



NATIONAL RURAL  
HEALTH  
ALLIANCE INC.

ABN: 68 480 848 412

National Rural Health Conference  
Australian Journal of Rural Health

PO Box 280 Deakin West ACT 2600

Phone: (02) 6285 4660 • Fax: (02) 6285 670

Web: [www.ruralhealth.org.au](http://www.ruralhealth.org.au) • Email: [nrha@ruralhealth.org.au](mailto:nrha@ruralhealth.org.au)

## Discussion Paper

# **Access to medicines and pharmacy services in rural and remote Australia**

January 2014

*This paper has been prepared to stimulate discussion on an issue of importance to rural and remote health. The views and opinions in the paper do not necessarily represent those of the National Rural Health Alliance or any of its Member Bodies.*

## Contents

The purpose of this paper.....	3
Introduction.....	4
How medicines and pharmacy services are available and accessed in Australia .....	6
Issues to be investigated in greater depth .....	15
References.....	22
Glossary .....	23
Appendix.....	31

## The purpose of this paper

Compared with those who live in the major cities, people in Australia's rural and remote areas have reduced access to prescribed and non-prescribed medicines, less advice about the use of medicines, and poorer access to professional pharmacy services<sup>1</sup>. As with so many other issues in the rural and remote health sector, there is a gradient of deficit as one moves from major cities through regional areas to remote and very remote places.

This Discussion Paper provides a preliminary exploration of these issues, and begins scoping for a project which could advise Australian governments on the best ways to modify some of these deficits.

Through amendments to programs and legislation it would be possible to move to the situation in which the supply of both medicines and the professional services necessary for their safe and effective use would be equivalent in rural and remote areas to those in major cities.

For the purposes of this paper, 'medicines' are defined as those substances listed on any of the PBS schedules (irrespective of whether an individual consumer is eligible to access it through the PBS). They therefore include medicines listed under Section 100, encompassing the HSD program, Efficient Funding of Chemotherapy, Botulinum Toxin program, Human Growth Hormone program, IVF/GIFT program, and the Opiate Dependence Treatment program. It also includes the Section 100 arrangements for supply of medicines to some 170 Aboriginal Community Controlled Health Services and to remote health services operated by the States and Territories.

The Paper deals with four topics.

Topic 1: A consideration of the supply of medicines and professional pharmacy services in Australia, describing how and where people access medicines:

- i. who authorises or prescribes access to medicines under various Schedules;
- ii. who dispenses them;
- iii. the circumstances in which some medicines may be supplied without dispensing; and
- iv. how the costs associated with the supply of medicines are handled (and what records of supply are created).

Topic 2: An analysis of the mix of supply pathways used in rural and remote areas compared with major cities.

Topic 3: Based on the evidence from 1 above, a description of the issues (including bottlenecks and inefficiencies) that need to be addressed in the proposed follow-up study and which may improve access to medications and professional pharmacy services for people living in rural and remote Australia.

Topic 4: The data sources that could be used to describe the rates of pharmacy service to people in rural and remote areas.

---

<sup>1</sup> As evidenced by the substantially lower prevalence of pharmacists working in, and the lower PBS expenditure on people living in rural and remote areas.

## Introduction

While rates of ill health are higher among people in rural and remote areas compared with those in major cities, medicines are supplied to them at a lower rate<sup>2</sup> through the PBS (see the Glossary for an explanation of terms used).

However, reimbursement through the PBS is not the only means by which the Australian Government funds access to medicines. The other reimbursement systems include the Repatriation Pharmaceutical Benefits Scheme (RPBS), Section 100 medicine provision under the *National Health Act*, and supply through public hospitals which is funded by the relevant jurisdiction. In addition, consumers can and do access medicines through private prescriptions and private purchases from within and outside Australia.<sup>3</sup>

The proportional contribution of these non-PBS sources to total access to medicines is currently not clear. From the point of view of rural patients, the issue is whether their total access, through all means, is reflected in the deficit situation existing for PBS medicines.

Access to medicines through any of the PBS categories is dependent upon access to a person authorised to prescribe medicines through the PBS or through State and Territory legislation (for example, Schedule 8 medicines), and to a pharmacy authorised to dispense medicines through the PBS (known as Section 90 approved pharmacies<sup>4</sup> or Section 94 hospital pharmacies).

People living outside major cities also have poorer access to professional advice<sup>5</sup> related to medicines, and this has implications for both the safety of patients and for the effectiveness of medicines.

For example, under Section 100, medicines are supplied in bulk to remote Aboriginal Health Services but, under the arrangement, the services of a pharmacist are generally not available to then dispense medicines to the patient. Consequently, the medicines may not be labelled (nor recorded in the consumer's health record), and the patient may not receive any advice about the medicine or ongoing review of its efficacy - all normal services available when medicines are obtained from a community pharmacist.

In addition, access to professional pharmacy services funded by the Australian Government such as Home Medicine Reviews (HMR), Meds Check and Diabetes Meds Check, Dose Administration Aids, National Diabetes Services Scheme, Opioid Dependence Treatment and Residential Medication Management Reviews (RMMR) is often limited in rural Australia and frequently unavailable in remote communities.

---

<sup>2</sup> NRHA January 2011. Australia's health system needs re-balancing: A report on the shortage of primary care services in rural and remote areas. <http://nrha.ruralhealth.org.au/publications/?IntContId=60&IntCatId=6> cited 26 April 2013.

<sup>3</sup> There are strict laws regarding ordering prescription medicines for supply from outside Australia. It still needs to be under order of an Australian prescriber. [Link](#)

<sup>4</sup> Although there are community pharmacies that are not Section 90 approved pharmacies (and therefore can only provide prescription medicines as a private prescription) they are usually located in metropolitan areas.

<sup>5</sup> As evidenced by the lower prevalence of pharmacists in these areas.

## **Potential scope of a detailed investigation into the supply of medicines and pharmacy services in rural and remote Australia**

The proposed detailed study could deal with the following issues:

1. Describe in detail how medicines and pharmacy services are available and accessed in Australia and how it differs as between rural areas and major cities. This would include details of funding, prescribing, dispensing, accessing and payment for medicines.
2. Consider the lack of integration of various programs and the impact this has on people when they move between remote, rural and urban locations. For example, QUMAX, S100 and the Closing The Gap PBS Co-payment Measure are three programs which have all had a positive impact on pharmaceutical care for Indigenous people; however they do not integrate and do not recognise and respect people's right to move between these locations.
3. Describe what is known about the impact of different models for the supply of professional pharmacy services e.g. dose administration aids, HMRs, RMMRs, Meds Checks.
4. Describe the rate of prescription writing, supply of medicines to the population (in terms of therapeutic groups e.g. medicines to treat diabetes, units and in terms of dollars) and actual consumption of medicines in Australia, across Major cities and rural/remote areas<sup>6</sup>.
5. Identify those areas where lack of information precludes a complete understanding of these issues, and suggest action to remedy this in the longer term.
6. Identify a range of issues related to supply of medicines, where people in rural areas are disadvantaged (or advantaged), attempt to quantify this, and suggest the means of overcoming identified issues.
7. Attempt to allow for regional/population differences in the need for medicines (eg differences in illness, concession holding, Indigeneity, socio-economic status, age and sex).
8. Attempt to describe practical issues relating to safe or adequate supply and management of medicines (eg whether some people do not have a safe place to store medicines, and some do not have access to optimal prescribed medicines and safe dispensing).
9. Identify if these issues differ between jurisdictions and propose the means of overcoming them.
10. Suggest means of further bolstering the supply of pharmacists and the services they provide in rural and remote areas of Australia.
11. Present case studies of how people across the country access their medicines, illustrating the sort of differences (including disadvantages) that exist across the country.
12. Recommend action by government(s) to address any negative issues and to bolster any positive issues identified.

---

<sup>6</sup> Consumption is different from purchase/acquisition. Purchased or acquired medicines may not be consumed.

## How medicines and pharmacy services are available and accessed in Australia

### Prescribing

A PBS prescription (authorisation for a person to be provided with a medicine the cost of which is reimbursed through the PBS) can only be written by a doctor, dentist, optometrist, midwife or nurse practitioner<sup>7</sup>. The PBS schedules specify the medicines and the circumstances for reimbursement; for example, doctors can prescribe a large range of medicines, while midwives and nurse practitioners can prescribe a limited range as specified.<sup>8</sup>

As far as we are aware, there is no central record of all prescriptions which have been written and issued.<sup>9</sup> Being able to count the number of prescriptions written would be useful because it would provide an understanding of the rate at which people *have the potential* to access medicines. A low rate of prescription, for example in an area where doctors are in short supply, may predispose the population to lower levels of *access* to medicines, no matter how easy it is to access a pharmacist and a pharmacy.

In some locations (eg in parts of the NT) a prescription can also be written by a registered nurse or a registered Aboriginal health worker.<sup>10</sup> While this increases access to medicines in an area where there is limited access to a doctor, concerns may arise about whether the limited range of medicines which can be prescribed limits consumer care.<sup>11</sup>

Despite their extensive knowledge of medicines, their effects and side effects, pharmacists are not permitted to prescribe medicines through the PBS. However they can prescribe and supply Schedule 2 ‘pharmacy only’ and Schedule 3 ‘pharmacist only’ medicines. Currently trials of pharmacist prescribing are occurring in the hospital setting. A major consideration is the separation of the prescribing and medicine review/dispensing/supply activities irrespective of the profession of the prescriber; this is required to remove perceived and actual conflicts of interest and to ensure consumer safety.<sup>12</sup>

PBS prescriptions are generally written by a medical practitioner. However, other health professionals - specifically dentists, optometrists, midwives and nurse practitioners - can also prescribe specific medicines within the scope of their practice.

In some locations a registered nurse or a registered Aboriginal Health Worker can also prescribe certain medicines.

Pharmacists are not permitted to prescribe medicines reimbursed through the PBS.

<sup>7</sup>[http://www.pbs.gov.au/info/healthpro/explanatory-notes/section1/Section\\_1\\_2\\_Explanatory\\_Notes](http://www.pbs.gov.au/info/healthpro/explanatory-notes/section1/Section_1_2_Explanatory_Notes)

<sup>8</sup> Eg <http://www.pbs.gov.au/browse/midwife> sighted 29/04/2013

<sup>9</sup> There is a difference between prescriptions written and prescriptions filled (ie medicines dispensed). A prescription may not be acted upon by the patient – it may be lost or only partially used, or even discarded. Similarly, a medication can be dispensed, but may not be taken.

<sup>10</sup> Pers.Com Rollo Manning

<sup>11</sup> This issue is the subject of current work through Health Workforce Australia.

<sup>12</sup> This is why another health provider cannot typically dispense – the separation of prescribing and dispensing activities works both ways. Under current Australian legislation National Health Act (section 92) medical practitioners are only permitted to dispense and supply medicines as pharmaceutical benefits in areas where they practise if there is no pharmacy available within a reasonable geographical distance, and approval will be cancelled should a pharmacy open within the area.

## Supply of medicines

Supply can occur through a process known as dispensing (which includes a review of the medicine's use, the consumer-specific labelling of the medicine and professional advice offered regarding the medicine) or through another authorised arrangement.

### *Supply by dispensing*

The preferred process is dispensing by a pharmacist. This consists of the process of supply (including consumer-specific labelling) plus the process of the pharmacist counselling the patient (in writing, on the phone or face-to-face) to ensure that the medicine will be used as intended and that its use is as safe and as effective as possible. Other authorised processes (i.e. those not involving a dispensing pharmacist) involve supply only, with little or no advice from a pharmacist.

### Community pharmacy

The majority of medicines dispensed in Australia are accessed through community pharmacies. Dispensing can be face-to-face in a registered community pharmacy or online.

Evidence of the quantity of medicines dispensed is available from PBS data from the Commonwealth Department of Health (DoH). Until recently, only medicines that attracted a government subsidy were recorded. However, details of all dispensed medicines on the PBS schedule have started to be recorded, providing a much more complete picture of the supply of medicines from community pharmacy. This is a great improvement on the quality and quantity of PBS data previously available.

Some community pharmacies offer an online service (eg Sydney-based Pharmacy Direct or Pharmacy Online Australia<sup>13</sup>). The customer is required to produce (or post) a prescription before scheduled medicines can be dispensed.<sup>14</sup>

### Public Hospital Pharmacy

Hospital pharmacies supply medication to inpatients on discharge and when patients attend emergency departments or outpatient clinics.

In general the medicines used in a hospital are agreed by the hospital's 'drug committee'. These include medicines listed on the PBS schedules (although the medicines may be used for indications not included in the PBS schedules), other medicines registered for use in Australia, and investigational and clinical trial medicines.

The amount of medicines provided on discharge from public hospitals is linked to the jurisdiction's agreement with the Australian Government regarding access of medicines through the PBS. For example hospitals in NSW and ACT cannot offer medicines through the PBS, Victorian hospitals generally only provide one dispensing of a PBS reimbursed medicine, while some hospitals in Queensland offer a repeat PBS prescription service.

Patients leaving private hospitals are usually provided with medicines reimbursed through the PBS. In both instances consumers access ongoing supplies of their PBS medicines from section 90 authorised pharmacies.

The volume of PBS medicines accessed through public and private hospitals is not clear since they are not reported separately in standard reports about PBS expenditure. It is possible that the volume is significant, especially for persons living in rural and remote areas where access to community pharmacy is more limited.

---

<sup>13</sup><http://www.pharmacyonline.com.au/>

<sup>14</sup>State or Territory legislation still requires the pharmacy to get the hard-copy.

Although details of total expenditure on medicines in hospitals may be available, the reporting does not distinguish between reimbursement systems that may or may not apply to every supply of every medicine. This is required as the same medicine may simultaneously be available through the PBS for a limited range of indications, be available through a clinical trial and be accessed by a patient ineligible to receive medicines through the PBS.

The medicines dispensed from hospital pharmacies include a range of PBS-scheduled medicines (including Section 100 medicines and chemotherapy medicines) and medicines funded through the hospital's budget (e.g. investigational medicines and medicines not listed on the PBS but funded by the jurisdictional and Commonwealth Governments).

Under current Australian legislation (National Health Act - section 92) medical practitioners are permitted to dispense and supply medicines as pharmaceutical benefits in areas where they practise if there is no pharmacy available within a reasonable geographical distance. Approval is cancelled should a pharmacy open within the area<sup>15</sup>.

### ***Supply without dispensing***

Medicines can also be supplied to patients through methods other than dispensing by a pharmacist.

- Some Aboriginal Health Services (including some run by Aboriginal Controlled Community Health Organisations and some run by State Health Departments), are supplied with multiple doses of medicines by a community or hospital pharmacy. These medicines are then supplied to the consumer by a non-pharmacist (e.g. nurse or Aboriginal health worker), with likely lower level of safety and efficacy – but at least the patient has access to a medicine which would otherwise not be available to them.
- Doctors and Nurse Practitioners can carry a limited supply of medicines for use in emergencies ('prescriber bag'), which are supplied to the patient free of charge, with instructions for use provided by the doctor or nurse practitioner.
- Remote farms can be supplied with a 'bag' of medicines to be used in an emergency or if access to a usual source of supply is interrupted.
- Ambulances carry supplies of a number of medicines for use in transit.

In addition, boxes of medicines for a specified range of emergencies are held or distributed by the Royal Flying Doctor Service (RFDS), the Australian Armed forces and on ships.

### **Overseas drug suppliers**

These are private foreign companies selling medicines, such as <http://www.vitasprings.com>. The customer is not required to produce a script<sup>16</sup>, PBS is not involved, and the customer pays the entire cost themselves, plus postage. The cost is often highly competitive. For example Melatonin, not on the PBS but potentially used for anyone over two years who has trouble sleeping, requires a script in Australia but may be imported cheaply. Melatonin costs \$30 per month on a private script in Australia, while from US websites it is possible to obtain many months' worth of Melatonin for the same outlay (\$4.95 for a pack of 100 and a maximum import of two packs, with \$20 postage and handling).<sup>17</sup>

---

<sup>15</sup>Lim D, Emery J, Lewis J & Sunderland V.B (2009) 'A systematic review of the literature comparing the practices of dispensing and non-dispensing doctors' Health Policy Vol 92:1-9

<sup>16</sup>Prescription-only items in Australia still require prescribing by an Australian prescriber.

<sup>17</sup>Pers. Com. Jo McCubbin.

A potential danger of sourcing medicines from overseas is that the consumer may not be purchasing what they have paid for due to the problem of counterfeit drugs.

It is not clear what proportion of medicines is sourced by Australians online. In 2011, fewer than 1 per cent of Australians over the age of 50 bought their medicines online<sup>18</sup>, and many of these would have been from legitimate Australian online pharmacies. No doubt a proportion of them were from overseas sources.

#### Medicines supplied through Section 100 arrangements by Remote Aboriginal Health Services

About 174 remote health services are registered to receive medicines via Section 100.<sup>19</sup> Of these, 60 are Aboriginal Community Controlled Organisations (ACCOs)<sup>20</sup> and 114 are state/territory operated.

ACCOs which are not registered with the scheme presumably rely on patients accessing PBS schedule medicines in the normal manner: dispensed to individual consumers through community pharmacies, which may involve subsidisation through the Close the Gap PBS Co-payment Measure.

For a service to be eligible<sup>21</sup> under Section 100, it must be primarily for Aboriginal or Torres Strait Islander people, the area must be classified as remote under RRMA, and the service must have safe, adequate and secure storage facilities. Also the Health Service must employ or be in a contractual relationship with health professionals who are suitably qualified under the legislation of the relevant state and territory to supply all pharmaceutical benefits covered by the Section 100 arrangement and must undertake that all supply of pharmaceutical benefits will be made under the direction of such qualified persons.

In 2011-12, about \$42.7 million worth of PBS-listed medicines were provided through this scheme to remote Aboriginal Health Services<sup>22</sup>, through which they are supplied to patients.

These medicines are sourced from community or hospital pharmacies, with a supply fee (set at \$2.81) paid to the community or hospital pharmacy, rather than a dispensing fee of \$6.63. The lower fee charged under PBS by community pharmacists reflects the fact that medicines are not dispensed to an individual consumer, but supplied in bulk and that there may be no advice or professional pharmacy services associated with supply.

Medicines arrive in bulk at the service, where they are stored securely and supplied to consumers with instructions provided by a doctor or by a nurse or Aboriginal Health Worker under the supervision of a medical practitioner. There is some controversy about the lack of opportunity for pharmacists to speak with patients, provide written instructions, review medicines and so on. This raises concerns about patient risk, and the lack of monitoring of

---

<sup>18</sup> The Pulse: Buying medicines online: know the risks. Kathy Graham 27/07/2011.

<http://www.abc.net.au/health/thepulse/stories/2011/07/27/3277837.htm> viewed 13/07/2013

<sup>19</sup> Supply of pharmaceutical benefits to remote area Aboriginal Health Services (AHSs) under Section 100 of the National Health Act.

<sup>20</sup> In total, there are about 150 ACCOs in Australia, many of which are located in areas which would not be considered remote.

<sup>21</sup> <http://www.health.gov.au/internet/main/publishing.nsf/Content/health-pbs-indigenous-eligibility>.

<sup>22</sup>

[http://www.health.gov.au/internet/main/publishing.nsf/Content/AC97597F257E6ABBCA257BF0001FE872/\\$File/Expenditure%20and%20Supply%20Factsheet%202010-12.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/AC97597F257E6ABBCA257BF0001FE872/$File/Expenditure%20and%20Supply%20Factsheet%202010-12.pdf)

adherence, poly-pharmacy issues and review of medicines<sup>23</sup> - the sort of problems which pharmacists routinely address.

Transport<sup>24</sup> of medicines from pharmacy to Aboriginal Health Service (AHS) is by courier or by post. However, some medicines (eg morphine) are classified by Australia Post as illicit and are not permitted to travel by post.<sup>25</sup>

A review of Section 100 as it applies to supply of Indigenous people was recently completed.<sup>26</sup> There has as yet been no Government response. The scheme's essential features are:

- the supply of PBS medicines to AHSs through the existing network of community pharmacies, and at no cost to the patient;
- utilising the existing infrastructure provided at the local remote AHSs, and not requiring the patient to travel to other venues;
- providing a one stop shop at the AHS (patient gets medications and advice for using them at the time of visiting the AHS);
- allowing the patient to access medicines in a culturally appropriate setting; and
- not requiring the patient (or staff) to provide Medicare cards, Pension or Health Care concession cards for eligibility purposes or to keep track of PBS Safety-Net information.

The Section 100 Support Allowance pays for two visits by a pharmacist to an Aboriginal health service per year. However the work backlog after 6 months is often so great that there is anecdotal evidence that the pharmacist has little time to achieve anything apart from 'stock control', with little or no opportunity to provide necessary professional support.<sup>27</sup>

#### A medical practitioner or nurse practitioner 'prescriber bag'

Certain medicines are provided without charge to prescribers who in turn can supply them free to patients for emergency use.<sup>28</sup>

Once a month, the doctor or nurse practitioner can complete an order form and obtain a limited number and range of medicines *gratis* from a pharmacist (who bills PBS). The practitioner can order up to a specified number of each medication each month as a Prescriber Bag ('emergency drug supply' – also known as 'Doctor's bag' supply) and no recording is required.

Although the practitioner is not meant to carry more than a specified number of units of each medicine, there appears to be no way of knowing what they have in their possession, and no way of knowing what proportion of these units of each medicine is actually provided to patients. It is not known whether medicines subject to such arrangements are more likely to be ordered and handed out in rural and remote areas than in major cities.

---

<sup>23</sup>Pers com Fran Vaughan, Rollo Manning, Anne Leversha, Lindy Swain

<sup>24</sup>Pers com Andrew Robson

<sup>25</sup>Schedule 8 drugs as defined by the relevant State or Territory drugs and poisons legislation are excluded from s100 arrangements. Also excluded are pharmaceutical benefit items supplied to medical practitioners as emergency drugs (Doctors Bag).

<sup>26</sup>Senate Community Affairs References Committee 2011

<sup>27</sup>Pers com Lindy Swain

<sup>28</sup><http://www.pbs.gov.au/browse/doctorsbag>

### Residential Aged Care Facility

The local community pharmacy or another contracted pharmacy will supply ready-for-use individual consumer pre-packs (a Dose Administration Aid, DAA) based on details supplied by the residential aged care facility and prescriptions provided. Payment is shared by the consumer and the residential facility.

### Ambulance

Paramedics employed by public ambulance services administer some medicines to their patients. These include Narcan for heroin overdoses; pain relief; medicines to address asthma emergencies; thrombolytics, etc. Similar arrangements apply through volunteer organisations but volunteers in rural and remote areas have a narrower scope of practice and a narrower list of medicines available. The paramedic is neither the prescriber nor the dispenser; the authority vests in the service under a variety of arrangements. Stock is carried in the ambulance.<sup>29</sup> It is not clear how the cost of the medicines is covered in every instance - but it is not through the PBS.

### Royal Flying Doctor Service (RFDS)

The RFDS is responsible for over 2,500 medical chests located in remote locations across Australia including at parks, police stations, remote homesteads, pastoral stations, hotels, roadhouses, Aboriginal and Torres Strait Islander communities, outback schools and mining exploration sites. The contents of the chest are reviewed regularly at a national level to ensure relevance and currency of medicines. The majority of the contents of the chest are available to be used only on advice from RFDS doctors, primarily for acute presentations.

These medical chests are made available free of charge and are funded by the Commonwealth under the RFDS Traditional Services contract. In addition, in some locations RFDS can provide medical chests on a commercial basis with proceeds returned to support RFDS operations.

### ***How does this supply vary across Australia?***

The purpose of the proposed research and action project would be to describe exactly how access and supply of medicines and professional pharmacy services differs outside major cities. At this stage Table 1 may be as close as we can get.

Expenditure on medicines could provide a proxy for actual 'service' provided by medicines; however, as Table 2 demonstrates, even expenditure data are very scarce. Only occasionally is information about expenditure in rural areas available.

In addition, it is probable that some of the expenditure is reported more than once; for example, expenditure on highly specialised drugs may also be reported under PBS government expenditure. Currently it is not clear what expenditure is reported under which category. One of the outcomes of the proposed major study would be an accurate and completed table.

---

<sup>29</sup>Pers comm. Greg Mundy CAA

**Table1: How does expenditure on and access to medicines vary across Australia?**

Source	Major Cities	Regional	Remote	Total expenditure (millions \$)
Community pharmacy	~\$750 per card <sup>30</sup> holding person pa	~\$600 per card holding person pa	~\$560 per card holding person pa	PBS \$5,492 People \$1,152
	Expenditure per non cardholder may be similar across areas, but the situation is unclear due to incomplete data			
Public Hospital Section 100 highly specialised drugs		May be lower due to complications negotiating legislative requirements around physical access to drugs	May be lower due to complications negotiating legislative requirements around physical access to drugs	PBS?~\$800 (double counting row 1 above?) People ~\$7
Private Hospital Section 100 highly specialised drugs		Likely lower (less access to private hospitals)	Likely much lower (very low levels of access to private hospitals)	PBS?~\$600 (double counting row 1 above?) People~\$8
Dispense scripts prior to discharge from hospital		Probably lower (scarcity of hospital pharmacists on site?)	Probably much lower (rare or no pharmacists on site?)	\$??? (PBS or State/Territory Health Dept??)
Overseas supplier	Likely greater need to purchase on-line in rural, but lesser infrastructure in rural areas			Less than 1% (ie less than about \$100)??
Aboriginal Health Services accessing Section100+	none	Limited	substantial	Section 100 special arrangements ~\$50
Other AHS	Individuals obtain medication from local Community Pharmacy			\$? PBS? (see row 1 above)
Prescribers (Drs) bag		Possibly lower due to lower prevalence of GPs consults		~\$15
RFDS	none	Limited	substantial	?
Boxes at remote farms, RFDS etc	none	Limited	substantial	?
Total	?	?	?	?

<sup>30</sup> See PBS in Glossary.

**Table 2: Expenditure on medicines in Australia, by remoteness area.**

Supply	MC	IR	OR	R	VR	Australia
	\$A million					
PBS 2006-07						
-govt	3678	1191	521	99		5492
-patient copayment	788	237	108	19		1152
RPBS	?	?	?	?	?	?
Section 100 highly specialised drugs (2011-12)						
-Public hospitals (govt)	?	?	?	?	?	785
-Public hospitals (patient)	?	?	?	?	?	7
-Private hospitals (govt)	?	?	?	?	?	622
-Private hospitals (patient)	?	?	?	?	?	8
Section 100 ATSI (2010)	?	?	?	45?		45
Overseas supply	?	?	?	?	?	<100
Doctors Bag 2011-12	?	?	?	?	?	13
Hospital pharmacies	?	?	?	?	?	?
RFDS	?	?	?	?	?	?
Ambulance	?	?	?	?	?	?
Total						

Sources: <http://www.pbs.gov.au/statistics/2011-2012-files/table-15b.pdf>, and AIHW 2011, and [http://www.pbs.gov.au/info/statistics/asm/asm-2010#specialised\\_drug\\_programs](http://www.pbs.gov.au/info/statistics/asm/asm-2010#specialised_drug_programs), and <http://www.pbs.gov.au/info/browse/statistics#HSD-Expenditure> (all cited 10/07/2013).

Notes: It is possible that the amounts expended as co-payments by both concession card holders and the general public is greater than the \$1,152 million described in the table above. As far as we understand it, the amounts described here are those associated with dispensing only where PBS was billed. For those medicines costing less than the PBS copayment amount, there has historically been no record of the patient's expenditure. However, as discussed, new PBS data will describe all purchases of PBS schedule medicines for the first time.

### **Professional pharmacy services**

Pharmacists who provide services through a section 90 authorised community pharmacy can seek approval from Medicare to offer Meds Check and Diabetes Meds Check services which can attract a payment from the Australian Government through the Community Pharmacy

Agreement. In addition, accredited pharmacists can conduct Home Medicines Reviews (HMRs) and Residential Medication Management Reviews (RMMRs). To do so, they need to be accredited to provide services that can attract a payment from the Australian Government through the Community Pharmacy Agreement (eg complete a short course equivalent to about 80 hrs of CPD).<sup>31</sup>

In addition to these important services provided by community and/or hospital pharmacists, hospital pharmacists also provide professional services in hospital.

As is the case for community pharmacists, the major role of pharmacists in hospitals is to provide a clinical pharmacy service to support the safe and effective use of medicines during the patient's episode of care. They check prescriptions written by doctors and make suggestions as required to maximise safety and the effectiveness of the medicines. For example, in regional and metropolitan hospitals the medication regimen for a patient may be prescribed by a medical intern and then reviewed by a hospital pharmacist, while in a small hospital it may well be the patient's GP who prescribes. In the latter case there is little likelihood of the prescription being reviewed by a hospital pharmacist because they are unlikely to be employed in a hospital with less than 50 beds. With no pharmacist on site, small rural hospitals may have the use of one visiting from a nearby larger hospital or have services provided through a contact arrangement with a community pharmacy.

Studies<sup>32</sup> indicate that employing hospital pharmacists in this role provides benefits in terms of mistakes prevented. A major Australian study showed that for every dollar spent on pharmacists to initiate changes in medication management, approximately \$23 was saved through beneficial impacts on length of stay, the probability of readmission, and the costs of medical procedures and laboratory monitoring.<sup>33</sup>

Hospital pharmacists compile a patient's medication history to validate which medicines the patient is actually taking and to identify which medicines the patient has at home. The pharmacist then checks this against the medication chart, reconciles the two lists and sorts things out if they don't match.

If a medicine is added to the patient's treatment, the hospital pharmacist then reviews the sum total of the medicines to ensure they are correct and at the correct dose. They also check the patient's clinical parameters and disease progression to make sure that the medicines used are appropriate and safe.

At discharge, the doctor writes the discharge prescription, the hospital pharmacist checks that it is correct and includes all the medicines required; the discharge script takes into consideration the medicines that the patient is already taking. The hospital pharmacist will discuss with the patient how and what to take, as well as any other noteworthy aspects of the medicines, to ensure that the patient will be as safe as possible and that the medicines they will use will have the optimal effect on their health.

---

<sup>31</sup> Further details of Meds Checks, HMRs and RMMRs are in the glossary.

<sup>32</sup> Pers Comm. Anne Leversha

<sup>33</sup> Dooley MJ, Allen KM, Doecke CJ et al. A prospective multicentre study of pharmacist initiated changes to drug therapy and patient management in acute care government funded hospitals. *Br J Clin Pharmacol* 57:4; 513-21

If the patient is discharged to a nursing home, the hospital pharmacist faxes the details to the local community pharmacist. This is based on the medication chart which the hospital pharmacist has reviewed as part of the discharge process.

Similar to the professional pharmacy services offered in the community, hospital pharmacists also provide medication review services in outpatient clinics. In some hospitals these services are provided as an 'outreach' service in the patient's home.

All of these professional pharmacist activities occur independently but in parallel with the physical supply of the medicines.

### **Issues to be investigated in greater depth**

There are a number of issues to be investigated in greater depth and which can enhance access to medicines and professional pharmacy advice in rural and remote Australia.

During the course of developing this paper, it has become evident that the 'number of prescriptions filled', although important, is not the only issue to be considered in efforts to improve the quality of pharmacy services for people in rural areas. Other issues include the following:

1. Professional Medicine Reviews;
2. pharmacy outposts or depots;
3. non-medical prescribing by pharmacists;
4. review of arrangements related to Section 100 supply to Aboriginal Health Services (AHS) and review of the additional arrangements related to pharmacists visiting and advising AHSs;
5. transport of some Section 100 medicines and maintenance of cold chain;
6. PhARIA and the 8-pharmacy rule;
7. enhancing opportunities for young pharmacists to work in rural and remote areas;
8. enhanced reporting of pharmacist labour force data by remoteness; and
9. enhanced reporting of all the PBS, Section 100 etc in such a way as to be able to validly compare the volume of dispensing/supply across the various regions of Australia, including by Medicare Locals.

These issues can be broadly categorised as:

1. improving advice, information and review of medicines for people in more remote locations or marginalised situations;
2. improving access of people in rural and remote areas to pharmacies and pharmacists (i.e. workforce numbers issue); and
3. data reporting issues.

Each of these will be considered in turn.

### **Improving advice, information and review**

Improved access to advice on medicines (e.g. professional services, giving advice, supervision, medication review etc) has real potential to improve people's health and save the health system money. For example, costs to the Canadian health care system resulting from medication non-adherence have been estimated to be between \$7 billion and \$9 billion per

year<sup>34</sup>; it may be that Australia is currently experiencing a loss of the same order of magnitude.

### ***Professional medicines review***

Professional medicines reviews (Meds checks, home medicines reviews and Residential Medication Management Reviews—see Glossary) include home medicine reviews (HMRs), the subject of a recent Government report<sup>35</sup>, are a potentially valuable service to reduce the probability of health complications due to inappropriate use of medicines. It might be assumed that these would be most effective in rural and Indigenous settings.

The cost of an HMR is covered by the Australian Government as part of the Community Pharmacy Agreement, with the HMR service provider being reimbursed for the service. However, the review has to occur within the consumer's home (unless prior approval is granted), which restricts their use in small rural, remote and Indigenous communities. When an HMR is undertaken in a person's home, the reviewer can assess if there are other issues such as non-compliance, poor storage or accumulation of medicines. They can also assess other issues such as how the patient is looking after themselves. HMRs can result in referrals for ACAT assessments as well as feedback on medicine use.

Similarly Meds Check services, which were specifically developed as in-pharmacy activity, can only be accessed when the consumer physically interacts with a pharmacist in a section 90 authorised community pharmacy.

There may be considerable opportunity for salaried pharmacists to operate in a role which reviews and advises medicines locally in a range of rural and remote settings (including Aboriginal health services). They could be based in a small rural hospital or a Medicare Local as part of a larger state or regional team.

Concerns have been expressed about the need for certain medicine reviews to be conducted in a patient's home or within the community pharmacy, which is logistically difficult in many rural and remote areas, and culturally inappropriate in a number of situations for some population groups.

The PhARIA classification system could be used to provide automatic approval for a medicine review to be conducted outside the consumer's home. There should be modification of the rules to allow medicines reviews in central locations such as a community health centre or an Aboriginal Health Service. The use of PhARIA to determine travel allowances should also be reviewed so as not to discourage pharmacists from undertaking medicines review activities in these locations.

### ***Registered locations and pharmacy depots***

Legislative restrictions, designed to make sense in metropolitan areas, over-complicate and impede the work of pharmacists in rural and especially remote areas. Of particular concern is

---

<sup>34</sup>Coombs R, Jenson P, Her M, et al. *Review of the Scientific Literature on the Prevalence, Consequences, and Health Costs of Non-compliance and Inappropriate Use of Medication in Canada*. Ottawa, Ontario: Pharmaceutical Manufacturers of Canada; 1995.

<sup>35</sup>[http://www.health.gov.au/internet/main/publishing.nsf/Content/B2992EBF12BE7E1ECA2573D8007F91F3/\\$File/HMR%20Final%20Report.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/B2992EBF12BE7E1ECA2573D8007F91F3/$File/HMR%20Final%20Report.pdf)

the fact that legislative requirements tie a pharmacist's dispensing and counselling to a registered location. This restricts them in playing what could be a very constructive role in remote communities.

The legislative opportunity for pharmacy outposts in all states (not just in Victoria, Tasmania and SA where they are currently possible) would increase the potential for pharmacists to improve the quality of access in these often underserved and needy areas<sup>36</sup>.

### ***Non-medical prescribing by pharmacists***

The concept of prescribing pharmacists (PPs) is being actively considered as a potentially useful addition to the health workforce, particularly in rural and remote areas.

To avoid conflict of interest issues, these pharmacists would be able to prescribe but would not be able to dispense medicines for the same consumer.

Their value would lie in being able to service the smaller rural centres and more remote areas where access to GPs is restricted. Prescribing pharmacists could be based in the smaller hospitals and could potentially hold clinics in a range of settings including community pharmacies. Their strength would be that, in low population areas where access to a GP for prescriptions is poor, these pharmacists could improve access to medicines for chronic diseases (e.g. prescribing by agreed protocols).

Prescribing pharmacists may also offer medication review services i.e. dual professional services not linked to the dispensing of medicines. This dual role may be appealing enough to attract pharmacists to rural and remote areas and is more likely to achieve economies of scale and be sustainable, while assisting those people in greatest need (i.e. people living in small rural centres and remote communities).

### ***Supply of medicines to Aboriginal Health Services (AHSs) under Section 100 arrangements***

The supply of medicines to AHSs under Section 100 arrangements is a valuable program assisting Aboriginal people access medicines. However, the lack of opportunity for pharmacist review and advice giving (both written and oral) is likely to reduce the effectiveness of those medicines provided under the program.

Programs such as QUMAX and the section 100 Support Allowance no doubt provide some assistance in this regard. Given that people serviced by AHSs have significant health disadvantages, more should be done to encourage greater access to medicines and professional services (for example through expansion of these programs).

### ***Transport***

The transport of medicines from a pharmacy to Aboriginal Health Service is generally by courier or Australia Post. However, some medicines (such as morphine) are reportedly classified by Australia Post as illicit and will not be transported.<sup>37</sup>

---

<sup>36</sup><http://pharmacycouncil.org.au/PDF/Rural%20Remote%20Final%20Report%20June%202009.pdf> cited 22/05/2013

<sup>37</sup>Pers com Andrew Robson

### ***Pharmacy technicians and Aboriginal Health Workers***

There may be expanded roles in medicines dispensing and management for pharmacy technicians and Aboriginal Health Workers. People in the latter professional group could have further training to improve their competencies.

### **The number of pharmacists in rural and remote areas**

Based on the best existing data, the ratio of pharmacists to population is substantially lower in rural and remote areas than Major Cities (see Tables A1, A2 and A3 in the Appendix). Their under-representation seems to be worse than for medical practitioners, and similar to the situation for allied health professionals and dentists.

Based on the latest available (11 year old!) data, the ratio of rural and remote students commencing a pharmacy degree is about half that of students from major cities (see Figure A1 in the Appendix).

The rate of prescription for the most needy people in rural and remote populations is lower than for those in major cities.<sup>38</sup>

There are already programs to encourage pharmacists to work in rural and remote locations (for example the Rural Pharmacy Maintenance Allowance)<sup>39</sup> and there have been calls made by NRHA correspondents for legislative and other change to allow pharmacists opportunities that are not linked to the four walls of a pharmacy. For example salaried positions could be established in small rural hospitals or Medicare Locals, with their incumbent providing services such as HMRs and providing assistance to Aboriginal Health Services.

### ***Enhancing opportunities for young pharmacists to work in rural and remote areas***

Young people from rural and remote areas wishing to pursue tertiary study have to overcome the double disadvantage of generally poorer access to high school education, as well as the financial barrier of having to live away from home while attending university.

The greater tendency for graduates of rural origin, and of those educated and trained in rural areas, to return to work in rural areas is well established<sup>40</sup>. This suggests a variety of initiatives that should bolster access of rural people to pharmacists:

- expanding sources of direct economic support, including scholarships to rural origin students commencing pharmacy;
- broadening employment opportunities for pharmacists in rural and remote areas (as discussed above); and
- enhancing the opportunities for pharmacy trainees and graduates to train and gain experience in rural areas.

---

<sup>38</sup> <http://www.ruralhealth.org.au/sites/default/files/documents/nrha-policy-document/position/pos-full-complementary-report-27-feb-11.pdf>

<sup>39</sup> <http://www.medicareaustralia.gov.au/provider/pbs/fifth-agreement/rural-pharmacy-maintenance-allowance.jsp>

<sup>40</sup> Walker JH, DeWitt DE, Pallant JF, Cunningham CE. Rural origin plus a rural clinical school placement is a significant predictor of medical students' intentions to practice rurally: a multi-university study. *Rural and Remote Health* **12**: 1908. (Online) 2012. Available: <http://www.rrh.org.au>

## Data and research

The Appendix describes the most recently available data on the number of pharmacists working in rural areas, the prevalence of students from rural areas, and the rate of dispensing and supply for people in rural areas.

There appear to be about 1200 pharmacy graduates from Australian Universities each year<sup>41</sup>. There are over 5,000 registered pharmacies in Australia<sup>42</sup> and (in 2012) 26,500 registered pharmacists<sup>43</sup>.

Much of the information in the Appendix below is at least a decade old. There is an urgent need for updated data and information on medicines, including as the basis for adjusted and new policies and programs.

The following research projects suggest themselves, with some of them falling into the work proposed for the follow up study to this Discussion Paper.

1. PBS data analysed to describe number and rate of scripts dispensed/supplied by remoteness, for both concession card holders and non card holders<sup>44</sup> (ie an update on the 2011 AIHW work).
2. Research on the opportunities for innovation relating to the use of medicines, such as tele-pharmacy and eHealth initiatives including those involving the electronic health record.
3. Quantification of the misadventure from poor medicine use devised in the absence of medication review services; in other words, an attempt to quantify the magnitude of the potential good from expanding access to medicines review services.
4. The collection and publishing of case studies of people's experiences in accessing medicines under a range of circumstances, situations and remoteness.
5. As a means of promoting wider understanding of matters related to medicines and their use, there could be series of published case studies: 'a day in the life of' a hospital pharmacist, an Aboriginal Health Service, and a community pharmacist.

### *Some comments on quantifying the dispensing and supply of medicines*

It is clear that per capita PBS expenditure decreases with remoteness (Table A4 in the Appendix).

Until recently, PBS data related only to those medicines for which a PBS payment is made by Medicare to the pharmacy. Sales of medicines which cost less than the patient copayment (\$36.10 for most PBS medicines or \$5.90 if the patient holds a concession card), have not attracted a PBS copayment, and consequently have not in the past been recorded in the PBS data. Previously, the only way of estimating their magnitude was through the Pharmacy Guild of Australia's annual survey, in which a sample of community pharmacists collects

---

<sup>41</sup><http://sydney.edu.au/news/pharm/1311.html?newsstoryid=4740> Viewed 29 Jan 2013.

<sup>42</sup>[http://www.guild.org.au/iwov-resources/documents/The\\_Guild/PDFs/News%20and%20Events/Publications/Fact%20Sheets/Community%20Pharmacy%20and%20Medicare%20Locals.pdf](http://www.guild.org.au/iwov-resources/documents/The_Guild/PDFs/News%20and%20Events/Publications/Fact%20Sheets/Community%20Pharmacy%20and%20Medicare%20Locals.pdf) viewed 29 Jan 2013.

<sup>43</sup><http://www.entegy.com.au/ebooks/ahpra2011-12/#/74/> viewed 29 Jan 2013(AHPRA Annual Report 2011/12).

<sup>44</sup> It is possible that new data from PBS may record details of both card and non card holders after changes made to pharmacist reporting requirements by DoHA. Consequently reporting of PBS expenditure and units of drug accessed by people living rural and remote areas could easily be reported, not only in total, but also for each ATC grouping (eg beta blockers).

representative drug sales information on medicines both attracting and not attracting PBS co-payments.

As recently as 2012, PBS data has started to record details of the sale of all medicines on the PBS schedule, both those attracting a co-payment and those not. For the first time Australia will have a record of all PBS schedule medicines accessed through section 90 authorised pharmacies. This will be invaluable in better describing the rate of medicine use across remoteness areas.

Community pharmacists are paid a dispensing fee by Medicare for each medicine dispensed, which is reduced by the amount the consumer must pay as a co-payment. The co-payment is dependent upon the consumer's concessional status, pensioner status and if they have reached the PBS safety net; therefore it can be different for each consumer (even within one family) and can change over time within each calendar year.

The dispensing fee compensates the pharmacist for, among other things, time spent ensuring that the patient has enough information to safely take the medicine.<sup>45</sup> It seems that this payment for service has not previously been included in statistical reporting of pharmaceutical benefits received by people living in rural and remote areas. Inclusion of this dollar-proxy for valuable advice would be useful in describing inequity across areas, especially as it bears on the lack of advice giving for medicines supplied to Aboriginal Health Services under Section 100.

Community pharmacists supplying AHSs under Section 100 arrangements do so for less than the dispensing fee, to reflect the fact that there is no prescription.

It may be that statistics relating to medicines supplied through Section 100 arrangements are included as part of the PBS expenditure, but it is not clear from the information currently available. Similarly, RPBS expenditure may be reported as part of PBS expenditure, but it is not clear. We are unaware of any reporting of RPBS expenditure data by remoteness, although we do know that such analysis is technically possible.

It can be assumed that almost all of the RFDS expenditure on medicines is on behalf of people living in rural and especially remote areas.

It is not clear what specific sources of information might be available to describe pharmaceutical supply in the following areas:

- overseas drug supplier;
- doctor's bag;
- ambulance; and
- State and Territory health services including public hospitals.

A potential danger in this sort of work is that one particular transaction may be counted more than once. For example, it is not clear if the medicines issued through Aboriginal Health

---

<sup>45</sup>It also rewards the pharmacist for keeping a range of PBS medicines in stock to facilitate prompt access; to review the script and ensure it is legal, appropriate and safe; to dispense and record the information as per legislative requirements; to ensure no interaction or change of therapy; to assemble, label and double check; to include any cautionary labels; and to ensure the patient has access to information and counselling.

Services, or those provided under the Highly Specialised Drug (HSD) arrangements, are also included in the data reported as PBS expenditure.

***Some other sources of information to quantify the prescribing, dispensing and supply of medicines***

The rate of prescription by GPs could be estimated from BEACH survey data (rate of prescription per 100 GP attendances and number of attendances per day) coupled with AIHW estimates of the number of GP FTEs. This would yield rough estimates which could be compared between remoteness areas.

At this stage it is not clear what data could be used to estimate the rate of prescription by specialists, dentists, optometrists, midwives and nurse practitioners.

The Roy Morgan single source database may be able to shed some light on where people purchase their medicines (eg online, overseas, community pharmacy etc).

In 2010<sup>46</sup> there were approximately 204 million prescriptions subsidised through the PBS and RPBS, and about 67 million unsubsidised prescriptions. In addition, there appear to have been about 1.2 million packs of medicines used, classified as highly specialised drugs (available under Section 100 of the Health Act), and valued at about \$664 million.

In 2012 the cost to the Australian Government of prescriptions subsidised by the PBS (including \$13 million to supply doctors' bags) was \$7.54 billion.<sup>47</sup>

---

<sup>46</sup><http://www.pbs.gov.au/statistics/asm/2010/australian-statistics-on-medicine-2010.pdf>

<sup>47</sup><http://www.pbs.gov.au/statistics/2011-2012-files/expenditure-and-prescriptions-2011-2012.pdf>

## References

1. AIHW 2003. Podiatry Labour Force 2001. Canberra 2003.
2. AIHW 2005. Rural, regional and remote health—Indicators of health. AIHW Cat. No. PHE 59. Canberra: AIHW (Rural Health Series no. 5).
3. AIHW 2010. Australian health expenditure by remoteness: a comparison of remote, regional and city health expenditure. Health and welfare expenditure series no. 50. Cat. no. HWE 50. Canberra: AIHW.
4. Joint position paper of the Australian Pharmacy Guild and NACCHO re Section 100 [http://www.guild.org.au/docs/default-source/public-documents/issues-and-resources/Pharmacy-Issues/Naccho-Joint-Position-Paper/20120420-naccho-guild-position-paper-s100\\_204247\\_1.pdf?sfvrsn=0](http://www.guild.org.au/docs/default-source/public-documents/issues-and-resources/Pharmacy-Issues/Naccho-Joint-Position-Paper/20120420-naccho-guild-position-paper-s100_204247_1.pdf?sfvrsn=0) viewed 13/07/2013.
5. Senate Community Affairs References Committee 2011: The effectiveness of special arrangements for the supply of Pharmaceutical Benefits Scheme (PBS) medicines to remote Aboriginal Health Services. Senate Report October 2011.
6. Australian Pharmacy Council June 2009. Remote Rural Pharmacists Project. <http://pharmacycouncil.org.au/PDF/Rural%20Remote%20Final%20Report%20June%2009.pdf> viewed 22/05/2013.
7. Home Medicines Review Program Qualitative Research Project Final Report. DoHA Canberra 2008. [http://www.health.gov.au/internet/main/publishing.nsf/Content/B2992EBF12BE7E1ECA2573D8007F91F3/\\$File/HMR%20Final%20Report.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/B2992EBF12BE7E1ECA2573D8007F91F3/$File/HMR%20Final%20Report.pdf) viewed 13/07/2013.
8. Australia's health system needs re-balancing: a report on the shortage of primary care services in rural and remote areas. NRHA January 2011. Viewed 13/07/2013. <http://www.ruralhealth.org.au/sites/default/files/documents/nrha-policy-document/position/pos-full-complementary-report-27-feb-11.pdf>
9. Coombs R, Jenson P, Her M, et al. Review of the Scientific Literature on the Prevalence, Consequences, and Health Costs of Non-compliance and Inappropriate Use of Medication in Canada. Ottawa, Ontario: Pharmaceutical Manufacturers of Canada; 1995.
10. PBS Information Management Section Pharmaceutical Policy Branch. Expenditure and prescriptions twelve months to 30 June 2012 <http://www.pbs.gov.au/statistics/2011-2012-files/expenditure-and-prescriptions-2011-2012.pdf> viewed 13/07/2013.
11. DoHA 2011. Australian Statistics on Medicines 2010. <http://www.pbs.gov.au/statistics/asm/2010/australian-statistics-on-medicine-2010.pdf> viewed 13/07/2013.
12. AHPRA Annual Report 2011/12 <http://www.entegy.com.au/ebooks/ahpra2011-12/#/1/> viewed 13/07/2013.

## Glossary

### *Aboriginal Health Services*

Aboriginal Health Services (AHSs) can be State or Territory run health services providing health services to Aboriginal people, or can be Aboriginal Community Controlled Health Services.

### *Aboriginal Community Controlled Health Services*

Within Australia, there are 150+ ACCHSs.<sup>48</sup> They range from large multi-functional services employing several medical practitioners and providing a wide range of services, to small services without medical practitioners, which rely on AHWs and/or nurses to provide the bulk of primary care services, often with a preventive, health education focus.

The ACCHSs form a network, but each is autonomous and independent both of one another and of government.

The integrated primary health care model adopted by ACCHSs can include:

- Primary clinical care such as treatment of illness using standard treatment protocols, 24 hour emergency care, provision of essential drugs, management of chronic illness.
- Population health/preventive care such as immunisation, antenatal care, appropriate screening and early intervention (including adult and child health checks and secondary prevention of complications of chronic disease), communicable disease control, pharmaceutical supply system, a comprehensive health information system (population registers, patient information recall systems, and systems for quality assurance).
- Clinical support systems such as :
  - Support services internal to the health service including staff training and support such as Aboriginal Health Worker training, cross cultural orientation, continuing education, management systems that are adequately resourced, financially accountable and include effective recruitment and termination practices, adequate infrastructure at the community level such as staff housing and clinical facilities, and functional transport facilities.
  - Support services external to the health service including systems for supporting visiting specialists and allied health professionals (including dental, mental health etc), medical evacuation or ambulance services, access to hospital facilities, training role for tertiary and other students.
  - Programs based on locally relevant priorities and the availability of funds; for example programs directed at rheumatic fever, substance misuse, nutrition, environmental health, particular target groups such as youth, aged and disabled, young mothers, schoolchildren etc.

### *Community Service Obligation*

The Community Service Obligation (CSO) ensures that every pharmacy in Australia can obtain medicines subsidised by the Pharmaceutical Benefits Scheme (PBS) from their wholesaler within 24 hours, no matter where they are located.<sup>49</sup>

---

<sup>48</sup> <http://www.naccho.org.au/about-us/naccho-members/>

<sup>49</sup> Pers comm. Kelly Gourlay, PGA

### ***Consumers, patients and customers***

The terms consumer, patient and customer have been variously used throughout this discussion paper, to denote end-users of medication. Depending on the context of the interaction with the health system, these people could be classified as either of these three terms.

### ***Drug Administration Aid (DAA)***

DAAs are devices which assist people to take the right medication at the right time. The Webster pack is an example of a DAA.

DAAs are devices or systems designed to assist consumers in the community to better manage their medicines, with the objective of avoiding medication misadventure and associated hospitalisation.<sup>50</sup>

The devices usually consist of a sheet of hermetically sealed blisters of medicines set out in a calendar pack that must be tamper proof once packed. Each dose compartment contains either single dose/s of one medication type or multiple dose/s of one or more medication types for a particular time and date.

### ***Home Medicines Review***

A Home Medicines Review (HMR) involves the patient, their general practitioner (GP), an accredited pharmacist and regular community pharmacy.<sup>51</sup> In some cases other relevant members of the healthcare team, such as nurses in community practice or carers, are included. The accredited pharmacist visits the patient at their home, reviews their medicine routine and provides their GP with a report. The GP and patient then agree on a medication management plan.

The HMR program aims to increase quality use of medicines and reduce adverse medicine events. As part of this program, an accredited pharmacist must conduct a comprehensive review of a patient's medicine in the patient's home.

The objective of a HMR is to:

- achieve safe, effective and appropriate use of medicines by detecting and addressing medicine related problems that interfere with desired patient outcomes
- improve the patient's quality of life and health outcomes using a best practice approach, that involves cooperation between the GP, accredited pharmacist, other relevant health professionals and the patient (and where appropriate, their carer)
- improve the patient's and health professional's knowledge and understanding of medicine
- facilitate cooperative working relationships between a patient's health professionals to improve their health and wellbeing
- provide medicine information to the patient and other health professionals involved in the patient's care.

A GP can refer a patient to a community pharmacy that employs an accredited pharmacist to conduct the HMR on their behalf, or directly to an accredited pharmacist to conduct the

---

<sup>50</sup> <http://www.5cpa.com.au/initiatives-programs/ppi/dose-administration-aids>

<sup>51</sup> <http://www.medicareaustralia.gov.au/provider/pbs/fifth-agreement/home-medicines-review.jsp>

HMR. The community pharmacy and/or accredited pharmacist must have written approval from Medicare to conduct HMR services.

If there is no access to an accredited pharmacist in a timeframe suitable to the patient, a registered pharmacist can conduct the HMR if prior approval has been granted by the Department of Health.

If a registered pharmacist, who has approval from the Department of Health, conducts the HMR, they must give the information to an accredited pharmacist who completes the clinical assessment and writes the report.

An accredited pharmacist is a pharmacist who has undertaken specified education programs or examinations and has received accreditation to conduct medication reviews from the Australian Association of Consultant Pharmacy (AACP) or the Society of Hospital Pharmacists of Australia (SHPA).

A GP must determine if a patient is eligible for a HMR.

The HMR service is not available to in-patients of a hospital, day hospital facility or care recipients in residential aged care facilities.

A HMR must be conducted in the patient's home. When this isn't possible, accredited pharmacists must get approval from the Department of Health before the review takes place.

The payment rate for a HMR service is \$204.34. This amount is indexed annually.

### ***MedsChecks***

MedsCheck and Diabetes MedsCheck are in-pharmacy, patient centred services which aim to enhance the quality use of medicines by supporting patients in better understanding what their medicines are for and how best to use them<sup>52</sup>. A GP referral is not necessary.

Under the fifth Community Pharmacy Agreement, the MedsCheck program aims to improve the use of medicine among Australians by providing an in-pharmacy review of a patient's medicines by a registered pharmacist.<sup>53</sup>

The MedsCheck program aims to:

- help patients learn more about their medicines including how medicines affect medical conditions;
- identify problems patients may be experiencing with their medicines;
- improve the effective use of medicines by patients; and
- educate patients about how to best use and store their medicines.

An approved MedsCheck service provider must be an owner of a Section 90 Pharmacy (ie this does not include hospitals and Section 94 pharmacies).

---

<sup>52</sup> Pers comm. Kelly Gourlay, PGA

<sup>53</sup> <http://www.medicareaustralia.gov.au/provider/pbs/fifth-agreement/medicines-use-review.jsp>

Pharmacies already approved to provide Home Medicines Reviews (HMR), Residential Medication Management Reviews (RMMR) and/or Quality Use of Medicines (QUM) do not need to reapply for these programs when applying to become a MedsCheck Service Provider.

The payment rate for a MedsCheck service is \$61.02, and \$91.53 for a Diabetes MedsCheck service. These amounts are indexed annually.

### ***PBS***

The Pharmaceutical Benefits Scheme (PBS) is an Australian Government scheme to provide timely, reliable and affordable access to necessary medicines for Australians.

Under the PBS, the government subsidises the cost of medicine for most medical conditions. Most of the listed medicines are dispensed by pharmacists, and used by patients at home.

Some medicines are dangerous to administer and need medical supervision (such as chemotherapy drugs) and are only accessible at specialised medical services, usually hospitals.

The medicines available to be dispensed to patients at a Government-subsidised price are listed under the PBS Schedule which can be viewed at <http://www.pbs.gov.au/browse/medicine-listing>.

The Scheme is available to all Australian residents who hold a current Medicare card, as well as overseas visitors from countries with which Australia has a Reciprocal Health Care Agreement.

People eligible for a PBS concessional benefit include those with a Pensioner Concession Card, Commonwealth Seniors Health Card, a Health Care Card; or a DVA White, Gold, or Orange Card.

Under the PBS, the costs of medicines are shared between the Australian Government and patients (the patient's share is called a co-payment).

From 1 January 2013, patients pay up to \$36.10 for most PBS medicines or \$5.90 if they have a concession card. The Australian Government pays the remaining cost under the PBS.

The amount of co-payment is adjusted on 1 January each year in line with the Consumer Price Index (CPI).

Under the PBS scheme, further cost subsidisation occurs in situations when people have needed to spend a lot on medicines over the past year. This Safety Net further reduces the financial burden on people with substantial health care needs.<sup>54</sup>

### ***PhARIA***

The Pharmacy Access/Remoteness Index of Australia 2006/07 (PhARIA)<sup>55</sup> is an index used for the purpose of the pharmacy location rules to identify whether a locality is classified as

---

<sup>54</sup> <http://www.pbs.gov.au/info/about-the-pbs>

<sup>55</sup> <http://www.adelaide.edu.au/apmrc/research/projects/pharia/pharia-info.html>

urban or rural. It provides a standardised measurement of the physical and professional remoteness of pharmacies throughout Australia, for use in the determination of Australian Government rural and remote pharmacy allowances.

PhARIA is a composite index, which incorporates measurements of general remoteness, as represented by ARIA+, with a professional isolation component represented by the road distance to the five (5) closest pharmacies.

Within the index, spatial rules have been applied to ensure that anomalies do not occur in the treatment of areas closely surrounding urban centres. These apply a 'buffer zone' around a centre so that any location falling within that zone will receive the same index as that centre. This zone consists of a 30 km radius around the external boundary of major centres (greater than 250,000 population), and a 10 km radius around the external boundary of remaining population centres with a population of 18,000 or more.

A further refinement ensures that all urban centres with a large number of existing pharmacies were classified as highly accessible. This '8 pharmacy rule' provides that centres with 8 or more pharmacies are reclassified into Category 1 regardless of their location.

There are 6 PhARIA categories: Highly Accessible, Accessible group A, Accessible group B, Moderately Accessible, Remote and Very Remote.

### ***QUMAX***

Quality Use of Medicines Maximised for Aboriginal and Torres Strait Islander Peoples (QUMAX) Program was developed jointly by the Guild and NACCHO under the 4th Community Pharmacy Agreement in 2006-07. It provided intensive QUM support, dose-administration aids (DAAs), transport support and copayment relief in 2008 until 30 June 2010, in non-remote ACCHSs. Thereafter, the co-payment relief function was transferred to the PBS co-payment relief measure (CTG scripts). QUMAX continues to provide DAAs and substantial QUM support under the 5th Community Pharmacy Agreement.<sup>56</sup>

The current 5th Community Pharmacy Agreement funds QUMAX until June 2015.

The Quality Use of Medicines Maximised for Aboriginal and Torres Strait Islander Peoples (QUMAX) Program aims to improve the health outcomes of Aboriginal and Torres Strait Islander people who attend participating Aboriginal Community Controlled Health Services (ACCHSs) in rural and urban Australia, by trialling interventions that aim to:

- improve Quality Use of Medicines (QUM) and medication compliance; and
- support improved access to medicines under the Pharmaceutical Benefits Scheme (PBS) by addressing cultural, transport and financial barriers.

---

<sup>56</sup> Pers comm. Kelly Gourlay, PGA

QUMAX assists Aboriginal and Torres Strait Islander people of any age who present to participating Aboriginal Community Controlled Health Services and are assessed by prescribers to be at risk of adverse health outcomes from a failure to comply with their medication regime without assistance<sup>57</sup>, by:

- reducing financial barriers to access a comprehensive dose administration aids (DAA) service provided by community pharmacy to improve medication adherence and medication management for ACCHS clients;
- facilitating additional community pharmacy involvement and support in areas such as QUM planning, policies, protocol development, medication quality assurance and appropriate Safety Net utilisation;
- reducing the cultural and logistical barriers to access Home Medicine Reviews (HMRs) by ACCHS clients;
- reducing the financial barriers of access to QUM devices to improve overall delivery of medicines and management of chronic diseases ie asthma and diabetes;
- reducing financial barriers of access to QUM education and health promotion for ACCHS employees and their clients. This category may also help ACCHS to access current medicine resources, promoting suitable safe and effective medication management for ACCHS clients;
- improving access and delivery of cultural awareness resources and training for community pharmacy to promote a culturally aware pharmacy environment; and
- reducing barriers of access to medicines and community pharmacy services by providing transport support.

### ***Residential Medication Management Review***

A Residential Medication Management Review (RMMR) is a service provided to a permanent resident of an Australian Government funded aged care facility (ACF). This includes permanent residents of an Australian Government funded aged care facility (ACF) in flexible care arrangements (transitional care facilities).

When requested by a resident's general practitioner, an accredited pharmacist conducts an RMMR in collaboration with the GP and appropriate members of the eligible resident's healthcare team. Information about the resident's medicine is collated and a comprehensive assessment is undertaken to identify, resolve and prevent medication-related problems. A report of this assessment is provided to the resident's GP.

To be eligible for approval by Medicare as an RMMR service provider the applicant must be:

- an accredited pharmacist,
- the owner of a Section 90 Pharmacy, or
- the proprietor of a business entity that employs or has a service contract with one or more accredited pharmacists to conduct RMMR services on its behalf.

The applicant must also:

- hold a current valid RMMR Service Agreement with an Australian Government funded ACF, for RMMR services to be provided in that ACF;

---

<sup>57</sup> <http://www.naccho.org.au/promote-health/qumax/#sthash.hWqoxAU2.dpuf>

- provide all information needed by Medicare for assessment of the application, to determine eligibility to participate in the RMMR program; and
- agree to accept the service fee as full payment for the RMMR service as specified in the RMMR terms and conditions and at no cost to the eligible aged care resident or the ACF.

A GP can refer a patient to a community pharmacy that employs an accredited pharmacist to conduct the RMMR service on their behalf, or directly to an accredited pharmacist to conduct the RMMR service. The community pharmacy and/or accredited pharmacist must have approval from Medicare to conduct RMMR services and a valid service agreement must be in place.

The payment rate for an RMMR service is \$103.33. This amount is indexed annually.

### ***RPBS***

The Repatriation Pharmaceutical Benefits Scheme (RPBS) is a scheme to subsidise the cost of medicines for Veterans of the Australian Armed Forces.

RPBS cardholders are eligible for all PBS medicines, and other medicines listed on the RPBS, depending on their DVA entitlement. All medicines supplied under the RPBS are dispensed at the concessional rate (or free if the patient has reached their Safety Net threshold).

### ***Rural and remote areas (RA)***

Rural and remote areas are defined in this document as those areas in Australia outside major cities, based on the Remoteness areas structure of the ABS Australian Standard Geographic Classification (ASGC—or more recently the Australian Standard Geographic System (ASGS)). Categories include Major cities, Inner regional, Outer regional, Remote and Very Remote areas. Categorisation relates to average distance by road to 5 classes of urban centre, but pays little attention to the local towns size, so for example, Urana, Kerang, Darwin and Townsville are all classified as Outer regional areas, but with populations respectively of 1,500 (for the town plus surrounding rural areas), 3,700, 129,000 and 196,000.

### ***Section 100 programs***

Section 100 of the National Health Act provides for alternative ways of providing a medicine when the usual supply through community pharmacies is unsuitable (because of the cost of storage, requirements for particular controls over dispensing, the need for medical supervision or administration during treatment or constraints on patient access to community pharmacies).

Section 100 programs include:

- The Highly Specialised Drugs Program;
- The Botulinum Toxin Program;
- The Human Growth Hormone Program;
- The IVF/GIFT program;
- The Opiate Dependence Treatment Program; and
- The Special Authority Program.

### ***Section 100 supply for clients of Remote Aboriginal Health Services***

Since 1999, there have been special arrangements for the supply of medicines to clients of eligible remote area AHSs, under the provisions of section 100 of the National Health Act 1953.

Clients of around 170 approved remote area AHSs (including Aboriginal Community Controlled AHSs and remote services operated by the States and Territories) are able to receive medicines from the Aboriginal Health Service, without the need for a normal PBS prescription form, and without charge.

Each participating remote area AHS maintains a stock of pharmaceutical benefit items, ordered using an approval form on a bulk supply basis from an approved pharmacist or an approved hospital authority, and dispensed through the AHS as appropriate. Pharmaceutical benefit items are supplied directly by the approved pharmacist or the approved hospital authority to the participating AHS. Approved pharmacist and approved hospital authorities are reimbursed directly by Medicare Australia.

A handling fee of \$2.83 is paid by Medicare Australia to the pharmacist for each PBS item provided to AHS's, rather than the larger dispensing fee of \$6.42.

PBS items are dispensed to patients by an appropriate health professional (either a medical practitioner, or an Aboriginal Health Worker or nurse working under the supervision of a medical practitioner, where consistent with the law of the relevant State or Territory).

### ***Section 100 Support Allowance***

This allowance is paid to approved pharmacies and approved hospital authorities to improve the quality use of medicines by clients of remote Aboriginal Health Services that participate in the S100 supply arrangements.

The allowance is between \$6,000 and \$10,500 pa (depending on the number of PBS items dispensed from the AHS), plus travel and additional loading for a pharmacist to service an AHS at least twice per annum.<sup>58</sup> Services can include:

- developing and implementing a Work Plan for the S100 supply arrangements within the AHS;
- providing assistance in the implementation and ongoing administration of appropriate procedures and protocols for managing S100 supply arrangements, including the establishment of a medicine store;
- developing a range of other appropriate measures to enhance the Quality Use of Medicines (which may include assistance with dose administration aids, participation in regular meetings with health staff, and review of patient medication);
- implementing agreed measures which aim to enhance the Quality Use of Medicines; and
- providing a range of education services to AHS clinical and support staff relating to medicines and their management.

---

<sup>58</sup> <http://www.5cpa.com.au/docs/librariesprovider5/public-documents/initiatives-and-programs/atsip/section-100-pharmacy-allowance/s100-program-specific-guidelines.pdf?sfvrsn=0>

## Appendix

Table 4.10: Employed pharmacists: selected characteristics by remoteness area<sup>(a)</sup>, 2012

Characteristic	Major cities	Inner regional	Outer regional	Remote/Very remote <sup>(b)</sup>	Australia <sup>(c)</sup>
Number	16,225	3,301	1,506	279	21,331
Average age	39.3	41.3	39.6	40.0	39.7
Aged 55 and over (per cent)	15.7	20.5	18.9	17.8	16.7
Women <sup>(d)</sup> (per cent)	59.9	52.6	53.8	51.6	58.2
Average weekly hours worked	35.7	35.9	37.3	40.6	35.9
FTE rate <sup>(e)</sup>	95.4	75.2	72.3	56.3	88.7

(a) Derived from remoteness area of main job where available; otherwise, remoteness area of principal practice is used as a proxy. If remoteness area details are unavailable, remoteness area of residence is used. Records with no information on all three locations are coded to 'not stated'.

(b) Includes *Migratory* areas.

(c) Includes pharmacists who did not state or adequately describe their state or territory, and those who were overseas.

(d) For a small proportion of pharmacists in Victoria, information about sex was missing. Because this had minimal impact on the figures, the sex for these pharmacists was imputed.

(e) Full-time equivalent (FTE) number per 100,000 population. FTE is based on total weekly hours worked (see Glossary).

Source: NHWDS: allied health practitioners 2012.

Table A1: Numbers of employed pharmacists, by remoteness areas, 2012

Note: FTE based on 38 hour working week

Source: <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=6442459626> AIHW 2005. Rural, regional and remote health—Indicators of health. AIHW Cat. No. PHE 59. Canberra: AIHW (Rural Health Series no. 5).

**Table 3.5.2.11: Numbers of employed pharmacists, by ASGC Remoteness Areas, 1999**

	MC	IR	OR	R	VR	Unknown	Australia
Number of pharmacists (main location of work)	10,284	2,446	1,037	120	49	781	14,717
Pharmacists per 100,000 population	82	63	52	37	28	n.a.	78
Pharmacists per 100,000 expected consultations	78	59	49	35	26	n.a.	72
FTE (main location of practice)	10,914	2,518	1,164	151	60	551	15,359
Rate FTE per 100,000 population	87	64	58	47	34	n.a.	81
Rate FTE per 100,000 expected consultations	80	61	55	44	32	n.a.	75
FTE (based on hours worked in main and second locations of practice)	10,874	2,515	1,161	152	59	593	15,354
Population ('000s)	12,871	4,026	2,014	324	179	n.a.	19,413

**Notes**

1. Full time equivalents (FTEs) are based on a 35-hour week.
2. Results from the survey have been weighted-up to account for non-responders.
3. Expected consultations are the number expected in each area in 1999 if age- and sex- specific consultation rates evident in Major Cities in 2001 were experienced everywhere. Rates of consultation in Major Cities in 2001 were calculated using data from the ABS National Health Survey. The total number of FTEs in Australia, presented by location of main practice and based on the number of hours worked in the main and in the second location, should be identical. Discrepancies are due to incomplete information on the hours worked in the main and the second location in a small number of records.

Table A2: Numbers of employed pharmacists, by remoteness areas, 1999

Source: <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=6442459626> AIHW 2005. Rural, regional and remote health—Indicators of health. AIHW Cat. No. PHE 59. Canberra: AIHW (Rural Health Series no. 5).

The tables above show that, per 10,000 people, there were about 9.5 pharmacists in major cities, about 7.5 in inner regional areas, and about 5.5 in remote areas. Adjusting for the slightly different definitions of FTE in 1999 and 2012, FTE supply has remained largely unchanged in Major cities, but has increased 8 per cent and 15 per cent in IR and OR areas respectively. It is unclear whether the FTE rate has changed in remote areas.

**Table 5: Employed pharmacists per 100,000 population, geographic area, 1999**

	Geographic area							Total
	Capital city	Other metropolitan centre	Large rural centre	Small rural centre	Other rural area	Remote centre	Other remote area	
Population ('000) <sup>(a)</sup>	12,090.2	1,443.1	1,128.0	1,225.7	2,485.6	224.7	336.8	18,984.2
<b>Pharmacists per 100,000 population</b>								
Community pharmacists	66.6	61.0	67.9	60.0	49.6	31.5	25.6	62.3
Hospital pharmacists	13.3	9.6	12.9	8.0	2.9	6.9	4.2	11.0
Other pharmacists	6.7	0.4	0.4	0.0	0.2	0.0	0.9	4.3
<b>Employed pharmacists</b>	<b>86.7</b>	<b>71.0</b>	<b>81.1</b>	<b>68.0</b>	<b>52.6</b>	<b>38.4</b>	<b>30.6</b>	<b>77.7</b>

(a) Estimated resident population as at 30 June 1999.

Source: Pharmacy Labour Force Survey 1999; ABS.

Table A 3: Employed pharmacists per 100,000 population, by sector, by RRMA, 1999

Source: <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=6442458282>

Note that this analysis uses RRMA as the rural classification, but the story is the same.

In 2002, rural students are about half as likely to commence studying pharmacy as were their major cities counterparts. We are unaware of any more recently published data that would shed light on whether this is still the case a decade later.

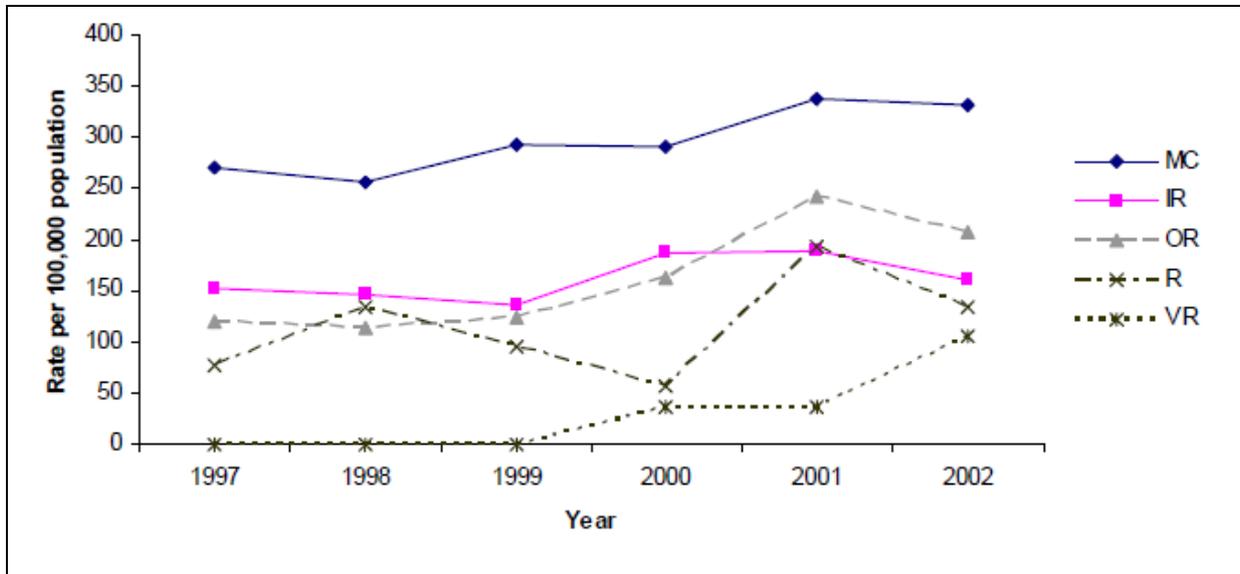


Figure A1: Undergraduate commencement rate for pharmacy, 17–20-year-olds from each area, 1997–2002

Source: AIHW 2005. Rural, regional and remote health—Indicators of health. AIHW Cat. No. PHE 59. Canberra: AIHW (Rural Health Series no. 5). Page 286.

	MC	IR	OR	R	VR	Australia
General expenditure (\$millions)	\$1,210	\$302	\$142			\$1,683
Card expenditure (\$millions)	\$3,256	\$1,125	\$ 487			\$4,934
Population (millions) 2006-07	14,299	4,121	1,980	0,316	0,166	20,883
% of pop card holders	30%	45%	44%	44%	44%	35%
General population (millions)	9,952	2,283	1,111	0,177	0,934	13,532
Card holding population (millions)	4,347	1,838	0,869	0,139	0,731	7,351
Gen. per cap. expenditure (adjusted)	\$122	\$132	\$128	\$128	\$128	\$124
Card per cap. expenditure (adjusted)	\$749	\$612	\$560	\$560	\$560	\$671
Per capita overspend gen. pop	\$0	\$11	\$7	\$7	\$7	\$3
Per capita overspend card pop	\$0	-\$137	-\$189	-\$189	-\$189	-\$78
Total overspend gen. pop	\$0	\$25	\$7	\$1	\$1	\$34
Total overspend card pop	\$0	-\$312	-\$210	-\$33	-\$18	-\$573
<b>Total overspend</b>	<b>\$0</b>	<b>-\$288</b>	<b>-\$202</b>	<b>-\$32</b>	<b>-\$17</b>	<b>-\$539</b>

Notes: Assumes, in the absence of information from the ABS National Health Survey, that the percentage of the population in Remote and Very Remote areas who are concession card holders is the same as in Outer Regional areas. Estimates of underspend described in this table are indicative.

Source: Derived by NRHA from AIHW 2011.

Table A4: Summary table of adjusted PBS expenditure to account for differences in the proportion of the population who are concession card holders in each of the remoteness areas, 2006-07

Source: <http://www.ruralhealth.org.au/sites/default/files/documents/nrha-policy-document/position/pos-full-complementary-report-27-feb-11.pdf>