Nurse Practitioners:
An Insight into their Integration into Australian Community Pharmacies

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ABSTRACT

Background: Nurse practitioners (NPs) are independent health professionals with prescribing rights, and have recently established primary care roles in pharmacies.

***Objective*:** To describe the roles of pharmacy-based NPs in Australia.

Methods: Semi-structured interviews were undertaken on-site or by telephone with 28 staff of all 9 Revive NP Clinics in Western Australia. Participants comprised NPs representing 6 practices and pharmacy staff of all 9 practices. Questions explored the NPs' scope of practice and staff collaboration. 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 reported to continue ensuring the safe and quality use of medicines and to counsel clients. Both pharmacists and NPs provided consumer medicine information leaflets. NPs are authorised to write prescriptions for Pharmacist Only (S3) Medicines.

Conclusions: NPs' primary healthcare roles appear to 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 offering consumer medicines leaflets.

INTRODUCTION

Nurse Practitioners (NPs) are registered nurses who are authorised to prescribe medicines, order diagnostic investigations and provide referrals to specialist medical practitioners.[1,2] Traditionally, NPs have been employed in hospitals and medical clinics; a career path in primary healthcare has now been developed.

The most significant and recent change for NPs in Australia is their eligibility, in private practice and under a collaborative agreement with a general practitioner (GP),[3] to provide Government-subsidised medical services and prescribe Government-subsidised medicines.[4] NPs work within their recognised 'scope of practice' and adhere to approved protocols for patient safety.[5] In primary healthcare, NPs have a 'generalist' role, with a broad range of skills and knowledge[6] to provide a range of primary care services including health checks, vaccinations, health promotion, medical certificates and diagnostic testing.[7] The NPs can also prescribe many of the medicines in the GPs' formulary. The NP's role in primary healthcare aims to increase timeliness and convenience of access to clinical and prescribing services, complementing the roles of GPs and pharmacists; however, their impact on patient care has not been evaluated.

The Revive Clinic franchise, founded in 2008 in Western Australia, is the primary operator of a pharmacy-based NP service. In the Revive Clinic model, the community pharmacy purchases a franchise and is supplied a Revive-trained NP, who practises independently within the pharmacy. The pharmacy also receives signage and marketing collateral. Revive is responsible for continuity of the service, while the NP's salary and income from consultations are part of the pharmacy business. NPs consult patients within a private area provided by the

pharmacy; appointments are optional. Fixed Government-rebated consultation fees apply for consultations.

Nurses have practised in community pharmacies in South Africa since 1995[8] and the United States, via 'convenient care clinics' established in 2000.[9] The South African nurses were positive about their primary health role, although some pharmacists perceived role encroachment.[8] Concerns about fragmentation of care and patient safety were raised in the United States.[9] These issues are worthy of further exploration in the Australian context. A recent Australian study into the role, responsibilities and patterns of practice of NPs excluded the pharmacy-based employment model,[10] and other studies of NPs' prescribing and counselling practices were not representative of NPs in the private sector.[2,11] Thus, there is a lack of insight into the functionality of the Australian NP pharmacy model, with questions relating to the services managed by NPs and interaction(s) between NPs and pharmacist staff.

AIM

This study aimed to describe the roles of pharmacy-based NPs in Australia and their integration with those of other pharmacy staff.

METHOD

The study was approved by the Griffith and Curtin Universities Human Research Ethics Committees. The study involved data collection via semi-structured interviews (20-60 minutes' duration) of pharmacists, NPs and pharmacy assistants. Interviews were on-site where feasible, to facilitate observation of the facilities and allow for interruptions, with field

notes and documentation of quotations of interest in lieu of recording the interviews. Questions explored the NP's roles in the pharmacy, changes to the role(s) of pharmacy staff and service provision, and NP-pharmacy staff interaction(s). Operational aspects of the Revive Clinic were also explored but not reported here.

All NPs and the pharmacists-in-charge of the 9 Revive Clinics in Western Australia were invited to participate during August-September 2011. All responses were coded by the category of participant. Both authors analysed the transcripts independently to identify noteworthy comments, trends and variability in the data, which were reported descriptively.

RESULTS

Participant details

Twenty-eight interviews took place across 5 metropolitan and 4 regional community pharmacies (Revive Clinic franchisees). Interviews were conducted on-site for 6 accessible Clinics, and by telephone for 3 regional Clinics. The participants comprised 10 pharmacists, including 4 pharmacy owners, 11 pharmacy assistants and 1 non-pharmacist manager. Five NPs participated in the study, with 1 who worked part-time across 2 Clinics providing responses specific to each site. The NPs of 2 regional and 1 metropolitan Clinics were unavailable for interview.

Scope of Practice and Professional Roles

Pharmacists in general were not concerned about the NP encroaching on their professional roles. Pharmacists were still involved in the provision of Pharmacist Only Medicines, such as emergency hormonal contraception. Some pharmacists considered it appropriate to refer clients presenting for emergency contraception to the NP for prescribing of regular contraception and further referral if warranted. Although the NP could supply a wide range of non-prescription medicines, the NPs acknowledged that a pharmacist was legally required to be involved in the provision of Pharmacist Only Medicines.

Regarding other non-prescription medicines, NPs acknowledged that they approached pharmacy staff for advice if they were not familiar with a medicine, but also have a duty of care to counsel their clients:

> *"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* [non-prescription] *medication, I would discuss it with the pharmacy assistant and client."* (NP5)

The majority of pharmacists did not write medical ('sick') certificates, and would refer these requests to the NP. Pharmacy staff performed blood pressure testing as a standard service, with more advanced screenings referred to either the NP or GP.

Pharmacists confirmed that their role in dispensing NP's prescriptions was no different to dispensing for other prescribers. The majority of pharmacists indicated that the NP was approachable to clarify medication queries. Given a scenario where the pharmacist identifies

a drug interaction from an NP's prescription, a typical response was: *"I would alert her* [NP] *and would suggest an alternative"* (Pharmacist 6).

While NPs prescribed and reportedly counselled on medicine use during their consultations, pharmacists also continued to provide advice:

> *"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* [medicines information] *again, which I find really good, as it's reinforcement."* (NP6)

Some NPs claimed to supply written medicines information when counselling clients, albeit not routinely. 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)
>
> *"If it is a* [contraceptive] *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 NPs and Pharmacy Staff

Some NPs were officially introduced to the pharmacy staff via a staff meeting and undertook an induction. Having two healthcare professionals co-located was commonly identified, unprompted, as a key benefit of the NP clinic. Pharmacists reported undertaking *ad hoc*

discussions with the NP, for second opinions or referral for consultations, for cases such as infection and wound management, vaccinations and medical certificate requests:

> *"Depends … 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 recommend consumers to see the NP if they could assist them "*for free"* (Pharmacy Manager).

In a scenario of a 1-year-old child presenting with symptoms of bacterial conjunctivitis (Table 1), the majority of pharmacists would have referred the child to the NP rather than provide chloramphenicol eye drops, compliant with age indications in conjunctivitis management guidelines,[12] although 2 pharmacists indicated that they would provide the medicine to save the consultation fee.

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 and the assistant acted upon his need for advice about weight management (Table 1).

Most participants recognised the potential for NPs to be more involved in pharmacy-based health promotion campaigns, although health checks were not conducted regularly in the pharmacy. The NPs' 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.

DISCUSSION

Pharmacists reported that they referred consumers to the NP when the case was within the NPs' expertise. While there are no Australian data on the clinical or economic impact of this model, it could be postulated that triaging to the NP service should relieve GPs' workloads, as demonstrated with nurses in clinics,[13] and improve healthcare access.[14] Other studies have identified that NPs provide comparable primary care to GPs, in terms of compliance with management guidelines, patients' self-reported health status and medical resource consumption.[15,16] Furthermore, another study demonstrated no significant difference between the self-reported health status of NPs' and GPs' patients at two-year follow-up.[17] Further research is required into the contribution of NPs in a pharmacy setting, particularly their effect on clinical outcomes[13,18] and healthcare utilisation.

The incorporation of these NP clinics into pharmacies did not appear to change the pharmacists' current roles. Pharmacists reported ensuring the quality use of medicines and upholding patient safety by confirming the appropriateness of NP prescriptions, as they would for traditional prescribers.[19] Patient-focused interactions between the pharmacist and the NP were not observed for confidentiality reasons; however, participants reported working together to solve clinical issues, yet maintaining autonomy and independence for professional integrity. The pharmacy profession supports non-medical prescribing,[20] and the inclusion of an independent prescriber into the community pharmacy may help meet consumers' needs without compromising patient safety.

Consumers may not recall all information provided in a medical consultation,[21] and it is appropriate for pharmacists to reinforce information provided by NPs. Indeed, South African

196 pharmacy-based nurses reported that advice on safe and effective medication use was a
197 pharmacist's domain.[22] There is, however, a need to improve the provision and utilisation of
198 written consumer information,[23] particularly given the professional expectation of
199 pharmacists to provide these leaflets[24] and the risk that pharmacists and NPs could presume
200 that the other has already supplied written information.
201
202 Clarification is needed regarding the role of NPs in the provision of non-prescription
203 medicines, and for protocols to be adjusted accordingly. This discussion extends to legislative
204 matters, as pharmacists are legally required to be involved in the provision of Pharmacist
205 Only Medicines. The anomaly exists in that NPs could write prescriptions for Pharmacist
206 Only Medicines. Whether NPs' prescribing rights are consistent with the broader knowledge
207 base needed for a primary-care setting[25] is unknown.
208
209 NPs do have the scope of practice to complement the pharmacist's role. In a survey in the
210 United Kingdom, the majority of pharmacists agreed that NPs could expand pharmacy
211 activities.[26] One proposal for collaboration relates to sexual health services, with pharmacists'
212 promotion of sexually-transmissible infection screening by NPs (via fee-for-service) for
213 clients who present for emergency contraception. Other disease management services and
214 health promotion within community pharmacy[27] have been endorsed by the Australian
215 Government.
216

Strengths and Limitations of the Study

This study independently explored NPs' roles in Australian pharmacies. The small number of pharmacy-based NP clinics only provides preliminary insight into the benefits and challenges with this model, and the findings may not be generalisable to other franchises or independently-owned NP clinics established in the future. Not all staff from the 9 Clinics were available for interview. While the interviews were not recorded, comprehensive note-taking was feasible given the location and timing of the interviews. This preliminary insight was unable to evaluate the quality of NPs' prescribing, clinical outcomes and external relationships, generating opportunities for further research in this field.

CONCLUSION

The NPs' scope of practice can complement that of community pharmacists. However, further collaboration is warranted, particularly to extend health promotion services, ensuring that the knowledge and skills of both parties are used to advantage. Clarification is also required as to the extent of the NPs' role in non-prescription medicine supply within pharmacies.

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CONFLICT OF INTEREST

None. This project was not funded by Revive clinics.

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322 Table 1: Hypothetical case scenarios for pharmacy staff

323

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?

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

325

APPENDIX: OBSERVATION/STAFF INTERVIEW SHEET

Pharmacy name:

Staff names (for reference only):

Pharmacist 1:

Pharmacist 2:

Nurse practitioner:

Pharmacy assistant 1:

Pharmacy assistant 2:

Pharmacy assistant 3:

Pharmacy assistant 4:

Other:

Staff Roles

(complete with the assistance of available staff; delete sample answers)

	Phcist	Assistant	Nurse Pr	Comments
Prescriptions	Usually 2nd	Usually 1st	Issue only	NP script is given to client, who usually hands to assistant (or phcist if at counter)
OTC (symptom presentations)	Usually referral by assistant	Usually 1st	Suggest brand to assistant	
OTC (product/brand requests)				
Supplements				
Wound mgmt	By referral; minor role	Usually 1st	Sometimes 1st	Phcist defers to NP; most clients unaware of NP services in wound mgmt
Mobility aids				
Blood pressure test	Prefer NP to manage	Refer to NP	Usually 1st	Phcist can take BP if needed, but too busy
Weight mgmt/advice				
Diabetes care/ equipment				
Medical certificates		Refer to either phcist or NP		
etc (add more rows)				

Nurse Practitioner

1. When was the Nurse Practitioner Clinic established in this pharmacy?

2. How was the service initially advertised?

3. How are your services advertised now (in-store and externally)?

4. When the Nurse Practitioner Clinic opened, what procedures were introduced to 'integrate' the service into the pharmacy?

5. What are your consultation hours compared to the pharmacy opening hours?

6. Who covers for your absence? Is there a locum system?

7. Are clients seen on a 'walk in' or appointment-based system? If by appointment, who arranges these?

8. Are consultations timed? Are they time limited?

9. Can you provide a summary of types of cases and clients (preferably from de-identified records) that you see? (follow up on this if access is not convenient)

10. Do you refer clients to the pharmacist to recommend certain medicines? If yes, what type of medicines?

11. When you recommend an OTC medicine, who usually provides information about dosage, use, safety etc? If you think a client needs an S3 (Pharmacist Only) Medicine, how does the client obtain it?

12. When you write a prescription, what are patients told about where to get the prescription dispensed?

13. When you write a prescription, and it's dispensed in this pharmacy, who advises the client about how to use the medicine? Who (you or the pharmacist) supplies written information (e.g. a CMI) if it's considered appropriate?

14. What guidelines, checklists, protocols etc are in place to ensure that you provide a quality service?

15. If there is a guideline/checklist/protocol (*for example*) for supply of emergency contraception, how does it compare to the PSA protocol?

16. What resources and equipment do you have available in your consultation area? (Include software and online resources.)

17. What is available for nurse practitioners to keep up-to-date with techniques, diagnostics and clinical therapeutics? Do drug and other reps who visit the pharmacy make an effort to involve you? What CPD opportunities are there for nurse practitioners?

18. Do you have regular meetings with the pharmacist(s)?

19. What documentation is kept of each consultation?

20. Are your case records linked with the dispensary records?

21. What sort of audit/quality control is performed? By whom?

22. If you refer a patient to the GP, is the pharmacist involved at any point in the referral? What documentation is involved in the referral process?

23. If you order a pathology test, how is the patient notified of his/her result?

24. What are the benefits of practising within a pharmacy? (e.g. pharmacy image, workflow, job satisfaction, improved communication)

25. What are the challenges of practising within a pharmacy? (e.g. communication between staff, identifying who should handle which cases)

26. How do you feel clients have responded to this as a service? (e.g. appreciate convenience, complaints about fees, confusion about how to access the NP)

27. Do you run any health promotion campaigns in the pharmacy? If yes, how are the pharmacy staff involved?

28. A case study: A gentleman presents to the counter, and describes symptoms of a cold. The pharmacy assistant asks questions about cough, sputum, fever etc, and decides that he needs antibiotics. The assistant suggests that he waits to see you. You consult him, write a prescription for antibiotics and suggest that he buys a cough medicine.
    What would normally happen next with the prescription?
    How is the OTC recommendation managed with respect to brand choice?

29. Another case study: A lady with a twisted ankle presents directly to you. You confirm that it is a mild sprain, and you bandage it. The lady asks you about hiring crutches. How would this request be managed in this pharmacy?

Pharmacy Manager/Pharmacist(s)

1. What prompted the decision to introduce a Nurse Practitioner Clinic in this pharmacy?

2. What are the benefits of having a nurse practitioner in this pharmacy? (e.g. pharmacy image, workflow, job satisfaction, improved communication)

3. What are the challenges of having a nurse practitioner in this pharmacy? (e.g. communication between staff, identifying who should handle which cases)

4. How do you feel clients have responded to the change? (e.g. appreciate convenience, complain about fees, appear confused about how to access the NP)

5. How have other pharmacists you know (who don't have a Nurse Practitioner Clinic) reacted?

6. Did any staff training/inductions take place before and after the nurse practitioner started?

7. Were any services (e.g. blood pressure measurement) provided free of charge before the nurse practitioner came on board, and are now charged?

8. What change has there been to your role as a pharmacist since the nurse practitioner started here? (e.g. no longer check BP, supply EC, write medical certificates, triage symptoms OTC)? Advantages/disadvantages of this?

9. Has the number of pharmacy staff here changed since the nurse practitioner came on board? If so, how? (e.g. new/no Intern position, more/fewer pharmacy assistants)

10. If you think a client should see the nurse practitioner, but isn't aware that there is one in the pharmacy and has never consulted one, how do you explain the service to him/her?

11. Can you give some examples of situations where you would refer a patient to the nurse practitioner?

12. Have there been any situations when you would have recommended something different to the nurse practitioner? What were these? How did you resolve the issue?

13. Has contact with GPs changed in any way since the introduction of the nurse practitioner?

14. Do you run any health campaigns in the pharmacy? If so, (how) is the nurse practitioner involved?

15. A case study: A gentleman presents to the counter, and describes symptoms of a cold. The pharmacy assistant asks questions about cough, sputum, fever etc, and decides that he needs antibiotics. The assistant suggests that he waits for the nurse practitioner. The nurse practitioner consults him, writes a prescription for antibiotics and suggests that he buys a cough medicine.
    What would normally happen next with the prescription?
    How is the OTC recommendation managed with respect to brand choice?

16. 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?

17. Another case study: A mother brings her one-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 **two** years and older. The nurse practitioner is available for consultation.
    What would you do next?

Pharmacy/Dispensary Assistant(s)

1. If you think a client should see the nurse practitioner, but isn't aware that there is one in the pharmacy and has never consulted one, how do you explain the service to him/her?

2. What are the benefits of having a nurse practitioner in the pharmacy? (e.g. pharmacy image, workflow, job satisfaction, improved communication)

3. What are the downsides of having a nurse practitioner in the pharmacy? (e.g. communication between staff, defining who should handle which cases)

4. How do you feel clients/customers have responded to the change? (e.g. appreciate convenience, complain about fees, appear confused about how to access the nurse practitioner)

5. What change has there been to your role since the nurse practitioner started here?

6. A case study: A gentleman presents to the counter, and describes symptoms of a cold. You ask him questions about cough, sputum, fever etc, and decide that he needs antibiotics. You suggest that he waits for the nurse practitioner. The nurse practitioner consults him, writes a prescription for antibiotics and suggests that he buys a cough medicine.
   What would normally happen next with the prescription?
   How is the OTC recommendation managed with respect to brand choice?

7. Another case study: A lady with a twisted ankle presents directly to the nurse practitioner. The nurse practitioner confirms that it is a mild sprain, and bandages it. The lady asks the nurse practitioner about hiring crutches.
   How would this be managed in your pharmacy?

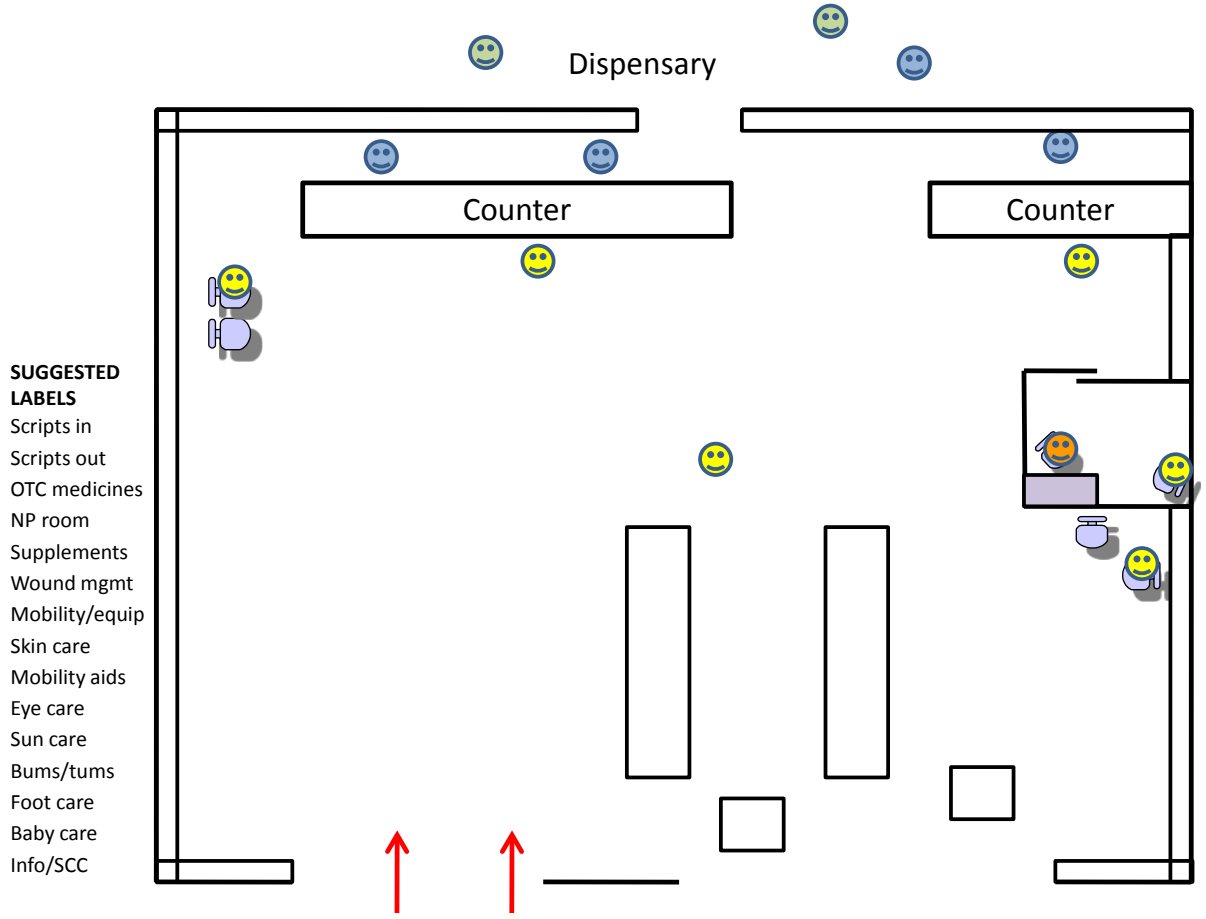
8. A third case study: A middle-aged man approaches you and requests a pack of ranitidine tablets (Schedule 2) for his reflux. They're for himself, he's taken them before, he's not taking any other medicines, and he only uses the ranitidine occasionally. This appears to be a straightforward sale that you can manage. However, you are concerned that the man is overweight, and this might be contributing to his reflux. You feels 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?

Pharmacy layout (check with staff if needed):

Manipulate the Powerpoint template to indicate the location of the nurse practitioner consultation area in relation to other pharmacy products and services. Add arrows to indicate:

- Directions of foot traffic for prescriptions brought into the pharmacy
- Directions of foot traffic for prescriptions generated by the nurse practitioner
- OTC traffic from browsing and presenting to the counter
- OTC traffic generated by the nurse practitioner
- The nurse practitioner's movements outside consultation room (e.g. to the OTC area)

(Powerpoint template inserted below as a picture)



Observations of client movement

(no staff input needed; delete sample answers)

Client	Movement **TO** the nurse practitioner	Movement **FROM** the nurse practitioner
1	Asked at counter to make appointment with NP; assistant directed client to waiting area; interviewed there **client code number to match completed questionnaire	Handed in Rx to assistant; waited and browsed while Rx dispensed; purchased OTC when Rx ready
2	Entered phcy; sat in waiting area until NP available; declined interview (reason: too sick)	Left phcy folding up a printed sheet; no purchase
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