Briefing Paper
July 2022

Community benefits proposition for MBS payments for Rural Generalists

Advice to the Rural Generalist Strategic Council

Australian College of Rural & Remote Medicine
WORLD LEADERS IN RURAL PRACTICE

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About the Australian College of Rural and Remote Medicine (ACRRM)

ACRRM's vision is ***the right doctors, in the right places, with the right skills, providing rural and remote people with excellent health care.*** It provides a quality Fellowship Program including training, professional development, and clinical practice standards; and support and advocacy services for rural and remote doctors and the communities they serve.

ACRRM is accredited by the Australian Medical Council to set professional standards for the specialty of general practice. The College's programs are specifically designed to provide ACRRM Fellows with the broad scope of skills required to deliver the highest quality Rural Generalist model of care. These doctors provide critical services to people in in rural and remote areas, including in Aboriginal and Torres Strait Islander communities that have limited access to consultant specialist and allied health services.

Purpose and Scope

The National Rural Generalist Taskforce Advice Report, written by the National Rural Health Commissioner, Prof Paul Worley and tabled with the Australian Parliament in 2019 included the following:

> *"Recommendation 16: Rural Generalists are given access to Medical Benefits Scheme specialist item numbers when providing clinical care in areas of accredited Additional skills, including access to telehealth item numbers"*[1]

This paper overviews the value proposition for proceeding with this recommendation ascertaining whether there is community need and whether this approach may contribute to addressing this need.

The paper does not seek to make a case that the recommended action in isolation can resolve this need. Rather the proposal should be viewed as a potentially positive contributing element of a multifaceted strategy to improve rural and remote healthcare. Any such strategy needs to adequately address all three key pillars of rural health services, training, infrastructure, and workforce.

It is not intended that this paper provide a detailed description of an appropriate approach to implementing the recommendation. The analysis is built entirely on the recommendation as described in the Taskforce Advice paper.

The proposal is based upon the concept that increased financial reward for the work of Rural Generalism will increase the appeal of the specialised field of practice for medical graduates.

Taskforce Recommendation

The National Rural Generalist Taskforce Advice Report provided the following detail related to Recommendation 16:

> *There are multiple components of a Rural Generalist's remuneration package; some are directly in control of the Commonwealth Government, while other elements are found in the*

[1] Aust Govt: National Rural Health Commissioner (2018) *National Rural Generalist Taskforce Advice to the National Rural Health Commissioner on the development of a National Rural Generalist Pathway December 2018. Page 12.*

jurisdiction or private practice area of responsibility. Prior to joining the Pathway, trainees will want to know that the eventual job will be paid fairly, from all sources, in comparison to earning opportunities in other specialties and in urban locations.

Medicare billings are a key source of income for non-hospital extended services by Rural Generalists. In some states such as South Australia and Victoria, it also is the payment mechanism for medical practitioners providing outpatient emergency services and impacts the payment levels for inpatients services at small rural hospitals.

A key component of the fairness of the package is to recognise equal pay for equal services. ***In relation to the MBS, this means that Rural Generalists should have access to General Practice item numbers when providing General Practice services and access to relevant specialist item numbers when using their Additional Skills.***

There are precedents for this approach. Recently the MBS Review Clinical Committee for Obstetrics recommended that if a General Practitioner or a non-General Practice specialist performs the same procedure, the rebate should be paid at the non-General Practice specialist rate, and the differential payment arrangement is removed, e.g. item 35677 e.

For the purpose of this paper it is assumed that under Recommendation 16, doctors with a recognised Rural Generalist qualification working in hospitals, private GP clinics and other work settings would be given the option for their patient to have their services reimbursed using specified MBS items numbers that are currently restricted to consultant specialists.

It is anticipated that these doctors would be assessed as having attained and to be maintaining advanced level skills in the relevant area of practice which may involve credentialing or CPD specified arrangement.

It is recognised that whatever services are provided would need to be within a defined safe scope of practice and this may not include the full scope of services provided by consultant specialists in the relevant field.

It is also recognised that there may be a requirement, particularly in office based skilled areas such as gerontology, paediatrics, and oncology, for practitioners to clearly differentiate within a defined clinical framework, where they are offering an advanced care service rather than a standard general practice service.

It is noted that such arrangements are already well established in obstetrics and anaesthetics and generally considered to be acceptable to health consumers, health services and the practitioners.

Role of Rural Generalists in services provision

People in rural and remote areas do not have access to the full scope of specialist services available in cities and different models of care are required to enable them to access these as and when needed. Rural Generalists can enable appropriate models of care by providing ‘both comprehensive general practice and emergency care, and required components of other medical specialist care in hospital and community settings as part of a rural healthcare team’ [Collingrove Agreement]

Due to relatively small patient catchments, it is unlikely that private practitioners and services, nor governments will ever establish the breadth and depth of medical, nursing, and allied health care services that exists in metropolitan areas in regional, rural or remote areas. Geographic distances will continue to create a substantial barrier to people accessing many of these services.

This being the case alternative (non-urban) systems of care and service delivery are required to optimise the services that can be accessed locally.

Many subspecialist and referred consultant care models are too narrow to viably support locally-based practitioners in rural and remote communities with small patient pools and low resource bases. There are a range of partial solutions to ensuring access to services in these areas:

- Consultant specialist locum and outreach models can partially address this. Outreach models are expensive and cannot provide 24/7 services or continuity of care. The quality of care provided by these doctors may also be less than optimal, where they do not build ongoing relationships with patients, and are not trained to provide care in geographically isolated, low resource settings.

- Digitally-based specialised services models can facilitate access, but provide low value care particularly when not strongly articulated to continuous face to face co-located care by appropriately trained locally based doctors and healthcare providers.

- Patients can provide their own transport and travel arrangements to urban-based care. In these cases, the potentially prohibitive cost burden of accessing care is passed from Government to the individuals and families living in rural and remote areas. Likewise, the considerable health and safety impacts associated with travel and/or delays in receiving care are born by rural and remote people.

The Rural Generalist model of care offers an important solution. It seeks to embed general practice qualified doctors within rural and remote communities and for them to provide a range of specialised services that in cities would be the province of consultant specialists. These doctors are able to manage undifferentiated patient presentations and provide emergent care, continuous primary care as well as a range of advanced care skills and are trained to provide all these services effectively in the low resource, geographically isolated clinical contexts of their communities.

It is noted that the Rural Generalist model of care needs to be supported by workforce, infrastructure, and training, when any of these essential pillars is deficient the model is compromised. This paper looks at addressing workforce provision which is only one dimension of the three.

Payment models for Rural Generalists

It is important to note that MBS billings for Rural Generalist services represent only some of the potential income sources for some Rural Generalists.

Rural Generalists are defined by their capacity to work flexibly as such they work under diverse employment arrangements often simultaneously in multiple work settings and are paid under different systems. Their remuneration arrangements take many forms and alter between jurisdictions and often comprise several parts.

Common remuneration arrangements include the following:

- Salary
- Private billing
- Medicare billing either bulk billing or with gap fees levied
- Salary with percentage of Medicare billings above a threshold of Medicare revenue

Common employment arrangements include the following

- Private general practice billings (bulk-billing, gap billing)
- Retrieval services (salary)

- Aged care facilities (salaries/private fee for service/Medicare billing)
- Community health care centres either NGOs, state/local government run clinics. Paying doctors salaries or enabling fee for service arrangements under Medicare
- ACCHOs (salary)
- Visiting Medical Officers to rural hospitals with designated state payments fee for service
- Salaried roles in rural hospitals – usually as a Senior Medical Officer
- Senior Medical Officers with Rights to Private Practice in Queensland Hospitals
- Urgent Care Centres in Victoria (providing MBS supported services)

It should also be noted that Rural Generalists are often also reliant on income from Government programs such as the General Practice - Practice Incentive Payments and the Rural Procedural Grants Program.

Case for improved RG Remuneration

Given the undersupply of doctors in rural and remote areas, it might be assumed that doctors working in rural environments would be better remunerated than those in metropolitan environments however this is not the case. There is an inverse relationship between healthcare need - which increases with remoteness, and medical income which is higher in metropolitan regions. This reflects concentration of the most specialised doctors with the highest incomes in major cities, while rural and remote communities are predominantly serviced by the most generalised (and lowest paid) specialists namely rural GPs and Rural Generalists.

These rural and remote doctors and particularly those working to the Rural Generalist scope of practice, work longer hours than their urban counterparts and have broader responsibilities such as afterhours, hospital and emergency care.[2] Their earning potential is limited by their local patient pool, the value allocated to their work within Medicare and the added burden of practice costs associated with travel, locums, and resourcing. The generally lower socio-economic status of their patient pool also means that gap payments are less likely to be charged. Rural and remote doctors often face difficult ethical challenges when contemplating charging their patients sufficiently to maintain an economic practice.

It is out of the scope of this paper to discuss the issue of appropriate pay for core GP services provided by rural doctors however it is noted that these also warrant consideration.

This paper does however make the case for the need to adequately compensate doctors for skilled services that they provide over and above those provided by non-Rural Generalist GPs. Rural Generalists have completed additional training which is assessed and certified and for which they must meet skills maintenance standards. Adequate compensation would recognise that providing these services places additional levels of professional risk, stress, and time commitments upon practitioners. As outlined by the National Rural Generalist Taskforce this would be consistent with a fairness principle: '*equal pay for equal services'.*

The diversity of employment arrangements and the lack of a common national recognition and registration makes it difficult to quantify and map the income of rural and remotely based Rural Generalists. This lack of clarity of the earnings of Rural Generalists doctors is yet another disincentive for graduates to pursue a career in Rural Generalism.

Despite an almost tripling of the number of medical student places in Australia in recent decades workforce shortages persist in rural and remote areas and Australia continues to be heavily reliant on

[2] Russell D (2016) *How does the workload and work activities of procedural GPs compare to non-procedural GPs?* Aust. J. Rural Health (2017) 25, 219–226

overseas trained doctors for the continuance of medical services in rural and remote regions. Australian trained medical graduates today are less likely to work either as general practitioners or in rural communities compared to graduates of the 1970s–1980s and rural areas continue to remain substantially dependent on International Medical Graduate doctors, that comprise 36-38% of all general practice doctors in small rural centres.[3]

There is also evidence that the pool of doctors providing this broad scope practice is declining. Over the past ten years, the number of Rural Generalists working in remote and rural New South Wales for example has decreased from 800 to fewer than 200, with over 50 per cent of those aged over 55 and getting close to retirement.[4]

Community need for RG services

There is clear evidence that lack of access to specialist services is leading to people in rural and remote communities receiving less care than their counterparts in cities. There is also considerable evidence linking this lack of access, to the much poorer health outcomes experienced by people living in rural and remote areas.

Declining use of services by remoteness

It is estimated that there is an annual underspend of around $4b by government in funding for health services for rural people relative to that spent on people in major cities.[5] This reflects significantly lower use of government funded health services across most key Government programs including the Pharmaceutical Benefits Scheme (PBS). The lower per capita use of MBS funded services by rural people is a major contributing factor in this inequity.

A steep decline in utilisation of MBS services occurs with increasing levels of remoteness. This service gap is especially significant for non-GP specialist services.

- The per capita number of non-GP specialist services received by people in outer regional areas was 25% lower than in major cities, and 59% lower for people in remote and very remote areas. (Compared to a 9%, and 36% respectively for GP services).

- Similarly, per capita MBS funding for Non-GP services declined by 16% for people in outer regional areas, and 59% for people in remote and very remote areas, compared to that spent on people in major cities. (Compared to 8%, and 28% respectively for GP services).

[3] O'Sullivan B et al (2019) Reviewing reliance on overseas-trained doctors in rural Australia and planning for self-sufficiency: applying 10 years' MABEL evidence *Hum Resour Health* 17: 8.
[4] Evidence, Mr Richard Colbran, CEO, NSW Rural Doctors Network to NSW Parliamentary Inquiry into health outcomes and access to health and hospital services in rural, regional and remote New South Wales 19 March 2021, p 21.
[5] National Rural Health Alliance. The case for better health care. NRHA, 2021 [cited 2021 Sep]. Available from: tps://www.ruralhealth.org.au/content/case-better-health-care

Figure 1: GP and Non-GP specialist MBS expenditure by geographic classification 2020-2021

	GP SERVICES			NON-GP SPECIALIST SERVICES		
	MBS funding	**Services per 100 people**	**MBS funding per 100 people**	**MBS funding**	**Services per 100 people**	**MBS funding per 100 people**
National	$8,753,453,966	666	$34,064	$2,347,556,834	102	$9,135
Major Cities	$6,458,349,941	675	$34,349	$1,787,621,659	106	$9,507
Inner Regional	$1,587,951,436	675	$34,916	$412,071,860	104	$9,061
Outer Regional	$577,054,190	613	$31,730	$127,310,635	80	$7,000
Remote/ Very Remote	$130,098,399	431	$24,619	$20,552,680	44	$3,889

Source: AIHW. (2021). *Medicare-subsidised GP, allied health and specialist health care across local areas: 2019–20 to 2020–21.* Retrieved from https://www.aihw.gov.au/reports/primary-health-care/medicare-subsidised-health-local-areas-2020-21

Unmet demand for local advanced and specialised care services

Consistent with statements by the World Health Organisation, there are a range of key advanced specialised services which are essential to primary healthcare in rural and remote contexts.[6] Some examples include, birthing and neonatal care, paediatric care, cancer treatments, renal care, end of life care, and addiction care.

Metropolitan GPs often refer patients to non-GP specialists for common conditions. In rural communities where non-GP specialists are uncommon, patients can travel to see a distant non-GP specialist; or Rural Generalists can provide those patients' care without them needing to leave their community. Travel has inherent financial, time and social cost and rural patients faced with travel will often opt to stay home and not access services. In this way, where there are local services provided by Rural Generalists, there is greatly improved access to care.

Rural Generalists may provide immediate care in situ, or as is often the case with non-procedural care, they provide the services their patients need between appointments with distant consultant specialists. They thereby improve the quality of service provision, reduce the frequency of review and reduce the burden of travel.

A survey of over 800 people from across regional, rural and remote New South Wales recorded respondents' feedback about whether they felt they had reasonable access to a range of key services. It highlighted gaps in fundamental areas of care provision in non-routine general practice/primary care services such as maternity care, palliative care, paediatrics and mental health.[7]

[6] WHO definition of primary care, https://www.who.int/news-room/fact-sheets/detail/primary-health-care
[7] County Women's Association of New South Wales (CWA NSW) (2021) Submission to New South Wales Parliamentary Inquiry into health outcomes and access to health and hospital services in rural, regional and remote New South Wales. https://www.parliament.nsw.gov.au/lcdocs/submissions/70108/0445%20Country%20Women%E2%80%99s%20Association%20of%20NSW%20REDACTED.pdf

General Practice	96%
Ambulance	95%
Access to hospital or hospital service	90%
Emergency department (hospital)	87%
Pathology	89%
Aged care	86%
Dental	77%
Other allied health	67%
Early childhood services (including mother and baby)	55%
Palliative care	53%
Maternity services	51%
Psychology and mental health services	47%
Disability services and child development services	44%
Domestic/family violence, sexual assault services	42%
Oncology treatment	40%
Alcohol and other drugs treatment and services	39%

Rural doctors also recognise these gaps in the services available to their communities. The Rural Workforce Agency of Victoria survey of rurally-based general practice doctors found respondents felt they would meet their communities' needs better if they had further advanced skills training in a range of areas including dermatology and skin cancer care (39%), mental health (23), obstetrics and gynaecology (including ultrasound and women's health) (18%), and emergency medicine (13%).[8]

The absence of locally available services is leading to critical and unacceptable delays in the time taken for patients to receive diagnosis and care. The New South Wales Parliamentary Inquiry into rural health services included testimonies of patients variously seeking specialised services who faced wait times and delays of:

- Four to six years to address developmental issues such as hearing loss, vision impairment, speech and language delay and behaviour
- Two years to see paediatricians
- Over 18 months for ENT specialists
- Over six months for psychiatrists.[9]

Lack of local access to these essential healthcare services can be shown to lead to many patients delaying or foregoing needed care. International studies have shown that longer journeys discourage the use of healthcare services.[10] National patient surveys have found that 58% of people in remote areas view the lack of a non-GP specialist nearby as a barrier to seeing one (compared to 6% in major cities).[11] They found that the likelihood of forgoing seeing a specialist because there was none nearby increased with remoteness and that people in remote areas were 10% more likely to report this than people in major cities.

There are considerable barriers to many people in rural and remote areas being able to travel extended distances to receive care. Groups such as the aged, people with disabilities and Aboriginal

[8] Rural Workforce Agency Victoria (2021) Health Workforce Needs Assessment Executive Summaries – East Gippsland, Western Victoria, and Murray.

[9] NSW Legislative Council (2022) *Health outcomes and access to health and hospital services in rural, regional and remote New South Wales May 2022*: Portfolio Committee No 2 - Health. Report No. 57. https://www.parliament.nsw.gov.au/lcdocs/inquiries/2615/Report%20no%2057%20-%20PC%202%20-%20Health%20outcomes%20and%20access%20to%20services.pdf

[10] Jones A et al (2008) Travel time for hospital and treatment for breast, colon, rectum, lung, ovary and prostate cancer. *Eur J Cancer.* 44:992-9.

[11] Evidence, Mr Richard Colbran, CEO, NSW Rural Doctors Network to NSW Parliamentary Inquiry into health outcomes and access to health and hospital services in rural, regional and remote New South Wales 19 March 2021, p 21.

and Torres Strait Islander people face additional barriers .[12,13] A survey of rural people in New South Wales, found 42% of respondents viewed the costs to travel away from home for health treatment to be a deterrent and/or prohibitive.[14] The lack of public transport or other access to transport services is a key issue for many rural residents. It is noted that patient travel assistance schemes are administratively onerous and inflexible, and typically only partially cover costs. Kelly et al found that travelling to the city hospital is a significant barrier to remote and rural Indigenous patients and that arranging and supporting travel is time-consuming work not recognised by the healthcare system.[15]

Poor access to specialised and referred care services can also lead to fragmentation of care. The likelihood of care fragmentation due to lack of communication from specialists to patients' regular general practitioner increases with remoteness. People in remote areas are10% more likely than people in major cities to report that their usual general practitioner had not been informed about specialist care they had received.[16]

Health and safety impacts of lack of local services access

With increasing remoteness comes significantly declining health status. This coincides with the significant gaps in access to services and declining use of services with remoteness. For example, the death rate for coronary heart disease, chronic pulmonary disease, lung cancer diabetes and increases with remoteness. The rate of Potentially Preventable Hospitalisations (PPH) also increases with remoteness. The PPH rates in regional areas were slightly higher than for *Major cities* and for those in *Very remote* areas were 2.5 times as high and in *Remote* areas were 1.7 times as high over 2017-2018.[17]

Extended travel to access healthcare adds risk to patient care. Extensive literature documents the risks associated with patient travel to access distant health care.[18,19,20] One study of stroke care for example found that the clinical risks of longer journeys outweighed the benefits of accessing the tertiary service.[21] A study by Greenup et al into patients travelling to access hospital care identified a direct relationship between increasing remoteness and travel risk. The review identified 45 people who had died in road accidents in the process of obtaining medical treatment in Queensland between 2002 and 2015, an average of 3.21 deaths per year. They concluded that individuals living in regional and remote Queensland are exposed to a larger risk than those living in the major cities of Queensland when required to travel to hospital for referred care.[22]

Some examples of service areas impacted by lack of access include the following:

Maternity Care and Birthing services

[12] Peel N et al (2002) 'Transport safety for older people: A study of their experiences, perceptions and management needs', Injury Control and Safety Promotion, vol. 9, no.1, pp. 19-24.
[13] Dew A et al (2013) 'Addressing the barriers to accessing therapy services in rural and remote areas', Disability and Rehabilitation, vol. 35, no. 18, pp. 1564-1570
[14] CWA NSW (2021) Ibid
[15] Kelly J et al (2014) Travelling to the city for hospital care: Access factors in country Aboriginal patient journeys. Aust J Rural Health 22:109-113
[16] AIHW (2018) Survey of Health Care: selected findings for rural and remote Australians. Cat. no. PHE 220. Canberra: AIHW
[17] AIHW. (2020). *Rural and remote health.* Retrieved from https://www.aihw.gov.au/reports/australias-health/rural-and-remote-health
[18] Turrell G et al (2006) Area variation in mortality in Tasmania: the contributions of socioeconomic disadvantage, social capacity, and geographic remoteness. Health Place. 12:291-305.
[19] Probst J et al (2007) Effects of residence and race on burden of travel for care: cross sectional analysis of the 2011 US National Household travel survey. BMC Healt Ser Res. 7:40.
[20] Wei L et al (2008) Impact on mortality following first acute myocardial infarction of distance between home and hospital: cohort study. Heart. 94:1141-6.
[21] Votruba et al (2006) Redirecting patients to improve stroke outcomes. Med Care. 44:1129-35.
[22] Greenup Potts B. (2020) Road deaths relating to the attendance of medical appointments in Queensland. *Australian Health Review: CSIRO Publishing.*

Local maternity services are essential to deal with obstetric emergencies and studies have clearly linked the need for extended travel time to access maternity services to increased rates of mortality and adverse outcomes.[23] Canadian studies have found that women with no local access to maternity services have significantly greater incidence of adverse perinatal outcomes than women from similar communities with local access to rural birthing services with caesarean section capability.[24] Over and above safety considerations, access to maternity care is a significant quality of care issue for people living in rural and remote settings. There is a strong preference in Aboriginal and Torres Strait Islander communities for birthing on country.[25] This is also a strong preference for many people in rural and remote communities.[26] Local birthing services are likely to be most important to the people with the least financial and/or social support to enable them to spend extended periods of time in distant major centres.

Mental Health services

Rural Generalists have training in both management of psychiatric emergencies, and hospital care as well as community clinic based mental health care. These skills are learned as part of core training. Some Rural Generalists choose to obtain advanced specialised skills in mental health. This reflects the significant demand for these services experienced in rural general communities. People in rural and remote areas have higher rates of mental health disorders and risk of suicide than other Australians.[27] In 2016, the number of suicides in rural and remote Australia was 50% higher than in the cities with the rate increasing with remoteness. The suicide rate in rural and remote Australia has been growing more rapidly than in the cities. Aboriginal and Torres Strait Islander people represent significant proportions of many rural and remote communities and the suicide rate they experience is twice that for non-Indigenous people.[28] Drug and alcohol addiction is a major cause of rural morbidity, mortality and social breakdown. Crystal methamphetamine 'ice' use has been particularly destructive and is significantly more prevalent among rural Australians than other Australians[29] and yet in remote communities access to support services is less than a third of that available in cities.[30]

Access to Emergency Care

For accidents and psychiatric emergencies provision of care locally can be vital to patient survival.[31,32,33] One study has found that for every mile a seriously injured person had to travel to hospital, the risk of death increased by one per cent.[34] In 2019–20, the likelihood of hospitalisation and death due to accident and injury increased sharply with remoteness. People living in outer regional areas were 32% more likely to be hospitalised and 56% more likely to die from an injury than people

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[23] Ravelli A et al (2010) Travel time from home to hospital and adverse perinatal outcomes in women at term in the Netherlands. BJOG 118:457-465.
[24] Grzybowski et al (2011) Distance matters: a population-based study examining access to maternity services for rural women. BMC Health Serv Res 11:147.
[25] Kildea S et al. (2016) Guiding Principles for Developing a Birthing on Country Service Model and Evaluation Framework, Phase 1. Brisbane: Mater Medical Research Unit and the University of Queensland on behalf of the Maternity Services Inter-Jurisdictional Committee for the Australian Health Ministers' Advisory Council.
[26] Queensland Health, Wakerman J (chair) (2019) *Rural Maternity Taskforce Report, June 2019, https://clinicalexcellence.qld.gov.au/sites/default/files/docs/maternity/rural-maternity-taskforce-report.pdf*
[27] AIHW (2010) A snapshot of men's health in rural and remote Australia. Cat No. PHE 120. Canberra.
[28] ABS (2017), 3303_0 Causes of Death, Australia, 2016.
[29] Roche A et al (2017) Ice and the Outback. Ice and the outback: Patterns and prevalence of methamphetamine use in rural Australia. *Aust. J. Rural Health.* Vol(1) 25:202-209.
[30] Meadows G et al (2015) Better access to mental health care and the failure of eth Medicare principle of universality. *Med. J. Aust*. 202:190-194.
[31] Hoang H et al (2012) *Small rural maternity units without caesarean delivery capabilities: is it safe and sustainable in the eyes of health professionals in Tasmania?* Rural and Remote Health, 12: 1941 (online), http://www.rrh.org.au/articles/showarticlenew.asp?ArticleID=1941
[32] Rankin S et al (2001). *Costs of accessing surgical specialists by rural and remote residents*. ANZ Journal of Surgery 71(9):544-7.
[33] Garne D et al. (2009) *Frequent users of the Royal Flying Doctors Service primary clinic and aeromedical services in remote New South Wales: a quality study*. MJA 191(11):602-4.
[34] Nicholl J et al (2007) The relationship between distance to hospital and patient mortality in emergencies. Emerg Med J. 24:665-8.

from major cities, while people living in *Very remote* areas, were: 2.3 times as likely to be hospitalised, and 2.0 times as likely to die from an injury. Land transport accidents are a leading cause of death in *Remote* and *Very remote* areas. The death rate being nearly three times as high for *Remote* areas and nearly four times as high for *Very remote* areas, compared with Australia overall.[35] Regional and remote road crashes contribute substantially to the overall road toll in Australia, accounting for 65% of fatal crashes from 2010-2018. The road crash fatality rate per population increases dramatically with level of remoteness.[36,37] While the distances involved are likely to be a factor in the higher mortality rates these should be offset by the greater risks in urban areas of the concentration of vehicles. Access to emergency care must play a significant role in these rural fatalities.

[35] AIHW (2019). MORT (Mortality Over Regions and Time) books: Remoteness area, 2013–2017. Cat. no. PHE 229. Canberra: AIHW. https://www.aihw.gov.au/reports/life-expectancy-death/mort-books
[36] BITRE (2020) *Road Trauma Australia 2019 Statisfical Summary: Bureau of Infrastructure, Transport and Regional Economics,* Canberra: Commonwealth of Australia.
[37] Austroads (2019) *National View on Regional and Remote Road Safety (AP-R603-19)* Sydney: Austroads.