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## Access all areas

New solutions for GP shortages  
in rural Australia

Stephen Duckett and Peter Breadon



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## Grattan Institute Report No. 2013-11, September 2013

This report was written by Stephen Duckett, Grattan Institute Health Program Director, and Peter Breadon, Health Fellow. Leah Ginnivan provided extensive research assistance and made substantial contributions to the report.

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## Overview

Shortages of GP services have a big impact. When people can't see a GP, they get sick with conditions that could be prevented. This is costly for the health system and for individuals.

Many parts of Australia have too few GP services. The number of services per person in the lowest-access rural areas is less than half that of the major cities. These gaps affect a significant proportion of the population. More than a million people, one in 20 Australians, live in the seven under-served rural areas discussed in this report – in places such as Tamworth, Goulburn and Mt Isa, as well as the Northern Territory and most of Western Australia.

The problem has been around for generations. Successive policies have tried to fix it, but they have only solved the easiest problems by bringing GPs to inner regional centres, not to the areas with the greatest need. Many of the worst shortages have remained stubbornly high for decades, when the worst problems should be fixed first. At current rates of improvement, it would take more than 65 years for very remote areas of Australia to catch up to the levels of GP services that the big cities have today.

Current responses – such as training more doctors, or paying them bonuses to move to rural areas – haven't done enough. More of the same won't fix the problem. We need new solutions that do more than tinker with the system.

This report outlines a plan for the parts of rural Australia with the lowest access to GP services. We don't aim to bring these areas up to the national average, just to end the most extreme shortages. To achieve this, we have to make the most of scarce

resources, while keeping GPs at the centre of the system.

The first step is to make much better use of pharmacists' skills. Pharmacists are highly trained, have deep expertise in medicines, and are located in communities throughout Australia. But their role is far more limited in Australia than in many other countries.

With the agreement of GPs and patients, pharmacists should be able to provide repeat prescriptions to people with simple, stable conditions. They should also be able to provide vaccinations and to work with GPs to help patients manage chronic conditions.

We also need to increase access to other services, including diagnosis, which currently only GPs can provide. Australia should introduce physician assistants, health workers who practise medicine under the supervision of a doctor. There is good evidence that physician assistants could expand the care available in under-served areas, without compromising quality or safety, and at an affordable cost.

The proposals in this report only apply to the seven rural areas with the worst shortages of GP services. They can be in place within five years. In 2011-12, they would have resolved the worst shortages for just \$30 million. The costs would mostly have been offset by fewer, or less costly, hospitalisations as a result of better population health.

Too many people have waited too long to get primary care. But the solution is surprisingly achievable, if we're willing to adopt new responses to an old problem.

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## 1. Introduction

### What is primary care?

Primary care is given at the first point of contact with the health system, when people get a check-up, or think they might have an illness or disease. Primary care workers diagnose and treat many conditions, give advice and treatment to prevent problems or stop them getting worse, and refer patients to the right kind of specialist. Increasingly, primary care workers put people in contact with other people with similar conditions for mutual support or as part of self-management programs.

Primary care is the foundation of the health system. There is overwhelming evidence that a good primary care system leads to a healthier population.<sup>1</sup> Strong primary care also makes the whole health care system – including hospitals and specialists – more efficient, effective and equitable.<sup>2</sup>

Many professionals provide primary care. They include nurses, pharmacists, community health workers, dentists and optometrists. However, general practice doctors (GPs) are at the centre of the system. They are often the first health professional to deal with general health concerns. They also provide the vast majority of diagnosis and treatment in primary care. For these reasons, this report focuses on GP services.

Because primary care is best delivered in teams, our recommendations focus on strengthening the role of other health professionals who can work with GPs. This will free up GPs to spend more time managing the patients with the most complex needs.

### What this report is about

One of the most important problems in primary care is geographic gaps in access to GP services.

This isn't the only problem. There are other barriers to GP services besides physical location.<sup>3</sup> More broadly, the primary care system hasn't been designed to deal with chronic disease, which is on the rise. We should be trying more innovative ways to deliver primary care, and there are probably much better ways of funding it. There are also serious gaps in access to other kinds of primary care besides GP services, for example dental care.

But severe GP service shortages in some parts of Australia are one of the most pressing problems. Currently, services provided by GPs are the cornerstone of primary care. They are the only way that most people can get crucial types of care.

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<sup>1</sup> Macinko, Starfield, and Shi (2003).

<sup>2</sup> Engström, Foldevi, & Borgquist, (2001), Kringos, et al, (2010), Starfield, Shi, & Macinko, (2005).

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<sup>3</sup> For a discussion of the broader concept of access in health care, including cultural differences and economic disparities, see Levesque, *et al.* (2013).

### Two new ways to fill access gaps

Gaps in access to GP services have persisted for generations. Many responses have been tried, but three have been the most prominent. They are: a massive expansion in medical training; bonus payments to encourage GPs to go where they are most needed; and requiring overseas doctors to work in rural areas.

As discussed below, these strategies haven't done nearly enough. Progress is being made in some places but it is very slow. Mostly, these policies have brought more doctors to inner regional areas, but they haven't had much impact in outer regional, remote and very remote places (see Box 2 for definitions of remoteness). At the current rate of improvement it will take nearly 20 years for outer regional areas to get up to the level of services in the city, while it will take remote areas 30 years. For very remote areas, it will take 65 years.

Instead of simply more of the same, we should start with the needs of the patient. People need specific services: a check-up, a diagnosis, or a repeat prescription. These needs can be met in a variety of ways, not just the ways laid down in the 1800s when today's health care roles were developed.

Rather than focusing just on GPs, we should build a broader primary care team. The GP will remain at the centre of this team, but they should have much more support from pharmacists and from physician assistants – a new workforce group in Australia.

Adding these professionals to the primary health care team will increase access to high quality primary care, contain costs, and

free up GPs to do the most complex and rewarding aspects of their job – the things only they can do safely and well.

The shortage of primary care in many rural and remote areas is a complex and enduring problem. We should pursue any good solution that is backed by evidence – including existing policies. Physician assistants and broader roles for pharmacists are not the only good ideas that can help fix the problem (other options are discussed in Box 1).

But we have focused on two *new solutions* that aren't being used in Australia. They have been proven overseas and are good for doctors as well as patients. They are affordable and can be implemented rapidly. We present a realistic scenario where pharmacists and physician assistants bring under-served rural and remote areas up to a basic minimum standard for access in just five years.

The next chapter explains how important access to primary care is, and the severe health problems that access gaps can create, particularly in rural and remote Australia.

The following chapter explains how we measure access to GP services, where the biggest gaps are, and the minimum level of primary care access the Government should commit to.

The rest of the report outlines how pharmacists and physician assistants could achieve this target in the seven rural areas with the lowest access to GP services.

### Box 1: Other solutions to keep, expand or test

#### Policies to keep or expand

**Nurses** are often the backbone of rural and remote primary care. Evaluations of nurses in GP practices have suggested they have improved patient care, increased communication between health professionals, contained costs, and reduced GP workloads.<sup>4</sup> These nurses have provided a rapidly growing volume of services, especially chronic disease management. However these service levels may have peaked. Nurses with advanced training (nurse practitioners) can also provide some of the services that GPs offer, but growth has been very slow. There are policies to expand the number and role of nurses, but they aren't making a big enough impact. These measures are not an alternative to our proposals and we should keep promoting nurses to increase access, particularly specialist rural and remote nurses.

**Aboriginal Health Workers** provide services to Aboriginal people in a range of primary care settings (GP clinics as well as Aboriginal Controlled Community Health Organisations). They play an invaluable role that includes conducting screenings, referrals, education and patient transport.

Evidence that **rural medical training** attracts doctors to under-served areas is not conclusive,<sup>5</sup> but supports continuing this approach. Promising approaches to getting students to choose a career as a rural GP have been trialled, in particular at James Cook University.<sup>6</sup>

**Flying Doctors** cannot provide a large volume of primary care that is continuous and close to home, but are essential in very remote areas.

#### Solutions to develop and evaluate

**Paramedics** in rural and remote areas are not busy with emergencies all the time, so a broader role is a good idea. Trials expanding their role into some aspects of primary care are underway. If they are successful, this could be another good solution.

'**Telehealth**' is a health service delivered over the phone or Internet. Trials of telehealth specialist care have been extremely promising. Telehealth may not be as suited to primary care, as physical tests are not as easily administered, and telehealth services don't seem to reduce demand for traditional appointments.<sup>7</sup> Overseas, telehealth has not yet become a major part of primary care in other countries. Future developments, such as remote monitoring of health status, might work well once they are mature.

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<sup>4</sup> Healthcare Management Advisers (2005); Phillips, *et al.* (2008); Hegney, *et al.* (2013).

<sup>5</sup> See Mason (2013)

<sup>6</sup> See Gupta, *et al.* (2013)

<sup>7</sup> 70% of callers to Healthdirect for advice from nurses or GPs were told to see a GP, Healthdirect (2013); see Bywood, *et al.* (2013) for an overview of telehealth developments in Australia and elsewhere.

### Box 2: Rural, regional and remote Australia

The ABS Remoteness Structure groups Australia into five broad regions based on road distance to urban centres of various sizes. These 'remoteness levels' are intended to group together places with similar access to services and similar opportunities for social connection. The different levels of remoteness are:

- major cities (Brisbane, Melbourne, Sydney)
- inner regional (Bunbury, Hobart, Wagga Wagga)
- outer regional (Horsham, Emerald, Port Augusta)
- remote (Esperance, Strahan, Alice Springs)
- very remote (Cobar, Mount Isa, Coober Pedy, Meekatharra)

This classification is an objective way to divide Australian regions and is commonly used to define eligibility for regional subsidies. But it groups together areas with very different social and economic features,<sup>8</sup> and different levels of access to primary care. As this report shows, primary care access within the different remoteness categories varies greatly.

This report uses remoteness to highlight the challenges that parts of Australia face. But this report measures *access* to primary care to determine where change is needed the most, not simply remoteness – we use a direct measure instead of just a proxy.

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<sup>8</sup> As discussed in a previous Grattan Institute report on economic development in regional areas, see Daley and Lancy (2011).

## 2. Big gaps and big consequences

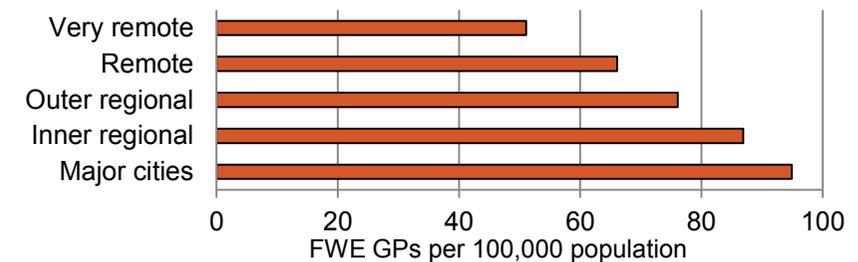
Across Australia, there are serious problems with the availability of GP care. More than one in four people (27 per cent) feel that they have to wait too long for an appointment. Almost four in 10 (38 per cent) delayed their visit, or didn't see a GP, because of cost or another barrier.<sup>9</sup> In a survey of 11 countries, only two – Germany and the US – had a higher proportion of people reporting that they avoided the doctor when they were sick because of the cost.<sup>10</sup>

These figures are national averages. The picture is much worse for specific parts of the country. GPs are distributed unevenly across Australia (Figure 1), with many of the most severe and stubbornly persistent service shortages being in more remote areas.

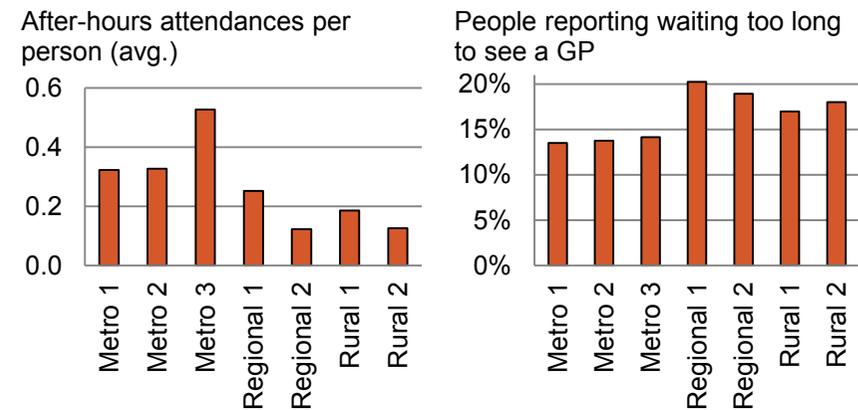
There are barely half the GP services per person in very remote areas as there are in major cities. Layer upon layer of policies have been introduced to fill these gaps, but in many parts of Australia the problem seems intractable.

As well as having fewer GPs per person, rural, regional and remote Australians have fewer GP appointments outside traditional hours. As a result, people outside major cities are much more likely to report having to wait too long to see a GP (Figure 2).

**Figure 1: Distribution of GPs by remoteness area, 2010-11 (full-time work equivalent)**



**Figure 2: After-hours GP attendances (left) and waiting too long for appointment (right), Medicare Local areas, remoteness, 2010-11**



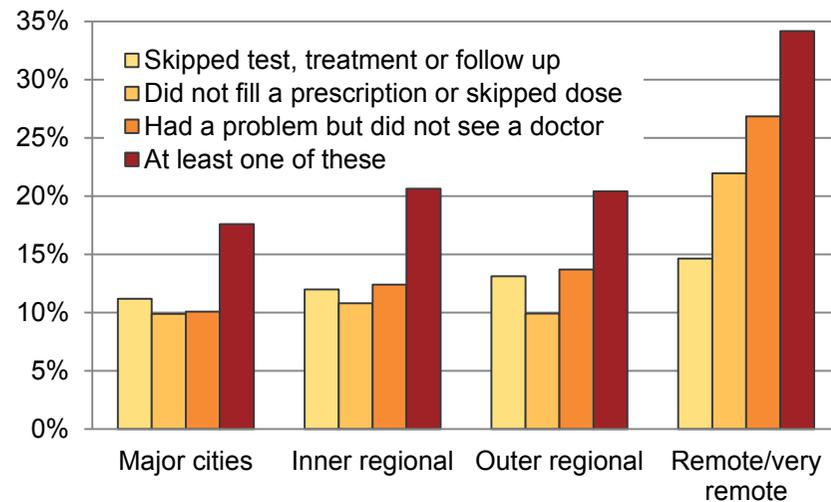
Note: Higher numbers (e.g. Metro 3) indicate lower socioeconomic status. Sources: National Health Performance Authority (2013a); Health Workforce Australia (2013b)

<sup>9</sup> ABS (2012)

<sup>10</sup> Schoen, *et al.* (2012)

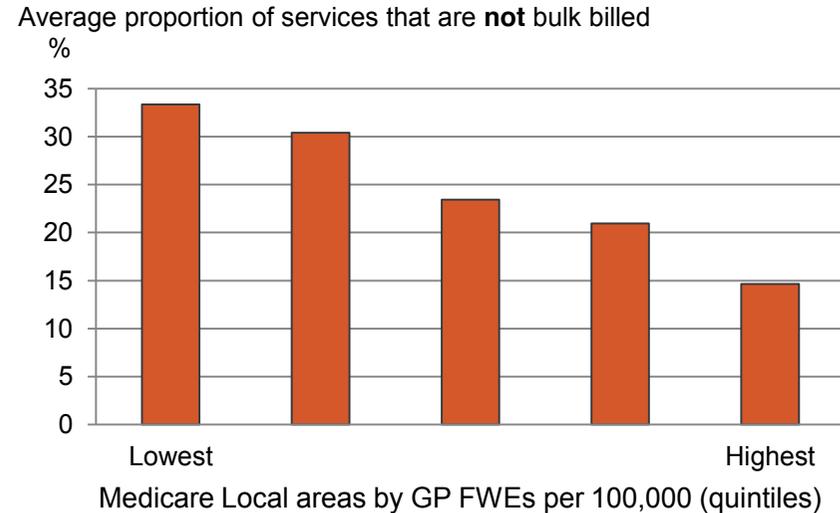
As well as limited availability of care, the cost of care is a major barrier in many parts of Australia. People living in a more remote area are more likely to skip visits, treatments, tests and medications because of cost (see Figure 3). One reason is that the places with the fewest services per person (often remote areas) also have the lowest rates of bulk billing. On average, people in the worst-served areas pay out-of-pocket costs (that is, they are not bulk billed) more than twice as often as people in the best-served areas (see Figure 4).

**Figure 3: Proportion of people who reported access barriers due to cost in the last year, by remoteness, 2010**



Source: Grattan Institute analysis of data from *The Commonwealth Fund* (2011).

**Figure 4: Services that are not bulk billed, Medicare Locals, by access levels, 2010-11**



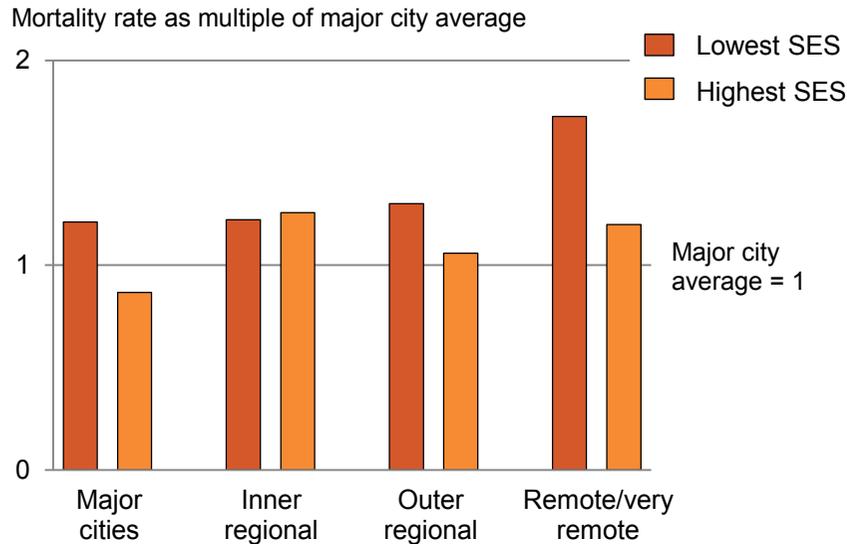
Note: Averages for Medicare Local quintiles are population adjusted. Source: Grattan Institute, based on Department of Health and Ageing (2012)

Importantly, access is low precisely where the need for services is greatest. People in rural, regional and remote Australia generally have worse health than people living in cities. They have higher rates of many diseases, more health risks, and higher death rates in every age group.<sup>11</sup> As one example, Figure 5 shows that men

<sup>11</sup> Australian Institute of Health and Welfare (2008). Health differences between rural and urban areas are exacerbated by the very poor health status of Aboriginal and Torres Strait Islander people.

face a significantly higher mortality rate if they live outside major cities, even if they are relatively well-off.

**Figure 5: Estimated male mortality rate ratios (compared with major cities), by remoteness and socioeconomic status, 2006**



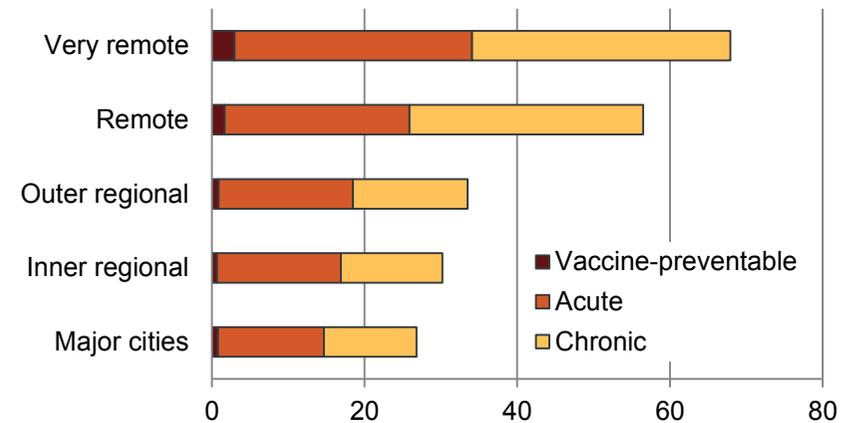
*Notes: Major city average includes all socioeconomic (SES) groups. 'Lowest SES' includes people living in the lowest 40% of all areas and 'Highest SES' includes people living in the highest 40% of areas. Findings are approximate due to changes in boundary definitions. Source: Australian Institute of Health and Welfare (2010)*

Low levels of primary care can also force people to present to a hospital with conditions that could have been treated elsewhere, and to seek help later in the course of a disease, when it is usually harder to treat.

As Figure 6 shows, the proportion of people who go to hospital for conditions that could have been treated by a GP is much higher in more remote areas.

As well, the rate of admissions for conditions that could be prevented with vaccines is nearly four times higher in very remote areas than it is in major cities. For chronic conditions, it is nearly three times higher.<sup>12</sup> Not all of this difference could be fixed by better access to primary care, but a significant proportion could be.<sup>13</sup>

**Figure 6: Potentially preventable hospitalisations per 1,000 population, by remoteness, 2011-12**



*Source: Australian Institute of Health and Welfare (2013)*

<sup>12</sup> The multiples are 3.8 (vaccine preventable) 2.2 (acute) and 2.8 (chronic).

<sup>13</sup> There may also be a lag between improvements in access and improvements in health status.

### 3. Flawed responses and slow progress

GP shortages in rural, regional and remote Australia have existed for generations. Over the last decade, government spending to fill medical workforce shortages has dramatically increased, as program has been layered on top of program. The result is a bewildering array of policies, many of which have not been well targeted, well evaluated or supported by evidence.<sup>14</sup> Despite all this effort, the fundamental problem remains.

The causes of the GP shortage are complex. Some – such as access to schools for children or job opportunities for spouses – are outside the health care sector. While there have been promising attempts to use the skills of other health professionals (see Box 1 above), most policy effort has gone into boosting GP numbers in rural areas.

The three main strategies have been training more doctors, giving doctors and medical students financial incentives to go to areas of greatest need, and requiring overseas-trained doctors to do so.

These policies have helped fix the easier problems – access gaps in inner regional areas. But for the most under-served areas, existing strategies need to be supplemented. We need new, more creative, solutions.

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<sup>14</sup> A Senate committee recently found there were “deficiencies in the development and evaluation” of programs to ensure adequate health programs in rural and remote Australia, and that there is an “urgent and fundamental need to better understand what programs have been effective ...” Siewert (2012).

#### Training more doctors

The number of medical graduates has increased each year since 2001, by an average of 8.8 per cent per year.<sup>15</sup> The goal has been to produce more GPs; the hope has been that enough of them will choose to work in areas of short supply.

But the proportion of doctors who are GPs is falling as doctors choose to specialise in other areas (see Figure 7). In the decade to 2009-10, the number of GPs increased by only 1.4 per cent a year, on average. Adjusted for the amount of services that GPs provide, the annual growth rate was a little higher, at 1.8 per cent.<sup>16</sup> This growth rate is barely above the 1.5 per cent average population growth in the same period, and well below the growth in medical graduates.

In other words, while there has been significant growth in medical training, there hasn't been a flood of new GPs. Medical graduation rates are expected to grow further (by 50 per cent from 2009 to 2015) and there are more medical graduates in the GP training pipeline. Yet past trends suggest the ‘trickle down’ effect to rural general practice will not work and may even get worse. Like their predecessors, new doctors mostly come from, are trained in, and are likely to work in cities and in specialist practice. Current

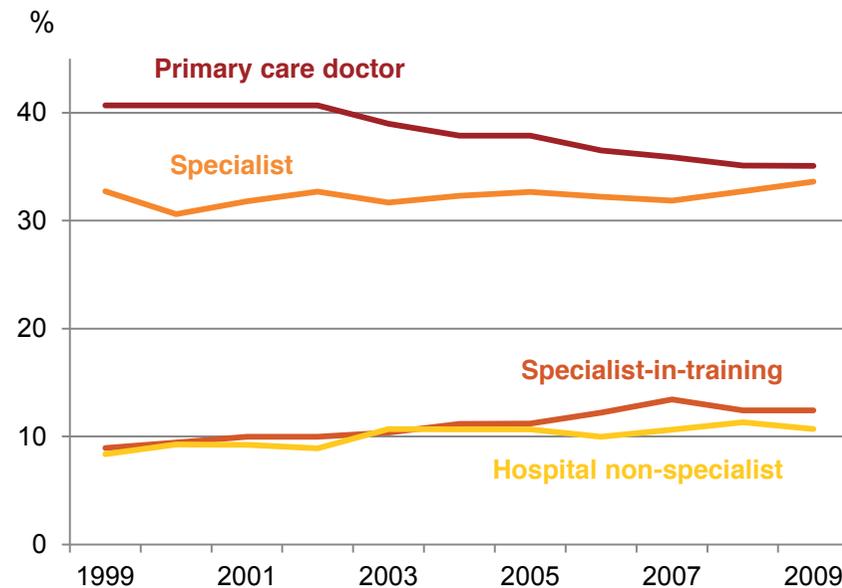
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<sup>15</sup> Average growth in graduates from 2001 to 2010, Health Workforce Australia (2012a).

<sup>16</sup> Ibid.

strategies are therefore unlikely to yield enough GPs to fix Australia's primary care access problems.<sup>17</sup>

**Figure 7: Employed doctors by type, 1999-2009**



Source: Health Workforce Australia (2012a)

<sup>17</sup> Health Workforce Australia (2012b) has projections which suggest that compared to 2009, there will actually be fewer GPs relative to demand well into the 2020s. However, this “comparison” scenario assumes no major reforms, and has been challenged by Birrell (2013), who claims there will be a glut of doctors. See also HWA’s defence of their projections, Health Workforce Australia (2013c).

Even if enough new GPs graduate, encouraging them to move to workforce shortage areas is very difficult. The most obvious way to do this would be to force doctors to work where their skills are in shortest supply. But doctors would certainly resist this change.<sup>18</sup> Also, it takes a long time for doctors to complete their training. If a location requirement were only applied to people starting medical training (which would be fairer than applying the requirement to graduating doctors or all working doctors) it would take a very long time to have an impact.

To the extent that these location requirements exist now, they have little impact. The Bonded Medical Places scheme has required 25 per cent of all medical students who have entered universities since 2004 to work in rural areas.<sup>19</sup> Yet as of February 2013, only one doctor has started work in a rural area on graduation. Three others have bought their way out of the scheme.<sup>20</sup> What has happened to the remaining graduates is unknown. We should continue to expect long lead times and disappointing results from programs that bond students to rural areas.

In the absence of effective sticks, carrots have been dangled in front of Australian trained doctors to encourage them to move to areas of workforce shortage.

<sup>18</sup> Any proposal of this kind is very likely to face constitutional challenge under the civil conscription provision. The provision is discussed in Mason (2013).

<sup>19</sup> The scheme applies to students with a Commonwealth Supported Place.

<sup>20</sup> Mason (2013)

### Financial incentives

One ‘carrot’ is the Medical Rural Bonded Scholarship scheme. It provides scholarships to medical students in return for a commitment to practice in rural or remote areas for up to six years after graduation. But many students who receive this \$25,000 a year scholarship later avoid practising in rural and remote areas by paying out their debt or moving overseas. Each year, a hundred students are awarded the scholarship. After more than 10 years, fewer than 50 scholarship recipients have started the service obligations they agreed to.<sup>21</sup> More generally, there is insufficient evidence to show that scholarship schemes actually change people’s employment intentions.<sup>22</sup>

Another plank of the Government’s response has been the General Practice Rural Incentive Program (GPRIP). This scheme pays GPs an incentive payment based on the remoteness of their practice location and length of stay.<sup>23</sup>

The scheme has many problems. Its uptake and costs have exceeded expectations, partly because it has been extended

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<sup>21</sup> Ibid.

<sup>22</sup> See Mason (2013) for a detailed discussion. A study of 21 European nations also found that financial bonuses and interventions in medical training had minimal impact. The study did find that quotas for GP registration, and payment based on capitation (where GPs receive money for seeing more individuals rather than fewer people more times) were successful at increasing access, Ozegowski (2013).

<sup>23</sup> The amounts paid range from \$2500 in an inner regional area to \$47000 for someone who has been working for five or more years in a very remote area. Billing minimums of \$4000 per quarter on ‘eligible’ services apply. See Rural and Regional Health Australia (2013) for details.

beyond primary care doctors, which are its intended target.<sup>24</sup> GPRIP was allocated \$116 million in 2012-13. While it might encourage doctors to stay in under-served areas, it has not done much to encourage relocation. Only 33 doctors qualified for relocation payments in 2011-12 (the target was 70).<sup>25</sup>

These subsidies can’t change many doctors’ minds about where they want to work – the payments are too low. A recent study found that GPs with a base salary of \$180,000 would only move to a town of 5,000 to 20,000 people for an income increase of \$68,000. For an inland town of 5,000 residents, they would require an extra \$116,000, while the least attractive job would need incentives of around \$237,000. Almost nine out of ten (86 per cent) would not move at all, regardless of the financial incentive.<sup>26</sup>

### Overseas-trained doctors

Because it is hard to motivate Australian-trained doctors to work in rural and remote areas, another major response to GP shortages has been to require overseas-trained doctors to work in areas of need for up to 10 years.<sup>27</sup> They make up a growing proportion of the GP workforce, and are strongly represented in rural and remote areas (see Figure 8 and Figure 9).

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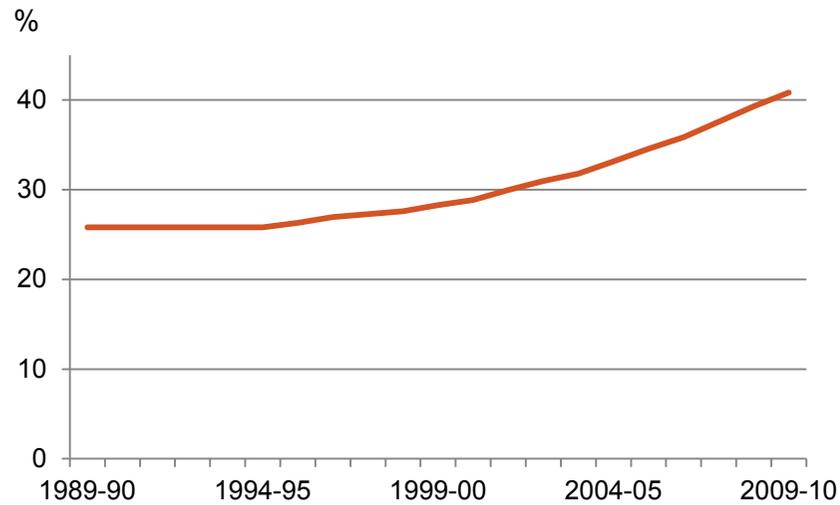
<sup>24</sup> Because of eligibility criteria, some specialists, for example anaesthetists, cardiologists and obstetricians can access GPRIP payments, Mason (2013).

<sup>25</sup> Ibid.

<sup>26</sup> Based on percentages of current earnings of 37%, 64% and 130% respectively. Scott, *et al.* (2012).

<sup>27</sup> McGrail, *et al.* (2012)

**Figure 8: Proportion of overseas-trained GPs in the Australian workforce, 1989-90 to 2009-10 (full-time work equivalent)**

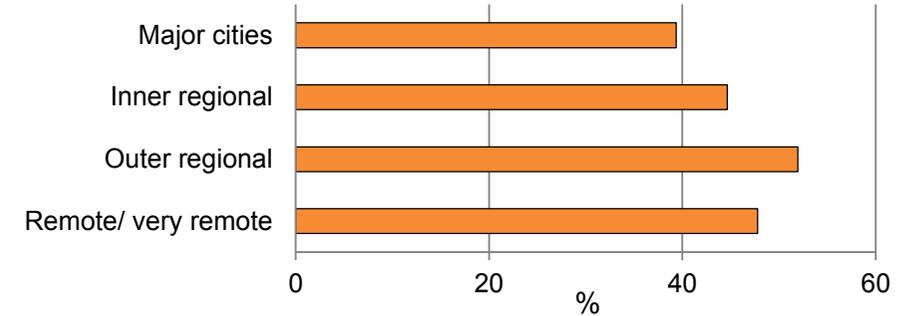


Source: Health Workforce Australia (2012a)

Overseas-trained doctors who complete their 10-year requirement to practise in workforce shortage areas often move to cities or inner regional areas where there is no workforce shortage. As a result, much of the growth in overseas-trained GPs has been in well-served areas. The annual growth in GP services from overseas-trained doctors was four times higher in major cities than it was in remote areas. In inner regional areas, it was 10 times higher (see Figure 10).<sup>28</sup>

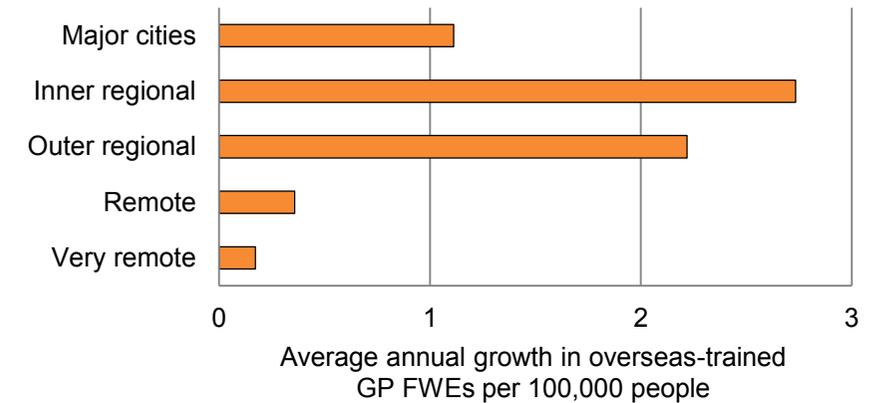
<sup>28</sup> Comparisons are against the average of GP FWEs per capita in remote and very remote areas.

**Figure 9: Proportion of GPs who are overseas-trained, by remoteness, 2009-10 (full-time work equivalent)**



Source: Health Workforce Australia (2012a)

**Figure 10: Annual growth in overseas-trained GP FWEs per capita, 2001-02 to 2011-12**



Source: Grattan Institute analysis based on Department of Health and Ageing (2013a)

Overseas-trained doctors have increased patient access to GPs in some areas, but there are several reasons we can't keep relying on them to fix primary care problems.

First, overseas-trained doctors who are restricted to work in rural areas are much less personally and professionally satisfied than either locally-trained doctors or overseas-trained doctors who can work anywhere.<sup>29</sup> For this reason, overseas-trained doctors required to work in under-served areas are likely to move on as soon as they can.<sup>30</sup>

The result is that the vast bulk of overseas-trained GPs end up where there are already plenty of GPs. Seven out of 10 overseas-trained GPs work in major cities, as Figure 11 shows. In the long-term, combining increased medical training with reliance on overseas-trained GPs in rural and remote Australia will risk a costly oversupply of doctors in well-served areas.

Second, the intake of overseas-trained doctors has fallen by more than a third from its 2007-08 peak.<sup>31</sup> It might fall further as the

<sup>29</sup> Satisfaction is lower in all 10 measures relating to work, statistically significantly in six cases (ranging from 32% to 64% less likely to be satisfied). Satisfaction is significantly lower in all six measures of satisfaction with social and, leisure and employment opportunities (20% to 49%), McGrail, *et al.* (2012).

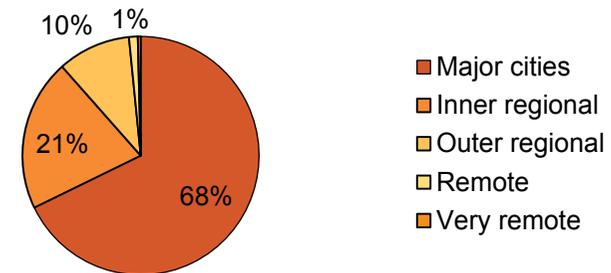
<sup>30</sup> This concern was raised by the Rural Doctors Association of Australia and the Australian Medical Association in submissions to a recent Parliamentary inquiry into overseas-trained doctors, Standing Committee on Health and Ageing (2012). Research suggests that work and life satisfaction (aspects beyond remuneration) are important determinants of retention of doctors in remote areas Humphreys, *et al.* (2009).

<sup>31</sup> From 4,930 to 3,220 in 2010-11, Medical Training Review Panel (2012)

Government is committed to returning to net self-sustainability in medical training.<sup>32</sup>

Third, pushing up the proportion of overseas-trained doctors in rural and remote areas even higher carries risks. In these areas, there is often limited peer support and supervision to help people adapt to a new country and workplace culture.<sup>33</sup>

**Figure 11: Location of overseas-trained FWE GPs, by remoteness, 2011-12**



Source: Department of Health and Ageing (2013a). Note: 'Very remote' = 0.3%.

<sup>32</sup> See Standing Committee on Health and Ageing (2012). Ethical concerns about taking doctors from less economically developed countries are also often raised as a reason to reduce reliance on overseas-trained doctors. This is one reason that the World Health Organisation argues that countries should try to meet their own health workforce needs, World Health Organisation (2010). However, recent research suggests that international migration of health workers can have either a positive or negative net effect on developing countries and that it is not the main cause of healthcare shortages where it does contribute to them. See Clemens (2009); OECD (2010); Docquier and Rapoport (2012).

<sup>33</sup> This is particularly concerning as one recent study found that overseas-trained doctors are more likely to have complaints made against them, and more likely to have those complaints upheld. Elkin, *et al.* (2012). Data are on complaints resolved from 2001 to 2010 in Victoria and Western Australia.

### The results

All these measures together – scholarships, financial incentives and overseas-trained doctors – have resulted in too little progress in the worst-served areas. Recent trends show no sign of raising access levels in these places to anywhere near the level in the rest of the country (see the methodological appendix for projections based on recent trends).

There has been significant progress in inner regional areas, which now have a similar number of services per resident as the major cities. But remote and very remote areas lag far behind and access improvement has occurred at a snail's pace (see Figure 12).

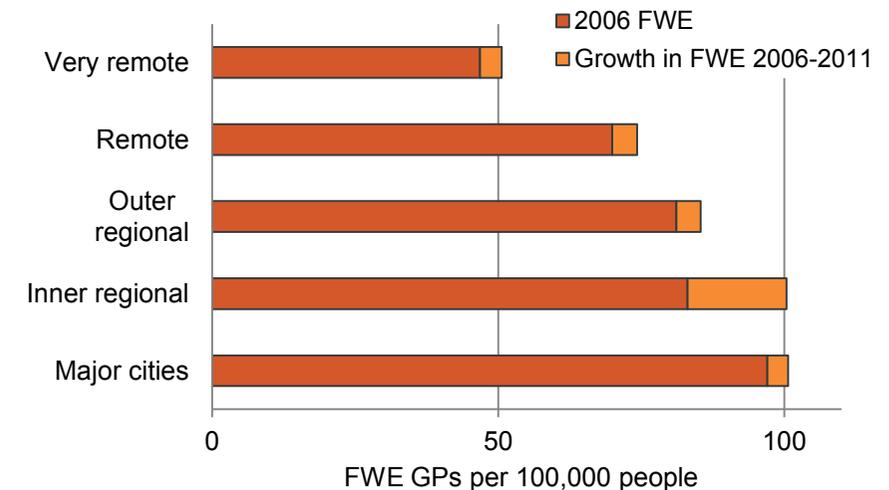
Even if the rate of improvement in the last five years continued (which is not guaranteed) it would take very remote areas 44 years to reach the target in this report, and 65 years to catch up to the level of services per person that cities have today. When it comes to the places with the worst service shortages, we need new approaches to supplement existing ones.

Fortunately, there are proven solutions. We can draw on international and Australian experience to extend care to the people who often need it the most. There are good options that can increase access to care, maintain standards of quality and safety, and that are much more affordable than the alternatives.

The next chapter identifies the parts of Australia where new approaches to providing primary care are most urgently needed.

The following two chapters identify solutions to the access gap in these areas: using pharmacists and physician assistants as part of a GP-led team.

Figure 12: FWE GPs by remoteness, 2006-07 and 2011-12



Source: Department of Health and Ageing (2013a). Population estimates based on census data

## 4. Where are the biggest gaps?

The best measure of access to GPs is not the number of GPs in an area, or how many hours they work, but the amount of services these GPs provide. This measure is called 'full-time-workload equivalence' (FWE), a measure of realised access based on the Medicare billings that GPs make.<sup>34</sup>

Different parts of Australia have very different levels of GP services per person (see Figures 13, 15 and 16). The areas with the most GPs – such as Sydney, Melbourne and the Sunshine Coast – have well over twice the GP services per person that the Kimberley – Pilbara or Northern Territory have. Box 3 explains why we use Medicare Local areas to measure access to primary care.

### Setting a target

Some variation in the availability of GPs is inevitable, but there is a threshold below which access to primary care is too low. The Government has never set a target for the minimum level of access to primary care that all parts of Australia should have. Without a target there is little accountability, so not much progress has been made in reducing the worst access gaps.

Because it is hard to say what level of access is too low, we should start by targeting the places with the worst access first.

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<sup>34</sup> This is widely accepted as a useful measure for service access – headcount overstates service access due to part-time workers, Department of Health and Ageing (2013a). FWE does not capture services that are not billed to Medicare, but these are a small minority of primary care services, see the methodological appendix for more information.

### Box 3: Why use Medicare Local areas to measure access?

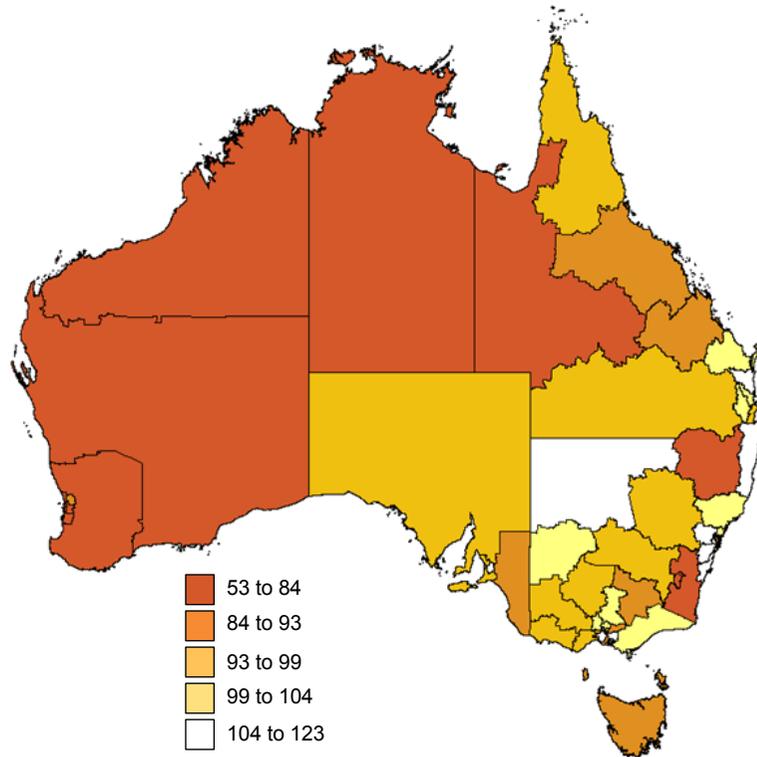
Like the National Health Performance Authority, which reports on access and other measures of primary care provision, this report measures access using Medicare Local areas. The 61 Medicare Local areas in Australia range in size from a part of a city (South Eastern Sydney) to whole states (Tasmania and the Northern Territory). The area populations range from 40,000 to 900,000.

Except in major cities, people are unlikely to travel outside their Medicare Local area to go to a GP. This makes Medicare Local areas a good size for assessing if there are enough services for the local population. As well, when we identify areas with low access to GPs we have checked that there are no 'surplus' GP services in surrounding areas that people living in neighbouring Medicare Local areas could visit (see methodological appendix).

The level of GP services *within* Medicare Local areas varies. While this is a concern, gaps could be filled with existing health care resources if there are enough GPs across the whole Medicare Local area. For example, GPs could be encouraged to do a clinic once a month in an under-served area within driving distance.

We focus on places where bigger changes are needed. We look at the Medicare Local areas with extremely low levels of services: the bottom 20 per cent in the nation. In these places, good primary care access cannot be provided without new resources and changes to the roles that different professionals can play.

**Figure 13: FWE GPs per 100,000 population, Medicare Local Areas, 2011-12**

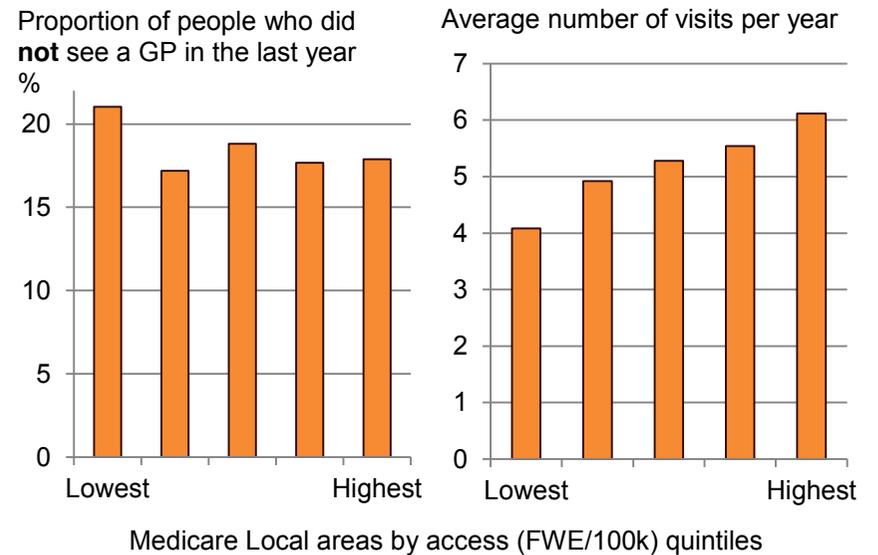


Source: Grattan Institute

Note: The range of service levels in this map is different to the range in some previous figures as it uses Medicare Local areas, rather than remoteness category.

This report presents a plan for the bottom fifth of Medicare Local areas. There are stark differences between this group and the rest of the country. In these areas, people are less likely to see a GP at all. When they do, it is much less frequently, as shown in Figure 14.<sup>35</sup>

**Figure 14: GP visits, Medicare Local areas, by access level (GP FWEs per 100,000), quintiles, 2010-11**



Notes: Proportion who didn't see a GP last year excludes Central and Nth West Qld, Loddon – Mallee – Murray, Lower Murray and Far West NSW.  
Source: National Health Performance Authority (2013a)

<sup>35</sup> The proportion of people who do not see a GP at all is 2.56 per cent higher in the lowest-access quintile than the national average. If it was at the average about 71,000 more people would see a GP each year. Data was not available for Central and North West Queensland.

We should aim to bring the bottom fifth of Medicare Local areas up to equivalence with the next-lowest access area (84 GP FWEs per 100,000 people, as Figure 17 shows).<sup>36</sup>

### Shortages in the city

Most of the lowest-access areas are in rural and remote Australia, but four are in Perth. Another is the Australian Capital Territory, where almost the entire population lives in Canberra. In fact, over the long-term, GP services per person in the ACT and Western Australia have declined since peaking in the 1990s (Figure 15).<sup>37</sup>

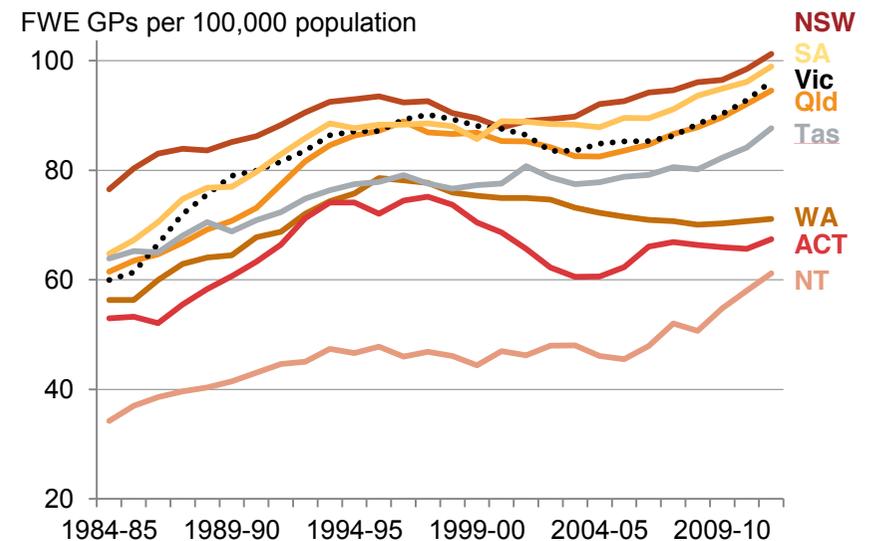
Unlike in most rural and remote areas, current or slightly changed policies could achieve progress in Perth and Canberra. The establishment of new medical schools in these cities in recent years (Canberra in 2002 and Perth in 2005) will significantly increase the number of medical students graduating in these cities. In the three years to 2014, more than 300 doctors are expected to graduate from the ANU, and more than 900 from universities in Perth.<sup>38</sup>

It will take time for these graduates to finish their postgraduate training, and only a minority will become GPs. However, if they stay in the city where they trained, it would close a lot of the GP

service gap between Perth and Canberra and the rest of the country.

Because current approaches might work in Perth and Canberra, this report focuses instead on the worst-served rural areas. But the access gap in Perth and Canberra is serious. If they don't reach the target proposed in this report within five years, it will be time to introduce our rural solutions in these cities, too.

Figure 15: GP FWEs per 100,000 population, by states, 1984-85 to 2011-12



Note: These figures are based on annual Estimated Resident Population figures which are not as accurate as the Census data used in our analyses below, and generate different results. More accurate annual data is not available. Source: Department of Health and Ageing (2013a)

<sup>36</sup> This measure should capture the new services provided by pharmacists and physician assistants that we propose below.

<sup>37</sup> Although the Northern Territory's trajectory is much better, even it won't reach our target for a decade, even under the favourable assumption that recent rapid growth continues. See the methodological appendix for projections.

<sup>38</sup> Projected graduates (310 for the ACT and 945 for Perth) include domestic and international students and do not take student attrition into account, see Medical Training Review Panel (2012). In the Perth case, this represents a net increase of 201 per year over the 2004 graduations.

### Realistic solutions for a longstanding problem

More than 1.1 million people – around one in every 20 Australians – live in the seven lowest-access rural and remote Medicare Local areas (see Box 4).<sup>39</sup> If access to primary care was a serious issue for any other group this large, it would probably have been resolved long ago. The good news is that the problem can be fixed and relatively few new primary care workers are needed to meet the target.

It will take the equivalent of just 164 GP full-time work equivalents across these areas. As discussed above, getting enough additional GPs to these locations is unlikely under current policies, and at current rates of progress will take decades to achieve. But there are good alternatives. By using pharmacists' skills better, and by introducing physician assistants, the primary care gap in the lowest-access rural areas can be filled in only five years. Based on 2011-12, the measures will cost just \$30 million a year to reach our target in the seven most under-served rural areas of Australia.<sup>40</sup>

These costs could go up or down if population growth, population health, or service patterns shift. But this \$30 million estimate shows that achieving a minimum level of access to the kind of services that GPs provide can be a small investment.

Direct costs, and longer-term benefits, could be higher if our new solutions lead to our target being exceeded. Even then, this would almost certainly be a good result. It is extremely unlikely that these chronically under-served areas will end up with 'too much'

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<sup>39</sup> As of 2011, based on Census data.

<sup>40</sup> The total cost is \$30.4 million.

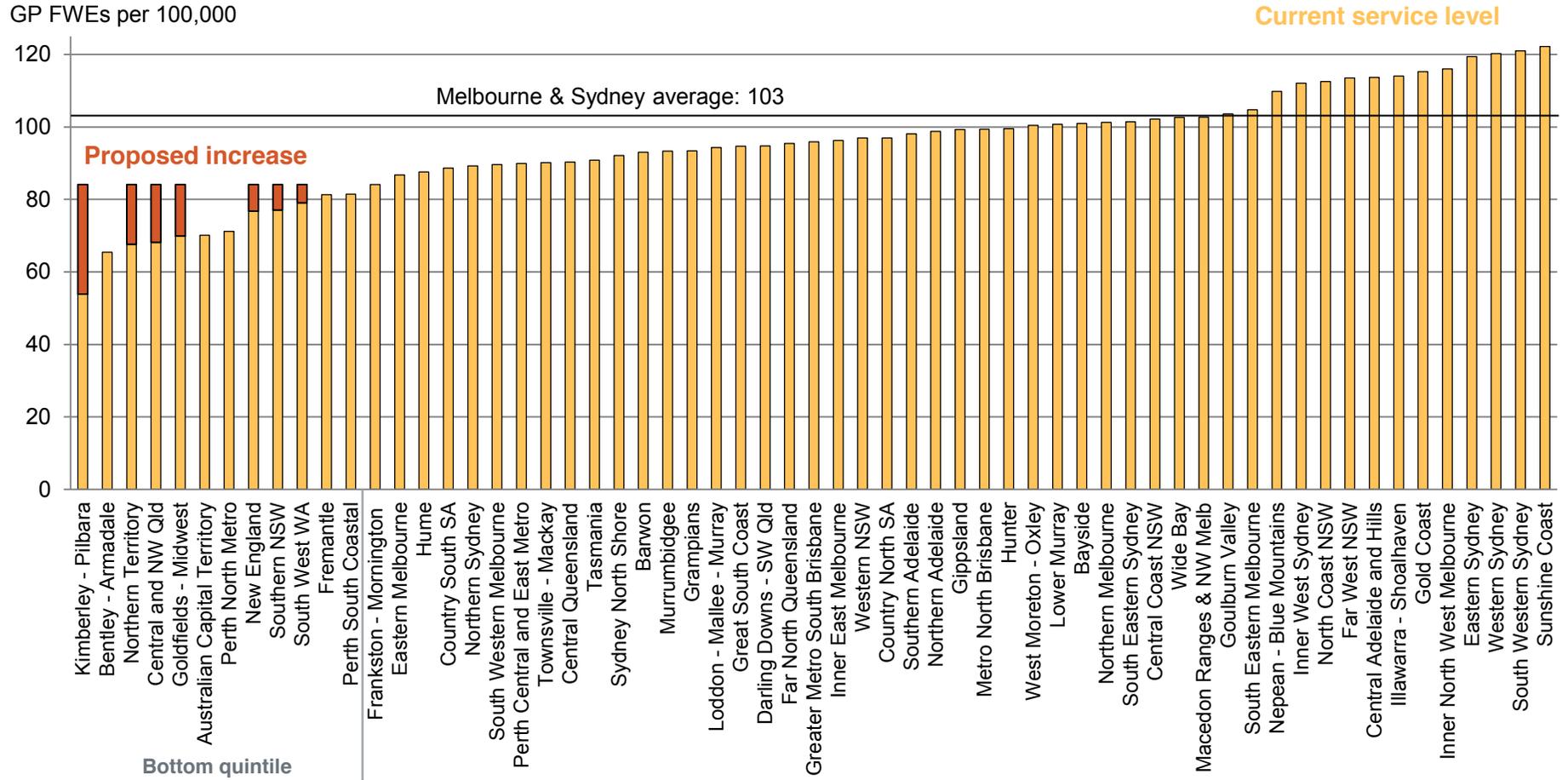
care, or anything approaching the level enjoyed in Australia's biggest cities.

#### Box 4: Fixing the worst first: where are the lowest access rural areas?

The Medicare Local Areas discussed in this report span the country. In order of severity of GP shortage, the seven areas we focus on are:

- **Kimberley – Pilbara** in Western Australia which covers most of the state's north east, including Broome, Kununurra, Karratha, and Roebuck
- **the Northern Territory**
- **Central and North West Queensland** which includes Mt Isa, Carpentaria and the Northern Highlands
- **Goldfields – Midwest** in Western Australia is a huge region of the state, including Kalgoorlie, Exmouth, Carnarvon, and Esperance
- **New England** in northern New South Wales includes Armidale, Tamworth, Inverell and Scone
- **Southern New South Wales** – the south east of NSW, including Queanbeyan, Goulburn, Bega and Cooma
- **South West Western Australia** – includes the southern population centres of Albany and Denmark

Figure 16: FWE GPs per 100,000 population, Medicare Local Areas, 2011-12



Source: Grattan Institute

## 5. New roles for pharmacists

GPs are experts at diagnosing and treating illnesses. They are able to manage the most complex cases in primary care. Yet many of the more than 122 million annual visits to GPs are relatively straightforward. At least four million visits involve issuing a repeat for a medication that a patient is already taking. Nearly 1.3 million visits involve a vaccination to prevent a disease, with no ‘diagnosis’ or other treatment involved.

Data about what happens at GP visits are collected by the Family Medicine Research Centre at the University of Sydney, through the BEACH (Bettering the Evaluation and Care of Health) program, a continuous national study of GP activity. Analyses of BEACH data commissioned by Grattan Institute show one in five (19 per cent) GP visits are likely to be relatively straightforward. This represents almost 23 million GP visits a year.<sup>41</sup>

These ‘less complex’ visits involve management of only one problem, with only one or two medications prescribed.<sup>42</sup> They do not involve referrals to specialists or allied health services, ordering of tests and investigation, conducting procedures or providing other treatments (apart from giving relevant advice and

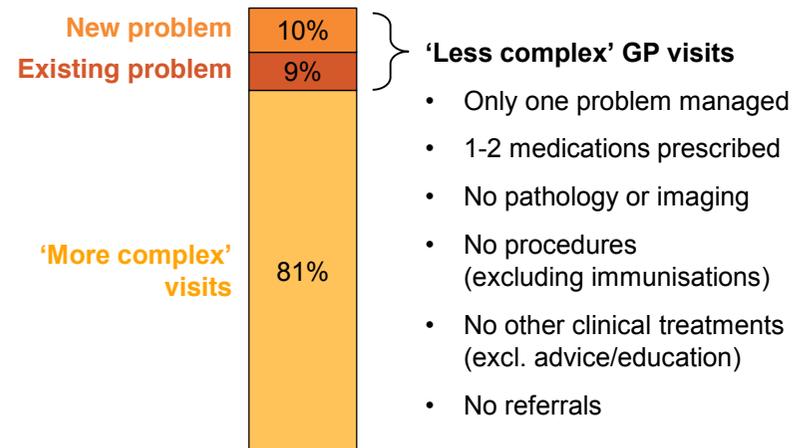
<sup>41</sup> Additionally, 44 per cent of GPs in primary care agree that they ‘often undertake tasks someone less qualified could do’, corroborating the finding that many GP visits do not use the full skill sets of doctors. Based on data from the Medicine in Australia: Balancing Employment and Life (MABEL) study.

<sup>42</sup> This also included medications that were advised for over the counter purchase, or supplied directly to the patient. An even ‘simpler’ category exists with no medications prescribed, but it is much smaller than the ‘less complex’ category described here.

explanation). About half of these ‘less complex’ visits are for pre-existing problems that the patient has already had medical treatment for, as Figure 17 shows.

While the proportion of ‘less complex’ visits is lower in rural and regional areas, it is still high – 16 per cent of the total, compared with 20 per cent in major cities (see Figure 18).

Figure 17: GP visits by complexity, 2011-12

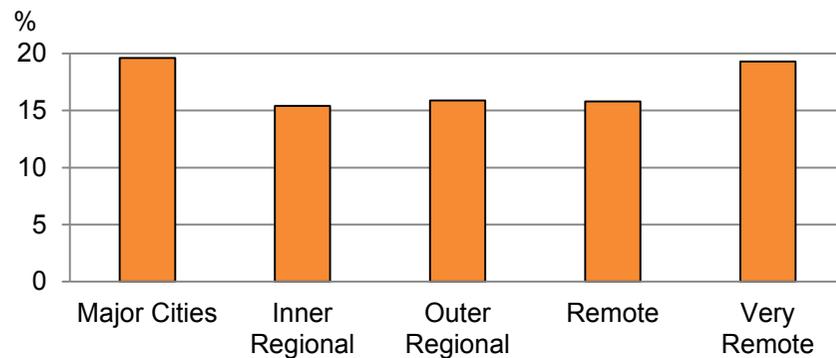


Source: Grattan Institute analysis, based on BEACH data request

Not all ‘less complex’ visits are straightforward, but a large proportion will be. For example, 2.7 million are for colds, 220,000 for hayfever and 53,000 are for excess ear wax. Since all the ‘less complex’ visits involve medications, some could be handled by

pharmacists. This approach has been successful in other countries.

**Figure 18: Proportion of 'less complex' visits by remoteness, 2011-12**



Source: Grattan Institute analysis, based on BEACH data request. 95% confidence intervals from left to right: 18.5-20.7%; 13.8-17.0%; 13.4-18.4%; 10.8-20.8%; 14.9-23.8%.

Community pharmacists train for four years. They have expertise in medications and in providing advice about over-the-counter medicines. They are among the most trusted of all professionals,<sup>43</sup> are found in most communities throughout Australia, and are accessible to patients without a long wait. Yet compared to many other countries, pharmacists have a very limited role in delivering primary care in Australia.

With additional training, pharmacists could help to reduce GP workloads in under-served areas. When a patient agrees, GPs could authorise pharmacists to give repeat prescriptions and help

<sup>43</sup> After nurses and doctors, see Roy Morgan (2013).

manage chronic care. Pharmacists should also be able to administer vaccinations.

There is solid international evidence that patients benefit when pharmacists take on these roles (see Box 5).<sup>44</sup> Allowing them to do so will increase access at low cost, while protecting patient safety.

With additional training, we estimate that pharmacists could take on five per cent of the workload of GPs in the lowest-access rural and remote areas. This would free up almost 225,000 visits which GPs could offer to people who currently aren't getting enough primary care.<sup>45</sup> The role of GPs in diagnosis and prescribing is critically important. Yet their expertise is most needed when cases are complex and challenging.

These reforms would require changes to the way pharmacists are paid. Community pharmacy is a heavily regulated retail industry. Pharmacists are essentially paid for selling medicines rather than for providing care and advice. A 'blended' payment approach to reward pharmacists for providing these services is discussed at the end of this chapter.

<sup>44</sup> Bond, *et al.* (2000); Dole, *et al.* (2007); Hunt, *et al.* (2008); Latter, *et al.* (2010); Nissen (2011); Latter, *et al.* (2012). A Cochrane Collaboration meta-review of pharmacist roles found that while "pharmacist interventions are beneficial in improving patient and health professional outcomes", there remain problems with some study methodologies and more consistent study design is needed. See Nkansah, *et al.* (2011). Mossialos, *et al.* (2013) conducted an umbrella review of 33 systematic reviews published since 2000, and discuss the methodological problems in studying policy developments in community pharmacy practice.

<sup>45</sup> Assumes that consultations remain roughly the same length.

### Box 5: Using pharmacists' skills – international comparisons

In many other countries pharmacists deliver care in a range of ways. There is strong evidence that this is safe, convenient and cost effective.

#### **Pharmacist vaccinators**

Pharmacists are allowed to immunise people in the US, Canada, Portugal, Ireland and the UK. There have been successful trials in New Zealand.<sup>46</sup> Vaccinations in pharmacies have the potential to dramatically reduce costs associated with immunisation, including waiting times for patients.<sup>47</sup> Easy access to immunisations makes it more likely people will get their vaccinations.

#### **Reissuing prescriptions for long-term conditions**

'Medication continuance' is used in the UK and some Canadian provinces. Doctors can authorise pharmacists to continue dispensing for an agreed period of time.<sup>48</sup> This has led to a more efficient use of pharmacist and GP time and expertise, and reduced costs to patients.<sup>49</sup>

#### **Pharmacists in a chronic care team**

Pharmacists have a range of roles in chronic disease management in Canada, the UK, New Zealand and the US. In most cases, a doctor makes a diagnosis and initiates treatment, and a care plan is shared with the pharmacist. These measures have improved patient safety, compliance and have reduced costs.<sup>50</sup>

These three changes to pharmacist roles would all improve care while maintaining or increasing patient safety. Overseas, pharmacists have taken on even greater responsibilities in prescribing for some conditions. However, this report does not propose that pharmacists diagnose conditions independently.<sup>51</sup>

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<sup>46</sup> Evaluation conducted at the end of the New Zealand trial suggested pharmacist vaccinators were far more convenient than seeing a doctor. See McMichael (2012).

<sup>47</sup> Duncan, *et al.* (2012); Murphy, *et al.* (2012)

<sup>48</sup> National Prescribing Centre (UK) (2008); Lynas (2012)

<sup>49</sup> See National Prescribing Centre (UK) (2008) and McKinnon and Jorgenson (2009)

<sup>50</sup> Raebel, *et al.* (2007)

<sup>51</sup> The UK, Canada, and New Zealand have all begun pharmacist independent prescribing roles. Research suggests that prescribing by suitably-trained pharmacists can be as safe and clinically appropriate as prescribing by doctors. While this is a promising future direction, the roles we propose here are better evidenced and able to meet existing access gaps within a shorter time frame. Independent prescribing would require substantial additional training, audit and governance structures. See Nissen, *et al.* (2010) for a discussion of non-medical independent prescribing in Australia.

### Pharmacists as immunisers

Vaccinations are a cost-effective way to prevent many diseases. Rates of vaccine-preventable diseases have plummeted in Australia in recent decades. Yet earlier this year, a report from the National Health Performance Authority showed worrying disparities in child immunisation rates around the country. In many Medicare Local areas, more than one in 10 five-year olds are not fully vaccinated, even in inner-city areas. Immunisation rates for Aboriginal and Torres Strait Islander children are often much lower.<sup>52</sup> Across Australia, around 77,000 children under five are not fully immunised.

Rural and remote areas have a far higher incidence of hospital admissions from diseases that could be prevented with a vaccine. As well as putting individuals at risk, low vaccination rates can lead to outbreaks of infectious diseases that jeopardise the health of the community.

In Australia, only doctors, nurses and Aboriginal health workers can administer vaccines in a primary care setting. Yet pharmacists have safely administered vaccinations in other countries for years.

In the US, all states allow pharmacists to administer vaccines, although specific types of vaccines and permissions vary. In most Canadian provinces, pharmacists can administer flu and other vaccines to people aged over five.<sup>53</sup> New Zealand has run

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<sup>52</sup> National Health Performance Authority (2013b)

<sup>53</sup> Pharmacists in British Columbia, Alberta and New Brunswick can administer vaccinations. Regulations are pending in Manitoba, Ontario and Nova Scotia.

successful experiments with pharmacist immunisers.<sup>54</sup> In Australia, nurse immunisers have been employed to work from pharmacy premises with good results.<sup>55</sup>

Provision of vaccines in a pharmacy setting tends to be more convenient and cheaper than vaccination in a GP clinic.<sup>56</sup> Guidelines similar to those used by nurses and pharmacist immunisers overseas can protect patient safety and privacy.

Almost one in 20 GP visits involve a vaccination. In around a quarter of these visits, the vaccination is the only treatment that occurs at the visit.<sup>57</sup> Appropriately-trained pharmacists could take on many of these visits. It would increase pharmacist income, and would not involve excessive work.<sup>58</sup>

### Pharmacist repeat prescribing

Doctors generally write prescriptions for up to six months' supply of medicines, after which patients must return for a new script, even if their needs have not changed. For people with long-term health conditions that are being successfully controlled by

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<sup>54</sup> McMichael (2012)

<sup>55</sup> Daniels *ibid.* A Tasmanian trial gave free vaccinations during the 2010 swine flu outbreak. Priceline pharmacies began offering \$30 flu vaccines, administered by a nurse immuniser. Terry White chemists also started providing vaccinations around this time. Our proposed strategy is not an alternative to nurse immunisers but an additional strategy.

<sup>56</sup> Prosser, *et al.* (2008) showed that in the US, pharmacists could deliver vaccines for around 40% of the GP cost. Labour costs, as well as vaccine costs were lower in pharmacies, and people visiting pharmacies had a shorter wait than those seeing doctors.

<sup>57</sup> 4.7 per cent, Britt, *et al.* (2012)

<sup>58</sup> See methodological appendix for discussion of increased vaccination demand.

medication, these visits may not require the advanced skills of a GP.<sup>59</sup>

Pharmacists can already reissue lipid lowering and contraceptive prescriptions when a patient is temporarily unable to see a doctor.<sup>60</sup> This is a good first step, but pharmacists should be able to continue medications for more long-term conditions, when the patient and GP agree, and when the patient's condition is stable.<sup>61</sup> Surveys of pharmacists suggest the majority are willing to take on these roles with further training.<sup>62</sup>

Repeat prescribing could be straightforward.<sup>63</sup> After a GP has made a diagnosis and created a treatment plan, they would be able to share the patient's record with the pharmacist, if the patient agrees. When a patient asked the pharmacist for a repeat script, the latter could look up the patient's record, confirm the medication, and issue the script.

Depending on the condition, the doctor could allow the pharmacist to issue continuing scripts for up to 18 months. Of course, if the

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<sup>59</sup> At least 3.4% of all visits to the GP are 'less complex' visits that involve getting a prescription for either one or two 'continuing' medications (repeat prescriptions) for a problem previously treated by a doctor. The number could be higher. Depending on how missing data is treated, the proportion of visits that involve continuing medications (repeats) could be closer to 6.2%.

<sup>60</sup> This practice is termed 'medication continuance'. Medicare (2012)

<sup>61</sup> Currently, patients must prove they have been on the medication for six months or more.

<sup>62</sup> Hoti, *et al.* (2010). See also The Pharmacy Guild of Australia (2010)

<sup>63</sup> A number of GPs don't require seeing a patient for a repeat prescription – they might leave a copy at their front desk, with or without a charge. Our estimates are based on BEACH data which only covers occasions where a visit actually occurred and where a repeat prescription was the only recorded intervention.

patient's condition changed, they would return to their doctor to discuss their condition and review their medication.

#### Box 6: An example of pharmacist repeat prescriptions

Jane (not a real person) is a generally healthy 25-year-old woman living in Armidale, NSW who was diagnosed with type 1 diabetes as a child. She uses insulin on a daily basis to maintain a normal blood sugar level. Her condition is stable and she has no other illnesses. She has successfully been using the same medication in the same way for the last five years.

With pharmacist repeat prescribing, Jane's doctor authorises her pharmacist to continue prescribing her insulin for the next 18 months. When she visits the pharmacy, the pharmacist reviews her record for any change in medication dispensed from the pharmacy. They also ask her if she has started taking any other medications dispensed elsewhere, or has experienced any new symptoms.

The pharmacist uses a checklist to make sure that Jane's condition is stable (if not, she will refer Jane back to her GP). If nothing significant has changed, the pharmacist reissues the insulin script. This saves Jane the doctor's co-payment charge and waiting time.

GPs could also authorise this process through patient e-health records, which were introduced in 2012. Having a pharmacist administer a repeat prescription is preferable to getting doctors to write longer scripts as it provides a point of contact with a health professional and a chance for a patient to discuss their health.

### Collaborative chronic care management

Managing chronic care is a significant and growing part of GP workload.<sup>64</sup> More than half (56 per cent) of GP visits involve managing at least one chronic condition.<sup>65</sup> Many of these visits involve managing medications or making dosage adjustments, rather than diagnosing conditions. A large body of research suggests that chronic conditions are best managed in co-ordinated health care teams, which can deal with the complicated demands of treating chronic disease.<sup>66</sup> While Australia has made headway in using practice nurses and chronic care coordinators, there is a place for pharmacists in managing chronic disease. In particular, pharmacists are good at ensuring medication is used safely, and identifying potential adverse drug interactions.<sup>67</sup>

Under a coordinated chronic care model, a care plan would be shared by a patient, their GP and pharmacist, and any other relevant health professionals. Some services that pharmacists could offer include:

- Reviewing a patient's medication, checking for any adverse drug interactions and ensuring that patients understand the medicines they are taking
- Adjusting doses and discontinuing or altering the medication
- Helping treat acute conditions in chronic care patients, while avoiding adverse interactions with their existing medication

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<sup>64</sup> Isetts, *et al.* (2006); Isetts, *et al.* (2008); Carter, *et al.* (2009). See also Delate, *et al.* (2010); Bruhn, *et al.* (2013) Bunting, *et al.* (2008)

<sup>65</sup> Britt, *et al.* (2012)

<sup>66</sup> See Isetts, *et al.* (2006); Raebel, *et al.* (2007); Isetts, *et al.* (2008)

<sup>67</sup> See Krska, *et al.* (2001).

- Giving patients compliance packaging (with all the pills they need to take each day packaged together)
- Informing GPs and other health practitioners of any relevant information about the patients' plan
- Issuing repeat prescriptions, as discussed above.

### Conflicts of interest in prescribing

Financial conflicts of interest could occur when prescribing and dispensing are done by the same person. Professional codes of ethics, and monitoring and supervision, can partially address this problem, as can having a separation within a business between prescribing and dispensing roles.<sup>68</sup> Different jurisdictions have dealt with pharmacist conflict of interest in a range of ways. In some Canadian provinces, for example, the same pharmacist cannot both prescribe and dispense medication for a patient.<sup>69</sup>

The models discussed in this chapter are less vulnerable to conflicts of interest than pharmacist independent prescribing. There are clear standards about who should receive vaccinations and at what time.<sup>70</sup> These protocols leave little room to provide vaccines inappropriately. Pharmacists would also be required to document their decision making and compliance with these protocols.

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<sup>68</sup> See discussion in Nissen, *et al.* (2010)

<sup>69</sup> Standard 15 of the Alberta Health Professions Act – Standards for Pharmacist Practice states that dispensing and prescribing must be done by different pharmacists unless this would compromise the patient's health, or the patient requests the prescribing pharmacist dispense the drug.

<sup>70</sup> This is set out in the National Immunisation Program Schedule.

### Box 7: An example of chronic care coordination

Martin (not a real person) is an elderly man with diabetes, arthritis and heart disease. He lives with his wife, who is his primary carer, about an hour's drive from Esperance in Western Australia.

After checking with Martin and his wife, Martin's GP has developed a chronic care plan and referred Martin to his local pharmacist for support and advice between GP visits. The GP establishes a shared electronic health record with the pharmacist.

When Martin visits, the pharmacist checks all of his medicines and works through a medications review checklist with him.<sup>71</sup> Martin says that since he has been taking his new arthritis medication, he has been experiencing nausea and dizziness. The pharmacist, who is trained in arthritis management, is aware that Martin is currently on quite a high dose of his medication. Checking Martin's shared record, the pharmacist sees that the GP is happy for the dose to be lowered if Martin experiences these side-effects. The pharmacist writes a prescription for a lower dose, and also suggests an analgesic over-the-counter medication for painful flare-ups.

The pharmacist aligns the medication end dates so Martin will only need to visit the pharmacist once a month and will not run out before then. He also repackages Martin's next month of pills in compliance packaging, and updates the shared health record with the changes he has made.

Repeat prescribing can only happen with the agreement of a patient and their GP. The risk of conflict of interest is minimal. Pharmacists can only continue to prescribe medications that are already prescribed by GPs, and which GPs determine will be needed on an ongoing basis. Furthermore, pharmacists could only keep prescribing for a maximum of 18 months.

Conflicts of interest in chronic care can be managed by both an appropriate payment system and a care plan which is shared by other members of the chronic care team. Agreed goals, and regular communication and documentation can also help ensure the patient is receiving the right amount of care.

By providing repeats, chronic care management and vaccinations, pharmacists can help reduce the load on GPs in low-service areas. This will benefit the pharmacy profession, as well as patients. Pharmacists' incomes currently depend on high drug prices and dispensing fees. If drug prices fall (as proposed in previous Grattan work),<sup>72</sup> pharmacists undertaking these new roles can still be better off by delivering health care in addition to dispensing drugs. New roles offer more complex and rewarding work, which will make better use of pharmacist skills and training.

Participation in these new arrangements might be limited to those with Personally Controlled Electronic Health Records, subject to adequate roll out. This would facilitate both better communication between the three participants (GPs, pharmacists and patients) as well as allowing audit of pharmacist decisions.

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<sup>71</sup> A similar service is partially funded under the Home Medicines Review in the Fifth Community Pharmacy Agreement.

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<sup>72</sup> Duckett, *et al.* (2013)

### Implementing pharmacy reforms

We suggest that five per cent of current GP visits in the lowest-access rural areas should be handled by pharmacists. This is a conservative target, based on an estimate of the number of ‘less complex’ visits for repeats and vaccinations, and the scope for chronic care management (see methodological appendix for more details).

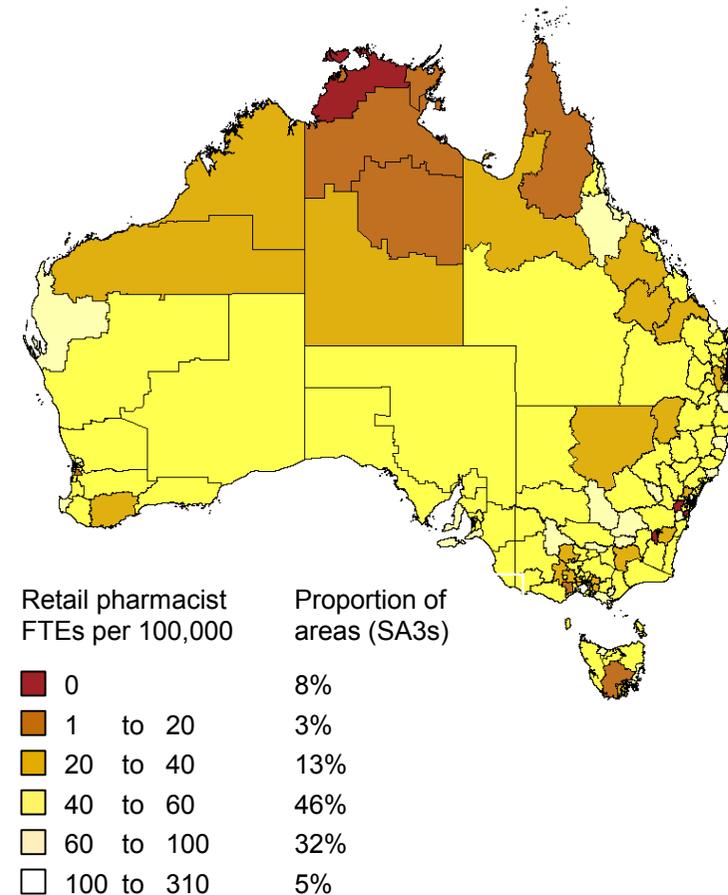
Many rural pharmacies have scope to provide more services. Industry statistics show that rural pharmacies dispense 150 fewer prescriptions a week compared to metropolitan pharmacies.<sup>73</sup> Turnover per full-time employee was around 30 per cent lower than in metropolitan pharmacies. However, rural pharmacies are open for nearly as many hours each week – 58.1 compared to 59.4 on average – and proprietors also work similar hours.

Community pharmacists are located in most communities across Australia – only a small number of areas have no retail pharmacists, as shown in Figure 19.<sup>74</sup> Areas that are under-served by GPs tend to have fewer pharmacists than average (see Figure 20). In large areas, people might not be able to access pharmacists readily, and there may not be enough pharmacists to take on 5 per cent of GP visits.

<sup>73</sup> 1,174 prescriptions compared to 1,324. Pharmacy Guild of Australia (2011).

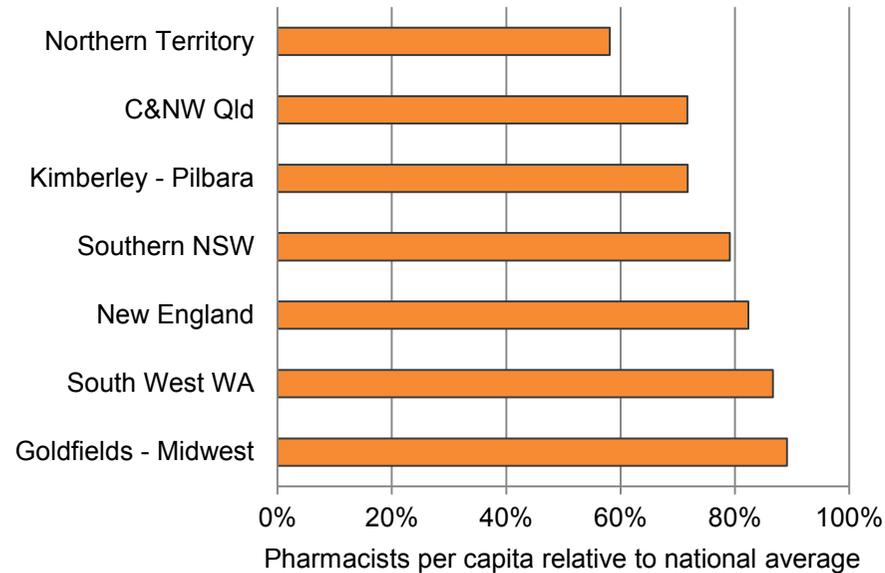
<sup>74</sup> Data was obtained from the ABS, which filtered both occupation (pharmacist) and industry of work (retail) for an estimate of retail/community pharmacists. This was aggregated by number of hours worked into a full-time equivalent (FTE). See the methodological appendix for further details. This section assumes that new pharmacist roles would be a marginal addition to the work of pharmacists in community pharmacies. In larger, group practice environments, it might be viable for the practice to employ a pharmacist to perform these functions.

Figure 19: Pharmacist full-time equivalents, 2011



*Note: Map is of Statistical Area Level 3s (ABS Statistical Geography). Daly-Arnhem-Tiwi is the only SA3 within our under-served MLAs that has no pharmacists. It has a population of nearly 16,000. Source: Grattan Institute analysis based on ABS data request.*

**Figure 20: Full-time equivalent pharmacists per capita relative to Medicare Local Average (national average of MLAs = 1)**



Source: Grattan Institute analysis based on ABS data request

To take the limited number of retail pharmacists in some areas into account, we have capped new pharmacist visits at a maximum of 25 a week for each pharmacist. Even with this constraint, pharmacists can still make a significant contribution in all the under-served Medicare Local areas (a minimum of 4 per cent, see the methodological appendix for more detail).

### Paying pharmacists

Currently, pharmacists are not paid for consultations, making a diagnosis or providing advice.<sup>75</sup> Instead, they rely on drug price mark-ups and dispensing fees to cover their costs. Introducing a consultation fee for patient visits would encourage pharmacists to prioritise quality of service and care over quantity of prescriptions.

GPs receive \$16.60 for an MBS Type A consultation, which are “obvious and straightforward cases”.<sup>76</sup> Pharmacists should receive half of this fee (\$8.30) for providing repeats. Vaccinations are likely to be more time-consuming and will require more training. We suggest a fee of \$12.10 for pharmacist vaccinations.<sup>77</sup>

For chronic care, a payment model where pharmacists received a fixed amount per patient per year, as well as a small amount each time they saw that patient, might be better than just a per-visit fee. These ‘capitated’ models reduce the incentives to over-provide services.<sup>78</sup>

Chronic care is more complicated and time-consuming than providing vaccinations or repeat prescriptions, so payment should

<sup>75</sup> There are some exceptions, such as the Home Medicines Review, under the *Fifth Community Pharmacy Agreement*.

<sup>76</sup> Department of Health and Ageing (2013b). Although Level A consultations are infrequent, the description is consistent with our approach to the type of service that could be provided by a pharmacist.

<sup>77</sup> This is one third of the MBS Type B fee (\$36.30).

<sup>78</sup> New Zealand’s model, for example, pays a \$130 a year enrolment fee when pharmacies enrol someone in a ‘Long Term Care’ service plan to treat one or more chronic conditions, with a \$1 ‘core service’ payment each day a patient actually visits, Norton (2013).

reflect this. We have not developed a comprehensive model for capitated payments, but we suggest that, on average, the cost should work out to half the MBS Type B payment (\$18.15) for a chronic care management visit.<sup>79</sup>

Pharmacists in the seven low-access rural areas should be able to bill Medicare or the Pharmaceutical Benefits Scheme for these fees. GPs would receive payment through a new Medicare item number, getting \$16.60 for referring a patient to a pharmacist for chronic care management, and \$8.30 for checking-in with the pharmacist as needed.

Under this model, the new pharmacist visits in the lowest-access Medicare Local areas would cost around \$4.5 million.<sup>80</sup> There may be additional costs from increased demand for vaccinations due to easier access (see methodological appendix).

For this price, over 235,000 GP appointments would be freed up, many of which could be used to treat more complex problems. Expanding the role pharmacists can play would close almost one quarter (24 per cent) of the gap between current access levels and the target proposed in this report.<sup>81</sup>

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<sup>79</sup> This average includes both the annual per-patient fee, and the service fee. We have not developed a detailed capitated payment system because we did not have access to detailed information about GP visit frequency for people with chronic diseases.

<sup>80</sup> As with all estimated savings and expenditure, this is based on meeting our target of 84 FWE GPs per capita in the seven lowest-access rural Medicare Local areas in 2011-12.

<sup>81</sup> Note that the FWE GP per capita measure should include the new services provided by pharmacists and physician assistants. This will allow access to care to be tracked over time.

Pharmacists acting in new roles should have the clinical appropriateness of their activities reviewed as part of their ongoing professional development and accreditation.<sup>82</sup> Some pharmacies may need to alter their premises to make a private space where consultations with patients can occur. The cost of this will vary depending on the store.

The costs of refurbishments and monitoring pharmacist performance have not been included in these estimates, but they would be offset by the new income that came with a broader role.

### Savings for patients

Patients will benefit from an expanded role for pharmacists. They will still have the choice of being able to see a GP. However, if they see a pharmacist for vaccinations, repeats or chronic care as proposed here, there would be no patient fees, which are sometimes charged by GPs. We estimate these savings at \$1 million (see methodological appendix). There would also generally be a much shorter waiting time to get these services from pharmacists.

### Integrating pharmacist services with GP care

It is worth emphasising that an expanded role for pharmacists would be provided in partnership with a GP. With the exception of providing vaccines, the new types of pharmacist care would be provided only once a patient was referred from a GP, and only with the agreement of the patient. As discussed above, GPs would be paid for their role initiating and overseeing pharmacist care.

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<sup>82</sup> Currently, this is the responsibility of the Pharmacy Board of Australia.

## 6. Introducing physician assistants

In partnership with GPs, pharmacists can lighten the load on GPs in low-access areas. But most areas will still need more services that are only provided by GPs, such as diagnosis and prescribing.

Physician assistants are a proven way to expand access to these services. They provide care at the same quality as doctors and are very popular with patients. GPs in rural and remote Australia, who best understand their patients' needs, have called for the introduction of physician assistants in Australia.<sup>83</sup>

Physician assistants practice medicine *under the direct supervision of a doctor*.<sup>84</sup> Their role is agreed with the supervising doctor, and can develop over time along with trust, experience and training.<sup>85</sup> This means that GPs can delegate any kind of care to physician assistants. This includes taking patient histories, performing examinations and investigations, diagnosing conditions, prescribing drugs, or referring patients to specialist doctors.<sup>86</sup>

Physician assistants are trained in a two or three-year degree.<sup>87</sup> The training is based on the 'medical model' – the approach to care that doctors use. In fact, much of the curriculum overlaps

with medical training. This makes it easy for physician assistants to work with doctors and take on doctors' tasks. Because they can learn to provide any type of services that GPs deliver, and can be supervised remotely, physician assistants can add a new level of flexibility to primary care in areas with too few GPs.

The role was first created in the USA in the 1960s. Physician assistants are now common there. Their number has doubled in the past decade, and there is now around one for every 10 doctors.<sup>88</sup> Almost one third (31 per cent) work in primary care, a far higher proportion than doctors.<sup>89</sup> Thirteen countries have experimented with physician assistants in some form. Some are looking to make them a major part of their primary care system, but they are not yet widespread outside the USA.<sup>90</sup>

International research suggests that physician assistants provide the same quality of care, and achieve the same outcomes as doctors, with cost savings and high patient satisfaction.<sup>91</sup> There

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<sup>83</sup> Australian College of Rural and Remote Medicine (2011)

<sup>84</sup> This is an important difference from nurse practitioners who can practise independently. As discussed in Chapter 1, physician assistants and nurse practitioners are not alternative policies – both options can be pursued.

<sup>85</sup> Jolly (2008); Miller, *et al.* (2012)

<sup>86</sup> Health Professions Regulatory Advisory Council (Ontario) (2011)

<sup>87</sup> Two-year postgraduate, three-year undergraduate.

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<sup>88</sup> One for every 10.2 doctors in 2010, Elliot (2011); Young, *et al.* (2011)

<sup>89</sup> American Academy of Physician Assistants (2010)

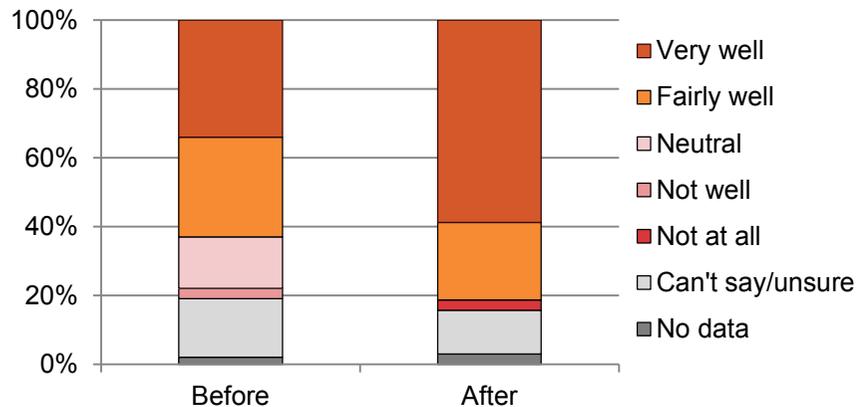
<sup>90</sup> Miller, *et al.* (2012). There are, however, 300 physician assistants in Canada, with 160 in training, Canadian Association of Physician Assistants (2012).

<sup>91</sup> Many studies and literature reviews point to at least equivalent quality and safety, and increased efficiency, see Hooker and Everett (2012); Farmer, *et al.* (2009); Laurant, *et al.* (2009); Miller, *et al.* (2012). A recent systematic review on physician assistants in primary care found that evidence on costs is weaker, and mixed, compared with evidence on acceptance by doctors and patients, and clinical appropriateness, with a weak-to-moderate level of evidence overall, Halter, *et al.* (2013). It notes that increased employment of physician assistants over time indicates a growing number of employers see them as valuable.

have been two trials in Australia. They were small, and their evaluations are not conclusive, but the results are consistent with the overseas experience and very encouraging. There were shorter waiting times, improved safety and clinical outcomes, and very high levels of patient satisfaction (see Figure 22).<sup>92</sup>

According to a survey evaluating the Queensland pilot, most people working in the participating health services (63 per cent) thought physician assistants would integrate well, or fairly well, into a rural or remote health context. After the pilot, over four in five (83 per cent) thought so, as shown in Figure 21.

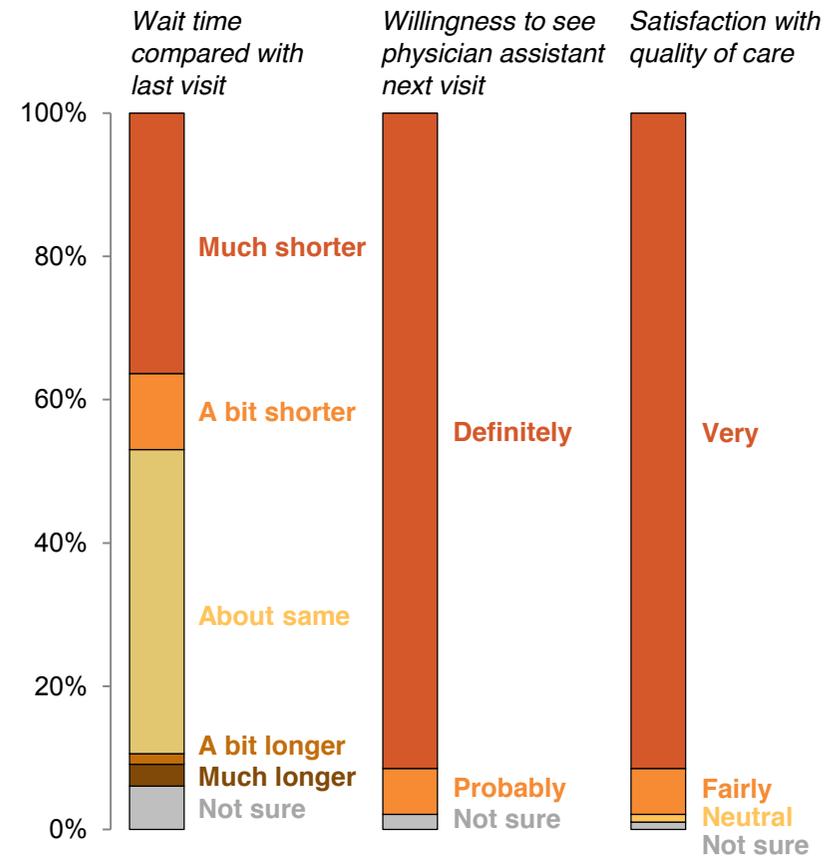
**Figure 21: Views on how well physician assistants would integrate into a rural/remote context, pilot participants, Queensland, 2010**



Source: Urbis (2010)

<sup>92</sup> A pilot in South Australia in 2008 involved four US-trained physician assistants, a pilot in Queensland in 2009 involved five. For evaluations, see Miller, *et al.* (2012) and Urbis (2010).

**Figure 22: Patient views on physician assistants, Queensland Pilot, 2010**



Source: Urbis (2010)

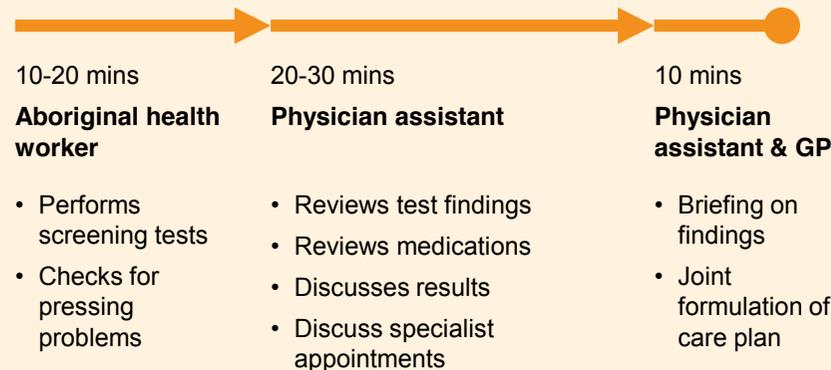
### Box 8: A physician assistant in rural Far North Queensland

An American physician assistant stayed on after the pilot to work in an Aboriginal medical centre in rural Far North Queensland.

The GP was finding it hard to recruit other doctors. They hired the physician assistant to help with chronic disease management and follow-up, make the clinic more efficient, and let the GP devote more time to complex patients and teaching. The physician assistant, Nanette Laufik, summarised the benefits for the GP:

*“Dave [the GP] is using his time more efficiently: he’s able to spend more time teaching students and junior doctors and his quality of life has increased too, as he’s been able to get away on time to coach his young son’s cricket team.”*

An example patient visit is shown below.



Source: Sweet (2013)

Physician assistants can make a big contribution in rural areas, particularly because they can be supervised remotely, reaching areas where there are few doctors. In the Queensland pilot, a physician assistant attended a remote health clinic at Wujal Wujal once a week, with remote supervision. At short notice, a physician assistant also relieved the nurse from a single-nurse station at Camooweal (190 km west of Mt Isa, near the Northern Territory border) when they were ill, again with remote supervision.<sup>93</sup> See Box 8 for the experience of an American physician assistant who stayed on after the trial to work in rural Far North Queensland.

In the USA, providing care in under-served rural areas was part of the reason the role was initially developed.<sup>94</sup> Around 15 per cent of physician assistants in the USA work in rural areas, and they are more likely to move to these areas than other types of health care worker.<sup>95</sup> A study in two states found that a greater proportion of physician assistants worked in rural areas, and in areas with shortages of health professionals, than any other type of health professional.<sup>96</sup>

### Introducing physician assistants in Australia

The success of the experiment with physician assistants in Australia was despite problems that need to be resolved before they can become a significant part of the primary care workforce.

<sup>93</sup> Urbis (2010)

<sup>94</sup> Ballweg, *et al.* (2008)

<sup>95</sup> American Academy of Physician Assistants AAPA (2009); Miller, *et al.* (2012)

<sup>96</sup> The states are California and Washington. Grumbach, *et al.* (2003). Rural areas are different in the US and in Australia, making the comparison difficult. However, parts of America with more small remote communities – making them more like Australia – have more physician assistants; Alaska has the highest number per capita. Ballweg, *et al.* (2008); Miller, *et al.* (2012).

Policy implementation is hampered by multiple veto or decision points between an idea and its implementation.<sup>97</sup> To be fully effective, introduction of physician assistants to rural and remote Australia needs coordinated action by the Commonwealth and state governments.

A state could 'go it alone' and change its laws to allow physician assistants to prescribe, refer to medical specialists or order diagnostic tests.<sup>98</sup> But the full potential of these changes would only be reached if, for services delivered in low access areas, the Commonwealth recognised physician assistant prescriptions, tests and referrals under the Pharmaceutical Benefits (PBS) and Medicare Benefits Schemes (MBS).<sup>99</sup>

Without Commonwealth recognition under the PBS, patients would have to pay more for medication prescribed by a physician assistant.<sup>100</sup> The reverse is also true: Commonwealth recognition under the PBS and MBS does not make it legal for physician assistants to prescribe, or for radiologists to fulfil a request for an x-ray. While states could license and regulate physician assistants, it would be better if this was done by the Medical Board of Australia, the national body which regulates the medical

profession. Box 9 outlines the changes that the Commonwealth and states should make.<sup>101</sup>

Governments also need to give some certainty to people thinking of signing-up for physician assistant training, and for universities to run courses. Only a handful of physician assistants have been trained in Australia. The University of Queensland closed its course in 2011 after training just 33 physician assistants. One reason was uncertainty about the future of the profession.<sup>102</sup> James Cook University's program, with 11 trainees, did not take enrolments in 2013, although it offers the course in alternate years and may enrol more students in the future.

Governments should commit to using physician assistants to bring low-access rural and remote areas up to the 20<sup>th</sup> percentile for access to GP services.<sup>103</sup> After the contribution of expanded pharmacist roles, this would only require 101 physician assistants.

The most needed in any one Medicare Local area would be the Northern Territory, which would require 32, and the Kimberley – Pilbara would require 30. All the other Medicare Local areas would need far fewer (see Figure 23).

Physician assistants have been trained in Australia before, and training takes only two to three years. This means that 101 physician assistants could easily be trained in five years.

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<sup>97</sup> Pressman and Wildavsky (1984)

<sup>98</sup> Similar issues apply to expanded roles of pharmacists discussed in the previous section.

<sup>99</sup> Regulatory and other barriers are discussed in Urbis (2010).

<sup>100</sup> Unless the physician assistant prescriptions were dispensed from hospital pharmacies or the state agreed to subsidise community prescriptions above patient co-payment levels where required.

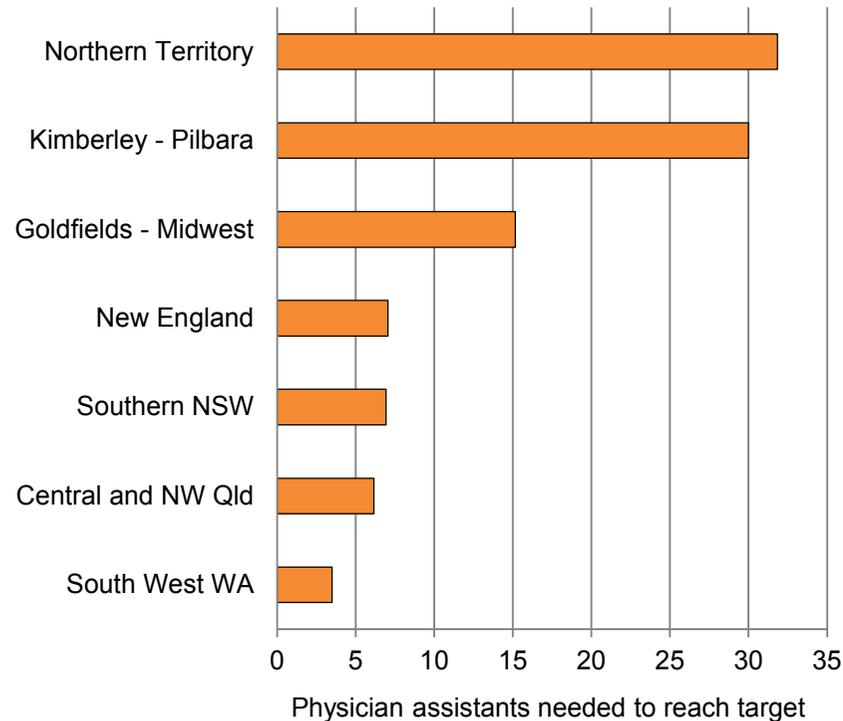
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<sup>101</sup> See also Nissen, *et al.* (2010) for a discussion of a nationally consistent prescribing framework. See also their recent draft paper on a prescribing pathway for health professionals: Health Workforce Australia (2013a).

<sup>102</sup> University of Queensland (2011)

<sup>103</sup> This measure should include the new services provided by pharmacists and physician assistants proposed in this report.

Figure 23: Physician assistants needed to reach benchmark service level (with expanded pharmacist role), Medicare Local areas



Source: Grattan Institute

**Box 9: Regulatory changes for a smooth introduction of physician assistants**

**National regulatory agencies**

- National registration through the Australian Health Practitioner Regulation Agency under the direction of the Medical Board of Australia, with regulation of scope of practice (prescribing)
- Accreditation of training programs by the Australian Medical Council

**States and Territories**

- Introduce harmonised legislation allowing physician assistants to prescribe medicines

**Commonwealth Government**

- Allow physician assistants to access Medicare Benefits Scheme, and for their referrals (to specialists and diagnostic images and tests) to receive Medicare benefits.
- Allow patient and physician assistant prescriptions to be covered by the Pharmaceutical Benefits Scheme
- Make access to MBS and PBS for physician assistants conditional on services being delivered in a low access area

If physician assistants are introduced in the right way, they could also cost patients less and make GP clinics more financially viable in areas of workforce shortage.

Physician assistants would have to bulk bill Medicare (not charging patients any fees).<sup>104</sup> If physician assistants were used to bring the lowest-access rural and remote Medicare Local areas up to the 20<sup>th</sup> percentile target, this could save patients in these areas almost \$5 million a year in fees.<sup>105</sup> GP fees are currently a serious barrier to care, as discussed above.

GPs would not lose out. These proposals target areas with plenty of unmet demand for GPs, so services from physician assistants would not have to reduce GP workload and income. In fact, even with physician assistant wages of \$105,000, on-costs estimated at \$73,000, and four hours of supervision by a GP each week, GP clinics would have a surplus of over \$36,000 a year for every physician assistant they hired.<sup>106</sup>

There will be some costs to make sure physician assistants go where they're needed, and work in ways that are appropriate to different places. In some places, such as the Kimberley, they will need to be mobile to bring primary care to some under-served areas. They might need to do a clinic in a different remote area

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<sup>104</sup> It is proposed that physician assistant provider numbers would be limited to services provided in the designated Medicare Local areas.

<sup>105</sup> Compared to GPs providing the services, which are not currently offered. Estimate based on state-level averages of patient fees charged and Medicare Local GP bulk billing rates. See the methodological appendix.

<sup>106</sup> This is an average across Medicare Locals. Due to different billing patterns, net surplus differ in different Medicare Local areas, the lowest is \$16,851 in the Northern Territory. See the methodological appendix for more detail.

once each fortnight, with associated transport costs. Other places might have a particular need for after-hours care, or want to subsidise PA training for local residents or healthcare workers.

Because of these varied challenges, the Commonwealth Government should establish a program, managed through Medicare Locals, to provide funding to smooth the introduction of physician assistants. This will allow Medicare Locals to tailor physician assistant roles to local conditions.

Medicare Locals were established in 2011 to support additional primary care services at a regional level. If they were provided with \$15,000 for every physician assistant employed in their area, they could use it for attraction, retention, transport, training, or promoting after-hours care – whatever was needed in that area.<sup>107</sup>

Introducing physician assistants would cost more than changing the role of pharmacists, but it is affordable. Using physician assistants to hit the target this report suggests would have cost just \$26 million in 2011-12. It would have resulted in 543,000 new primary care visits – visits that people are missing out on now. The cost of this change is much less than the cost of enticing GPs to rural and remote areas. It would also be much more effective and can be implemented quickly, in just five years.

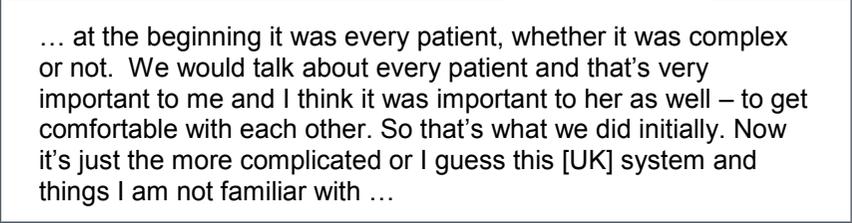
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<sup>107</sup> This is an indicative figure used for our costings and may be generous – it is approximately 15% of our estimated physician assistant income. An alternative approach would be for Medicare Locals to apply for grants for specific purposes (such as transport for physician assistants to visit remote communities). This would be more targeted, but also less flexible and more administratively burdensome.

Physician assistants would work directly for GPs. Like in other countries, and in Australian trials, they would be able to take on any kind of work that doctors were comfortable delegating. This would give GPs more flexibility, relieve workload pressures, and allow GPs to use their skills to the fullest possible extent.

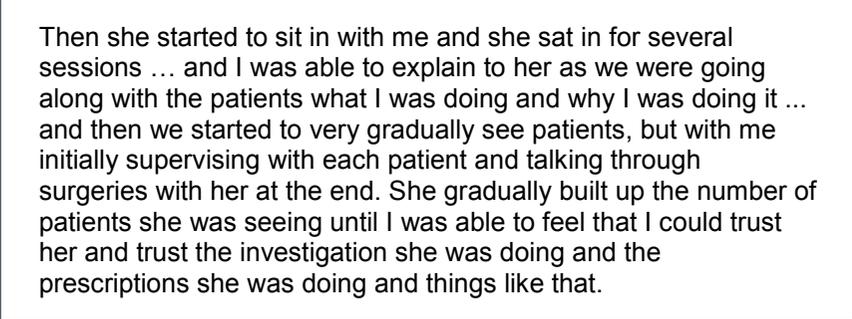
**Figure 24: Descriptions of working together – views from a physician assistant and GP in a UK trial**

Physician assistant



... at the beginning it was every patient, whether it was complex or not. We would talk about every patient and that's very important to me and I think it was important to her as well – to get comfortable with each other. So that's what we did initially. Now it's just the more complicated or I guess this [UK] system and things I am not familiar with ...

GP



Then she started to sit in with me and she sat in for several sessions ... and I was able to explain to her as we were going along with the patients what I was doing and why I was doing it ... and then we started to very gradually see patients, but with me initially supervising with each patient and talking through surgeries with her at the end. She gradually built up the number of patients she was seeing until I was able to feel that I could trust her and trust the investigation she was doing and the prescriptions she was doing and things like that.

*Source: Woodin et al. (2005)*

## 7. Better access is a good investment

If pharmacists and physician assistants had been able to work in a team alongside GPs in 2011-12, we could have brought the lowest-access areas in Australia up to the target. It would have cost only \$30 million.

It will take five years to train enough pharmacists and physician assistants to deal with the most severe access gaps. But particularly with the expanded role for pharmacists, improvements could be seen within a couple of years. Some of the worst-served areas (but probably not all) might have slightly more services anyway, in line with the painstakingly slow progress of recent years. If this happens, there will still be big gaps in primary care in many parts of Australia, but fixing them might cost even less than \$30 million a year.<sup>108</sup>

It would be easy to cover these costs by cutting waste in health care spending. A previous Grattan Institute report, *Australia's bad drug deal*, showed that at least \$1.3 billion is wasted every year on high drug prices in the Pharmaceutical Benefits Scheme.

Even within spending on health workforce programs, there is plenty of room to reallocate funding to close primary care access gaps. Our reforms would cost 6.5 per cent of the Department of Health and Ageing's Health Workforce Division's annual budget.<sup>109</sup>

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<sup>108</sup> The methodological appendix discusses projections of population and service levels.

<sup>109</sup> Based on 2011-12 expenditure.

In fact, even within spending on *remote and rural health workforce programs*, there is wasted money that could cover the cost of the reforms proposed in this report. A significant proportion of this expenditure isn't supported by evidence, is poorly coordinated and in some cases it is almost certainly ineffective.<sup>110</sup>

The cost of our reforms could easily be covered by reducing funding for ineffective programs. For example, cutting the General Practice Rural Incentives Program by one fifth would save \$23 million a year. Abolishing the Medical Rural Bonded Scholarship scheme would save \$13 million a year.<sup>111</sup>

The cost of our proposed reforms is very small. There are many ways to fund them without cutting the quality or amount of health care. The cost of change is no excuse for inaction.

Over time, this modest investment will generate real benefits. Primary care improves health and reduces hospital admissions.<sup>112</sup>

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<sup>110</sup> Mason (2013) describes several ineffective programs and describes a complex and poorly coordinated policy response.

<sup>111</sup> Together, this would save \$36 million. Figures are for 2012-13. GPRIP expenditure is projected to decline. If this occurs, the savings for 2015-16 would only be \$19 million (calculations based on *ibid.*), but it is worth noting that expenditure for this program has exceeded projections in the past.

<sup>112</sup> The broader benefits of primary care are clear (see the Introduction above), but its impact on hospitalisation is difficult to quantify. A recent systematic review found inconclusive support for an association between more primary health care resourcing and reductions in hospitalisations that could have been prevented by primary care, Gibson, *et al.* (2013). Grattan Institute intends to analyse this relationship when requested data becomes available.

While it is difficult to know exactly how big the benefits will be, we can estimate part of the impact on hospital costs.

One benefit of primary care is illnesses being caught sooner, making people's condition less serious when they have to go to hospital. To measure this, we used national data on public hospitals to see how much access to primary care reduces the cost of hospital visits.<sup>113</sup>

This analysis is only indicative, and benefits of this kind might take some time to appear. But our analysis suggests that each additional full-time work equivalent GP per 100,000 reduces the cost of a hospital visit by over \$7. This means that reaching the five-year target proposed in this report could save over \$30 million a year from this cost reduction alone.<sup>114</sup> The benefits are likely to be much greater. This figure only captures some of the most extreme flow-on effects of primary care, making it a very conservative estimate.

It doesn't include hospital visits that were avoided altogether.<sup>115</sup> It doesn't include avoided illnesses that aren't serious enough to cause a hospital visit. Most importantly, it doesn't include all the

financial and other costs of ill-health that are suffered by patients, and their families, communities and employers.<sup>116</sup>

If all these costs were included, it is almost certain that our suggestions wouldn't just make the health system fairer – they would also pay for themselves.

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<sup>113</sup> Based on the measure of access used in this report. This estimate uses the National Hospital Cost Data Collection (patient-level data) provided by the Independent Hospital Pricing Authority.

<sup>114</sup> It may be difficult to 'harvest' these savings, but there is still a strong economic, if not financial, case for the changes we propose. More detail on the estimate is provided in the methodological appendix.

<sup>115</sup> Reductions in preventable hospital admissions have been linked to primary care in the literature. Grattan Institute has requested data to allow analysis on this issue and will publish on this topic in the future.

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<sup>116</sup> There are two other reasons this estimate is conservative: it is based on state averages for hospital admissions, which are actually much higher in areas that are more remote (as discussed above); for this dataset, coverage for rural and remote areas is poor, meaning the effects of extreme primary care deprivation may not be captured.

## 8. Conclusion

Gaps in access to GP services have persisted for generations. Based on current trends, they will persist for decades to come. Policies such as bonding doctors to rural areas, paying doctors more, expanding training places, and recruiting from overseas have worked in some inner regional areas, but haven't closed the worst shortages. More of the same won't fix the problem.

People living in the most under-served areas – one in twenty Australians – have waited too long for access to GP services. The consequences are serious. When people can't get GP care, they are more likely to get sick and can even end up in hospital when a simple condition worsens.

Across Australia, people have a right to understand the minimum level of care they can expect. The Government should set a clear target, committing to bringing the bottom seven rural and remote Medicare Local areas up to a basic minimum standard.

This is a realistic goal that can be achieved in five years. But it will take new approaches – GPs can't do it alone. Instead, they should be part of a team of health care workers with a mix of skills. In many other countries, pharmacists and physician assistants have worked alongside GPs for years. In Australia, trials have been very promising, but resistance to change has stopped these reforms from gaining traction.

Pharmacists are highly trained health professionals, who are easy to access in most communities. With additional training, they can vaccinate against disease, issue repeats when GPs and patients

agree, and help manage chronic conditions.

Physician assistants can work with GPs to lighten their workload. Supervised by GPs, they can diagnose, prescribe and treat a wide range of health problems. They can deliver care of the same high quality as GPs, with high patient satisfaction and for a lower cost. These strategies are not 'second rate' solutions. Overseas experience shows that quality of care for the types of services we propose is just as good with pharmacists and physician assistants as with GPs.

GP services in low-access areas are often fragile. GPs are over-worked and patients can't get the care they want. Our recommendations will shore up existing services. They will make sure GPs are supported better and can use their unique skills as effectively as possible. Rather than bypass GPs, these changes put them at the centre of a stronger primary care team.

Pharmacists would share care plans and health records with GPs, and physician assistants would be employed by GPs. Working within this team will let GPs focus on the most complex cases. For patients, waiting times will be shorter and visits will cost less. These reforms are very affordable. In 2011-12, it would have cost just \$30 million to fill the worst access gaps.

Australians shouldn't wait for decades for access to primary care. Hoping that undergraduate enrolments will trickle down to rural communities is not a credible plan. Action now on physician assistants and pharmacist roles means that progress could be achieved within five years. The only problem is getting started.

## 9. Methodological appendix

### 9.1 Estimates of GP services per person

Data on GP services for Medicare Local areas are drawn from the Medicare Locals website.<sup>117</sup> As discussed in the body of the report, the full-time workload equivalent (FWE) measure is used, which is based on Medicare billings. Our analysis is based on the target of bringing the bottom quintile of Medicare Locals up to the 20<sup>th</sup> percentile of GP FWEs per capita.

To confirm that these areas needed new responses, we investigated the impact that recent trends would have on service levels if they continued. We also checked whether it would close the gap between low-access areas and the 20<sup>th</sup> percentile if people used services in neighbouring Medicare Locals.

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<sup>117</sup> Australian Government (2013). Populations figures are drawn from the Census, using concordances for Medicare Local areas. These are more accurate than the mid-year ABS resident population measures used in many Government and Medicare Local reports and data, including the Medicare Locals website. Using the alternative figures (mid-year estimates) results in lower reform cost estimates, making Census figures both a more accurate and a more conservative choice. An analysis of different sources of GP workforce data (including our data source, AIHW and AMPCo) found general agreement between them, including at a scale (Divisions of General Practice) similar to Medicare Local areas. Alternate data sources showed fewer GP FWEs in more remote areas, partly because they are based on location of principle practice and cannot capture part-time GP work in these areas, Mazumdar, *et al.* (2013).

### Will continuation of recent trends take care of service gaps?

The Department of Health and Ageing does not publish long-term GP FWE data below the state level. As a result, we used state-level data which dates back further.<sup>118</sup>

Of the Medicare local areas in the bottom-fifth for GP services per capita, two are territories (the Northern Territory and the ACT) and seven are located in Western Australia and represent the vast bulk of the state (85 per cent of its population). This means that state figures for the ACT, the NT and WA are a reasonable indication of trends in three quarters of the lowest-access Medicare Local areas.

Projections based on five-year average growth rates were generated using Census population figures and GP FWE statistics. They show WA and the ACT almost flat-lining, with no meaningful increase in services per person by 2018.<sup>119</sup> Service levels in the NT rise to 80.6 GP FWEs per 100,000 population by 2018 – below the target of 84.1 (see Figure 25).

The combination of these projections, and the projections by remoteness discussed in the body of the report, suggest that little hope can be held out for most low-access rural areas reaching

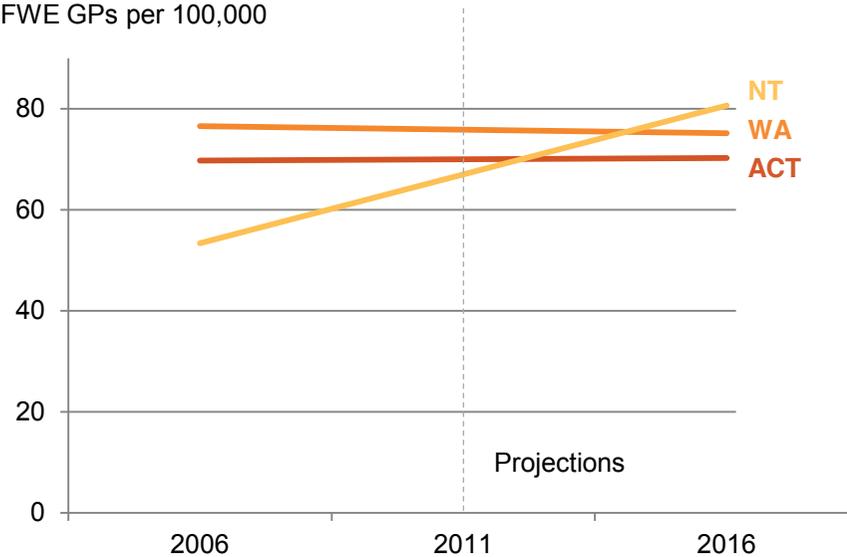
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<sup>118</sup> Department of Health and Ageing (2013a)

<sup>119</sup> As the most recent ABS population projections are based on the 2006 Census, we used more up-to-date population projections from the three states, Department of Planning (Western Australia) (2012); Chief Minister and Treasury Directorate (Australian Capital Territory) (2013); Northern Territory Department of Treasury and Finance (2013).

our target within five years. The exception is the Northern Territory, but the growth rate in the last five years there has been abnormally high and this may not be sustained.

**Figure 25: Projected growth in services per capita, WT, NT, ACT**  
FWE GPs per 100,000



Source: Grattan Institute

### Can't people go to a GP just outside their Medicare Local area?

It is possible that people living in a Medicare Local area with too few GPs could simply go to the neighbouring Medicare Local area. We investigated this question in two ways.

First we looked at the total 'surplus' GP services that are available in the areas surrounding low-access Medicare Local areas. We defined the surrounding areas that people may travel to for GP services as Statistical Areas Level 3 (in the Australian Bureau of Statistics statistical geography framework) that border a Medicare Local area.

Using the surrounding Medicare Local areas would clearly be too large for this purpose – they sometimes make up an entire state. Statistical Areas Level 3 (SA3s) are “a medium sized region with a population of 30,000 to 130,000. They represent the functional areas of regional cities and large urban transport and service hubs.”<sup>120</sup> This means that bordering SA3s are often quite large. In most cases, it is unlikely that a large number of people will go outside their Medicare Local area, and also outside neighbouring SA3s, to visit a GP (at least outside cities).

We defined 'surplus' GPs in neighbouring SA3s areas as any GPs FWEs above the median GP FWE per capita level (for Medicare Local areas). A second requirement was that the Medicare Local area that neighbouring SA3s belong to must also have a 'surplus' above the median GP FWE per capita level. Only this 'surplus' is available to surrounding areas.

<sup>120</sup> Australian Bureau of Statistics (2012)

When more than one Medicare Local used a 'surplus' in the same SA3, the SA3 'surplus' was divided by the number of low-access MLAs that shared them. For the SA3s, GP FWE figures were estimated by using GP full-time equivalent figures from the 2011 Census, then converting these to FWE estimates using the full-time equivalent to FWE ratio in each Medicare Local area (based on Department of Health and Ageing data).

It is important to note that this analysis uses assumptions which overstate the access people are likely to get from surrounding areas. It assumes that *all* the 'surplus' is allocated where it is needed most, rather than soaked up by greater service use within better-served Medicare Local areas.

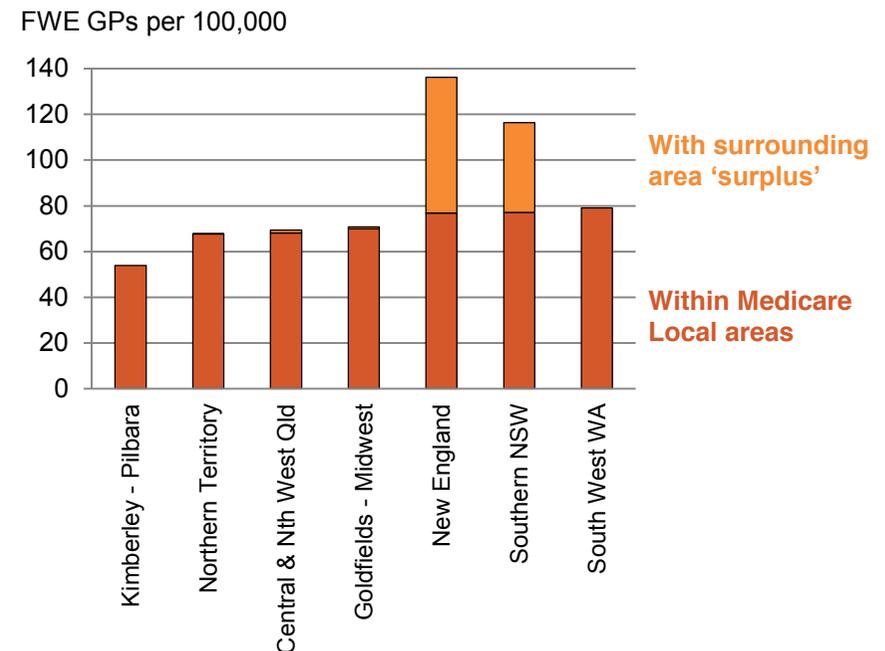
Figure 26 shows the impact of these assumptions. There is negligible change for most of the Medicare Local areas. New England and Southern NSW, however, both rocket well above the target level of services per person.

We checked whether actual GP services access was higher than expected in these areas using data from a 2010-11 ABS survey data about GP service use.<sup>121</sup> The reported average frequency of visiting a GP in the previous year correlates closely with our main access metric for Medicare Locals (see Figure 27).

This is expected. Both measure of access to GP services. But our measure is of services delivered within Medicare Local areas, while the ABS data captures services used by residents of Medicare Local areas. If a significant number of people were

getting services in neighbouring Medicare Local areas (making our measure misleading) the relationship would not be as strong.

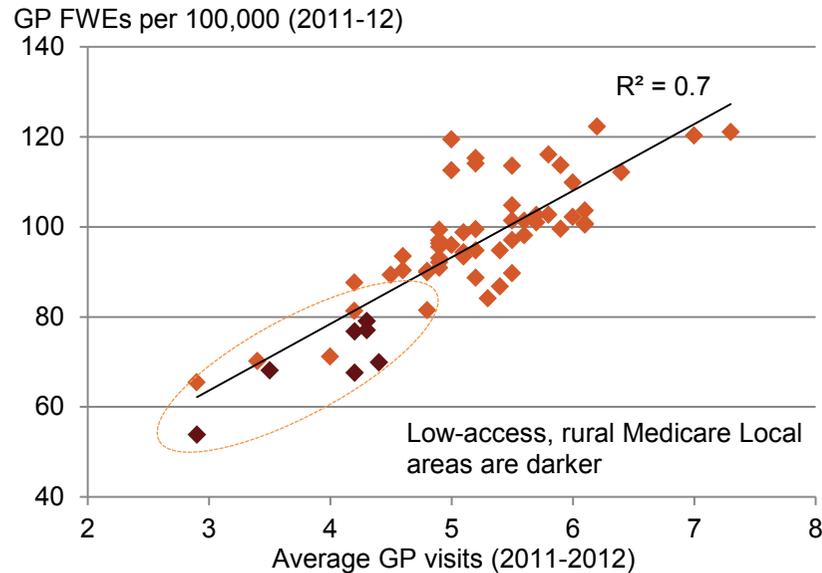
**Figure 26: The impact of accessing neighbouring 'surplus' GP FWEs on service levels, low-access Medicare Local areas**



Source: Grattan Institute

<sup>121</sup> Data are summarised in National Health Performance Authority (2013a).

**Figure 27: GP FWEs per capita and average visits per capita, 2010-11 and 2011-12**



Notes: The ellipse encloses the entire bottom quintile  
 Source: Grattan Institute, National Health Performance Authority (2013a)

For GP visits per capita, New England is ranked 53<sup>rd</sup> out of 61 Medicare Local areas, while Southern NSW is ranked 51<sup>st</sup> – both rankings are within the bottom quintile. Their rankings are even worse for after-hours service use, and are also low for the proportion of people who reported seeing a GP in the past year (see Figure 28). Only on this final measure does one of these two (New England) escape the bottom quintile, and only by four places.

These analyses indicate that in most cases there are insufficient ‘surplus’ GP services in neighbouring areas to address the gap in low-access Medicare Local areas. In the two instances where there may be, evidence of GP service use indicates that surrounding areas are not helping to fill the gap.

**Figure 28: Ranking among Medicare Local areas by three GP access metrics, New England and Southern NSW, 2010-11**

	New England	Southern NSW	Central & North West Qld
Avg. GP visits per person	51	53	53
Avg. after-hours visits per person	59	56	58
Saw a GP in the last year (% pop'n)	46	57	58

Source: National Health Performance Authority (2013a)

**What about services that aren’t billed through Medicare?**

Some medical services are not billed through the Medicare Benefits Scheme (MBS). This includes some Aboriginal health services, as well as services provided in state prisons, or by a hospital and not billed to the MBS. These services might employ a salaried doctor to provide services directly to patients.

These non-billed services might have an impact in some low-access areas, however, the results of the ABS Patient Experience Survey discussed above suggest that it is unlikely to be big enough to close the service level gaps between the bottom

quintile (by our measure) and the rest of the country.<sup>122</sup>

The questionnaire for this survey does not specify if the GP who provided services for respondents works in private practice. Based on rankings for the average number of visits reported in this survey, our low-access areas are all still among the 16 Medicare Local areas with the lowest access. Only three are outside the lowest quintile.

Another indication is that, according to 2011 Census data, nationally only 291 GPs (less than one per cent of the total) worked in categories other than general practice (which the ABS characterises as generally private or group practices), and in categories that are likely to focus on providing general practice primary care.<sup>123</sup> Even the entirety of this national total only makes up 8 per cent of the GP headcount in our low-access areas.

## 9.2 Pharmacist services and costs

This report proposes three reforms for pharmacists' roles: allowing them to vaccinate, issue repeats with a GP and patient's consent, and expanding their role in chronic disease management as part of a chronic care team.

The analyses requested from the BEACH program were based on data collected between April 2011 and March 2012. These data were filtered to generate a subset of 'less complex' encounters in which only one problem was managed. In these encounters, no

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<sup>122</sup> ABS (2012)

<sup>123</sup> These categories are: other health care services; social assistance services not further defined; and other social assistance services.

treatment, procedures, tests, or referrals (except advice and education), were undertaken. In each of these cases either one or two medications were prescribed, advised or supplied to the patient. The exclusion criteria were applied to the total sample in a step-wise manner, as shown in Figure 28.

The final subset of data represented 18.6 per cent of visits – or just under 23 million visits per year when extrapolated to all visits in Australia.<sup>124</sup>

These 'less complex' visits are the basis of our analysis of vaccinations and repeats. Additional data on chronic conditions were sourced from previously published BEACH data.<sup>125</sup>

We estimated that at least 4.4 per cent of all encounters were both 'less complex' and for vaccinations or repeat prescriptions.<sup>126</sup> As discussed below, we assume a subset of these visits can be shifted to pharmacists.

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<sup>124</sup> 95% confidence interval: 17.6-19.5%.

<sup>125</sup> Knox and Britt (2004); Britt, *et al.* (2012); *ibid.*

<sup>126</sup> This is a conservative assumption based on the minimum possible amount of repeats (3.6 per cent). There is a high missing rate in the BEACH data to the question identifying repeats, meaning it could be as high as 8.5 per cent.

Figure 29: BEACH data on 'less complex' GP visits

	Number	% of full BEACH dataset	Number after exclusion
All encounters	99,030	100%	
Encounters with no Medicare /DVA item number/data missing	11,725	11.8%	87,305
Non-surgery or non-site specific encounters	6,444	6.5%	80,862
2+ problems managed	31,764	32.1%	49,097
Therapeutic treatment*	5,988	6.1%	43,109
Clinical treatment provided**	6,299	6.4%	36,809
Referral at encounter	3,971	4.0%	32,838
Pathology, imaging or other test/investigation	6,739	6.8%	26,099
3-4 medications	1,064	1.1%	25,034
No medications at encounter	6,661	6.7%	18,374

\* Other than immunisation

\*\* Other than general advice and education

## Vaccinations

Vaccinations are relatively straightforward to classify. BEACH data shows that 4.7 per cent of *all* trips to the GP involve a vaccination. Of all 'less complex' visits, 5.7 per cent were for vaccinations. This works out to be 1.1 per cent of all visits – about 1.3 million per year.

## Repeats

Almost half – 46 per cent – of the 'less complex' visits, or about 10.5 million visits per year, were for pre-existing conditions. These visits for old problems had one or two medications prescribed.

BEACH provided additional data on the number of visits which had a 'continuing' medication provided for an 'old' problem. There was a high missing rate for data on this question, with a third of encounters not fully specifying whether the drug prescribed was new or continuing. However, at least 2.84 per cent of all encounters involved issuing one continuing medication for an old problem, and a further 0.5 per cent involved issuing two continuing medications – a total of 3.4 per cent. This number could be almost twice as high (6.2 per cent), depending on how the missing data is treated.

Some of the 'continuing' medications will not be restricted PBS medicines but rather over the counter medicines that have been recommended by the GP. We conservatively estimated that 1 per cent of visits (less than a third of continuing medications for old problems) would be for repeats eligible for pharmacist-issued repeats.

### Chronic care

People with one or more chronic conditions tend to see GPs very frequently – the average person with diabetes saw a GP 13.7 times in 2004.<sup>127</sup> Rates of chronic disease in the under-served Medicare Local areas were close to the national average, or above it.<sup>128</sup> While 42 per cent of trips to the GP involved the management of a chronic illnesses, 56 per cent of 'problems managed' were chronic.<sup>129</sup>

Estimating the number of visits to the GP that could be managed by a pharmacist was more complicated for chronic conditions. Our data from the BEACH survey showed that 2.7 per cent of all problems were 'less complex' visits for 13 major chronic illnesses.<sup>130</sup> However, this category would also capture visits where a repeat was issued, as well as some other aspects of chronic care management (such as recommending an over-the-counter medicine or giving relevant information about a medication). The true potential scope of chronic disease management is likely to be much larger.

We have assumed that each GP referral to a pharmacist for chronic care averts six GP visits per year. This is a conservative assumption which still allows for several GP visits.

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<sup>127</sup> Knox and Britt (2004). They also had an average of 3.8 other problems.

<sup>128</sup> Based on age-standardised rates in Social Health Atlas of Australia (2013). Age-standardised rates of hypertension were 18% lower than the national average for Perth North Metro, and 30% higher for diabetes in the Kimberley-Pilbara.

<sup>129</sup> Britt, *et al.* (2012)

<sup>130</sup> Hypertension, asthma, osteoarthritis, diabetes, lipid disorders, chronic obstructive pulmonary disease, arthritis, rheumatoid arthritis, osteoporosis, ischaemic heart disease, depression and anxiety.

A financial incentive may be needed to encourage GPs to refer patients to pharmacists for chronic care, and to cover the time costs of GPs liaising with pharmacists.

Existing items do not cover collaboration with pharmacists, so we suggest an MBS item number should be developed for this purpose.<sup>131</sup> One potential payment model would be paying the half of the current Medical Benefits Scheme-A fee (\$8.30) for referring patients to a pharmacist for provision of repeat prescriptions, and the same amount for checking-in with the pharmacist. These fees could be billed to the MBS.

Assuming that the GP will call the pharmacist three times a year per patient, plus an initial referral, this adds about \$782,000 in costs to our proposals.<sup>132</sup>

### Substituting visits

Even with these conservative filters, not all of these 'less complex' visits will be able to be substituted by a pharmacist – for example, the patient may have an underlying health condition that means they must be regularly seen by a GP. A pharmacist may not be available, or a GP may not want to refer a patient for a range of reasons.

We first set a 'target' of visits to be conducted by pharmacists – 5 per cent of the current GP workload. Although the mix of visits will

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<sup>131</sup> A 'case conference' item number already exists, but there are very few billings for it. There are alternatives to an MBS payment – for example, a practice incentive payment could be used.

<sup>132</sup> This is again based on the assumption that referral to a pharmacist replaces six GP visits per year.

vary by area, we have assumed 3 per cent of visits will be for chronic disease management, and the rest will be evenly divided between repeats and vaccinations (1 per cent each).

This is less than half of the total number of visits that could potentially be seen by a pharmacist according to our calculations discussed above. Using this figure, we calculated a ‘services per year’ needed in each Medicare Local Area.

### Spatial analysis of pharmacist services

Low numbers of pharmacists in some areas clearly reduces the number of services they can provide. To analyse whether this would impact the reforms proposed here, we requested ANS Census data on pharmacist full-time equivalent by place of work at the SA2, SA3 and Medicare Local level. We then used this to make comparisons of geographic access within the MLAs.

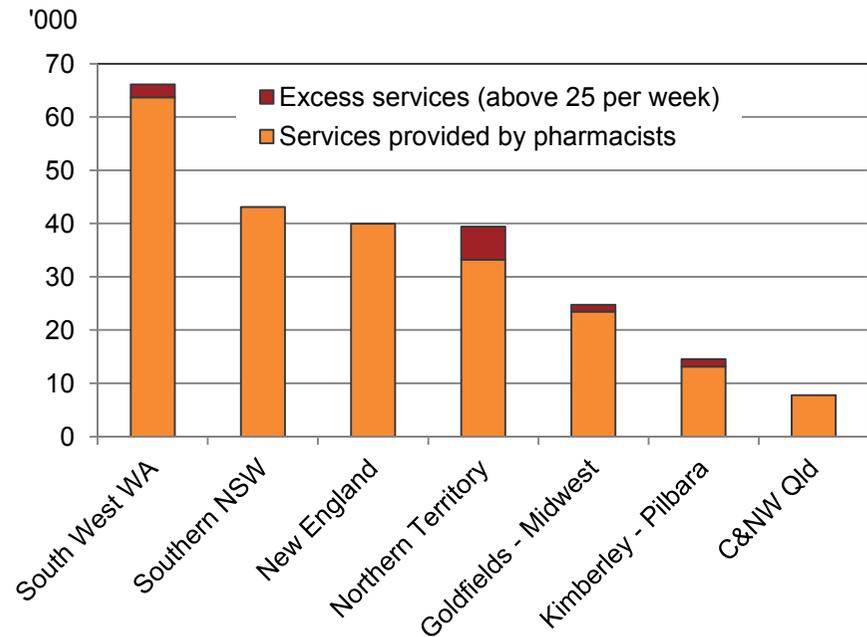
At the SA3 level, nearly every area had at least one pharmacist.<sup>133</sup> Many of the under-served Medicare Local areas had comparatively fewer pharmacists per capita than the rest of Australia. However some areas, such as Fremantle, had many more pharmacists per capita than average.

To estimate substitution, we assumed that each GP in an SA3 was providing the same number of services as the Medicare Local average. We then calculated a service rate per SA3 based on this, and used our benchmark of 5 per cent of GP services shifted

<sup>133</sup> Exceptions were mainly unpopulated or low population areas such as the Jervis Bay Territory, some national park and catchment areas, the Cocos (Keeling) Islands and Lord Howe Island. The main populated area was Daly-Tiwi-West Arnhem in the NT.

to pharmacists to estimate the number of services this would mean for each pharmacist in an SA3. The total number of services is shown in Figure 30.

**Figure 30: Annual services provided by pharmacists under reform scenario, by Medicare Local areas**



Source: Grattan Institute analysis

We set a maximum number of 25 additional services for pharmacists to provide each week. Visits above this were transferred to the services to be conducted by physician assistants. We have assumed that new visits to doctors will not be

less complicated than those that pharmacists take on.

### Potential increased demand for vaccines

Once vaccinations can be given in pharmacies, without long waiting times and with lower fees, there might be more demand for vaccinations. If *all* GP vaccinations in low-access areas went to pharmacists in low-access areas – an extremely unlikely scenario – this would work out to an average of around 18 additional vaccinations per week. The cost of these additional vaccinations would be \$2 million a year, which is only a modest increase in the overall cost of our reforms. We have not, however, included an estimate of ‘new’ demand in our figures.

### Paying pharmacists

There are a variety of ways in which pharmacists could be compensated for taking on these roles. Pharmacies make most of their money from mark-ups and dispensing fees on PBS medications. Although there are some clinical care provisions under the *Fifth Community Pharmacy Agreement*, direct payment for service is limited in Australia. This report proposes moving towards a service-based payment system.

For vaccinations and repeats, we suggest a fee equivalent to a third of the current MBS type-B payment of \$36.30. For chronic care, we suggest a capitated model which works out to an average of half the MBS-B payment per visit. These fees would respectively amount to \$12.10 and \$18.15.

These models all assume that pharmacy mark-ups and dispensing fees remain unchanged.

**Figure 31: Summary of pharmacist GP service substitutions**

Service type	Estimated proportion of GP visits (per cent)*	Estimated shift to pharmacists (per cent)	Payment to pharmacists	Cost
Vaccinations	1.1 - 4.7	1	\$12.10	\$568,000
Repeats	3.4 – 6.2	1	\$12.10	\$568,000
Chronic care	2.7 - 42	3	\$18.15	\$2.55m**

\*Lower bound represents ‘less complex’ visits. Upper bound is overall rate in GP visits. \*\*Plus co-ordination costs of \$782,000 as outlined above.

### Patient savings from visiting pharmacists

‘Less complex’ visits may be more likely to be bulk billed, although data was not available. We assumed that the rate of non-bulk billed ‘less complex’ appointments would be half the overall rate. For example, in the Southern NSW Medicare Local, 37 per cent of appointments are not bulk billed. We assumed the rate for ‘less complex’ visits would only be 18.5 per cent.

With this conservative filter in place, patients across the seven areas would save around \$992,000 in GP fees.

### 9.3 Physician assistant workload and costs

After an expanded role for pharmacists was taken into account, we estimated how many physician assistants it would take to fill the rest of the gap between GP FWE per capita levels in low-access areas and the 20<sup>th</sup> percentile.

### Supervision

Physician assistants cannot work without the supervision of a doctor. We estimated that supervision would take 10 per cent of GP time per physician assistant. For a full-time GP, this would be around four hours a week.

Some of this time would be spent directly supervising physician assistants – for example joint consultations with a patient, debriefing, or giving instructions or advice over the phone. But some of the time would be spent reviewing physician assistant notes without the physician assistant present. On average, we assume that half the supervision time involves direct physician assistant involvement.

Based on this, the number of physician assistants is the number needed to fill the remaining GP FWE gap, multiplied by 1.15 to take account of both the GP and physician assistant supervision time required.

### Service mix

Physician assistants are typically used to manage the more routine and straightforward aspects of medical care. For this reason, we have assumed that physician assistants will not do Type C and D consultations (which are longer and typically more complex). The exception is when these consultations take place outside the GP clinic, as we envision physician assistants providing some clinics in remote locations (as they did in Queensland trials), where they may be required to handle more complex cases with remote supervision.

To estimate the cost of this difference in service mix, we calculated how much it would change Medicare billings based on

current GP billing patterns in Medicare Local areas. We assumed that in-clinic Type C and D consultations would be replaced with Type B consultations. The average lengths of consultations of different types were taken from published literature.<sup>134</sup>

Changing the service mix in this way will increase the cost of PA services, relative to GP services (a greater number of shorter appointments result in higher Medicare billings). To ensure that our costings are conservative, we have not taken into account any increase in the time taken to process patients and move them in and out of the consultation room.

*Number of in-clinic Type C appointments*

*X (avg. length of Type C / avg. length of Type B appointments)*

*X (avg. billings per Type B appointment)*

An example for the Australian Capital Territory (Type C):

*141,707*

*X (29.2 / 13)*

*X 36.66*

*= \$11,696,115*

This adjustment increased the cost of physician assistant services, but slightly, by an average of only 3.2 per cent.

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<sup>134</sup> Britt, *et al.* (2002); Britt, *et al.* (2004). Average lengths: Type B, 13 minutes; Type C; 29.2 minutes; Type D; 44.9 minutes.

### Employment costs and clinic surplus

We assumed that average physician assistant salaries would be at the mid-point of the salaries used in the 2009-10 Queensland trials, adjusted for inflation: \$105,412.<sup>135</sup> This is a generous assumption, as experienced physician assistants were recruited from the USA. On average, recent domestic graduates are likely to be paid less.

To estimate the on-costs of employing physician assistants, we used ABS data on the financial performance of general practice taken from the Health Care Services Survey.<sup>136</sup> To generate estimates for different costs for clinical employees, we divided clinical costs by the number of clinical staff, and other costs by the total number of staff. The only cost excluded was clinical “registered medical/health practitioners and other staff providing health care services”. For physician assistants, these costs will be met by their salary, costed separately.

As Figure 33 shows, we assumed that, on average, some costs will not go up by the full average cost per employee. We assume that when a physician assistant is employed, the following costs will only go up by 25 per cent of the average cost per employee: non-clinical staff costs, clinical staff costs, administrative support services and non-medical contract costs. We assume that renting and leasing costs will go up by an average of 50 per cent.

This is because there will be some economies of scale when new staff members are added to GP clinics, which are mostly small-

scale, particularly in many areas with low-access to GP services. For example, in a clinic with just one GP and one receptionist, an entire additional receptionist, and an entire new consulting space, often won't be required.

In many cases, the estimates in the underlying ABS data are only indicative, as they have a relative standard error of 10 to 25 per cent. In one case (“purchases other”) it is over 50 per cent. However, we believe this is the best large dataset on GP practice costs, and the resultant on-cost estimate of \$63,188 seems realistic, and, if anything, conservative.

The cost of GP supervision was 10 per cent of the average GP Medicare billings per FWE (separate averages were used for each Medicare Local area). Added to this were 10 per cent of estimated out-of-pocket fees that GPs receive. The approach to estimating these out-of-pocket fees is outlined below.

Medicare billings by physician assistants (the only income they generate, due to the bulk billing requirement) were based on average GP billings per FWE within each Medicare Local area, with 5 per cent deducted for supervision (as discussed above).

Our analysis suggests that the income physician assistants generate will exceed the costs of employing them by an average of \$31,732.<sup>137</sup> As our assumptions are conservative, this figure is likely to be higher. Figure 34 shows the average breakdown of costs and income. Figure 35 shows variation in estimated surplus per physician assistant employed.

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<sup>135</sup> The range was \$95,292 to \$105,255, Miller, *et al.* (2012).

<sup>136</sup> ABS (2011)

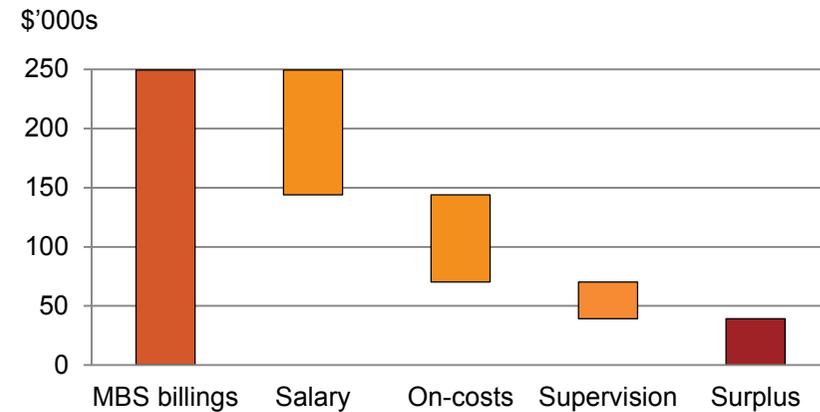
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<sup>137</sup> This is the average of the Medicare Local averages.

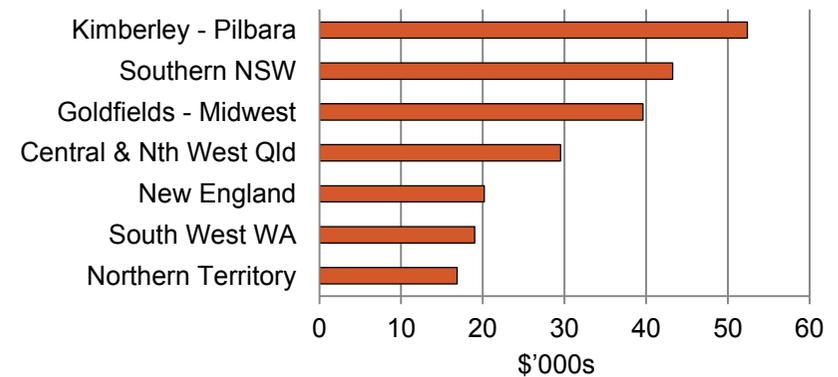
**Figure 32: Calculation of PA on-costs**

Cost	Divided by	Multiplied by
Non clinical staff	Clinical staff	25%
Clinical staff	Clinical staff	25%
Payments to admin. businesses for support services	All staff	25%
Contract, subcontract, commission expenses – medical	Clinical staff	100%
Contract, subcontract, commission expenses – other	All staff	25%
Professional & training expenses	All staff	100%
Purchases clinical	Clinical staff	100%
Purchases other	All staff	100%
Rent, leasing & hiring	All staff	50%
Insurance premiums	Clinical staff	100%
Other insurance	All staff	100%
Other expenses	All staff	100%

**Figure 33: Estimated physician assistant income, costs and surplus, low-access Medicare Local areas, 2011-12**



**Figure 34: Annual clinic surplus per PA, low-access Medicare local areas, 2011-12**



Source: Grattan Institute analysis

### Patient savings

Under our proposals, physician assistants will have to bulk bill patients. To calculate the savings for patients, for each low-access Medicare Local area we started with state-level figures for average out-of-pocket fees charged for GP visits (Medicare Local-level data were not available).

We multiplied these fees by the number of services that would be provided by physician assistants in each low-access Medicare Local area under our reform scenario. This total was then multiplied by the proportion of GP services that are not bulk billed in that Medicare Local. Bulk billing rates were based on Commonwealth Electoral Division-level Department of Health and Ageing data. Postal area concordances were used (with population weightings) to translate these rates to Medicare Locals.

To summarise, the calculations were:

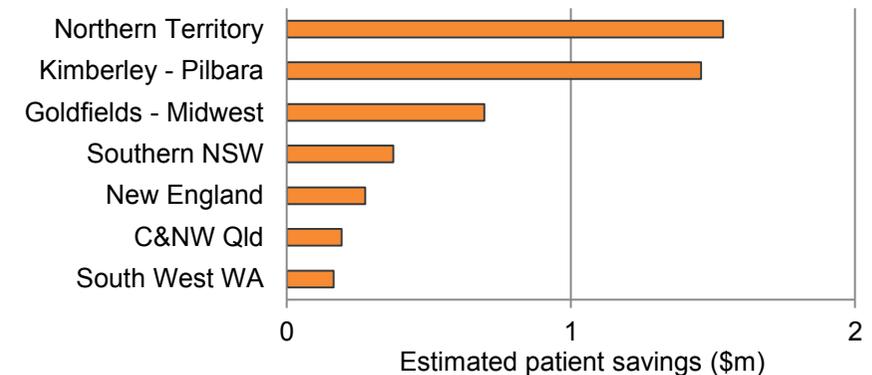
$$\begin{aligned} & \text{Average patient fee (state-level)} \\ & \times \text{physician assistant services} \\ & \times (1 - \text{Medicare Local bulk-billing rate}) \end{aligned}$$

An example for Goldfields – Midwest:

$$\begin{aligned} & 29.11 \\ & \times 82,813 \\ & \times (1 - 0.71) \\ & = 694,648 \end{aligned}$$

The total estimated patient savings from the introduction of PAs is \$4.7 million. These savings are relative to GPs delivering the services (the services are not currently provided). This figure does not take into account the change in service mix discussed above, as its impact is uncertain, but unlikely to be large.

**Figure 35: Estimated patient savings due to bulk-billing by physician assistants, 2011-12**



Source: Grattan Institute

### Ratio of GPs to physician assistants

In many places doctors are allowed to supervise more than one physician assistant. But this will not be necessary under our scenario. In all the low-access Medicare local areas, there will be multiple GPs per physician assistant. The lowest number of GPs per physician assistant is 6.4, in the Kimberley – Pilbara. The next lowest is in the Northern Territory, at 15. For GP FWEs per physician assistant, the numbers are 1.7 and 4.5.

## 9.4 Reduced hospitalisation costs

To estimate the impact of access to GP services on hospital costs, we used patient-level data from the National Hospital Cost Data Collection, which was provided by the Independent Hospital Pricing Authority.

Our analysis investigates the relationship between several factors that influence the cost of hospital admissions costs (which are weighted by their Diagnostic Related Group).

These factors include the patient’s age, gender, disadvantage and indigenous status, the complexity of their condition and how they are admitted and discharged. They also include our metric for access to GP services: GP FWEs per 100,000 in the Medicare Local area where patients live.

The table below shows the results of this regression.

**Figure 36: Regression results, GP service access and other factors that influence hospital costs, 2011-12**

	Estimate	Standard deviation
Intercept	-614.54	66.80
Admission mode: Transferred from another hospital	1050.60	47.44
Admission mode: Change of episode type	-294.80	11.50
Age (in years)	3.33	0.10
Charlson (weighted Charlson score)	64.62	1.54
Indigenous status	138.94	10.93

Living in “inner regional Australia”	33.30	7.26
Living in “outer regional Australia”	211.77	10.24
Living in “remote Australia” or “very remote Australia”	625.84	17.74
Separation: transferred to another hospital, aged care provider, or other healthcare provider	233.33	9.23
Separation: statistical discharge - type change	3939.09	20.38
Separation: patient died	-1100.53	24.09
Separation: all others apart from discharge to regular accommodation (e.g. left against medical advice)	-261.92	23.74
Sex - female	32.17	4.34
Patient treated in 2009-10	291.43	5.33
Patient treated in 2010-11	170.02	5.32
<b>Access to primary care (Full Time Work Equivalent GPs per 1000)</b>	<b>-7.14</b>	<b>0.18</b>
Alcohol over-use rate (per 100 people)	73.19	2.07
Physical inactivity rate (per 100 people)	18.41	0.79
Index of relative advantage/disadvantage	0.11	0.04
Smoking rate (per 100 people)	-22.50	1.27
Provider is a specialty women or children’s hospital	821.07	11.20

*Note: excludes hospitals with fewer than 1,000 separations  
Source: Grattan Institute, based on AIHW and IHPA data requests*

The results show that for each additional FWE GP per 100,000 people in a Medicare Local area, public hospital separations cost \$7.14 less for residents of that Medicare Local area.

Based on state averages for public hospital admissions, raising the seven low-access, rural and remote Medicare Local areas to the target proposed in this report would save \$30,270,000 a year.<sup>138</sup>

**Figure 37: Estimated reduction in hospital costs due to meeting access target**

	FWEs to reach target	Implied saving per separation	Estimated public hospital separations	Estimated savings (\$m)
Kimberley - Pilbara	30	\$216	24,869	4.62
Northern Territory	16	\$118	113,357	13.35
Central & NW Qld	16	\$114	9,834	1.12
Goldfields - Midwest	14	\$101	32,304	3.27
New England	7	\$52	42,204	2.21
Southern NSW	7	\$50	45,470	2.28
South West WA	5	\$36	74,396	2.67
Total				30.27

Source: Grattan Institute analysis

<sup>138</sup> Admissions data are from Australian Institute of Health and Welfare (2013).

As discussed in the main body of the report, this figure is indicative because it only looks at one consequence of primary care access; it does not include most private costs, avoided hospitalisations, and avoided illness that are not severe enough to cause a hospitalisation.

This makes it a conservative estimate, but it should also be noted that no model can correct for all the drivers of hospitalisation, and it is not clear how long the impact of increased primary care access would take to flow through to hospitalisations.

Grattan Institute is seeking data from the Australian Institute of Health and Welfare to determine how much access to GP services reduces admissions to hospital with preventable conditions. These data had not been provided at the time of publication.

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