 (adjusted) and final Aboriginal and Torres Strait Islander population estimates for 30 June 2021, based on the 2021 Census.
#Life expectancy estimates are calculated taking age-specific identification rates into account.
*Differences are based on unrounded estimates

d Life expectancy at birth estimates represent the average number of years that a newborn baby could expect to live, assuming current age-specific death rates are experienced through his/her lifetime.[23]

1.2.3 Death rates

Rural and remote Australians are more likely to die at a younger age from diseases than people living elsewhere in Australia.[1] A higher prevalence of modifiable risk factors coupled with poorer access to services and increased burden of disease, directly contributes to more potentially avoidable deaths and lower life expectancy in rural and remote communities.[1,24]

In 2022, 190,939 deaths were registered in Australia (99,924 males; 91,015 females).[10] As 2022 data on death rates **by remoteness** have not yet been released, the available data on death rates by remoteness refers only to 2021.

In 2021:

- 171,469 deaths were registered in Australia (89,401 males; 82,068 females).[21]
- Age-standardised death (mortality) rates increased as remoteness increased for males and females (Table 1.4).[21]
- Males had higher mortality rates than females across all remoteness categories.[21]
- Males living in very remote areas had a mortality rate 1.6 times higher than those living in major cities.[5]
- Females living in very remote areas had a mortality rate 1.6 times higher than those living in major cities.[5]
- Males had a higher mortality rate than females in all remoteness areas.[5]
- Age-standardised death rates were higher across all remoteness categories, compared to 2020.[4,5]

Table 1.4 Age-standardised death rates per 100,000 population by remoteness areas 2020 and 2021

Gender	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia	Very remote versus major city
2021							
Male	569.2	635.5	675.0	711.4	925.0	597.1	1.6
Female	409.1	455.5	477.2	513.7	643.5	427.4	1.6
Male vs. female	1.4	1.4	1.4	1.4	1.4	1.4	–
Australia	483.0	541.9	575.4	614.9	785.5	507.2	1.6
2020							
Male	545.9	630.7	668.1	703.3	712.7	579.4	1.3
Female	388.6	435.9	461.0	468.7	569.5	406.6	1.5
Male vs. female	1.4	1.4	1.4	1.5	1.3	1.4	–
Australia	461.3	528.8	563.0	587.6	648.4	487.7	1.4

Source: Adapted from AIHW Mortality Over Regions and Time (MORT) Books (2022 and 2023).[4,5]

In the period 2017–2021, for all remoteness areas combined, the age-standardised death rate among Indigenous Australians was 1.8 times higher than the rate for non-Indigenous Australians (941 deaths per 100,000 population, compared to 532 per 100,000 respectively).[21]

1.2.4 Age at death

Table 1.5 demonstrates that in 2021 and 2020, people living in rural and remote areas were more likely to die at a younger age than people living in major cities. Table 1.6 reports the gap in the median age at death between people living in major cities and all other remoteness areas.

In 2021:

- People living in very remote areas were likely to die 14.3 years earlier than their counterparts in major cities (males 13.1 years earlier and females 16.0 years earlier).[5]
- People living in remote areas were likely to die 7.6 years earlier than their counterparts in major cities (males 7.0 years earlier and females 6.7 years earlier).[5]
- People living in inner and outer regional areas were likely to die between 1.0 and 3.0 years earlier than people living in major cities.[5]

Table 1.5 Median age at death (years) by remoteness areas and gender 2021 and 2020

Gender	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
2021						
Male	80.1	79.1	77.2	73.1	67.0	79.4
Female	85.3	84.3	82.9	78.6	69.3	84.8
Total population	82.7	81.5	79.7	75.1	68.4	82.0
2020						
Male	79.6	78.7	76.8	73.1	65.7	78.9
Female	85.2	84.3	82.7	78.3	66.2	84.6
Total population	82.4	81.3	79.4	74.9	66.0	81.7

Source: Adapted from AIHW MORT Books (2022 and 2023).[4,5]

Table 1.6 Difference in median age at death (years) between major cities and other remoteness areas by gender 2021 and 2020

Gender	Inner regional	Outer regional	Remote	Very remote
2021				
Male	1.0	2.9	7.0	13.1
Female	1.0	2.4	6.7	16.0
Total population	1.2	3.0	7.6	14.3
2020				
Male	0.9	2.8	6.5	13.9
Female	0.9	2.5	6.9	19.0
Total population	1.1	3.0	7.5	16.4

Source: Adapted from AIHW MORT Books (2022 and 2023).[4,5]

In 2022, Indigenous Australians living in New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory (combined) were likely to die 19.5 years earlier than non-Indigenous Australians, based on median age at death 62.9 years for Indigenous Australians and 82.4 years for non-Indigenous Australians.[10]

1.3 Health of rural and remote Australians

Despite higher levels of life satisfaction,[25] rural and remote Australians have poorer access to health care, travel greater distances to receive medical services, experience higher rates of ill health and potentially preventable hospitalisations, and demonstrate higher levels of mortality, morbidity and health and disease risk factors.[1,26] Ensuring access to the right healthcare services at the right time and in the right place, is the first step to improving health outcomes for rural and remote Australians.

1.3.1 Social determinants of health

The health outcomes of Australians are also influenced by the social determinants of health. The social determinants of health are non-medical factors and include (but are not limited to) employment, education, income, housing, socio-economic position and languages spoken.[27] These factors act together to strengthen or undermine the health of individuals and communities. Social determinants of health can account for between 30%–55% of health outcomes.[27]

Rural and remote Australians are disproportionately affected by poor social determinants of health, including:

- Higher socio-economic disadvantage[28]
- Lower economic resources and opportunities[28]
- Lower levels of education[28]
- Higher rates of unemployment[28]
- Overcrowded housing[28]
- High alcohol and other drug usage[28]
- High levels of contact with the criminal justice system[28]
- Higher smoking rates and reduced physical activity.[28]

Indigenous Australians are also affected by the social determinants of Indigenous health, including the significant, long-lasting and ongoing impact of colonisation, such as dispossession and loss of connection to the land; loss of language; environmental deprivation; spiritual, emotional and mental disconnectedness; a lack of cultural respect; lack of opportunities for self-determination; ongoing poor educational outcomes; reduced opportunities for employment; poor housing; negative interactions with government and judicial systems; and systemic discrimination, and intergenerational trauma, including through the Stolen Generations.[14,29]

Addressing the social determinants of health is crucial if any significant improvement in health outcomes is to be achieved. Although there are limits to what health services can do in isolation when the social determinants of health are not addressed effectively, access to services is still a crucial first step in reducing the inequities in health outcomes for rural and remote Australians. First and foremost, rural and remote Australians need access to appropriate healthcare services if they are to improve their health outcomes.

1.3.2 Digital determinants of health

There is growing awareness and identification of ‘digital determinants of health’ and the rapidly expanding relationship between technology and the equity of digital access and access to health care.[30] The recent Australian Digital Inclusion Index highlighted a significant disparity in digital access, ability and affordability in rural and remote Australia, compared to major cities.[30]

In terms of the digital divide, remote Indigenous Australians have very high levels of digital exclusion compared with other Australians.[31] In a survey conducted in 2022, 45.9% of Indigenous survey respondents were rated as highly excluded by the Australian Digital Inclusion Index, compared with 9.2% of non-Indigenous Australians.[31] Only 4.1% were considered highly included, compared with 45.6% of non-Indigenous Australians.[31]

1.3.3 Hospital activity and potentially preventable hospitalisations

Hospitals play an important role in Australia's healthcare system.[32] Hospitals can be public or private, and provide care to admitted patients and non-admitted patients (through emergency departments and outpatient services).[32]

In 2021–2022 in Australia there were:

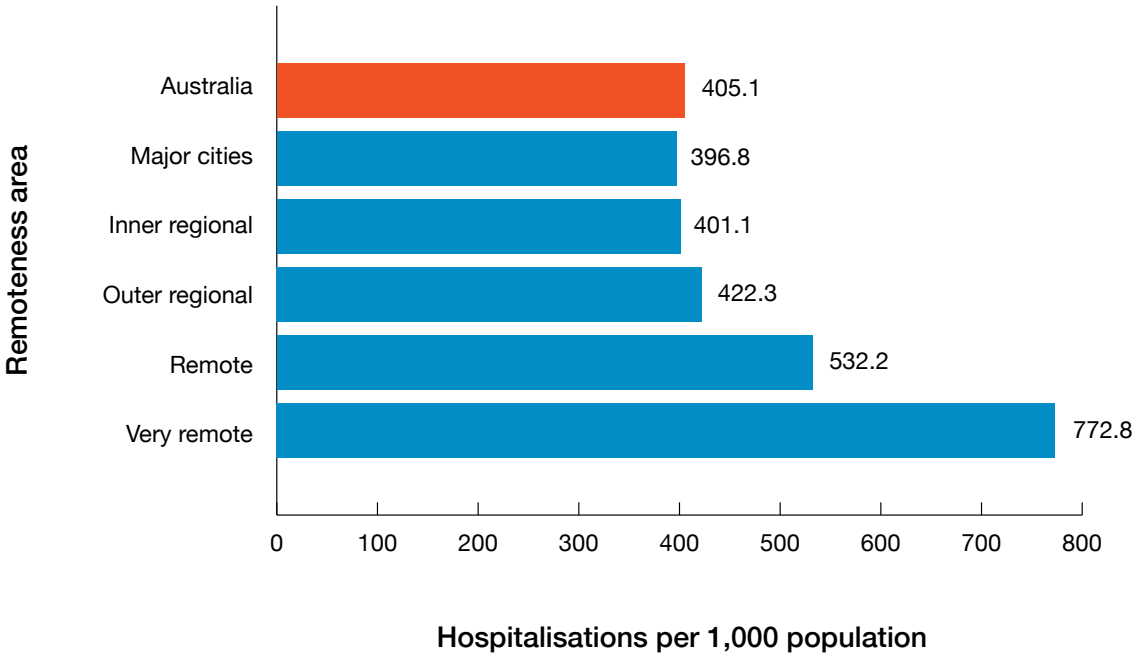
- 8.8 million presentations to emergency departments[32]
- 11.6 million hospitalisations (admitted patient care)[32]
- 623,000 admissions from public hospital elective surgery waiting lists[32]
- 55.4 million non-admitted patient (outpatient) services delivered.[32]

In 2021–2022, there were 11.6 million hospitalisations (405 hospitalisations per 1,000 population), with 6.8 million hospitalisations (239 per 1,000 population) occurring in public hospitals.[9]

Hospitalisation rates varied according to the remoteness of patients in 2021–2022 (Figure 1.3). Analysis of hospital admission data demonstrates greater rates of hospitalisations for people in rural and remote areas, compared to people in major cities. Specifically in 2021–2022:

- People living in very remote areas (772.8 per 1,000 hospitalisations) and remote areas (532.2 per 1,000 hospitalisations) were 1.9 and 1.3 times, respectively, more likely than people living in major cities (396.8 per 1,000 hospitalisations) to be hospitalised.[9]
- People living in very remote areas (635.3 per 1,000 hospitalisations) and remote areas (436.7 per 1,000 hospitalisations) were 2.9 and 2.0 times, respectively, more likely than people living in major cities (219.2 per 1,000 hospitalisations) to be hospitalised in a public hospital.[9]

Figure 1.3 Hospital admissions (public and private) by remoteness of area of usual residence, 2021–2022



Source: Adapted from AIHW (2023).[9]

Indigenous Australians (969.3 per 1,000 population) were 2.5 times more likely to be hospitalised than non-Indigenous Australians (384.1 per 1,000 population).[9]

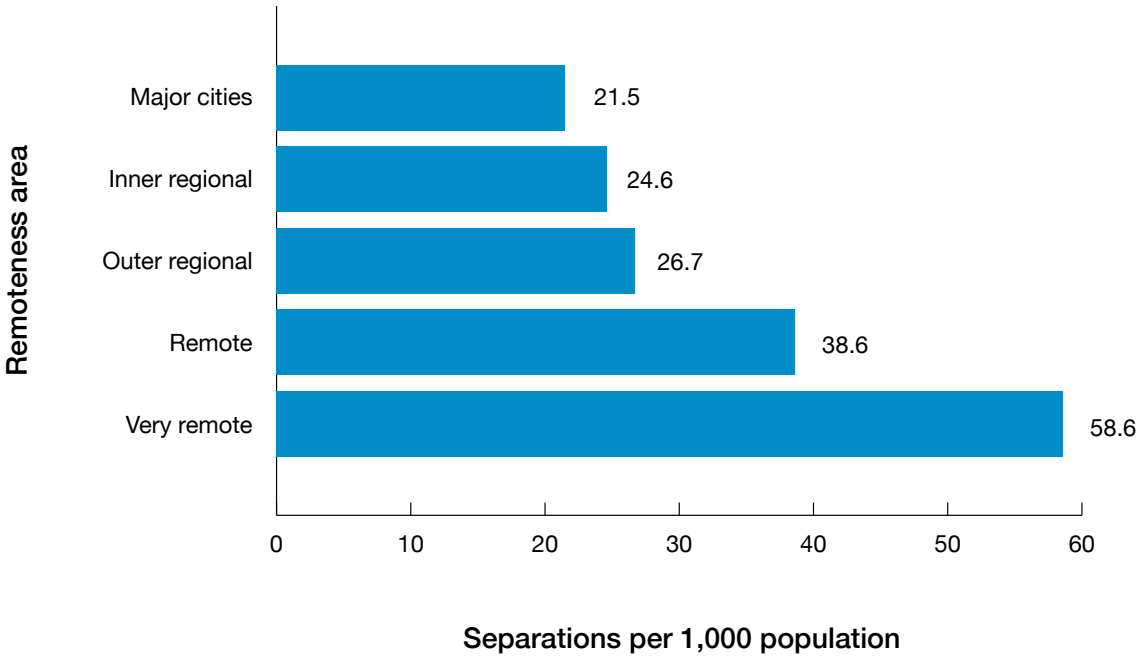
Between January 2020 and June 2022, there were over 270,700 hospitalisations involving a COVID-19 diagnosis (2,600 in 2019–2020; 4,700 in 2020–2021; and 263,400 in 2021–2022).[32]

Many hospitalisations could be prevented through the provision of appropriate preventive health interventions and early disease management in primary health care and community-based healthcare settings, including by general practitioners (GPs), medical specialists, dentists, nurses and allied health professionals.[33]

A potentially preventable hospitalisation describes a hospitalisation that could have been avoided had timely and adequate preventive health interventions and early disease management been provided in a primary health care or community-based healthcare setting.[33] There are 22 conditions across three broad categories (vaccine-preventable conditions, acute conditions and chronic conditions) for which hospitalisation is considered potentially preventable.[33]

In 2021–2022, 5.7% of all hospital admissions were potentially preventable, with rural and remote Australians being over-represented in this category (Figure 1.2).[9] Potentially preventable hospitalisations were 2.8 times higher for people in very remote areas (58.6 per 1,000 population), 1.8 times higher for people in remote areas (38.6 per 1,000 population), 1.2 times higher for people in outer regional areas (26.7 per 1,000 population), and 1.1 times higher for people in inner regional areas (24.6 per 1,000 population) compared to people in major cities (21.5 per 1,000 population).[9] Indigenous Australians (65.4 per 1,000 population) were 3.0 times more likely than non-Indigenous Australians (22.0 per 1,000 population) to undergo a potentially preventable hospitalisation.[9]

Figure 1.4 Separations per 1,000 population for potentially preventable hospitalisations by remoteness area, all hospitals 2021–2022



Source: Adapted from AIHW (2023).[9]

1.3.4 Potentially avoidable deaths

Potentially avoidable deaths are a measure of health system performance, including the quality, effectiveness and accessibility of the health system.[1,4,8]

Potentially avoidable deaths include deaths from conditions that are potentially preventable through individualised care and/or treatable through existing primary health care or hospital care settings.[1,4]

Table 1.7 presents the age-standardised rates for potentially avoidable deaths by remoteness area in 2021. People living in all remoteness areas are more likely to die from potentially avoidable deaths when compared to people living in major cities. In 2021, compared to people living in major cities:

- People in inner regional areas were 1.3 times more likely to die from potentially avoidable deaths[4]
- People in outer regional areas were 1.5 times more likely to die from potentially avoidable deaths[4]
- People in remote areas were 1.8 times more likely to die from potentially avoidable deaths[4]
- **People in very remote were 2.7 times more likely to die from potentially avoidable deaths.[4]**

Table 1.7 Age-standardised rates (per 100,000 population) for potentially avoidable deaths by gender and remoteness area 2021

Gender	Major cities	Inner regional	Outer regional	Remote	Very remote	Australia
2021						
Male	109.5	144.7	165.3	194.4	273.5	124.1
Female	61.1	76.5	91.2	109.9	171.8	68.1
Total population	84.6	110.2	129.0	154.2	226.0	95.6

Source: Adapted from AIHW MORT Books (2022).[4]

Over the five-year period from 2015 to 2019, there were 7,400 potentially avoidable deaths among Indigenous Australians from New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory (combined), accounting for 60% of all deaths of Indigenous Australians under 75 years.[8] During this five-year period, **Indigenous Australians living in remote and very remote Australia (combined) (329 deaths per 100,000 population) were 2.3 times more likely to die from potentially avoidable deaths than Indigenous Australians living in major cities (142 deaths per 100,000 population).[8]**

1.3.5 Burden of disease

Burden of disease is the measure of years of healthy life lost because of injury, illness or premature deaths in a population.[24]

In 2022 in Australia, 5.5 million years of healthy life were lost due to living with illness (non-fatal burden of disease – 52% of burden) or dying prematurely (fatal burden of disease – 48% of burden).[34]

The leading disease groups causing the most burden:

1. Cancer
2. Musculoskeletal conditions
3. Heart, stroke and vascular disease (also known as cardiovascular disease)
4. Mental health conditions and substance use disorders
5. Neurological conditions.[34]

Together, these disease groups accounted for 62% of the total burden of disease in 2022.[34]

Burden of disease is worse in remote and very remote areas, with total burden of disease being 1.4 times higher in these areas than in major cities in 2018.[e] The disparity in total burden of disease rates for Australians living in remote and very remote, and major cities, is also evident in many other specific disease/injury categories, including:

- Kidney and urinary diseases (remote and very remote areas rate was 2.7 times as high as for major cities)
- Injuries (2.4 times as high)
- Infectious diseases (2.3 times as high)
- Ischaemic heart disease[f] (2.2 times as high)
- Suicide/self-inflicted injuries (2.0 times as high).[24]

1.3.6 Health risk factors

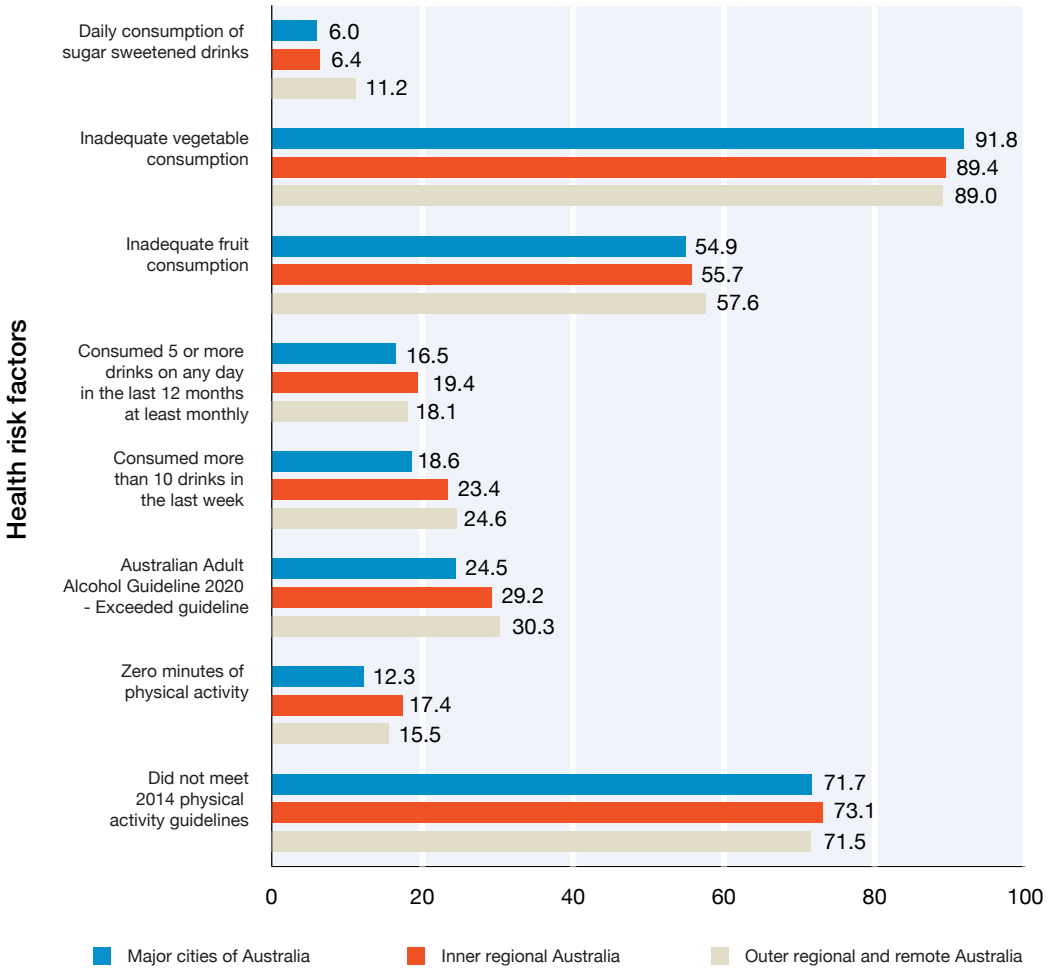
Health risk factors are attributes, characteristics or exposures that increase the likelihood of a person developing a disease or health disorder.[1] Many health problems can be prevented by reducing exposure to modifiable risk factors.[1]

The most common modifiable risk factors affecting rural and remote Australians include smoking, poor diet, alcohol and drug misuse, insufficient physical activity, high blood pressure, and being overweight or obese (Figure 1.5).[1]

e The latest subnational burden of disease estimates, and estimates of disease burden due to risk factors by remoteness area, was published in 2018.

f Ischaemic heart disease (or coronary heart disease) is the most common form of heart disease and belongs to the group of diseases known as 'heart, stroke and vascular disease,' 'cardiovascular disease' or 'circulatory disorders.' These terms are used interchangeably.

Figure 1.5 Proportion of adults self-reporting selected health risk factors by remoteness of residence 2020–2021



Source: Adapted from ABS (2022).[35]

Note: *Includes exercise and workplace activity.

Sugar-sweetened drinks

Frequent consumption of sugar-sweetened drinks is associated with weight gain, obesity, diabetes, cardiovascular disease, kidney diseases, non-alcoholic liver disease, tooth decay and cavities, gout and some cancers.[36-39] In 2020–2021, consumption of sugar-sweetened drinks on a daily basis (11.2%) in outer regional and remote areas was 1.9 times as high as consumption in major cities (6.0%).[35]

Diet

Approximately only 10.0% of Australians, across all remoteness categories, ate the recommended number of serves of vegetables, with the majority reporting inadequate vegetable consumption.[35] Similarly, more than half of respondents across all remoteness areas – 54.9% in major cities, 55.7% in inner regional areas, and 57.6% in outer regional and remote areas – reported inadequate fruit consumption.[35]

Poor diet, comprising low amounts of fruits, vegetables and whole grains, coupled with high intakes of sodium and saturated fat, is a primary contributor to the development of chronic disease, especially cardiovascular disease, diabetes, chronic kidney disease and high blood pressure.[1]

Alcohol consumption

The 2020–2021 National Health Survey reported that people in outer regional and remote areas were:

- 1.1 times more likely (18.1%) than people in major cities (16.5%) to have consumed five or more drinks on any day in the last 12 months at least monthly.[35]
- 1.3 times more likely (24.6%) than people in major cities (18.6%) to have consumed more than 10 drinks in the last week.[35]
- 1.2 times more likely (30.3%) than people in major cities (24.5%) to have exceeded the Australian Adult Alcohol Guideline 2020.[35]

Similarly, increased alcohol consumption correlates with increasing remoteness.[40] In 2019, people in remote and very remote areas were:

- 1.6 times more likely than those in major cities to consume alcohol at levels that exceeded the lifetime risk guideline (25.0% compared with 15.5%).[40]
- 1.6 times more likely than those in major cities to consume alcohol at levels that exceeded the single-occasion risk guideline (38.0% compared with 24.0%).[40]

Alcohol, tobacco and other drugs can have an impact on people's lives directly and indirectly, and are associated with disease and injury, road trauma, mental health conditions, family and domestic violence, crime and social marginalisation.[41]

To reduce the risk of alcohol-related harm over a lifetime, it is recommended that people not exceed two standard drinks per day (lifetime risk guidelines)[42] or have more than four standard drinks on one occasion at least once a month (single-occasion risky drinkers, monthly).[42]

People who exceed the recommended guidelines for alcohol consumption may experience long-term effects. These can include, for example:

- Mental health issues such as increased risk of suicide[43]
- Substance abuse[43]
- Increased risk of diabetes and weight gain[43]
- Cancers of the stomach, bowel, liver, breast, throat, oesophagus and mouth[43]
- Brain damage and brain-related conditions such as stroke and dementia[43]
- Heart issues such as high blood pressure, heart damage and heart attacks[43]
- Cirrhosis of the liver and liver failure.[43]

Smoking

In 2019, people in remote and very remote areas were 2.0 times more likely than those in major cities to smoke daily (19.2% compared with 9.8%).[1] Smoking increases the risk of lung cancer, heart disease, stroke, and oral cancer.[44] Smoking is also strongly linked to chronic obstructive pulmonary disease, including chronic bronchitis and emphysema.[44] Smokers are also more likely to develop severe influenza, pneumonia and respiratory infections (and COVID-19), compared to non-smokers.[45,46]

Overweight and obesity

In 2018, more people in inner regional (71.0%) and outer regional and remote (70.3%) areas were overweight or obese, compared with major cities (65.1%).[1] A high Body Mass Index or obesity is directly associated with an increased risk of certain cancers, including colon, breast, endometrium, oesophageal, and kidney,[47] as well as being linked to the development of many chronic conditions such as diabetes and cardiovascular disease.[48]

Physical activity

Low levels of physical activity are a major risk factor for several chronic conditions.[49] Without sufficient physical activity, people are at increased risk of cardiovascular disease, diabetes, osteoporosis, high blood pressure, high blood cholesterol, and becoming overweight or obese.[49]

The 2020–2021 National Health Survey demonstrated that 15.5% of respondents in outer regional and remote areas did not engage in any physical activity on a regular basis (zero minutes). Of those who did engage in physical activity, 71.5% did not meet current Australian activity guidelines. While many jobs in rural and remote areas entail physical labour, the survey reported exercise and workplace activity combined.[35]

High blood pressure

The 2017–2018 National Health Survey found that rates of high blood pressure were similar across all remoteness areas and ranged from 21.5% in major cities to 23.5% in outer regional and remote areas, with rates across all remoteness areas being similar.[1] High blood pressure is associated with increased risk of heart attack, stroke, heart failure and kidney disease.[50]

1.3.7 Causes of death

Cause of death data for 2022 were recently released by the ABS.[10] The top five causes of death accounted for 33.8% of all deaths.[10] The top five causes of death identified by the ABS[10] included:

1. Ischaemic heart disease (also known as coronary heart disease), which can lead to heart attack – 9.8% of all deaths.
2. Dementia, including Alzheimer's disease – 9.0% of all deaths.
3. COVID-19 – 5.2% of all deaths (COVID-19 caused 9,859 deaths and was a contributing factor to a further 2,782 deaths).
4. Cerebrovascular disease – 5.1% of all deaths.
5. Malignant neoplasm of trachea, bronchus and lung – 4.7% of all deaths.

Specific cause of death data for New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory (combined) were collected for Indigenous and non-Indigenous Australians in 2022. The top 10 causes of death, by Indigenous status, are reported in Figure 1.6.

Figure 1.6 Top 10 causes of death in New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory (combined), age-standardised death rate (per 100,000 population), median age at death (years), by Indigenous status, all persons 2022

Rank	Non-Indigenous Australians	Rate	Median age at death (years)	Indigenous persons	Rate	Median age at death (years)
1	Ischaemic heart disease	53.9	84.3	Ischaemic heart disease	134.9	63.5
2	Dementia, including Alzheimer's disease	51.1	89.1	Diabetes	85.9	67.3
3	Cerebrovascular diseases	28.9	85.8	Chronic lower respiratory diseases	80.6	68.9
4	COVID-19	26.8	86.0	Malignant neoplasm of trachea, bronchus and lung	71.0	67.6
5	Malignant neoplasm of trachea, bronchus and lung	26.0	75.4	Intentional self-harm (suicide)	29.9	33.4
6	Chronic lower respiratory diseases	24.1	80.5	Cerebrovascular diseases	43.3	68.1
7	Diabetes	16.5	82.6	Dementia, including Alzheimer's disease	63.7	83.5
8	Malignant neoplasm of colon, sigmoid, rectum and anus	15.9	79.0	Symptoms, signs and ill-defined conditions	23.5	48.9
9	Malignant neoplasms of lymphoid, haematopoietic and related tissue	14.9	78.8	COVID-19	41.2	71.3
10	Diseases of the urinary system	12.2	87.1	Cirrhosis and other diseases of the liver	25.3	53.0
	All causes	**556.4**	**82.4**	**All causes**	**1,130.5**	**62.9**

Source: Adapted from ABS (2023).[10]

ABS death data from 2022 showed that compared to non-Indigenous Australians, Indigenous Australians living in New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory (combined) were:

- 5.2 times more likely to die from diabetes[10]
- 3.3 times more likely to die from chronic lower respiratory disease[10]
- 2.6 times more likely to die from malignant neoplasm of trachea, bronchus and lung[10]
- 2.6 times more likely to die from Intentional self-harm (suicide)[10]
- 2.5 times more likely to die from ischaemic heart disease[10]
- 1.5 times more likely to die from cerebrovascular diseases[10]
- 1.5 times more likely to die from COVID-19[10]
- 1.2 times more likely to die from dementia (including Alzheimer's disease).[10]

Figure 1.7 presents the leading causes of death in Australia, by remoteness area, for the period 2017–2021. For the period 2017–2021:

- Ischaemic heart disease was the leading cause of death across all remoteness areas.[4]
- The age-standardised death rate from ischaemic heart disease in very remote Australia (94.2 deaths per 100,000) was 1.9 times higher than the rate in major cities (50.7 deaths per 100,000).[4]
- Diabetes was the second leading cause of death in very remote areas and the seventh in major cities – the age-standardised death rate was 3.9 times higher in very remote areas, compared to major cities (54.7 and 14.2 deaths per 100,000 respectively).[4]
- Lung cancer was the third leading cause of death in very remote Australia and the fourth leading cause of death in major cities. People living in very remote areas (41.0 deaths per 100,000) and remote areas (35.6 deaths per 100,000) were 1.6 and 1.4 times more likely (respectively) to die from lung cancer than people in major cities (25.6 deaths per 100,000).[4]
- Dementia, including Alzheimer's disease, had a lower ranking in remote and very remote areas (ranked fourth and seventh respectively) compared with major cities and regional areas (ranked second).[4]
- In very remote areas, the age-standardised death rate for suicide was 2.3 times higher than for major cities (24.7 and 10.9 deaths per 100,000 respectively).[4]

Figure 1.7 Top 10 causes of death and age-standardised death rate (per 100,000 population) by remoteness area, all persons 2017–2021

Rank	Major cities	Rate	Inner regional	Rate	Outer regional	Rate	Remote	Rate	Very remote	Rate
1	Ischaemic heart disease	50.7	Ischaemic heart disease	57.7	Ischaemic heart disease	64.4	Ischaemic heart disease	73.7	Ischaemic heart disease	94.2
2	Dementia, including Alzheimer's disease	43.9	Dementia, including Alzheimer's disease	39.5	Dementia, including Alzheimer's disease	39.2	Lung cancer	36.5	Diabetes	54.7
3	Cerebrovascular disease	28.6	Cerebrovascular disease	32.1	Lung cancer	33.3	Chronic obstructive pulmonary disease	34.9	Lung cancer	41.0
4	Lung cancer	25.6	Lung cancer	29.5	Chronic obstructive pulmonary disease	30.8	Dementia, including Alzheimer's disease	36.3	Chronic obstructive pulmonary disease	45.7
5	Chronic obstructive pulmonary disease	19.0	Chronic obstructive pulmonary disease	26.9	Cerebrovascular disease	30.4	Cerebrovascular disease	29.6	Suicide	24.7
6	Colorectal cancer	15.8	Colorectal cancer	19.1	Colorectal cancer	20.1	Diabetes	26.9	Cerebrovascular disease	34.5
7	Diabetes	14.2	Diabetes	16.5	Diabetes	20.0	Suicide	19.3	Dementia, including Alzheimer's disease	43.1
8	Accidental falls	9.6	Prostate cancer	11.9	Prostate cancer	13.6	Colorectal cancer	18.2	Land transport accidents	19.7
9	Heart failure and complications and ill-defined heart disease	9.4	Heart failure and complications and ill-defined heart disease	11.2	Suicide	18.6	Land transport accidents	14.2	Kidney failure	19.7
10	Prostate cancer	9.7	Cancer of unknown or ill-defined primary site	10.7	Cancer of unknown or ill-defined primary site	11.7	Prostate cancer	14.4	Other, ill-defined causes	13.8

Source: Adapted from AIHW (2023).[4]

In the period 2017–2021, for all remoteness categories combined, the top five causes of death for Indigenous Australians were ischaemic heart disease, diabetes, chronic obstructive pulmonary disease, lung cancer and suicide.[21]

1.3.8 Other health issues

There are many other health issues that disproportionately affect rural and remote Australians. Some of the longer term issues include, for example, mental health and suicide, poor oral health,[51,52] and family, domestic and sexual violence.[1]

In recent years, bushfires, floods and drought have also had significant impact on the health and mental health of rural and remote Australians.

The COVID-19 pandemic, particularly the disruption it caused to regular primary healthcare services, has been detrimental to the physical and mental health of rural and remote communities. Post-pandemic effects include increased levels of mental health disorders, such as depression and anxiety;[53] foregone and delayed health care, such as delayed screening and procedures (e.g. lower rates of bowel cancer screening and colonoscopies),[54] fewer elective surgeries,[54] ongoing health problems for people who contracted the virus,[54] and the suspension of services.[54] The Royal Flying Doctor Service (RFDS) has observed increased use of primary healthcare and emergency retrieval services by rural and remote Australians, especially for people with chronic conditions who may not have received the care they needed during the pandemic, due to the withdrawal and suspension of services.

Mental health and suicide

The prevalence of mental health disorders in rural and remote Australia is similar to that of major cities; however, age-standardised suicide and self-harm rates are higher.[55] In 2021, the age-standardised rates of suicide for residents of very remote areas was 23.9 deaths per 100,000 population, and for remote areas 21.2 deaths per 100,000 population. These rates were 2.3 and 2.1 times (respectively) higher than the rate for residents of major cities, which was 10.0 deaths per 100,000 population.[56]

Death data for Indigenous Australians and non-Indigenous Australians living in New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory (combined) in 2018–2022 demonstrated higher age-specific rates of self-harm among Indigenous Australians for several age groups and across all genders (Table 1.10).

Table 1.8 Deaths from intentional self-harm (suicide)* by Indigenous status, age-specific death rates (per 100,000 population) for males, females and persons in New South Wales, Queensland, Western Australia, South Australia, and the Northern Territory (combined) 2018–2022

Age group (years)^	Indigenous (age-specific death rate)	Non-Indigenous (age-specific death rate)	Rate ratio
Male			
15–24	54.6	17.8	3.1
25–34	72.1	23.6	3.1
35–44	84.9	25.3	3.4
Female			
1–14	2.6	0.4	6.5
15–24	26.9	6.4	4.2
25–34	23.9	6.6	3.6
35–44	20.6	8.2	2.5
Persons			
1–14	1.6	0.5	3.4
15–24	41.0	12.3	3.3
25–34	48.4	15.1	3.2
35–44	52.3	16.7	3.1

Source: Adapted from ABS (2023).[10]

Notes: *Suicide data should be interpreted with caution as some age groups had very low absolute numbers of suicides.
^Only includes data for age groups where suicide appeared in the top five causes of death.

Previous RFDS research demonstrated that farmers, young men, older people, and Indigenous Australians in remote areas were at greatest risk of completing suicide.[55]

Oral health

Good oral health is fundamental to overall health, wellbeing and quality of life.[52] The World Health Organization (WHO) defines oral health as 'the state of the mouth, teeth and orofacial structures that enables individuals to perform essential functions such as eating, breathing and speaking, and encompasses psychosocial dimensions such as self-confidence, wellbeing and the ability to socialise and work without pain, discomfort and embarrassment.'[57]

Poor oral health, such as dental caries (tooth decay), periodontal (gum) disease, and edentulism (tooth loss) affects many adults and children, and contributed 4.5% to Australia's non-fatal burden of disease in 2022.[58] Severe periodontal disease is also associated with a number of chronic diseases, including heart, stroke and vascular disease, diabetes and chronic obstructive pulmonary disease.[58,59]

Some groups of Australians experience poor oral health at significantly higher rates than the general population, including people living in rural and remote areas, and Indigenous Australians.[60] Oral health status generally declines as remoteness increases. People living in rural and remote Australia have poorer access to dental practitioners than their major city counterparts, which, coupled with longer travel times and limited transport options to services, affects the oral health care they can receive.[52,58]

Family, domestic and sexual violence

The ABS 2016 Personal Safety Survey identified that 2.2 million adults had experienced physical and/or sexual violence from a partner since the age of 15.[61]

Previous research demonstrated that people living in rural and remote Australia were 1.4 times more likely to have experienced partner violence than those living in major cities.[1,61] Significantly, people living in remote and very remote areas were 24 times more likely to be hospitalised for domestic violence as those in major cities.[1,61]

Chapter 2: The Royal Flying Doctor Service in rural and remote Australia

The RFDS is perhaps best known for its aeromedical retrieval service, which provides a mantle of safety for those who live, work and travel in rural and remote areas. This service is available 24 hours a day, seven days a week, and is supported by a 24-hour, seven-days-a-week Telehealth system to assist patients who are beyond normal medical services, and experience a medical emergency that requires transportation to hospital care. Aeromedical retrievals are conducted on behalf of the Commonwealth and our state and territory partners. Aeromedical retrievals comprise:

> Primary evacuation: an emergency medical service and retrieval for those beyond normal medical infrastructure.[g] ,[62]

> Inter-hospital transfer: transfer between hospitals.[h] ,[62]

> Repatriations: transporting patients back to their communities.[i]

g Primary evacuation: The provision of emergency medical retrieval services to victims of illness or accident who are in a serious or potentially life-threatening condition, who are beyond the normal medical infrastructure, and require transport and/or medical and nursing care during transport to the nearest suitable hospital. This transport includes all fixed-wing air transport services directly related to these emergency medical services but excludes transfers between hospitals.[58]

h Inter-hospital transfer: Transfer of patients between hospitals designated as normal medical infrastructure to get specialist treatment and life-saving surgery.[58]

i Repatriations: The transportation of patients from tertiary hospitals back to their communities.

RFDS Services delivered in 2022–23

387,042 total patient contacts

(= 921 per day)

24,889
(= 68 per day)
Primary health clinics made available to country Australia

137,995
Face-to-face primary health consultations

19,946
Face-to-face mental health consultations

2,370
Medical Chests located around Australia

58,839
Patients transported by road to hospital or between hospitals for specialist care

1,843
Full- and part-time RFDS staff

71,704
Remote Telehealth consultations

10,881
Face-to-face dental services for oral health, emergency and restorative dental care

4,770
Immunisations in remote, rural and regional settings

36,937 aeromedical retrievals,

equivalent to 101 aeromedical retrievals per day, 4.2 per hour

5,011
primary evacuations

30,879
inter-hospital transfers

1,047
repatriations

The RFDS also delivers a comprehensive suite of primary healthcare services to areas of rural and remote Australia through innovative and flexible models of care, to meet the needs of different communities (Table 2.1 and Figure 2.1). This suite includes permanent, mobile or regular fly-in fly-out GP and nursing clinics, mental health and wellbeing services, dental health services, chronic disease management, and a growing number of allied health programs, health-promotion activities and road transport services. These are integrated with a 24-hour, seven-days-a-week remote consultation (Telehealth) system. Services are funded by the Australian Government (particularly to address the lack of access to the Medical Benefits Schedule in these areas) as well as by state and territory governments, through philanthropy and fundraising.

The RFDS prioritises a place-based approach to service planning, to target the specific circumstances of the individual communities we serve. In many communities, despite operating as an outreach service, the RFDS is the 'local doctor' providing high-quality, continuity of care – and in some cases, has been the only provider of care for 95 years.

The RFDS endeavours to tailor services to the communities in which they are delivered, and is committed to both supporting the growth of local capacity and partnering with local service providers. Services are co-designed with the local community, consumers and carers, as well as with partner organisations, such as Primary Health Networks (PHNs), and the Aboriginal and Torres Strait Islander health sector, including Aboriginal Community Controlled Health Organisations (ACCHOs), and we continue to work with Indigenous communities and stakeholders to ensure services are culturally appropriate.

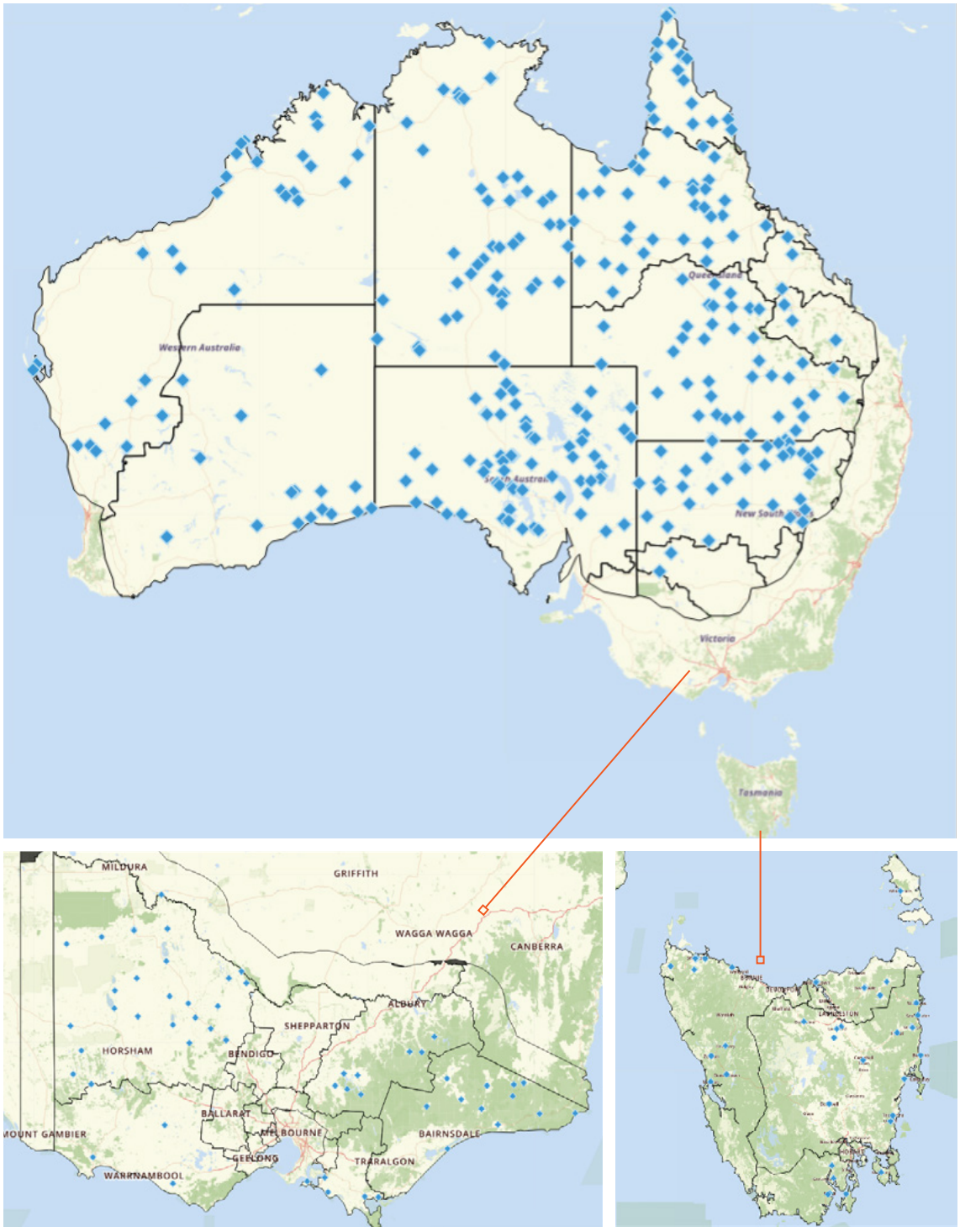
In 2021–2022, the Australian Government contributed 22.47% of total RFDS revenue, the states and territories contributed 30.12%, and the remaining funding came from donations, bequests, commercial entities, capital funding and other funding sources.[63,j]

j When presenting service availability and usage data in this report, the RFDS does not distinguish services by funding source.

Table 2.1 Current RFDS services by state and territory

	State or territory						
Services provided	South Australia	Northern Territory*	Queensland	New South Wales	Victoria	Tasmania	Western Australia
Emergency care							
Primary evacuations (aeromedical retrievals)	✓	✓	✓	✓			✓
Inter-hospital transfers (aeromedical retrievals)	✓	✓	✓	✓			✓
Road transfers	✓		✓	✓	✓		✓
Automated external defibrillators	✓		✓				✓
Medical Chests	✓		✓	✓			✓
Telehealth (phone – unscheduled remote consultations)	✓		✓	✓	✓	✓	✓
Covid-19 transfers (air/road)	✓	✓	✓	✓	✓		✓
Primary and preventive health care							
GP clinics (primary health care)	✓		✓	✓	✓		✓
Nurse clinics (primary health care)	✓		✓	✓			✓
Aboriginal health	✓		✓	✓	✓		✓
Active ageing	✓		✓	✓	✓		
COVID-19 respiratory clinics				✓			
COVID-19 vaccination clinics	✓	✓	✓	✓	✓		✓
Mental health and/or wellbeing services (includes alcohol and other drug services in some states)	✓	✓	✓	✓		✓	Facilitate clinics
Primary care outreach	✓		✓	✓	✓	✓	
Clinic charter services	✓	✓				✓	Facilitate charters
Dental/oral health	✓	✓	✓	✓	✓	✓	✓
Flying Doctor Telehealth team (Mantle)	✓		✓	✓	✓		✓
Telehealth (video – appointment based)	✓		✓	✓	✓	✓	
Allied health care							
Speech therapy					✓		
Eye care				✓	✓		
Augmentation of remote health services							
Community transport or non-emergency patient transport				✓	✓		
Mobile event care	✓		✓	✓	✓		
Public health promotion							
Visitor centre		✓	✓	✓			
Health education and/or training and/or health promotion	✓		✓	✓	✓	✓	

Figure 2.1 RFDS primary health care (includes GP, nursing, mental health and dental health) clinic locations



Note: Blue diamond denotes clinic location.

Chapter 3: Royal Flying Doctor Service aeromedical retrievals – a national perspective

The RFDS provides aeromedical retrievals for people from rural and remote areas who require care in inner regional and major city hospitals. While total numbers of RFDS aeromedical retrievals are reported elsewhere in annual reports, they do not detail retrieval characteristics, such as patient age, gender, and primary retrieval diagnosis. As such, an analysis of RFDS aeromedical retrievals was conducted for the 12-month period from July 2022 to June 2023 and is provided in this chapter to highlight some of the key health issues impacting rural and remote communities. The methodology for this analysis is included in Appendix 1.

With the responsibility of providing medical emergency and primary healthcare services to Australia's remote and very remote areas, the RFDS has established a network of flight paths across the continent (Figure 3.1).

Figure 3.1 RFDS aeromedical footprint

3.1 Summary data

In the 2022–2023 financial year, the RFDS conducted 36,937 aeromedical retrievals, equivalent to 101 aeromedical retrievals per day, or 4.2 per hour. A number of these were repatriations, where patients were transported to a facility closer to their home. Repatriations represented 1,047 of the overall aeromedical retrievals and are excluded from the remaining analyses.

The remainder of this chapter presents data for 35,890 aeromedical retrievals conducted in 2022–2023. The majority, (Number (N)=30,879, 86.0%) were inter-hospital transfers and the remaining 5,011 (14.0%) were primary evacuations.

More than one in 10 (N=4,226, 11.8%) RFDS aeromedical retrievals were Priority 1 retrievals (to be retrieved within one hour); 17,474 (48.7%) were Priority 2 retrievals (to be retrieved within four hours); the remaining 13,718 (38.2%) were Priority 3 retrievals (to be retrieved within 12 hours).

While overall retrieval numbers increased by 9.0% in 2022–2023 (N=36,937), compared to 2021–2022 (N=33,383), there were no significant changes in patient priority or severity of presentation.

3.2 Patient characteristics

Figures 3.2 and 3.3 demonstrate the number of patients who underwent an aeromedical retrieval by five-year age group and Indigenous status, and the number of patients who underwent an aeromedical retrieval by gender and Indigenous status, respectively. The following was observed for RFDS aeromedical retrievals in 2022–2023:

- People of all age groups underwent aeromedical retrievals, that is, the age range of patients was newborn to 85 years of age or older.
- 26,243 (73.2%) patients were non-Indigenous and 9,647 (26.9%) were Indigenous, which broadly reflects the demographics of remote and very remote Australia.
  - **On average, 26 Indigenous patients and 72 non-Indigenous patients underwent an aeromedical retrieval each day.**
- The median age of all patients was 54.0 years (interquartile range 30–70 years).
  - The median age of non-Indigenous patients was 60.0 years (interquartile range 36–73 years).
  - The median age of Indigenous patients was 39.0 years (interquartile range 22–55) years.
  - 51% of all Indigenous patients, as compared to 26.4% for non-Indigenous patients, were aged under 39 years.
  - For non-Indigenous patients, the highest number of retrievals were for people aged 70–74 years (N=2,424, 9.2%) and 75–79 years (N=2,374, 9.0%).
  - For Indigenous patients, the highest number of retrievals were for people aged 50–54 years (N=820, 8.5%) and 45–49 years (N=751, 7.8%).
- Reflecting the lower life expectancy of Indigenous patients, the proportion of Indigenous patients the RFDS retrieved declined steeply for those aged 70 years and older.
- More men than women required an RFDS aeromedical retrieval – 19,209 (55.9%) patients were male and 15,135 (44.1%) were female.
  - 13,918 (53.0%) non-Indigenous patients were male and 10,782 (41.1%) were female.
  - 5,291 (54.9%) Indigenous patients were male and 4,353 (45.1%) were female.
- **3,034 (31.5%) retrievals of Indigenous patients were primary evacuations, compared to 1,979 (7.5%) retrievals for non-Indigenous patients.** This reflects remoteness and the lack of healthcare facilities as remoteness increases.

Figure 3.2 Number of patients who underwent an RFDS aeromedical retrieval by five-year age group and Indigenous status 2022–2023

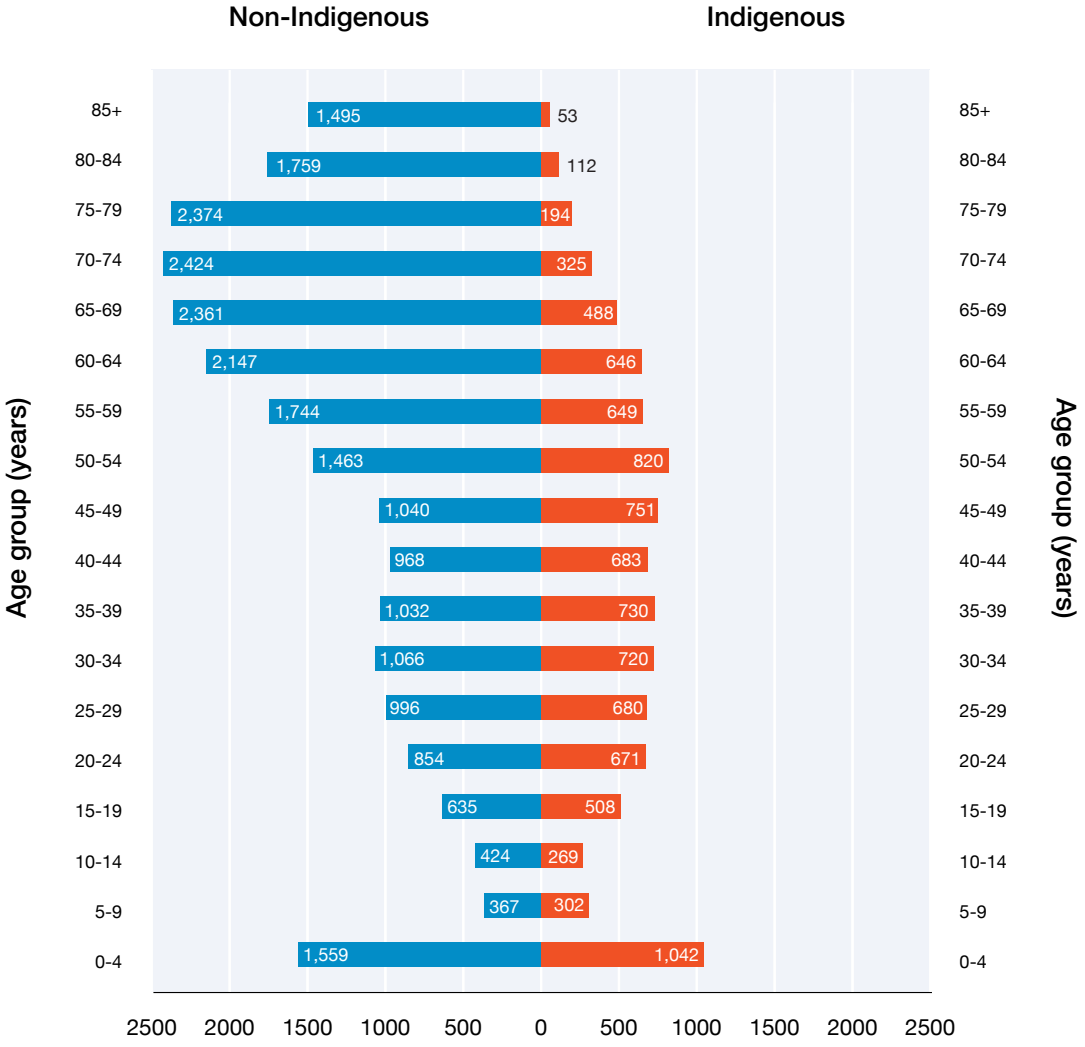
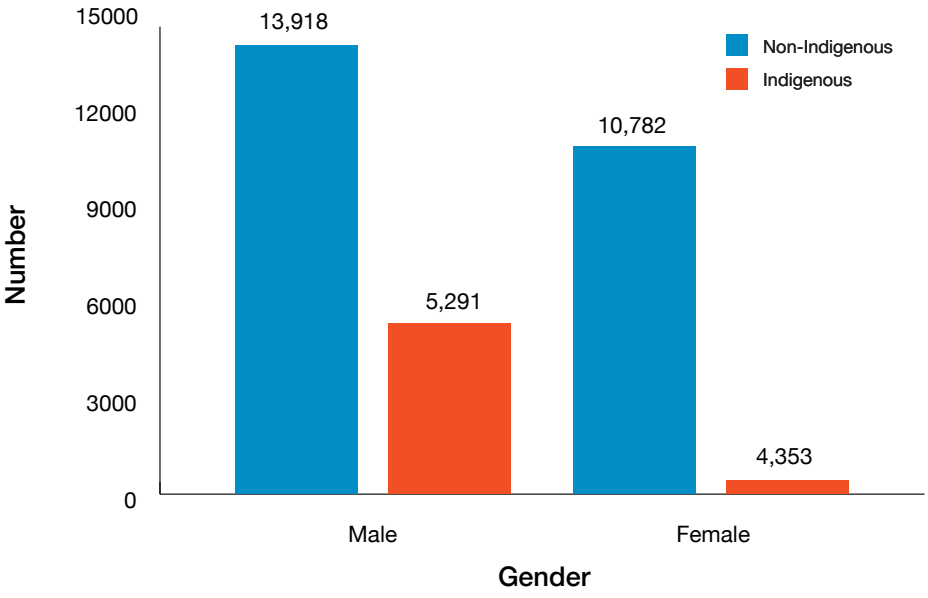


Figure 3.3 Number of patients who underwent an RFDS aeromedical retrieval by gender and Indigenous status 2022–2023



3.3 Reasons for retrieval

Figure 3.4 demonstrates the number of people who underwent an aeromedical retrieval (as coded by RFDS clinicians under the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM)) by Indigenous status. Figure 3.5 presents the top five reasons for an aeromedical retrieval by Indigenous status. The data demonstrated that in 2022–2023:

- The top five reasons for an aeromedical retrieval for non-Indigenous patients were:
  - Diseases of the circulatory system, which includes angina, heart attack and stroke (N=6,567, 18.3%).
  - Injury, poisoning and certain other consequences of external causes, which includes as a result of falls, motor vehicle accidents, assaults, suicide attempts or exposure to chemicals (N=5,847, 16.3%).
  - Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (N=3,753, 10.5%).
  - Diseases of the digestive system (N=3,034, 8.45%).
  - Diseases of the respiratory system (N=2,439, 6.8%).
- The top five reasons for an aeromedical retrieval for Indigenous patients was the same. However, as in previous years, the top two reasons for an aeromedical retrieval were reversed – Indigenous patients were most likely to be retrieved for injury, poisoning and certain other consequences of external causes (N=1,539, 15.6%), followed by diseases of the circulatory system (N=1,285, 13.3%).
- Aeromedical retrieval for pregnancy, childbirth and the puerperium (N=1,208, 8.0%) was the fifth most common reason for a retrieval (both Indigenous and non-Indigenous) for women.

Figure 3.4 RFDS Aeromedical retrievals by ICD-10-AM chapter heading and Indigenous status 2022–2023

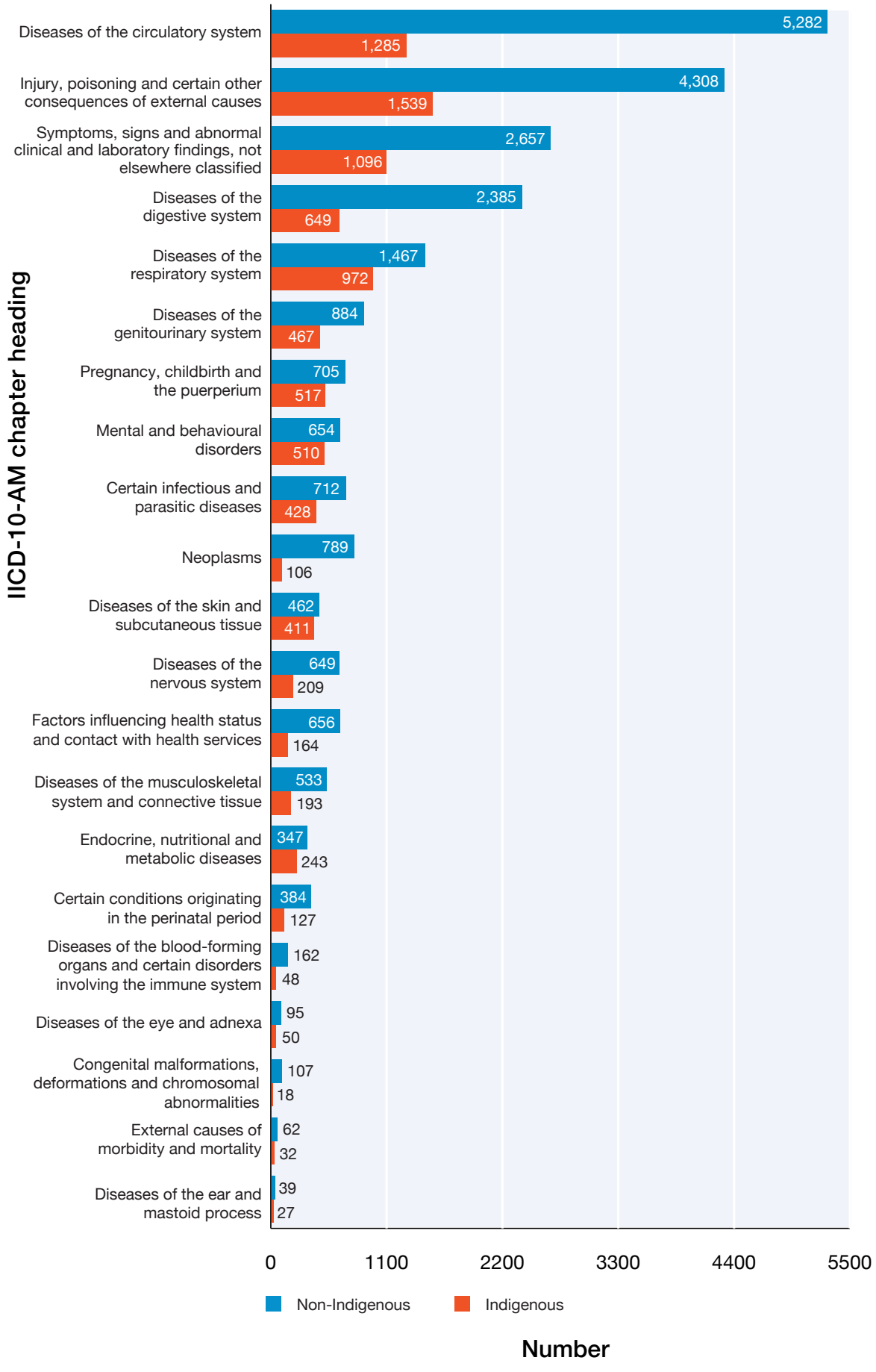


Figure 3.5 Leading reasons for RFDS aeromedical retrievals (number and proportion of total) by gender and Indigenous status 2022–2023

	Demographic characteristics				
Rank	All persons	Male	Female	Non-Indigenous	Indigenous
1st	Diseases of the circulatory system N=6,567 (18.3%)	Diseases of the circulatory system N=4,225 (22.0%)	Diseases of the circulatory system N=2,337 (15.4%)	Diseases of the circulatory system N=5,282 (20.1%)	Injury, poisoning and certain other consequences of external causes N=1,539 (16.0%)
2nd	Injury, poisoning and certain other consequences of external causes N=5,847 (16.3%)	Injury, poisoning and certain other consequences of external causes N=3,507 (18.3%)	Injury, poisoning and certain other consequences of external causes N=2,338 (15.4%)	Injury, poisoning and certain other consequences of external causes N=4,308 (16.4%)	Diseases of the circulatory system N=1,285 (13.3%)
3rd	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified N=3,753 (10.5%)	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified N=2,084 (10.8%)	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified N=1,668 (11.0%)	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified N=2,657 (10.1%)	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified N=1,096 (11.4%)
4th	Diseases of the digestive system N=3,034 (8.45%)	Diseases of the digestive system N=1,656 (8.6%)	Diseases of the digestive system N=1,377 (9.1%)	Diseases of the digestive system N=2,385 (9.1%)	Diseases of the respiratory system N=972 (10.1%)
5th	Diseases of the respiratory system N=2,439 (6.8%)	Diseases of the respiratory system N=1,438 (7.5%)	Pregnancy, childbirth and the puerperium N=1,208 (8.0%)	Diseases of the respiratory system N=1,467 (5.6%)	Diseases of the digestive system N=649 (6.7%)

When considering the data further, the following was observed:

- For children 0–4 years:
  - The top reasons for retrieval of non-Indigenous children were:
    I. Certain conditions originating in the perinatal period, which includes conditions that have their origin in the foetal or perinatal period (before birth and through the first 28 days after birth) even if morbidity occurs later (N=374).
    II. Diseases of the respiratory system, for example, influenza, pneumonia, asthma, and chronic obstructive pulmonary disease etc. (N=316).
  - The top reasons for retrieval of Indigenous children were:
    I. Diseases of the respiratory system (N=316).
    II. Symptoms, signs and abnormal clinical and laboratory findings, which includes symptoms, signs, abnormal results of clinical or other investigative procedures, and ill-defined conditions where no other classifiable diagnosis has been recorded (N=136).
  - There were proportionally more Indigenous children retrieved for infectious and parasitic diseases or diseases of the skin and subcutaneous tissue.
- For 5–39-year-olds:
  - Injury, poisoning and certain other consequences of external causes were the leading reasons for an aeromedical retrieval for both non-Indigenous and Indigenous patients.
- For those over 40 years old:
  - Diseases of the circulatory system, which includes cardiovascular disease, heart attack and stroke, were the leading reason for an aeromedical retrieval for both non-Indigenous and Indigenous patients aged 40–79 years, with Indigenous patients aged 80 years of age or older also having injuries as a leading cause of retrieval.

- Injury, poisoning and certain other consequences of external causes were the most common reasons for aeromedical retrieval for Indigenous patients of all ages. In addition to this finding, **Indigenous patients were also significantly younger (median age of 32.0 years) overall as compared to non-Indigenous patients (median age of 53.0 years). This requires further investigation.**
- The RFDS is observing growing rates of mental and behavioural disorders for both Indigenous and non-Indigenous patients.
- Compared to non-Indigenous patients (median age of 42.0 years), Indigenous patients with mental and behavioural disorders (median age of 31.0 years) were significantly younger, were more likely to be aged under 21 years old, and demonstrated higher rates of substance-related retrievals.

3.4 Primary evacuation retrieval pick-up and drop-off locations

Data on primary evacuations, whereby a patient is retrieved from a rural or remote location rather than a health facility, were collected.

The top 10 RFDS pick-up locations for primary evacuations are presented in Figure 3.6 and demonstrate that the majority retrievals were from the Northern Territory, Western Australia and Queensland.

Figure 3.6 Top 10 RFDS primary evacuation retrieval pick-up locations 2022–2023

The top 10 RFDS aeromedical retrieval drop-off locations, where the patient received definitive care, are presented in Figure 3.7. As expected, the majority of these locations are in inner regional areas and major cities.

Figure 3.7 Top 10 RFDS primary evacuation retrieval drop-off locations 2022–2023

3.5 Discussion

The RFDS plays a key role in providing aeromedical services to rural and remote areas of Australia. The following section discusses the findings from the 2022–2023 data on RFDS aeromedical retrievals, focusing on the number of retrievals, patient characteristics and reasons for retrieval.

3.5.1 Aeromedical retrievals: an overview

In 2022–2023, the RFDS conducted 36,937 aeromedical retrievals averaging 101 retrievals per day, as compared to 33,383 in 2021–2022, indicating an upward trend in retrievals. This year's figure translates to 4.2 retrievals every hour.

3.5.2 Patient demographics and characteristics

The RFDS services a diverse range of patients. The age range of patients spanned from newborns to those aged 85 and above.

The age distribution revealed some contrasts between Indigenous and non-Indigenous patients. The median age for all patients was 54 years, but while the median age for non-Indigenous patients was 60 years, it was significantly lower for Indigenous patients at 39 years. This difference in age distribution is further emphasised by the fact that over half of all Indigenous patients were under the age of 39, compared to just over a quarter for non-Indigenous patients.

This finding is consistent with a recent study that indicated the mean age for Indigenous patients who received a primary evacuation for heart, stroke and vascular disease was 48.0 years, significantly lower than the non-Indigenous mean age of 55.6 years. Furthermore, it was found that Indigenous patients who were hospitalised for heart, stroke and vascular disease were younger, with the majority being younger than 65 years.[64] Another study conducted on 1,773 stroke aeromedical retrievals between July 2014 and June 2018, found that Indigenous patients were a decade younger than non-Indigenous patients retrieved for stroke.[65] This age disparity suggests that Indigenous people might be at a higher risk for conditions such as stroke at a younger age.

Gender disparities were also evident. Males were more likely than females to undergo an aeromedical retrieval, with Indigenous males being 1.5 times more likely than Indigenous females, and non-Indigenous males 1.3 times more likely than non-Indigenous females. Gender disparities are most likely complex and multifactorial. The literature indicates that compared with women, men are more likely to self-monitor their health status for longer, have shorter consultations when they visit a GP, see GPs later in their illness and leave significant health issues unattended.[66,67]

3.5.3 Reasons for retrieval

The reasons for aeromedical retrievals provide insight into the health challenges faced by the populations served by the RFDS. The top five reasons for retrievals were diseases of the circulatory system, injuries, undiagnosed symptoms, diseases of the digestive system, and respiratory diseases.

Diseases of the circulatory system

Diseases of the circulatory system were the main reason for aeromedical retrieval in 2022–2023, accounting for 18.3% of retrievals. Diseases of the circulatory system are often referred to as cardiovascular diseases or heart, stroke and vascular disease, and encompass a range of conditions, including angina, heart attack and stroke. Cardiovascular disease is a leading cause of mortality and morbidity worldwide. In 2019, it accounted for 32% of global deaths, with 85% due to heart attack and stroke, and was the underlying cause of 25% of all deaths in Australia in the same year.[28]

Rural and remote patients experience cardiovascular disease at a 20% higher rate compared to major city patients and have worse clinical outcomes.[68,69]

Heart, stroke and vascular disease in rural and remote areas presents unique challenges. Factors such as limited access to specialised care, geographical barriers and socio-economic conditions play a significant role in the health outcomes of these populations.[68] The literature emphasises the need for targeted interventions, community awareness, and the role of healthcare professionals in managing and preventing heart, stroke and vascular disease in rural and remote settings.[68]

In recognition of the significant impact of heart, stroke and vascular disease, the RFDS produced the *Best for the Bush in Focus: Heart, Stroke and Vascular Disease* report in 2023.[68] The report found that in rural and remote areas, cardiovascular outcomes are worse when compared to inner regional and major city areas of Australia.[68] The report's findings underscored the urgent need for action, including:

- More equitable access to comprehensive primary healthcare services in rural and remote areas, including cardiac care. This includes primary prevention, secondary prevention and targeted management plans.[68]
- Support for funding and service models for heart, stroke and vascular disease prevention and management that are appropriate for the rural and remote context.[68]
- Better data collection and data linkages to further understand the need in these areas.[68]

Injuries

Injury, poisoning and certain other consequences of external causes were a main reason for an aeromedical retrieval in 2022–2023, accounting for 16.3% of retrievals.

The WHO has highlighted injuries as a major global health concern, noting that each year, over 521 million individuals suffer injuries, with 4.5 million of these injuries being fatal.[70] Rural and remote populations have notably worse injury outcomes as compared to major city patients. In Australia, people in rural areas are hospitalised at a rate 1.8 times higher and bear a disease burden 1.7 times greater than those in major cities.[71] Furthermore, the incidence of injury-related deaths and health complications in rural areas is 1.5 times higher than in major cities.[71,72]

The demographics of rural communities play a significant role. These communities often have an older population, more males, a larger Indigenous community, and distinct occupational patterns.[73] Other challenges that exacerbate injury risks in rural Australia, include limited access to health care and a higher prevalence of alcohol-related risky behaviours.

These trends have direct implications on aeromedical retrievals. During the COVID-19 pandemic, injury trends differed during isolation/restriction periods. A study conducted between 26 January and 23 June 2020, found that leading retrieval reasons were for injuries to the head, injuries to the hip and thigh, and injuries to the knee and lower leg.[74] Of interest, the pre-restriction period had higher rates of high severity patients (n = 578; 67.8%), as compared to the restriction period (n = 446; 52.3%), and post-restriction periods (556; 56.1%).[74]

In 2016, the RFDS recommended the 'Council of Australian Governments (through the Australian Health Ministers Advisory Council) develop and commit to resourcing a new national injury prevention and safety promotion plan, which includes remote and rural Australians as a priority group, identifying particular risk factors and evidence-based prevention strategies (p.15).'[75] The RFDS continues to advocate for this plan.

Undiagnosed symptoms

Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified were a main reason for an aeromedical retrieval in 2022–2023, accounting for 10.5% of retrievals. This includes symptoms, signs, abnormal results of clinical or other investigative procedures, and ill-defined conditions regarding which no diagnosis classifiable elsewhere is recorded. The categories in this chapter include the less well-defined conditions and symptoms that, without the necessary study of the case to establish a final diagnosis, point perhaps equally to two or more diseases or to two or more systems of the body.

No specific patterns were observed in RFDS aeromedical retrieval data. Rather, the data demonstrated that undiagnosed symptoms were spread across multiple diagnoses.

Diseases of the digestive system

Diseases of the digestive system were a main reason for aeromedical retrieval in 2022–2023, accounting for 8.5% of retrievals. Diseases of the digestive system, which includes gastrointestinal disorders, is very common in Australia with estimates indicating half the population complain of digestive problems.

Gastrointestinal conditions encompass various conditions – from functional issues like constipation and irritable bowel syndrome to structural problems such as peptic ulcers, reflux, colonic polyps, cancer and inflammatory bowel disease.[76,77] Many of these conditions necessitate expert intervention for proper diagnosis and treatment. In rural and remote areas of Australia, the ratio of available specialist doctors, including gastroenterologists, is 27 for every 100,000 people, which is significantly lower than the recommended standard of 100 per 100,000 individuals.[78]

In a study conducted over a four-year period from 2014 to 2018, it was found the RFDS conducted a total of 9,885 retrievals for gastrointestinal disorders, constituting 9.4% of the total retrievals over this period (N=105,147). There were 6,007 (≈1,201/year) aeromedical retrievals conducted specifically for gastrointestinal disease, representing 5.7% of the total retrievals, with many being high severity.[77]

Prevention of acute digestive disease and acute worsening of chronic gastrointestinal conditions is preferable to emergency presentation. Many of the areas serviced by the RFDS do not have regular access to a gastroenterology specialist or nurse support.[79] Many of the gastrointestinal conditions resulting in the need for RFDS aeromedical transfer are chronic conditions that intermittently worsen and then improve with the appropriate care. With inflammatory bowel disease, for example, good education and specialist intervention is essential in minimising flare-ups and progression of the disease.[80] The provision of good-quality care in chronic diseases requires a model that offers access to information and education, thereby enabling self-management and patient empowerment.[81-83]

Diseases of the respiratory system

Diseases of the respiratory system accounted for 6.8% of aeromedical retrievals in 2022–2023. Indigenous patients were significantly younger (median age of 38.0 years) than non-Indigenous patients (median age of 53.0 years) requiring retrieval, with proportionally more Indigenous patients aged 0–4 years retrieved for respiratory infections. This indicates further efforts are warranted to develop strategies to address the disparity and optimise the respiratory outreach services to this population.

In 2019, chronic respiratory disease, including chronic obstructive pulmonary disease, bronchiectasis, asthma and interstitial lung disease, was the third leading cause of death globally.[84] As mentioned, respiratory diseases are a significant concern in Australia, especially among the Indigenous population living in rural and remote areas.[85] Published data has demonstrated that in the Northern Territory, the prevalence of chronic obstructive pulmonary disease in Indigenous Australians is 30% among those aged over 50 years,[86] which is much higher than the overall estimated prevalence of 5.7% among all Australians in the same age group.[87] Furthermore, it has been found that Indigenous patients have significantly poorer outcomes, higher comorbidities, and different manifestations of bronchiectasis compared to non-Indigenous patients.[88]

The Prince Charles Hospital in Queensland has introduced the Indigenous Respiratory Outreach Care program. The program aims to implement, pilot and evaluate multidisciplinary specialist respiratory outreach medical teams in rural and remote Indigenous communities in Queensland.[89] The Indigenous Respiratory Outreach Care model has proven to be a culturally sensitive and sustainable approach to providing specialist respiratory services, especially in children with asthma and bronchiectasis.[90]

Respiratory diseases pose a challenge in rural and remote Australia, especially among Indigenous populations. Addressing the issue requires a multifaceted approach, including improving health literacy, understanding the unique manifestations of diseases like bronchiectasis in Indigenous populations, and introducing culturally sensitive healthcare models like Indigenous Respiratory Outreach Care. The RFDS is committed to continuing research and collaboration between communities and healthcare providers, aimed at improving respiratory health outcomes in rural and remote regions.

Chapter 4: Access to primary healthcare services in rural and remote Australia

4.1 What is primary health care?

Primary health care (also called primary care) is often the first contact a person has with the health system, outside of a hospital or specialist.[91,92] It includes diagnosis and treatment of health conditions and long-term care.[92] Primary health care 'is widely regarded as the most inclusive, equitable and cost-effective way to achieve universal health coverage.'[93] The WHO has identified three key components of primary health care:[93]

1. Integrated health services to meet people's health needs throughout their lives.
2. Addressing the broader determinants of health through multi-sectoral policy and action.
3. Empowering individuals, families and communities to take charge of their own health.

Common types of primary health care include general practice; ACCHOs; community health centres and walk-in clinics; community pharmacies; community nursing services; oral health and dental services; mental health services; drug and alcohol treatment services; sexual and reproductive health services; maternal and child health services; and allied health services, such as psychologists, physiotherapists, occupational therapists and chiropractors.[92]

There are multiple modes of delivery for primary healthcare services. Services can be delivered through planned, permanent, or mobile drive-in drive-out and fly-in fly-out services, and via Telehealth.

This chapter presents RFDS and national data on the following primary healthcare services: GP, nursing, mental health (including alcohol and other drugs), oral health and Indigenous health services.

According to the WHO, 90% of essential interventions for universal health coverage can be delivered through primary health care.[93]

Primary health care focuses on the comprehensive and interrelated aspects of physical, mental and social health and wellbeing, and provides the most inclusive, equitable, cost-effective and efficient approach to enhance physical, mental and social health and wellbeing.[93] Primary health care provides whole-person care to meet the health needs of an individual throughout their life, not just for a set of specific diseases.[93] Primary health care ensures people receive quality comprehensive care – ranging from health education and promotion and prevention, to treatment, rehabilitation and palliative care – as close as is feasible to their everyday environment.[93]

4.2 Reasonable access to primary health care for rural and remote Australians

The 2018 report by the WHO and the United Nations Children's Fund (UNICEF) identified that primary health care 'is rooted in a commitment to social justice, equity and participation. It is based on the recognition that the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction.'[94] Furthermore, the 2018 report stated that governments are responsible for 'making quality essential health services available and accessible and for implementing policies that promote and protect health and wellbeing.'[94]

Similarly, *Australia's Primary Health Care 10 Year Plan 2022–2032*[12] (the Plan) specifies a 'need for equitable access to health care' and that effective primary health care 'can improve health outcomes at a lower cost than hospital and secondary care and helps to avoid unnecessary hospitalisations. Countries with strong primary health care systems have better health outcomes.'[12] For example, effective primary health care could reduce the need for emergency aeromedical retrievals, such as those provided by the RFDS, resulting in long-term reduced costs for governments.

The Plan identified that people living in rural and remote areas, and Indigenous Australians (who represent a disproportionately large segment of rural and remote populations), have less equitable access to healthcare services and poorer health outcomes than people living in major cities.[12] Additionally, Indigenous Australians have less access to culturally appropriate and safe primary health care.[12]

There are many requirements if those living in rural and remote Australia are to have access to appropriate and effective healthcare services. The very first requirement is ensuring those services are actually available. The Evidence base for additional investment in rural health in Australia report released by the National Rural health Alliance (NRHA) in June 2023 shows a lack of funding is limiting service availability, and identified a gap of $6.55 billion in funding health expenditure between major city residents and rural and remote Australians in 2020–2021.[3] This translated to a funding shortfall of $848.02 per person in rural and remote Australia.[3]

As one measure to inform improved planning, the Australian Institute of Health and Welfare (AIHW) proposed that to ensure reasonable access to primary health care, people should have access to, at a minimum, a GP, nursing, oral health, mental health, and Indigenous health services within a 60-minute drive of where they live.[83,95] The RFDS is able to map where this is not the case.

Travel time to healthcare services is not the only barrier to access. There are many other barriers, all of which must be addressed in **work by the rural health sector, funders and policymakers alike, to develop and agree to a more comprehensive definition of reasonable access.** This needs to take into account affordability, cultural safety, availability, and frequency or mode of delivery, as well as the health literacy of service users.[28,96] Further, it does not account for a patient's ability to access transport, for example, a private motor vehicle or public transport, or the costs of doing so. In many rural and remote areas, difficult terrain, weather conditions or the poor condition of roads can make even a 60-minute drive a significant undertaking.[28]

Prevention, early detection and effective management of people with illnesses and injuries can only be achieved by ensuring appropriate access to health services for people in rural and remote Australia.[28]

4.3 Determining primary healthcare access – the Royal Flying Doctor Service, Service Planning and Operational Tool

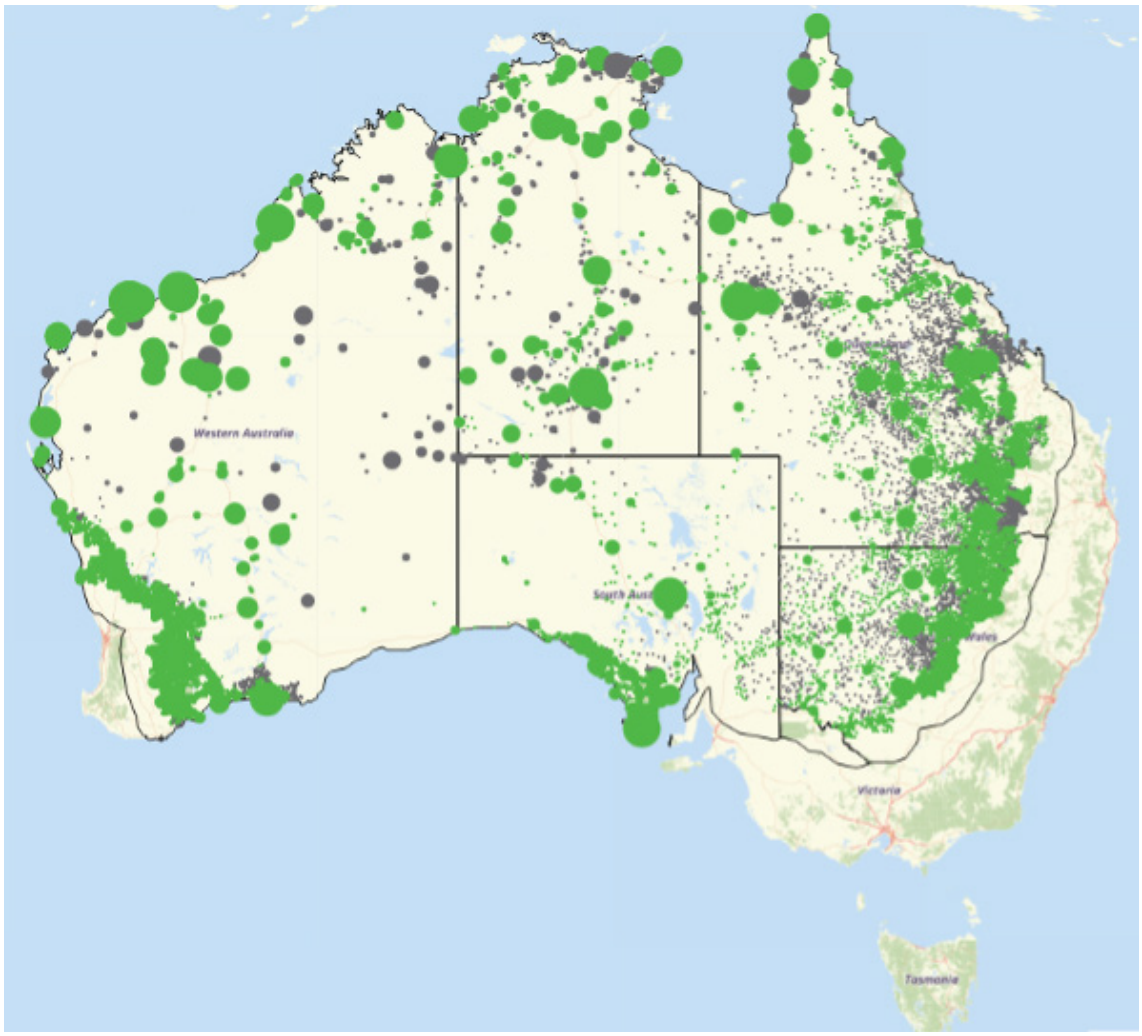
Through the RFDS Service Planning and Operational Tool (SPOT), which maps service data and overlays them with population data, the RFDS has been able to identify where people in remote and very remote Australia do not have access to primary healthcare services within a 60-minute drive of where they live.

The methodology for SPOT was previously described in the *Best for the Bush Rural and Remote Health Baseline 2022* report.[28]

Figure 4.1 shows the locations of current primary healthcare service providers in remote and very remote Australia (non-RFDS and RFDS), and ABS population concentrations, as derived from SPOT. The grey dots indicate population concentrations without reasonable access to primary healthcare services; the green dots indicate those that do. (Please see notes accompanying Figure 4.1.)

While most of Victoria and all of Tasmania were excluded from the current analysis, as the majority of their populations can access primary healthcare services within a 60-minute drive of where they live, it is recognised a range of other factors might impact that access, such as difficult terrain for driving (e.g. Tasmania's west coast) and challenges accessing transportation, and therefore, applying the simple 60-minute drive-time proxy does not necessarily reflect reasonable access in these areas.

Figure 4.1 Primary healthcare service providers in rural and remote Australia by ABS population concentration and remoteness areas November 2023



Notes: Grey dots indicate all population concentrations without reasonable access to primary healthcare services, with larger dots equalling more people (maximum 3,000).
Green dots indicate population concentrations with reasonable access to primary healthcare services, with larger dots equalling more people (maximum 3,000).

4.3.1 Access to primary healthcare services

In November 2023, SPOT demonstrated that:

- **392,985 people in rural and remote Australia had access to a non-RFDS primary healthcare service within a 60-minute drive of where they live.**
- **176,333 people in rural and remote Australia had access to an RFDS primary healthcare service within a 60-minute drive of where they live.**

4.3.2 Lack of access to primary healthcare services

SPOT was used to determine the number of people who had no regular access to any type of primary healthcare service (RFDS or non-RFDS) within a 60-minute drive of where they live.

According to SPOT, 18,405 people in remote and very remote Australia did not have any access to a primary healthcare service within a 60-minute drive as at November, 2023. Queensland (N=6,153), Western Australia (N=6,151) and the Northern Territory (N=4,467) had a greater proportion of people with no access to primary health care, relative to their total population, when compared with New South Wales (N=1,109) and South Australia (N=525). Specifically, the rural and remote regions of Daly - Tiwi - West Arnhem (1,639 people without access) in the Northern Territory, Goldfields (1,598 people without access) in Western Australia, and Bowen Basin (1,582 people without access) in Queensland, had the highest number of people without any access to primary healthcare services.

The number and proportion of people without access to specific primary healthcare services within a 60-minute drive of where they live, is broken down by state and territory and presented in Table 4.1.

Table 4.1 Number and proportion of remote and very remote population (RA4 and RA5) with no access to the following primary healthcare services within 60-minute drive, by state and territory 2023

	No access within 60-minute drive to the following services (Number (N) and %)				
State or territory	GP	Nursing	Dental	Mental health	Aboriginal health
New South Wales	N=1,256 (3.8%)	N=4,192 (1.8%)	N=15,627 (13.6%)	N=17,561 (17.2%)	N=6,323 (5.8%)*
Victoria	N=366 (1.1%)	N=18,098 (7.7%)	N= 6,018 (5.3%)	N=191 (0.2%)	N/A
Tasmania	N=380 (1.1%)	N=25,727 (11.0%)	N= 2,221 (1.9%)	N=318 (0.3%)	N/A
Western Australia	N=10,933 (32.8%)	N=70,290 (30.0%)	N=41,776 (36.5%)	N=46,710 (45.8%)	N=53,944 (49.2%)*
South Australia	N=1,811 (5.4 %)	N=36,139 (15.4%)	N=10,355 (9.0%)	N=3,915 (3.8%)	N=15,018 (13.7%)*
Northern Territory	N= 8,750 (26.2%)	N=38,528 (16.5%)	N= 7,614 (6.6%)	N=17,542 (17.2%)	N= 8,445 (7.7%)*
Queensland	N=9,862 (29.6%)	N=41,180 (17.6%)	N=30,964 (27.0%)	N=15,716 (15.4%)	N=25,976 (23.7%)*
Australia	N=33,359	N=234,165	N=114,566	N=101,963	N= 109,706*

Note: * Indigenous Australians only.

While overall this year 5% more people in remote and very remote areas had access to some type of primary healthcare service (RFDS and non-RFDS services combined) within a 60-minute drive compared to 2022, significant gaps remain across key clinical types as follows:

- 234,165 people did not have access to nurse-led services, with the highest numbers of people without access being in the regions of Eyre Peninsula and South West, South Australia (33,272 people without access); East Pilbara, Western Australia (23,714 people without access); and Katherine, Northern Territory (20,392 people without access).
- 114,566 people did not have access to general dental services, with the highest numbers of people without access in the regions of Kimberley, Western Australia (9,545 people without access); West Pilbara, Western Australia (7,739 people without access); and Darling Downs, Queensland (7,122 people without access).
- 101,963 people did not have access to general mental health services, with the highest numbers of people without access in the regions of Bourke – Cobar - Coonamble, New South Wales (9,782 people without access); Mid West, Western Australia (7,910 people without access); and West Pilbara, Western Australia (7,739 people without access).
- 32,359 people did not have access to GP services, with the highest numbers of people without access in the regions of Kimberley, Western Australia (4,037 people without access); Alice Springs, Northern Territory (2,889 people without access); and Far North Queensland (2,229 people without access).
- 109,706 Indigenous Australians, or 11.2% of the total Indigenous population, did not have access to an Aboriginal health service.

4.3.3 Summary

A combination of increased services and better reporting about the existence of services to healthdirect Australia (hereafter referred to as healthdirect) is likely to account for the report finding that accessibility to services increased in 2023, compared to 2022. However, the SPOT analysis in 2023 has highlighted significant disparities in primary healthcare access for various clinical types across rural and remote Australia. While 392,985 individuals have access to non-RFDS primary healthcare services and 176,333 to RFDS services within a 60-minute drive, there remain a concerning number of people without adequate access:

- 234,165 do not have access to a nurse; 114,566 do not have access to dental services
- 101,963 do not have access to general mental health services
- 32,359 do not have access to a GP
- 109,706 Indigenous Australians do not have access to an Aboriginal health service.

These figures underscore the urgent need for strategic improvements in healthcare provision and infrastructure to ensure equitable healthcare access for all Australians, regardless of their geographic location.

4.3.4 Limitations of the Service Planning and Operational Tool

SPOT used service registration data for non-RFDS primary healthcare services from a single source – healthdirect.[83] Registration with healthdirect is voluntary and is initiated by individual health services.[83] While healthdirect is believed to be the most robust database of healthcare services at the time of publication, some services may not have been registered at this time and therefore not included in the data available at healthdirect.[83]

Healthdirect data do not include the clinical capacity of the primary healthcare provider to see patients, frequency of service provision, or frequency of use by rural and remote Australians.[83]

Furthermore, SPOT did not differentiate whether an RFDS clinic was permanent, fly-in fly-out or drive-in drive-out, or the distribution of the workforce within the rural and remote geographic regions studied.[83]

4.4 Needs assessment

The RFDS recently completed a needs assessment (unpublished) for the regions where it provides Commonwealth-funded services in rural and remote Australia as part of its Commonwealth funding agreement. The needs assessment was developed to inform strategic and service planning and priority setting, by undertaking a detailed and systematic assessment of the health and service needs across areas serviced by the RFDS, and engaging in stakeholder and community consultations. In particular, the needs assessment considered the primary healthcare needs of rural and remote communities.

The processes supporting the needs assessment included:

- Desktop review of published literature and research relevant to the assessment of health needs and health services in the service locations.
- Acquisition and analysis of relevant population and service data to identify and present data on the social determinants of health, health needs, health service use and market analysis.
- Broad consumer and stakeholder engagement, including with primary healthcare consumers, co-located services, relevant state government Local Health Networks, Primary Health Networks (PHNs), ACCHOs, Aboriginal Medical Services and many others.

The needs assessment reviewed the literature, analysed recent data and consulted directly with communities, including 33 ACCHOs and 11 PHNs. It has further documented the devastating consequences of the very substantial underservicing that is characteristic of rural and remote communities, along with opportunities to act.

The needs assessment demonstrated that the health and service needs and preferences of communities varied across rural and remote Australia, and even by location within the states and territories. The locations where critical service gaps occur were identified in the needs assessment, and were supported by data derived from the SPOT.

The most significant primary health and service needs were identified for each state and territory and are presented in Table 4.2. It should be noted Tasmania and Victoria only considered health needs related to mental health and oral health, as these are the services funded by the Commonwealth in both states.

Table 4.2 Primary health and service needs for communities served by the RFDS by state and territory 2023

Health needs	Service needs
South Australia & Northern Territory	
Chronic disease incidence is extremely high and has an impact on life expectancy in the service areas.	Access to primary healthcare services for rural and remote Territorians living in Barkly and Central Australia is extremely poor, with myriad barriers and few enablers. (Note: Other parts of the Northern Territory excluded based on scope).
Poorer oral health is evident in remote communities, which increases the risk for other diseases, such as diabetes, cardiovascular disease and chronic kidney disease, all of which have high rates of incidence in these regions.	Current access to oral health services is extremely limited or absent among both Indigenous Australians and non-Indigenous Australians, while consumer demand is high.
The service location represents an older cohort. In regions with high numbers of older people, there is high demand for age-related services and allied health supports, including diagnoses of age-related diseases and chronic disease management.	Infants and toddlers are often not receiving recommended developmental checks due to lack of access to appropriate services. Lack of paediatric services mean disabilities and developmental issues are often not identified until the child is well beyond the benefits of early intervention services.
There is demand and need for specialist allied health services, such as optometrists, podiatrists, physiotherapy and other allied health services.	Access to Medical Chests, automated external defibrillators and associated training and support systems are highly valued. Northern Territory consumer respondents reported widespread issues and dissatisfaction with current Medical Chest arrangements and expressed a desire for the RFDS to provide an equivalent Medical Chest service in the Northern Territory.
Clinicians currently collect a limited amount of data relating to alcohol consumption and other drug usage, smoking, and physical activity. Simultaneously, consumers are under-reporting their health status in these domains. The impact on consumer health is apparent from the literature and anecdotal evidence from clinicians but is poorly substantiated by the data.	There are few chronic disease related services to support patients. Services should include appropriate screening, health promotion and education activities, or early intervention.
	Consumers in areas with seasonal population variations (i.e. pastoralists with seasonal workers and towns with high numbers of grey nomads, tourists) report a high need for advanced first aid, first responder training, and mental health first aid.
	There are very limited mainstream aged-care supports or services in the remote and regional communities.
	Health screenings are difficult to access, especially for cancers and skin-related diseases and eye health, for chronic disease management and early childhood interventions.
	Seasonal population variations and increased episodic and/or emergency care demands on local remote area clinics and aeromedical retrievals need resourcing and planning.
	Rural and remote consumers often face barriers to continuity of care between RFDS and other public and private healthcare services in population centres. There are opportunities for the RFDS to play a more intentional role in coordinating services, referrals and patient record sharing for remote consumers.
	Metropolitan populations have access to, and high usage rates of, allied health services. Remote consumers are dependent on the RFDS or other service providers (including private practitioners) to bring these services directly to the community.
	Access to primary healthcare services for rural and remote Territorians living in Barkly and Central Australia is extremely poor, with myriad barriers and few enablers. (Note: Other parts of the Territory excluded based on scope).

Health needs	Service needs
Western Australia	
Oral health.	Improved access to mental health and suicide prevention activities.
Risk factors for high blood pressure and obesity.	Population health and chronic conditions – need additional primary healthcare services to promote healthy weight and healthy lifestyle changes.
Chronic disease management (e.g. diabetes).	Population health and chronic conditions – need additional primary healthcare services to improve the self-management of cardiovascular disease.
Alcohol and other drugs.	Improved access to alcohol and other drug screening and treatment programs.
All cancers/cancer screening.	Indigenous health – appropriate care, including cultural safety.
Mental health and suicide.	Aged care – early intervention and prevention to promote healthy ageing at home.
Telehealth.	Telehealth – increased access to Telehealth to supplement face-to-face services.
New South Wales	
Poor access to dental health programs.	Expanded dental health-promotion programs.
Poor oral health literacy – nursing caries.	Improved access to dental services to reduce high tooth decay rate; pain.
Poor oral health – tooth decay.	Lack of access to early intervention services for mental health (psychological distress, grief/loss, post critical incident).
Diabetes, cardiovascular disease, obesity, asthma and chronic obstructive pulmonary disease.	No other service providers.
Chronic disease, heart disease, stroke, diabetes.	
Immunisation programs: Seasonal and childhood immunisations.	
Maternal and child health.	
Early access to pharmaceutical and medical supplies.	
Mental illness, AOD addiction, suicidality.	
Prevention and early intervention (psychological distress, grief/loss, post critical incident).	
Access, technology, facilities, cost of travel.	
Child and family mental health/wellbeing.	
Older persons' mental health/wellbeing.	
Indigenous wellbeing (culturally informed and safe).	
Data deficiencies.	

Health needs	Service needs
Queensland	
Chronic diseases.	Access to medication and pharmaceuticals.
Infectious diseases.	GPs.
Indigenous health.	Nurse and nurse practitioners.
Cancer.	Allied health.
Lifestyle factors.	Mental health.
Antenatal and maternal health.	Chronic disease specialist care.
Children's health.	Indigenous health.
Mental health.	Dental.
Dental.	Telehealth.
Aged care and disability.	
Alcohol and other drugs.	
Rates of injury.	
Victoria	
Prevalence of oral health disease.	Access to public oral health services in the community.
Mental ill health for children living in East Gippsland.	Access to psychological services close to home.
Higher prevalence of mental ill health and higher than average rates of suicide across youth and adult communities in the three rural Victorian PHN catchments (Murray, Western Victoria and Gippsland).	Access to free, uncapped mental health services.
	Continuity of mental health service providers.
	No access to child mental health services in Far East Gippsland if RFDS withdraws its service.
Tasmania	
Alcohol and other drugs usage.	Improved access to integrated alcohol and other drugs services.
Mental health needs in young people (8–16 years).	Increasing demand for mental health services (mild to moderate) for young people (8–16 years).
Mental health needs in young people (0–14 years).	Lack of continuity of care and inability to provide step up/down care through referrals in mental health services (high to complex) for young people (0–14 years).
Mental health burden in older people (55+) living in aged care.	Increased access to in-reach services for mental health care into residential aged-care facilities.
Dental health.	Address decline in continuity of care in primary care services in rural and remote communities.
Chronic disease.	Increased access to affordable and available dental health services in rural and remote communities.
Indigenous Australians general health and wellbeing.	Retention and workforce distribution.

4.4.1 Health needs

The prevalence rates for many of the conditions outlined in Table 4.2 are frequently higher than expected for the size of the population, relative to the Australian average, particularly among younger people. This indicates the RFDS has a patient cohort with a complex disease profile, requiring more specialised care and unique service planning considerations.

Considering high-needs populations, there are clearly documented health issues and challenges for Indigenous persons. Closing the Gap in health outcomes continues to be a significant challenge and needs to remain of the highest priority. These issues are summarised as chronic disease management, screening, prevention and early identification of disease, social and emotional wellbeing (mental health) including alcohol and other drug services, and dental services. These issues and challenges need continued attention.

4.4.2 Service needs

The needs assessment documented the very substantial underservicing that is characteristic of rural and remote communities. Across all of rural and remote Australia, gaps in services were identified. A lack of services has a negative impact on those living in communities where services are not provided.

The RFDS provides a range of services to people in these locations. For many communities, consumers identified the RFDS as their principal healthcare provider, although travel to capital cities, regional centres and nearby towns for services was also common.

The rural and remote health service delivery environment is extremely complex and presents consumers with many barriers to accessing quality and timely health care. One consumer surveyed by RFDS South Australia and the Northern Territory captured the views of many stakeholders when they said, 'Access to services is so difficult that we just don't use the service and we desperately need to.' Another stated, with agreement from others that '… we struggle to get primary health care and that's something I find really inequitable.'

4.4.3 Summary

Because health and service needs are dynamic, the present analysis only provides a snapshot of the current situation in rural and remote Australia where the RFDS delivers services. For many of these populations, the RFDS is the primary provider.

Over time, the health landscape can shift due to changes in a population's demographics, environmental factors, or the emergence of new health challenges, as demonstrated throughout the COVID-19 pandemic. Each of these variables plays an integral role in how the population is shaped and the challenges individuals will face in terms of their wellbeing and quality of life. To overcome this limitation, health needs assessments are required periodically as these provide crucial information in tracking trends, adapting current strategies, and ensuring the continued relevance of service providers in rural and remote Australia.

The current needs assessment highlighted the significant health issues and the impact of limited access to primary healthcare services for those living in rural and remote Australia.

The RFDS believes there is a tremendous opportunity to achieve better health outcomes by making basic services more readily available. The needs assessment identified the locations where health needs are greatest, along with the main health needs of communities in rural and remote Australia. **With political will and additional funding, the RFDS could support improved access to services via the delivery of additional place-based, culturally appropriate services to meet the complex needs of people in these areas.**

The RFDS acknowledges that Indigenous services are usually best provided through ACCHOs and Aboriginal Medical Services. The RFDS provides supplementary services to those 'on Country', to offer choice and support ACCHOs and Aboriginal Medical Services. In areas where there are no Indigenous health services, the RFDS consults with local communities to deliver culturally appropriate, place-based services to meet the health needs of local Indigenous communities.

4.5 Service use

Poorer access to primary healthcare services in rural and remote Australia is also demonstrated by reviewing Medicare claims data and other administrative datasets.

Medicare is Australia's universal health insurance scheme.[97] It was developed to ensure all Australians have equitable access to health care when they need it, regardless of where they live or their ability to pay.[97]

Medicare claims data (Table 4.3) from 2022–2023 revealed that total out-of-hospital services per person were 45% lower in very remote communities (9.1 per person) and 31% lower in remote communities (11.3 per person) than in metropolitan areas (16.6 per person).[1] This means people living in very remote communities used services covered by Medicare at just over half the rate (55%) of people living in metropolitan areas, while people in remote communities used services covered by Medicare at just over two-thirds of the rate. Similar proportions were observed in the previous year, although the absolute number of attendances was higher in 2021–2022.

Table 4.3 Total out-of-hospital services covered by Medicare, by MM category, 2022–2023 and 2021–2022

	2022–2023		2021–2022		
MM category	Total number of services*	Number of services per person	Total number of services*	Number of services per person	2021–2022 Population estimates^
Metropolitan areas (MM1)	303,196,884	16.6	348,678,864	19.1	18,289,295
Regional centres (MM2)	36,827,914	15.7	39,084,300	16.6	2,351,183
Large rural towns (MM3)	26,621,592	16.3	29,469,220	18.1	1,629,375
Medium rural towns (MM4)	16,522,637	16.7	17,983,955	18.2	989,211
Small rural towns (MM5)	28,086,758	15.8	30,544,131	17.2	1,776,178
Remote communities (MM6)	3,257,319	11.3	3,438,357	12.0	287,069
Very remote communities (MM7)	1,888,642	9.1	1,863,313	9.0	207,086
Total					**25,529,397**

Source: Adapted from AIHW (2023)[1] and Australian Government Department of Health and Aged Care (2023).[98]

Notes: *Excludes missing or unknown data.
^Population estimates for MM categories were extrapolated from 2021–2022 MM Medicare data presented by the AIHW (2023).[1] These population estimates were then used to determine 2022–2023 numbers of GP non-referred attendances per person.[1]

Medicare claims data (Table 4.4) from 2022–2023 revealed out-of-hospital, non-referred attendances per person, such as GP visits, were 50% lower in very remote communities (3.4 per person) and 33% lower in remote communities (4.3 per person) than in metropolitan areas (6.7 per person).[1] This means people living in very remote communities saw a GP who accesses Medicare funding at half the rate of people living in metropolitan areas, while people in remote communities saw a GP at two-thirds of the rate. Similar proportions were observed in the previous year, although the absolute number of attendances was higher in 2021–2022.

Table 4.4 Total out-of-hospital, GP non-referred attendances covered by Medicare, by MM category, 2022–2023 and 2021–2022

	2022–2023		2021–2022		
MM category	Total number of GP non-referred attendances*	Number of GP non-referred attendances per person	Total number of GP non-referred attendances*	Number of GP non-referred attendances per person	2021–2022 Population estimates^
Metropolitan areas (MM1)	122,129,207	6.7	138,998,640	7.6	18,289,295
Regional centres (MM2)	14,542,392	6.2	15,988,045	6.8	2,351,183
Large rural towns (MM3)	10,412,207	6.4	11,731,502	7.2	1,629,375
Medium rural towns (MM4)	6,435,001	6.5	7,320,165	7.4	989,211
Small rural towns (MM5)	11,126,718	6.3	12,788,484	7.2	1,776,178
Remote communities (MM6)	1,239,176	4.3	1,435,343	5.0	287,069
Very remote communities (MM7)	706,473	3.4	745,511	3.6	207,086
Total	25,529,397				**25,529,397**

Source: Adapted from AIHW (2023)[1] and Australian Government Department of Health and Aged Care (2023).[98]

Notes: *Excludes missing or unknown data.
^Population estimates for MM categories were extrapolated from 2021–2022 MM Medicare data presented by the AIHW (2023).[1] These population estimates were then used to determine 2022–2023 numbers of GP non-referred attendances per person.[1]

The data also demonstrated that the number of out-of-hospital, non-referred attendances per person, such as GP visits, was 11.9% lower in 2022–2023 (N=166,613,362) than in 2021–2022 (189,011,692) when all remoteness areas (combined) were considered.

A similar pattern is also seen for national Medicare claims data, which demonstrated a 10% reduction in the number of out-of-hospital services covered by Medicare (all service types and remoteness areas combined) in 2022–23 (N=454,387,990) compared to 2021–22 (N=506,838,923), for all out-of-hospital services.[98]

Further analysis of Medicare data demonstrated that total Medicare usage for all out-of-hospital services (combined), and GP services (separately), increased each year from 2009–2010 to 2021–2022. For the first time in more than 10 years, total Medicare usage for all out-of-hospital services (combined), and GP services (separately) decreased in 2022–2023.

Although reasons for this are unclear, an ABS patient experience survey conducted in 2021–2022, identified several barriers to health service use.[99] Barriers to service usage for people aged 15 years or older included:

- delayed or did not use health services when needed.[99]
- delayed or did not use health services when needed – due to cost.[99]
- delayed or did not use health services when needed – reasons other than cost (e.g. 'service not available when required', 'too busy' or 'waiting time too long').[99]

Specifically, in 2021–2022:

- 28.3% of all respondents delayed or did not see a GP when needed.[99]
- People living in outer regional, remote or very remote areas (30.2%) were more likely to delay or not see a GP compared to those living in major cities (27.9%).[99]
- 3.5% of all respondents delayed or did not see a GP due to cost.[99]
- People living in outer regional, remote or very remote areas (5.0%) were more likely to delay or not see a GP due to cost compared to those living in major cities (3.1%).[99]
- 24.8% of all respondents delayed or did not see a GP for reasons other than cost.[99]
- People with a long-term health condition (31.7%) were more likely to delay or see a GP when needed than those without a long-term health condition (23.2%).[99]

4.5.1 Service usage challenges in rural and remote Australia

Although Medicare was designed to ensure all Australians have equitable access to health care,[97] this is not always the case for rural and remote Australians.

Medicare is not a viable model in some areas of rural and remote Australia, owing to thin markets and/or market failure. Small populations spread across vast areas in parts of rural and remote Australia mean some regions may be unable to provide the economies of scale required for clinicians to provide services funded only through Medicare. In the rural and remote context, it may not be possible for everyone to have access to a full range of permanent local services. In these instances, fly-in fly-out services, drive-in drive-out services, zoom-in zoom-out services such as those provided by the RFDS, are vital to support the government to meet its universal service obligation to provide equitable access to health care.

4.6 Workforce distribution

The distribution of the health workforce across Australia also has an impact on accessibility to services.

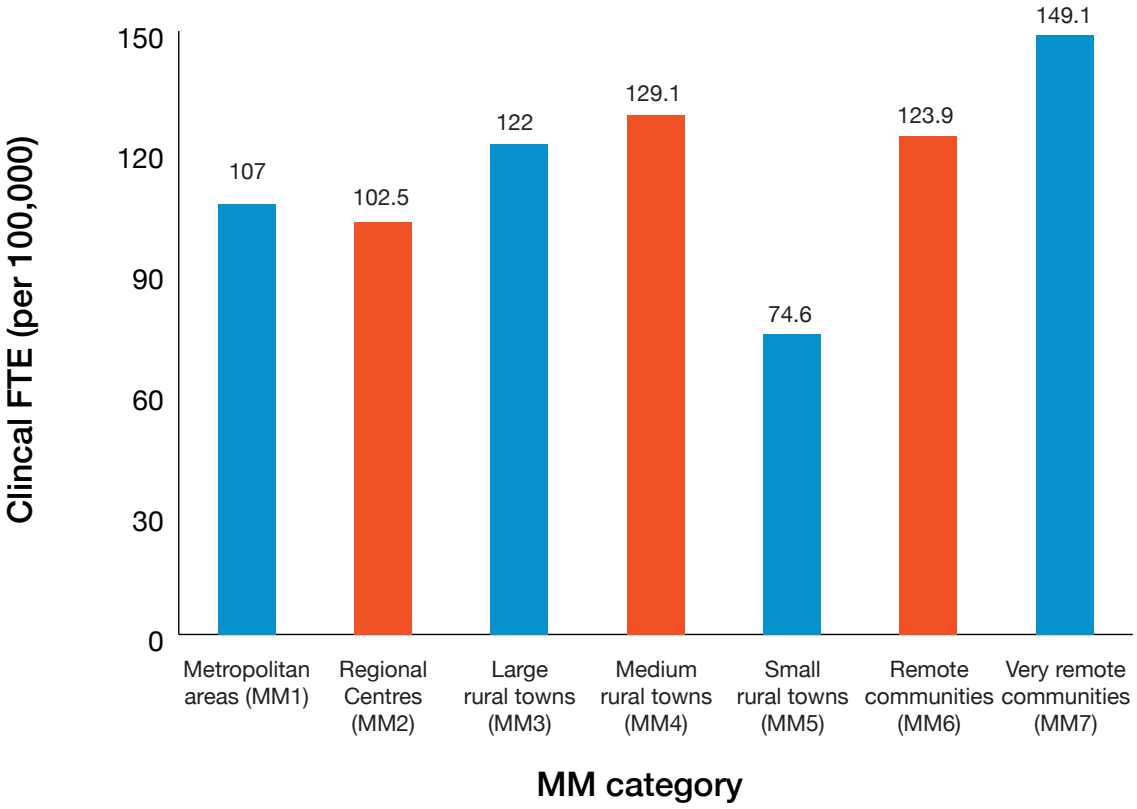
The clinical full-time equivalent rate (FTE) is described for a range of primary healthcare professionals, including GPs, nurses and midwives, dentists and psychologists, according to MM category in 2021.

The data demonstrates that the FTE rate for GPs and nurses was higher in very remote and remote communities compared to metropolitan areas in 2021. Conversely, the FTE rate for dentists and psychologists was higher in metropolitan areas than in very remote and remote communities.

4.6.1 General practitioners

Figure 4.2 presents data demonstrating the clinical FTE rate for GPs by MM category in 2021.

Figure 4.2. Clinical FTE rate for GPs by MM category, 2021



Source: Adapted from AIHW (2023).[1]

The data demonstrate there were more FTE GPs per head of population in very remote (MM7) and remote (MM6) areas in 2021, when compared to metropolitan areas (MM1). However, this result should be interpreted with caution[1,100] because work arrangements in these areas can be more complicated.[1] In the first instance, given the measure is per head of population and populations may be spread across vast distances in rural and remote areas, services may therefore not be within a reasonable distance. Additionally, 'there may be poor differentiation between general practice for on-call hours, activity for procedures, and hospital work for GPs working in rural and remote areas, which affects the accuracy of statistics on GP supply and distribution. '[1,100]

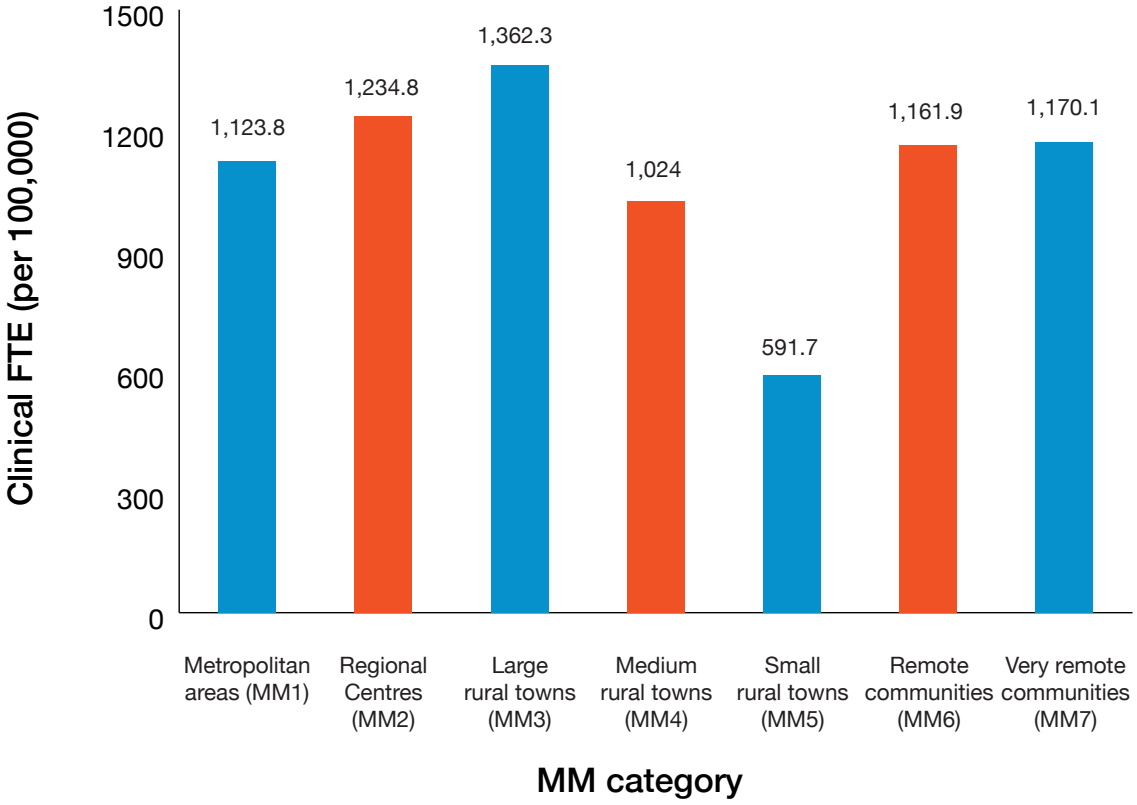
Furthermore, the health workforce is not spread evenly across remote and very remote Australia. Some locations are able to attract health professionals while other areas cannot. Where the health need is greatest, there is the lowest supply of health professionals despite the increased complexity and acuity of the health needs of people living in these areas.[101]

4.6.2 Nurses and midwives

Nurses and midwives constitute the largest group of health providers in rural and remote Australia.

The number of nurses and midwives throughout Australia is relatively similar across MM categories (Figure 4.3). There were slightly more nurses and midwives per 100,000 population in very remote (1,170.1 per 100,000 population) and remote communities (1,161.9 per 100,000 population) compared to metropolitan areas (1,123.8 per 100,000 population).

Figure 4.3 Clinical FTE rate (per 100,000 population) for nurses and midwives by MM category 2021

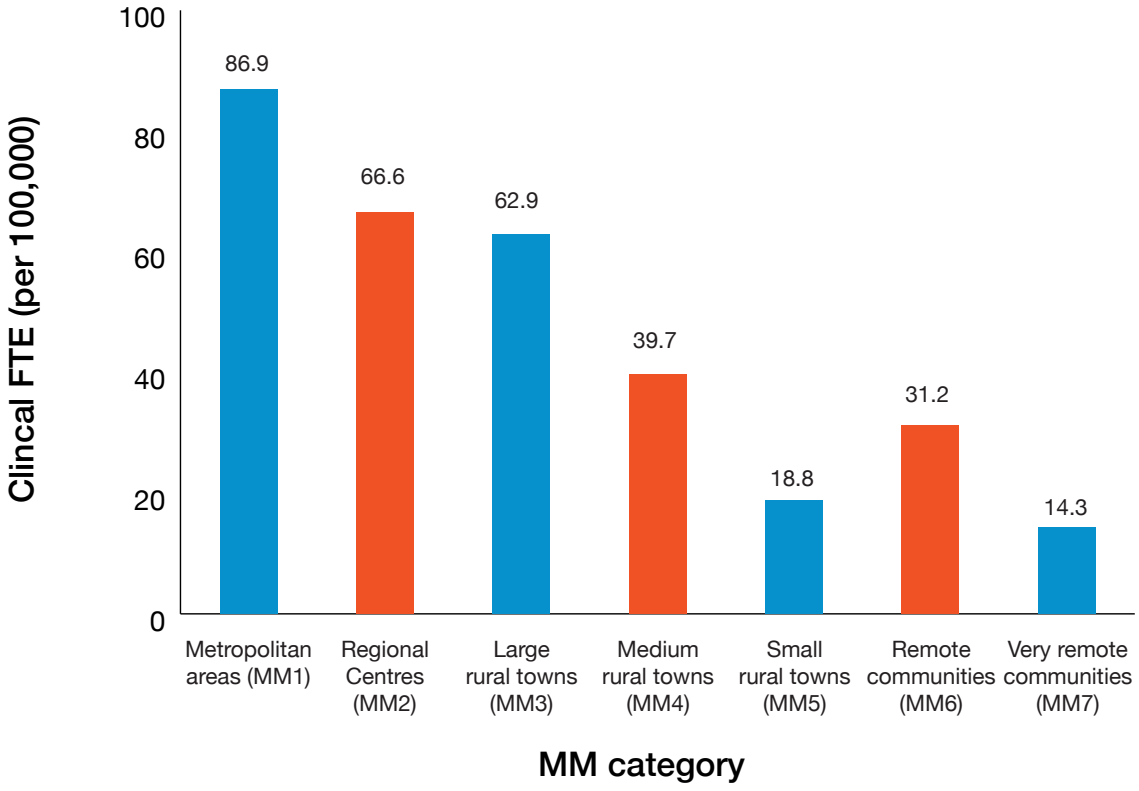


Source: Adapted from AIHW (2023).[1]

4.6.3 Psychologists

There were significantly fewer psychologists in remote and very remote communities compared to metropolitan areas, in 2021 (Figure 4.4). There were 6.1 times more psychologists per 100,000 population in metropolitan areas (86.9 per 100,000 population) than in very remote communities (14.3 per 100,000 population) in 2021, and 2.6 times more in metropolitan areas than in remote communities (31.2 per 100,000 population).

Figure 4.4 Clinical FTE rate (per 100,000 population) for psychologists by MM category, 2021

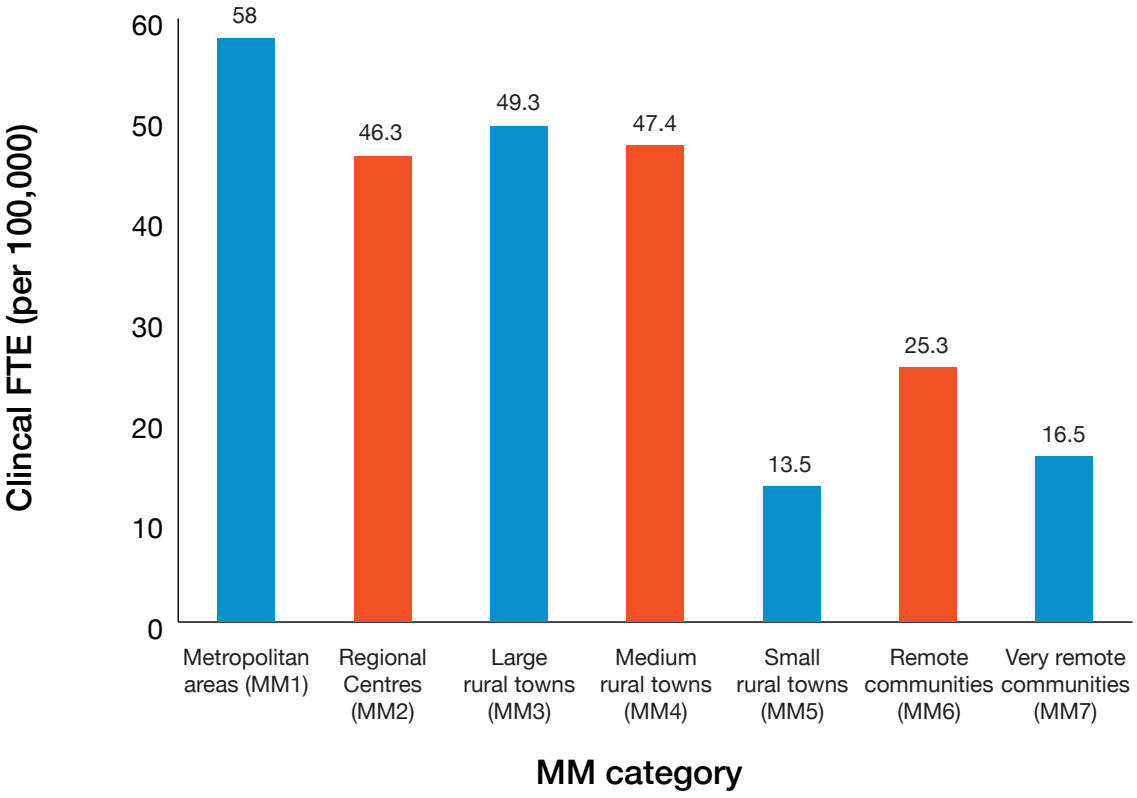


Source: Adapted from AIHW (2023).[1]

4.6.4 Dentists

There were fewer dentists in very remote and remote communities compared to major cities, in 2021 (Figure 4.5). There were 3.5 times more dentists per 100,000 population in metropolitan areas (58.0 per 100,000 population) than in very remote communities (16.5 per 100,000 population) and 2.3 times more in metropolitan areas than in remote communities (25.3 per 100,000 population).

Figure 4.5 Clinical FTE rate (per 100,000 population) for dentists by MM category, 2021



Source: Adapted from AIHW (2023)[1]

4.6.5 Other workforce considerations

Scope of practice

As part of the *Strengthening Medicare Taskforce Report*[11] (the Taskforce), the Australian Government commenced a Scope of Practice Review in 2023. The Taskforce is seeking to strengthen primary health care by empowering coordinated teams of multidisciplinary healthcare professionals to work together to their full scope of practice, to optimise use of the health workforce across the primary healthcare sector, and improve access and equity of outcomes for rural and remote Australia.[102] Working to 'full scope' means working to the full extent of the profession's recognised skill base and/or regulatory guidelines.[103] The Scope of Practice Review includes reviewing the barriers and incentives for all health professionals to be able to work to their full scope of practice.[102]

The RFDS recognises the importance of healthcare providers being able to work to their full scope of practice, particularly in rural and remote areas, where there are a wide range of workforce limitations and shortages. We note three clinical groups that at this current time would particularly benefit from further effort to support them working to their full scopes of practice: nurse practitioners, paramedics, and social workers.

Nurse practitioners are registered nurses who have completed additional study to a Master's degree level.[104] Nurse practitioners assess and manage clients using nursing knowledge and skills and have an advanced scope of practice that includes, but is not limited to, the direct referral of patients to other healthcare professionals, prescribing medications and ordering diagnostic investigations.[104]

Nurse practitioners play an important role in the provision of health care in rural and remote communities..[104] Australia's 2023 Nurse Practitioner Workforce Plan has been developed to 'provide a clear vision on how to better facilitate nurse practitioners to deliver health care, and to address barriers that have prevented them from being used to their full potential.'[105]

For paramedics, further work is required to identify relevant roles and opportunities to determine how this skill set can be used beyond ambulance services. This includes in aeromedical retrievals as well as community paramedicine. Additionally, a dual-registered nurse/paramedic role is emerging and appears to be well suited for remote Australia.

The increasing prevalence and awareness of mental health disorders throughout Australia creates an opportunity to more fully explore an expanded role for social workers, which should be supported by policy and funding arrangements.

The RFDS also notes the current lack of pathways for career progression for Aboriginal liaison officers and Aboriginal health workers, and limited career progression opportunities for primary healthcare nurses.

Noting the significant distances that must be travelled from rural and remote areas to use additional healthcare services, it is both necessary and efficient for healthcare providers to have the broadest skill set and be providing the most extensive range of services possible. This must, however, be supported by adequate clinical supervision and backup, training, assurance of competencies and other necessary supports, including administrative. We must train rural practitioners to have an extensive range of relevant skills in order to best support their community, and recognise this expertise. Recognition and credentialling of generalists would further support the rural health workforce.

In the rural and remote practice it can often be especially challenging to ensure the necessary exposure to the right type of work and professional development to ensure competencies and credentialling. While increased support has seen education providers enabling rural placements and students to study closer to home, there are differing levels of support for the employers who must provide appropriate supervision, mentoring and support during a placement. Further, there remains metro-centric and metro-focused experience for training placements, and while credentialling should support people working to their full scope, requirements for supervision where workforce is scarce can be limiting.

Rural generalist pathway

Another area of specialty that recognises the unique needs of rural and remote populations is the rural generalist pathway for GPs. Rural generalists are GPs who provide primary healthcare services, emergency medicine and have training in additional skills like obstetrics, anaesthetics or mental health services.[106] The National Rural Generalist Pathway recognises the extra requirements and skills of rural generalists and supports them to meet the diverse health needs of rural and remote Australians. Rural generalists give these communities access to a broader range of specialist medical services. Growing the rural generalist workforce will reduce hospital admissions, reduce the use of locum services and limit the need for patient travel.[106]

4.6.6 Future workforce

Previous RFDS research has predicted that in coming years there will be significant shortages of essential health services in rural and remote Australia.[78] For example, in 2028, there is projected to be less than a fifth of the current number of GPs in remote as compared to major cities (43 as compared to 255 per 100,000 population respectively); just a twelfth of the number of physiotherapists (276 as compared to 23 per 100,000 population); half the number of pharmacists (113 as compared to 52 per 100,000 population); and only a third the number of psychologists (104 as compared to 34 per 100,000 population).[78]

Since there is compelling evidence that provision of regular primary healthcare services and continuity of care within the health system are key to improving health outcomes for patients,[107] the current and projected workforce issues need to be addressed. Improving access to primary health care for people in rural and remote Australia, and provision of regular prevention and early intervention services, along with early identification and treatment of chronic health conditions, is likely to improve health outcomes for RFDS patients and reduce the need for avoidable aeromedical retrievals.

Chapter 5: Recommendations

This year's *Best for the Bush Baseline* report highlights the ongoing serious disparities in health service access for people living in rural and remote Australia. In its analysis of the impact these disparities have on health outcomes, the report finds there remains an urgent case for improvement in the delivery of targeted, comprehensive and appropriate services.

People living in rural and remote areas experience lower life expectancies and have higher potentially avoidable death rates. Conditions such as cardiovascular disease and diabetes, which can be effectively managed within a primary healthcare setting, have higher prevalence, become more severe requiring higher rates of hospitalisation and, ultimately, contribute to higher death rates because access to primary health care is limited in rural and remote Australia.

The report identifies the prevalence rates for many conditions are frequently higher than expected for the size of the population, relative to the Australian average, particularly among younger people. This indicates the rural and remote patient cohort has a complex disease profile, requiring more specialised care and unique service planning considerations. The exceptional prevalence of diabetes, for example, is associated with poor health outcomes and comorbidities (such as cardiovascular disease, kidney disease, and poor mental health).

Barriers to healthcare access are numerous. Continued difficulties with remote workforce recruitment and retention, lack of coordination and communication between health providers, and often little to no presence of health services located within remote communities, create a fragmented and unreliable health service context for consumers.

The rural and remote health service delivery environment is extremely complex and presents consumers with many barriers, preventing access to quality and timely health care. It is for this reason that rural- and remote-specific planning, funding and initiatives are crucial, and the RFDS makes the following recommendations:

1. Establish an agreed definition of 'reasonable access'

The Australian Government, through the Australian Institute of Health and Welfare, should lead a process to define "reasonable access" to primary healthcare services. Australians living in rural and remote Australia have the right to expect a level of care that addresses primary healthcare needs according to their age, demographic profile and health status.

This definition must consider proximity, as well as affordability, cultural safety, availability, frequency and mode of delivery and will vary by demographic profile and location, and could be achieved through further support for the work already commenced by the National Rural Health Alliance on minimum standards.

2. A targeted plan for rural and remote primary healthcare

The Australian Government should lead the development and publication of a detailed plan to deliver reasonable access to primary healthcare to every Australian living in rural and remote Australia. This plan should be detailed enough to cover every community and every citizen and progress should be reported annually.

There is a critical need to ensure the significant complexity of the rural and remote service delivery environment is recognised and addressed in a specific plan to improve access to primary and preventive healthcare in these areas.

While the RFDS encourages governments to accept all recommendations of the *Strengthening Medicare Taskforce Report*[11] and related reviews, and the implementation of resulting strategies in full, doing so must differentiate the rural and remote context. This is also true for recently released key national strategy documents such as *Australia's Primary Health Care 10 Year Plan 2022–2032,*[12] the *National Strategic Framework for Chronic Conditions*[13] and the *National Aboriginal and Torres Strait Islander Health Plan 2021–2031.*[14]

3. Local planning, funding sustainability and flexibility for targeted primary healthcare services

The Australian Government, working with State and Territory governments to enact a rural and remote primary healthcare plan, should substantially expand funding to provide more adequate and equitable levels of primary healthcare to rural and remote communities. This should include face-to-face care, fly-in fly-out and drive-in drive-out services, supplemented through hybrid models with videoconference and telehealth services to support more robust rural and remote primary health provision, augment chronic disease management and reduce preventable hospital admissions.

As shown by Nous, funding for rural and remote primary healthcare is currently significantly less than in metropolitan areas, despite the need for higher levels of investment to address poorer health outcomes. There is also little flexibility in current funding structures to provide variable and targeted models of care that are appropriate and address the priority needs of individual communities. This includes a lack of funding, supports and incentives for multi-disciplinary team-based models of care.

4. Specific funding for preventive and health promotion activities in rural and remote areas

The Australian Government should ensure dedicated funding for health promotion initiatives and activities for rural and remote Australians.

Despite the increased prevalence of many preventable and lifestyle diseases in rural and remote areas, there is a lack of availability of and funding for preventive health services and health promotion activities in these areas. Adequate resources, separate to (but integrated with) primary healthcare services must be allocated, with initiatives targeted to areas and health issues shown to be of highest need including factors contributing to cardiovascular disease, diabetes and injury prevention.

5. A National Compact on Rural and Remote Health

The Australian Government, working with State and Territory Governments, should lead the development of a National Compact on Rural and Remote Health.

The Compact should serve as a transparent inter-governmental agreement between the Commonwealth, States and Territories that ensures the agreed level of reasonable access to primary healthcare, oversees the rural and remote primary healthcare care plan and commits necessary funding to improve health outcomes for those living in rural and remote Australia. This is critical to ensure the achievement of improvements and that efforts across different elements of the health system are carefully coordinated, rather than the occurrence of duplication and inefficiency.

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Appendix 1. Methodology for analysis of RFDS aeromedical retrieval data

Classifying diseases and related health problems

The RFDS uses the tenth edition of the ICD-10-AM to code and classify health data. In the ICD-10-AM, diseases and injuries are classified under one of 22 chapter headings. Each chapter heading has a range of codes which denote specific illnesses and injuries.

RFDS data collection and coding

The RFDS records data for each aeromedical retrieval it conducts. De-identified data for all aeromedical retrievals conducted between 1 July 2022 and 30 June 2023 (hereafter referred to as 2022–2023) were analysed for this section of the report.

De-identified aeromedical retrieval data considered in this report include: retrieval date (day/month year); patient's age (aggregated by 5-year age group); gender (male, female, unknown), Indigenous status (Indigenous, non-Indigenous, unknown); illness or injury associated with the retrieval (ICD-10-AM chapter code and 3-item code (where known)); type of retrieval (primary evacuation, inter-hospital transfer repatriation); priority (priority one – to be retrieved within one hour, priority two – to be retrieved within four hours, priority three – to be retrieved within 12 hours); and pick-up and drop off location (nearest airstrip).

Data analyses

All data were analysed using IBM SPSS Statistics for Windows, Version 26.0 or Microsoft Excel 2016.

All analyses used unweighted data. Data are reported as summary statistics, including the number (N) and proportion (per cent (%)) of patients in each category.

The initial analysis on total number of aeromedical retrievals included all retrievals, even if one variable was missing (e.g. age, Indigenous status, gender etc.), in order to provide an overall picture of aeromedical retrievals. All remaining analyses excluded cases where variables were missing and excluded analyses of repatriation flights.

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