Pharmacists where there is no pharmacy

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Abstract

The involvement of a pharmacist as a part of the primary health care team is essential to the quality use of medicines in urban and rural areas. In the remote setting, pharmaceutical care has been managed by other primary health care staff. Many of these staff have no training in the systems and pharmacotherapeutics normally required for basic dispensing and counselling services.

Pharmacists have traditionally provided only a supply function with regular (or irregular) visits to the remote health service. Community and hospital pharmacy services demand a pharmacist is on-site to dispense prescriptions and act as a resource for health professionals and patients. This model is impractical for a relatively small population spread out over a vast area. Therefore if remote residents are to receive equitable access to services that promote quality use of medicines, it is important to develop new models of service delivery that meet the demands of the population yet are cost effective to manage.

In recent years a number of projects have been undertaken to develop models to provide more intensive pharmacist services for remote Aboriginal Health Services. Each model attempted to improve the quality use of medicines in Indigenous Australians but have not been funded on an ongoing basis. As well, generic standards of practice for pharmacy services to remote area health services have been published by the Pharmaceutical Society of Australia as a basis to guide development of elements of practice models.

While it is acknowledged that there is no “one size fits all”, it is critical that essential elements of remote pharmacy services be defined and funded by government and this paper addresses this important issue. This paper will review the alternative models developed and implemented to date and critique the strengths and weaknesses of each model. In particular, the potential for improvements in knowledge and efficiency of other primary health care staff, more cost effective use of resources, increased compliance to medications and better medication related health outcomes in the clients of Aboriginal health services will be analysed. Potential sources of funding and the financial sustainability of each model will also be examined.

Pharmacists where there is no pharmacy

Community pharmacies across Australia play an important role in primary health care. Community pharmacists are readily available to residents of even small rural towns to provide advice on self-treatment of simple ailments, health promotion messages and information about prescription medicines.1,2 Most Australians can attend a pharmacy any time and see a pharmacist to obtain information about a wide range of health and medication issues. In non-remote Australia, pharmacists are the most accessible health professionals in the community, seeing around two per cent of Australian adults at least once a fortnight3 and providing an estimated 42 million primary care consultations each year.4 Yet this service is generally not available to the residents of remote Indigenous communities.

In recent years a number of projects have been undertaken to develop models to provide more intensive pharmacist services for remote Aboriginal Health Services. Each model attempted to improve the quality use of medicines in Indigenous Australians but have not been funded on an ongoing basis. This paper will review the alternative models developed and implemented to date and critique the strengths and weaknesses of each model.
Background

Workforce statistics show that remote areas are underserviced in relation to access to pharmacists compared with metropolitan and rural centres.\(^5\) Figure 1 shows the number of pharmacists per 100 000 population. “Other remote” communities have populations of less than 5000.\(^6\)

**Figure 1** Pharmacists per 100 000 population by Rural, Remote and Metropolitan areas classification (RRMA) category

In the setting of remote Aboriginal Health Services (AHS), pharmacists have traditionally provided only a supply function with regular (or irregular) visits to the remote health service. Medicines are supplied by doctors, nurses and Aboriginal health workers where there is no pharmacist. Community and hospital pharmacy services demand a pharmacist on-site to dispense prescriptions and act as a resource for health professionals and patients. This model is impractical for a relatively small population spread out over a vast area. If remote residents are to have access to services that promote quality use of medicines (QUM), it is important to develop new models of service delivery that meet the demands of the population yet are cost effective to manage.

The lack of pharmacists in remote areas has also resulted in limited access to the Pharmaceutical Benefits Scheme (PBS).\(^7\) The introduction of special arrangements under Section 100 of the National Health Act, 1953 (s.100) in 1999 allowed remote area health services to access PBS medications without presenting written prescriptions to an approved pharmacy. The s.100 provision has addressed this inequity to some degree. It has been regarded as a successful program, albeit one that has not addressed the lack of quality use of medicines in remote areas.\(^8\) However, it also does not appear to have completely addressed the funding imbalance. A recent report suggests that, since the introduction of s.100, the relative amount spent on Indigenous Australians has risen from 22 cents in the late 90s prior to the introduction of s.100 to about 33 cents in 2001-02 for every dollar spent on all Australians.\(^9\)

Remote pharmacy models

It should not be assumed that metropolitan pharmacy models can be successfully generalised to the unique circumstance of remote Indigenous communities. Historically, there have been no pharmacists employed in remote Aboriginal health services and thus there is little relevant literature. There is work which describes differences between urban and remote practice in the fields of medicine and nursing with many citing an expanded scope of practice to include activities that would not normally be considered part of traditional practice.\(^10,11\) Based on the experiences of other health professionals it would be reasonable to assume that the practice of pharmacy in remote areas will be different from traditional pharmacy practice.
The visitor

There has been a “visiting” model in operation in remote areas in the recent past. In this model, resident health staff at the health centres (usually nurses) perform most medication supply functions such as ordering, stock control processes, and “dispensing” (consisting of recording, labelling and supplying) medications. Pharmacists from the regional hospital or a community pharmacy in a regional centre provide periodic visiting services between 2 and 10 times per year.12–16 With one exception, descriptive evaluations of these services have generally been written by the pharmacists developing and delivering the services. Whilst demonstrating that some degree of service can be provided in the context of limited financial and human resources out of regional hospital pharmacy departments, none have evaluated QUM or other health outcomes. In at least one case, direct patient contact was infrequent14 and other studies did not detail the extent of patient contact.

A study surveying the prescribing and dispensing needs of doctors, nurses and Aboriginal health workers of remote Northern Territory health centres where the “visiting” model is used suggested that dispensing functions in remote clinics ranged from “appalling” to “reasonable given the constraints and difficulties involved”.16 Participants interviewed widely expressed concern about being “virtual pharmacists” without training or support. In this study, only 51% had received a personal visit at the clinic from a pharmacist, despite the health service policies generally stating that at least two visits per year should be conducted. The major barrier to the provision of twice yearly visits was cited as the workload of the regional hospital pharmacists. All 94 staff interviewed in the study expressed a desire to have more input from a pharmacist and that this should be clinical services and education, “not to just go through the shelves”.

The literature describing the effectiveness of this model for remote health services is scant. The Quality use of Medicines in Aboriginal Communities (QUMAC) project was implemented in 11 sites across a range of urban, regional and remote AHS throughout Australia.17 This project was funded for only one year as an exploratory project to develop a model of visiting pharmacy services that could be used in the funding formula for the s.100 professional support allowance. However, to qualify for selection, all sites had to have at least one community pharmacy in the town. Thus, the communities involved were much larger than the majority of very remote communities and residents had already had opportunities to access the services of a pharmacist through the pharmacy in the town. The project offered funding to support the local pharmacist to provide services to the AHS. These services were on a visiting basis from the community pharmacy and were an extension to the regional hospital pharmacy model described above. The services provided included:

- initial audit of medication management practices
- continuing education for AHS staff
- assistance with filling of dosage administration aids
- ongoing provision of advice and answering of medication queries
- the delivery of medication reviews and “concordance” assessments.

While all sites provided the first service, there were varying degrees of implementation of the other four types of services. Only two sites provided all of these services. The reasons given for not providing services included time constraints and the short time frame of the project. Some pharmacists, especially where there was not a pre-existing relationship between the pharmacist and the AHS, found that it took time to develop the relationship and to establish the role of the pharmacist. As a consequence patient contact for medication reviews and “concordance assessments” were not able to be achieved for most sites. One of the two successful sites has since introduced a pharmacy service that employs a full-time pharmacist and 1.5 full-time equivalent technicians on-site at the AHS. This has been funded from health service funding rather than grant or project funds. This ensures that there is ongoing continuity of services. However, like other “visiting” models reviewed, there has been no formal evaluation of the impact of this pharmacy service on the health of the clients.
On-site supplying pharmacy

In 2001, an on-site pharmacy was opened in a remote area Aboriginal Health Service and used the Commonwealth based Pharmaceutical Benefits Scheme funding model for traditional community pharmacy. This AHS was a community controlled health service and the model of pharmacy relied on the health board “owning” and operating the pharmacy under Section 85 (s.85) of the National Health Service Act which is the section under which traditional community pharmacies operate. This pharmacy was then able to supply to its own constituent health centres under s.100, thereby negating the requirement to follow certain s.85 requirements while still retaining trading profits by the health board. This model has not been extensively evaluated and again the pharmacist implementing this model has been the major author of reviews of its benefits. However, the benefits he lists include:

- establishing more efficient stock levels and ordering processes
- establishing a process for on-site blister packing of dose administration aids (DAAs)
- development and implementation of a computerised system for recording, dispensing and labelling prescribed medications
- counselling of patients on quality use of their medicines at point of collection (as occurs in the traditional community pharmacy setting)
- review of prescribed medication for people with chronic diseases
- training of local community members as pharmacy technicians to assist in stock control and DAA filling
- education of other health care professionals about medications.

This model also reported good success with increased compliance to medication as measured by the number of weeks the medication was collected from the pharmacy. This was attributed to improving the efficiency of the dispensing service so that patients did not need to wait for dose administration aids to be filled. Any clinical or educational services provided were not described or evaluated and in personal communication with the author of that report (an employee pharmacist of the service), he declared that a frustration of the position was that he was so intensively involved with the DAA packing service that he had no time for the level of clinical services that he thought he should be providing. That pharmacy is no longer operating since the AHS went into receivership and the state based health department took over services and reintroduced the “visiting” model as described above.

Full-time clinical pharmacist

In 2005, the author of this paper assisted a remote AHS to obtain short term funding (one year) to implement and evaluate a variation of the on-site pharmacy model. The health service consisted of 11 separate health centres in remote areas of Western Australia (WA). In this model, the pharmacist was employed full-time by the health service from funding obtained through the s.100 professional support allowance and a grant from the Rural and Remote Pharmacy Workforce Development Program. The pharmacist was resident at one of the 11 communities and provided regular visiting services to the other 10 health centres. However, this was different in focus to the “visiting” model as there were no supply services provided by the pharmacist. Medications were provided from the community pharmacy in a regional centre. The pharmacist was also dedicated full-time to one health service, was resident in the remote area and was considered an employee of the health services rather than a “visitor”.

In this model, a supply pharmacy was unable to operate due to Western Australian state legislative restrictions. Legislation governing the conduct of pharmacists and the supply of drugs and poisons forbids a pharmacist from supplying a scheduled substance from any place that is not a registered pharmacy. As a result, the pharmacist employed for this project was unable to dispense or supply...
medications as he would in a community or hospital pharmacy, an anomaly that has been brought to the attention of legislators in Western Australia. However, “clinical” or “cognitive” services are not restricted and thus for the duration of the project this factor was a defining one in the role of a pharmacist for the health service.

The evaluation of this pharmacy model detailed good acceptance of the pharmacist by other health professionals as part of the primary health care team. Most respondents to a survey and subsequent interview described an increased awareness of medication related issues and increased knowledge gained about medications from contact with the pharmacist. All respondents welcomed the efficiency and space generating changes he had made to the physical layout of drug rooms. All supported continuation of the position by the health service and saw the next step in the development of the position as the pharmacist becoming more involved with patient education about medications.22

It was anticipated at the beginning of the project that there may be observed benefits from the pharmacist’s input in terms of improvements in measurable health indicators such as blood pressure and blood sugar control. The evaluator was unable to observe significant impacts in terms of client’s health. This was attributed mainly to the short timeframe of the project and the need to build relationships with clients before being able to have an impact. The urgent needs of the health service to have supply systems and processes sorted out also created other priorities for the pharmacist’s time. However, a couple of case studies that demonstrated good outcomes with individual patients were described which the authors suggest may point to potentially more widespread and sustainable effects if the model is continued past the one year timeframe. However, a significant outcome of the project was the cost savings that were realised from the efficiencies in drug ordering that the pharmacist implemented, which amounted to a good proportion of the pharmacist’s own salary. Although the funding for this project has finished, the health service has continued the pharmacist position.

**Telepharmacy**

Distance dispensing and counselling using information technology, videoconferencing equipment and local trained pharmacy technicians has been used in America for underserved populations23 and has been trialled in rural Australia.24 The Australian project used videophones to link community pharmacists with health practitioners and patients in other towns in outback Queensland. It recorded only ten interactions in the six months of the project, all of which were used as regular voice phones at the time of the interaction because the video link could not be established. The American experience was described as successful. However, the authors warned of the limiting factors of the expense of the equipment, unreliable connections and the need for well trained, reliable and efficient pharmacy technicians at the other end of the connection to assist patients and supervise distribution of the medications. At this point in time, the communications limitations and the lack of trained staff would make this model impossible to implement for most remote AHSs.

**Hub and spoke**

Another relevant model may be the “hub and spoke” allied health service introduced to North West Queensland. This entailed a pooling of allied health professionals into a structured service with common administration, providing visiting health services to communities in the region from a regional centre.25 Battye & McTaggart suggest that the primary health care approach ensures that services are tailored to local needs and fosters community involvement. The evaluation of the model suggested it provides peer support for sole practitioners, personally and professionally, thus improving recruitment and retention. A similar model has been proposed for Central Australia and a planning study completed during 2005 included pharmacists in the model.26 However, full funding of this model has not been made available. The current requirement that s.100 professional support allowances be accessed through a community pharmacy means that the limited amount of funds that are currently available for pharmacy services would not be available to the Allied Health service.
Remote pharmacy as a specialised field of pharmacy

The size and characteristics of AHS in Australia are diverse and it is difficult to imagine one model being perfect for all situations. Some AHS in regional and urban settings are run as multi-disciplinary medical services and their needs and the logistics of meeting those needs may be quite different to an AHS in a small remote community, yet their pharmacy services are mostly funded from the same funding formula. The above descriptions of pharmacy models demonstrate that different models have been tried in an attempt to meet the needs of the communities they serve as well as meet logistic and legislative constraints. It seems there is no best practice model for all situations. Therefore it may be more appropriate to examine what aspects of pharmacy practice are required and can be adapted to remote AHS.

The Pharmaceutical Society of Australia (PSA) guidelines for pharmacies developing services to AHS were developed in 2005 and are a step forward in defining the range of services that might be considered in a contract between a pharmacy and an AHS.\textsuperscript{27} When the elements of the PSA standards are examined, there is a similar grouping of services to those in the QUMAC study that may be seen as a continuum of complexity (and acceptability as valuable services) with supply services at one end and professional services provided to patients at the other.

In the evaluation of the employed pharmacist model, it was found that the role of the pharmacist changed over the course of the project year. This was, in some ways, essential to meet the needs of the health service, but was also the source of conflict in some cases between the pharmacist and other staff. An important message from this, was that the role of the pharmacist in any remote pharmacy model needs to be clearly defined and supported by management, reviewed on a regular basis and clearly communicated to other staff.\textsuperscript{22} This is essential in a field where there are few precedents but a range of expectations from other stakeholders.

Kelaher et al\textsuperscript{8} referred to the fact that some AHS are more developed in their medication management capacity than others. The QUMAC project which was the pre-cursor to the s.100 support allowance also listed several functions of a pharmacist in an AHS.\textsuperscript{17} However, it was found that not all AHS were ready for all services because of the necessity to build the relationship with the health service as well as getting the operational aspects of medication management sorted out first. The study found that those AHS who already had good dispensary systems and a relationship with a pharmacist were able to progress to medication reviews in the duration of the project while those who needed assistance in the basic management of a dispensary did not progress to medication reviews in the time of the study.

This might be referred to as a continuum in which the basics need to be addressed before more sophisticated QUM needs can be attended to. This is illustrated in Figure 2 and listed from the top down in the chronological order in which they appear to develop. The activities in the diagram are headings taken from the PSA guidelines for pharmacy services to remote Aboriginal health services.\textsuperscript{27} On this continuum, each step must be reached to an adequate degree before progressing to another step even though the previous step may continue to develop. It is essential that the pharmacist build a relationship with the staff of the health service and provide support for the basic things that pharmacists do—supply and manage drugs. Only then will clinical services be accepted.

Financial sustainability

Currently all funding for pharmacy services in remote AHS is provided from the s.100 professional support allowance which uses a formula that allows for the size of the community and the distance from the community pharmacy supplying their medications. This ranges from $2500 to $4500 per year and is clearly not adequate to operate a pharmacy service. There are inequities in such a formula, as a community with a population of 2000 people may receive about $1000 more than a community of 150 people.

There is also an inequity argument to be made when considering the differences in access to the PBS dollar between Indigenous and non-Indigenous Australians. In 2001–02 the average expenditure on PBS for each Indigenous person was $74.82 and $225.06 for each non-Indigenous Australian.\textsuperscript{28} The
average cost of PBS drugs per capita for all Australians for 2005 was $260. For a population of about 2000 people this would be $520,000 available for PBS services including drugs and pharmacist support. From the Western Australian project, the cost of drugs under s.100 (after pharmacist intervention) was $407,000 giving a difference of $113,000. This is more than the costs of the pharmacist’s salary and close to the complete costs of the pharmacy service as described in the evaluation report.22

Figure 2 The continuum of remote pharmacy services

Each level needs to be implemented to a satisfactory degree before the next level can be provided. The former level can continue to develop as other levels are introduced.

Under the Primary Health Care Access Program (PHCAP), the average Medicare benefits per capita for all Australians is cashed out to health services with a 2x loading for remote areas and 2x loading for the
chronic ill health of Aboriginal people.30 Were the same formula applied to PBS expenditure, there would be considerably more funds available for professional pharmacy services.

Funding of remote pharmacy services is an ongoing issue. None of the models reviewed in this paper have been able to secure ongoing sustainable funding which in itself has presented problems for the viability of the model. Shannon et al commented on the number of pilots and demonstration projects within the Aboriginal health literature that

...demonstrated the “stop-start” nature of past Aboriginal health policy and inherent short funding cycles which programs endured. There has been a repeated search for innovation which results in a high turnover of projects and recycling of ideas, rather than utilising the not insignificant knowledge currently available and properly evaluating its effectiveness. 31

Conclusion

The professional aspects of remote health practice are different to the mainstream. The pharmacy profession itself barely recognises remote practice as a discipline. This is understandable as there are currently very small numbers working in the field.

It would appear more work remains to be done in defining the perfect model for remote pharmacy. The diverse nature of AHSs suggest the perfect model may not exist. However, if the pharmacy service is developed with the particular needs of the clients of the health service in mind and given the longevity of funding to have an opportunity to establish a functional service, there may be a clearer picture of the role of a pharmacist in remote area Aboriginal Health Services.

The way forward therefore depends on the following urgent action:

• A national approach needs to be taken to address the legislative anomalies that make remote pharmacy a series of compromises.

• Health services should be offered project management services to assist them to develop a model of pharmacy services that suits their individual needs.

• Proposals developed from the above process should be funded from the Commonwealth government to address the inequities of remote Aboriginal populations in access to the PBS that still exist despite the introduction of s.100.

• Pharmacy service models should be funded for a period of at least 5 years to enable the model to evolve and to demonstrate health outcomes

• Academic support should be provided to assist AHS to document the strengths and weaknesses of remote pharmacy models.

References


2. Sunderland B, Burrows S, Griffiths C. The Impact of Community Pharmacy Services on Rural Communities. Perth: Curtin University of Technology School of Pharmacy; 2003.


6. Sanburg A. Introducing Quality Use of Medicine (QUM) Initiatives to Aboriginal Communities of South Australia.: Port Augusta Hospital Pharmacy Dept; undated.

7. RRPWDP. Clinical Pharmacy Services in Rural and Remote Areas: Rural and Remote Pharmacy Workforce Development Program; 2004 October.


9. Sanburg A. South Australian Aboriginal Health Services—review of Pharmacy services. Port Augusta: RGH Pharmacy Consulting Services, Port Augusta Hospital; 2002.


Presenter

Frances Vaughan is a pharmacist with extensive experience in both hospital and community-based pharmacy services. Most recently Fran has been involved in providing visiting pharmacy services, including home medicines reviews, to remote Aboriginal health centres. Fran teaches a course in pharmacotherapeutics for remote area nurses, which is offered by the Centre for Remote Health as part of the Masters in Remote Health Practice and as a stand alone short course. Fran also co-ordinates placements of undergraduate pharmacy students in central Australia. Her passion is the further development of professional pharmacy services to remote Aboriginal health services.