

# Expanding pharmacy support in rural areas: Views from rural healthcare providers in Queensland

## Abstract

**Introduction:** The limited rural pharmacy workforce may hinder provision of medication support or pharmacy specialty services in rural areas. To date, well-established capacity-building initiatives to improve service provision in rural areas include alternative delivery models, such as sessional employment, outreach services and telehealth. This paper explores service delivery models involving pharmacists and roles for pharmacy support staff, from the perspectives of rural healthcare providers in a study community in Queensland.

**Methods:** A rural community comprising four towns, and the healthcare providers servicing this community, were identified within a Health Service District in Queensland. Medical practitioners (n=5), pharmacists (n=7), intern pharmacists (n=2) and hospital registered nurses (n=11) participated in semi-structured

face-to-face interviews. The interviews explored a range of topics, including rural medication support and service models. Interviews (averaging 45 minutes in duration) were recorded, transcribed and manually analysed for breadth of responses.

**Results:** While sessional employment, outreach services and tele-pharmacy were not practised in this community at the time of the study, participants reflected on the benefits and challenges of providing clinical consultation and medication support through these means, based on their practice experiences elsewhere. Funding was identified as a significant barrier to implementing these services. Rural practitioners also supported potential role extension for pharmacy support staff into medication supply.

**Conclusions:** The potential to explore service models was recognised in this rural community, with outcomes informing stakeholders and policymakers, and possibly generating novel career paths for rural pharmacists and pharmacy support staff.

## Introduction

Australia's rural geography is known to impose challenges for healthcare services, including social and professional isolation, and impeding recruitment of healthcare providers. This limits the workforce capacity

of existing rural healthcare providers, including pharmacists, in providing optimal healthcare services.<sup>1-3</sup> Australia-wide, workforce studies have revealed ageing of the pharmacy workforce and a common existence of sole pharmacists servicing single-pharmacy towns in rural areas, in both hospital and community settings.<sup>4,5</sup> Approximately two-thirds of Queensland's public hospitals (n=116) have no pharmacist on site, and about half of those employing a pharmacist are reportedly serviced by sole pharmacists.<sup>6</sup>

In Queensland, the *Health (Drugs and Poisons) Regulation 1996* (the *Regulation*) endorses non-pharmacists to undertake extended medication supply roles to supplement the limited pharmacist workforce in rural areas. For example, in non-pharmacist rural hospitals, registered nurses (RNs), Rural and Isolated Practice RNs and midwives are endorsed to supply medications on a prescription or medical order.<sup>7,8</sup> In isolated practice areas with no pharmacy services in the community, nurses, Indigenous health workers and Isolated Practice Area Paramedics, often sole healthcare providers servicing the designated facilities, are also authorised to supply medications.<sup>8,9</sup> These healthcare providers are not required to conform to the *Quality Standards of Dispensing* under which pharmacists must practise, although they are bound by the requirements in the *Regulation* for labelling and recording of issued medications.<sup>8,9</sup> These roles have been commended to improve access to medications in rural areas, and training packages have been developed to up-skill these healthcare providers.<sup>6,10,11</sup> While some healthcare providers may be coping with these roles, studies have revealed that healthcare providers in general would value ongoing technical support, due to their unfamiliarity with regulatory requirements and dispensary or

## Authors

\*Amy CW Tan, BPharm (Hons), PhD candidate, School of Pharmacy, The University of Queensland, Brisbane.

Lynne Emmerton, BPharm (Hons) PhD MPS, Associate Professor, School of Pharmacy, Curtin Health Innovation Research Institute, Curtin University, Perth, School of Pharmacy, The University of Queensland, Brisbane.

H Laetitia Hattingh, BPharm MPharm PhD GCApplLaw Cert IV TAA AACPA MPS, Senior Lecturer, School of Pharmacy, Curtin Health Innovation Research Institute, Curtin University, Perth, School of Pharmacy, Griffith University, Gold Coast

\*Author for correspondence: amy.tan@uqconnect.edu.au

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inventory management.<sup>2,6,7,12,13</sup> In addition, the roles only entail basic medication supply tasks, and as such, the healthcare providers reportedly value clinical support from pharmacists, including medication information and review of medication regimens, to optimise management of medication use.<sup>2,6,7,12,13</sup> This highlights the need for service models involving pharmacists to provide the required medication support.<sup>2,14</sup>

Similarly, there is a lack of models to enable pharmacists to deliver pharmacy specialty services in rural areas amidst limited workforce capacity and restrictive pharmacist models of care, resulting in their primary focus being dispensing services.<sup>2,4,10,12</sup> Studies have shown that pharmacists are highly valued in terms of provision of medication consultation services and inpatient clinical pharmacy services, such as therapeutic drug monitoring and medication reconciliation.<sup>11,12</sup> Additional roles and scopes of practice have been developed for pharmacists, including health promotion, chronic disease management, comprehensive medication review services, and coordination of medication management for patients transitioning between healthcare settings (i.e. as a liaison pharmacist).<sup>11,15,16</sup> Apart from investigating delivery models to accommodate this array of roles, there is also potential to explore models to enable provision of support, training and mentoring for rural pharmacists, who often practise solo.<sup>4,14</sup>

Due to limited workforce in rural areas, several service delivery models and role innovations have been identified to specifically enhance workforce capacity to improve delivery of healthcare services in rural areas. These include:

- Sessional (part-time or casual) or 'shared' employment between the public and private sectors to optimise access to locally available services and health practitioners,<sup>2,10,11,17</sup>
- Visiting or outreach support from metropolitan or regional healthcare providers to provide periodic access to services to communities too small to support permanent local services,<sup>2,4,10,11,17</sup>
- Virtual support involving a metropolitan or regional healthcare provider providing

services via video-conferencing to rural healthcare providers and/or patients as a practical alternative in the situation where distance is a challenge to the service provision,<sup>6,10,11,18,19</sup> and

- Re-engineering the role of assistant or support staff to better support the health workforce in provision of healthcare services.<sup>10,20</sup>

Review of the literature has identified a limited number of studies investigating the establishment, utilisation or application of these models in the pharmacy profession to provide medication support and pharmacy specialty services in rural areas.<sup>11</sup> This paper explores service delivery models involving pharmacists and roles for pharmacy support staff, from the perspectives of rural healthcare providers in a study community in Queensland. The data presented are part of a larger exploratory study on extended roles of health practitioners and issues relevant to medication supply and management in the rural community in Queensland.<sup>14</sup>

## Methods

Ethical approval was granted by the Griffith University Human Research Ethics Committee, the University of Southern Queensland Human Research Ethics Committee, the University of Queensland Behavioural and Social Sciences Ethical Review Committee, and the human research ethics committee of the study Health Service District.

The study community, identified through a geographical mapping exercise, comprised four neighbouring towns in a rural Health Service District in Queensland.<sup>14</sup> The four towns are not named in this paper, in accordance with ethical approval to protect the identity of the healthcare providers. The average population across the four towns at the time of the study was 1,500, and the towns were classified with a remoteness index of PhARIA<sup>21</sup> 4–6. Basic healthcare services available in each town include one hospital, one medical practice and at least one community pharmacy.

The geographical mapping exercise also identified the healthcare providers servicing these four towns, who were contacted via telephone or email to establish whether they were involved with medication-related services (prescribing,

dispensing or medication supply, medication administration, provision of medication information and assisting patients in managing their medications). Those involved in such services were invited to participate in individual, face-to-face interviews. Participants provided informed consent to conduct and voice-record interviews. The interviews, approximately 45 minutes in duration, were jointly conducted by two researchers over four weeks in September–October 2010 in the study community. The presence of two researchers in all the interviews allowed enhanced understanding, contextualisation and interpretation of the identified themes.

A series of semi-structured interview questions (Figure 1) was developed to guide the interview. The interview topics were informed by review of the literature and interviews with twelve key informants external to the study community.<sup>10,11</sup> The interviews explored issues with medication supply and management in the study community, including challenges in service provision, extended medication roles of rural healthcare providers, medication support mechanisms for rural healthcare providers and potential service delivery models and roles for pharmacists and pharmacy support staff to provide medication support. As per semi-structured interview methods, a degree of flexibility allowed healthcare providers to expand on topics relevant to their practice area. Data were collected until theme saturation was reached. The interviews were transcribed and manually analysed for themes and unique responses.

## Results

A total of 49 healthcare providers servicing the ambulatory community, residential aged care, hospital and mental health facilities were interviewed. Findings reported below were the insights of medical practitioners (n=5), pharmacists (n=7), intern pharmacists (n=2) and hospital RNs (n=11) whose comments related to service delivery models involving pharmacists and potential roles for pharmacy support staff to provide medication support in rural areas.

The five medical practitioners in the study community were all contracted to service their local hospital, while also

working in private practice such as residential aged care and general practice, reportedly common practice to maximise medical workforce in rural areas. All four hospitals were serviced by nurses, who held responsibility for medication supply (discharge medications or emergency supply when the local community pharmacy was unavailable) and for the hospital pharmacy store. One of the towns was serviced by two sole-pharmacist community pharmacies (one with an intern pharmacist) and the remaining three towns were serviced by one sole-pharmacist community pharmacy each (one with an intern pharmacist). A pharmacy educator occasionally visited the study community to provide medication education at the hospitals, community pharmacies and medical practices. An accredited pharmacist provided Residential Medication Management Review (RMMR) services to the residential aged care facilities in the study community, as well as quality use of medicine services in the form of medication education to nursing staff at the facilities.

- What are your day-to-day tasks relating to medications? Would you consider any of these roles not something that is usually undertaken by other people in your profession?
- Can you describe the challenges and possibility for error when you're undertaking (the task described)?
- How do you cope with (the challenges described)? What support do you receive/need?
- If you have any medication-related questions, who do you go to? What happens if that person is unavailable?
- Do you see a role for pharmacist to provide the support you need? How?
- What role do you see for a community pharmacist in towns where there is no hospital pharmacist?
- Do you see the potential for a pharmacy assistant or technician to undertake more (medication) roles?

Figure 1: Sample questions relevant to key findings presented in this paper

Most of the hospitals' nursing staff had consulted either the local community pharmacist or a Queensland Health hospital pharmacist via telephone for medication-related information, although neither was considered as beneficial as support from an on-site pharmacist. The nurses claimed that although the local community pharmacist may not be familiar with Queensland Health policies or the drug formulary used in hospitals, they valued the local community pharmacist's support through medication supply and reconciliation of patients' medication histories. Additionally, most of the participants were considerate of the workload of the local community pharmacist, being a sole practitioner.

### Sessional support

Two of the pharmacists shared their experiences in other towns as a 'sessional pharmacist' providing part-time services to a non-pharmacist hospital when they were working as a community pharmacist:

*'...it was my responsibility to order all the medications needed, to dispense anything for outpatients and check the ward stock... the nursing staff ring up and check things out, pharmaceutically. I thought it was brilliant ... They carried on (the system) for a while, and then it felt flat ...'* (Community pharmacist, HP26)

*'...it was one doctor, one-pharmacist town, the doctor would be up at the hospital until 10 o'clock in the morning. I wasn't doing any dispensing and there'd be a nurse [at the hospital] dispensing... We ended up piloting sessional hospital pharmacy where my dispensary was closed until 10 o'clock. I worked at the hospital. Did the hospital dispensing, also provided clinical services... That was then available for every pharmacist in Queensland to do that. It was created and we ran that like that for ages, but no one else ever picked it up. It was 40 years ago... the hospital paid me... we worked through the Minister of Health and the local hospital board wanted it on the basis of cost cutting, as it was very poor stock management [at the hospital]. So I got in there on budgetary rationale, but then I actually turned it into a clinical rationale.'* (Accredited pharmacist, HP46)

The majority of hospital staff acknowledged the value of a pharmacist in checking

medication charts and providing patient education, but cited insufficient workload, current budgetary constraints and health care models supporting acute patient care as some of the barriers to employment of a hospital pharmacist. However, a medical practitioner valued consistent pharmacist consultation at the hospital as compared to intermittent clinical services, such as the RMMR service provided by the visiting accredited pharmacist at the residential aged care facilities:

*'[A hospital pharmacist] would be ideal. The thing is, in the hospital, we have such high turnover of patients that [the pharmacist] has to be there on a day-to-day basis to be able to catch up with everybody. There is a facility for pharmacy-led medication reviews for the long-term patients in the aged care facilities, but in the acute wards, there would be a lot of people falling through the cracks.'* (Medical practitioner, HP30)

### Outreach support

Most participants were supportive of the service model involving an outreach or visiting pharmacist, providing district support, inventory audit services and medication education for health care staff in non-pharmacist sites. While pharmacists located at larger hospitals were able to provide support via telephone, the value of a visiting pharmacist was perceived to be greater:

*'In another town, we had a permanent pharmacist who was able to get staff to do outreach visits. So they were a great support to the staff and to audit the pharmacy... They'd do a drug count and check the drug book and audit to ensure the correct use and supply... Then they had a lot of problems staffing the pharmacy, so they didn't have staff to go on outreach. Hopefully, if they do come, they'd do education as well for the staff, you know, different drugs are always coming online and different storage or different administration.'* (Managerial hospital RN, HP14)

*'I quite often think "why aren't [the pharmacists] doing it now?"...Even from working, knowing what happens in my own hospital here that doesn't have a pharmacist, visiting all the other little towns [that also lack a hospital pharmacist], it really makes me just wish that there was some sort of role there for a pharmacist.'* (Pharmacy educator, HP45)

The accredited pharmacist spoke of his/her experiences as an outreach clinical pharmacist in New South Wales:

*'I was operating as a regional clinical pharmacist for a regional hospital group... [the healthcare staff] realised they had a hospital pharmacist at the main base, but there was no-one getting around to all the little hospitals... So they put me on a stipend and I was going around all the little hospitals, talking to doctors, talking to nurses, doing education...'* (Accredited pharmacist, HP46)

The majority of the hospital staff supported the intermittent outreach services provided by a visiting pharmacist, but acknowledged staffing and workload issues in larger facilities in order to provide this service:

*'I think we do need to have a pharmacist come in, provide support, review what we're doing and audit what we're doing. I think twice a year would be great, if more, it would be excellent, but not permanent [due to lack of funding]... Quite a big limitation, they needed to keep the pharmacy [at the larger hospital] staffed and if they don't have any extra there, they can't release pharmacists to do the outreach.'* (Managerial hospital RN, HP14)

## Virtual support

There was limited video-conferencing infrastructure in place in the study community. A video-conferencing set-up at the mental health facility had been established for psychiatrists to provide clinical assessment remotely and another set-up was observed at one of the local hospitals for regional or metropolitan hospital doctors to provide clinical support to the rural doctors. Both set-ups were commended by hospital and mental health workers. Few insights were offered regarding regional or metropolitan pharmacists providing support through video-conferencing (i.e. tele-pharmacy) due to unfamiliarity with the model, although the majority of the participants commented on the benefits of video-conferencing for training or continuing professional development purposes. A community pharmacist used to provide medication consultation and education for the local Division of General Practice:

*'The tele-conferences I was involved in were part of the [name of Division of General*

*Practice]. We used to have our regular tele-conference meetings and discuss topics... There's a mental health part of it, and diabetic part of it... That's stopped. I'm pretty sure they said something about funding.'* (Community pharmacist, HP12)

## Roles for pharmacy support staff

Some pharmacists agreed with the concept of pharmacy/dispensary assistants or technicians undertaking a supply role in non-pharmacist sites:

*'...the routine dispensing for outpatients could still be done by a [pharmacy] tech. And the topping up of the ward cupboard could still be done by a pharmacy tech'* (Community pharmacist, HP26)

*'I think pharmacy technicians would probably be in better position than some of the nurses to be doing [supply]... there's also need to have something put in place so that they could reference things that need to be referenced... whether that involves talking to the doctor or ringing a pharmacist for advice... they could call a pharmacist that's based in [a larger hospital].'* (Community pharmacist, HP12)

Many of the hospital nursing staff could not comment on the benefits of the role, mainly because of lack of experience in working with a pharmacy-trained colleague. However, a managerial hospital RN commented that the model had to be designed to be applicable to rural hospitals, citing current budget and rational use of workforce as some of the barriers:

*'Our work demand is too erratic over a 24-hour period to support having a technician ... just for that role [i.e. medication supply], unless they were doing another role as well. If they were a dietitian, they could share that: part-time dietitian, part-time [pharmacy] technician'* (Managerial hospital RN, HP14)

## Discussion

The quasi-qualitative study methodology and interviews with a range of healthcare providers at the 'coal face' in the community facilitated in-depth discussion of the support models. While none of the service models existed in the community at the time many of the healthcare providers were able to reflect on the benefits and limitations of these models based on their practice experience.

Most participants acknowledged the value of pharmacist support, either in a technical or clinical capacity, and service delivery models to provide this included:

- **Sessional support.** Participants previously involved in this model elsewhere identified the potential for community pharmacists to support non-pharmacist hospitals via pharmacy management, dispensing and clinical pharmacy services. Implementation of this model would offer service consistency and reduce fragmentation in provision of clinical support, as indicated by a medical practitioner interviewed. This could be further complemented with periodic hospital pharmacist visits.<sup>4</sup>
- **Outreach support.** Participants with previous experience in outreach services elsewhere commented on the potential to periodically provide enhanced pharmacy services (e.g. medication management review services), medication education and administrative pharmacy support. The nurses interviewed in this study appeared to favour this concept due to the perception that a district hospital pharmacist would be more familiar with Queensland Health policies and practices surrounding medication management. This concept was preferred over full-time or part-time employment of a hospital pharmacist, due to the perceived budgetary constraints of rural hospitals required to support nursing staff in provision of emergency medical care as well as primary healthcare services.
- **Virtual support.** Participants have commented on the convenience of video-conferencing in breaking the geographical barrier to provide specialist medical services, education and clinical support.<sup>18</sup> Although few insights were provided regarding tele-pharmacy, there is potential for pharmacists to utilise such a model, as a result of studies proposing its benefits in the regular provision of tele-pharmacy consultation, as opposed to irregular on-site pharmacist services, in improving access to medication consultation and clinical pharmacy support.<sup>6,11,19,22</sup>

Lack of funding was universally identified as a significant barrier in establishing and implementing these models,

and it is likely that funding would only follow proof-of-concept studies in rural communities. There have been calls from the Pharmaceutical Society of Australia and National Rural Health Alliance to the Commonwealth Government to allocate funding for expansion of telehealth into tele-pharmacy and funding for sessional employment by pharmacists to provide Quality Use of Medicines support in rural areas.<sup>3,23</sup> The Commonwealth Government Department of Health and Ageing has also announced the establishment of a Rural Health Outreach Fund to support outreach allied health services in priority areas such as mental health and chronic disease management.<sup>24</sup> Apart from funding, the study identified that competency, availability of professional support and acceptance of other healthcare providers are other factors to be considered when establishing and implementing the service delivery models.<sup>14</sup>

Some pharmacists commented on the potential to re-engineer pharmacy practice to better utilise pharmacy support staff (e.g. pharmacy/dispensary assistants or technicians) in medication supply.<sup>10,20,25</sup> Participants considered pharmacy support staff as appropriate personnel to undertake independent operational or technical tasks as they generally have undertaken training in medication stock management and legislation relating to medication storage and supply processes.<sup>10,20,26,27</sup> Again, limited insights were provided on this model, as the role of pharmacy support staff is restricted by supervision requirements and limited endorsements in the *Regulation*. Further role modelling is warranted, supported by investigation into indirect supervision of the support staff by a pharmacist via video-conferencing, which is aligned with recent changes in the *Regulation* that acknowledge the role of technology in 'supervision' and 'personal supervision' of health practitioners.<sup>8</sup>

One of the limitations of this study is its lack of focus on provision of medication support to Indigenous communities, as Indigenous issues were not identified by interviewees in the study community. Separate investigation is required into funding models and legislative provisions (e.g. Section 100) to address the unique needs of Indigenous communities, particularly in more remote or isolated areas. Another limitation is that

none of the proposed models had been instigated in this community, and as such, the research took an exploratory, theoretical approach based on the perspectives of those with experience in similar models in other settings. Although the study was conducted in one specific rural community in Queensland, the service delivery models have also been identified in other studies<sup>11</sup> and thus the concepts discussed should be applicable to the general rural settings in Queensland or other jurisdictions.

## Conclusions

Australia's rurality imposes a challenge to delivery of healthcare services, including pharmacy services. This research provided rural healthcare providers' perspectives on sessional support, outreach support, and virtual support in providing clinical pharmacy services and medication support. The potential for extended medication supply roles for pharmacy support staff was also discussed. Despite the limitations reported for the model, each model has its place and application. It is intended that the examples provided in this paper will inform and inspire stakeholders, researchers and pharmacists to exploit these models to enhance provision of pharmacy services in rural areas.

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