

Changing perspectives of the role of community pharmacists: 1998 – 2012

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ABSTRACT

INTRODUCTION: In New Zealand, extended medicines management roles proposed for pharmacists include the optimisation and monitoring of medicines in patients with long-term conditions through greater collaboration with general practitioners (GPs). Although some collaborative roles have been successfully implemented in hospitals, barriers for both pharmacists and GPs hinder interprofessional working relationships in the community.

AIM: To compare data from a 2012 study with two previous studies (1998, 2002) examining perceptions of community pharmacists and GPs of the expanding medicines management roles of community pharmacists.

METHODS: In 2012, a survey, modelled on the 1998 and 2002 studies, was sent to 600 community pharmacists and 600 GPs. Analyses considered the five-point Likert scale to be a continuous variable. A change of $\geq 10\%$ between any two surveys indicated a relevant change for comparison.

RESULTS: Increasing agreement, which differed considerably between professions, was apparent for most expanding medicine management roles over the 14 study years. In all three studies, pharmacists were open to expanding their roles to include monitoring, screening, advisory and prescribing roles. GPs were most accepting of the traditional dispensing role with a positive shift towards pharmacists' involvement in medicines management over time.

DISCUSSION: Over 14 years, GPs became more accepting of community pharmacists' involvement in extended medicines management roles, although still had low acceptance of the more clinical roles. Pharmacists considered increased involvement in medicines management as their role, but appeared to lack confidence in their ability to do this role.

KEYWORDS: Pharmacy services; general practitioners; primary health care; workforce

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Introduction

Proposed extended roles for community pharmacists in New Zealand include prevention of drug-related adverse events,¹ optimising and monitoring medicines in patients with long-term health conditions through greater collaboration with general practitioners (GPs),² promotion of patients' health, wellbeing and self-care,² and a collaborative prescribing role.³ Some of these extended roles have been successful in hospitals, where doctors are familiar with clinical pharmacists participating in drug management,³

but relationships between community pharmacists and GPs are less formalised. Perceived professional barriers prevent comprehensive interprofessional working relationships.³

Pharmacist-perceived barriers to expansion of their roles include a lack of orientation to take on new roles,^{4–7} and perceptions that some roles are not legitimate for pharmacists.⁶ Other pharmacists perceive they lack knowledge and clinical problem-solving skills, so feel uncomfortable with the accountability that is integral to these

services.^{6,8,9} External factors include beliefs that pharmacists do not have the mandate from the government, GPs, or patients to undertake new roles.^{5,6}

GPs' perceptions of pharmacists may determine their willingness to collaborate.¹⁰ Historically, the 'shop keeping' role of community pharmacists has resulted in their being perceived as tainted health professionals^{1,11} who might act for commercial gain and not in the patients' best interests.^{3,12,13} GPs report more distrust of pharmacists practicing in pharmacy chains,¹¹ and many GPs preferred an interprofessional model that involves pharmacists located within their practices and working directly with GPs.³ Furthermore, GPs' lack of knowledge regarding pharmacists' professional training, responsibilities and continuing professional development obligations,^{3,11,14} and their professional skills and strengths, has resulted in contributions made by pharmacists to patient-focused services being undervalued.^{6,15} GPs have also expressed concerns about pharmacists taking on GP roles such as screening, monitoring and prescribing.^{2,3,11,16,17}

In part, the issue is that pharmacists' roles appear ill-defined and on the periphery of primary health-care teams,³ so pharmacists have been viewed as subordinates to GPs who consider themselves the decision-makers and ultimately responsible for patient outcomes.^{11,18} Pharmacists' attempts to re-professionalise have been reported as threatening to GPs' status, autonomy and control.^{2,11} When working collaboratively, role clarification for both professions is paramount.^{8,18-21}

GPs have also been reluctant to use services led by pharmacists they did not trust, respect or have confidence in, with regard to competence and quality of cognitive services.^{11,11,12,14,18} Good communication^{19,21-23} and effort from both parties is required to build successful collaborative, interprofessional relationships.^{12,18} For pharmacists to have credibility in extended roles, practical systems need to be implemented to standardise practice.¹¹

In 1998 and 2002, surveys of GPs' and community pharmacists' perceptions of the role of community pharmacists and barriers to increasing their roles were undertaken across New

WHAT GAP THIS FILLS

What is already known: Successful, collaborative, interprofessional relationships between general practitioners and community pharmacists require positive endeavour and communication from both parties. Implementation of practical systems to standardise practice are required for pharmacists to have credibility in extended roles.

What this study adds: There is a gradual shift by both general practitioners and pharmacists in accepting the expanding roles of community pharmacists. Although levels of acceptance differ considerably between the two professions, certain barriers still exist. Pharmacists remain concerned about how medicines management will be implemented, and whether their clinical knowledge and training is adequate to undertake this role.

Zealand.^{5,24} The aim of this 2012 study was to repeat the survey to determine whether perceptions had changed over time and in what domains this might have occurred. A focus of all three surveys was on the role of pharmacists in medicines management, which '... identif[ies] potential and actual medicines therapy problems including non-compliance, adverse effects and monitoring for effectiveness. The aim is to optimise the use and benefit of medicines ... by pharmacists and GPs working together using a structured, documented process and regular meetings.²⁵ This definition aligns with the concept of pharmaceutical care, as originally defined by Hepler and Strand.²⁵

Methods

The study approved by the University of Auckland Human Participants Ethics Committee (Reference: 8231).

Participant selection

Questionnaires were sent to 600 community pharmacists and 600 GPs, based on power calculations from the 1998 and 2002 surveys. Pharmacists were randomly selected from a list of 1300 community pharmacists who held a current Annual Practising Certificate and agreed to release their address for research. GPs were selected via random selection from the Medimedia® database of all New Zealand GPs. Exclusion criteria included 'specialist' practice; for example, Poisons Centre and travel medicine.

Questionnaire design

The original questionnaire was developed through key informant interviews and refined through piloting.⁵ Using statements and level of agreement, Part A explored perceived roles that community pharmacists should be involved in. Part B explored potential barriers to involvement of community pharmacists in medicines management services, using five-point Likert scales. Comments were encouraged in free-text boxes (not reported in this paper).

Data collection and entry

In 2012, two mailings of the survey were sent 3 weeks apart with a prepaid return envelope addressed to a Justice of Peace (JP) who marked off the returns against a master sheet of names and unique identifiers. The JP forwarded to the researcher the list of non-responders to allow for resending and, for analysis, completed questionnaires identified only by a uniquely assigned number.

For each of the three studies, survey data were double entered into two separate databases by JM and an independent party. The two entry sets were compared for accuracy. Discrepancies were corrected by referral to original survey documents, and data were converted to SPSS® Version 20 (IBM SPSS Inc., IL, USA) for analysis.

Data analysis and statistical applications

Quantitative analysis assumed five-point Likert scales to represent continuous variables.

Attempting to update original files from the 1998 and 2002 surveys, analysed with IBM SPSS® Version 15, corrupted those files, and so prohibited statistical tests comparing the three surveys. Consequently, positive responses (strongly agree and agree) were grouped as 'yes' and negative responses (strongly disagree and disagree) were grouped as 'no' and presented as a percentage using published data from the 1998 and 2002 surveys.^{5,24}

Changes of $\geq 10\%$ in the 'yes' percentage of respondents between any two surveys was deemed an important change in perception. The rationale for this came after analysis of variance was applied to the 1998 and 2002 data and significant outcomes were further explored using the method of Tukey to preserve an overall significance of 5%; this was then fixed at 10% due to the multiple survey questions. Multiple linear regression was used to build models explaining the association between responses after adjustment. The same criteria were used to enable comparisons between the three studies.

A role was considered 'acceptable' if more than 75% of respondents definitely or probably agreed

Table 1. Comparison of the demographic results for the 1998, 2002 and 2012 surveys

	Community pharmacists			General practitioners		
	1998 (N = 286)	2002 (N = 580)	2012 (N = 295)	1998 (N = 506)	2002 (N = 565)	2012 (N = 237)
Usable response rate (%)*	75.3	69.6	49.4	72.2	59.0	39.7
Gender (%)						
Male	59	48	40	70	66	53
Female	41	52	60	30	34	47
Age (mean) in years	40.9	45.7	45.6	44.6	46.4	50.4
Location (%)						
Urban	82	83	65	78	80	78
Rural	18	17	35	22	20	22
Role (%)						
Proprietor	52	41	35			
Employee	48	59	65			

* Calculated based on eligible survey responses.

(1 and 2 on the Likert scale); 'ambivalent' when 50–75% of respondents definitely or probably agreed; and when fewer than 50% definitely or probably agreed, the respondents were deemed to 'oppose' the role.

From the previous surveys, themes for the barriers emerged, and were confirmed by factor analysis.²⁴ The main themes were mandate, legitimacy, adequacy, effectiveness and change.^{5,24}

Results

Survey response rates and demographics

For both professions, there was a steady and substantial decline in response rates, and the number of male responses declined by 20% between 1998 and 2012 (Table 1). A significant ($P < 0.0001$) decrease in the percentage of proprietor pharmacists was seen between 1998 and 2002, which continued to decline in 2012. For both professions, there was a significant increase in the age of respondents between 1998 and 2002 (pharmacists: $P < 0.0001$; GPs: $P = 0.002$), with a further increase in the 2012 survey for GPs.

Comparison of pharmacists' and GPs' responses to the role of community pharmacists

Pharmacists' agreement increased for four of the 23 roles discussed: three technical roles and the dependent prescribing role. GPs' agreement increased for 14 roles and moved from opposition to ambivalence regarding pharmacists' involvement with medicines management (Table 2).

Technical and checking roles

Both professions increasingly found it acceptable for pharmacists to provide technical prescribing information to GPs and remained opposed to pharmacists receiving prescriptions from GPs and couriering medication to patients; however, pharmacists showed increasing agreement for this role in 2012. Although opposed to being mostly involved in the technical aspects of dispensing, pharmacists showed increasing agreement with this role; GPs remained ambivalent.

Counselling, monitoring and screening

Both groups accepted that patient counselling on adverse effects was a pharmacist role. However, whether pharmacists should counsel on expected benefits of medicines was still 'ambivalent' in 2012 by GPs, despite a 16.6% increase between 1998 and 2012.

Important changes were seen for monitoring for adverse medicine reactions and medicines non-compliance, which saw GPs move from ambivalence to acceptance. This 10% increase was also seen for monitoring of patients' progress – a pharmacist role still opposed by GPs in 2012.

GPs were consistently opposed to pharmacists screening for conditions such as diabetes and hypertension, but a 15.4% increase in agreement was seen from the first survey.

Advising prescribers

There was little change in pharmacists' responses regarding their medicines advisory role. GPs moved from ambivalence to acceptance (+13.5%) between 1998 and 2012, and from opposition to ambivalence (+29.0%) for pharmacists being a source of clinical medicines information and advice on medicines selection, during the same timeframe. Both professions opposed pharmacists advising on therapeutic drug monitoring, although GPs increased agreement over time. Pharmacists moved from ambivalence to acceptance (+11.2%) and GPs from opposition to ambivalence (+36.3%) in accepting pharmacists formally reviewing patients' medicines and discussing alterations with GPs.

Dependent prescribing

In 2012, continuation prescribing of medicines was considered an acceptable role by pharmacists, while GPs remained in opposition, despite a 17.5% increase since 1998. Similarly, making dosage adjustments to patients' medicines was considered acceptable by most pharmacists, but although an 11.9% acceptance increase was seen since 1998, GPs remained opposed.

Table 2. Community pharmacists' and general practitioners' perceptions of the role of community pharmacists

Statement. Pharmacists should:	Community pharmacist responses						General practitioner responses					
	1998 N = 286		2002 N = 580		2012 N = 295		1998 N = 506		2002 N = 565		2012 N = 237	
	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)
Technical roles												
Maintain patient records	94.4	2.4	95.5	2.1	98.7	0.3	86.8	9.8	88.4	9.3	88.3	6.3
Provide technical prescribing information such as funding and availability of medicines to general practitioners	70.5	19.1	78.3	14.7	82.8	9.4	77.3	10.8	78.4	11.8	92.1	4.12
Be mostly involved in the technical component of dispensing (counting tablets and labelling)	26.6	64.7	34.1	55.2	39.2	51.0	57.4	27.9	59.3	25.6	58.5	26.3
Provide a 'closed shop' service that just receives prescriptions from the general practitioner and courier the medicine to the patient	5.2	84.2	3.6	84.0	18.9	55.6	12.5	65.7	14.2	63.8	16.7	54.3
Checking functions												
Check prescriptions are the correct dose for the patient	97.5	1.7	99.0	0.4	99.9	-	94.9	2.4	97.0	1.8	98.3	0.8
Check prescriptions do not have drug-drug interactions	99.3	-	98.3	0.2	99.0	-	90.8	2.8	88.6	4.1	93.8	3.3
Check a prescription is not contraindicated for the patient	95.3	1.8	93.2	2.3	96.9	1.0	80.2	11.7	86.7	8.4	93.3	2.9
Counselling functions												
Counsel patients about relevant adverse reactions to their medicines	98.9	0.4	98.1	0.4	98.0	0.3	85.4	7.4	88.4	5.2	93.8	1.7
Counsel patients about the expected benefits of the medicine	94.1	1.7	91.7	3.1	95.3	1.0	50.9	30.8	58.9	24.3	67.5	14.6
Monitoring functions												
Monitor for adverse medicines reactions	88.9	2.7	92.2	2.6	90.3	2.7	65.0	19.4	74.3	13.1	85.4	7.1
Monitor patients for medicines non-compliance	91.3	3.5	92.8	2.3	97.0	0.7	69.9	16.0	77.9	12.6	90.9	4.5
Monitor the effectiveness of medicines by monitoring the patient's progress	63.6	14.5	57.7	18.4	70.1	10.4	4.8	81.7	10.8	75.6	20.5	49.8
Screening functions												
Screen for disease such as diabetes and hypertension in the pharmacy	57.2	18.1	57.6	18.6	64.0	9.0	15.6	68.4	16.8	65.0	31.0	45.2

Advising prescribers												
Be a source of clinical medicines information to general practitioners such as adverse effects of medicines	86.9	7.3	88.1	4.8	91.9	2.3	67.8	20.0	75.2	14.3	81.3	10.8
Be a source of clinical advice to general practitioners, such as selection of a medicine for a particular disease state	77.9	10.7	78.9	7.9	79.9	7.4	30.6	53.0	46.2	39.9	59.6	25.0
Advise general practitioners on the monitoring of drug serum concentrations	25.7	41.9	27.1	36.9	33.0	28.3	19.8	59.4	30.9	47.7	46.2	34.9
Advise on the cost-effectiveness of medicines for disease states	68.6	15.9	62.9	18.5	64.8	14.5	53.4	25.3	57.3	22.2	61.8	15.9
Dependent prescribing												
Formally review patient's medicines and discuss possible alterations to medicines therapy with the general practitioner	67.7	14.3	62.3	16.3	78.9	4.3	25.4	55.9	37.1	36.9	61.7	20.4
Supervise repeat prescriptions for a patient, according to agreed protocols, for up to 12 months, contacting the general practitioner if a problem arises (continuation prescribing)	73.3	10.8	71.3	10.9	80.5	5.8	24.2	62.0	31.2	56.0	41.7	38.4
Make dose adjustments to a patient's medicine using protocols established with prescribers, eg inhaled steroids in asthma	71.2	11.1	70.7	11.4	79.5	7.0	9.4	80.2	12.4	76.0	21.3	55.6
Prescribe a medicine for a patient after the general practitioner has made the diagnosis, decided on the category of medicine required and given the pharmacist relevant clinical details (partnership prescribing)	53.5	15.6	45.8	22.1	56.3	14.6	5.2	82.9	9.4	71.6	15.4	62.5
Independent prescribing												
Prescribe for minor illness such as hay fever	98.6	-	97.6	1.2	99.3	0.3	62.7	23.7	70.8	17.0	80.4	9.6
Recommend herbal medicines	70.4	8.7	66.4	12.5	64.8	12.6	24.2	42.1	22.3	51.1	16.3	56.0

Score 1 and 2 = definitely or probably yes; Score 4 and 5 = probably or definitely no. Percentages do not always total 100% because of rounding to one decimal point.

Pharmacists remained ambivalent regarding partnership prescribing. In 2012, only 15.4% of GPs considered this an acceptable role (+10.2%).

Independent prescribing

Pharmacists agreed that prescribing for minor illness was a recognised and regular component of their daily work, with agreement from GPs in 2012 (+17.7%). Pharmacists remained ambivalent about herbal products, with GPs becoming more strongly opposed to this.

Barriers to increased community pharmacist involvement in medicines management

Pharmacists changed their level of agreement for eight of the 23 statements, and GPs increased their level of agreement for 17 barriers (Table 3). Neither profession perceived that pharmacists had a mandated role in the medicines management service or that it was a legitimate role for community pharmacists, or that pharmacists have adequate knowledge and skills to be effective in providing this service. Potential resistance to change for both professions was high, although GPs appeared to be more accepting of change. Pharmacists accepted increased involvement in medicines management, while GPs moved from initial opposition in 1998 (34.0%) to ambivalence (66.5%) in 2012.

Mandate

Pharmacists agreed that government funding did not support medicines management services. Conversely, only 32.1% of GPs agreed with this statement, a 45.9% decline from 1998.

Almost 60% of pharmacists still felt that they were on the periphery of the healthcare team in 2012, while only 22.1% of GPs thought so.

Legitimacy

GPs moved towards ambivalence that medicines management would not question their judgment, and although 13.8% still agreed that pharmacists would challenge their authority, this declined from 24.9% (-11.1%). Pharmacists were

ambivalent about the service duplicating GPs' work, but GPs remained hesitant. Over time, GPs became less uncomfortable with pharmacists' autonomy with patients, even though responses consistently demonstrated disquiet. In 2012, less than half of GPs believed that there would be competition for income from patients, a marked change from 70.5% in 1998.

Adequacy

Less than half of both professions were confident that pharmacists' clinical knowledge was sufficient to provide a medicines management service. Pharmacists agreed they were able to provide unbiased advice; GPs remained doubtful.

Effectiveness

GPs demonstrated substantially higher concern that medicines management services may result in patients receiving conflicting medicines information, although they became less concerned over time. Pharmacists accepted that medicines management would enhance intercollegial relationships and improve patient medicine-related health outcomes. GPs moved from opposition to ambivalence for both these statements, with a 24.8% and 23.6% change in agreement over time, respectively.

Change

Pharmacists were consistently ambivalent as to whether the current health environment provided a good opportunity to refine roles, while GPs remained opposed to this statement. GPs indicated less resistance to adapting to new roles over the time period, with 60.7% agreeing in 1998 that there were enough changes in the health system without having to cope with new changes, compared to 29.2% in 2012.

Discussion

Over the past decade, an increase in demand for healthcare services constrained by limited resources has resulted in major changes in primary health care.^{26,27} Recognition of under-utilisation of community pharmacists' training and skills has presented opportunities for developing the

Table 3. Community pharmacists' and general practitioners' perceptions of barriers to community pharmacists' involvement in 'medication management'

Statement. Pharmacists should:	Community pharmacist responses						General practitioner responses					
	1998 N = 286		2002 N = 580		2012 N = 295		1998 N = 506		2002 N = 565		2012 N = 237	
	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)
Overall perception												
Do you think pharmacists should increase their involvement in medicines management**?	85.3	2.3	80.2	6.2	94.2	1.4	34.0	34.8	38.7	33.5	66.5	16.1
Mandate												
The funding stream currently does not support pharmacists and general practitioners collaborating on medication management	83.2	5.2	91.3	2.6	79.5	5.8	78.0	5.7	76.2	5.0	32.1	12.1
Government policy now gives sufficient recognition to this approach to patient care	15.3	57.5	11.8	61.6	21.1	44.0	11.8	32.9	15.3	33.8	20.3	20.8
Other than to dispense prescriptions, pharmacists are on the periphery of the core healthcare team	56.4	27.5	66.3	23.2	59.4	25.2	30.7	46.5	24.8	52.9	22.1	62.5
Patients would find this unacceptable	11.2	62.2	11.4	63.0	7.7	74.4	23.1	26.9	19.2	33.5	16.0	49.6
Legitimacy												
By providing this service (I/the pharmacist) would not be calling (the general practitioner's/my) judgment into question	57.5	20.5	60.4	17.8	58.9	20.5	29.1	29.5	39.5	28.0	47.3	19.3
(I/the pharmacist) would be challenging (the general practitioner's/my) authority	18.4	56.1	22.7	52.2	14.8	62.1	24.9	35.7	21.4	44.8	13.8	58.1
This is not duplication of the general practitioner's work	61.5	16.4	58.5	19.5	64.9	14.9	19.3	65.1	24.9	57.2	32.6	45.6
I don't have time to discuss patient-related medicines issues with (general practitioners/community pharmacists)	30.6	49.4	42.9	36.5	30.5	45.6	40.3	37.8	41.4	38.4	32.1	48.7
I don't feel comfortable with the autonomy pharmacists have when dealing with patients							34.7	24.7	29.8	30.1	22.0	44.1
If patients paid for the service there would be unacceptable competition for income from the patient source							70.5	5.4	65.2	10.4	43.7	19.7
Adequacy												
I feel inadequate dealing with general practitioners on clinical medicine-related issues on behalf of the patient	29.9	41.5	31.9	42.6	23.2	50.3						

(Continued)

Table 3. (Continued)

Statement. Pharmacists should:	Community pharmacist responses						General practitioner responses					
	1998 N = 286		2002 N = 580		2012 N = 295		1998 N = 506		2002 N = 565		2012 N = 237	
	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)	1 and 2 (yes) (%)	4 and 5 (no) (%)
I have sufficient confidence in my clinical knowledge to provide this service	33.1	34.8	32.0	36.5	43.6	23.8						
A community pharmacist's knowledge of pharmacology and clinical use of medicines is inadequate to intervene on the patient's behalf							35.4	31.7	27.0	40.3	19.7	52.1
I have sufficient confidence in the clinical knowledge of my local pharmacists for them to provide this service							20.2	42.5	36.4	28.7	47.7	18.8
(I feel I am/Pharmacists are) sufficiently trained to provide this service	45.8	25.8	42.0	24.9	58.1	17.8	27.4	43.2	34.5	31.6	46.6	19.9
Pharmacists can give unbiased advice on the use of medicines despite commercial pressure	85.0	2.4	87.9	3.9	91.6	1.7	27.7	46.7	29.2	40.5	30.0	32.9
Effectiveness												
The patient may get conflicting information regarding medicines use	46.7	31.0	51.7	28.7	38.4	41.5	83.9	5.0	79.0	8.0	68.2	12.1
This would enhance my current relationship with my general practitioner	73.5	4.9	70.0	6.2	78.9	4.0	46.3	19.4	56.3	10.8	71.1	8.8

* Medicines management: focuses on the use of the medicine by the patient, identifying potential and actual medicines therapy problems including non-compliance, adverse effects and monitoring for effectiveness. The aim is to optimise the use and benefit of medicines for an individual patient by pharmacists and general practitioners working together using a structured, documented process and regular meetings. (5) Score 1 and 2 = definitely or probably yes; Score 4 and 5 = probably or definitely no → Percentages do not always total 100% because of rounding to one decimal point.

profession through provision of services beyond the traditional supply function.²⁸ This study aimed to examine the effects of time and a dynamic healthcare environment on the perceived role of community pharmacists.

Technical, checking, counselling and monitoring roles

Both GPs and pharmacists generally accept the traditional community pharmacist roles of dispensing, checking and counselling, and also for increased involvement in more clinical aspects of medicines management. Exceptions to the agreement between pharmacists and GPs were: counselling on expected benefits of medicines and monitoring for the effectiveness of medicines.

Advisory role

More divergence was seen around perceived clinical roles, which may be expected, as this has traditionally been considered GP territory. Community pharmacists in all three studies agreed with the role of advising GPs on the adverse effects of medicines, with GPs increasing their agreement over time. This may be due to escalation in the complexity of medication regimens, a result of an ageing population, an increase in the number of patients with multiple chronic conditions, and the advent of new medicines. GPs remained opposed to this role, but the level of disagreement diminished over time, consistent with the advent of practice and Primary Health Organisation pharmacist facilitators, an evolving role for pharmacists.

Medication review and continuation prescribing

Performing in-depth clinical medication reviews is a departure from traditional community pharmacist roles. Results demonstrated an increase in the percentage of respondents agreeing that pharmacists should increase their involvement in medicines management services. However, during this time, an adherence support service (Medicines Use Review) was introduced, and some respondents may have interpreted this statement to refer to the adherence support service rather than full clinical medication reviews. Success of medication review services depends on

adequate training for pharmacists,⁷ appropriate patient selection,^{29,30} quality assurance of the service through peer review,³¹ communication and collaboration with GPs, allocation of sufficient time to undertake the service,²⁹ and adequate remuneration. Pharmacists' heavy involvement in the dispensing process, commercial intent, and patients' lack of awareness of pharmacists' ability to offer this service constrain the effectiveness of the service.³²

Both professions showed increased agreement with the extended roles of continuation and protocol prescribing, although GPs remained opposed to this role. Pharmacist-led repeat and continuation prescribing implemented in the United Kingdom since 2004 has been well received by GPs,³³ is logistically feasible, identifies and addresses clinical problems, and has resulted in cost savings.³⁴ Pharmacist involvement in repeat or continuation prescribing has overcome many of the documented problems associated with traditional systems for repeat prescribing (including medicine stockpiling and inappropriate treatment), resulting in improved patient outcomes.³³

In this study, an apparent conflict was noted in the perceptions of community pharmacists and their perceived clinical roles, and their view of adequacy to undertake this role. Part B of the survey found feelings of inadequacy, lack of confidence in clinical knowledge, and less than 60% of pharmacists felt sufficiently trained. Although perceptions of inadequacy have been identified previously, this discrepancy in perceived roles versus perceived ability needs to be explored further, but may explain why, when opportunities are presented, extensive implementation fails.⁵ Concerns were also noted regarding the need for adequate training, appropriateness of the role for community, as opposed to specialist, pharmacists and the need for unambiguous delegation of overall responsibility.

Investigation of the culture of the pharmacy profession^{35,36} has revealed characteristics including lack of confidence, aversion to change, and apparent unwillingness to leave the comfort of the dispensary. This may be impeding the profession's advancement; attitudes held by pharmacists may be sabotaging the development of the profession.

In June 2013, New Zealand legislation permitted the role of prescribing pharmacists. This is a specialist and not a community pharmacist role, and possibly a reason for an increase in agreement over time by pharmacists for all dependent prescribing roles apart from formal review services. Conversely, although GPs remained opposed to all dependent prescribing roles, except for the formal review service, the decrease in the level of opposition over time was noteworthy. The pharmacist prescriber role is uncharted territory for New Zealand's pharmacy profession and has been viewed as a major advance in the recognition of pharmacists' skills and a positive step towards their inclusion into core healthcare teams. Nevertheless, many issues discussed previously need to be resolved so that prescribing pharmacists can be effective in their new role.

Prescribing for minor illness and recommending herbal medicines

Pharmacists prescribing through the Pharmacist Only Medicine classification allows pharmacists to select appropriate medication for specific conditions in accordance with guidelines and after consultation with patients, providing some recognition of skills to undertake this cognitive service.³⁷ Convenience,³⁸ accessibility³⁹ and trustworthiness^{39,40} have resulted in local pharmacies often being the triage centre for healthcare advice, a valid (mandated) role acknowledged in this study by GPs. Over time, GPs' opinions went from ambivalence (1998) to agreement (2012) for this role.

GPs remained opposed to pharmacists recommending herbal medicines, suggesting pharmacists would rather make a sale than adhere to evidence-based practice for particular remedies. The tainted 'shopkeeper' role has been well documented.^{1,11} Although pharmacists remained ambivalent over time, results concurred with the requirement for scientific evidence and better training when recommending herbal medicines.

Study limitations

The poorer response rate from pharmacists in the 2012 survey may have been due to the timing of the survey coinciding with the implementation

of the new community pharmacist national contract, which caused distress among community pharmacists. The difference in the pharmacist demographics across the studies may also have influenced response rate and responses.

The low GP response rate may be attributed to a lack of time and the policies of some general practices, which avoid survey participation. A potential bias may be introduced if more 'pharmacy-friendly' GPs responded to the survey.

Responses may have been skewed by the tendency of survey respondents to provide socially desirable responses; however, participant anonymity is likely to have minimised this effect.

The inability to undertake comparative statistical analysis of the 2012 results with previous surveys limited analysis to the identification of trends, but still provides useful information on changes in perceptions over time, and barriers that remain if community pharmacists are to extend their role in health care.

Conclusion

Over a 14-year period, this study has shown increased agreement by both GPs and pharmacists for expanding roles for community pharmacists, but levels of agreement differed considerably between the two professions. Pharmacists were open to expanding their role to include services such as medicines management, monitoring, screening, advisory and prescribing roles, but expressed concern on how this would be implemented and identified a lack of confidence in their clinical knowledge and training. Only about half considered they have adequate skills to undertake clinical roles. GPs demonstrated less agreement for all roles. While accepting of the traditional dispensing role, they were less supportive of other roles, although there was a gradual shift towards agreement concerning pharmacists' involvement in medicines management.

With the evolution of pharmacists' roles, the future focus of research is likely to change to the general practice environment. For the pharmacy profession and universities, there is a need to

explore the contrasting perception of the community pharmacists and the roles that they think they should be undertaking, and the lack of confidence in their adequacy to do these roles.

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CONFLICTS OF INTEREST

None.