

Chapter 4

Improving the quality of health care in rural and remote Australia

Australia's geographical vastness compounds the complexity of its health system and poses unique predicaments for health service delivery. While efforts have been made to address some of these problems, much of the policy conversation thus far has revolved around improving access and workforce shortages that are critical in some parts of the country. Little is known about the quality and outcomes of health care services delivered to rural and remote communities in Australia.

Adding to the challenge, Aboriginal and Torres Strait Islander people continue to considerably trail the non-Indigenous population in relation to life expectancy and other health status indicators. In Australia's most remote areas, Aboriginal and Torres Strait Islander people account for almost half the population, highlighting the importance of culturally competent services.

While more health professionals would help, strong governance, innovations in funding, creative thinking and a smarter use of technologies are all required. While efforts to improve access to health care should continue, these should be accompanied by an equal emphasis on measuring and improving quality.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

4.1. Introduction

Australia's size adds another layer of complexity to its health system. The nation's population and services are heavily concentrated in coastal vicinities in and around urban centres. Yet people living in remote areas experience poorer health outcomes.

Adding to the challenge is that much of the ageing of the population will take place outside of Australia's major cities. People aged 65 and over are expected to make up about 30.1% of the population in metropolitan areas, 30.2% of the population in inland areas, and 26.8% of the population in coastal areas, in 2045 (Productivity Commission, 2005). With older people often experiencing multiple chronic conditions, this suggests the need for health care will grow. Some of this need will be in areas with insufficient services to meet the demand for health care associated with ageing.

Australia has long had geographical challenges in health care delivery in a way that few OECD countries have experienced. This is compounded by a maldistribution in the health workforce. The country has dealt with this situation with a heavy reliance on overseas-trained doctors, and government policy has directed them to areas of need. In a bid to become more self-sufficient, Australia has also made efforts to increase the number of locally-trained doctors and has provided incentives for doctors to relocate to areas of need. Other policy levers Australia has experimented with include task delegation among health professionals, and the use of technology to facilitate access to health services for people in the most remote parts of the country.

4.2. Setting out the challenge: the geography of health care need in Australia

Australia's population is heavily concentrated in urban centres

Australia is large in area and, compared with other countries, its population is small. There are on average three Australians for every square kilometre of land, a density similar to Iceland and Canada (OECD, 2009). This statistic hides the fact that Australia is a highly urbanised nation, with most of the population concentrated in two widely separated coastal regions. As Figure 4.1 shows, the larger of these is the east to south-east region, and the smaller lies in the south-west of the continent.

As Figure 4.2 shows, compared with other OECD countries, Australia has one of the highest proportions of rural land, relative to the national area. It also has one of the highest proportions of urban dwellers, relative to the

national population. As a result, the spatial concentration of population in Australia is the highest in the OECD – almost two-thirds of the population live in 10% of the regions with the largest populations.

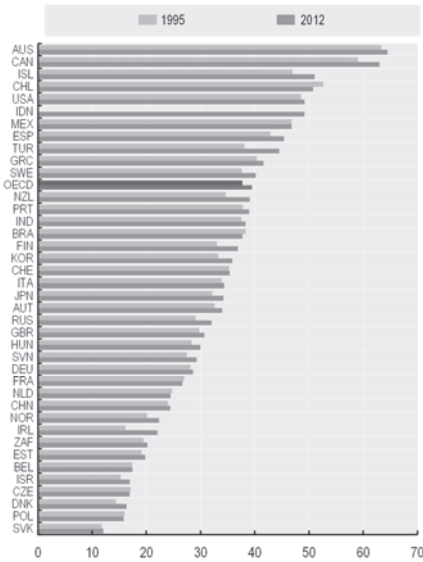
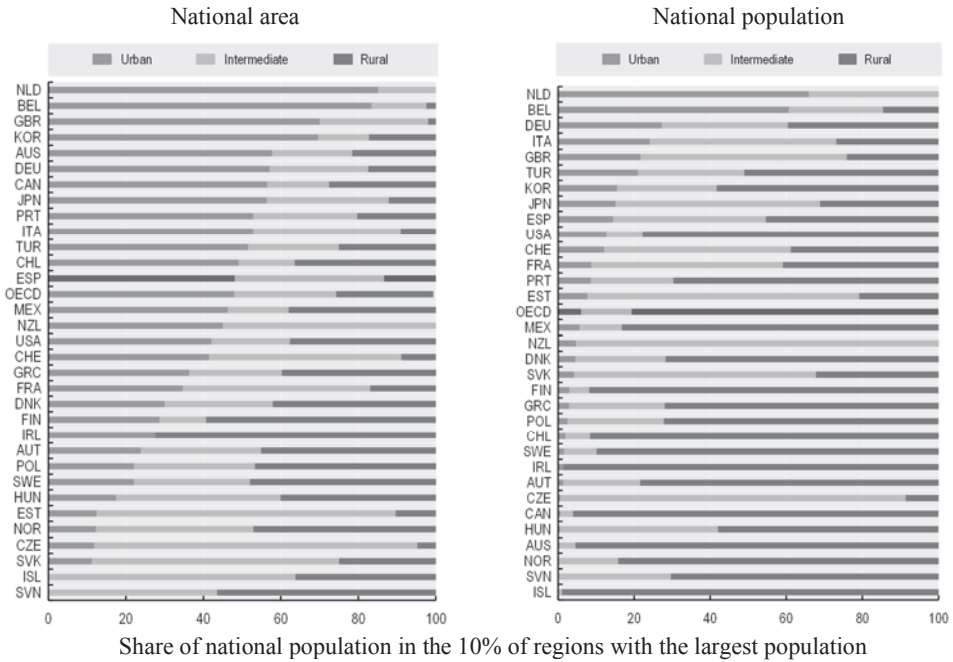
The move towards urban living has been taking shape since Australia’s Federation in 1901. From then until 1976, the proportion of Australians living in capital cities rose from a little over one-third (36%) to almost two-thirds (65%) (ABS, 2008). This figure has remained relatively stable. In 2014, 15.6 million people, or 66.5%, were living in capital cities. Overall, almost a third of Australia’s 23.5 million people reside in New South Wales, making it the country’s most populous state (ABS, 2015).

Figure 4.1. Australia’s population density



Source: OECD (2013), *Regions at a Glance 2013*, OECD Publishing, Paris, http://dx.doi.org/10.1787/reg_glance-2013-en.

Figure 4.2. Distribution of the national area and national population into urban, intermediate and rural regions (top) and share of national population in the 10% of regions with the largest population (bottom)



Source: OECD Economic, Environmental and Social Statistics.

A classification system is used to demonstrate the remoteness of Australia’s regions. The Australian Standard Geographical Classification – Remoteness Areas system was developed by the Australian Bureau of Statistics (ABS) and enables quantitative comparisons between “city” and “country” Australia. It allows data from census collection districts to be classified into geographical categories by remoteness area. These categories are defined in terms of the physical distance of a location from the nearest urban centre, based on population size. The system has five categories:

- RA1 – Major Cities of Australia
- RA2 – Inner Regional Australia
- RA3 – Outer Regional Australia
- RA4 – Remote Australia
- RA5 – Very Remote Australia

Non-Indigenous Australians overwhelmingly live in urban areas. Almost three-quarters (71.3%) live in major cities. Those living in the most remote parts of Australia are few – 1.2% live in remote and 0.5% in very remote areas (ABS, 2013c). The story is somewhat more complex for Australia’s Aboriginal and Torres Strait Islander people, who make up about 3% of the nation’s population. More than half reside in major cities or inner regional areas, but their density compared with non-Indigenous people is higher in more remote areas. As Table 4.1 shows, at the end of June 2011, about a third of Aboriginal and Torres Strait Islander people lived in major cities, while more than 20% lived in remote and very remote areas (ABS, 2013c).

Table 4.1. Estimated resident Aboriginal and Torres Strait Islander population, remoteness areas, 30 June 2011

Remoteness areas	Aboriginal and Torres Strait Islander (%)	Non-Indigenous (%)	Total (%)
Major City Areas	34.8	71.3	70.2
Inner Regional	22	18.3	18.4
Outer Regional	21.8	8.7	9.1
Remote	7.7	1.2	1.4
Very Remote	13.7	0.5	0.9

Source: Australian Bureau of Statistics (2013), “Estimates of Aboriginal and Torres Strait Islander Australians”, June 2011.

Aboriginal and Torres Strait Islander people account for almost half the population (45%) in very remote areas, and 16% in remote areas. They progressively account for less of the population as they move closer to cities, comprising 7% of the population in outer regional areas, 4% in inner regional areas and 1.5% in major cities (ABS, 2013c).

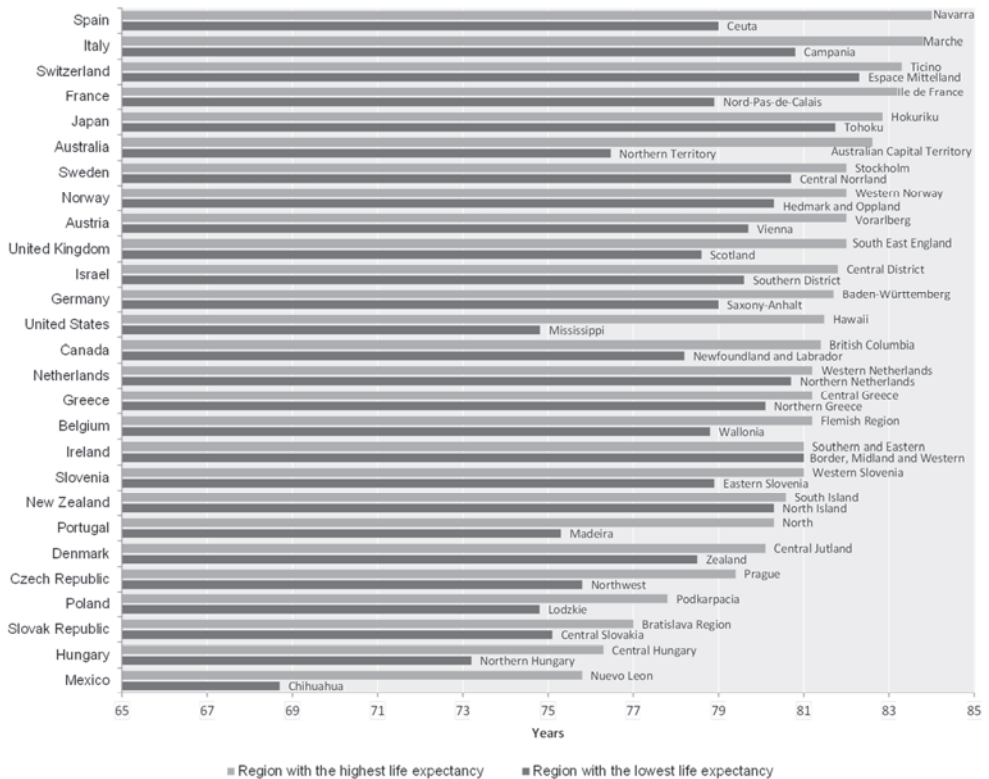
Australians living in rural areas experience poorer health outcomes

Remote Australia covers about 85% of the country's land mass, mostly in northern and central Australia (Standing Council on Health, 2012). For the most remote communities, services are limited. People may live hundreds of kilometres from their nearest major centre, with limited transport. Travel on unsealed roads can be difficult and even dangerous during the wet season, and access to affordable nutritious food can be difficult. Opportunities for education and work may also be more limited. This locational disadvantage perpetuates socioeconomic disadvantage and existing health conditions.

People living in cities can expect to live longer than people in more remote areas. In 2010-12, Australian men in major cities and inner regional areas had a life expectancy at birth of 79.7 years, compared with 77.4 years for men in outer regional, remote and very remote areas. Women in major cities and inner regional areas had a life expectancy of 82.8 years, compared with 81.5 years for women in outer regional, remote and very remote areas (ABS, 2013d).

As Figure 4.3 shows, Australia displays the third highest regional disparity in life expectancy in the OECD, with a difference of 6.1 years between the Australian Capital Territory (life expectancy at birth in 2010 of 82.6 years) and the mostly rural Northern Territory (76.5 years). Only the United States (6.7 years) and Mexico (7.1 years) have wider regional disparities in life expectancy (OECD, 2013a).

Rural Australia has higher mortality rates associated with cancer and other chronic disease, a higher prevalence of mental health problems, more potentially preventable hospitalisations, and higher rates of injury. The higher proportion of Aboriginal and Torres Strait Islander people in more remote areas only partially explains this; the poorer state of health extends to non-Indigenous people in remote Australia. As Table 4.2 demonstrates, people in the most remote areas experience poorer health outcomes on a range of measures.

Figure 4.3. Maximum and minimum regional life expectancy at birth, 2010 (TL2)¹

1. To address the issue of comparability across countries' regional classification systems, the OECD has classified regions within each member country to facilitate comparability at the same territorial level. The classification is based on two territorial levels: the higher level (TL2) consists of 362 large regions and the lower level (TL3) consists of 1 794 small regions. These two levels are used as a framework for implementing regional policies in most countries. In Brazil, China, India, the Russian Federation and South Africa only TL2 large regions have been identified. This classification (which, for European Union countries, is largely consistent with the Eurostat NUTS classification) facilitates comparability of regions at the same territorial level.

Source: OECD (2013), *OECD Regions at a Glance 2013*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/888932914767>.

Table 4.2. Health outcomes of people in cities and rural and remote areas

	Major cities	Inner regional	Outer regional	Remote	Very remote
Mortality per 1 000 people	5.5	6.1	6.4	6.7	8.4
Proportion of live-born babies of low birth weight	4.6	5	5.2	6.3	7.7
Lung cancer incidence per 100 000 people	40.4	43.5	46	46.9	55.8
Separations for potentially preventable hospitalisations per 1 000 people	11.1	12.5	14.4	20.1	27.3

Source: Australian Institute of Health and Welfare (2014), “Australia’s Health 2014”; Steering Committee for the Review of Government Service Provision (2015), “Report on Government Services 2015”, Vol. E, Health, Productivity Commission, Canberra.

Aboriginal and Torres Strait Islander people continue to trail others in their state of health

Despite a marginal improvement, the life expectancy gap between Aboriginal and Torres Strait Islander people and non-Indigenous people remains considerable. Life expectancy at birth for Aboriginal and Torres Strait Islander men was 69.1 years in 2010-12, about 10.6 years lower than for non-Indigenous men. For Aboriginal and Torres Strait Islander women, it was 73.7 years, about 9.5 years lower than for non-Indigenous women (ABS, 2013d). The gap has narrowed more for Aboriginal and Torres Strait Islander men, whose life expectancy increased by 1.6 years between 2005-07 and 2010-12, compared with a little less than a year for non-Indigenous men. For women in both groups, life expectancy increased by about half a year during that period (ABS, 2013d).

Improvements can be seen in the Aboriginal and Torres Strait Islander infant mortality rate, which was 6.1 deaths per 1 000 live births in 2013, compared with 3.4 per 1 000 births among non-Indigenous infants (ABS, 2014b). The Indigenous infant mortality rate declined by 62% from 1991 to 2010 (AIHW, 2013a). It is currently within the range required to meet the target set by the Council of Australian Governments in 2008, to halve the gap between Aboriginal and Torres Strait Islander and non-Indigenous child death rates by 2018.

Aboriginal and Torres Strait Islander people engage in more potentially harmful behaviour. For example, 41.6% aged 15 years and over reported smoking on a daily basis. These rates have declined from 48.6% in 2002, but are still much higher than for non-Indigenous people (15%) (ABS, 2014a). Harmful patterns of alcohol consumption are similar among Aboriginal and Torres Strait Islander and non-Indigenous groups. About 18% of Aboriginal and Torres Strait Islander people aged 15 years and over had exceeded the

lifetime risk guidelines. This was similar for non-Indigenous people. However, Aboriginal and Torres Strait Islander people aged 15 years and over were more likely than non-Indigenous people to exceed the single occasion risk guidelines. Just over half (53.6%) of those aged 15 years and over had consumed more than four standard drinks on a single occasion, compared with 43.4% of non-Indigenous Australians (ABS, 2013a). Conversely, Aboriginal and Torres Strait Islander adults are twice as likely as non-Indigenous Australians to have abstained from alcohol consumption in the previous 12 months (AIHW, 2013a).

Aboriginal and Torres Strait Islander children aged 2 to 14 years are significantly more likely than non-Indigenous children to be obese (10.2% compared with 6.5%). Obesity rates for Aboriginal and Torres Strait Islander males and females are significantly higher than for non-Indigenous people in almost every age group (ABS, 2014a).

These adverse risk factors, combined with social determinants of health as well as more challenging social circumstances, explain the higher rates of ill health experienced by Aboriginal and Torres Strait Islander people. Findings from the Australian Aboriginal and Torres Strait Islander Health Survey indicate that the population fares significantly worse when it comes to heart or circulatory disease, diabetes, asthma and psychological distress (Table 4.3).

Table 4.3. Australian Aboriginal and Torres Strait Islander Health Survey key findings

	Prevalence (%)	Adjusted rate ratio
Self-rated “excellent” or “very good” health ¹ (a)	39.3	0.6
Asthma ² (b)	17.5	1.9
Heart or circulatory disease ³ (a)	12.7	1.2
Diabetes/high sugar levels ⁴ (a)	8.6	3.2
High or very high psychological distress ⁴ (b)	30	2.7

1. Estimates for persons aged 15 years and over.

2. Estimates for all persons.

3. Estimates for persons aged 2 years and over.

4. Estimates for persons aged 18 years and over.

Source: a) Australian Bureau of Statistics (2014), *Australian Aboriginal and Torres Strait Islander Health Survey: Updated results, 2012-13*. b) Australian Bureau of Statistics (2013), *Australian Aboriginal and Torres Strait Islander Health Survey: First Results, Australia, 2012-13*.

The high rate of kidney disease among Aboriginal and Torres Strait Islander people has been a considerable concern. In 2010-11, almost 11% of people with end-stage kidney disease who were beginning treatment were identified as Indigenous (AIHW, 2014b). Access to dialysis treatment or a kidney transplant can be more limited in remote communities, because there are no hospitals in proximity to these areas, or there may be difficulties in accessing transportation to travel to health services.

Between 2001 and 2011, the number of Aboriginal and Torres Strait Islander people with treated kidney disease almost doubled (from 762 to 1 491), compared with a 59% increase among non-Indigenous people over the same period (from 11 613 to 18 289). However, in 2011, Aboriginal and Torres Strait Islander people with kidney disease were less likely to receive a functioning kidney transplant than their non-Indigenous counterparts (13% compared with 47%) (AIHW, 2014b).

There is limited information on the number of people with kidney disease not receiving dialysis or a kidney transplant. It is estimated there were 21 370 new cases of end-stage kidney disease in Australia between 2003 and 2007, about 21 new cases per 100 000 population. In all age groups up to 60 years, more than 90% of cases were treated, but the rate fell substantially among older age groups. Data provided for five jurisdictions suggest the age-standardised ratio of treatment rates between Indigenous and non-Indigenous Australians was 0.96, indicating that Indigenous Australians had slightly lower treatment rates (AIHW, 2011).

Aboriginal and Torres Strait Islander people also have higher death rates for a range of health conditions. Between 2007 and 2011, they were most likely to die from circulatory conditions (26% of all Indigenous deaths), followed by cancer (19%) and external causes such as suicides, falls, transport accidents and assaults (15%). Circulatory disease deaths also account for the largest gap in death rates between Indigenous and non-Indigenous Australians (22% of the gap). This is followed by endocrine, metabolic and nutritional disorders – particularly diabetes – which account for 14% of the gap (AIHW, 2014b).

Overall, potentially avoidable death rates are more than three times higher for Aboriginal and Torres Strait Islander people than non-Indigenous people. In 2006-10, overall death rates were twice as high. Circulatory diseases accounted for the largest gap (27% of the gap), followed by diabetes (17%) and cancers (12%). In 2007-11, 81% of Indigenous deaths occurred before the age of 65 years, compared with 35% for non-Indigenous Australians (AIHW, 2014b). These are striking figures, and could suggest that Aboriginal and Torres Strait Islander people have more trouble accessing health care and are less likely to engage in preventive health

measures. This can point to poor health literacy, affecting the capacity to adopt preventive behaviours that would improve their health, and seek timely treatment for long-term health conditions.

The ABS health literacy survey does not provide information based on Indigenous status, nor does it provide data for very remote parts of Australia. While it is difficult to accurately measure health literacy levels among Aboriginal and Torres Strait Islander people, it is known that they are among the most disadvantaged populations in Australia. Higher rates of avoidable deaths and poor health can be influenced by social determinants such as education, employment and the environmental conditions in which people live. Inequalities in health care access and use of services may exacerbate inequalities in health status.

Less is known about discrepancies in meeting the health needs of Aboriginal and Torres Strait Islander people. In the Australian Aboriginal and Torres Strait Islander Health Survey, about 21.9% of Aboriginal and Torres Strait Islander people had consulted a general practitioner (GP) or specialist in the last two weeks of 2012-13, 6% had visited the casualty, outpatients or day clinic, and 18% had been admitted to a hospital in the previous year (ABS, 2013a). But due to methodological differences between the Australian Aboriginal and Torres Strait Islander Health Survey and the Australian Health Survey, there are no directly comparable data for consultations with health professionals.

The Australian Aboriginal and Torres Strait Islander Health Survey, which is based on self-reported data, also indicates that remoteness seems to affect the extent to which Aboriginal and Torres Strait Islander people access services. The survey indicates that 24% of Aboriginal and Torres Strait Islander people in major cities had consulted a GP in the two weeks before being surveyed, compared with 18.5% in very remote areas. Aboriginal and Torres Strait Islander people in very remote areas were also more likely to have been admitted to hospital in the previous 12 months (21.5% compared with 18.3%) (ABS, 2013a). More hospital admissions may partially reflect difficulties in accessing primary health care, and delayed testing and medical attention requiring more complex treatment at later stages of disease.

However, Aboriginal and Torres Strait Islander people in non-remote areas were more likely than those in remote areas to have rated their health as fair or poor (26% compared with 21%). There was no significant difference between the proportion of Aboriginal and Torres Strait Islander people reporting excellent or very good health in non-remote and remote areas (40% compared with 38%), although more people in remote areas (41%) reported being in good health than non-remote areas (35%) (ABS, 2013a).

About 323 600 Aboriginal and Torres Strait Islander people accessed a Commonwealth-funded Indigenous-specific health service in 2013-14. If these people went to only one organisation, this would represent about 45% of the total Indigenous population. However, as those accessing health services may have attended more than one organisation and can be counted at multiple locations, this may be an overestimate of the proportion of the total Aboriginal and Torres Strait Islander population who received these health services (AIHW, 2015).

Data from more than 200 primary health care organisations receiving funding from the Australian Government to provide services primarily to Aboriginal and Torres Strait Islander people indicate that organisations with better performance are spread across diverse geographical and service delivery environments. Small organisations perform well, as do larger organisations. For example, remote services are more likely to comply with guideline-based care and routinely performed better than those in other locations on a range of process of care indicators such as GP management plans, team care arrangements and HbA1c results for people with type 2 diabetes (AIHW, 2014e).

The vital role primary health care can play in improving the health of Aboriginal and Torres Strait Islander people is demonstrated in a cohort study of more than 14 000 Indigenous residents living in remote communities. It found the average annual number of hospitalisations per person decreased with increasing levels of primary care for five conditions. Hospitalisations were reduced by 84% in the medium primary care group and 86% in the high primary care group for renal disease; 78% and 80% respectively for diabetes; and 73% to 78% for hypertension. The reductions in hospitalisations for ischaemic heart disease and chronic obstructive pulmonary disease were the lowest among the five conditions, but still statistically significant, ranging from 61% to 75% and 62% to 71%, respectively. Death rates in the high and medium primary care groups were lower than in the control group for all conditions. There were 69% and 75% reductions in death rate for diabetes, and 72% and 75% decreases for renal disease. In addition to better health outcomes, the study also demonstrates the cost-effectiveness of strengthening primary health care (Zhao et al., 2014).

4.3. The geography of health care services in Australia

Australia's health workforce is characterised by a maldistribution that is particularly acute in the country's rural and remote parts. In some areas, a low volume of patients makes a hospital or a specialist unviable. These are also places that are not perceived by health practitioners as attractive to live. Succession planning for an ageing workforce presents another challenge for policy makers.

There is a scarcity of health professionals and other resources in remote Australia

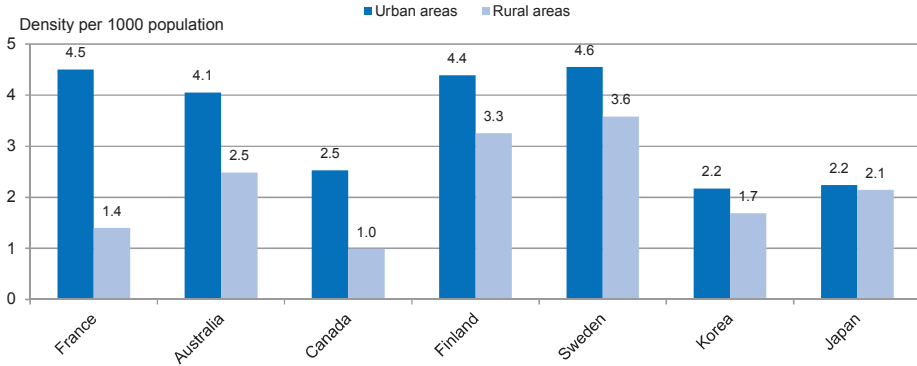
Difficulty in accessing health services, in particular medical specialists, grows with increasing distance from major cities. Compounding the issue is the fact that social disadvantage is typically higher in regional and remote areas, where workforce shortages are more acute. It is not infeasible, for example, that a rural patient in Western Australia faces the prospect of travelling 3 000 kilometres to attend an appointment with a specialist in the state's capital of Perth. If potential poor co-ordination between health services is added to the equation, this can compromise a patient's care and lead to avoidable hospitalisations. As discussed later in this chapter, the federal government has provided a range of financial and non-financial incentives to encourage doctors, including specialists, to relocate to, and remain in, rural and remote areas.

Australia's health workforce is characterised by a geographical maldistribution of medical practitioners. The overall supply of employed full-time equivalent (FTE) clinicians in 2013 was significantly higher in major cities compared with other areas. However, analysis by the type of clinician shows that the disparity was much less with regard to the supply of GPs specifically, with 106.4 FTE GPs per 100 000 population in major cities compared with 110.1 FTE per 100 000 in inner regional areas and 112.2 FTE GPs in outer regional areas. The supply of GPs in remote/very remote areas was the highest of all areas in 2013, with 134.7 FTE per 100 000 population (AIHW, 2015b). However, this equates to only about 600 GPs working across a very broad geographical area consisting of many small communities and a total estimated population of more than 500 000 people (AIHW, 2014d).

By contrast, Australian specialists work predominantly in major cities. In 2013, 154.8 FTE specialists per 100 000 population worked in major cities, with supply decreasing to 80.2 FTE per 100 000 population in inner regional areas, 58.3 FTE per 100 000 population in outer regional areas, down to 30.7 FTE per 100 000 population in remote/very remote areas (AIHW, 2015b). This last group equates to only about 140 specialists (AIHW, 2014d).

The overall physician density in Australia is 4.1 per 1 000 population in urban areas, compared with 2.5 per 1 000 in remote and very remote areas (OECD, 2015). This excludes areas in Australia classified as "regional". The Australian urban versus remote/very remote distribution of doctors represents one of the wider disparities in the OECD (Figure 4.4). However, the disparity is less pronounced than in Canada, a country whose large size presents similar challenges in terms of health service delivery.

Figure 4.4. Physician density in predominantly urban and rural regions, selected countries, 2013 (or nearest year)



Note: The classification of urban and rural regions varies across countries.

Source: Australia: AIHW National Health Workforce Data Set (NHWDS) 2013. Canada: Scott's Medical Database, 2013, Canadian Institute for Health Information. France: RPPS médecins au 1er janvier 2015. Other: *OECD Regions at a Glance 2015*.

Unlike the situation with medical practitioners, the supply of all nurses (including registered and enrolled) is more evenly distributed, ranging from 1 111 FTE nurses per 100 000 population in outer regional areas to 1 265 FTE nurses per 100 000 population in very remote areas in 2013. In major cities, there were 1 161 FTE nurses per 100 000 population in 2013 (AIHW, 2015c).

A higher proportion of Indigenous-specific primary health organisations service the most remote areas. Of the 203 Australian Government-funded Indigenous-specific primary health care organisations that provided data in 2013-14, around one-third (33%) were located in very remote areas, almost one-quarter (22%) were in outer regional areas and 21% were in inner regional areas. A smaller proportion were in remote areas (13%) and major cities (11%) (AIHW, 2015a).

Difficulty in accessing health care in remote areas extends to acute health care. Of Australia's 746 public acute hospitals, only 71 are in remote areas and 83 in very remote areas, where full hospital services are not viable. These communities are serviced largely by small and very small public hospitals with a relatively narrow range of services. They mostly provide emergency services rather than formal emergency departments (AIHW, 2014a). In many of these communities, patients who require surgery or who have other complex issues travel to bigger regional centres for hospital treatment that cannot be provided by outreach specialists.

Rural Australians face major barriers in accessing health care

In an ABS Australian Health Survey, about 32.8% of people living in major cities had consulted a specialist in the previous 12 months, compared with 27.6% of people living in outer regional and remote areas. The trend was similar when it came to seeing a dentist (48.8% of people in major cities, compared with 41.1% of people in outer regional and remote areas). However, the extent of GP visits was relatively similar. About 84.6% of people living in major cities had consulted a GP in the previous 12 months, compared with 82.3% in inner regional areas and 81.7% in outer regional and remote areas (ABS, 2013b).

In an ABS Patient Experiences survey, people living in outer regional and remote areas were more likely to visit an emergency department than those living in major cities (17.1% compared with 12.3%) (ABS, 2013f). As highlighted in Chapter 2, this could be explained by difficulties in accessing a GP with no out-of-pocket cost, particularly outside of standard working hours. It could also reflect delays in seeking health care that could exacerbate an existing medical condition.

In the ABS survey, of those who had seen a GP in the previous 12 months, people living in outer regional, remote or very remote areas were more likely to report waiting longer than an acceptable period than those living in major cities (23.8% compared with 19.3%) (ABS, 2013f).

The co-ordination of care for people living in these areas can also be affected. Among those who had seen three or more health professionals for the same condition, more people living in outer regional, remote or very remote areas reported issues caused by a lack of communication between health professionals, compared with those in major cities (16.5% compared with 11.7%) (ABS, 2013f).

Similar patterns are seen in preventive programmes. For example, the uptake of cervical screening is lower in very remote areas (54%), compared with 59% in inner regional areas and 58% in major cities (AIHW, 2014c). Very remote areas also have the lowest participation rate in breast cancer screening of 45.8%, compared with 53.2% in major cities and a high of 58.5% in outer regional areas (AIHW, 2013b).

While sometimes variations in the provision and use of health care are warranted, they can also signal that resources are not being used efficiently or effectively. An Australian study undertaken as part of an OECD project analysed health care variation based on the areas in which people live. The variation was smallest for caesarean sections (1.6-fold) and largest for cardiac catheterisation (7.4-fold). Variation between local areas was evident across all interventions and conditions. For example, in 2010-11, the

national standardised rate of admission for hip fracture was 102 per 100 000 population. There was a five-fold difference between the highest admission rate of 253 admissions per 100 000 population in Western Australia's remote Kimberley-Pilbara region, compared with 50 per 100 000 in the inner regional Perth South Coastal region. Once the Kimberley-Pilbara region, and outlier, was excluded, the variation fell to 2.7-fold. Some explanations for this may include higher rates of osteoporosis and obesity in the region, and that Aboriginal and Torres Strait Islander Australians are more likely than others to fracture their hip (ACSQHC and AIHW, 2014).

In another example, the national standardised rate of admission for cardiac catheterisation was 596 per 100 000 population. There was over a 7-fold difference between the highest rate (1 551 admissions per 100 000 in outer regional Murrumbidgee) and the lowest rate (210 admissions per 100 000 population in metropolitan Inner West Sydney). However, the authors noted that Murrumbidgee was an outlier in the results. Removal reduced the difference to 5.1-fold. No clear relationship between remoteness and admission rates was observed (ACSQHC and AIHW, 2014).

This kind of analysis is useful in determining public health or access problems unique to particular regions, and can help inform policy making. There are inconsistencies, however, in how the states and territories are doing this work. For example, the report notes that the Australian Capital Territory currently does not have any ongoing local activity measuring or targeting health care variation. It also notes that the first step in reducing unwarranted variation in health care is the systematic collection, analysis and publication of variation. That needs to go beyond hospitals to variation in community and primary care. The Australian Commission on Safety and Quality in Health Care (ACSQHC) will explore variations in community care as part of an Australian Atlas of Healthcare Variation. But it says a lack of routine information on outcomes of care is the key limitation of this work (ACSQHC and AIHW, 2014).

4.4. Policies, data infrastructure and payment systems in rural and remote health care in Australia

In addition to heavily relying on foreign doctors and increasing the number of medical graduates, Australia has made efforts to embrace workforce innovation. Strategies have included changing scopes of practice, flying specialists and other health practitioners in and out of remote areas, and offering doctors financial incentives to move to areas of need.

In recognition of the complexities of delivering health services in Australia's most remote areas, a National Strategic Framework for Rural

and Remote Health has been developed (Box 4.1). The framework aims to promote a national approach to policy, planning, design and delivery of health services in rural and remote communities. The framework cites wide variations between rural and remote communities. As a consequence, a “one size fits all” approach cannot be applied throughout rural and remote Australia. The framework therefore encourages health service planning and delivery that recognises the need to develop solutions to meet the unique needs of local populations (Standing Council on Health, 2012).

Box 4.1. Australia’s National Strategic Framework for Rural and Remote Health

Goals

Rural and remote communities will have:

1. improved access to appropriate and comprehensive health care
2. effective, appropriate and sustainable health care service delivery
3. an appropriate, skilled and well-supported health workforce
4. collaborative health service planning and policy development
5. strong leadership, governance, transparency and accountability.

Outcome areas

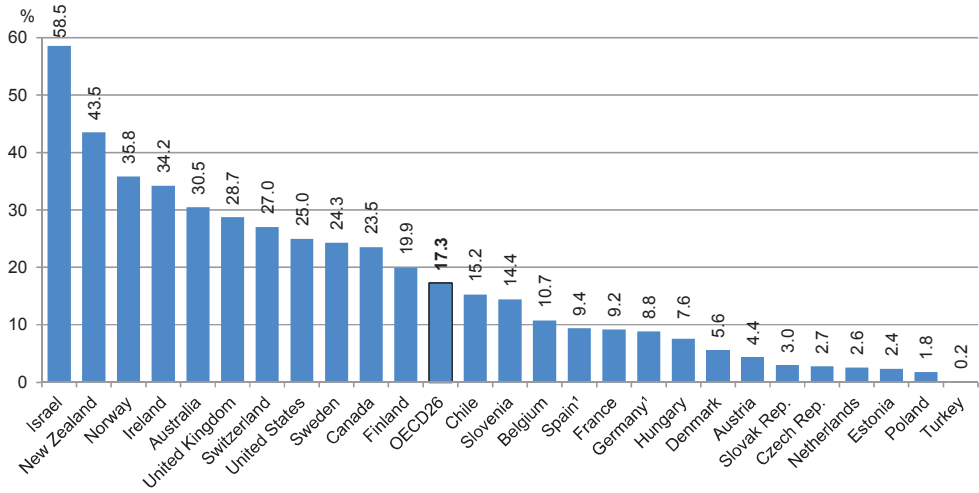
The framework lists objectives and strategies under five outcome areas. These are:

1. access
2. service models and models of care
3. health workforce
4. collaborative partnerships and planning at the local level
5. strong leadership, governance, transparency and performance.

Source: Standing Council on Health (2012), “National Strategic Framework for Rural and Remote Health”.

Australia has relied heavily on foreign-trained doctors to fill health workforce gaps

Australia’s dependence on overseas-trained doctors (OTDs) has been described as “extraordinary” by the World Health Organization (Siyam and Dal Poz, 2014). Figure 4.5 shows Australia has one of the highest proportions of foreign-trained doctors in the OECD (OECD, 2015).

Figure 4.5. Share of foreign-trained doctors in OECD countries, 2013 (or nearest year)

1. In Germany and Spain, the data is based on nationality (or place of birth in Spain), not on the place of training.

Source: OECD Health Statistics 2015, www.oecd.org/els/health-systems/health-data.htm.

Australian Government policy has sought to direct overseas-trained GPs to more remote areas to fill workforce gaps. Federal Department of Health GP statistics based on Medicare data indicate that overseas-trained GPs in Australia make up a higher proportion of the GP workforce in outer regional areas (57%) and inner regional and remote areas (50%), on a full-time workload equivalent (FWE) basis. They account for less of the workforce in major cities (44% of FWE GPs).

One explanation for this is a scheme that gives overseas-trained GPs incentives to work in areas of need. Currently, under the Health Insurance Act 1973, there are restrictions on access to Medicare provider numbers for overseas-trained doctors. To gain access to Medicare benefits, they are required to work in a district of workforce shortage. This scheme is known as the ten-year moratorium. However, OTDs can reduce the period of their restriction by practising in a regional or remote area. The OTD Scaling programme enables doctors to reduce the period of restriction by up to 50%. The Five-Year Overseas-Trained Doctor Scheme can provide even greater reductions for OTDs who practise in locations deemed to have severe workforce shortages. By agreeing to work in a difficult to fill rural or remote position, overseas-trained GPs can gain a Medicare provider number to practise anywhere in Australia, once the requirements are met. Box 4.2 provides an example of how it works in one state.

Box 4.2. Graded incentive categories by Health Workforce Queensland

- *Category A:* Exceptionally difficult for GP recruitment and retention. Includes small, very remote communities, and very remote and difficult to retain Aboriginal and Torres Strait Islander communities. Every year in this category counts as two years in the scheme, with the maximum reduction being from five to three years.
- *Category B:* Very difficult for GP recruitment and retention. Includes remote locations, small communities, very difficult community attributes, and high Aboriginal and Torres Strait Islander people need. Also includes demonstrated requirement for advanced practice skills, special services, and extreme climate. Every year in this category counts as one and a half in the scheme, with the maximum reduction being from five to four years.
- *Category C:* Difficult for GP retention and recruitment. A default category that includes all locations previously approved unless otherwise agreed. The GP must serve five years in the scheme, with no additional concessions.

Source: Health Workforce Queensland, *Fact Sheet: Five Year Overseas Trained Doctors (OTD) Recruitment Scheme*, available at: www.healthworkforce.com.au/Portals/0/Documents/Support/Fact%20Sheet_29Apr13.pdf (accessed 27/05/2015).

Efforts have been made to increase the number of Australian doctors, and encourage them to work in rural and remote areas

Australia has set an ambitious goal of workforce self-sufficiency by 2025, and has increased the number of university places to try to achieve this. In 2003, 1 511 domestic students and 378 international students commenced medical courses. By 2012, the number had grown to 3 035 domestic and 651 international students. This trend is also reflected in graduating students. A combined 1 425 students completed medical courses in 2002, and the number doubled to 2 964 in 2011 (Health Workforce Australia, 2013).

Based on evidence that medical graduates from a rural background and those who have had rural exposure during training are more likely to practise in a rural area, the federal government has invested in a number of rural training programmes. The Rural Clinical Training and Support programme funds a network of rural clinical schools and requires participating medical schools (17 of a total of 19 schools) to deliver short-term rural placements to all medical students, and long-term (over one year) rural placements to 25% of their medical students. Medical schools must also fill 25% of medical school places with students from a rural background. The University Departments of Rural Health programme

supports rural clinical placements for students from a range of health disciplines, including medicine, nursing and allied health.

However, university medical places are partially subsidised by the federal government, while funding for internships in public hospitals is provided by state governments. The increasing number of graduating medical students has put pressure on available internship positions. The Australian Government has an agreement with the states and territories that guarantees intern positions for all Australian domestic medical graduates.

In 2014, the Medical Board of Australia and the Australian Medical Council implemented a new framework for internships. While the framework improves consistency across the states, it does little to encourage doctors to get a taste of rural medicine early in their careers. The scheme requires interns to gain a minimum of ten weeks each in medicine and surgery, and at least eight weeks in emergency medical care. However, these placements are not necessarily available in small rural hospitals. Of rural health, the framework says combinations of services in rural, regional or outer metropolitan areas may provide a “suitable context” for more integrated placements (Australian Medical Council and Medical Board of Australia, 2013).

Separately, the federal government has its own Commonwealth Medical Internship initiative, which aims to increase the training of medical interns in the private sector in rural Australia. This scheme is not open to Australian citizens, as domestic medical graduates are expected to be placed in internships by states and territories. This scheme is open only to full-fee paying international medical graduates who completed their medical course in Australia. These interns must enter a Return of Service Agreement with the federal government, requiring them to complete a year’s return of service in an approved rural location within five years of starting their internship. Failure to complete the internship year or the return of service is considered a breach of the Agreement and may require the intern to repay the cost of providing the internship place, of up to AUS 132 000 in 2014 (Department of Health, 2014a).

Another federal government strategy to increase numbers of medical graduates in country areas is the Higher Education Contribution Scheme (HECS) Reimbursement Scheme. It reimburses the student debt for medical students, should they train and work in rural communities. Scaling of the HECS Reimbursement Scheme allows the debt to be repaid in greater amounts for doctors working or training in outer regional, remote and very remote locations. Scaling also allows doctors to reduce the period for reimbursing the cost of their medical studies from five years to two, depending on the classification of their training or practice location

according to area of remoteness. Nurses can also receive HECS reductions under a different system. However, allied health professionals, dentists and public health graduates are not eligible for these sorts of schemes.

The federal government has also sought to increase numbers of medical graduates in rural areas through the Medical Rural Bonded Scholarship (MRBS) scheme and the Bonded Medical Places (BMP) scheme. The MRBS provides 100 medical school places with an attached scholarship each year to first-year Australian medical students. The scholarship recipients sign a contract that requires them to work as a medical practitioner in a rural or remote area for six years after they attain fellowship.

Of all first-year medical places that receive a funding contribution from the federal government, 25% are allocated to the BMP scheme. Students must commit to working in an approved workforce shortage area of their choice, which can include outer metropolitan, rural and remote areas. This applies for a period that equals the length of their medical degree. A scaling system that increases with remoteness allows participants to fast track their return of service period. Graduates who breach the agreement have to repay a proportion of the government contribution to their university fees. The BMP scheme does not include a scholarship to the student.

A review of Australian Government health workforce programmes observed that stakeholders had cited concerns about the potentially “stigmatising” effect of the BMP scheme on students and on the nature of rural practice itself. There have also been concerns about the lack of international evidence for the success of mandatory or bonded schemes in achieving long-term sustainable increases in the rural health workforce. However, the review concluded that very few students in Australia had yet to become eligible for return of service under the scheme, given the long lead time in medical training, and it was premature to abandon the scheme without meaningful data (Mason, 2013).

The federal government also provides a range of scholarship programmes that aim to support the rural and remote health workforce and to recruit students from rural and remote areas. For example, the Nursing and Allied Health Scholarship and Support Scheme provides scholarships to nursing and allied health professionals for continuing professional development (CPD) activities and postgraduate study. There are also scholarships available for undergraduate studies and clinical placements in particular settings.

A range of other schemes and incentives exist for doctors in rural and remote areas. Federal government-funded incentives under the General Practice Rural Incentives Programme are available for graduates

undertaking their GP training in regional and remote areas. Additionally, the Australian General Practice Training (AGPT) programme is a postgraduate vocational training programme for medical graduates wishing to pursue a career in general practice. Under the programme, at least 50% of training activity occurs in inner and outer regional and remote and very remote areas. The federal government is increasing the number of positions in the programme.

The Remote Vocational Training Scheme (RVTS) allows doctors to remain and continue to provide general medical services in remote communities that are often single-doctor towns, and receive structured remote supervision to train towards fellowship of the Australian College of Rural and Remote Medicine (ACRRM) and the Royal Australian College of General Practitioners (RACGP). The RVTS gives preference to solo doctors located in inner and outer regional areas, and remote and very remote areas. RVTS doctors can be found practising in a variety of roles, including with the Royal Flying Doctor Service, and Aboriginal Medical Services and private practice in smaller communities. A total of 89 doctors have achieved general practice fellowship through the programme.

State and territory governments provide a significant number of vocational training places in their public hospitals. The federal government funds the Specialist Training Programme, which seeks to extend vocational training for specialist registrars into settings outside traditional metropolitan teaching hospitals. The programme is delivered through 12 medical specialist colleges under funding agreements with the federal government. The colleges then provide funding to health care settings that have successfully applied to support these placements. More than 50% of training posts have an element of training in regional and rural areas.

Multiple health professionals flying in and out of remote communities are a vital service, but can affect the continuity of patient care

Devising strategies to encourage doctors to live in the most remote areas of Australia, which are often devoid of other services, is very challenging.

Given Australia's geography, it is not uncommon for health practitioners to be flown in to remote areas to deliver health services. These "fly-in/fly-out" and "drive-in/drive-out" services are used to fill the void of medical specialists and other health professionals. The Rural Health Outreach Fund brings together five outreach programmes, including medical specialists, ophthalmologists, maternity services, a rural women's GP service, and a paediatric outreach programme. More outreach is provided by allied health professionals, midwives and nurses, GPs and multidisciplinary teams.

Mental health and chronic disease are among the priority areas for outreach services. In 2013-14, 190 460 Australians accessed services through this programme.

Outreach is expensive to provide. However, it has become an essential part of the Australian health workforce. Outreach represents 28.7% of specialist services in very remote areas, and 4.2% in remote areas (Health Policy Analysis, 2011). An evaluation of the Medical Specialist Outreach Assistance Programme – which has since been brought into the Rural Health Outreach Fund – indicated it had the greatest impact in reducing the gap in access in very remote areas (Health Policy Analysis, 2011). Among the evaluation’s recommendations was that funding be targeted at communities with the highest levels of need, and better mechanisms be used to assess levels of need and gaps in access and take into account the cost of service delivery in more remote locations (Health Policy Analysis, 2011).

The success of these schemes in more remote communities depends on the willingness of specialists to provide outreach services. Only some specialists are willing to participate because of time commitments, the impact on remuneration, and issues with co-ordination (Health Policy Analysis, 2011). Another barrier is a lack of stability in primary care services. In less remote places, GPs and hospitals can provide a reliable basis for specialists to provide outreach, and can assist with managing appointments. Anecdotal evidence suggests there is a high turnover of local primary care staff in remote communities. The evaluation of outreach noted that in some communities, the visiting specialist service was the “most stable” health service providing continuity for patients. Other issues were a lack of physical space to provide services, and broader social and economic issues affecting the most disadvantaged remote communities (Health Policy Analysis, 2011).

The evaluation found outreach services were more likely to be successful if they were provided with some regularity over a long period of time, so that community trust and confidence in the service and specialists could be gained. A good example of this was in Aurukun in far north Queensland, where the general physician and paediatrician had conducted regular clinics in the community for more than 20 years. This helped them to establish good relationships with the local people (Health Policy Analysis, 2011). Services that were free were more likely to be used. Also pivotal to success was a collaborative approach between visiting specialists and local primary care providers. For example, in Leongatha in rural Victoria, the GPs had responsibility for patients before and after any procedure conducted by a visiting specialist. This included administering their anaesthetic before surgery (Health Policy Analysis, 2011).

In another initiative, the Remote Area Health Corps, urban-based health professionals such as GPs, registered nurses, dental and allied health professionals, provide short-term health workforce support to remote Aboriginal and Torres Strait Islander communities around the Northern Territory. These placements can range from three weeks to three months.

Temporary locums are also used to provide respite to local doctors. Locums are temporary doctors who can give local doctors time for rest and to engage in CPD. The aim of such a scheme is also to help boost retention rates of doctors in remote areas. The National Rural Locum Scheme accounts for specialist obstetricians, anaesthetists and GPs. Similar schemes exist to enable rural nurses, midwives, dentists and allied health professionals to take leave.

While locums perform a vital service in providing some respite for doctors, the frequent turnover of professionals means this is not a sustainable long-term approach. If patients are treated by multiple doctors, they can be deterred by having to recount their history over and over again. Their ability to establish trust with a doctor is affected, as is their continuity of care. There have been reports by patients of pathology test results and radiology reports going missing between one GP and the next, and follow-up not taking place (Far West New South Wales Medicare Local, 2013).

Additionally, the Royal Flying Doctor Service, which has existed for about 85 years, complements other rural health services. It receives funding from the federal and state and territory governments, fundraising and private contracts. Its services include 24-hour emergency retrieval, aeromedical transportation of patients between hospital facilities, and a range of primary health services. In 2013-14, it had more than 282 000 patient contacts, including patients at clinics, patients transported, and telehealth; more than 54 000 patient transports; and conducted more than 16 000 clinics (Royal Flying Doctor Service, 2014).

Schemes that subsidise patient transport and accommodation are insufficient to meet patients' costs

Patients who need hospital treatment often have to travel long distances. Patient travel assistance schemes are provided by the state and territory governments. Generally, they subsidise rather than fully cover the cost of travel and accommodation. Criticisms of these programmes include a lack of uniformity, levels of reimbursement being insufficient, and challenges to accessing funds. A government evaluation of medical outreach notes that the lack of uniformity in travel assistance schemes means that access to care is not equal for all Australians – depending on where people live, they may or

may not receive funds or they may be insufficient to cover expenses. The levels of reimbursement also do not reflect current costs of travel and accommodation (Health Policy Analysis, 2011).

For example, the eligibility is different in each state regarding the minimum distance of travel. The most common minimum one-way travel criterion is 100 kilometres, with Queensland set at 50 kilometres and Tasmania 75 kilometres. In the Northern Territory, which has a high population of Aboriginal and Torres Strait Islander people with arguably greater need, the minimum distance is 200 kilometres one way. A review into the territory's scheme recommended it remain at 200 kilometres, due to the region's large geography and the high demand for the scheme (Northern Territory Department of Health, 2013).

There are also differences around whether patients must make co-payments. Queensland provides a subsidy of AUS 60 per night per person for commercial accommodation and AUS 10 per night for private accommodation, but the client and carer are required to contribute to the first four nights of accommodation per financial year (Queensland Government, 2014). The Northern Territory contributes AUS 60 per night in commercial accommodation and AUS 20 per night in private accommodation, but the contribution is payable to both client and carer from the first night (Northern Territory Department of Health, 2015).

The fuel subsidy paid in various jurisdictions ranges from 16 to 30 cents per kilometre, with accommodation subsidies ranging from AUS 30 to AUS 60 per night (National Rural Health Alliance, 2014). There have been a number of state reviews into the various schemes, and recurring themes include the inadequacy of the amount paid towards accommodation and travel, the need to lower the threshold that patients must travel before qualifying, and the need to streamline the complex process for claiming reimbursement (National Rural Health Alliance, 2014).

The current state of these schemes can deepen health inequalities between people living in major cities close to hospital care with no out-of-pocket costs, and people in remote communities who have to pay to travel for hospital treatment.

Australia was slow to embrace workforce flexibility and changes to scopes of practice, but is now exploring innovation and new technologies

Many OECD countries are changing the scopes of practice of health practitioners as a means of coping with health workforce shortages. This includes more generalist roles, particularly in rural areas, and roles such as general practice nurses, allied health assistants, and physician assistants.

The creation of a rural generalist programme in Australia enables GPs to be upskilled so they can perform some specialist roles including anaesthetics and obstetrics. The programme has expanded, and there is scope for the creation of more of these positions through rural generalist training pathways.

Another approach adopted in Australia and many countries is that of nurse practitioners. These are nurses who undertake postgraduate education qualifying them to take on some of the duties that previously only doctors could perform. Compared with some other countries, Australia was late in creating these roles. The United States and Canada established nurse practitioners in the mid-1960s (Delamaire and Lafortune, 2010). In Australia, the first nurse practitioners appeared in 2000. Since then, the numbers have slowly grown to 1 165 (Nursing and Midwifery Board of Australia, 2015). These are still very small numbers that are unlikely to meet the need. Only 18 of them are in the Northern Territory – a largely rural jurisdiction that would benefit from more nurse practitioners.

Australian nurse practitioners can now prescribe some medication, order and interpret diagnostic tests and make referrals to other health professionals. Since November 2010, nurse practitioners have been eligible to provide services attracting a Medicare benefit, to make their services more affordable for patients. The items currently available under the Medicare Benefits Schedule include consultations requiring examination and management, providing preventive health care, and arranging necessary investigations. The Medicare rebate also applies to nurse practitioners referring patients to other health care providers, such as specialists and psychiatrists, but not allied health professionals (Department of Health, 2014b). Australian nurse practitioners most commonly work in emergency departments, renal health, mental health and paediatrics. There has also been a growth in nurse practitioners working in primary health care (Middleton et al., 2011).

In the United States, nurse practitioners play a bigger role in rural and primary health care. About 89% of nurse practitioners in the United States are prepared in a primary care focus, with the most prevalent category family health (49.2%). Primary care nurse practitioners are prepared in providing care at first contact for a number of conditions, ongoing management of acute and chronic conditions, health promotion and care co-ordination. Nurse practitioners are also actively working in US rural areas, with 18% practising in communities of fewer than 25 000 residents (American Association of Nurse Practitioners). With serious workforce gaps in remote Australia, nurse practitioners could play a bigger role, particularly given the higher rates of chronic disease in these areas. They could play a critical role in primary care and prevention.

International evaluations of nurse practitioners generally show that they can improve access to services, reduce waiting times and deliver the same quality of care as doctors for services such as routine follow-up of patients with chronic conditions – provided they have had proper education and training. There is also a high patient satisfaction rate, and in many cases a higher satisfaction rate than for similar services provided by doctors. This can partly be explained by the fact that nurse practitioners tend to spend more time with each patient. The few studies that have tried to measure the impact on health outcomes have not found any negative impact following the transfer of certain tasks from doctors to nurses (Delamaire and Lafortune, 2010).

However, the small numbers in Australia indicate barriers remain. One of the key barriers to extending the role of nurse practitioners is some opposition from the medical profession. The main reasons for this include a potential overlap in the scope of practice and loss of activities, the degree of autonomy of nurse practitioners, concerns about legal liability, and concerns about the skills and expertise of nurse practitioners (Delamaire and Lafortune, 2010). In Canada, the nursing and medical professions have tried to work together to set out principles and criteria for defining the scope of practice and clarifying liability issues (Delamaire and Lafortune, 2010).

Some Australian states have embraced the innovative use of nurses in different ways. For example, under the Rural and Isolated Practice Endorsed Registered Nurse scheme, some jurisdictions in Australia permit approved nurses to provide a limited range of medicines, where there is little or no access to GPs, nurse practitioners, paramedics or pharmacists. Queensland and Victoria have both implemented this model.

Australia has adopted other innovative options to address workforce shortages. For example, in central Australia, much of the direct patient contact is provided by nurses and Aboriginal health practitioners, with doctors reviewing tests and examinations remotely.

In the Northern Territory, a web-based electronic patient record with a unique patient identifier has enabled new models of care to be developed, and improved access to patient information. Rural medical practitioners can be anywhere in Australia, and assist remote nurses and Aboriginal health practitioners to manage chronic disease patients appropriately by reviewing pathology and assessment results, then have case discussions with the local team. They also monitor and advise on other pathology testing. The medical practitioners consist of a group of GPs, who have usually previously worked in remote Northern Territory, and have moved away but can continue to provide quality care for remote patients through the innovations of IT systems. These medical practitioners form the core of the 24-hour duty

roster that provides emergency advice and arranges medical retrieval to all government and non-government remote health services, as well as pastoral stations, rangers, oil rigs and ships at sea. This is considered an important retention initiative for remote GPs, as it limits the expectation they are on call continuously and provides reassurance and backup for remote nurses and Aboriginal health practitioners that they can contact a doctor who understands the conditions and circumstances they are providing care in.

Another very promising innovation is telehealth. Box 4.3 shows some of its uses in Australia.

Box 4.3. Telehealth in Australia

Mental health is a key area where telehealth can be useful. The technology can link rural GPs to specialists in cities or bigger regional centres via video. It can also link patients directly to city-based specialists, such as psychiatrists, for consultations.

The immense state of Western Australia provides a good example of how telehealth can work well in an area where there is a shortage of health services. In a major motor vehicle trauma in the Great Southern region, patients were able to be triaged, stabilised and treated at a small rural health facility via a telehealth link with surgeons based in the state's capital city of Perth. The patients were later evacuated to a major city hospital for surgery, post-operative care and rehabilitation (Kimberley-Pilbara Medicare Local, 2013b).

Dermatology is another example of how telehealth is used internationally. The Australian College of Rural and Remote Medicine developed Tele-Derm, an online resource enabling rural doctors to receive advice on the diagnosis and management of skin disease. A rural doctor submits a photo of a skin condition, together with information on the patient's history and a possible diagnosis. A dermatologist responds usually within two days with a diagnosis and treatment options. GPs can also access online case studies and education opportunities (Australian College of Rural and Remote Medicine, 2014).

The potential benefits of telehealth include access to a larger pool of specialists, and a corresponding reduction in waiting times. Patients who are unwell are spared the inconvenience of long travel away from their families. A good initiative in Australia is permitting Medicare benefits to apply to telehealth, to make it more affordable. Government figures indicate that 98% of telehealth services have been provided to patients without out-of-pocket costs (Department of Health, 2014c).

While Medicare benefits for telehealth services will continue, a separate scheme in which doctors were given financial incentives to participate ended on 30 June 2014. The financial incentives had been introduced in 2011 to encourage early adoption of telehealth. The incentives had been designed to "step down" each year and eventually cease. Between 1 July 2011 and 30 June 2014, more than 10 300 Medicare providers and 250 residential aged care facilities provided more than 199 000 Medicare-funded telehealth services to more than 71 000 patients.

These are encouraging early signs. The government could explore ways to boost awareness of the benefits of telehealth among doctors, and support practices to have this technology.

Rural hospital funding and financial incentives for GPs to work in remote areas do little to take into account patient outcomes

Under the National Health Reform Agreement, public hospitals are funded mostly on an activity basis, which is based on the actual number of services provided to patients. But the Agreement acknowledges that in some cases, hospital services are better funded through block grants – where hospitals are paid a fixed amount. This is particularly the case for smaller rural and regional health services. The Agreement stipulates that funding be provided on the basis of activity “wherever practicable”. The states provide advice to the Independent Hospital Pricing Authority (IHPA) on how their hospital services and functions meet the block funding criteria on an annual basis. For small rural and regional hospitals, this advice can be provided once every six years, or more frequently at the states’ discretion. On the basis of this advice, the IHPA determines which hospital services are eligible for federal government funding on a block grant basis only, or a combination of activity-based funding and block funding (Council of Australian Governments, 2011). State governments choose their own level of contribution to block funding.

The federal government’s level of block funding is determined by the IHPA’s National Efficient Cost, and is based on a small rural hospital’s size and allocation. For 2015-16, the IHPA determined that public hospitals are eligible for block grant funding if the technical requirements for applying activity-based funding are not able to be satisfied, and there is an absence of economies of scale that would make some services financially unviable. The IHPA determined low-volume thresholds forming part of the block funding criteria would make hospitals eligible if they are in a major city and provide 1 800 or less acute inpatient National Weighted Activity Unit (NWAU) per year, or are in a rural area and provide 3 500 or less acute inpatient NWAU per year (IHPA, 2015). Complex activities are worth multiple NWAUs, while the more straightforward are worth fractions of an NWAU. Activity-based funded hospitals that treat patients who reside in rural locations receive an adjustment, which results in additional funding.

At a primary care level, the federal government also provides incentives for GPs to work in rural areas. As discussed in Chapter 2, one of the financial incentives for GPs under the Practice Incentives Programme is a Procedural General Practitioner Payment, which aims to encourage GPs in rural and remote areas to maintain local access to surgical, anaesthetic and obstetric services. About 375 practices participated in 2013-14, receiving average payments of AUS 23 900. There is also a PIP rural loading which ranges from 15% to 50% (depending on the remoteness of the practice location) and is applied to the incentive payments of practices in rural and

remote areas. The rural loading is paid in recognition of the difficulties of providing care, often with little professional support, in rural and remote areas. Approximately 1 700 practices received an average rural loading payment of AUS 12 300 in 2013-14.

The General Practice Rural Incentives Programme aims to reward long service in rural areas. General practice payments increase with remoteness. A government review reported concerns with the scheme. Some stakeholders argued there had been an unsustainable growth in retention payments to doctors in inner regional areas, relative to those in more remote locations. The programme had originally been intended for GPs, but had since been accessed by some specialists. The programme seemed to be retaining doctors, but not inspiring many to relocate to rural areas, as payments were mostly going to doctors who had been practising in these areas for some time. Take up and participation rates for the two retention components had been higher than originally forecast. In 2010-11 and 2011-12, more than 11 000 participants were assessed as eligible to receive annual incentives. The major growth in retention payments had been in inner regional areas, not the more remote areas (Mason, 2013).

The review described the relocation component of the incentive as disappointing. Only 33 doctors qualified for relocation payments in 2011-12, against a target of 70. Strict eligibility requirements and an overly bureaucratic process were identified as barriers. This included the need to apply for the relocation incentive before commencing work at a rural location, rather than seeking funds retrospectively. In 2011-12, at least half the participants who received initial approval for relocation incentives withdrew from the programme, mostly because they did not meet the minimum level of service requirements to receive their first and second grant payments, and were therefore deemed ineligible. The review also noted the grants themselves may not have been sufficient to motivate doctors to move to rural areas (Mason, 2013). The Rural Relocation Incentive Grant (RRIG) ceased on 25 May 2015 (Australian Government Department of Health, 2015).

There was also concern that the focus on financial incentives for doctors, at the exclusion of other health professionals, was not equitable. There were also calls to refine the classification scheme of remoteness. The review recommended the programme be replaced with a regionalised system for distributing incentives to doctors and other health professionals. This would involve moving to a system of regional management under outcomes-based funding parameters. The allocation of funding would occur at the regional level and would be based on an assessment of local workforce needs rather than the current entitlement approach. This would allow regions to use incentives either for relocation or retention (Mason, 2013).

An outcomes-based approach to funding rural health services – which shifts the focus to the health outcomes of patients – is discussed later in this chapter.

Different approaches have been taken to Indigenous health funding

A new Indigenous Australians' Health Programme (IAHP) was established in 2014, with the aim of consolidating Indigenous health funding, streamlining arrangements, and better addressing health needs at a local level to improve health outcomes.

The IAHP is a consolidation of four existing Indigenous health funding streams: primary health care base funding; child and maternal health activities; Stronger Futures in the Northern Territory (Health); and the Aboriginal and Torres Strait Islander Chronic Disease Fund.

In addition to Indigenous-specific health programmes and activities, Aboriginal and Torres Strait Islander people are also able to access universal health programmes, such as Medicare and the Pharmaceutical Benefits Scheme. The Australian Government's first Implementation Plan for the National Aboriginal and Torres Strait Islander Health Plan 2013-2023 outlines specific actions to make the health system more culturally safe, comprehensive and effective. The intention is to engage other government departments and states and territories to identify actions to address the social and cultural determinants of health.

Through the IAHP, the Australian Government continues to fund Aboriginal Community Controlled Health Organisations (ACCHOs) and state and territory governments to deliver Indigenous primary health programmes. An ACCHO is initiated and operated by the local Aboriginal community to deliver culturally appropriate health care to the community which controls it, through a locally elected board.

In 2013-14, 139 (68%) of the 203 Australian Government-funded Indigenous primary health care organisations that provided data identified as being an ACCHO. There were more ACCHOs than other organisations in all remoteness areas, except in very remote areas, where the number was the same. ACCHOs had about 327 000 clients, accounting for about 78% (AIHW, 2015a). Some ACCHOs provide comprehensive services with several doctors, while smaller services are more likely to be led by Aboriginal health workers. The peak body for community controlled Aboriginal primary health care is the National Aboriginal Community Controlled Health Organisation, with state-based affiliated peak bodies. Box 4.4 provides an example of how such an organisation works.

Box 4.4. The Winnunga Nimmitjyah Aboriginal Health Service

The Winnunga Nimmitjyah Aboriginal Health Service is an Aboriginal community controlled primary health care organisation, run by the Aboriginal and Torres Strait Islander community of the Australian Capital Territory (ACT). In the Wiradjuri language, “Winnunga Nimmitjyah” means “Strong Health”.

The services it provides include medical care, maternal health care, immunisations, health checks, child health and dental services. Aboriginal health workers are an important part of the team. A range of allied health services are also available, and the service engages in health promotion activities. Patients can walk into the clinic and be seen by the next available doctor, although appointments are needed for dental services, physiotherapy and psychiatry.

The organisation is also accredited to train medical students and GPs, resident medical officers and general practice registrars. It has won a number of awards for achievements in promoting Aboriginal and Torres Strait Islander health. Winnunga is also the affiliate in the ACT.

Source: Winnunga Nimmitjyah Aboriginal Health Service, available at: www.winnunga.org.au/index.php?page=about-winnunga (accessed 28/05/2015).

The government also uses the Practice Incentives Programme (PIP) Indigenous Health Incentive, discussed in Chapter 2, to encourage GPs to provide better health care for Indigenous patients, including best practice management of chronic disease. Practices receive a one-off sign-on payment of AUS 1 000, and are required to agree to undertake cultural awareness training and create and use a recall and reminder system to follow up Aboriginal and Torres Strait Islander patients with chronic disease. An annual payment of AUS 250 is made for each registered usual patient 15 years and over who has a chronic disease and has been offered or has had a health check. Practices can also receive “outcome” payments of up to AUS 250 per patient per year, where a target level of care and/or majority of care have been provided.

Variability in the availability of data makes it difficult to assess the quality and outcomes of health care in rural and remote Australia

A wealth of information exists about access to health care in rural Australia. However, it can be difficult to draw direct comparisons on health status and outcomes between people living in very remote areas and those living in major cities. National health surveys by the Australian Bureau of Statistics omit people in very remote areas and in Aboriginal and Torres Strait Islander communities. Such information could provide useful insight into the possible health consequences of remoteness. While the scope of the

Aboriginal and Torres Strait Islander Health Survey does include very remote areas, the different methodologies make the two surveys difficult to compare.

As discussed in Chapter 1, the Aboriginal and Torres Strait Islander Health Performance Framework incorporates data from multiple sources in more than 60 indicators. The framework covers three tiers of health performance – health status and outcomes, determinants of health, and health system performance. A set of 24 national key performance indicators has been developed, focusing on chronic disease prevention and management, and maternal and child health. The *National Key Performance Indicators for Aboriginal and Torres Strait Islander primary health care* report provides data on about 200 primary health care organisations that provide services primarily to Aboriginal and Torres Strait Islander people. The data are focused on process indicators, while there is less data on health outcomes. The data are disaggregated by remoteness, although the report cites the possibility of double counting of the same client at multiple organisations, especially at those in very remote areas. The analysis indicates that organisations participating in continuous quality improvement programmes are likely to outperform other organisations. The report demonstrates improvement by organisations delivering Indigenous primary health care in achieving guideline-based care and patient outcomes over the three reporting periods (18 months), indicating the process of submitting and reviewing data is enabling a focus on achieving quality care. The Online Services Report also provides information on Aboriginal and Torres Strait Islander health organisations. The data are disaggregated by remoteness for a number of health care indicators, including episodes of care, client contacts, maternal and child health and chronic disease indicators.

The National Health Performance Authority (NHPA) website MyHealthyCommunities provides information stratified by local area and allows for comparisons to be made between peer groups in major cities, regional areas and rural areas. However, much of the data focus on activity, while information on quality of care and health outcomes is more limited. The MyHospitals website also compares hospital performance by peer group. Information on the quality of care is also limited on this website.

The Steering Committee for the Review of Government Service Provision's annual *Report on Government Services* provides data on very remote areas for a number of indicators, but data on a range of measure for very remote areas are not included. For example, it reports on preventable hospitalisations, unplanned hospital readmissions and separations for falls resulting in patient harm in hospitals by remoteness. However, data on sentinel events, adverse events and episodes of *Staphylococcus aureus* (including MRSA) bacteraemia in acute care hospitals are not provided by remoteness. Drawing comparisons on such indicators can be more

challenging. While it may not be appropriate to compare major city hospitals with small rural hospitals, allowing small hospitals to benefit from comparisons with their peers across the country would help provide them with the support their metropolitan counterparts are accustomed to.

The Steering Committee has identified primary and community health services for Aboriginal and Torres Strait Islander Australians as a priority area for future reporting. Other priorities it has identified are the quality of data on Aboriginal and Torres Strait Islander Australians with regards to public hospitals and maternity services. Disaggregation of a number of indicators for Indigenous status and remoteness are also considered priorities (SCRGSP, 2015).

Existing data provide some insight into health outcomes, but little is known about the quality of health care in remote Australia. As Table 4.4 demonstrates, the ABS acknowledges in its *Measures of Australia's Progress* report a data gap with regards to quality of health services – not only at a regional level but more broadly. The ABS says a range of possible indicators are being considered for quality health services, such as patient experience and data about private health insurance (ABS, 2013e).

Table 4.4. Measures of Australia's progress indicators

Health (headline)	Life expectancy at birth
Physical health	Disability free life expectancy at birth
Mental health and wellbeing	Levels of psychological distress
Quality health services	Data gap
Healthy Lifestyles	Proportion of adults who are overweight or obese Smoking rates
Healthy environments	Average air quality index for capital cities

Source: Australian Bureau of Statistics (2013), *Measures of Australia's Progress*, 2013.

The ABS' 2011-12 Patient Experience survey was the first to include households in very remote areas, although it still excluded Aboriginal and Torres Strait Islander communities. The Australian Health Survey's exclusion of people in very remote areas is understood to have a small impact except in the case of the Northern Territory, where people in very remote areas make up a relatively large proportion of the population. While distance and road infrastructure may make it difficult to travel to some of these more remote areas, the data that exist on remote areas highlight the usefulness of this information, as shown earlier in this chapter. It can demonstrate where there are greater areas of need, to help guide decisions about policy and resource allocation. Therefore, the first step to improving the quality and outcomes of health care in Australia's most remote areas is more comprehensive data collection to inform decision making about health care provision in rural communities.

4.5. Improving rural and remote health care services through greater quality management

Most discussion around rural and remote health care in Australia has focused on improving access and availability of services. Less attention has been paid to quality of rural health services in Australia. While improving access is important, it is not sufficient. Attention must also be paid to the quality of existing and new health care services. To improve quality, a richer information infrastructure will be key. This could form the basis for reformed payment systems that reward quality and good outcomes. Smarter governance, and in particular continuity in leadership, is also necessary.

To improve health care quality and outcomes in rural and remote Australia, new models of care should be considered, and greater involvement by local populations in the design and operation of services will be instrumental.

Stronger governance, focused on quality, should be consistently embedded within all rural and remote health services

Quality in rural and remote areas needs to be driven by strong, directive governance. A crucial function of open and transparent government is the collection and publication of health system performance data. This provides the public with information about how the health system and their local health service are performing, what outcomes are being achieved, and whether resources are being used appropriately.

Fundamental to good governance is transparency around what standards health services are expected to achieve, and public reporting of accurate data that ensures accountability and provides incentives for health services to achieve good outcomes. Robust data collection, however, is necessary to measuring performance and ensuring accountability.

Ensuring a high level of accountability for spending public funds must remain a priority, although the reporting burden should be reasonable. Alongside these reporting measures should be increased feedback to rural service providers, which they can learn from and use to improve quality.

In rural and remote areas, engaging clinicians who visit communities on an occasional basis in local quality initiatives may be particularly challenging. Understandably, such clinicians may not feel as strong a connection with staff, facilities and patients in remote areas, as with their main practice base. Hence, rural quality governance should address the area of visiting specialist practices specifically. Examples of activities to

underpin quality monitoring and improvement in this area include audits of local clinical outcomes, with benchmarking against equivalent metropolitan services, patient opinion surveys, and root-cause analysis of adverse incidents and patient complaints.

With stronger governance, health services achieving good outcomes can be identified and supported to develop innovations that respond to the needs of their local populations.

Innovations in the models of care serving rural and remote communities are needed

Patient-centred health services recognise that it is best to treat patients as close to home as possible. This requires a willingness to think flexibly about how existing local workforces and other resources can be used, putting the patient at the centre and creating roles that respond to their needs.

Some small rural communities have for many years relied on the goodwill of a local doctor to provide health services. However, this is not a feasible long-term solution. Nor is it ideal to rely on flying medical practitioners in and out of remote communities, as this is a costly way to provide health services and does little to promote continuity of patient care. As discussed later in this chapter, overcoming resistance to change and the more strategic use of local health professionals already living in these communities will be key. High-performing health services demonstrating strong governance should be identified and given greater freedom to develop and implement innovative models of care promoting quality health services and good outcomes. One idea worthy of exploration is that of Earned Autonomy, which has been adopted in the United Kingdom (Box 4.5).

Reflecting on this model, Australia could apply the principal of Earned Autonomy where there is evidence of strong governance in health services. In the Australian context, these health services could be empowered with greater freedom to be more innovative, and this could be facilitated with more flexible funding. The evidence suggests, however, that for such a model to have value, the freedom devolved to health services must truly enhance their autonomy. A move to provide health services with greater autonomy should not come at the expense of public accountability.

Box 4.5. Earned Autonomy in the National Health Service

The philosophy of Earned Autonomy is that more decision making is devolved to high-performing health services, so that the best are granted more freedom and less government control. This move away from a top-down centralised approach to greater autonomy is intended to be an incentive to lift health service performance and quality.

In the United Kingdom, Earned Autonomy was introduced in the National Health Service (NHS) in 2000. Under the system, local NHS organisations that performed well were given more freedom, were subject to less frequent monitoring, and had access to a “performance fund”. For those health services deemed to not be performing well, the government would intervene. Health services were given star ratings to demonstrate how well or poorly they were performing.

There is debate about the policy’s effectiveness in lifting performance, as it is based on the assumption that hospital administrators value enhanced autonomy as an incentive to improve performance. In a study of hospital Trusts in the United Kingdom, almost all the senior managers interviewed believed that the freedoms and flexibilities associated with Earned Autonomy provided only a low-powered incentive to improve performance. Their main motivations were to provide more responsive services for patients, increase community involvement in the organisation, and enhance staff morale. Autonomy was valued insofar as it enabled the development of more responsive services to patients and served as a lever to motivate staff to provide better patient services (Mannion et al., 2007).

More recent research suggests autonomy is increasingly perceived positively, although it depends on the extent to which organisations have the incentives and the capacity to respond to increased autonomy. It concluded that incentives and the capacity to make use of autonomy need to be present if organisational freedom is to generate changed behaviours. Autonomy needs to be accompanied by suitable rewards, skill development and the genuine granting of freedom if there is to be an impact on performance (Anand et al., 2012).

The Care Quality Commission, the independent regulator of health and social care in England, currently applies inspection ratings for all health services on its website, to signify to the public how well health services are performing.

Better information will be key – currently, Australian health statistics focus on big picture reporting, with insufficient context and analysis

Identifying and granting greater freedom to high-performing health services requires robust data systems and the collection of more information about health system performance. However, there are a number of systemic deficits in the information infrastructure underpinning rural and remote health care in Australia. These must be filled as a first step in measuring and improving the quality of care. No single government agency, for instance, holds comprehensive information on data and policies regarding rural and remote health care.

As outlined earlier, data on health needs, service use, outcomes and quality is not consistently available, although the data from the Commonwealth-funded Indigenous-specific health services provides an exception. National health surveys omit people living in very remote areas, comparative consultation rates with health professionals are not available for Aboriginal and Torres Strait Islander people and non-Indigenous groups, and the ABS acknowledges a clear data gap around measures of quality. While the release of the report on national key performance indicators for Aboriginal and Torres Strait Islander primary health care is a good initiative, there is an opportunity to include more indicators of quality in this report.

These issues are not intractable, as evidenced by the Patient Experience Survey's inclusion of people living in very remote areas. Findings from this survey provide a basis upon which a more extensive set of quality measures can be built. Taking the OECD Health Care Quality Indicators as a guide, an extension of the set of quality measures could proceed incrementally. In Australia, a small number of quality indicators are already disaggregated by remoteness. For example, the AIHW provides cervical screening and breast screening rates by remoteness. The data show in both cases, the country's lowest screening rates are in very remote areas. Such information on health care quality disaggregated by remoteness, however, is limited.

The Canadian Institute for Health Information demonstrates what can be achieved. It has publically-available time series for around 30 indicators of health system performance (including in-hospital mortality rates, avoidable admission rates and readmission rates) for all regions and provinces. These include Yukon Territory, the Northwest Territories and Nunavut, which are as sparsely populated as the Australian interior.

At a higher level, health information has not been well used in Australia. The country has had a preference for big picture reporting, with insufficient context and analysis. This stands in contrast not only to Canadian efforts, as described above, but also to significant investment in the open comparison and analysis of regional performance in Sweden, Italy, the United Kingdom, the United States and other countries. Sweden's *Quality and Efficiency in Swedish Health Care – Regional Comparisons*, for example, illustrates and discusses regional variation in more than 150 indicators (OECD, 2013b).

Australia's NHPA has made a good start in this direction with publications such as *Avoidable Deaths and Life Expectancies* and *Selected Potentially Avoidable Hospitalisations*. Such work must now move on to address other priority issues in rural and remote health care, such as mental health.

More attention should also be given to mapping workforce needs. For example, reporting on local GP retention and workforce vacancies in rural

areas could be useful. The bulk of workforce projection in Australia has focused on doctors, nurses and midwives. These worthwhile efforts have notably included information on medical practitioners by speciality.

There is scope, however, for this to be broadened. In Finland, for example, health workforce planning is part of an economy-wide workforce planning exercise, rather than occupation-specific. The main objective of overall workforce planning is to provide advice on tertiary education student intake, to achieve a better balance between future workforce supply and demand. Meanwhile, Japan has conducted an analysis of physicians, nurses, long-term care workers, pharmacists and other health workers (Ono et al., 2013).

In Australia, efforts to shift from measuring workforce to projecting shortages are worthwhile projects that can influence future workforce policy. These efforts should be continued, and broadened to take in other parts of the workforce, such as allied health professionals.

Funding models that are closely based on need and reward quality will drive better rural health care

Rural health funding models should be developed that sustainably reward quality and good outcomes. Rural communities should be provided with health services using block funding wherever practicable, as the low volume of patients makes activity-based funding infeasible for smaller health services. Funding needs to be flexible to take into account the discrepancies in the services they provide based on local population need, and ensure they are not locked in to providing particular services. The added complexity associated with remoteness and disadvantage should also be factored in to funding for rural health services. Funding should minimise transaction costs and maximise quality and good outcomes. The appropriate blend of fee-for-service (FFS), capitation payments and project-based grants is unlikely to be invariable across areas or fixed over time. Rather, federal and regional governments should work towards developing flexible and responsive funding models that provide opportunities for innovation.

In primary care, FFS reimbursement may be appropriate for simple, discrete interventions such as vaccination or screening, particularly where population uptake is low. Over-reliance on FFS is unlikely to meet needs sustainably for longer-term or more complex health needs, however, particularly where volumes and demand is low. Services and accompanying infrastructure in remote areas will need to be backed by population and/or project-based funding to a greater extent than seen in urban settings.

One model for funding care for chronic conditions, currently underexploited in Australia, is prospective block grants contracted on outcomes. These enable the insurer, or payer, to specify the outcomes it wishes to see delivered by the care provider, while allowing the care provider flexibility in how services are designed to deliver those outcomes. Australia is already experimenting with advance payments for bundles of care for patients with complex needs, as discussed in Chapter 2, with the Diabetes Care Project. It aims to improve the quality of care and health outcomes of adults with either type 1 or type 2 diabetes.

Similar initiatives have shown promise elsewhere. In Germany, the *Gesundes Kinzigtal Integrated Care* model aims to provide financial incentives for health care providers to improve population health by investing more in prevention programmes, leading to reductions in morbidity and prevalence of chronic disease. This, in turn, is intended to promote efficiency gains and a reduction in health care costs (Hildebrandt et al., 2010). The programme, which operates on a “shared saving contract” with an up-front block grant, aims to improve co-ordination of care in Germany’s fragmented health system – a problem also experienced in Australia. Programmes such as this, along with the Australian trial, should be closely evaluated in the Australian context and, if appropriate, scaled up.

Overall, the rural funding model must prioritise and support primary care – in its fullest sense. Current systems are not flexible enough to do this. FFS does not necessarily need to be modified further for rural and remote areas, but options to expand its use among nurse practitioners could be considered. Generally, group-based payment methods, including payments based on capitation or pay-for-performance schemes, can provide greater incentives for employing nurse practitioners, as long as the supplementary revenues from their services exceed their cost. Fixed salaries also provide a greater incentive to employ nurse practitioners (Delamaire and Lafortune, 2010). The government could examine the feasibility of expanding Medicare accessibility for nurse practitioners beyond their current scope of practice, and limiting this to rural areas to ensure this is fiscally appropriate. It could also explore the feasibility of opening up Medicare to other rural health professionals, and extending incentives to other health practitioners to relocate to rural areas and promote rural retention.

It is important to ensure that all health professionals providing outreach are adequately reimbursed, to give them incentives to continue to provide the service. The value that experienced visiting staff play in quality improvement through training local staff should not be underestimated. Specialists flying in should, as much as possible, see patients jointly with local clinicians to optimise training and support. There could be additional incentives for taking on this mentoring role, which is all the more important

in the case of overseas-trained doctors, who need support to adapt not only to Australia, but to an isolated lifestyle in remote communities.

Better use can be made of existing local workforces by changing health practitioners' scopes of practice, and with the clever use of technology

A more strategic use of existing rural health workers already living in areas where there are workforce shortages is crucial to meeting health care need in more remote areas. By using existing workforces more strategically, the need for expensive fly-in/fly-out outreach services may be reduced. This requires overcoming resistance to change, and promoting a culture of mutual respect among health professionals.

As earlier discussed, Australia has already started experimenting with changing scopes of practice, but there is an opportunity to progress this further to develop the roles and competencies of rural health workers. The creation of more rural generalist roles, for example, would help local workforces become more self-sufficient. Expanded roles for allied health professionals and assistants should also be explored.

Nurse practitioners are internationally regarded as a successful innovation but, with just over 1 000 in Australia, their numbers are small. By contrast, the United States has more than 205 000 nurse practitioners (American Association of Nurse Practitioners, 2015). Options to extend their role and increase their numbers in Australia should be considered. Efforts should be made to investigate the key barriers preventing nurses from taking up these roles, and to explore what incentives may encourage them to work in rural areas. As a starting point, it would be useful to conduct a substantial longitudinal study assessing the career choices nurses make. This could help inform policy options to make the role of the nurse practitioner a more attractive career path for suitably qualified nurses. Australia should also monitor the experience of countries like the United States, which is advanced in the use of nurse practitioners, for other innovations in the tasks appropriately trained nurse practitioners could take on feasibly and safely.

With the promotion of nurses to higher duties, nursing assistants in turn could be trained and supervised to take on some of the less complex tasks currently performed by nurses, freeing nurses to focus on more complex clinical work.

Australia should continue to look for other opportunities to create roles involving task delegation, and could look to the overseas experience with physician assistants. This is largely an under-deployed role in Australia,

whereas in the United States there are more than 100 000 certified physician assistants across all medical and surgical specialties in all 50 states. They practise medicine in health care teams with physicians and other providers. Their tasks include taking a patient's medical history, conducting physical exams, diagnosing and treating illness, ordering and interpreting tests, developing treatment plans, counselling on preventive care, assisting in surgery, writing prescriptions, and making rounds in hospitals and nursing homes (American Academy of Physician Assistants).

In Australia, physician assistants are supervised by a doctor, and their scope of clinical practice is determined by agreement between the physician assistant and his or her supervising doctor (Miller et al., 2011).

Physician assistants are not regulated by the Australian Health Practitioner Regulation Agency (AHPRA), the body which, as discussed in Chapter 1, regulates 14 health professions in a nationally consistent way. This is not in the best interests of patient safety. Australia should carefully evaluate the experience of physician assistants in other countries and consider ways to incorporate this role into the Australian health workforce. Such a move should involve a robust accreditation scheme with AHPRA oversight, to optimise patient safety. Australia could also examine the feasibility of permitting Medicare benefits to apply to appropriately qualified and credentialed physician assistants in rural areas.

Pharmacists are an under-utilised part of the Australian health workforce, and this stands in contrast to other countries. In most US states, for example, pharmacists play a larger role in primary care and have long been permitted to administer vaccinations. The US Department of Veterans Affairs uses pharmacists for traditional dispensing and quality assurance. Pharmacists can also prescribe under protocol anticoagulation, hypertension and diabetes drugs, and provide preventive medicine in immunisation and smoking cessation (Manolakis and Skelton, 2010).

In England, community pharmacists can provide “enhanced” services, including “minor ailment schemes”, in which patients who would have otherwise visited a GP for conditions like a cold can visit a pharmacy for treatment without the need to obtain a prescription from a GP. Such a scheme in Australia could be particularly useful in areas where there may be greater difficulty gaining appointments with GPs.

The expansion of the pharmacist role appears to still be in its infancy in Australia, and is another area in which national inconsistency applies. Pharmacists in South Australia are permitted to administer the influenza vaccine. In the Northern Territory, pharmacists in a pilot are permitted to administer influenza, measles mumps and rubella, adult diphtheria, pertussis and tetanus vaccines for adults. In Queensland, an influenza vaccine pilot

has been expanded to include measles and whooping cough vaccines for adults. Western Australia recently amended legislation to allow pharmacists to administer influenza vaccines. Each of the jurisdictions has applied requirements to ensure that pharmacists are appropriately trained before administering vaccinations.

Australia should look to the international experience to inform ways of expanding the role of the pharmacist. By providing local pharmacists with more responsibility, there is the possibility of patients relying less on more expensive health care services, so the expansion of the role of the pharmacist could also represent savings to the health system. Australia could also consider opening up Medicare benefits to patients using pharmacy services in rural areas.

Another under-used role in the Australian health workforce is that of the paramedic. In England, for example, Emergency Care Practitioners (ECPs) are mostly paramedics who have undertaken additional training. ECPs can work in a variety of settings and in some cases can “see and treat” patients rather than taking them to an emergency department. In one setting, for example, they work with GPs in out-of-hours primary care services. Patients phone the out-of-hours service, and the GP makes an initial assessment of any clinical needs. The patient may be given advice on the telephone, or asked to attend the primary care centre. If a home visit is deemed necessary, the GP decides if the patient's condition is suitable for an ECP, or whether a GP is required (Halter et al., 2007). Variations on this model enable the patient to be transferred to another health service, such as a primary care centre, instead of an emergency department.

In Australia, there have been similar initiatives enabling Extended Care Paramedics to treat low-acuity patients in some states, including South Australia, New South Wales, and the Australian Capital Territory. These initiatives should be considered particularly in the rural context, and scaled up where appropriate. In doing so, there is greater capacity for care to be delivered to patients in their homes, reducing potentially unnecessary long travel for rural patients.

With a shortage of psychiatrists in rural areas, mental health is another area that will require more innovation. The mental health impacts of long droughts and severe bushfires and floods will remain a significant issue in Australia, as climate change is likely to be linked with more of these extreme events. Social isolation and reduced cohesion can also have a detrimental effect on mental health, and contribute to more alcohol and substance abuse.

Australia has made a good start in making better use of primary care for mental health services. But there is scope for more innovation. One model

that has shown potential is an approach that integrates private psychiatrist and public mental health services. In the Far West Mental Health Integration Project model in remote New South Wales, mental health services are delivered through primary care. Psychiatrists regularly visit from urban centres, as do allied mental health specialists from the regional Broken Hill headquarters. The visits include patient consultations, caseload reviews, and mentoring and training local mental health and primary care staff. In between outreach visits, local staff continue planned care and are able to phone psychiatrists if necessary. They receive regular supervision and support from psychiatrists (Perkins et al., 2006).

A study of the model shows that since it began, many communities had regular access to a psychiatrist for the first time. Access to community mental health teams was also improved. While collaboration with GPs improved, it was not regarded a “spectacular success” because GPs were in short supply and reported being overworked. High GP turnover also made it difficult to form relationships with psychiatrists. Still, this model suggests that more flexibility can improve mental health access, and warrants further exploration. The authors note that this model is not sustainable under the normal FFS arrangements, and its success depends on a commitment to appropriately fund it. There is also a need for flexibility in the use of funds (Perkins et al., 2006). While access was improved, less is known about the quality of the service patients received, and their outcomes. There is also scope to trial models integrating primary and acute care in other specialty areas.

The skills and competence of other rural and remote health practitioners could also be developed further. A necessary pre-requisite is that any such extended roles are attractively reimbursed. The expansion of local skills and competence is not purely a monetary issue, however. One professional group that is typically neglected in discussions around workforce development are the service managers. Responsibility for managing services often falls, by default, to the longest-serving clinician in rural areas. Just as in metropolitan areas, though, it should be recognised that modern-day service management requires specific skills that clinicians may lack or be uninterested in.

Nurses occupy almost 50% of the health workforce, and fill most of the management positions in rural and remote areas (National Rural Health Alliance, 2004). The cadre of rural and remote service managers should therefore be developed. This could occur through internal management training programmes. Many large hospitals have such programmes, but they are rarer in rural services (National Rural Health Alliance, 2004). Compounding these issues is physical isolation associated with remoteness. There is scope for managers and the wider workforce to take the lead in a

number of areas of operational research which are particularly important in rural areas, but which have application across the health service. Examples include the creation, use and transmission of electronic health records, patient-held records, telehealth and patient self-management. A programme of dedicated resources to support rural and remote service managers and wider workforce to spearhead operational development of these tools would increase their profile as well as yield direct service improvements. Administrative staff could also be used more strategically, so clinical staff can spend more time on patient care.

Telehealth has proven to be very promising, and Australia should continue to look for opportunities to expand this service into other specialty areas. There is evidence that telehealth is being used in rural areas internationally to assist in the management of diabetes, cancer and many other conditions (Myrvang and Rosenlund, 2007). It is encouraging that such trials are happening in Australia, including one that links Aboriginal Community Controlled Health Services in the Northern Territory with a large hospital. As new evidence of telehealth's uses emerges, Australia should explore the suitability of adapting these models to the Australian experience. This technology should be used to connect isolated patients directly with specialists, as well as to connect small hospitals with larger metropolitan hospitals.

One approach could be the hub and spoke model, where rural facilities are networked with appropriate urban services. This could apply, for example, to cancer services. Another model to explore at is one adopted by the not-for-profit organisation, Silver Chain. It uses telehealth to treat people in remote areas in their own homes, for conditions that would normally require a hospital attendance. Another example is in South Australia, where the Cardiac Clinical Management in rural emergency departments has been set up. It is an integrated, digitally-based and statewide cardiac clinical management network allowing country emergency departments to manage potentially critical situations and reduce the need for hospital transfers (Standing Council on Health, 2012).

An expansion of telehealth could also reduce the need for more expensive outreach and patient travel schemes. Plans to expand telehealth, however, need to be supported by the necessary infrastructure to facilitate this technology.

Where a patient's condition requires travel to a hospital, travel schemes must be sufficient to cover the costs. Patient travel assistance schemes should be evaluated and refined to ensure national consistency around eligibility requirements and levels of reimbursement. As earlier highlighted, the differing criteria make patients eligible in some states but not others. The

low subsidies for accommodation do not reflect the true cost of accommodation in Australia. An approach that better reflects the true costs of travel would make the scheme more equitable, and support patients to move more easily.

Training more rural doctors could help boost their numbers close to home

Alongside workforce innovations, efforts should continue to be made to increase the numbers of doctors. This extends to increasing the capacity of rural internships, to encourage young doctors to live and work in these areas. All medical graduates should be required to do at least one rural rotation as part of their internship. Such rotations come with other incentives for interns, such as the opportunity to gain early exposure to an area of medicine they are less familiar with. In addition to helping the workforce, a stint in a rural setting would also be beneficial to the personal development of medical graduates, exposing them to complexities they may not otherwise experience in city hospitals.

Australia has increased the number of medical schools in the country, but more medical schools could be established in rural areas where young people want to live and practise medicine. Getting a taste of rural medicine early may create a desire to stay in these places upon graduation. The University of Sydney says approximately 20% of graduates from its rural programme take up rural postgraduate training positions, where they are available (Mason, 2013).

There is also a need to train more rural generalists. The rise of specialists, particularly in surgery, has contributed to workforce problems in rural Australia. A rural generalist programme began a few years ago in Queensland enabling GPs to be upskilled so they may perform some specialist roles including anaesthetics and obstetrics. The programme has since been expanded to other states. The creation of more of these positions through rural generalist training pathways could help rural communities become more self-sufficient, potentially lessening the need for outreach and improving continuity of care. Given nurse practitioners in Australia are often specialists, options to create and encourage more generalist rural nurse practitioner roles could also be considered.

The Australian Government could consider making available programmes similar to the HECS Reimbursement Scheme, the Medical Rural Bonded Scholarship scheme and the Bonded Medical Places scheme to others, such as allied health professionals and dentists, to provide them with incentives to work in areas of need.

While Australia should be commended for increasing the number of university medical places, this needs to be accompanied by strategies promoting rural retention. An important way of providing support is through CPD and engagement with peers. These are critical to long-term retention. Insufficient training and professional isolation perpetuated by distance are key motivators for professionals leaving. Prior to Medicare Locals being replaced by Primary Health Networks in July 2015 (see Chapter 2), the Kimberley-Pilbara Medicare Local reported holding a chronic disease workshop in the remote town of Derby. The Medicare Local served some very remote communities in Western Australia. More than 50 health professionals from surrounding areas attended, and enjoyed the opportunity to meet each other – sometimes for the first time – having only ever talked to their colleagues on the phone (Kimberley-Pilbara Medicare Local, 2013a). More sessions like these – bringing CPD into remote areas – should be considered to help doctors feel more supported.

Another important consideration in retention is that doctors may not want to work in areas where a wider professional network does not exist. The flow-on effect is pharmacists may not want to work in areas where there are no doctors. Health professionals want to live in places where their children can go to good schools, and an effective locum service means they can have a break and a good quality of life. A more permanent solution to retaining health professionals needs to go far beyond financial incentives, to providing the social infrastructure that communities need to thrive.

Closer involvement of patients and their families in designing, delivering and monitoring health services will drive quality gains

One of the key principles in open government referred to earlier is citizen participation. This means including patients in decisions not only affecting their own care, but more broadly in how their local health services are managed. The National Safety and Quality Health Service Standards include requirements about involving consumers in the governance process. These apply across Australia, including in health services in rural and remote areas.

As discussed in Chapter 1, this could go further with, at a minimum, community representation on hospital boards, or a “citizen council” acting in the interests of patients. Western Australia, for example, has established District Health Advisory Councils to give country residents a voice in how their local health services are managed. Victoria’s boards of management in rural public hospitals enhance consumer participation, as they lead the service’s strategic planning. Encouraging more community input need not conflict with the need for strong, directive governance.

A consistent way of collecting patient feedback needs to be applied across rural areas. This feedback should not only apply to local hospitals, but also extend to outreach services and telehealth experiences. Tasmania, for example, conducts annual surveys of local communities accessing outreach and telehealth programmes that are used to inform service planning. Such a move is encouraged, and could be applied in a nationally consistent way.

Central to respecting the patient perspective is cultural competence, which requires organisations to have a defined set of values and principles, and demonstrate behaviours, attitudes, policies and structures that enable them to work effectively cross-culturally (Dudgeon et al., 2010). In Australia, this is particularly important when it comes to Aboriginal and Torres Strait Islander communities. Some Medicare Locals that existed before the introduction of Primary Health Networks had developed Aboriginal Health Plans. The best of these recognise the importance of cultural sensitivity. There is a potential double cultural barrier for overseas-trained doctors, who are also trying to adapt to life in Australia. All health service staff catering to large Aboriginal and Torres Strait Islander populations should be required to undergo training for cultural competence. Such training would also benefit staff working in other areas, including in major cities.

Australia's commitment to community-controlled Aboriginal health services stands out among OECD countries, in tailoring health services to meet the needs of Aboriginal and Torres Strait Islander people. These organisations should continue to be the preferred providers of services for their local populations, and should be supported by the government to do so. However, if issues around governance inhibit these organisations from delivering services, alternative providers that are able to deliver culturally appropriate services should be considered.

4.6. Conclusions

People living in remote Australia continue to face poorer health outcomes and access, making this a critical issue for policy makers. The extent to which Aboriginal and Torres Strait Islander people trail others in terms of health status – despite concerted efforts – remains a significant concern. The life expectancy gap remains considerable and, despite some improvements, Aboriginal and Torres Strait Islander people fare worse on a range of health indicators. The significant improvements in the child death rates – including the expected achievement of the COAG target to halve the gap by 2018 – are important. Other improvements, such as the reduction in

adult smoking rates from 48.6% to 41.6%, also suggest longer-term gains could be achievable.

Improving the health outcomes of Australia's most remote inhabitants is no easy feat. A maldistribution of the workforce means there is a scarcity of health practitioners in the country's most remote parts. Filling this void requires a willingness to apply creative solutions. Australia has relied heavily on overseas-trained doctors to fill these gaps, but aims to be self-sufficient by 2025. This is an ambitious target – despite a growth in locally-trained doctors.

A smarter use of existing local workforces, and changes in scopes of practice, will become increasingly important strategies if Australia hopes to meet this goal. The country should also continue to expand promising innovations such as telehealth.

While much policy work has been directed to improving access, little attention has been devoted to measuring and improving the quality and outcomes of rural and remote health services. The collection of more data, along with payment systems that reward quality and good outcomes, are central to this. A stronger emphasis on prevention, thus reducing the need for patients to travel long distances for hospitalisation, is also fundamental.

The geographical quandaries confronting Australia place the country in the unique position to be a leader in the development of innovations to cope with rural and remote health care needs.

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