

General practitioners' views of pharmacists' current and potential contributions to medication review and prescribing in New Zealand

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ABSTRACT

INTRODUCTION: Internationally, non-medical practitioners are increasingly involved in tasks traditionally undertaken by general practitioners (GPs), such as medication review and prescribing. This study aims to evaluate GPs' perceptions of pharmacists' contributions to those services.

METHODS: Semi-structured interviews were carried out in two localities with GPs whose patients had and had not undergone a pharmacist-led adherence support Medication Use Review (MUR). GPs were asked their opinions of pharmacists' provision of MUR, clinical medication review and prescribing. Data were analysed thematically using NVivo 8 and grouped by strengths, weaknesses, opportunities and threats (SWOT) category.

FINDINGS: Eighteen GPs were interviewed. GPs mentioned their own skills, training and knowledge of clinical conditions. These were considered GPs' major strengths. GPs' perceived weaknesses were their time constraints and heavy workloads. GPs thought pharmacists' strengths were their knowledge of pharmacology and having more time for in-depth medication review than GPs. Nevertheless, GPs felt pharmacist-led medication reviews might confuse patients, and increase GP workloads. GPs were concerned that pharmacist prescribing might include pharmacists making a diagnosis. This is not the proposed model for New Zealand. In general, GPs were more accepting of pharmacists providing medication reviews than of pharmacist prescribing, unless appropriate controls, close collaboration and co-location of services took place.

CONCLUSION: GPs perceived their own skills were well suited to reviewing medication and prescribing, but thought pharmacists might also have strengths and skills in these areas. In future, GPs thought that working together with pharmacists in these services might be possible in a collaborative setting.

KEYWORDS: Community pharmacy services; general practitioners; New Zealand; primary health care; professional role

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Introduction

Two traditional tasks for general practitioners (GPs) are prescribing and reviewing patients' medications. When performing these tasks doctors are expected to discuss and reach an agreement with their patients regarding the medications they plan to prescribe.¹

In some countries, other health professionals may also be involved in these tasks. In Australia, pharmacists are authorised to conduct medication

reviews known as Home Medication Reviews (HMRs).² Although pharmacists are not yet permitted to prescribe, other health professionals in Australia, such as nurse practitioners, podiatrists and optometrists are authorised to prescribe within their scopes of practice.³ In contrast to Australia, pharmacists in England were granted supplementary prescribing rights in 2003 and, in 2006, independent prescribing rights as part of a medical team.⁴ Pharmacist prescriber roles are also present in certain states in the United States of America and Canada.^{5,6} In these countries,

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pharmacists are also authorised to conduct medicines management for patients.⁷⁻⁹

The introduction of prescribing by non-medical health professionals has been the subject of much debate. Doctors whose patients have experienced nurse prescribing perceived the service to have a positive impact on patient care as it reduced patients' waiting time for prescriptions and patients were provided with more detailed information about their medications.^{10,11} However, GPs felt that the clinical skills required for prescribing should not be underestimated,¹² that nurses had limited skills, and that extra skills—such as physical assessment and diagnosis—are required before prescribing.¹¹⁻¹³ Similar mixed responses were reported by GPs for pharmacist prescribing.¹⁴ GPs felt that to be acknowledged as prescribers, pharmacists would need to demonstrate their expertise and already be known to the GP practice.¹⁵ GPs were also concerned about pharmacists' level of training and skills in diagnosis and that prescribing was perceived to occur subsequently to pharmacists making a diagnosis.¹⁴⁻¹⁶

Pharmacists in New Zealand (NZ) are also extending their roles. As part of the NZ National Pharmacy Services Framework 2007, some pharmacists have been contracted to provide Medication Use Review (MUR) and adherence support services on a fee-for-service basis.¹⁷ In addition, a more in-depth review termed Medicines Therapy Assessment (MTA) is currently being trialled in some areas in NZ. MTA is similar to Clinical Medication Review in the UK¹⁸ that aims to optimise a patient's medication in the context of the clinical picture. Pharmacist prescribing, a proposed service, aims to optimise patients' access to medications and help achieve desired treatment goals.¹⁹

Pharmacist prescribing is intended to occur in close collaboration with a medical practitioner (e.g. a GP). In this setting, the medical practitioner would be responsible for diagnosis, selection of treatment modality (e.g. medication) and setting treatment goals. The accredited pharmacist would then initiate/modify medication therapy to optimise attainment of those goals.¹⁹ The term 'collaboration' in the proposed scope of pharmacist prescribing in NZ means that pharmacist prescribers are required to practise in a health team

environment where patients are the main focus of collaboration and patient information is shared among the health care team members. This does not have the same meaning as 'collaborative prescribing', also known as 'dependent prescribing' as defined in the UK, that describes a model that requires medical prescribers to authorise pharmacists' prescribing practice. The NZ model for pharmacist prescribing is the same as for existing prescribers which is that of 'independent prescribing'. It does not require pharmacists to have delegated authority from medical prescribers and pharmacists are legally and independently responsible and accountable for their prescribing decisions. Hence, NZ pharmacists would be independent prescribers and would work collaboratively.¹⁹

An earlier study in NZ, conducted between 2002 and 2004, examined GPs' perceptions of proposed clinical roles for pharmacists.^{20,21} It was reported that GPs were less accepting of, and were concerned about, pharmacists' clinical roles²⁰ and their value for patients and GPs.²¹ In the light of the new framework for pharmacy services in 2007 and recent proposals for pharmacist prescribing, more information on GPs' perceptions of pharmacists' skills and competence in medication review and prescribing are needed. This study therefore aims to explore GPs' perceptions of pharmacists' current and potential contributions to those services in NZ.

Methods

This study was conducted as qualitative semi-structured interviews with three groups of GPs in two localities in NZ. The two localities were in urban areas of two cities. These locations were chosen based on available information about pharmacists providing MUR.¹⁷ Ethical approval was obtained from the Human and Ethics Committee, University of Otago (Ref. F10/008).

GPs were invited initially by mail and after a week, if there was no reply, a follow-up phone call was made. The interviews were conducted by EH who has a pharmacy background and, prior to the interview, GPs were informed of this fact. The present study focused on GPs' perceptions of pharmacists' contributions to medication reviews

and prescribing and the potential impact on patients and on GPs' own daily practice. GPs from location one were GPs who did not have patients who had undergone an MUR by their community pharmacist and were selected using a combination of purposive and convenience sampling techniques, as described by Marshall.²² GPs were approached purposively according to their years of practice. GPs were divided into two groups—GPs with less than 20 years' experience as a medical practitioner (Group one—G1) and GPs with 20 or more years' experience as a medical practitioner (Group two—G2). GPs with differing years of experience were considered in this study, as this factor was reported in other studies to have a significant influence on GPs' perceptions.^{23,24} Participants were also selected to achieve an appropriate balance of gender. G1 and G2 were identified from the local telephone directory and their years of practice were identified from the New Zealand Medical Council website.²⁵ A total of 44 GPs were purposively invited to participate in the study. Participation in the study was voluntary and GPs were informed that they could withdraw from the study at any time without any disadvantage to themselves or their practice. No incentives were offered to participants in this study.

GPs from location two, Group three (G3), were GPs whose patients had undergone an MUR by their local community pharmacist. GPs were identified by convenience sampling—by contacting the community pharmacists who had participated in the previous MUR study conducted by the School of Pharmacy, University of Otago.¹⁷ Pharmacists were asked to suggest GPs who had patients who had participated in the MUR services and all GPs (n=29) that were named were invited to participate in this study. Due to a limited sample, further division according to years of practice in this group was not considered.

Each 30-minute interview was conducted face-to-face at the GP's surgery. The interviews were tape-recorded with agreement from the GPs. The themes of the interview questions were developed through a literature review of previously published qualitative studies^{26–30} and discussion among the authors of the current study. The questionnaire was then piloted by a GP and two registered pharmacists who were familiar with

WHAT GAP THIS FILLS

What we already know: An earlier study in New Zealand reported concerns from general practitioners regarding pharmacists' clinical roles in performing medication reviews. Currently pharmacists in some parts of New Zealand are funded to provide medication reviews and a further proposed service is pharmacist prescribing.

What this study adds: GPs perceived that pharmacist prescribing would include pharmacists making a diagnosis. This is different from the proposed model for pharmacist prescribing that is reliant on a medical practitioner's diagnosis and treatment plan. In general, the current study found general practitioners to be more accepting of pharmacists providing medication reviews and reluctant to accept pharmacist prescribing unless appropriate controls with close collaboration and co-location of services occurred.

the services provided by community pharmacists. The input from the pilot interviews was used to further refine the interview topics. The interview schema was developed in such a way as to ensure the theoretical and conceptual understanding of the research topics was well established.³¹ GPs were asked about how they perceived pharmacists providing medication review and prescribing. The topic guide used for asking questions during the interviews is shown in full in Appendix 1 (see the web version of the paper). Prior to the interview, brief descriptions of pharmacist services were given to the GPs (Table 1).

The interviews were transcribed verbatim and sensitive information was removed to ensure confidentiality. Transcription accuracy was checked by an independent third party. To ensure the validity of coding and that saturation was achieved, a second investigator read and coded every third and last transcription from each group, using the finalised code structure independently.³² Any disagreement was resolved through consensus. Data collection was ceased when no new themes were found in at least two consecutive interviews.

GPs' perceptions were examined using thematic analysis and constant comparison³³ with NVivo 8 software. A strengths, weaknesses, opportunities and threats (SWOT) process—a tool used in organisational planning—was utilised in the analysis to classify the themes into internal and external factors that have the potential to influ-

Table 1. Brief descriptions of pharmacist services given to participants

Service	Description
Medication Use Review (MUR)	This is a patient-centred service. A pharmacist reviews the patient's medications, both prescribed and purchased for self-medication, and identifies any problems related to medication use, such as administration techniques (e.g. inhaler use) or non-adherence. While providing this service, a pharmacist will educate patients about their medications and help to improve patient adherence to medications. A pharmacist may produce a complete medication list for reference.
Clinical Medication Review	These services involve a patient-centred medication review aimed at optimising the choice and use of medications with regard to appropriateness, effectiveness and safety. To provide this service, pharmacists need to have access to patients' clinical notes. This service is provided as a fully integrated process with the prescriber (e.g. located in a GP's practice). This service will also include adherence support (an MUR).
Pharmacist prescribing	In this study, note that GPs were not given a detailed explanation of what was meant by pharmacist prescribing. This was in order to get a GP's personal impression about pharmacist prescribing in general (e.g. for prescribing over-the-counter medications, prescribing for repeat prescriptions, and prescribing collaboratively with GPs).

ence success or failure, in this case of medication review and prescribing services.³⁴ This tool has been used commonly in business to generate strategic planning or an action plan, to achieve the company's objective or help with decision-making.³⁵ In this study, the SWOT analysis was used to provide the framework for analysing the strengths and weaknesses (internal factors) and

opportunities and threats (external factors) for GPs' practice associated with medication-related services to patients. The themes identified were examined using comparative analysis between the groups (groups 1–3) for similarity and differences in perceptions.³²

Findings

Eighteen GPs agreed to participate in this study and saturation of themes was achieved within this number. Participants' demographics are presented in Table 2. Common themes that emerged from the interviews with regard to medication review and prescribing were grouped according to GPs' perceptions of the strengths and weaknesses of GPs and pharmacists (Table 3), and potential opportunities and threats to GPs' daily practice (Table 4). Although we did not specifically ask GPs about their perceptions of their own contributions (e.g. strengths and weaknesses) to medication review and prescribing, these themes were raised frequently during the interviews. GPs' perceptions were also compared between the groups (groups 1, 2 and 3) and the same themes were found to be raised in each group.

GPs' views of their own strengths and weaknesses

GPs considered their own strengths to be their skills and training in diagnosis and treatment,

Table 2. Demographic data of the respondents

Groups	GPs with no MUR patients* (Location 1)		GPs with MUR patients* (Location 2) Group 3
	Group 1 (<20 years experience)	Group 2 (≥20 years experience)	
Number (n)	7	6	5
Gender			
Male	2	3	3
Female	5	3	2
Mean years of experience (range)	13.5 (6–19)	28.5 (22–34)	27.8 (15–37)
Average number of patients seen in a week (range)	80 (60–105)	98 (50–160)	124 (20–250)
Average pro-rata FTE (range)	0.7 (0.5–1.0)	0.8 (0.5–1.5)	1.0 (0.2–1.6)

FTE full-time equivalent

* MUR patients are patients who have had a medication use review (MUR) by a pharmacist

Table 3. General practitioners' views of their own and pharmacists' strengths and weaknesses in medication review and prescribing

Medication-related services	GPs' perceived strengths	GPs' perceived weaknesses	Pharmacists' perceived strengths	Pharmacists' perceived weaknesses
MUR	Know patients' clinical conditions well Provide medications advice to patients	Lack of time Heavy workload	Pharmacists' knowledge of pharmacology and drug interactions Longer consultation time Funded to provide the service Strategic place for medication counselling (with the presence of patients' medications) Could get more information of how patients use their medications	Do not know the patients' clinical conditions well Limited source of patient information
Clinical Medication Review	Strong set of skills Know patients' clinical conditions well Provide brief medication reviews to patients	Lack of time for in-depth medication reviews Limited knowledge of pharmacology and drug interactions Lack of time Heavy workload	Good level of knowledge of pharmacology and drug interactions Longer consultation time Funded to provide the service	Do not know the patients' clinical conditions well Appropriate skills? Limited source of patient information
Prescribing	Strong set of skills Know patients' clinical conditions well Directed by guidelines Regular component of work	Lack of time Heavy workload	Pharmacists' knowledge of pharmacology and drug interactions	Do not know the patients' clinical conditions well Appropriate skills? Limited source of patient information

GP general practitioner; MUR medication use review

and their knowledge of clinical conditions. They thought they knew their patients' clinical conditions well, and understood the usual processes of care. Another perceived strength was GPs' ability to practise according to guidelines.

Part of my training is to use all that I have... the talking, the examination, the history to formulate what's going on. I'm not convinced that pharmacists or nurses have that background. (GP#6, G2)

When hearing about pharmacist-led clinical medication review, a number of GPs said they already reviewed patients' medication—that is, they provided brief medication reviews and advice to patients. They thought this would be similar to the pharmacists' proposed services but was perhaps not as in-depth as the services described to them.

GPs thought their own weaknesses were the limited time to conduct medication reviews, heavy workloads and limited knowledge of pharmacology and drug interactions. They thought it was quite difficult to talk about medication issues or do a detailed check for drug interactions during a 15-minute consultation.

I think that in general, general practitioners generally feel that there's more work than they can do and that they often try and cram work in and often aren't allowing things the time that they should. (GP#10, G1)

I don't think pharmacology is a strong point with GPs. I don't think it's well taught ... in med schools. So having feedback about any potential [interactions]... will be really fortunate. (GP#10, G1)
[Speaking about Clinical Medication Review]

GPs' views of pharmacists' strengths and weaknesses

GPs thought that pharmacists' strengths were their knowledge of pharmacology and drug interactions, and a better knowledge about aspects, such as dosage forms and the appearance of medications. GPs also thought pharmacists had a better knowledge of herbal and alternative preparations than GPs. Another strength perceived was that pharmacists would have a longer consultation time if funded by the health system to talk about medication use with patients.

I don't think it's possible for us to have some of the skill set that the pharmacists do. Pharmacists have specialist knowledge in some aspects of medication or you might say all aspects... so if somehow combining the two so that we work together and utilise everybody's skill set... (GP#11, G1)

GPs perceived a pharmacy-based setting with the presence of patients' medications would enhance the counselling process. Another perceived strength would be pharmacists' ability to obtain

in-depth, medication-focused information from patients. GPs thought patients might have barriers to sharing their medication issues with GPs because patients might not feel confident to tell their doctor that they were unhappy with the treatment prescribed.

Perceived pharmacists' weaknesses included a lack of knowledge about each patient's medical history and clinical conditions. Pharmacists were also thought to lack the appropriate skills to prescribe or review patients' medications clinically. Some patients' unfavourable experiences with pharmacists' advice on over-the-counter medications had raised GPs' doubts about pharmacists' clinical skills. GPs also felt that a pharmacy might not be an appropriate setting for discussing confidential issues with patients.

It's okay I mean I suppose my only reservation is that if you [pharmacists] don't have all the information from the clinical examination before examination, then it's not always easy to work out what's appropriate if you've only got a history to go by. (GP#5, G1) [Speaking about Clinical Medication Review]

Table 4. General practitioners' views of opportunities and threats ensuing from pharmacists' contribution in medication-related services

Medication-related services if provided by pharmacists	Opportunities perceived by GPs	Threats perceived by GPs
MUR	Increase patients' understanding of medication used Increase adherence to medications Simplify patients' drug regimen Source for GPs for drug information Will be an additional source of information on the patients for the GPs	May confuse the patient May interfere with GP–patient relationship Operational challenges for GPs (e.g. increase workload and time) No remuneration for GPs' additional work
Clinical Medication Review	Ensure patients use medications safely Checking for prescribing errors and interactions Can help to optimise medication effectiveness Source for GPs for drug information	May conflict with other recommendations May confuse the patient May harm the patient Confidentiality issues with patients' notes Operational challenges for GPs No remuneration for GPs' additional work
Pharmacist prescribing	Improve access to medications Reduce GPs' workloads Checking for drug interactions	Fragmented patient care Discontinuity of care Conflict with pharmacists' business interests May harm the patient Operational challenges for GPs Competition for work with GPs

GP general practitioner; MUR medication use review

I think it depends on what the condition is and how well the pharmacist has trained as a diagnostician... I'm not convinced that pharmacists or nurses have that background. (GP#6, G2) [Speaking about pharmacist prescribing]

To be honest, the one thing that I don't think they [pharmacists] do that well, is actually dispense over the counter medications. But, I probably get a completely false idea, because I see all the people whose over-the-counter medications have failed them. (GP#4, G3) [Speaking about dispensing over-the-counter medications]

GPs' views of possible opportunities for pharmacist contributions

GPs mentioned some opportunities for pharmacist contributions. GPs thought that pharmacists' greater knowledge of pharmacology and dosage forms, adverse drug effects and drug interactions would be an asset in helping ensure patient safety. They thought that a clinical medication review by pharmacists might reduce prescribing errors and provide reassurance of correct prescribing. Pharmacists' up-to-date knowledge of pharmacology was also thought an advantage as they could help to optimise patients' medication and be a source of medications information for GPs.

They [pharmacists] are an invaluable back-up because GPs do make prescribing errors and to know it's a blanket that... if you write something stupid there's somebody else checking it... that they make sure that no harm comes to the patient. (GP#10, G1) [Speaking about Clinical Medication Review]

It will be quite good to have a community pharmacist that visits GP practices and gives some input into some of the complicated drug regimen patients. Not necessarily just from the local pharmacy, but maybe someone that is more clinically orientated and has experience in that area... you know [see the] polypharmacy type of patients. (GP#3, G2) [Speaking about Clinical Medication Review]

GPs said pharmacists would have an advantage over GPs with regard to consultation time, as in-depth medication reviews are difficult and time-consuming. Furthermore, GPs thought pharmacists could notify the GP about a patient's

medication-related problems that the GP might be unaware of. They thought such services could also increase patients' understanding and adherence to medications.

It [an MUR] will tell us what the patient is taking... in terms of OTC [over-the-counter] medication and alternative medication. It might also inform us what they are not actually taking, but we prescribers [are] thinking that they are taking it so... it might give us an idea of compliance and so there ultimately might be cost-benefits and safety benefits. (GP#1, G2) [Speaking about MUR]

Well my recollection [for MUR] is that there were one or two things that the pharmacist pointed out that could be changed for the patient's benefit. (GP#3, G3) [Speaking about MUR]

Many GPs thought pharmacists might have a limited role in prescribing. Prescribing under agreed protocols or guidelines (for a limited number of diseases and conditions), with appropriate training and close monitoring was more acceptable to GPs. In addition, pharmacist prescribing for patients with warfarin was perceived as potentially beneficial by some as it could reduce GPs' and nurses' workloads. However, GPs would prefer this to happen within the GP's practice, as it could improve communication and prevent information being 'lost in transfer'. It would also allow GPs to have more control over decisions on patients' medications.

For us being able to spread things out to nurse prescribing here was like a burden was lifted from us. So I think it's great. (GP#10, G1) [Speaking about collaborative prescribing for patients taking warfarin]

I guess if we are seeing them from time to time, to have the ability to say 'Well no, actually this is getting a little bit unsafe and now you need to... just to see us for it, would be appropriate. (GP#10, G1) [Speaking about collaborative prescribing for patients taking warfarin]

GPs' views of the possible threats of pharmacist contributions

Some GPs thought that pharmacists' contributions to medication reviews might be a threat

to patient care, as the advice provided could conflict with that given by the GP (e.g. about a clinically irrelevant drug interaction) and hence might confuse patients and harm GP-patient relationships.

I would not want to refer patients to the pharmacist for review only to find that the patient comes back and tells me that I shouldn't have done this, I shouldn't have done that. So it's a relationship that could be undermined by the pharmacist if they're not careful what they're saying. (GP#3, G3)

GPs thought that if prescribing were undertaken outside the GPs' surgery, and without close communication, this could fragment patient care, reduce the frequency of GPs seeing their patients, and decrease their opportunities to talk with their patients about other health concerns. GPs were also worried that those services could conflict with pharmacists' business interests.

I think I have concerns about the INR [International Normalised Ratio] thing if it is not done in very close conjunction with the... if the pharmacist is brought in as part of the GP team then I think that's fine but if it's a standalone [service] and there isn't much communication, then yes they'd be able to do it technically but the kind of information that might be lost...(GP#13, G1) [Speaking about collaborative prescribing for patients taking warfarin]

Another possible threat to patient care voiced was that pharmacists were not trained in diagnosis and treatment. It was thought unsafe for pharmacists to give recommendations without appropriate skills and training, based on assumptions, and with little clinical information. The majority of GPs would agree to share clinical notes with pharmacists providing that patients gave consent. However, many GPs preferred the information to stay within the GP's surgery.

The GPs considered the major threats to their own work were time constraints and increased workloads (carrying out recommendations from pharmacists). Even though GPs thought pharmacist prescribing could potentially compete with GPs' own work, they thought that it would not be a problem currently as there are shortages of doctors in NZ.

I don't know if there's anywhere in NZ where there are too many GPs, it might be seen as a turf war when there was not enough business... But I think New Zealand is under-provided with GPs and so, in general I think it [pharmacists' medication-related services] would be welcomed. (GP#10, G1)

GPs were also concerned that they could be given extra work (e.g. reviewing pharmacists recommendations) without remuneration.

What worries me is that it will be time-consuming and not remunerated anyway. (GP#7, G2)

Despite the possible threats, GPs thought they would be more accepting of the services if they knew the pharmacist well, or if they already had a good working relationship with them. GPs felt that it was essential for them to trust the pharmacist in order to accept their new services.

Obviously sometimes we don't make a careful decision... so I think that's a more difficult area, because I think that's almost where you actually need a pharmacy facilitator on site, or at least in close relationship. I'd probably accept it from her [local pharmacist] because I speak to her frequently and know her. I think it's to do with the relationship. (GP#1, G3)

Discussion

The current study provides insight into GPs' perspectives about pharmacists conducting medication review and prescribing. The analysis was conducted by comparing the themes of GPs' perceptions of their own contributions with their perceptions of pharmacists providing similar services. GPs perceived that their own skills and training were well suited to reviewing and prescribing patients' medications. GPs also described their heavy workloads and short consultation time as limitations of GPs' services. GPs thought that pharmacists could mitigate GPs' limitations in medication review, as they were perceived to be knowledgeable in pharmacology, more aware of drug interactions and would have a longer consultation time if funded by the health service to carry out the reviews. However, GPs had some concerns about pharmacist prescribing, as they believed that pharmacists lacked the appropriate skills and training in diagnosis and

prescribing, and do not know patients' clinical conditions well. On the other hand, GPs thought such pharmacist-led services could reduce GPs' workloads and benefit patients, if appropriate 'controls' were in place and co-location of those services occurred.

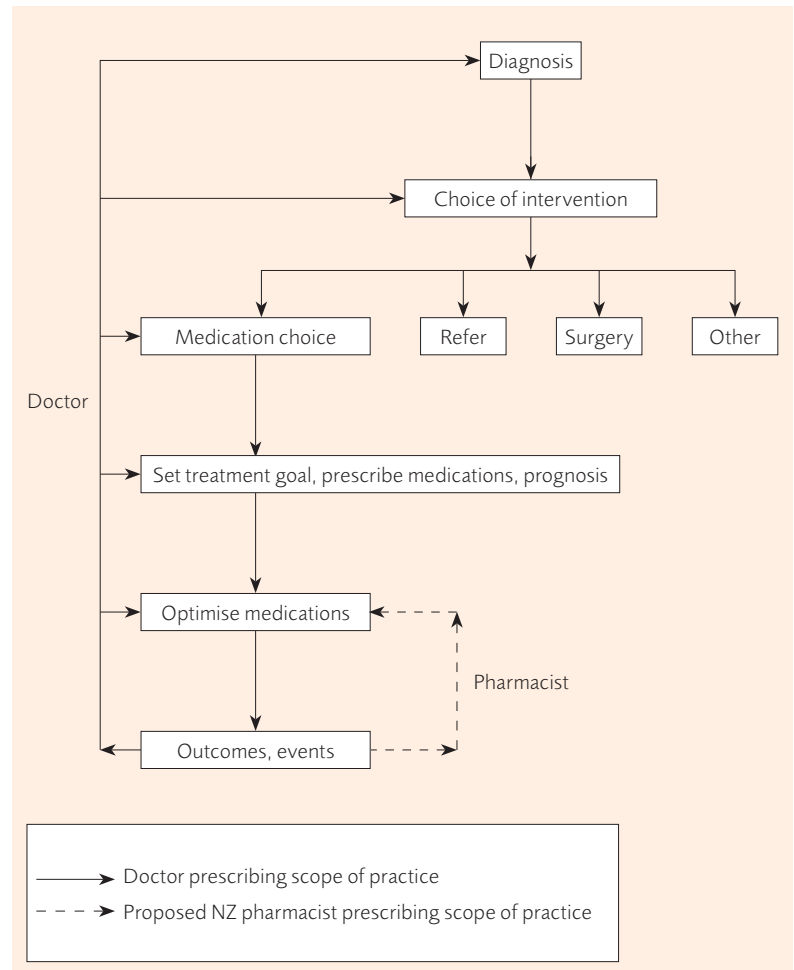
Our findings were consistent with other studies:

1. GPs' acceptance of pharmacists' contributions to clinical care and prescribing was underpinned by patient-safety issues;^{14,36}
2. Pharmacists need to be competent in prescribing³⁷ and have good working relationships with the medical team;³⁸ and
3. GPs' perceived that pharmacist prescribing would include pharmacists making a diagnosis.¹⁴⁻¹⁶

A schematic diagram that summarises the authors' view of the pharmacist prescriber scope of practice outlined in the consultation document by the Pharmacy Council of New Zealand¹⁹ is presented in Figure 1. Pharmacist prescribing in NZ is being proposed as a collaborative model that requires joint practice between a pharmacist and a GP or GP practice group. In the proposed model, the pharmacist will prescribe (modify the medication therapy) to optimise medication-related outcomes for patients who have a working diagnosis and a defined treatment goal.¹⁹ Modification of treatment goals, based on a changing clinical picture, would then provide feedback to the patient-care process initiated earlier by the GPs (diagnosis, and selection of treatment modality) and would not include pharmacists making a diagnosis.¹⁹ The proposed scope of practice is not intended to replace the patient's need to see a doctor for diagnosis or treatment, or to cause discontinuation of care.³⁹ The proposed model would suit pharmacists' strengths in medication management, and doctors' skills in diagnosis and disease management. Pharmacist prescribers also must have no financial interest in the dispensing of their own prescriptions.⁴⁰

GPs in the current study appeared to accept pharmacists' clinical roles if performed in close collaboration with GPs. Close collaboration between pharmacists and GPs was reported in other studies as:

Figure 1. Proposed New Zealand pharmacist prescribing scope of practice



1. having positive outcomes⁴¹
2. reducing GPs' initial concerns and negative perceptions of pharmacists' expertise and competence^{42,43}
3. increasing GPs' positive perceptions of pharmacists' contributions to diagnosis, prescribing, monitoring and medication review over time,⁴³ and
4. reducing GPs' workloads.^{37,42}

In those studies, close collaboration occurred as integration of the services into the GPs' practice.^{42,43} Changes in GPs' perceptions are reported to be influenced by the amount of experience that the GPs had of working alongside pharmacists.^{15,43} Close collaboration would facilitate more consistent interactions between GPs and phar-

macists and help develop trust. It was reported that the integration of pharmacists' services into the GP's practice allowed GPs to recognise pharmacists' expertise and clinical competence.⁴³ However understanding pharmacists' roles could take some time as role negotiation and shifting are an implicit part of the process.⁴²

Health professionals such as GPs and community pharmacists should not work in isolation but embrace the idea of working as a team, helping each other to provide the best care to patients.

The findings provide insight into some perceived potential benefits from GPs and pharmacists working together to provide patient care. However, this would need to be appropriately set up and supported by the health care system. Health professionals such as GPs and community pharmacists should not work in isolation but embrace the idea of working as a team, helping each other to provide the best care to patients. Since it has been reported that patients visit pharmacies more often than seeing their GPs, in order to improve patient care it is important that both professions have the same aims/treatment plans and that they share their information and expertise.⁴⁴ These findings also provide insight into how patient-oriented care services in NZ might be improved. Lack of appropriate systems, funding and initiatives in the current setting to foster close collaboration between health care professionals may limit the potential benefits of collaborative practice reaching patients. To improve this, future studies should explore the potential facilitators and barriers to collaborative health care practice in the health system.

Although some GPs (G3) had patients who had experienced MUR services, the investigators could not identify any difference in perspectives when compared with GPs whose patients had not utilised MUR services. This might, in part, be due to the limited number of patients who had experienced the MUR services (between three and six patients per GP) in this GP cohort (G3). It should be noted that our interpretation of GPs' perceptions of pharmacists' contributions to

medication review and prescribing are based on GPs with limited experience of those services. In contrast to a previous study reporting GPs' years of practice to be inversely related to their acceptance of pharmacists' clinical services,²⁴ the current study found no difference in perceptions between GPs with more (≥ 20 years) or less (< 20 years) clinical experience. In our study, both groups of GPs appeared to accept MUR and Clinical Medication Review services, although some resistance was found to pharmacist prescribing. Although saturation was achieved in G3, it is possible that GPs' perceptions might be different if they had had extensive experience with patients who had received MURs.

Furthermore, participants may have given a socially desirable response despite the interviewer's (EH) request to disregard her background in pharmacy. GPs in the current study might also already have a close working relationship with a local community pharmacist that could influence their perceptions of new services by pharmacists. Recall bias for GPs with MUR patients was also possible, as their patients had experienced the services up to five years previously.

In conclusion, GPs felt that their own experience and skills suited them well for carrying out medication review and prescribing for patients, and that pharmacists had perceived strengths in areas where GPs had limitations, such as time and knowledge of pharmacology. However, GPs had some concern about the possible impact of pharmacist-led services on patients, GP practices and GP-patient relationships. GPs felt that there was a possibility of working together with pharmacists in providing those services if the appropriate controls (protocols, guidelines, close monitoring), close collaboration and co-location of the services occurred.

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COMPETING INTERESTS

None declared.

APPENDIX: Topic guide for the interviews

1. Demographic information on the GP practice
2. GP's experience of working with pharmacists
3. Views on new services provided/proposed for pharmacists, e.g. medication use review (MUR) and Clinical Medication Review
4. Views on pharmacists having access to a patient's clinical notes
5. Views on pharmacists prescribing medications in general
6. Views on pharmacist prescribers at the GP's practice
7. Perceived impact that the services/proposed services might have on GP's practice
8. Views on what could be improved between GPs and pharmacists when providing patient care