



# HEALTH CARE ACCESS, MENTAL HEALTH, AND PREVENTIVE HEALTH HEALTH PRIORITY SURVEY FINDINGS FOR PEOPLE IN THE BUSH

Lara Bishop, Andy Ransom, Martin Laverty



## Acknowledgments

This report has been prepared by the Royal Flying Doctor Service (RFDS) Research and Policy Unit using data and evidence from multiple sources.

Sincere thanks to Mark Harvey-Sutton and Maximiliane Hanft from the National Farmers' Federation for their assistance in developing, and administering, a survey on the health priorities of remote and rural Australians, and for reviewing this report.

Published by  
Royal Flying Doctor Service of Australia  
Level 2, 10–12 Brisbane Avenue  
Barton ACT 2600  
Australia

ABN 74 438 059 643  
Tel: (02) 6269 5500

**Suggested citation:** Bishop, L., Ransom, A., and Laverty, M. (2017). Health care access, mental health, and preventive health: Health priority survey findings for people in the bush. Canberra: Royal Flying Doctor Service of Australia.

© 2017 Royal Flying Doctor Service of Australia

## About the Royal Flying Doctor Service (RFDS)

The RFDS is one of the largest and most comprehensive aeromedical organisations in the world. Using the latest in aviation, medical and communications technology, the RFDS delivers extensive primary health care and 24-hour emergency service to those who live, work and travel throughout Australia.

## About the National Farmers' Federation (NFF)

The NFF is the peak national body representing farmers and, more broadly, agriculture across Australia. It is one of Australia's foremost and respected advocacy organisations. Since its inception in 1979, the NFF has earned a reputation as a leader in the identification, development and achievement of policy outcomes—championing issues affecting farmers and dedicated to the advancement of agriculture.

## Commitment to Indigenous Reconciliation

The RFDS has developed a Reconciliation Action Plan (RAP),<sup>1</sup> which commenced in 2016. The RAP proposes, among other things, to use research and policy to improve Indigenous health outcomes. RFDS research and policy reports include Indigenous data as part of a broader effort to improve health outcomes and access to health services for Indigenous Australians as a contribution to the 'Close the Gap' campaign. This research and policy report contributes to the aims of the RAP.

## Royal Flying Doctor Service Research and Policy Unit

In mid-2015, the RFDS established a Research and Policy Unit, located in Canberra. The Unit's role is to gather evidence about, and recommend solutions to, overcoming barriers to poor health outcomes and limited health service access for patients and communities cared for by RFDS programs. The Research and Policy Unit can be contacted by phone on (02) 6269 5500 or by email at [enquiries@rfd.org.au](mailto:enquiries@rfd.org.au).

## Notes about this report

### Use of the term 'Indigenous'

The term 'Aboriginal and Torres Strait Islander peoples' is preferred in RFDS publications when referring to the separate Indigenous peoples of Australia. However, the term 'Indigenous Australians' is used interchangeably with 'Aboriginal and Torres Strait Islander peoples' in order to assist readability. The use of the term 'Indigenous' to describe Australia's Aboriginal and Torres Strait Islander peoples follows the Australian Institute of Health and Welfare's use of the term in their publication, *The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples* (Australian Institute of Health and Welfare, 2015c).

Throughout this publication, the term 'Indigenous Australians' refers to all persons who identify as being of Aboriginal, Torres Strait Islander, or both Aboriginal and Torres Strait Islander origin.

### Data limitations

Data in RFDS reports come from a number of different administrative datasets and surveys, all of which have limitations that should be considered when interpreting the results.

---

<sup>1</sup> The RFDS Reconciliation Action Plan can be viewed at [https://www.flyingdoctor.org.au/assets/files/RN013\\_RAP\\_P1\\_low-res.pdf](https://www.flyingdoctor.org.au/assets/files/RN013_RAP_P1_low-res.pdf)

# Contents

Acknowledgments.....	2
About the Royal Flying Doctor Service (RFDS).....	3
About the National Farmers' Federation (NFF).....	3
Commitment to Indigenous Reconciliation.....	3
Royal Flying Doctor Service Research and Policy Unit.....	3
Notes about this report.....	3
<b>Abbreviations.....</b>	<b>7</b>
<b>Foreword .....</b>	<b>8</b>
<b>Executive summary .....</b>	<b>9</b>
<b>1.0 Introduction and purpose.....</b>	<b>11</b>
1.1 Remote and Rural Australia.....	12
1.2 Background.....	13
1.2.1 Social determinants of health.....	17
1.2.2 Access to services.....	17
<b>2.0 Health priorities for people in the bush – survey methodology.....</b>	<b>19</b>
2.1 Survey development.....	19
2.2 Survey distribution.....	20
2.3 Data collection, coding and analysis.....	20
2.3.1 Open-ended questions.....	20
<b>3.0 Results.....</b>	<b>24</b>
3.1 Characteristics of respondents.....	24
3.2 Most important health issues .....	26
3.3 Areas of health expenditure.....	30
3.4 Accessing a doctor for non-urgent and urgent care.....	32
3.5 Use of RFDS health services.....	34
3.6 Health status of respondents.....	35
<b>4.0 Discussion.....</b>	<b>36</b>
4.1 Characteristics of respondents.....	36
4.2 Important health issues.....	36
4.2.1 Access to services.....	36
4.2.1.1 Service Planning and Operational Tool (SPOT).....	37
4.2.2 Mental health.....	37
4.2.3 Other issues.....	38
4.2.4 Indigenous health issues.....	39
4.3 Areas of health expenditure.....	39
4.4 Access to a doctor in a non-emergency and an emergency.....	41
4.5 Use of RFDS health services.....	41
4.5.1 RFDS emergency aeromedical retrieval service.....	41
4.5.2 RFDS primary health care services.....	41
4.5.3 RFDS telehealth service.....	43
4.5.4 RFDS medical chests.....	43

4.5.5 Other services.....	43
4.6 Health status of respondents.....	43
4.7 Strengths and limitations of the research.....	43
4.7.1 Strengths.....	43
4.7.2 Limitations.....	44
<b>5.0 Conclusion.....</b>	<b>45</b>
<b>References.....</b>	<b>46</b>
<b>Appendix 1. Health priorities for people in the bush.....</b>	<b>50</b>

## Tables

Table 1.1. DALY, YLL and YLD counts, age-standardised rates and rate ratios, by remoteness, 2011.....	15
Table 1.2. Age-standardised DALY rates, by disease group and remoteness, 2011.....	15
Table 1.3. Number of adjusted deaths and YLL for Indigenous Australians, by remoteness, 2010.....	16

## Figures

Figure 1.1. Remoteness areas of Australia .....	12
Figure 1.2. Self-reported disease prevalence, 2014–2015 National Health Survey, by remoteness.....	13
Figure 1.3. Self-reported health risk factors, 2014–2015 National Health Survey, by remoteness.....	14
Figure 1.4. Leading causes of fatal burden (YLL) for Indigenous Australians, by remoteness, 2010.....	16
Figure 1.5. Distribution of GPs by remoteness area, 2010–2011, full-time work equivalent.....	18
Figure 3.1. Five-year age groups, health survey respondents, 2017.....	24
Figure 3.2. State or territory of residence, health survey respondents, 2017.....	25
Figure 3.3. Occupation, health survey respondents, 2017.....	25
Figure 3.4. Most important health issues impacting remote and rural communities, health survey respondents, 2017.....	27
Figure 3.5. Areas of expenditure to improve health outcomes in remote and rural communities, health survey respondents, 2017.....	31
Figure 3.6. Travel time to visit a doctor for a non-emergency, health survey respondents, 2017.....	32
Figure 3.7. Waiting time to see a doctor for urgent medical care, health survey respondents, 2017.....	33
Figure 3.8. Use of RFDS health services in previous 12 months, health survey respondents, 2017.....	34
Figure 3.9. Self-reported health status, health survey respondents, 2017.....	35
Figure 4.1. RFDS primary health care clinics, by ASGS remoteness areas, 2014–2015.....	42

# Abbreviations

<b>ACCHO</b>	Aboriginal Community Controlled Health Organisation
<b>ASGS</b>	Australian Statistical Geography Standard
<b>CI</b>	Confidence interval
<b>DALY</b>	Disability-adjusted life years
<b>FTE</b>	Full-time equivalent
<b>GP</b>	General practitioner
<b>MBS</b>	Medicare Benefits Schedule
<b>n</b>	Number
<b>NFF</b>	National Farmers' Federation
<b>NHMRC</b>	National Health and Medical Research Council
<b>NHPA</b>	National Health Priority Area
<b>NSW</b>	New South Wales
<b>NT</b>	Northern Territory
<b>PHN</b>	Primary Health Network
<b>Qld</b>	Queensland
<b>RFDS</b>	Royal Flying Doctor Service
<b>SA</b>	South Australia
<b>SEIFA</b>	Socio-Economic Indexes for Areas
<b>SPOT</b>	Service Planning and Operational Tool
<b>Tas</b>	Tasmania
<b>Vic</b>	Victoria
<b>WA</b>	Western Australia
<b>YLD</b>	Years lived with a disability
<b>YLL</b>	Years of life lost

# Foreword



## Tony Mahar

Access to health care in the bush is paramount. Despite much work over past decades, many people in rural, regional and remote communities across Australia continue to experience difficulty in accessing adequate medical care and health outreach programs.

This study, designed in cooperation with the Royal Flying Doctor Service, gives a voice to our regional population, among many of which are farmers.

Respondents identified core health areas that require more investment including: access to medical services; mental health; health promotion and prevention activities; cancer; aged care; and travel and accommodation support for people needing to access health care outside of their community.

To ensure rural, regional and remote communities remain vibrant and viable, we need to address medical health issues that are directly related to the remoteness of communities and target those services that most effectively meet the needs of the bush.

A handwritten signature in black ink that reads "Tony Mahar".

## Tony Mahar

Chief Executive Officer  
National Farmers' Federation





# Executive summary

Seven million Australians live in remote and rural Australia. On average, these seven million Australians have poorer health outcomes and live shorter lives than city residents. For example, the premature death rate is 1.6 times higher in remote Australia than in city areas. The percentage of people in remote areas with arthritis, asthma, deafness, diabetes, cancer, and cardiovascular disease is higher than in cities. The health behaviours of people in country areas are less conducive to good health than people in cities, with higher rates of smoking, obesity, and alcohol misuse in remote areas than in cities.

While there is ample evidence on the health access and outcome disparity between city and country Australia, there is little information about how country people themselves see these disparities. In response, the Royal Flying Doctor Service (RFDS) joined with the National Farmers' Federation (NFF) to assess the health needs of remote and rural Australians and to give voice to country Australians.

Four hundred and fifty-four (454) country Australians living in remote and rural regions of Australia were surveyed for this report to ascertain their needs and priorities for the Australian health system. The short survey, conducted in early 2017, asked remote and rural Australians to give their opinions on the three most important health issues impacting their communities and the three areas where money should be spent to improve health outcomes for their communities, indicate the types of RFDS services they used in the previous year, and self-rate their overall health and wellbeing. The mean age of respondents was 45–49 years. The highest proportion of respondents were aged 55–59 years (13.9%). The survey found three-quarters of respondents self-reported their health as either good or very good. About one in ten reported their health as poor or very poor.



Respondents identified 1,293 important health issues. Access to general health services was identified as the most important health consideration of country people, with almost one-third of responses (32.5%) identifying general health access as a key priority. This comprised general access to medical services (13.1%), access to specialists (10.6%), access to GPs (4.6%), access to hospitals (2.3%), access to diagnostic tests (1.4%), and access to allied health services (0.5%). Addressing mental health (12.2%) and drug and alcohol problems (4.1%) were the second and third priorities respectively.

Country people believed health expenditure should be prioritised towards expanding access to health services in country areas. Again, almost one-third (32.2%) of the 1,188 responses identified general health service access as a priority for health expenditure. Directing more expenditure to mental health (14.6%) was the second priority, with health prevention and promotion (8.6%) as the third expenditure priority.

Clearly, efforts to improve access to services, particularly to general medical services, specialists, and GP services, are needed. This is especially important in light of recent research that has linked the poorer health status of remote and rural Australians, in part, to inequitable access to primary health care services. By using the RFDS' Strategic Planning and Operation Tool (SPOT)—which has mapped existing services in remote and rural Australia, and overlaid these with population data—governments and organisations, such as the RFDS, can better plan where services should be located, and which services would best serve a community, relative to need. Funding for the provision of appropriate medical services, to underserved communities, is vital to improve health outcomes.

Positively, more than two-thirds of respondents (68.7%) said they travelled less than an hour to see a doctor for a non-emergency, with the remaining respondents travelling anywhere from one to five hours, or more. Four percent of respondents travelled for more than five hours. More than half (58.3%) of respondents saw a doctor within four hours for urgent medical care, with the remaining able to see a doctor anywhere from the same day to six or more days later for urgent medical care.

Respondents reported they had used RFDS health services on 167 occasions in the previous year. This reflects survey respondents being drawn from within the service area of the RFDS.

The key issues identified by the survey respondents represent the areas in which government policy efforts should be directed. The five most important issues identified by respondents overall were access to medical services; mental health; drugs and alcohol; cancer; and cardiovascular health. The areas of health that respondents identified money should be spent on included: access to medical services; mental health; health promotion and prevention activities; cancer; aged care; and travel and accommodation support for people needing to access health care outside of their community. Many of these areas are already the focus of government policy, but their inclusion in the findings of the survey suggest more effort and resources are required to address them.

# 1.0 Introduction and purpose

The Royal Flying Doctor Service (RFDS) has been providing health care to people who live, work or travel in remote and rural Australia for almost 90 years. The RFDS is best known for its emergency aeromedical retrieval service, which provides emergency evacuations for remote and rural Australians who are seriously ill or injured and require urgent medical attention in a tertiary hospital. The emergency aeromedical retrieval service is supported by a comprehensive telehealth service. The RFDS also provides primary health care services through medical, nursing, oral health, mental health, and allied health clinics, remote telephone consultations, medical chest supplies, outreach programs, health promotion and education activities, non-emergency patient transport services, clinic charter services, and repatriation services.

These services are vital, since the evidence indicates that as a whole, remote and rural Australians generally experience poorer health than people living in major cities, including higher levels of mortality, morbidity, and health and disease risk factors (Australian Institute of Health and Welfare, 2008, 2014, 2016a). Burden of disease studies have also demonstrated that people living outside major cities have higher rates of disease burden than their counterparts living in major cities (Australian Institute of Health and Welfare, 2015b, 2016c).

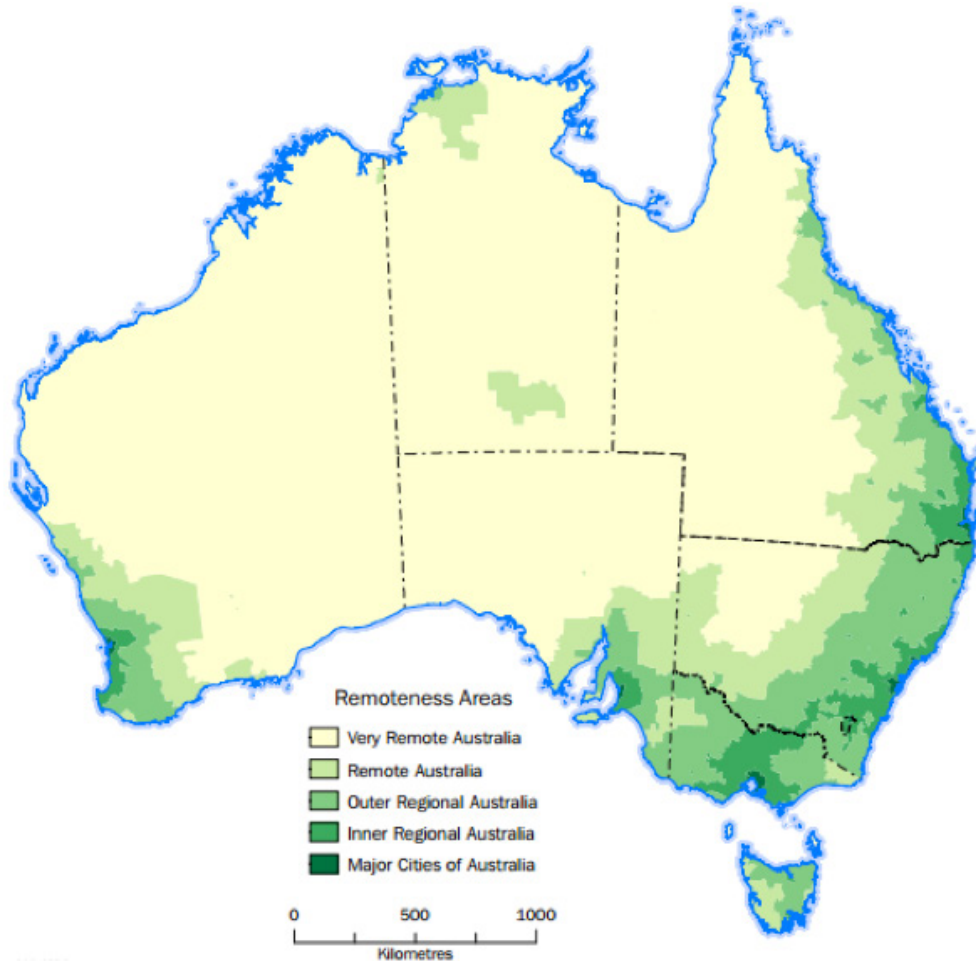
While there is strong evidence that remote and rural Australians experience poorer health outcomes across a range of injuries and illnesses, the individual views of remote and rural Australians themselves have not been examined to determine their perceptions of the main health problems impacting their communities. In response to the scarcity of information about what people in the bush identify as the main health problems, the RFDS partnered with the National Farmers' Federation (NFF) to conduct a survey of remote and rural Australians. Specifically, the survey sought remote and rural Australians' opinions on the most important health issues impacting their communities, and the areas of health that money should be spent on to improve health outcomes. The survey also sought to determine respondents' access to health services for urgent and non-urgent health problems, their use of RFDS health services, and their own health status. A number of demographic data were also collected. The current paper reports the results of the survey and discusses the results.

Chapter 1 describes the purpose of the report, defines remote and rural Australia, and briefly reviews the literature around the health of remote and rural Australians. Chapter 2 describes the survey development, methodology, and implementation. Chapter 3 reports the results of the survey. Chapter 4 discusses the results. Chapter 5 concludes the report.

## 1.1 Remote and Rural Australia

For the purpose of this paper, the term ‘remote and rural’ is used to encompass all areas outside Australia’s major cities. This includes areas classified as inner regional (RA2), outer regional (RA3), remote (RA4) and very remote (RA5) under the Australian Statistical Geography Standard (ASGS)<sup>2</sup> (Figure 1.1).

**Figure 1.1. Remoteness areas of Australia**



Note: Migratory-offshore-shipping, and no usual address, are not mapped.  
Source: Australian Bureau of Statistics (2013a).

Major cities comprise only 0.3% of Australia’s land mass (Garvan Research Foundation, 2015), yet the majority (70.2%) of Australians live in these areas (Australian Bureau of Statistics, 2013b). The remaining population is not evenly distributed throughout the country—18.4% live in inner regional areas, 9.1% in outer regional areas, 1.4% in remote areas, and 0.9% in very remote areas (Australian Institute of Health and Welfare, 2014). Australia’s estimated resident population was 23,490,700 in June 2014 (Garvan Research Foundation, 2015), of which 29.8% were located outside of Australia’s major cities (Australian Institute of Health and Welfare, 2014). This equates to around seven million Australians who reside in remote and rural areas. Of these, more than half a million live in either remote, or very remote, areas of Australia. Aboriginal and Torres Strait Islander (Indigenous) Australians are overrepresented in remote and very remote areas—almost half (45%) of all people in very remote areas and 16% in remote areas are Indigenous Australians, compared with a 3% Indigenous representation in the total population (Australian Institute of Health and Welfare, 2014).

<sup>2</sup> For more information on how the RFDS defines remote and rural Australia, go to <https://www.flyingdoctor.org.au/what-we-do/research/defining-rural-remote/>











## 1.2 Background

It is evident that Australia's remote and rural areas differ significantly in their location, economic activities, climate and demography (Australian Institute of Health and Welfare, 2010). Consequently, health status may vary within each of the broad remoteness categories (Australian Institute of Health and Welfare, 2010). However, the evidence indicates that as a whole, remote and rural Australians generally experience poorer health than people living in major cities, including higher levels of mortality, morbidity, and health and disease risk factors (Australian Institute of Health and Welfare, 2008, 2014, 2016a).

Australians living in remote and rural areas have a lower life expectancy than people living in major cities and are more likely to die prematurely. Although only around 29% of people live in remote and rural areas, deaths in these areas accounted for 38% of premature deaths in 2011–2013— the premature mortality rate among people living in remote areas was 1.6 times higher, and in very remote areas 2.2 times higher, than people living in major cities (Australian Institute of Health and Welfare, 2016a). In 2009–2011 mortality rates of remote and very remote Australians were 1.4 times higher than people living in major cities (Australian Institute of Health and Welfare, 2016a).

Self-reported data from the 2014–2015 National Health Survey (Australian Bureau of Statistics, 2015) demonstrated that people living in inner regional and outer regional/remote areas of Australia had higher rates of a number of diseases, including, for example, mental health problems, arthritis, asthma, deafness and diabetes (Figure 1.2)

**Figure 1.2. Self-reported disease prevalence, 2014–2015 National Health Survey, by remoteness**

		Major cities	Inner regional	Outer regional/ remote
	<b>Arthritis</b>	14%	20%	18%
	<b>Back pain and problems</b>	16%	18%	16%
	<b>Asthma</b>	10%	12%	12%
	<b>COPD</b>	2.4%	3.4%	2.7%
	<b>Blindness</b>	0.5%	0.9%	0.8%
	<b>Deafness</b>	9.8%	15%	14%
	<b>Diabetes</b>	4.7%	6.0%	6.7%
	<b>CVD</b>	4.7%	6.7%	5.8%
	<b>Cancer</b>	1.6%	1.7%	1.8%
	<b>Mental health problems</b>	17%	19%	19%






Notes:

1. '%' represents prevalence of chronic diseases in each region (excluding *Very remote* areas of Australia).
2. Proportions are not age-standardised, and in some instances higher prevalence may reflect the older age profiles in *Inner regional* and *Outer regional/Remote* areas.
3. 'COPD' refers to chronic obstructive pulmonary disease.
4. 'Blindness' includes partial and complete blindness.
5. 'CVD' refers to heart, stroke and vascular disease.

Source: Australian Institute of Health and Welfare (2016a, p. 249).

Remote and rural Australians also experience higher death rates from injuries, coronary heart disease, other circulatory diseases, chronic obstructive pulmonary disease, diabetes, and suicide (Australian Institute of Health and Welfare, 2014, 2016a). They also have higher self-reported rates of overweight and obesity, daily smoking, risky alcohol consumption, and high blood pressure, and lower levels of exercise (Figure 1.3) (Australian Institute of Health and Welfare, 2014, 2016a).

**Figure 1.3. Self-reported health risk factors, 2014–2015 National Health Survey, by remoteness**

		Major cities	Inner regional	Outer regional/ remote
	<b>Current daily smoker</b>	13%	17%	21%
	<b>Overweight or obese</b>	61%	69%	69%
	<b>No/low levels of exercise</b>	64%	70%	72%
	<b>Exceed lifetime alcohol risk guideline</b>	16%	18%	23%
	<b>High blood pressure</b>	22%	27%	24%

Notes:

1. '%' represents prevalence of risk factor in each region (excluding *Very remote* areas of Australia).
2. 'Proportions' are not age standardised and, in some instances, higher prevalence may reflect the older age profiles in *Inner regional* and *Outer regional/Remote* areas.

Source: Australian Institute of Health and Welfare (2016a, p. 250).

Burden of disease studies have also demonstrated the existence of health inequalities. Burden of disease, expressed as disability-adjusted life years (DALY),<sup>3</sup> “is a measure of the health impact of disease on a population in a given year both from dying from, and living with, disease and injuries” (Australian Institute of Health and Welfare, 2016c). Table 1.1 demonstrates that all areas outside major cities recorded higher rates of disease burden than major cities, and that these increased with increasing remoteness. Specifically, inner regional and outer regional areas (207 DALY per 1,000 people) experienced 1.1 times the disease burden of major cities (181 DALY per 1,000 people), while remote (242 DALY per 1,000 people) and very remote (301 DALY per 1,000 people) areas experienced 1.3 and 1.7 times (respectively) the rate of disease burden of major cities in 2011 (Australian Institute of Health and Welfare, 2016c).

*“This pattern was mostly driven by fatal burden; in very remote areas, the age-standardised rate (ASR) of fatal burden was twice the rate for major cities (178 and 87 YLL per 1,000 people, respectively). As a result, fatal burden made up a greater proportion of total burden in very remote areas (61%) compared with major cities (49%)” (Australian Institute of Health and Welfare, 2016c, p. 92).*

3 The DALY is a health metric that expresses years of life lost (YLL) to premature death and years lived with a disability (YLD) of known severity and duration—one DALY represents one lost year of healthy life (Murray & Lopez, 1996).

**Table 1.1. DALY, YLL and YLD counts, age-standardised rates and rate ratios, by remoteness, 2011**

Remoteness area	Total burden			Non-fatal burden			Fatal burden		
	DALY ('000)	ASR	Ratio Rate (%)	YLD ('000)	ASR	Ratio Rate (%)	YLL ('000)	ASR	Ratio Rate (%)
Major cities	2,961	181.4	1.0	1,517	94.2	1.0	1,443	87.2	1.0
Inner regional	950	205.3	1.1	450	102.2	1.1	501	103.1	1.2
Outer regional	456	206.8	1.1	202	94.3	1.0	254	112.5	1.3
Remote	73	242.0	1.3	33	107.0	1.1	41	135.0	1.5
Very remote	52	300.8	1.7	20	122.8	1.3	31	178.0	2.0
<b>Australia</b>	<b>4,494</b>	<b>189.9</b>		<b>2,224</b>	<b>96.0</b>		<b>2,270</b>	<b>93.9</b>	

(a) Rate ratios compare the remoteness area rate of burden with the *Major cities* rate of burden.

Note: Rates were age-standardised to the 2001 Australian Standard Population, and are expressed per 1,000 people. ASR, age-standardised rate; DALY, disability-adjusted life years; YLD, years lived with a disability; YLL, years of life lost.

Source: Australian Institute of Health and Welfare (2016c, p. 92).

For the majority of disease groups, age-standardised rates of burden increased with increasing remoteness (Table 1.2). Remote areas had higher rates of burden for injuries, cardiovascular disease, kidney and urinary diseases, and endocrine disorders (Australian Institute of Health and Welfare, 2016a, 2016c). Because of the high national rate, cardiovascular disease and injuries had the greatest absolute difference in rates between major cities and very remote areas (differences of 28 and 29 DALY per 1,000 people, respectively) (Australian Institute of Health and Welfare, 2016c).

**Table 1.2. Age-standardised DALY rates, by disease group and remoteness, 2011**

Disease group	Major cities	Inner regional	Outer regional	Remote	Very Remote	Australia	Ratio rate <sup>(a)</sup>	Rate difference <sup>(b)</sup>
Blood/metabolic	2.0	2.3	2.4	2.7	2.4	2.1	1.2	0.3
Cancer	32.8	36.4	37.8	38.8	37.2	34.2	1.1	4.3
Cardiovascular	24.8	28.1	30.6	38.5	53.2	26.4	2.1	28.4
Endocrine	4.1	4.2	5.1	8.0	13.0	4.3	3.2	8.9
Gastrointestinal	5.7	6.4	6.8	8.6	11.0	6.0	1.9	5.3
Hearing/vision	3.9	4.4	3.9	2.7	5.1	4.0	1.3	1.2
Infant/congenital	5.0	5.9	7.1	5.7	11.7	5.4	2.4	6.8
Infections	2.9	3.1	3.6	5.4	8.5	3.1	2.9	5.6
Injuries	15.0	21.4	24.4	36.8	44.4	17.5	3.0	29.4
Kidney/urinary	2.3	2.2	2.6	4.8	14.0	2.4	6.2	11.8
Mental	25.6	23.5	20.7	20.8	22.2	24.6	0.9	-3.4
Musculoskeletal	21.0	25.6	21.0	24.2	29.9	22.1	1.4	8.9
Neurological	12.0	13.9	13.4	12.4	13.0	12.4	1.1	1.0
Oral	3.7	4.9	5.3	6.4	6.4	4.2	1.7	2.7
Reproductive/maternal	1.6	2.1	1.7	1.6	1.4	1.7	0.8	-0.3
Respiratory	15.4	17.3	17.1	21.0	22.9	16.0	1.5	7.5
Skin	3.4	3.4	3.4	3.5	4.4	3.4	1.3	0.9
<b>All</b>	<b>181.4</b>	<b>205.3</b>	<b>206.8</b>	<b>242.0</b>	<b>300.8</b>	<b>189.9</b>	<b>1.7</b>	<b>119.4</b>

ASR, age-standardised rate; DALY, disability-adjusted life years.

Source: Australian Institute of Health and Welfare (2016c, p. 94).

Similarly, rates of fatal burden of disease among Indigenous Australians were higher in remote and very remote areas compared to major cities in 2010 (Table 1.3) (Australian Institute of Health and Welfare, 2015b). Age-standardised rates demonstrated that Indigenous Australians in very remote areas were 1.5 times as likely as Indigenous Australians in major cities to die prematurely in 2010 (Australian Institute of Health and Welfare, 2015b).

**Table 1.3. Number of adjusted deaths and YLL for Indigenous Australians, by remoteness, 2010**

Remoteness	Deaths	YLL	Age-standardised YLL rate
Major cities	2,961	181.4	1.0
Inner regional	950	205.3	1.1
Outer regional	456	206.8	1.1
Remote	73	242.0	1.3
Very remote	52	300.8	1.7

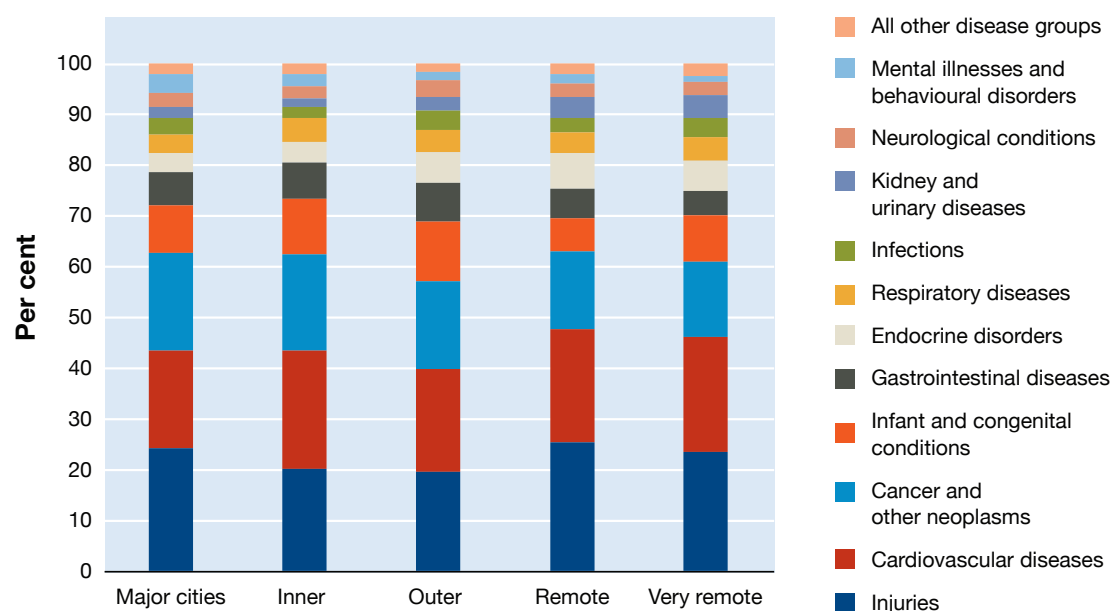
Note: Number of deaths and YLL for 2010 is the annual average of 2009–2011. Deaths have been adjusted using AIHW remoteness adjustment factors.

AIHW, Australian Institute of Health and Welfare; YLL, years of life lost.

Source: Australian Institute of Health and Welfare (2015b, p. 43).

The leading causes of fatal burden of disease among Indigenous Australians in 2010 were cardiovascular disease, injuries and cancer (Figure 1.4) (Australian Institute of Health and Welfare, 2015b). However, when considered by remoteness, injuries was the leading contributor to fatal burden in major cities and remote and very remote regions, whereas cardiovascular disease was the leading cause in inner and outer regional areas (Australian Institute of Health and Welfare, 2015b).

**Figure 1.4. Leading causes of fatal burden (YLL) for Indigenous Australians, by remoteness, 2010**



Notes: Years of life lost (YLL) for 2010 is the annual average of 2009–2011. Deaths have been adjusted using Australian Institute of Health and Welfare (AIHW) remoteness adjustment factors. As a result, estimates by remoteness will not match other estimates in the report by the Australian Institute of Health and Welfare, (2015b), which have been adjusted using Australian Bureau of Statistics adjustment factors. Data are from AIHW analysis of the AIHW National Mortality Database.

Source: Australian Institute of Health and Welfare (2015b, p. 45).



Overall, the fatal burden of disease and injury in the Indigenous population is estimated to be 2.6 times that experienced by non-Indigenous Australians, with injuries (22%) and cardiovascular disease (21%) contributing the most to the fatal burden of disease for Indigenous Australians (Australian Institute of Health and Welfare, 2015c).

### **1.2.1 Social determinants of health**

The poorer health of both non-Indigenous and Indigenous remote and rural Australians is also impacted by the social determinants of health, which are well recognised nationally and internationally. The social determinants of health are the conditions in which people are born, grow, live, work, and age, and these are shaped by the distribution of money, power, and resources at global, national, and local levels (World Health Organization, 2015). There are many social determinants including social, economic, environmental, political, behavioural, and biological factors, and cultural perceptions (Smith, 2016). Examples of these social determinants include socio-economic status, access to education, access to health care, employment status, income, access to affordable housing, stress, age, race, Indigenous status, transport availability, and disability (World Health Organization, 2015).

In general, people in remote and rural areas have: lower levels of education; lower levels of employment and lower household incomes; higher rates of inadequate housing; higher occupational risks and hazards, including physical risks and workplace pressures and stressors associated with farming and mining; the need for more long-distance travel; poorer access to fresh foods; and poorer access to health services (Garvan Research Foundation, 2015). Indigenous Australians experience additional, unique social determinants, which relate to the loss of language and connection to the land; environmental deprivation; spiritual, emotional, and mental disconnectedness; lack of cultural respect; lack of opportunities for self-determination; poor educational attainment; reduced opportunities for employment; poor housing; and negative interactions with government systems (King, Smith, & Gracey, 2009; Osborne, Baum, & Brown, 2013).

High levels of social disadvantage and income inequality are evident in many remote and rural areas (Centre for International Economics, 2015). The Socio-Economic Indexes for Areas (SEIFA), which uses census data, ranks areas in Australia according to relative socio-economic advantage and disadvantage, by considering people's access to material and social resources and their ability to participate in society (Australian Bureau of Statistics, 2013c). Comprising four subscales, variables considered in the index include income, education, employment, occupation, housing, and other miscellaneous indicators of relative advantage or disadvantage (Australian Bureau of Statistics, 2013c). A large proportion of remote areas have a low SEIFA ranking (Centre for International Economics, 2015). The lower the score, the higher the disadvantage. Recent research has confirmed that people residing in capital cities are more likely to be in the top 20% of income earners, while those outside capital cities are more likely to be in the bottom 20% of income earners (Australian Council of Social Service, 2015). Around 39% of people living in remote areas have low socio-economic status, compared to 24% in regional areas and 17% in major cities (Garvan Research Foundation, 2015). This means that in addition to the practical difficulties associated with living in remote and rural locations, a large proportion of people living in remote and rural Australia are also some of Australia's most socio-economically disadvantaged.

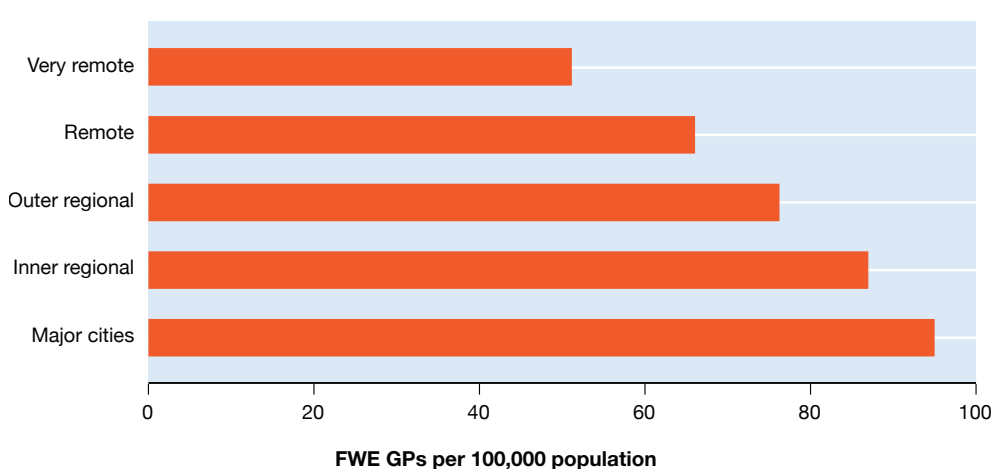
Understanding the impact of socio-economic factors is crucial in light of recent research claiming that socio-economic factors account for 40% of all influences on health, rather than clinical care (20%), which has traditionally been identified as the major influence on health (British Academy, 2014). Other factors, including health behaviours (30%) and the physical environment (10%), also impact on health (British Academy, 2014).

### **1.2.2 Access to services**

Compared to people living in major cities, remote and rural Australians also have poorer access to, and demonstrate lower use of, health services (Australian Institute of Health and Welfare, 2016a).

In 2014, there were 264 full-time equivalent (FTE) medical practitioners per 100,000 population in remote and very remote areas compared to 437 FTE medical practitioners per 100,000 population in major cities (Australian Institute of Health and Welfare, 2016a). Similarly, there were 25 FTE dentists per 100,000 population in remote and very remote areas compared to 63 FTE dentists per 100,000 population in major cities (Australian Institute of Health and Welfare, 2016a). These data indicate that people in remote and very remote areas have significantly fewer medical practitioners and dentists per 100,000 population than people in major cities—demonstrating poorer access to services. Data from 2010–2011 painted a similar picture—the number of general practitioner (GP) services provided per person in very remote areas during 2010–2011 was around half that of major cities (Figure 1.5) (Duckett, Breadon, & Ginnivan, 2013). In addition to fewer GP services per person, remote and rural Australians have fewer GP appointments outside traditional hours (Duckett et al., 2013). Consequently, remote and rural Australians are more likely to report long waiting periods to see a GP (Duckett et al., 2013)

**Figure 1.5. Distribution of GPs by remoteness area, 2010–2011, full-time work equivalent**



FWE, full-time work equivalent; GP, general practitioner.

Source: Duckett et al. (2013, p. 7).

Access to Medicare Benefits Schedule (MBS) services by remote and rural Australians is therefore much lower than for people living in major cities (Centre for International Economics, 2015). People living in very remote areas see GPs at half the rate of people living in major cities, allied health professionals at one-third of the rate, and specialists at one-fifth of the rate (Centre for International Economics, 2015). For example, in 2011–2012, 7.6% of city residents accessed MBS mental health services, compared to 3.0% in remote areas and just 1.5% in very remote areas (Centre for International Economics, 2015).

Remote and rural Australians also experience poor access to other services resulting in, for example, lower rates of breast and bowel cancer screening, higher rates of potentially avoidable hospitalisations, and lower access to selected hospital procedures (Australian Institute of Health and Welfare, 2016a).

The data presented in this chapter have identified the diseases and illnesses that place the greatest burden on remote and rural Indigenous and non-Indigenous Australians, and the difficulties these populations experience in accessing services. Chapter 2 describes the survey that was developed and administered to a sample of remote and rural Australians to determine their views on the most important health issues, and areas where money should be spent to improve health outcomes within their communities.

## 2.0 Health priorities for people in the bush—survey methodology

The RFDS and NFF collaborated to develop a short survey for remote and rural Australians to gauge their opinion on the most important health issues impacting their communities, where money should be spent to improve health outcomes for their communities, the types of RFDS services they use, and their self-rated health. This chapter describes the survey methodology employed in this study, including the construction and distribution of the ‘health priorities for people in the bush survey’ (hereafter referred to as the ‘health survey’).

### 2.1 Survey development

In February 2017, the RFDS, in partnership with the NFF, developed the survey. The survey was developed using SurveyMonkey—a cloud-based online survey development tool that collects data and displays responses in real time. The survey comprised 11 questions. The survey sought respondents’ opinions on the three most important health issues for people living in their community and the three areas of health that money should be spent on to improve health outcomes for people living in their community. These were open-ended questions. Two other open-ended questions were included to determine respondents’ occupation and postcode.

Participants were also asked to answer a number of forced-choice questions about:

- > the length of time they had to travel to access a doctor in a non-emergency (less than 1 hour; 1 hour to less than 2 hours; 2 hours to less than 3 hours; 3 hours to less than 4 hours; 4 hours to less than 5 hours; 5 hours or more);
- > the length of time they had to wait to be seen by a doctor for urgent medical care (within 4 hours; longer than 4 hours, but same day; next day; 2–5 days; 6 or more days; don’t know); and
- > the types of RFDS health services they had accessed in the previous 12 months (emergency aeromedical retrieval service; primary health care; dental service; telehealth service; non-emergency ground transport; medical chest; outreach program; other RFDS health service).

The survey included a series of forced-choice, demographic questions about:

- > their overall health (very good; good; neither good nor poor; poor; very poor);
- > gender (male; female; other);
- > Indigenous status (Aboriginal only; Torres Strait Islander only; Aboriginal and Torres Strait Islander; neither Aboriginal nor Torres Strait Islander); and
- > age (18–24 years; 25–29 years; 30–34 years; 35–39 years; 40–44 years; 45–49 years; 50–54 years; 55–59 years; 60–64 years; 65–69 years; 70–74 years; 75–79 years; 80 years or older).

No identifying information was collected regarding a person’s name, address or contact details.

People were eligible to complete the online survey if they were aged 18 years or older, lived in an area of Australia that was located outside a major city, and had access to the internet. The survey was conducted between 15 February and 30 March 2017. All responses were voluntary and if a respondent came to a question and did not wish to answer it, they were instructed to leave it blank. Informed consent was assumed if a participant completed the survey.

The complete survey is included at Appendix 1.

## 2.2 Survey distribution

A web link to the online survey was automatically generated by SurveyMonkey. The web link, along with a description of the survey, and an invitation for remote and rural Australians to participate in the survey, was initially placed on the RFDS and NFF social media and digital channels, and included in the monthly RFDS research and policy update.

Snowball sampling was subsequently used to recruit participants for the survey. The web link was sent to a small group of organisations with an interest in remote and rural health, such as the Country Women's Association, National Aboriginal Community Controlled Health Organisation, and National Rural Health Alliance. Organisations were asked to place the web link on their social media and digital channels, with a description of the survey, and an invitation for remote and rural Australians to participate in the survey. The web link and associated details were also provided to internal staff within the RFDS, who were asked to distribute it within their networks.

## 2.3 Data collection, coding and analysis

Data were collected in SurveyMonkey, and responses were available in real time. SurveyMonkey data were downloaded and saved as Microsoft Excel 2016 files. Data were then exported into the statistics software package SPSS. Forced-choice questions were analysed using version 23.0 of SPSS. Open-ended questions were first coded (see Section 2.3.1), and then analysed in SPSS. Graphs were created using either SPSS or version 10.2 of Tableau.

### 2.3.1 Open-ended questions

Responses to all open-ended questions were coded by one or two raters (raters A and B). A coding sheet was developed for each open-ended question by rater A. For the questions relating to (1) respondents' opinions on the most important health issues for people living in their community, and (2) the most important areas of health that money should be spent on to improve health outcomes for people living in their community, both raters (rater A and rater B) independently coded responses. An inter-rater reliability analysis using the Kappa statistic was performed to determine consistency among raters. Once inter-rater reliability had been calculated, both raters met to discuss results. Where there was disagreement about which category an item should be coded into, both raters outlined their reasons for coding into a particular category, and reached a consensus. Data presented in this report represent the consensus of raters A and B.

Respondents were able to nominate a maximum of three health issues in the question about the most important health issues, and all responses were combined prior to analysis. Similarly, respondents were able to nominate a maximum of three areas of health that money should be spent on to improve health outcomes for people living in their community, and these responses were also combined prior to analysis.

The remaining two open-ended questions were coded by one rater (rater A) as there were clear coding categories for responses. However, if rater A was unsure about how to code a response in the remaining questions, rater A discussed the issue with rater B, and a consensus was reached.

For the question relating to respondents' opinions on the three most important health issues for people living in their community, responses were coded into one of 22 categories. Categories were developed after reading all responses and identifying the most common categories. An 'other' category was included for responses that did not fall into any other category, and for which there were small numbers of responses (fewer than four responses). Coding categories were as follows:

- > Access to services (including general medical service access, GPs, specialists, diagnostic services, allied health services, hospital services);
- > Affordable care—e.g. “affordable access to health care,” “cost;”
- > Ageing—e.g. “aged care,” “health problems associated with ageing;”
- > Cancer;
- > Cardiovascular health;
- > Children's health;
- > Chronic disease;
- > Consistency/continuity of care—e.g. “seeing the same GP for a few years;”
- > Costs when travelling for medical care—e.g. “transport and accommodation costs;”
- > Dental;
- > Diabetes;
- > Diet—e.g. “poor access to fresh foods;”
- > Drugs and alcohol;
- > Emergency services—e.g. “ambulance services,” “RFDS;”
- > Indigenous health;
- > Injury;
- > Men's health;
- > Mental health—e.g. “depression,” “anxiety;”
- > Other;
- > Overweight and obesity;
- > Skin issues; and
- > Women's health.

Once this question had been coded, and inter-rater reliability had been calculated, responses included in the 'access to services' coding category were further broken down into the following subcategories by rater A: general access to services; access to specialists; access to GPs; access to hospitals; access to diagnostic tests; and access to allied health services.

For the question relating to respondents' opinions on the three most important areas of health that money should be spent on to improve health outcomes for people living in their community, responses were coded into one of 19 categories. Categories were developed after reading all responses and identifying the most common categories. An 'other' category was included for responses that did not fall into any other category, and for which there were small numbers (fewer than four responses). Coding categories were as follows:

- > Access to services (including general medical service access, GPs, specialists, diagnostic services, allied health services, hospital services)—e.g. “more doctors and services at clinics to give rural patients more access to services,” “more visiting specialists to rural areas;”
- > Aged care;
- > Cancer;
- > Cardiovascular health;
- > Children's health—e.g. “child health/ paediatrics;”
- > Chronic disease;
- > Dental;
- > Diabetes;
- > Drug and alcohol services—e.g. “funding for drug and alcohol abuse and addiction,” “evaluated alcohol and other drug rehab programs—one each for each age group: teens, early adulthood, etc.;
- > Emergency services—e.g. “Westpac rescue helicopter, Royal Flying Doctor, first responders and ambulance;”
- > Fresh food access;
- > Health promotion and prevention—e.g. “primary health care initiatives to prevent illness and promote health,” “evaluated health promotion campaigns re: grog and sugar/fat directed at all quarters;”
- > Incentives to retain doctors—e.g. “schemes to attract and retain doctors and health professionals,” “funding/grants/incentives to help health professionals relocate/run businesses in rural/remote areas;”
- > Men's health;
- > Mental health—e.g. “depression;”
- > Other—e.g. “chronic disease management;”
- > Technology—e.g. “telehealth;”
- > Travel/accommodation support—e.g. “improved iptas system for travelling to bigger centres for specialist care;” and
- > Women's health—e.g. “maternity,” “gynae and obstetrics.”

For the question relating to respondents' occupation, responses were coded into one of 15 categories. Categories were developed after reading all responses and identifying the most common categories. An 'other' category was included for responses that did not fall into any other category, and for which there were small numbers (fewer than four responses). Coding categories were as follows:

- > Administration—e.g. “executive assistant,” “office manager on cattle station;”
- > Business owner;
- > Carer;
- > Customer service;
- > Education—e.g. “teacher aide,” “home tutor;”
- > Farming—e.g. “grazier,” “farmer;”
- > Home duties—e.g. “stay-at-home mum;”
- > Information technology;
- > Management;
- > Marketing;
- > Medical profession—e.g. “rural doctor,” “director of nursing;”
- > Other—e.g. “pilot,” “social media content creator;”
- > Pensioner—e.g. “disability support pension;”
- > Retired; and
- > Student.

For the question relating to respondents' postcode, responses were coded into one of seven categories—New South Wales (NSW); Queensland (Qld); Northern Territory (NT); South Australia (SA); Western Australia (WA); Victoria (Vic); and Tasmania (Tas).

All analyses used unweighted data, excluded missing cases and included respondents from all age categories.

The results from the survey are presented in Chapter 3.

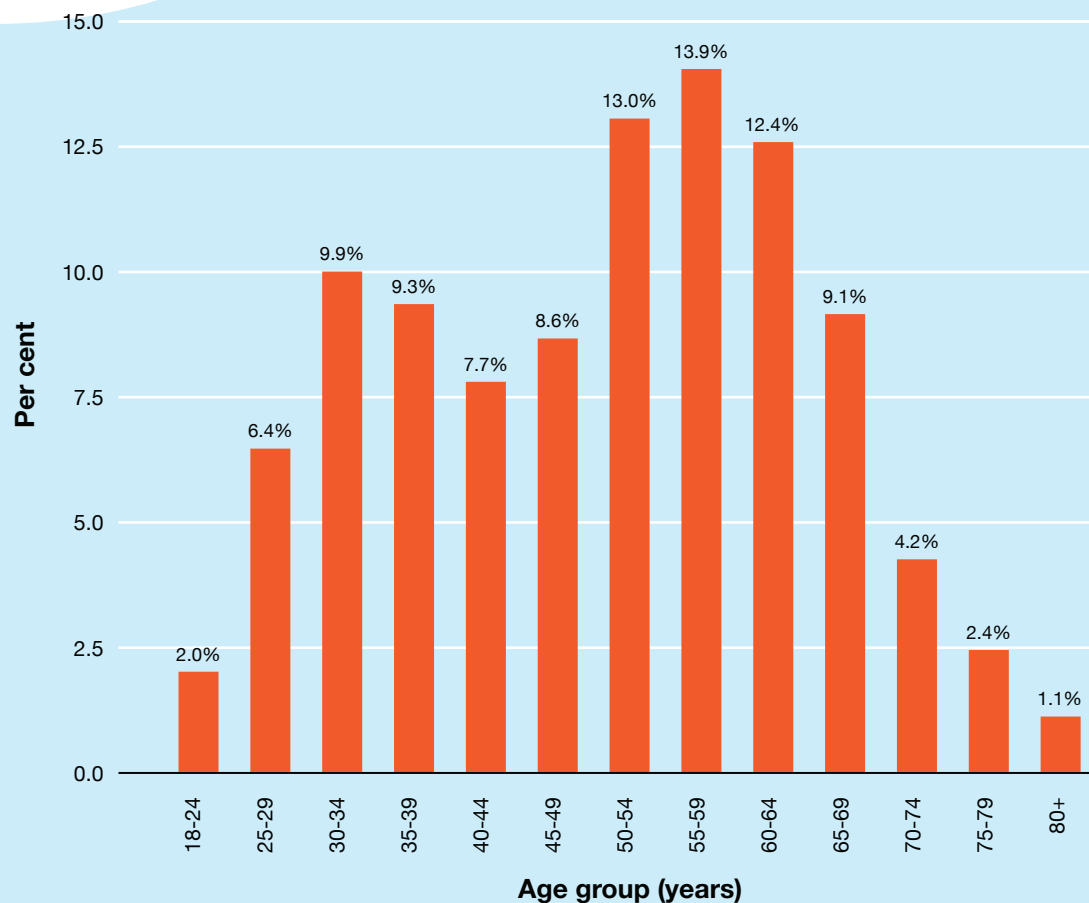
## 3.0 Results

This chapter presents the results of the health survey that was completed by respondents in February and March 2017. Four hundred and fifty-four (454) respondents completed the survey. However, not all respondents answered each question. The number (n) of respondents that answered each question is provided.

### 3.1 Characteristics of respondents

People from each age group from 18–24 years to 80 years or older participated in the survey (n=454) (Figure 3.1). The mean age of respondents was 45–49 years. The highest proportion of respondents were aged 55–59 years (13.9%). Respondents aged 80 years or older (1.1%) and 18–24 years (2.0%) were least likely to participate in the survey.

**Figure 3.1. Five-year age groups, health survey respondents, 2017 (n=454)**

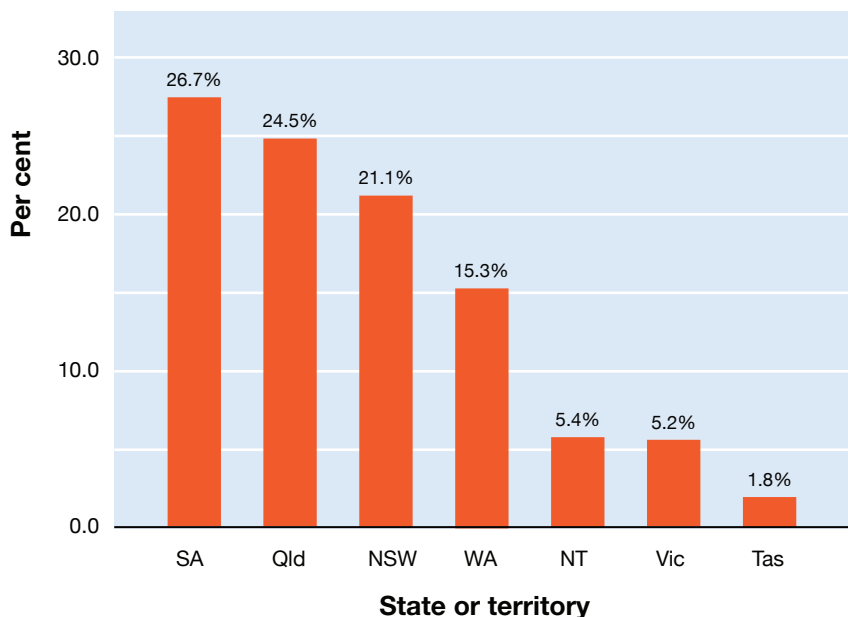


Of respondents who provided their gender (n=451), 83.1% were female and 16.9% were male. Respondents (n=438) identified as non-Indigenous (96.5%), Aboriginal only (3%), and Aboriginal and Torres Strait Islander (0.5%). No-one identified as Torres Strait Islander only.

Respondents came from a range of remote and rural Australian communities in NSW, Vic, Qld, WA, NT, SA and Tas (Figure 3.2). The highest proportion of respondents came from SA (26.7%), closely followed by Qld (24.5%) and NSW (21.1%). Few respondents came from Tas (1.8%).

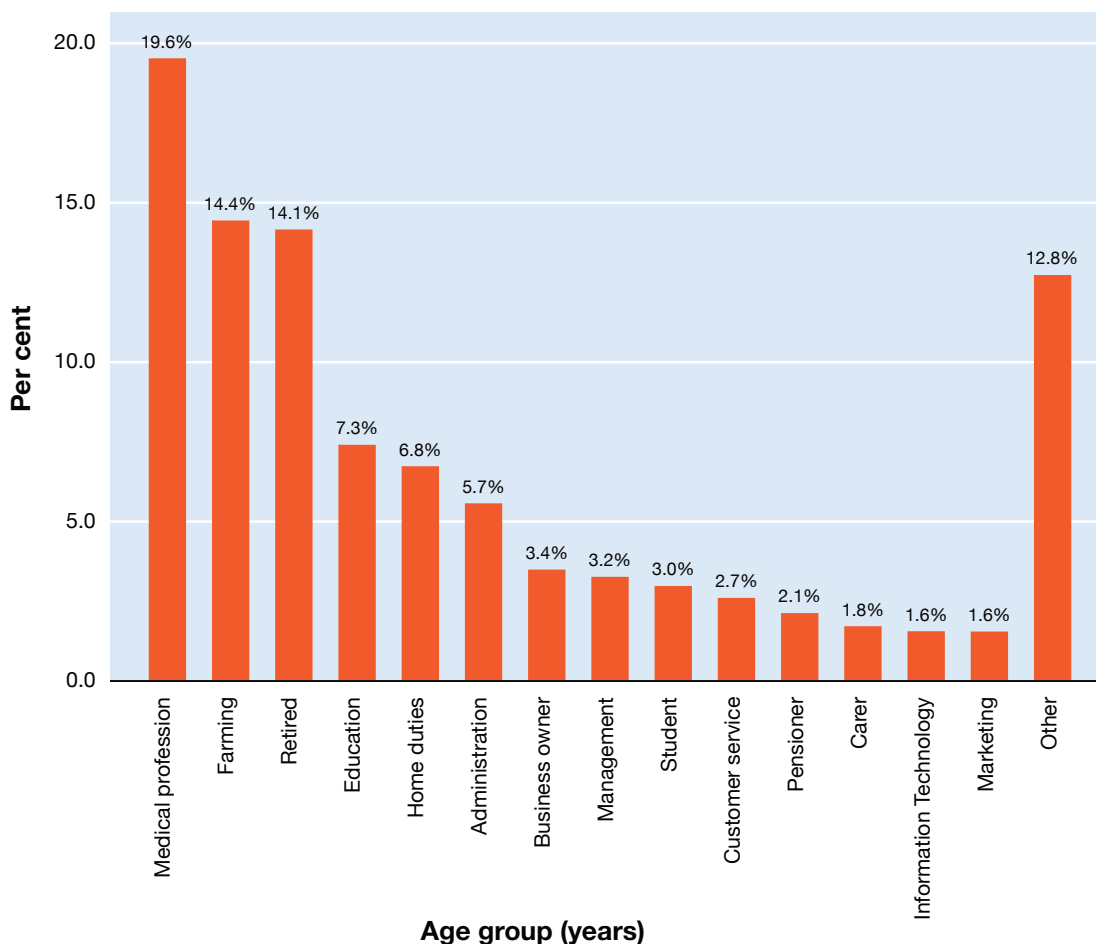


**Figure 3.2. State or territory of residence, health survey respondents, 2017 (n=445)**



Respondents were engaged in a number of different occupations. Overall, 439 respondents provided details of their occupation (Figure 3.3). Working in the medical profession (19.6%) and farming (14.4%) were the most common occupations of respondents. A large proportion of respondents were retired (14.1%). Excluding the 'other' category, the next most common occupations were education (7.3%) and home duties (6.8%).

**Figure 3.3. Occupation, health survey respondents, 2017 (n=439)**



## 3.2 Most important health issues

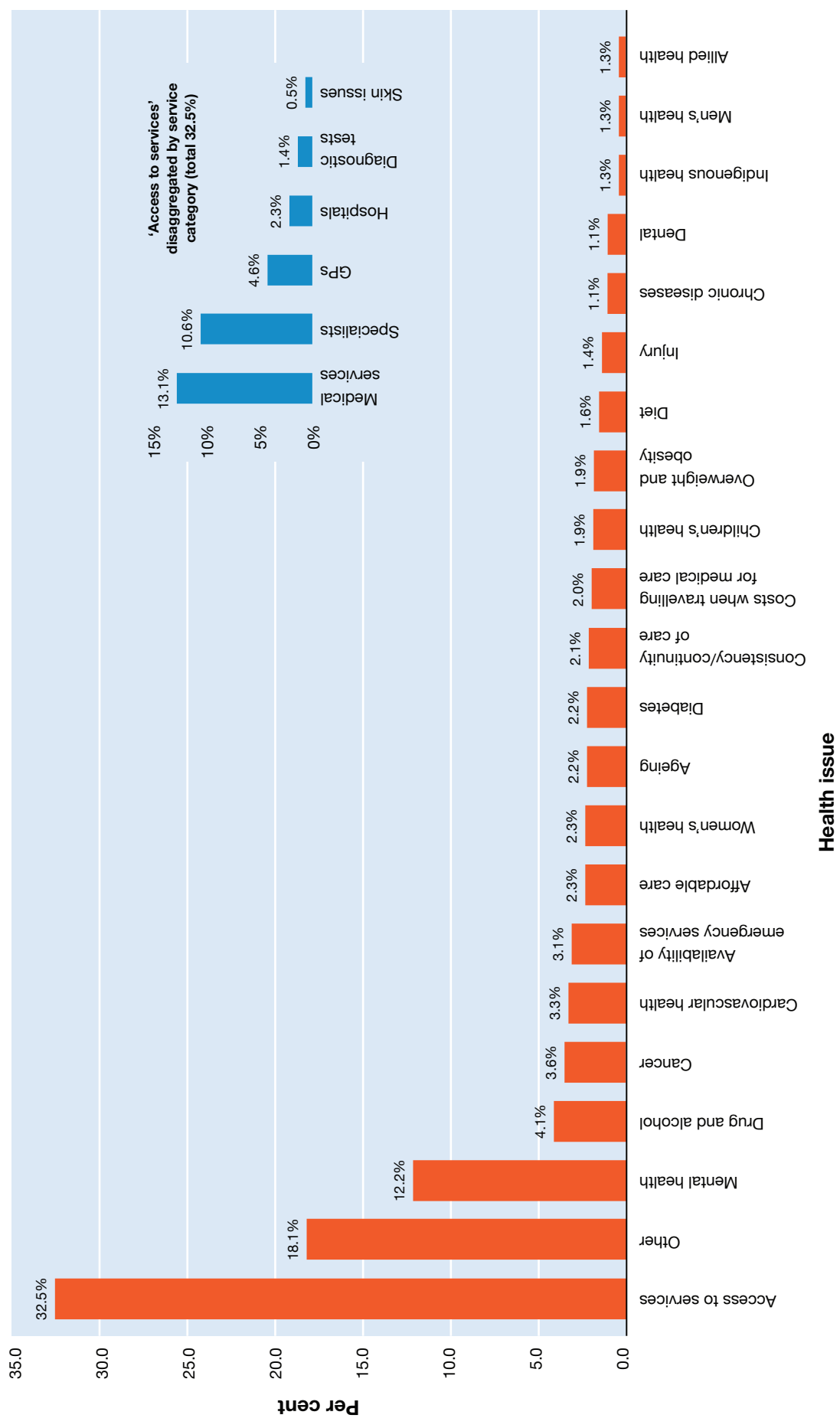
Respondents were asked to nominate up to three important health issues impacting their communities. Overall, 1,293 health issues were identified by respondents—451 respondents nominated at least one health issue of importance, 440 nominated at least two health issues of importance, and 402 nominated three issues of importance. As respondents were not asked to rank these in order of importance, all responses were consolidated into a single dataset and coded by raters A and B. The inter-rater reliability was found to be Kappa = 0.81 ( $p < 0.001$ ), 95% confidence interval (CI) (0.789, 0.837), representing a very good level of agreement.

The most important health issues nominated by respondents are represented in Figure 3.4. Access to services was identified as the most important health issue (32.5% of responses). This comprised general access to medical services (13.1%), access to specialists (10.6%), access to GPs (4.6%), access to hospitals (2.3%), access to diagnostic tests (1.4%), and access to allied health services (0.5%). Excluding 'other' issues, mental health was nominated as the second most important issue (12.2% of responses). Drugs and alcohol (4.1% of responses), cancer (3.6% of responses), and cardiovascular health (3.3% of responses) completed the top five most important health problems. Together, access to services and mental health accounted for almost half (44.7%) of all responses. Almost one in five (18.1%) responses were coded as 'other'.

### Examples of the most important health issues in remote and rural Australia identified by survey respondents

- > "Access to medical services, so many rural people have to travel long distances to see anybody other than their GP."
- > "Access to a regular GP who can, when required, provide care for all family members."
- > "Few private GPs and no younger ones coming to take over when older ones retire, if a town is lucky enough to have one."
- > "Lack of services such as x-rays and scans."
- > "Lack of mental health services."
- > "Stress, mental health, depression, anxiety."
- > "Quick access to emergency care."
- > "Child and women's health (pre/post natal)."
- > "Improve hospitals, more day surgery and specialist visits to cut travel cost and time."
- > "Alcohol and other drug addictions."
- > "Heart health."
- > "Memory loss, dementia in people living on rural and remote properties. No family around to support them."
- > "Availability of fresh fruit and vegetables."

Figure 3.4. Most important health issues impacting remote and rural communities, health survey respondents, 2017 (n=1,293 health issues)





Source: Royal Flying Doctor Service (2016b).



When Mount Gambier resident Amanda felt the first startling twinges of labour, she was also overcome by a strong feeling of déjà vu.

That's because three years earlier, Amanda and her husband Craig had suffered the tragedy of giving birth to twin daughters—Lila and Harper—when Amanda was just 20 weeks pregnant and the tiny newborns' little lungs could not sustain their first breaths beyond a few heart-breaking minutes.

Knowing from past events that Amanda was prone to premature labour and birth, they were faced with the same dreadful set of circumstances.

Craig and Amanda hurriedly made their way to the emergency department of the Mount Gambier Hospital for assessment by medical staff. Hoping to prolong the pregnancy, doctors first administered medication designed to stop the labour from continuing. Amanda also received steroids to help mature the babies' lungs as much as possible. If the labour was prolonged, this would have allowed time for the twins to be delivered in a major Adelaide hospital where crucial specialist neonatal staff and facilities were close at hand at the time of birth.

However, attempts to stall the developing labour were unsuccessful, and, at 30 weeks gestation, little Nash and Preston were delivered at Mount Gambier Hospital by emergency caesarean section.

“With their lungs too small to cope, one of the boys was immediately put on a medical ventilator, while the other was manually ventilated for ‘what felt like an hour’”, Craig said.

While the births were taking place, the RFDS had been contacted and an RFDS aircraft—with the MedSTAR Kids neonatal retrieval team and RFDS flight nurse Jackie Matear on board—was already on its way to Mount Gambier, finding a way through stormy weather to touch down safely.

“I just can’t describe the feeling of immense relief that came over us on the arrival of the aeromedical team,” Craig said. “You’re suddenly completely reassured that all the skilled care and specialist equipment that you need for your very own emergency aeromedical transfer has just come in to the room.”

The two little boys were soon speeding their way to Adelaide. Driving from Mount Gambier to Adelaide takes almost five hours, but the RFDS aircraft covered this ground in just one hour.

On arrival at Flinders Medical Centre, the boys were immediately placed into the hands of neonatal specialists.

Meanwhile, Amanda was stabilised following her surgery and flew the next morning in another RFDS aircraft to be with her newborn sons. After the boys’ speedy flight and the special care they received in their first hours, days and weeks, the boys are now fit and well—this time, a very happy ending.



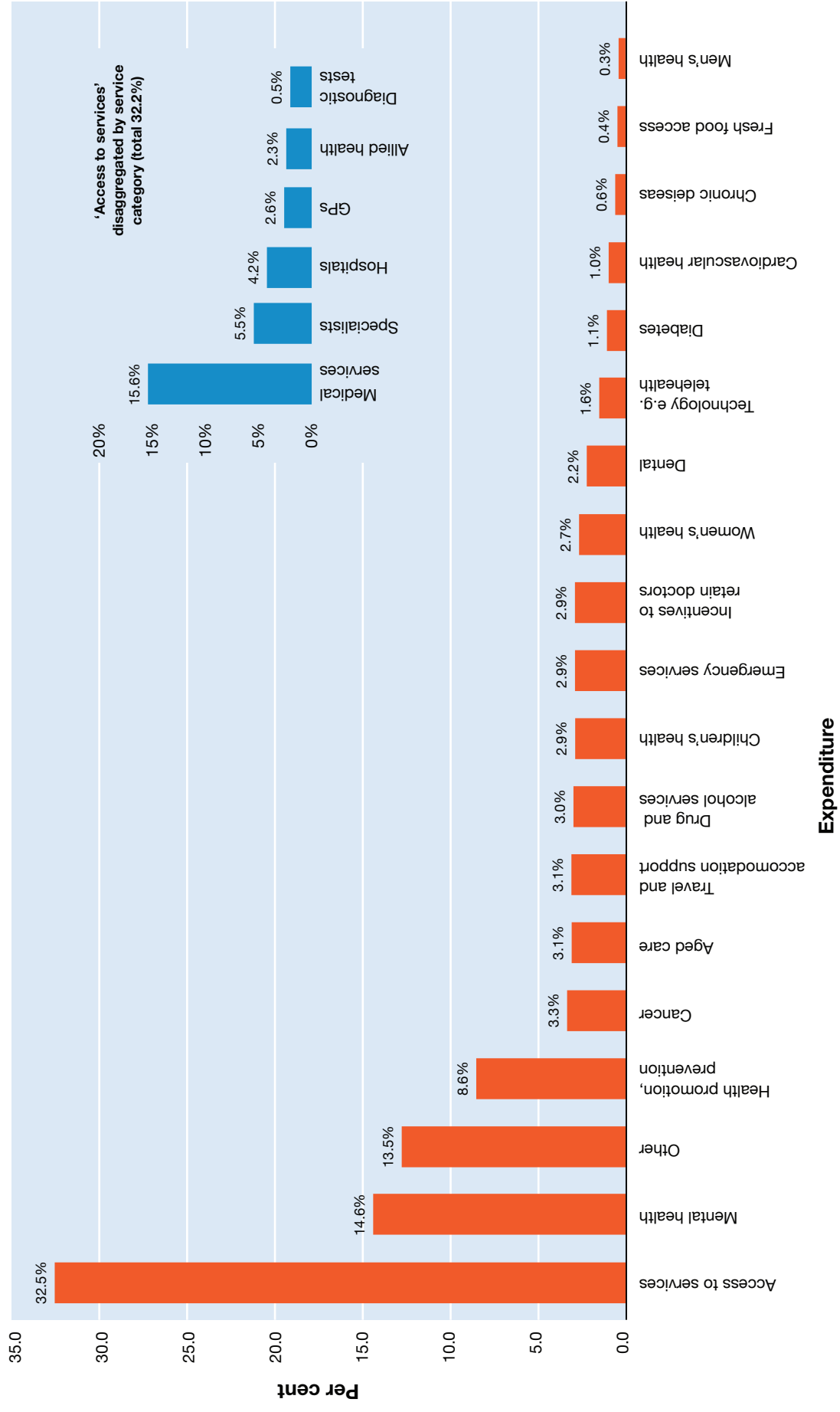
“I am in no doubt that without the specialist care and the emergency RFDS flight that the boys received, we would have lost another two,” Craig said. “That would have been absolutely devastating.”

### 3.3 Areas of health expenditure

Respondents were asked to nominate up to three areas of health that money should be spent on to improve health outcomes for people in their remote and rural communities. Overall, 1,188 areas of health expenditure were identified by respondents—440 respondents nominated at least one area of health expenditure, 407 nominated at least two areas of health expenditure, and 341 nominated three areas of health expenditure. As respondents were not asked to rank these in order of importance, all responses were consolidated into a single dataset and coded by raters A and B. The inter-rater reliability was found to be Kappa = 0.80 ( $p < 0.001$ ), 95% CI (0.781, 0.825), representing a very good level of agreement.

The areas of health that respondents identified money should be spent on to improve health outcomes in their rural communities are represented in Figure 3.5. Access to services was identified as the most important area that money should be spent on (32.2% of responses). This comprised general access to medical services (15.6%), access to specialists (5.5%), access to GPs (2.6%), access to hospitals (4.2%), access to diagnostic tests (2.0%), and access to allied health services (2.3%). Respondents identified mental health (14.6% of responses) as the next most important areas for health expenditure. Excluding 'other' areas of health expenditure, health promotion and prevention (8.6% of responses), cancer (3.3% of responses), aged care (3.0% of responses), and equally, travel and accommodation support for people needing to access healthcare outside of their community (3.0% of responses) were identified as the most important areas for health expenditure to improve health outcomes in their communities. Together, access to services and mental health accounted for almost half (46.8%) of all responses. Almost one in seven (13.5%) responses were coded as 'other'.

**Figure 3.5. Areas of expenditure to improve health outcomes in remote and rural communities, health survey respondents, 2017 (n=1,188 areas of expenditure)**



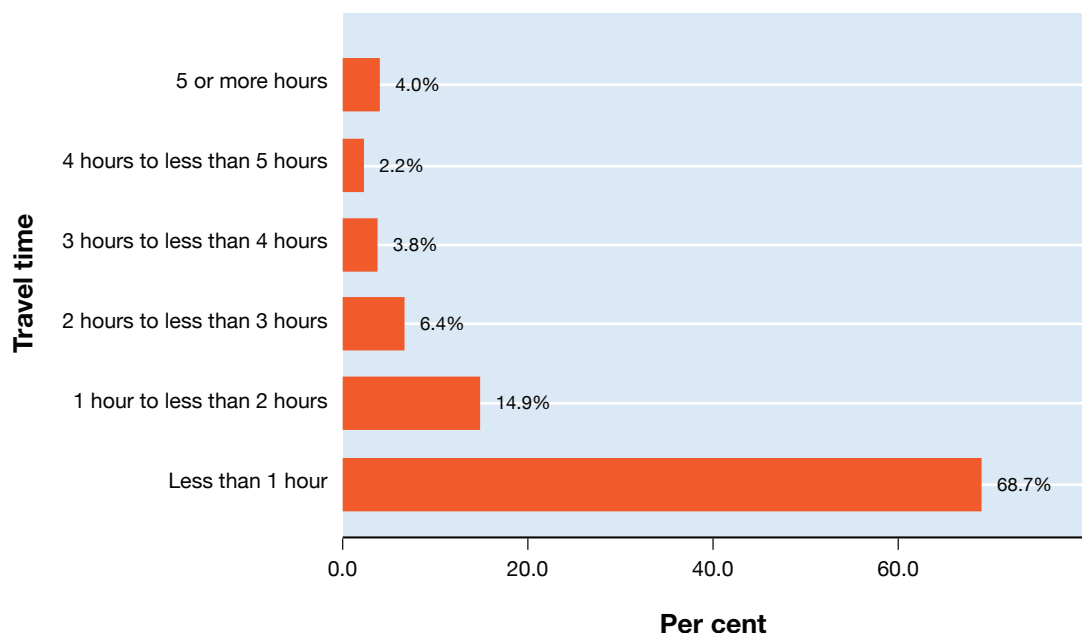
### Examples of areas where money should be spent to improve health outcomes in remote and rural Australia identified by survey respondents

- > “More doctors.”
- > “Bringing medical services out to rural areas.”
- > “More visiting specialists to rural areas.”
- > “Community health, providing allied health services.”
- > “Mental health for men and women, also teens: Access to counselling, psychologists, community programs.”
- > “Proper funding for agencies such as RFDS/rescue helicopters to facilitate better management of health emergencies.”
- > “Schemes to attract and retain doctors and health professionals.”
- > “Primary health care initiatives to prevent illness and promote health.”
- > “Cancer awareness clinics and treatments.”

### 3.4 Accessing a doctor for non-urgent and urgent care

More than two-thirds (68.7%) of respondents travelled less than an hour to see a doctor for a non-emergency (Figure 3.6). The remaining respondents travelled anywhere from one to five hours, or more, to see a doctor—4.0% of respondents travelled five hours or more to see a doctor for a non-emergency. The average travel time was less than one hour.

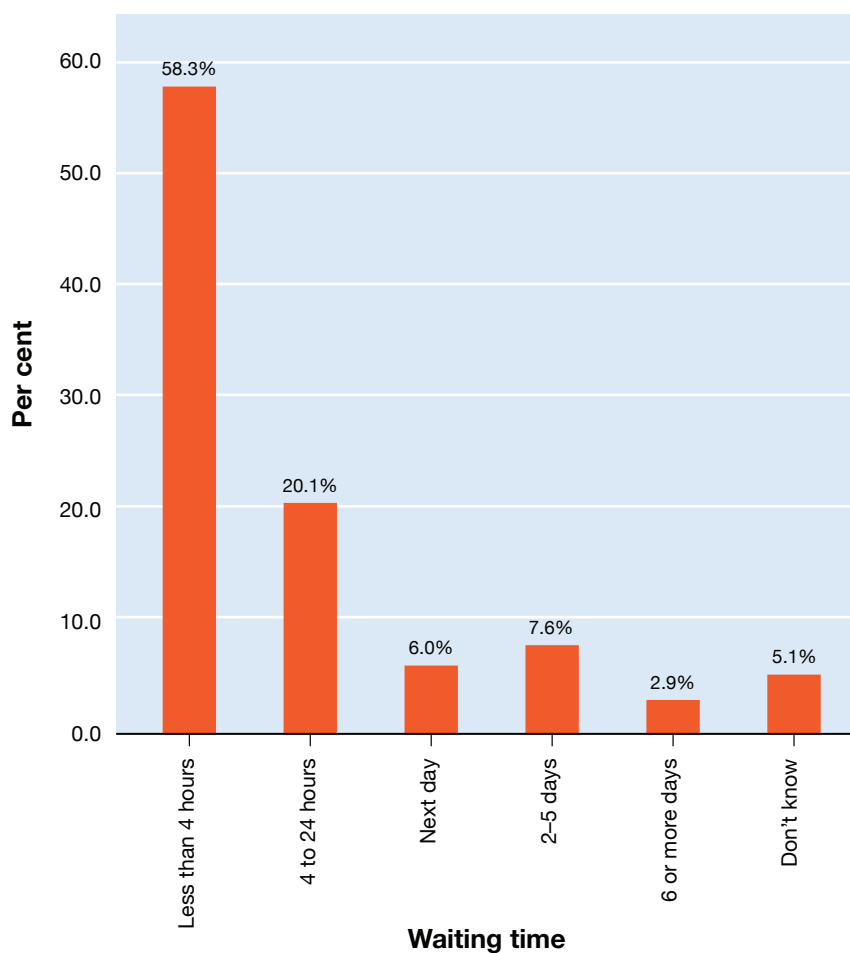
**Figure 3.6. Travel time to visit a doctor for a non-emergency, health survey respondents, 2017 (n=450)**



More than half (58.3%) of all respondents were able to see a doctor within four hours for urgent medical care (Figure 3.7). The remaining respondents were able to see a doctor anywhere from the same day to six or more days later for urgent medical care. Around one in six respondents (15.6%) were unable to see a doctor for urgent medical care for at least two days, with 2.9% having to wait six or more days to see a doctor for urgent medical care. The average amount of time respondents had to wait to see a doctor for an emergency was less than four hours.



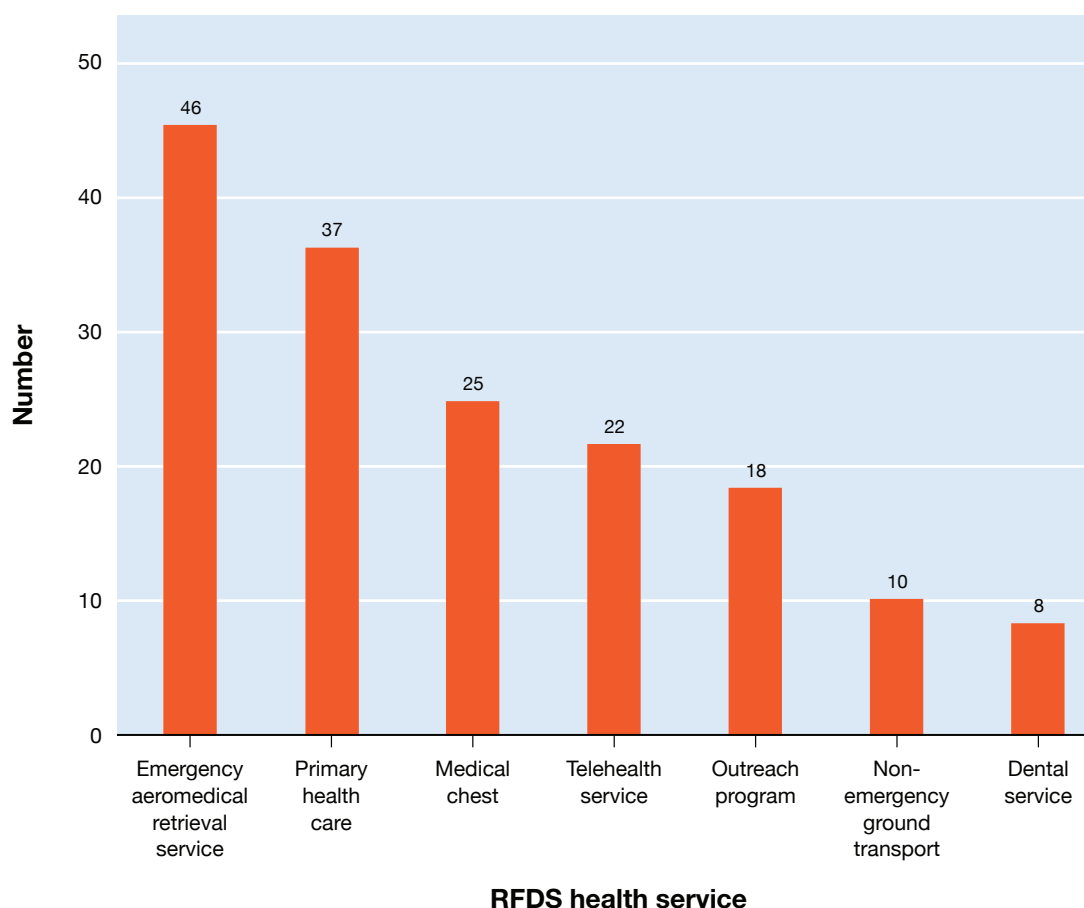
Figure 3.7. Waiting time to see a doctor for urgent medical care, health survey respondents, 2017 (n=448)



### 3.5 Use of RFDS health services

Respondents reported that they had used RFDS health services on 167 occasions in the 12 months prior to the survey (Figure 3.8). Respondents were most likely to have used the RFDS emergency aeromedical retrieval service (46 occasions of use in previous 12 months), followed by primary health care clinics (37 occasions of use in previous 12 months), and medical chests (26 occasions of use in previous 12 months). Telehealth services, outreach programs, non-emergency ground transport, and dental programs were also used by respondents in the 12 months prior to the survey.

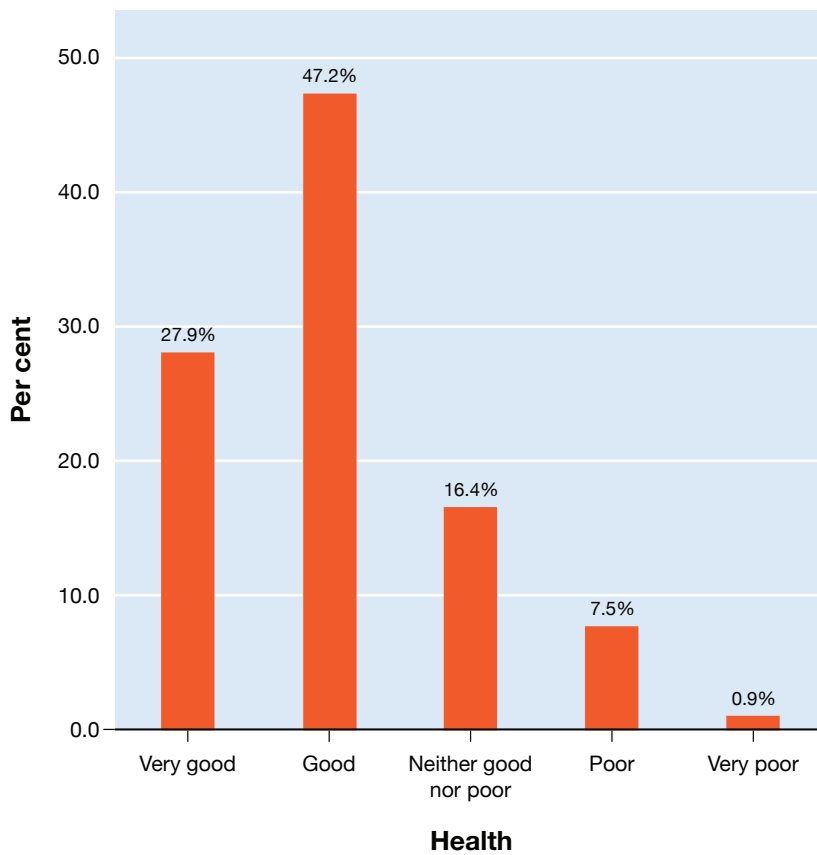
**Figure 3.8. Use of RFDS health services in previous 12 months, health survey respondents, 2017 (n=37)**



### 3.6 Health status of respondents

The majority of respondents (75.1%) reported that their health was either good or very good. However, 8.4% of respondents reported they had poor or very poor health (Figure 3.9).

**Figure 3.9. Self-reported health status, health survey respondents, 2017 (n=451)**



Chapter 4 discusses the results of the survey.

## 4.0 Discussion

The aim of the health survey was to determine the views of remote and rural Australians around a number of issues related to the health of people in their communities, areas of health that money should be spent on to improve health outcomes for people in their communities, their access to a doctor for both non-urgent and urgent health care, their own health, and their use of RFDS health services. The data presented in this report captured a snapshot of views from a sample of remote and rural Australians.

The results demonstrated that remote and rural Australians are significantly impacted by poor access to health services—respondents nominated access to health services as both the main health issue impacting remote and rural communities and the leading area of health that money should be spent on to improve health outcomes. Similarly, mental health was nominated as both an important health issue impacting remote and rural communities, and an area where money should be spent to improve health outcomes within local communities.

### 4.1 Characteristics of respondents

Females and non-Indigenous Australians were overrepresented among survey respondents—three-quarters of respondents were female and 96% of respondents were non-Indigenous. This contrasts with the actual population in remote and rural areas. The proportion of males and females living in remote and rural areas is approximately equal and almost half (45%) of all people in very remote areas and 16% in remote areas are Indigenous (Australian Institute of Health and Welfare, 2014).

Some possible explanations for the gender inequality among survey respondents have been suggested. These include that females are more interested in health issues, and are generally more likely to complete online surveys (Anderson & Aydin, 2005); and that females are more likely to engage in online activity characterised by communication and exchanging of information than men and that accessing an online survey, completing it, and returning it is a process of online information-exchange (Jackson, Ervin, Gardner, & Schmitt, 2001).

Low participation of Indigenous Australians in the survey may be a result of poorer access to computers and the internet, especially in remote areas—in 2011 around 80% of Australians had regular access to the internet, but only 6% of residents in some remote Indigenous communities had a computer (PHIDU, 2016).

The survey also demonstrated that a large proportion of respondents were medical professionals and farmers. This is unsurprising, since the survey was made available on digital media channels by Australia's peak farming body, the NFF, and the RFDS.

### 4.2 Important health issues

#### 4.2.1 Access to services

Poor access to health services was identified by survey respondents as the most significant health issue impacting people living in remote and rural communities. Access issues nominated by respondents included poor access to general services, GPs, specialists, allied health professionals, diagnostic tests and hospital services. This concurs with the evidence. Specifically, there is strong evidence that poor access to health services is a significant barrier for remote and rural Australians (Australian Institute of Health and Welfare, 2016a). More specific research has linked the poorer health status of remote and rural Australians, in part, to inequitable access to primary health care services (Thomas, Wakerman, & Humphreys, 2015).

Researchers have identified poor access to medical practitioners and long waiting periods to see a GP as major barriers to remote and rural Australians receiving timely primary health care services (Duckett et al., 2013).

There is also evidence of poorer access to MBS services (Centre for International Economics, 2015), screening services, and selected hospital procedures by remote and rural Australians compared to people in major cities (Australian Institute of Health and Welfare, 2016a).

Researchers have identified that “Australia’s PHC [primary health care] system needs to boost its capacity to provide a range of basic services to Australians in rural and remote communities” (Thomas et al., 2015, p. 2). It is clear that remote and rural Australians are also seeking better access to specialist services, and that these services are lacking in many areas.

To ensure that remote and rural Australians have access to the right types of services, existing services must be identified and mapped. It will then be possible to determine areas of greatest need, and the types of services that are required in these communities. The RFDS recently undertook to complete this task for remote and very remote areas of Australia (see Section 4.2.1.1).

#### **4.2.1.1 Service Planning and Operational Tool (SPOT)**

The RFDS commissioned the development of the Service Planning and Operational Tool (SPOT) to assist with planning where services should be located, relative to need, by mapping existing services and overlaying these with population data.

To create SPOT, a 1 km<sup>2</sup> grid was applied to a map of remote Australia, and the population of each grid square (‘node’) was added—to enable users to understand health service need. The demographics of the population were then added to each node, allowing users to identify population groups with high or specific needs. A comprehensive database of health services within Australia was then compiled. Geographic location and service types were added to the map. This was then combined with the travel time between the 35,000 identified nodes, enabling health service availability to be modelled.

Apart from these map-based functions, SPOT can predict where additional health services should be placed to improve access to the greatest number of under-served people and where limited resources are best directed.

There exists great potential for SPOT to be replicated in inner and outer regional areas to assist in identifying existing services and identifying areas where new services should be located to improve outcomes for populations with poor health access.

#### **Examples of access issues identified by survey respondents**

- > “Access to medical services; so many rural people have to travel long distances to see anybody other than their GP.”
- > “Improve hospitals; more day surgery and specialist visits to cut travel cost and time.”
- > “Lack of medical cover in rural and remote towns ‘24/7’—7 days a week, 365 days a year.”

#### **4.2.2 Mental health**

Mental health was identified by health survey respondents as the second most important issue impacting remote and rural communities. This is consistent with research and other evidence that suggests that mental health issues are important issues for all Australians. Specifically, each year, one in five (20%) Australians aged 16–85 years experiences a mental disorder, and almost half (45%) of all Australians will experience a mental disorder at some point during their lifetime

(Australian Bureau of Statistics, 2008). Having a mental disorder is also a risk factor for suicide,<sup>4</sup> which is the main cause of premature death among people with a mental disorder (Australian Bureau of Statistics, 2008).

Lower levels of mental health can cause distress and may affect a person's thinking, mood, and behaviour, which can lead to adverse impacts on day-to-day functioning, relationships, and physical health, and is a risk factor for premature death (beyondblue, 2016). A person with a clinically diagnosable condition related to their mental health is said to be experiencing a mental disorder (Slade, Johnston, Teesson, Whiteford, Burgess, Pirkis, & Saw, 2009).

The evidence suggests that the prevalence of mental disorders in remote and rural Australia is similar to that in major cities (Australian Bureau of Statistics, 2008). Around 960,000 people in remote and rural Australia experience a mental disorder each year (Garvan Research Foundation, 2015).

While the prevalence of mental disorders is similar throughout Australia, rates of suicide and self-harm are higher in remote and rural areas, and increase with increasing remoteness (Harrison & Henley, 2014). Farmers, young men, older people, and Indigenous Australians in remote areas are at greatest risk of completing suicide (Arnautovska, McPhedran, & De Leo, 2015; Harrison & Henley, 2014). In 2010–2011, residents in very remote areas were almost twice as likely as those in major cities to die from suicide (Harrison & Henley, 2014). The increasing rates of suicide with remoteness suggest that there are significant mental health issues that need to be addressed in remote and rural Australia (National Rural Health Alliance Inc, 2016).

Mental health has also been identified as a key priority by the Primary Health Networks (PHNs). In 2015, the Australian Government established 31 PHNs, which are independent organisations closely aligned with state and territory local health networks or their equivalent (Booth, Hill, Moore, Dalla, Moore, & Messenger, 2016). The two main objectives of the PHNs are to “increase the efficiency and effectiveness of medical services, and improve coordination of care to ensure patients receive the right care in the right place at the right time” (Department of Health, 2015).

In 2015, the Australian Government agreed to six key priorities for targeted work by PHNs, of which mental health is one (the others are Aboriginal and Torres Strait Islander health; population health; health workforce; eHealth; and aged care (Department of Health, 2015).

Mental health is also one of nine of Australia's National Health Priority Areas (NHPAs). The NHPA initiative was Australia's response to the World Health Organization's global strategy Health for All by the Year 2000 (Australian Institute of Health and Welfare, 2016d). It addresses specific diseases and conditions that contribute significantly to the burden of illness and injury in the Australian community, and for which there is the potential for health gain (Australian Institute of Health and Welfare, 2016d). It was developed as a collaboration between the Australian and state and territory governments, non-government organisations, health experts, clinicians, and consumers (Australian Institute of Health and Welfare, 2016d).

Alongside mental health, the other eight NHPAs are cancer control; cardiovascular health; injury prevention and control; diabetes mellitus; asthma; arthritis and musculoskeletal conditions; obesity; and dementia (Australian Institute of Health and Welfare, 2016d).

### **4.2.3 Other issues**

Drugs and alcohol, cancer and cardiovascular health were also nominated as important health issues by health survey respondents. There is strong evidence that these health issues are significant for remote and rural Australians—who are more likely than people living in major cities to have risky alcohol consumption, higher daily smoking rates, problematic drug use, and insufficient physical activity, potentially leading to increased risk for some cancers and cardiovascular disease (Australian Institute of Health and Welfare, 2014, 2016a).

---

<sup>4</sup> Suicide refers to “the act of deliberately killing oneself”; suicide attempt is used to mean any “non-fatal suicidal behaviour” and refers to intentional self-inflicted poisoning, injury or self-harm which may or may not have a fatal intent or outcome (World Health Organization, 2014, p. 12). The terms suicide and self-harm are used interchangeably in this report.

Cancer control and cardiovascular health have also been identified as health priorities within the broader Australian context, including as NHPAs (Australian Institute of Health and Welfare, 2016d) and population health priorities of the PHNs (Department of Health, 2015). The National Health and Medical Research Council (NHMRC)—Australia’s leading expert body promoting the development and maintenance of public and individual health standards, chiefly through research funding—has provided significant amounts of funding for research into these areas.

It is clear that the health issues respondents nominated as important have also been recognised as important areas for action by governments, PHNs and research funding bodies.

#### **4.2.4 Indigenous health issues**

Few respondents identified Indigenous health issues as important. This was disappointing since across all remoteness areas, Indigenous Australians generally experience poorer health than non-Indigenous Australians (Australian Institute of Health and Welfare, 2014) in relation to chronic and communicable diseases, mental health, infant health, and life expectancy (Aboriginal and Torres Strait Islander Social Justice Commissioner, 2005). However, this result is unsurprising considering the very low proportion of respondents who were Indigenous.

Indigenous Australians are five times as likely as non-Indigenous Australians to die from endocrine, nutritional and metabolic conditions such as diabetes, and three times as likely to die from digestive conditions (Australian Institute of Health and Welfare, 2015b). Age-adjusted data demonstrated that in 2014–2015 Indigenous Australians were more than twice as likely as non-Indigenous Australians to be hospitalised for any reason (Australian Institute of Health and Welfare, 2016b). Indigenous Australians are twice as likely as non-Indigenous Australians to be hospitalised for an injury (Australian Institute of Health and Welfare, 2015a), and 1.8 times as likely to die from an injury than non-Indigenous Australians (Henley & Harrison, 2015). Indigenous Australians are three times as likely to die from chronic lower respiratory diseases and twice as likely to die as a result of self-harm (suicide) than non-Indigenous Australians (Australian Bureau of Statistics, 2016).

Compared to non-Indigenous Australians, Indigenous Australians demonstrate higher age-standardised death rates for a number of illnesses and injuries (Australian Institute of Health and Welfare, 2015c). Indigenous Australians also experience higher prevalence rates of communicable diseases compared with non-Indigenous Australians, including shigellosis (2.6 times greater), pertussis (whooping cough) (54.3 times greater), and tuberculosis (6 times greater) (Abdolhosseini, Bonner, Montano, Young, Wadsworth, Williams, & Stoner, 2015).

Similarly, life expectancy is lower and mortality rates are higher among Indigenous Australians compared to non-Indigenous Australians. In 2010–2012, the estimated life expectancy at birth was 10.6 years lower for Indigenous males (69.1 years) compared to non-Indigenous males (79.7 years) and 9.5 years lower for Indigenous females (73.7 years) compared to non-Indigenous females (83.1 years) (Australian Institute of Health and Welfare, 2015c).

Fatal burden of disease studies have also demonstrated the existence of health inequalities—the fatal burden of disease and injury in the Indigenous population is estimated to be 2.6 times that experienced by non-Indigenous Australians, with injuries (22%) and cardiovascular disease (21%) contributing the most to the fatal burden of disease for Indigenous Australians (Australian Institute of Health and Welfare, 2015b).

### **4.3 Areas of health expenditure**

Remote and rural health survey respondents nominated access to medical services and mental health as the top two areas that money should be spent on to improve health outcomes for people living in their communities. This is unsurprising since these were also nominated as the two most important health issues within their communities.

One way of improving access to services is by offering incentives to encourage doctors to set up practices in remote and rural areas, and stay in these areas. This has also been identified as an important way of improving access to services by the Australian Government, which has developed a number of schemes, and implemented a number of initiatives to encourage doctors to remain in remote and rural areas. Initiatives include:

- > 5 Year Overseas Trained Doctor Scheme—Developed to address long-term rural medical workforce shortages, this scheme allows a reduction in the 10-year moratorium for overseas trained doctors, to five years, if they opt to work in identified remote or difficult-to-recruit locations (Department of Health, 2016b; Rural Health Workforce Australia, 2017);
- > Bonded Medical Places (BMP) Scheme—Students accepting a BMP commit to working in a district of workforce shortage for a specified period after they graduate from medical school (Department of Health, 2016b);
- > Rural and Remote General Practice Program—Provides funding to Rural Workforce Agencies in each state and the NT to provide a range of activities and support to improve the recruitment and retention of GPs to rural and remote areas. Money is used to assist communities to recruit GPs, find appropriate placements for doctors who want to relocate to rural Australia, assist with the costs of relocation, support doctors' families with fitting into a new community, and helping doctors to access infrastructure, support and training (Department of Health, 2016b); and
- > General Practice Rural Incentives Program—Aims to encourage medical practitioners to practise in regional and remote communities using incentive payments which increase with increasing remoteness (Department of Health, 2016b).

However, despite government incentive schemes, the recruitment and retention of doctors in small, often isolated, remote and rural communities remains difficult (McGrail, Humphreys, & Ward, 2015). Some of the barriers for doctors working in these communities include long work hours, and difficulties associated with professional isolation such as taking leave from work, lack of peer support, and limited access to professional development (McGrail et al., 2015). Other factors relate to doctors' families, including lack of employment opportunities for partners, and poorer education opportunities for school-age children (McGrail et al., 2015). As a result, some doctors may be reluctant to work in remote and rural areas regardless of government incentives.

The importance of mental health is also well recognised in Australia. Specifically, it is included as a NHPA and recognised as a priority for PHNs. Mental health is a priority funding area for the NHMRC which, in 2016, expended \$71.7 million on mental health research (National Health and Medical Research Council, 2017). Mental health was the third highest area of expenditure after cancer (\$170.1 million) and cardiovascular disease (\$106 million) (National Health and Medical Research Council, 2017). It is likely that the newly created Medical Research Future Fund will provide funding for future research that addresses national health priorities, supports the sustainability of the health system, and drives medical innovation (Department of Health, 2016a).

Health promotion and prevention was also identified as an area where money should be spent to improve health outcomes for remote and rural communities.

There is good evidence that health promotion and prevention activities can improve health outcomes and that the

*“attainment of the highest possible standard of health depends on a comprehensive, holistic approach which goes beyond the traditional curative care, involving communities, health providers and other stakeholders [and that] this holistic approach should empower individuals and communities to take actions for their own health, foster leadership for public health, promote intersectoral action to build healthy public policies and create sustainable health systems in the society” (Kumar & Preetha, 2012, p. 6).*



The need for prevention has been widely identified as necessary to avoid the manifestation of diseases, to keep people healthy, and to reduce the impact of poor health, including, for example, from chronic diseases, with their large associated health, social and economic burdens (Australian Institute of Health and Welfare, 2014).

#### **4.4 Access to a doctor in a non-emergency and an emergency**

Health survey respondents spent an average of one hour travelling to see a doctor for a non-emergency, with some travelling for as long as five or more hours to access a doctor. For urgent medical care, the majority of survey respondents were able to access a doctor within four hours, although some waited for up to six days, or longer, to see a doctor.

Poor access to doctors for both non-emergency and emergency care remains a significant impediment to achieving good health for many remote and rural Australians (McGrail et al., 2015). As previously described, there are multiple factors that adversely impact on the recruitment and retention of doctors in remote and rural areas. Unless innovative approaches to access are identified, it is likely that remote and rural Australians will continue to experience poor access to medical care for both emergencies and non-emergencies. Although remote and rural Australians of sparsely settled communities are prepared to travel further to access non-emergency care than people in more densely settled areas (McGrail et al., 2015), striving for equity of access to medical treatment should remain a government priority.

#### **4.5 Use of RFDS health services**

Multiple RFDS health services were used by respondents in the 12 months prior to the survey, and many respondents used more than one service, suggesting that the RFDS plays an important role in delivering services to people in remote and rural areas. The RFDS emergency aeromedical retrieval service, primary health care services, telehealth services and medical chests were the four services most used by respondents.

##### **4.5.1 RFDS emergency aeromedical retrieval service**

The RFDS emergency aeromedical retrieval service was the most utilised RFDS service by health survey respondents in the 12 months prior to the survey.

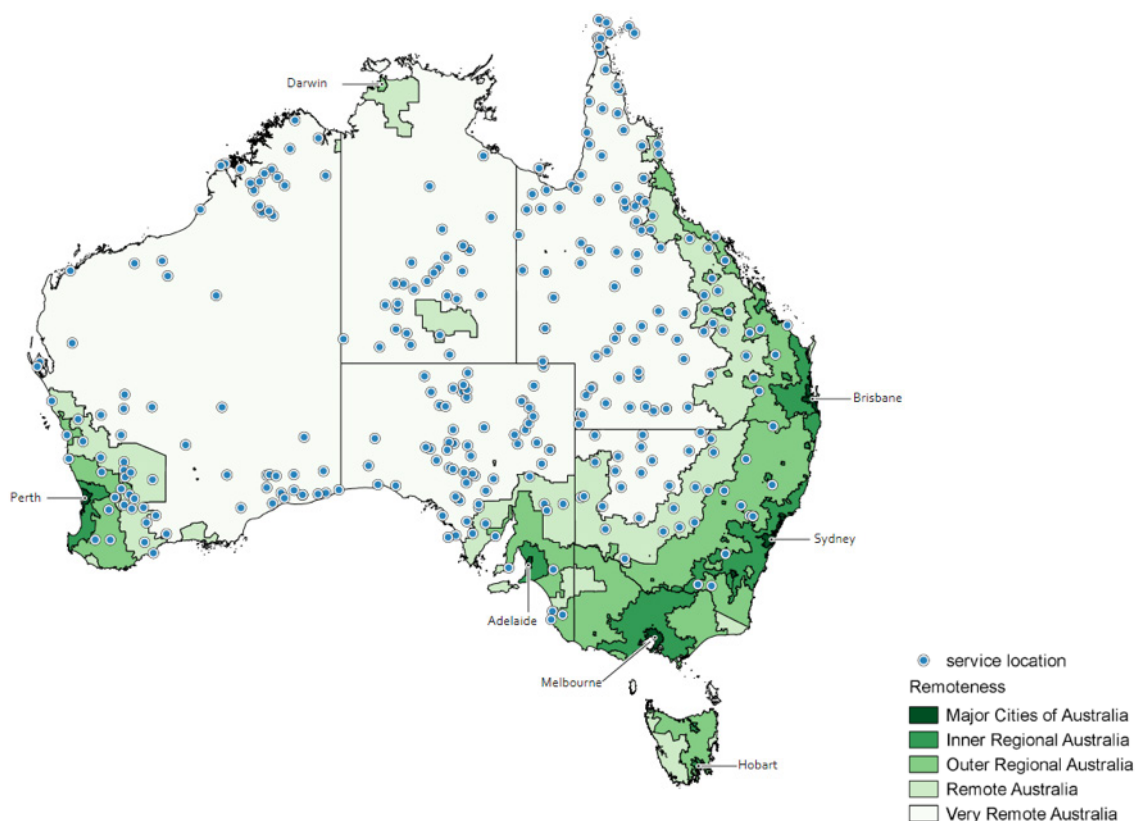
The RFDS is best known for its emergency aeromedical retrieval service. In major cities, the care of sick or injured Australians is characterised by timely access to emergency services, including road ambulance and hospital services. However, most Australian states and territories comprise remote and regional areas that are either difficult to access by road or too remote to enable timely hospital transfer by road ambulance. Comprehensive medical services are often unavailable in these areas, and aeromedical retrieval may be the most effective way of transporting patients to receive timely hospital care. Patients sustaining illnesses and injuries may need to be transported long distances, in emergency situations, to receive definitive care in a tertiary hospital). The RFDS, as a provider of emergency aeromedical retrieval services, fills this gap and provides a vital service to remote and rural Australians who require emergency medical treatment in a tertiary hospital, and who are unable to access local emergency medical treatment in a hospital, due to their remoteness.

##### **4.5.2 RFDS primary health care services**

The RFDS primary health care service was the service second most used by health survey respondents in the 12 months prior to the survey.

The RFDS provides primary health care services to people in remote and rural areas, through, for example, its clinic program (Figure 4.1). By providing services to people who, because of geographic factors, do not have reasonable access to normal medical infrastructure, the RFDS plays a pivotal role in the provision of universal access to primary health care.

**Figure 4.1. RFDS primary health care clinics, by ASGS remoteness areas, 2014–2015**



ASGS, Australian Statistical Geography Standard; RFDS, Royal Flying Doctor Service.

Source: Developed for the RFDS by the Australian Institute of Health and Welfare, 2016.

Within the RFDS, primary health care is provided through medical, nursing and oral health care clinics with 14,432 clinics delivered in 2015–16 (Royal Flying Doctor Service of Australia, 2016).

The aims of the primary health care clinic program are to:

- > deliver primary health care clinics, nursing services and allied health services in areas beyond the normal medical infrastructure, in areas of market failure, and in areas of most need;
- > deliver primary health care clinics and nursing services on a regular basis where there are no other regular similar services, including no MBS billable services, and within a multidisciplinary context wherever possible; and
- > deliver flexibly planned and conducted services based on need and the program's priorities in collaboration with relevant stakeholders and other service providers, including the communities receiving the service.

RFDS primary health care clinics provide comprehensive general practice services, and offer and facilitate all aspects of primary medical care. General practice clinics are held on a regular basis in remote locations and the frequency of visits depends on local needs.

All RFDS primary health care services are accessible to Indigenous and non-Indigenous Australians. Indigenous-focused health care may be available in regions serviced by the RFDS through Aboriginal Community Controlled Health Organisations (ACCHOs), which are controlled by, and accountable to, Aboriginal people in the areas in which they operate. ACCHOs aim to deliver holistic, comprehensive and culturally appropriate health care to the community that controls it. Although the majority of patients accessing care delivered by ACCHOs are Indigenous, non-Indigenous Australians can also access these services (Australian Institute of Health and Welfare, 2013).

### **4.5.3 RFDS telehealth service**

The RFDS telehealth service was also used by health survey respondents in the 12 months prior to the survey.

The RFDS operates a 24/7 telehealth service. Telehealth consultations (also called remote consultations) describe telephone calls that come into an RFDS base from individuals or health workers in remote and rural areas who require medical assistance or advice from an RFDS doctor. This service also supports the aeromedical retrieval service and provides a service to remote and rural residents who require doctor or nurse consultations. In most cases, the patient has no permanent medical services available, and limited, if any, access to a hospital (Centre for International Economics, 2015). Unlike other telehealth services, which are more akin to triage and referral services, the RFDS telehealth service seeks to resolve medical issues for the patient (Centre for International Economics, 2015). Calls to this service range from GP services to assist in managing chronic conditions, such as diabetes, asthma or heart conditions, to emergency calls around poisons or injuries (Centre for International Economics, 2015).

### **4.5.4 RFDS medical chests**

Health survey respondents also reported that they had accessed items from RFDS medical chests in the 12 months prior to the survey. A medical chest is a secure package of pharmaceutical and non-pharmaceutical items held by custodians in remote areas of Australia. RFDS doctors prescribe the use of medicines, or other items, from these chests.

### **4.5.5 Other services**

Other health services provided by the RFDS, and that respondents indicated they had used in the 12 months prior to the survey, included non-emergency patient transport services, repatriation services, oral health services, outreach programs, health promotion and education activities, clinic charter services, and mental health and social and emotional wellbeing services.

## **4.6 Health status of respondents**

The self-reported health status of respondents demonstrated that most respondents had good or very good health. This is a pleasing result, since the evidence indicates that remote and rural Australians generally experience poorer health than their counterparts in major cities.

## **4.7 Strengths and limitations of the research**

There are both strengths and limitations to the research methodology employed for this study, which should be acknowledged. These are described below.

### **4.7.1 Strengths**

The survey was voluntary, meaning that people were free to choose whether to participate. If they changed their mind at any time during the survey, they were able to discontinue the survey.

Developing the survey online and administering it via the internet meant that it was cheaper, faster, environmentally friendly and convenient compared to other survey methods (or 'compared to face-to-face or paper-based surveys'). People were able to complete the survey from the comfort of their own home, at a time of their choosing, and were not required to participate in face-to-face interviews with a researcher. It is possible that participants were more likely to provide honest responses via the internet survey than they might have done in a face-to-face interview, due to the anonymity of the survey.

Responses were also collected and displayed in real time, which meant that researchers were able to view individual responses and consolidated data as they arrived. In addition, researchers were not required to transcribe responses, thereby reducing the potential for errors in the transcribing process. Data were also quick to analyse, as there was no need to enter data into a database.

Finally, developing and administering the survey via the internet was a good way to reach populations that may not otherwise have been able to participate. This methodology is especially relevant for remote and rural populations who may not normally be invited to participate in face-to-face research due to the large distances researchers may need to travel to survey them.

#### **4.7.2 Limitations**

The snowball sampling technique used in this survey is a non-probability sampling technique and therefore does not recruit a random sample—participants did not participate in the survey by chance alone (Sadler, Lee, Lim, & Fullerton, 2010). As a consequence, conclusions “reached in a study that used a snowball recruitment strategy may be biased, e.g., the sample may include an over-representation of individuals with numerous social connections who share similar characteristics” (Sadler et al., 2010, p. 3).

Another limitation to snowball sampling is that there is no statistically reliable way to estimate whether ‘saturation’ of the sample has been reached—this is especially important for qualitative research (Sadler et al., 2010). Saturation occurs when no new information is forthcoming (Sadler et al., 2010). This is important because researchers are seeking to ensure that the greatest amount of information has been obtained from a sample in order to make conclusions about the research. If saturation has not been reached, it can be difficult to generalise findings to the wider population (Sadler et al., 2010).

Answers to the demographic questions show that the demographic characteristics of survey respondents do not match the overall population of remote and rural Australia—females and non-Indigenous Australians were overrepresented among respondents. Future research should seek to capture the views of Indigenous Australians and males—this may require a different approach to sampling, such as face-to-face surveys, mail surveys, focus group work, and involving Aboriginal health workers in question design and survey implementation.

The survey was biased towards people who had access to the internet. Sections of the community that may not have good access to the internet—for example, some very remote areas and some Indigenous communities—were unable to participate in the survey.

It is also possible that participants may have completed the survey more than once, as the researchers did not limit surveys to one per internet provider address, recognising that multiple household members may wish to complete the online survey using the same computer.

Factors dissuading people from participating may have included people feeling insecure about whether their answers would be treated anonymously, or having slow internet connectivity.

The results of the health survey provide only an indication or ‘snapshot’ of what some people in remote and rural areas think about health issues. Further research is required in order to have greater confidence that the results represent the views of the majority of remote and rural Australians.

## 5.0 Conclusion

This report has described the results of an online survey of remote and rural Australians that sought their responses to a range of health issues, including: the most important health issues impacting their communities; areas of health that money should be spent on to improve health outcomes for people living in their community; their access to doctors for both non-urgent and urgent health care; their use of RFDS health services; and their own health and demographics.

The 11-item survey was developed using SurveyMonkey, and a link to the survey was posted on digital media channels of the NFF, RFDS and other organisations. Snowball sampling was employed in order to distribute the survey more widely.

The data presented in this report provide a snapshot of the views of 454 remote and rural Australians, aged from 18 years to 80 years and beyond, and from all states and territories, except the Australian Capital Territory.

The five most important issues identified by respondents were access to medical services; mental health; drugs and alcohol; cancer; and cardiovascular health. The areas of health that respondents identified money should be spent on included: access to medical services; mental health; health promotion and prevention activities; cancer; aged care; and travel and accommodation support for people needing to access health care outside of their community.

RFDS services were used on 167 occasions in the 12 months prior to the survey with the emergency aeromedical retrieval service and primary health care service the two most utilised RFDS services.

Clearly, efforts to improve access to services, particularly to general medical services and specialists, are needed. This is especially important in light of recent research that has linked the poorer health status of remote and rural Australians, in part, to inequitable access to primary health care services (Thomas et al., 2015). By using SPOT—which has mapped existing services in remote and rural Australia, and overlaid these with population data—governments and organisations, such as the RFDS, can better plan where services should be located, and which services would best serve a community, relative to need. Funding for the provision of appropriate medical services, to underserved communities, is vital to improve health outcomes.

The current study has provided strong evidence around the health priorities for remote and rural Australians. It serves as a strong platform from which the RFDS and NFF can conduct advocacy efforts to improve health outcomes for remote and rural Australians.

Future research should seek to build on these data, and focus on engaging with a wider range of remote and rural stakeholders, including Indigenous Australians and males.

# References

- Abdolhosseini, P., Bonner, C., Montano, A., Young, Y. Y., Wadsworth, D., Williams, M., & Stoner, L. (2015). Should the governments of 'developed' countries be held responsible for equalizing the indigenous health gap? *Global Health Promotion*, DOI: 10.1177/1757975915574255, 1–3.
- Aboriginal and Torres Strait Islander Social Justice Commissioner. (2005). *Social Justice Report 2005. Report No. 3/2005*. Sydney: Human Rights and Equal Opportunity Commission.
- Anderson, J. G., & Aydin, C. (2005). *Evaluating the organizational impact of health care information systems. 2nd Edition*. New York: Springer.
- Arnautovska, U., McPhedran, S., & De Leo, D. (2015). Differences in characteristics between suicide cases of farm managers compared to those of farm labourers in Queensland, Australia. *Rural and Remote Health*, 15(3), 3250.
- Australian Bureau of Statistics. (2008). *National Survey of Mental Health and Wellbeing 2007: Summary of results. ABS cat no. 4326.0*. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics. (2013a). *Australian Statistical Geography Standard (ASGS): Volume 5—Remoteness Structure, July 2011. ABS cat. no. 1270.0.55.005*. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics. (2013b). *Estimates of Aboriginal and Torres Strait Islander Australians, June 2011. ABS cat. no. 3238.0.55.001*. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/3238.0.55.001Main+Features1June%202011?OpenDocument> on 13/06/2016.
- Australian Bureau of Statistics. (2013c). *Technical paper: Socio-Economic Indexes for Areas (SEIFA). ABS cat. no. 2033.0.55.001*. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics. (2015). *National Health Survey first results: Australia 2014–2015. ABS cat. no. 4364.0.55.001*. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics. (2016). *Causes of death, Australia, 2014. ABS cat. no. 6324.0*. Retrieved from <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/3303.0~2014~Main%20Features~Summary%20of%20Findings~1#> on 24/03/2016.
- Australian Council of Social Service. (2015). *Inequality in Australia: A nation divided*. Sydney: Australian Council of Social Service.
- Australian Institute of Health and Welfare. (2008). *Rural, regional and remote health: Indicators of health status and determinants of health. Rural Health Series no. 9. Cat. no. PHE 97*. Canberra: Australian Institute of Health and Welfare.
- Australian Institute of Health and Welfare. (2010). *A snapshot of men's health in regional and remote Australia. Rural health series no. 11. Cat. no. PHE 120*. Canberra: Australian Institute of Health and Welfare.
- Australian Institute of Health and Welfare. (2013). *Healthy for Life—Aboriginal Community Controlled Health Services: Report card. Cat. no. IHW 97*. Canberra: Australian Institute of Health and Welfare.

- Australian Institute of Health and Welfare. (2014). *Australia's health 2014*. Canberra: Australian Institute of Health and Welfare.
- Australian Institute of Health and Welfare. (2015a). *Admitted patient care 2013–14: Australian hospital statistics. Health services series no. 60. Cat. no. HSE 156*. Canberra: Australian Institute of Health and Welfare.
- Australian Institute of Health and Welfare. (2015b). *Australian Burden of Disease Study: Fatal burden of disease in Aboriginal and Torres Strait Islander people 2010. Australian Burden of Disease Study series no. 2. Cat. no. BOD 2*. Canberra: Australian Institute of Health and Welfare.
- Australian Institute of Health and Welfare. (2015c). *The health and welfare of Australia's Aboriginal and Torres Strait Islander peoples 2015. Cat. no. IHW 147*. Canberra: Australian Institute of Health and Welfare.
- Australian Institute of Health and Welfare. (2016a). *Australia's health 2016. Australia's health series no. 15. Cat. no. AUS 199*. Canberra: Australian Institute of Health and Welfare.
- Australian Institute of Health and Welfare. (2016b). *Australia's hospitals 2014–15 at a glance. Health services series no. 70. Cat. no. HSE 175*. Canberra: Australian Institute of Health and Welfare.
- Australian Institute of Health and Welfare. (2016c). *Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Australian Burden of Disease Study series no. 3. BOD 4*. Canberra: Australian Institute of Health and Welfare.
- Australian Institute of Health and Welfare. (2016d). *National health priority areas*. Retrieved from <http://www.aihw.gov.au/national-health-priority-areas/> on 12/12/2016.
- beyondblue. (2016). *What is mental health?* Retrieved from <https://www.beyondblue.org.au/the-facts/what-is-mental-health> on 15/11/2016.
- Booth, M., Hill, G., Moore, M. J., Dalla, D., Moore, M. G., & Messenger, A. (2016). The new Australian Primary Health Networks: How will they integrate public health and primary care? *Public Health Research and Practice, 26(1)*, e2611603.
- British Academy. (2014). *'If you could do one thing ...': nine local actions to reduce health inequalities*. London: British Academy.
- Centre for International Economics. (2015). *The Royal Flying Doctor Service: Flexible and responsive primary healthcare for rural and remote Australia*. Canberra: Centre for International Economics.
- Department of Health. (2015). *PHN background*. Retrieved from <http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-Background> on 10/11/2016.
- Department of Health. (2016a). *Medical Research Future Fund*. Retrieved from <http://health.gov.au/internet/main/publishing.nsf/Content/mrff> on 26/3/2017.
- Department of Health. (2016b). *Rural and Regional Health Australia (RRHA) list of programs*. Retrieved from <http://www.health.gov.au/internet/main/publishing.nsf/content/rural-regional-health-australia-list-programmes> on 30/3/2017.
- Duckett, S., Breadon, P., & Ginnivan, L. (2013). *Access all areas: New solutions for GP shortages in rural Australia*. Melbourne: Grattan Institute.

Garvan Research Foundation. (2015). *Medical research and rural health: Garvan report 2015*. Darlinghurst: Garvan Research Foundation.

Harrison, J. E., & Henley, G. (2014). *Suicide and hospitalised self-harm in Australia: Trends and analysis. Injury research and statistics series no. 93. Cat. no. INJCAT 169*. Canberra: Australian Institute of Health and Welfare.

Henley, G., & Harrison, J. E. (2015). *Trends in injury deaths, Australia: 1999–00 to 2009–10. Injury research and statistics series no. 74. Cat. no. INJCAT 150*. Canberra: Australian Institute of Health and Welfare.

Jackson, L. A., Ervin, K. S., Gardner, P. D., & Schmitt, N. (2001). Gender and the internet: Women communicating and men searching. *Sex Roles, 44*(5), 363–379.

King, M., Smith, A., & Gracey, M. (2009). Indigenous health part 2: The underlying causes of the health gap. *Lancet, 374*(9683), 76–85.

Kumar, S., & Preetha, G. (2012). Health promotion: An effective tool for global health. *Indian Journal of Community Medicine 37*(1), 5–12.

McGrail, M. R., Humphreys, J. S., & Ward, B. (2015). Accessing doctors at times of need—Measuring the distance tolerance of rural residents for health-related travel. *BMC Health Services Research, 15*, 212.

National Health and Medical Research Council. (2017). *Grants and funding: Research funding statistics and data*. Retrieved from <https://www.nhmrc.gov.au/grants-funding/research-funding-statistics-and-data> on 26/3/2017.

National Rural Health Alliance Inc. (2016). *Mental health in rural and remote Australia*. Canberra: National Rural Health Alliance Inc.

Osborne, K., Baum, F., & Brown, L. (2013). *What works? A review of actions addressing the social and economic determinants of Indigenous health. Issues paper no. 7. Produced for the Closing the Gap Clearinghouse*. Canberra and Melbourne: Australian Institute of Health and Welfare and Australian Institute of Family Studies.

PHIDU. (2016). *Private dwellings with Aboriginal households with children, and with no Internet connection, 2011*. Retrieved from <http://www.phidu.torrens.edu.au/notes-on-the-data/atssi-notes/child-internet-no-connection> on 25/5/2017.

Royal Flying Doctor Service of Australia. (2016). *Royal Flying Doctor Service annual national report 2015/2016*. Canberra: Royal Flying Doctor Service of Australia.

Rural Health Workforce Australia. (2017). *5 Year Overseas Trained Doctor Scheme*. Retrieved from <http://www.rhwa.org.au/5-year-otd-scheme> on 30/3/2017.

Sadler, G. R., Lee, H. C., Lim, R. S., & Fullerton, J. (2010). Recruiting hard-to-reach population subgroups via adaptations of the snowball sampling strategy. *Nursing and Health Science, 12*(3), 369–374.

Slade, T., Johnston, A., Teesson, M., Whiteford, H., Burgess, P., Pirkis, J., & Saw, S. (2009). *The mental health of Australians 2. Report on the 2007 National Survey of Mental Health and Wellbeing*. Canberra: Department of Health and Ageing.



Smith, J. D. (2016). *Australia's rural, remote and Indigenous health 3e*. Chatswood: Elsevier.

Thomas, S. L., Wakerman, J., & Humphreys, J. S. (2015). Ensuring equity of access to primary health care in rural and remote Australia—what core services should be locally available? *International Journal for Equity in Health*, 14, 111.

World Health Organization. (2014). *Preventing suicide: A global imperative*. Geneva: World Health Organization.

World Health Organization. (2015). *Social determinants of health*. Retrieved from [http://www.who.int/social\\_determinants/en/](http://www.who.int/social_determinants/en/) on 14/07/2015.

# Appendix 1. Health priorities for people in the bush

Thank you for agreeing to take part in our survey. This survey is voluntary. As far as the law allows, all information you provide will be kept confidential. If you come to a question and do not wish to answer it, please leave it blank.

1. What are the most important health issues for people living in your rural community? (List up to 3 health issues)

Issue 1

Issue 2

Issue 3

Is there anything else you would like to add?

2. What areas of health should money be spent on to improve the health of people living in your rural community? (List up to 3 areas of health)

Area 1

Area 2

Area 3

Is there anything else you would like to add?

3. How long do you normally travel to visit a doctor for something that isn't an emergency?

- Less than 1 hour
- 1 hour to less than 2 hours
- 2 hours to less than 3 hours
- 3 hours to less than 4 hours
- 4 hours to less than 5 hours
- 5 hours or more

4. Thinking about the most recent time you needed urgent medical care, how long did you have to wait to be seen by the doctor?

- Within 4 hours
- Longer than 4 hours, but same day
- Next day
- 2-5 days
- 6 or more days
- Don't know

5. In the past 12 months, have you used any services provided by the RFDS? (tick all that apply)

- Emergency aeromedical retrieval service
- Primary healthcare (e.g. RFDS primary healthcare clinic)
- Dental service
- Telehealth service
- Non-emergency ground transport
- Medical chest
- Outreach program
- Other RFDS health service (please specify)

6. How would you rate your overall health? (choose one answer)

- Very good
- Good
- Neither good nor poor
- Poor
- Very poor

7. What is your gender

- Male
- Female
- Other

8. Do you identify as...(choose one answer)

- Aboriginal only
- Torres Strait Islander only
- Aboriginal and Torres Strait Islander
- Neither Aboriginal nor Torres Strait Islander

9. What is your age? (choose one answer)

- 18-24 years
- 25-29 years
- 30-34 years
- 35-39 years
- 40-44 years
- 45-49 years
- 50-54 years
- 55-59 years
- 60-64 years
- 65-69 years
- 70-74 years
- 75-79 years
- 80 years of age or older

10. What is your occupation? (please list)

11. What is your postcode?

Thank you for completing this survey.



Royal Flying Doctor Service