Nurse Practitioners:

An Insight into their Integration into Australian Community Pharmacies

ABSTRACT

Background: Nurse practitioners (NPs) are independent health professionals with prescribing rights. Since 2008 in Australia, NPs have established primary care roles, yet evidence of this model of care has not been published to date.

***Objective*:** To explore the integration of NPs into community pharmacies and their reported impact on the provision of pharmacy services.

Methods: The study comprised semi-structured interviews with 28 staff of all 9 community pharmacies operating the Revive Clinic Nurse Practitioner service in Western Australia, Australia, between August and September 2011. Interviewees comprised NPs representing 6 practices and pharmacy staff of all 9 practices. Interviews explored the NPs' scope of practice, provision of pharmacy services, interactions within the pharmacy and operational aspects of the NP clinic. Data are descriptively reported.

Results: The NPs undertook a range of services, including medication prescribing according to clinical guidelines, provision and ordering of diagnostic services, vaccine administration and provision of medical certificates. Community pharmacists claimed to continue ensuring the safe and quality use of medicines and to counsel clients. Both pharmacists and NPs potentially provided consumer medicine information leaflets. The key collaboration between the NP and pharmacy staff involved referral to the NP if within their scope of practice. NPs also wrote prescriptions for Pharmacist Only (S3) Medicines. Clinical guidelines and resources used by the NPs were similar to those for pharmacists.

Conclusions: NPs' primary healthcare services can complement roles of community pharmacists. Potential exists for further collaboration and interdisciplinary care in health promotion and screening services. Clarification is needed with respect to prescribing and provision of Pharmacist Only Medicines, and provision of consumer medicines leaflets.

INTRODUCTION

Nurse Practitioners (NPs) are registered nurses with advanced knowledge, qualifications and skills who are authorised to write prescriptions, order diagnostic investigations and provide referrals to specialist medical practitioners.[1,2] Although the role of the NP has been well established internationally,[3] NP endorsement occurred considerably later in Australia, with the first NP authorised to practise in the Australian State of New South Wales in 2000.[4] Other States shortly followed, with legislative changes allowing NPs to practise in Western Australia (WA) in place since 2003.[5] As independent practitioners registered with the Nursing and Midwifery Board of Australia, NPs are required to practise in accordance with regulatory and professional guidelines[6] including the *National Competency Standards for the Nurse Practitioner* and the Board's registration standard on continuing professional development.[7] The most significant and recent change to the NPs' scope of practice is their eligibility, in private practice, to provide subsidised services under Australia's Medicare Benefits Schedule (MBS), and prescribe medicines subsidised under the Pharmaceutical Benefits Scheme (PBS).[8] A collaborative agreement between a NP and a medical practitioner is required for the NP to provide Medicare-subsidised services,[9] and should involve an understanding between the health professionals in terms of scope of practice and patient care protocols, in order to uphold patient safety.[10]

NPs have developed a career path in primary healthcare. The Revive Clinic franchise, founded in 2008 in WA, is the primary operator of a pharmacy-based NP service. In the Revive Clinic service model, NPs consult patients within a private area of the pharmacy; appointments are optional. Fixed Medicare-rebated consultation fees apply for consultations. NPs have been described as having a 'generalist' role, with a broad range of skills and knowledge[11] to provide a range of primary care services including the provision of health checks, vaccinations, health promotion, medical certificates, and diagnostic testing such as kidney and liver functioning. The NPs can also prescribe many of the medicines in the general practitioners' PBS formulary, and assist with the treatment of minor illnesses such as headaches and infections.[12]

Whilst this model is relatively new to Australia, the proposal of an alliance between pharmacy and nursing professions had been supported by the South African Pharmacy Council in 1995, leading to approval of pharmacists to employ registered nurses (who can provide many of the roles of NPs in Australia) to provide a range of services within community pharmacies.[13] Gilbert *et al*. identified that although the South African nurses were positive about practising within a community pharmacy, some pharmacists questioned their training and had concerns about the nurse encroaching on pharmacists' roles.[14] Concerns about fragmentation of care and patient safety have also been raised in the United States, where in-pharmacy 'convenient care clinics' have been staffed by a NP since 2000.[15] These issues are worthy of further exploration in the Australian context. A recent Australian study that investigated the role, responsibilities and patterns of practice of NPs did not include the primary care model found in community pharmacy,[16] and other studies that focused on NPs' prescribing and counselling practices were not representative of NPs in the private sector.[2,17]

There is therefore a lack of insight into the functionality of the Australian NP community pharmacy practice model, which raises a number of questions pertinent to the pharmacy profession: What is the range of services managed by NPs? What interaction(s) takes place between the NP and pharmacist staff? Do the pharmacists refer clients to the NP for tasks that they would normally manage? Does the NP refer clients to the pharmacist to recommend certain medications? What guidelines and resources are in place to ensure that the NP provides a quality service?

AIM

This study aimed to explore the integration of NPs into community pharmacies and provide insight into how NPs impact upon, or may enhance the provision of, pharmacy services.

METHOD

The study was approved by the Griffith University and Curtin University Human Research Ethics Committees (approval numbers PHM/06/11/HREC and HR122/2011, respectively). Semi-structured interview guides for pharmacists, NPs and pharmacy assistants were developed by the researchers, informed by review of the literature. Participants were asked open-ended questions that related to the following broad categories, all within the context of the pharmacy setting: scope of practice of the NP, changes to the role(s) of pharmacy staff and service provision, and NP-pharmacy staff interaction(s). Pharmacists were asked what prompted the decision to introduce a NP clinic into the pharmacy, and NPs were provided with additional questions relating to operational aspects of the clinic, such as procedures and resources. To further investigate the integration of NPs into community pharmacies,

scenarios common to pharmacy practice were presented for comment (Table 1), depicting a drug interaction in a NP's prescription and two non-prescription medicine requests where a referral was indicated.

All Revive Clinic NPs and the pharmacists-in-charge of the nine clinic franchises in WA were contacted, provided with a study information sheet and invited to host a visit by a researcher (SMcM) and participate in semi-structured interviews. Visits were confirmed via written consent, and undertaken in August and September 2011. The researcher spent approximately 1 day per site collecting field notes and interviewing pharmacists, pharmacy assistants and NPs. Notes were taken during all interviews, including verbatim transcriptions of comments of particular interest. Data collection visits were made to all 5 metropolitan and 1 of the 4 regional Revive Clinics. Upon verbal consent, telephone interviews and note-taking of responses were conducted with available staff in the other 3 regional clinics.

All responses were de-identified and both authors analysed the transcripts independently to identify noteworthy comments, trends and variability in the data, which were reported according to the major topics in the data collection template.

RESULTS

Participant details

A total of 28 interviews took place across 5 metropolitan and 4 rural community pharmacies (Revive Clinic franchisees). The participants comprised 10 pharmacists, including 4

pharmacy owners, 11 pharmacy assistants and 1 pharmacy manager. Five NPs participated in the study, with 1 who worked in 2 clinics providing responses specific to each site.

Scope of Practice

Pharmacists in general were not concerned about the NP encroaching on their professional roles, exemplified by:

> *"We thought the challenges were: when does it no longer become the pharmacist's role?... One pharmacist in particular whose opinion was 'why can't we write the prescriptions ourselves?'...well that's not the way that it is* [currently]*."* (Pharmacist 4)

Pharmacists were still involved in the provision of Pharmacist Only Medicines (also known as Schedule 3 or S3 medicines) such as the emergency contraceptive pill. However, considering that contraceptives are listed in the NPs' formulary and that NPs can provide referrals for further medical investigations, some pharmacists considered it appropriate to refer clients to the NP if the clients were not using contraceptives.

A range of non-prescription medicines are also included in the NPs' formulary, and although the NP could prescribe these medications, the NPs identified that a pharmacist was legally required to be involved in the supply of S3 medicines. This was therefore described as a shared arrangement between the health professionals:

> *"…* [We NPs are] *not supposed to be recommending S3s, but we do.* [We] *would let the pharmacist know that* [we] *are giving out an S3."* (NP1)

With respect to other non-prescription medicines, NPs acknowledged that they approached pharmacy staff for advice if they were not familiar with a medicine, but also believed they had a duty of care to provide advice to their clients:

> *"We probably both do* [provide advice], *but it does depend on the preparation. Certainly, I would make it my business to know what the dose was. If I had to go out and ask what is the most appropriate medication, I would discuss it with the pharmacy assistant and client."* (NP5)

The majority of pharmacists stated that they did not write medical certificates and would advise consumers that the NP could provide this service. With respect to clinical investigations, pharmacy staff still performed blood pressure testing as a standard service, with more advanced screenings referred to either the NP or general practitioner (GP).

Pharmacists confirmed that their role in supplying NP-prescribed medicines was no different to dispensing for traditional prescribers. The majority of pharmacists indicated that the NP was approachable if there were medication queries, and that conversations were held to find common ground. Given a scenario where the pharmacist identifies a drug interaction from an NP authorised prescription, a typical response was: *"I would alert her* [NP] *and would suggest an alternative"* (Pharmacist 6).

Overall, the view from both pharmacists and NPs was that while NPs can prescribe and counsel on medicine use during their consultation, pharmacists would continue to provide advice, which was also acknowledged by some NPs as an expected role of the pharmacist:

> *"I tell* [the clients] *as well, it is part of the job if I am prescribing…how long to take it, when to stop taking it, any side effects."* (NP1)

> *"Some of the pharmacists would go through it* [medicines information] *again, which I find really good, as it's reinforcement."* (NP6)

Although some NPs stated they would supply a consumer medicines information [CMI] leaflet when counselling clients, this did not appear to be used as a routine resource. However, this may be because the pharmacist continued to provide this information:

> *"I have seen the [pharmacist] do it. I suppose we work together if you like."* (NP5)

> *"Depends. If it is a pill…I would automatically print it out. Even if they have used it before and they just want information. Not so much on antibiotics, the pharmacist would normally print it out."* (NP6)

Interaction between NP and Pharmacy Staff

Having two health care professionals co-located was identified as a key benefit of the NP clinic by most participants. In addition to *ad hoc* discussions around medications, pharmacists interacted with the NP when needing a second opinion or when referring consumers for

consultations. Pharmacists expressed that these referrals were clinically warranted and were within the scope of the NPs' role, and included cases such as infection and wound management, vaccinations and provision of medical certificates:

> *"Depends on what they are presented with; if out of my scope, I would refer, e.g. skin lesions…would only refer to the NP if it was within their scope…"* (Pharmacist 6)

Pharmacists felt strongly that they would not have recommended consumers to see the NP if they could assist them, particularly "*for free"* (Pharmacy Manager).

This was also identified when pharmacists were given a scenario of a 1-year-old child presenting with symptoms of bacterial conjunctivitis (Table 1). Although the majority of pharmacists acknowledged that they would refer the child to the NP rather than provide chloramphenicol eye drops, to comply with age indications in conjunctivitis management guidelines,[18] two agreed that they would provide the S3 medicine to save the client money:

> *"I would probably do it as an S3. You are torn between a NP that charges x amount of dollars…If I think that it needs to have more of a consult I would send to the NP. You would be tempted to do this if it was busy."* (Pharmacist 9)

Pharmacy assistants were inclined to refer clients to the pharmacist before seeking assistance from the NP. This was identified in a scenario where a gentleman requested ranitidine tablets for his reflux and the assistant felt that someone needed to speak to him about weight management (Table 1):

"I would explain that the pharmacist would probably be able to provide information on how to better manage his reflux, if he does not mind waiting...I would get the pharmacist…" (Pharmacy Assistant 8)

Both pharmacists and NPs recognised that it would be beneficial for the NP to be more involved in pharmacy-based health promotion campaigns, with most pharmacists acknowledging that health check activities were not conducted regularly in the pharmacy. However, the fee-for-service was mentioned as an issue, as pharmacists can provide information at no cost and are available during the pharmacy opening hours for consultations:

"It would have been good if they get involved, we are doing it as a service; NP is a fee-for-service basis. It would have been an issue to get them involved in something that is free…" (Pharmacy Manager)

Reasons for Introducing the Clinic

Pharmacists identified that the NP clinic promoted the pharmacy as a health care destination that meets consumer needs. This was particularly emphasised in areas where there was a shortage of GPs, creating long appointment waiting periods:

"I guess shortage of medical services in [region]*...pharmacies are under-utilised resources in the provision of primary health services… trying to do something about it."* (Pharmacy Manager)

"[The issue is] *just the amount of time it takes to get into a GP."* (Pharmacist 9)

One pharmacist also commented that although his/her pharmacy was predominantly staffed by pharmacists, there was still not enough time to meet client demand for professional services. The introduction of the NP was seen to assist the pharmacy to provide a superior level of service. Most pharmacists agreed that the reasons for introducing the NP into the pharmacy aligned with the benefits of this professional service, such as relieving pressure on a somewhat burdened health system and not delaying treatment:

> *"…there are a number of patients that we see that we need to refer on to the Dr….in a lot of cases they are very straightforward…not wasting the Dr's time...refer to the NP who can normally deal with them…"* (Pharmacist 8)

Conversely, a limited number of pharmacists mentioned remuneration or increases in customer numbers as the primary benefits from the NP clinic. As one participant explained, it was "*…not done for financial reasons,* [it is] *all about provision of health care"* (Pharmacy Manager).

NP Resources and Procedures

The NPs explained that they had an assortment of medicine information compendia such as the *Therapeutic Guidelines*, *Australian Medicines Handbook* and *MIMS*. Upon client consent, NPs could also access their medication history from the pharmacist, as the pharmacy's computer database was not linked to Revive Clinic records. They also follow clinical protocol guidelines when issuing prescriptions, and would refer to the GP if outside their scope of practice:

"Every ailment that we treat we have clinical protocol guidelines – we follow those, we don't prescribe outside of that." (NP6)

DISCUSSION

This study explored the NPs' professional roles within a community pharmacy setting, their impact on the pharmacist's role(s) and delivery of professional services. It was evident from pharmacists that the primary reason for incorporating a NP clinic into their pharmacies was to meet client demand for increased access to health care. Some pharmacists expressed that this was due to GP shortages and the difficulties for consumers to obtain an appointment, particularly in non-metropolitan areas. This reflects the current healthcare climate in WA, with a report by the Council of Australian Governments in 2011 indicating that Western Australians endure longer GP waiting times compared to other states of Australia.[19] The utilisation of NPs to address healthcare workforce shortages has also been recognised internationally.[20-22]

Pharmacists in this study reported that they referred consumers to the NP when the pharmacist could not assist and perceived that the case was within the NPs' scope of practice. Although this initial study did not assess the impact of this service model on the healthcare system, it could be postulated that this triaging by the pharmacy to the NP service should relieve GP workloads (as demonstrated with nurses placed in general practice[23]), improve healthcare access[24] and relieve hospital Emergency Department visits. Furthermore, other studies have also identified that NPs provide comparable primary care to GPs.[20,25] A study by Lenz *et al.* demonstrated that there was no significant difference between the health status of

NPs' and GPs' patients at two-year follow-up,[26] indicating that NPs are well suited to improve healthcare access. As Lenz's study involved NPs located within a general practice surgery, further research is required into the contribution of NPs in a community pharmacy setting, their effect on clinical outcomes[23,27] and healthcare utilisation.

This study identified that the incorporation of a NP clinic into the community pharmacy did not appear to impact on or change the pharmacists' current scope of practice. Pharmacists claimed to continue their key role of ensuring the quality use of medicines and upholding patient safety by confirming the appropriateness of NP prescriptions, as they would for traditional prescribers.[28] Although patient-focused interactions between the pharmacist and the NP were not observed for confidentiality reasons, interviewees commented that the two health professionals worked together to solve any clinical issues, yet a degree of autonomy and independence were considered important for professional integrity. The importance of effective communication between all healthcare professionals involved in patient care has been abundantly described in the literature.[29,30] The NPs also confirmed that they did not prescribe outside of their clinical protocols and referred cases to the GP if beyond their scope of practice, which is also critical for maintaining patient safety. This principle has been the basis for supporting the separation of prescribing and supplying duties,[31-33] with a study by Bissell *et al.* revealing that the pecuniary interests of community pharmacists influence consumer perceptions of the pharmacist's role in medication management.[34] With the profession currently supportive of collaborative prescribing by non-medical health care professionals,[35] the inclusion of an independent practitioner such as the NP into the community pharmacy is a way to help meet client needs without compromising on patient safety.

Considering that consumers may not recall all information provided in a medical consultation,[36] it is appropriate for pharmacists to provide drug information and reinforce counselling for NP clients. This role was recognised as an important one by NPs and was also identified in the South African study by Gilbert *et al*., with registered nurses working in pharmacies agreeing that the provision of advice on safe and effective medication use was the domain of the pharmacist.[13] There is, however, a need to improve the provision and utilisation of CMIs,[37] particularly given the professional expectation that pharmacists provide these information leaflets upon medication counselling.[38] Without co-ordination of CMI provision, there is the risk that both health care professionals could presume that the other offered this written information to the client.

The presence of a NP did not impact on the pharmacist's provision of most S3 medicines, who explained that if they could not assist the consumer, they would refer to the NP if within the NP's scope of practice. NPs are therefore ideally placed to manage cases that are clinically aligned in-between a GP's appointment and a non-prescription medication request. This was demonstrated by the scenario involving a one-year-old infant presenting with symptoms of bacterial conjunctivitis, with pharmacists expected to follow the Pharmaceutical Society of Australia's protocol for chloramphenicol provision.[18] These protocols aim to ensure that the provision of these medicines is warranted and the relevant risk factors have been considered. Although it is recommended that children under the age of two years are referred to an optometrist or GP, the majority of pharmacists stated that they would refer the case to the NP. It could be viewed as a concern that two pharmacists stated that they would provide the eye drops in order to save the client time and money. This scenario indicates that there is potential to better utilise the NP for a second opinion. Furthermore, clarification is needed regarding the appropriateness of NPs as referral agents

for the provision of non-prescription medicines, and for protocols to be adjusted accordingly. This discussion also extends to legislative matters, as the provision of Pharmacist Only (S3) Medicines by pharmacists is grounded in legislation requiring the pharmacist to ascertain the therapeutic need for the medicine, provide advice, and, in some Australian States, to document the sale. Although the supply of the majority of S3 medicines in WA does not need to be recorded via dispensary software, the pharmacist needs to be involved in the sale. The anomaly exists in that the NP could write a prescription for an S3 medicine during a consultation. Clarification is required regarding whether NPs working in a community pharmacy need to confirm the supply of all S3 medicines with the pharmacist on duty, considering NPs have prescribing rights but may not have the broader knowledge base needed for a primary-care setting,[39] such as the non-prescription medicine knowledge with which pharmacists are trained.

However, NPs do have the scope of practice to complement the pharmacist's role, and this study identified that further opportunities are available to improve the provision of professional services, and subsequently, pharmaceutical care. This reiterates the findings of a survey conduct in the United Kingdom, with the majority of community pharmacists agreeing that NPs could help expand community pharmacy activities.[40] An example of this enhancement of collaborative care would be for pharmacy staff and the NP to co-ordinate care for sexual health services. The pharmacist could promote sexually transmissible infection screening for clients who present for the EC, with NPs utilising their diagnostic skills to provide further testing. Considering that the profession is currently encouraging the provision of disease management services and health promotion within community pharmacy,[41] and the Australian Government has emphasised the importance of collaborative

care,[42] it is prudent that the nursing and pharmacy professions work together to improve the delivery of primary health care.

Strengths and Limitations of the Study

This was an independently-funded study and provides first-hand insight into the NPs' role in the Australian community pharmacy setting. The small number of operational NP clinics within pharmacies in Australia only provides preliminary insight into the potential benefits and challenges with this model, and as such, the findings may not be generalisable to other franchises or independently-owned NP clinics that may be established in the future. It is also acknowledged that the interviews were not recorded; however, comprehensive note-taking was feasible given the location and timing of the interviews. It was beyond the scope of this study to evaluate the quality of NP prescribing, the clinical outcomes for clients and the relationships with GPs and other health care professionals, generating opportunities for further research in this field.

CONCLUSION

This study highlights that the NPs' scope of practice can complement that of community pharmacists. Pharmacists are still required to provide advice and ensure the therapeutic need of medications. NPs were introduced into these pharmacies to improve access to patient care and promote the pharmacy as a healthcare destination. However, further collaboration is warranted by both professions, particularly to extend health promotion services, ensuring that the knowledge and skills of both parties are used to the advantage of the patient. Clarification is

also required within the pharmacy profession as to the extent of the NPs' role in non-prescription medicine supply, particularly as a referral agent.

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CONFLICT OF INTEREST

None. This project was not funded by Revive clinics.

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Table 1: Hypothetical case scenarios for pharmacy staff

Pharmacist Question(s)	The nurse practitioner writes a prescription, which is handed in to you for dispensing. You identify on the dispensing record a potential drug-drug interaction that was not apparent to the nurse practitioner. What would happen next in your pharmacy?
	A mother brings her **1**-year-old daughter to the counter and explains to you that the girl has an eye infection. You recognise the symptoms of conjunctivitis, and know that Chlorsig® (chloramphenicol) is now available as an S3 (Pharmacist Only) Medicine for children aged **2** years and older. The nurse practitioner is available for consultation. What would you do next?
Pharmacy Assistant Question	A middle-aged man approaches you and requests a pack of ranitidine tablets (Schedule 2[a]) for his reflux. They're for himself, he's taken them before, he's not taking any other medicines, and he only uses the ranitidine occasionally. This appears to be a straightforward sale that you can manage. However, you are concerned that the man is overweight, and this might be contributing to his reflux. You feel that someone – either the pharmacist or the nurse practitioner – should talk with him about weight management. Both are busy. What would happen next in your pharmacy?

[a] Pharmacy Medicine; can be sold by pharmacy assistants