ªSchool of Pharmacy, University of London, ᵇEastern Specialist Pharmacy Services, ᶜUniversity of Brighton, ᵈEast and South East England Specialist Pharmacy Services and ᵉUniversity of London

ªElizabeth Mills, research pharmacist
ªIan Bates, Head of Educational Development
ᵇDenise Farmer, Associate Director of Clinical Pharmacy
ᶜGraham Davies, Academic Director of Clinical Studies
ᵈ,ᵉDavid G. Webb, Director of Clinical Pharmacy

Correspondence: Elizabeth Mills, Academic Course Manager, Department of Medicines Management, Keele University, Keele, Staffordshire ST5 5BG, UK. E-mail: e.r.mills@mema.keele.ac.uk

The General Level Framework: use in primary care and community pharmacy to support professional development

Elizabeth Mills, Denise Farmer, Ian Bates, Graham Davies
and David G. Webb

Abstract

Objectives To compare practice pharmacists and community pharmacists based on the use of the General Level Framework (GLF) as a tool to support continuing professional development (CPD).

Setting Primary care and community pharmacy in London and the East of England.

Method The study pharmacists were self-selected after distribution of recruitment packs in the study area through local pharmaceutical committees, primary care trusts and two large multiples. Sixty-nine pharmacists used the framework to support their CPD (42 community pharmacists and 27 with a role in primary care pharmacy). Pharmacists made an initial self-assessment against the GLF and then used the framework over a 12-month period to identify learning needs for CPD. Pharmacists identified their desired performance levels for the behaviours in the framework, based on guidance from the project team, and then identified their learning needs by comparing the desired performance level with their self-assessment. Pharmacists were visited at 4 and 8 months by a trained facilitator to support their self-assessment and progress with CPD. Final self-assessments were collected at 12 months. Assessment ratings for the delivery of patient-care competencies were compared.

Key findings There was no difference in the probability of either group achieving their desired performance level (log rank = 0.023, 1 df, $P = 0.878$): pharmacists achieved their desired performance level irrespective of their sector of work, demonstrating the applicability of the GLF to the different sectors of practice. Practice pharmacists had a higher aggregated score for the desired performance levels than the community pharmacists (Mann–Whitney $U = 10.500$, $P < 0.001$; median = 133.0 and 119.5 respectively).

Conclusion Both groups of pharmacists were able to apply the framework to their practice and use it to support their CPD, resulting in increasing self-assessed competency scores over time. The higher desired performance level for practice pharmacists compared with community pharmacists conveys a difference, perceived or actual, between the two roles. Irrespective of the difference in desired performance levels, both groups of pharmacists have improved, to meet their level of expectation, over the 12-month period.

Introduction

Over the last 10 years competency frameworks in healthcare have become increasingly popular due to the need for transparency in the training, development and accreditation of healthcare professionals. Continuing professional development (CPD) is advocated as a means of ensuring the competence of healthcare professionals and is now mandatory for many of the healthcare professions. In order for CPD to be meaningful healthcare professionals need to know the areas of competence for their role to enable them to accurately identify their learning needs; they need to know what it is they need to be able to do. Competency frameworks can provide this and fit well with the principles of adult learning; competencies are based on real-life roles and experience, and experiential or applied learning is essential for the development of competence. There is a need to define the competencies and standards required for general and advanced pharmacy practice.[1] Many professional groups within pharmacy have developed competency frameworks for their members and

currently there are a number of different approaches to competency specification and assessment. Although these frameworks have validity for the specific groups for which they were developed, none could be used for the whole profession, although a review of the frameworks conducted by the authors did reveal a high generic content and an overlap in the competencies defined. Additionally there is a risk that lack of a unified approach to competency development will fail to provide clear and structured training, development and career advancement for pharmacists.

The Competency Development and Evaluation Group (CoDEG) in England have designed and evaluated two competency frameworks that develop the practitioner from a newly registered pharmacist to a pharmacist working at a general level of practice, through to advanced- and consultant- level practice. This strategy has been described in detail elsewhere.[2–4] It integrates training, experience and competency progression and proposes two distinct training phases: general and advanced. The General Level Framework (GLF) was initially constructed for secondary care using a recognised process[5] and has been evaluated among junior pharmacists in secondary care. The framework describes the competencies expected of pharmacists working at a general level and contains performance-assessment ratings allowing development to be monitored against the framework. Use of the framework improved and sustained the performance of the junior pharmacists.[6–8] It is now being used to train junior pharmacists in over 100 hospital trusts in England and has been integrated into some postgraduate degree courses.

The Advanced and Consultant Level Framework (ACLF) enables differentiation between those undertaking higher-level training, those who have progressed to an advanced level of practice and those who may be recognised as practising at a consultant level. It was included in the government document providing guidance in the development of consultant pharmacists in hospitals and primary care trusts (PCTs)[9] and was used as the basis for the competency framework for Pharmacists with a Special Interest (PhwSI).[10] The Royal Pharmaceutical Society of Great Britain, in its response to the call for ideas for the review of regulation of the non-medical professions,[11] discusses this work by CoDEG and the need to distinguish between general and higher-level practice.

The concept of general and advanced practice is not confined to secondary care. Recent developments in both community pharmacy and primary care pharmacy are likely to result in clearer career goals for practitioners in both these sectors. The current contractual framework for community pharmacy was introduced in April 2005.[12] Under this new framework all pharmacies are contractually obliged to provide essential services to patients such as dispensing of medicines, and advice on self care. Pharmacies may then choose to provide services beyond the essential services in the form of advanced services such as medicines-use review, commissioned on a national level, and enhanced services such as minor ailments schemes and supervised consumption of methadone, commissioned on a local level according to local need. One of the aims of the new contractual framework for community pharmacists was to ensure the quality of services provided from community pharmacies: only those pharmacists and pharmacies who can demonstrate quality will be

able to provide advanced and enhanced services. Accreditation of pharmacists to undertake medicines-use reviews is through a nationally agreed competency assessment administered through higher-education institutes. The GLF helped to inform some of these competencies. Currently PCTs are varying in their requirements for accreditation for enhanced services. There are no nationally agreed standards; however, the GLF competencies can be mapped to those services that require a general level of competence to deliver them (e.g. emergency hormonal contraception and minor ailment schemes). Some services will require a period of more advanced training and development; for example, those that could be provided as a PhwSI service. In order to work as a PhwSI, pharmacists will need to demonstrate that they possess the required competencies. These developments point to the need for general and higher-level (specialist) development and training for community pharmacists.

The role of primary care pharmacist has emerged over the last decade and was recognised as an employment category in the 2002 pharmacy census.[13] The role initially involved providing prescribing support to optimise medicines use, but has evolved as the function of PCTs has changed. The role has been difficult to define as variations in the structure and organisation of PCTs has led to diversity in job titles and descriptions. Research has been carried out to define a conceptual model for the role of primary care pharmacists. Jesson and Wilson[14] proposed a five-level model for primary care pharmacists based on the work being carried out, the location of the work, the target audience, the length of contact time with the target audience and the degree of autonomy in setting the agenda for the work.

This model starts to distinguish between pharmacists who work entirely for and with the GP practice and those who are responsible to the PCT and whose work involves setting external targets on the GP practice. The National Prescribing Centre broadly defined primary care pharmacists as health authority pharmaceutical advisers, plus pharmacists working either full-time, part-time or on a sessional basis for PCTs or GP practices.[15] This definition, however, has not clarified the role, and in practice there is still a debate around what actually is a primary care pharmacist. Definitions include pharmaceutical advisors, prescribing support pharmacists and pharmacists employed within the NHS providing primary care services, and some definitions include community pharmacists. Mullen[16] has suggested that pharmacists who work solely in NHS authorities and those that work wholly or part of their time in GP practices should not be labelled in the same way because the roles are very different. She suggests the generic title of 'pharmaceutical advisor' for the former and 'practice pharmacist' for the latter. 'Practice pharmacists' provide medicines-management services and 'pharmaceutical advisors' have a more strategic role and are involved in the commissioning of services. These definitions are useful because they characterise the majority of the functions of practice pharmacists as being 'generalist'.

An important outcome of the evolution of the primary care pharmacist's role and the creation of more employment opportunities since the inception of PCTs is the development of 'portfolio' patterns of working. Almost half of all primary care pharmacists work in community pharmacy (49.4%), with

21.7% working as retail locums, 11.3% working as retail managers and 42.0% working for large multiples.[13] These primary care pharmacists are likely to be the practice pharmacists providing medicines-management activities on a sessional basis, employed either directly by GP practices or by the PCTs. This pattern of work poses difficulties in terms of training and development of the primary care pharmacist workforce, as well as defining the roles undertaken. Pharmacists working in two or more sectors need to demonstrate their competence across all sectors of work, and pharmacists who are contracted on a sessional basis may have little support for their development. Additionally, as the role of the community pharmacist becomes more patient-orientated and involves more medicines-management elements, the boundaries between the community pharmacist and the practice pharmacist will become blurred.[17] What is clear, however, is that practice in both primary care and community pharmacy, even if the boundaries are unclear, can be defined by different levels. In summary the practice pharmacists described above, and community pharmacists providing essential, advanced and some enhanced services, are working at a generalist level, whereas pharmacists providing services that require more specialist training such as PhwSI are working at an advanced level. The framework evaluated in this paper was developed for the generalist level, and so the rest of this paper will refer to practice and community pharmacists as defined above.

The work by CoDEG described here, defining general- and higher-level practice, is in line with government strategy for the NHS and potentially could be used to support practitioner development across the whole profession. Different levels of practice are not sector-dependent but are dictated by patient need. The GLF, although initially designed for secondary care, describes the generic competencies required of pharmacists working at a generalist level of practice, and the work presented in this paper stems from the belief that, with some modification, it could be used to develop and support practice in all sectors of the profession. The modification of the framework to ensure relevance for primary care and community pharmacists has been described elsewhere.[18] This modified framework has been published as the second edition of the GLF[19] and will be referred to as the GLF throughout the rest of this paper.

The work presented here is part of a larger trial to compare the self-assessed performance of pharmacists using the GLF to support their development with that of a control group. This paper focuses on the intervention group only and describes an evaluation of the use of the GLF by practice and community pharmacists.

Aim

The larger trial aimed to evaluate the GLF as a tool to support the CPD of pharmacists working in primary care and used a controlled trial methodology. As part of the larger trial the use of the GLF between practice and community pharmacists in the intervention group was compared. In order to make this comparison the following objectives were identified:

- to compare the probability of practice pharmacists and community pharmacists in the intervention group achieving the desired performance levels.
- to compare the applicability of the GLF to practice and community pharmacists.

Methods

The protocol for this project was submitted to Camden and Islington Local Research Ethics Committee. Ethical advice was that formal approval was not required for this project.

For the larger trial pharmacists were recruited through self selection in response to recruitment packs distributed to pharmacists in the study area who fitted into one of the four groups described below. Recruitment packs were distributed via local pharmaceutical committees (LPCs), PCTs and the area professional development managers of pharmacy organisations in London and the East of England. Each recruiter was asked to target a particular group of pharmacists as described below. In total 1651 recruitment packs were distributed via the recruiters; 1234 via LPCs, 239 via PCTs and 178 via pharmacy organisations. Pharmacists were recruited from the following groups.

1 Community pharmacists working in independently owned pharmacies (individual pharmacies and non-national chains), including owners and managers (recruited via LPCs).
2 Community pharmacists working for large national pharmacy organisations (recruited via their area professional development manager).
3 Locum community pharmacists (recruited via LPCs and PCTs).
4 Practice pharmacists; that is, pharmacists working for the PCT (either employed or on a sessional basis) performing medication reviews for GP surgeries or carrying out domiciliary visits. This included pharmacists who have a dual role, for example working on a sessional basis for the PCT, and also working in community pharmacy (recruited via PCTs).

Allocation of pharmacists to the intervention and non-intervention groups for the larger trial adopted a mixture of cluster sampling and stratified random sampling. The clusters were based on the county boundaries within the study area to avoid the possibility of 'leakage' of the framework in the same area from intervention to non-intervention pharmacists, and to help with the practicalities of organising the evaluation over a large geographical area. Within each geographical cluster (n = 7) stratified sampling was used to ensure adequate representation of each of the four groups of pharmacists described above. The clusters were then randomly allocated to intervention and non-intervention groups. Three clusters were allocated to the intervention group and four to the non-intervention group. The remainder of the methods section relates to the intervention group only (the subgroup analysed in this paper).

The study took place over a 12-month period. The infrastructure of primary care and community pharmacy meant it

would have been costly and impractical to use external assessors to measure performance, and so self-assessment of performance against the GLF was adopted as the main outcome measure, facilitated by an external facilitator. This approach best reflected the manner in which the competency framework might eventually be used in the primary care sector. Pharmacists could use it as a development tool to help identify their individual learning needs to support their CPD.

Intervention pharmacists undertook a baseline self-assessment of performance against the GLF. Pharmacists with a dual role were asked to complete the self-assessment as practice pharmacists, rather than community pharmacists, to ensure adequate representation of this group. All intervention pharmacists then attended an evening session to introduce the framework. Pharmacists were asked to focus their development on the 'Delivery of Patient Care' and the 'Management and Organisation' competencies. Throughout the year intervention pharmacists were asked to use the framework to achieve three overall aims (Figure 1), as follows.

1 To identify the level of performance expected of their role (desired performance level). Pharmacists were given some guidance on the desired performance levels for the different sectors in the form of a handout. The guidance was based on work from the secondary care trial,[8] and was produced in consultation with members of the review panels involved in the modification of the GLF for primary care and community pharmacy.[18] Pharmacists were advised that this was for guidance only and that they were expected to consider how each behaviour related to their role, and then to decide on an appropriate performance level.

Figure 1 Overview of the study design.

2 To make a self-assessment of performance at 4, 8 and 12 months.
3 During the course of the year to move towards the desired performance level through the process of CPD.

In order to support the process of self-assessment all intervention pharmacists were visited at 4 and 8 months by a facilitator. The facilitators ensured that the assessments were realistic by asking the pharmacist for evidence. If, based on the evidence provided, the facilitator believed a pharmacist's self-assessment was too high or too low, a discussion was held until consensus was achieved on the appropriate performance level. Facilitators collected data about the pharmacists' self-assessment and the evidence provided on a standardised form, and followed a standardised process for the visit. They also attended a training session before the first visit took place, and a debriefing session in between the 4- and 8-month facilitation sessions to ensure that the facilitation process was as standardised as possible.

Intervention pharmacists undertook their final self-assessment at 12 months, using their baseline, 4-month and 8-month assessments to review their development over the year. The data from the baseline, 4-, 8- and 12-month self-assessments, along with demographic information from the pharmacists, were entered into a database created with SPSS version 13.00. The assessment ratings were given a numerical value when entered into SPSS (4=always, 3=usually, 2=sometimes, 1=never). The assessment ratings for each competency cluster were aggregated to provide a score for each pharmacist. The maximum score for the Delivery of Patient Care competencies was 140, and for the Management and Organisation competencies 96, and so when the competency clusters were combined the maximum score was 236. To apply survival-analysis techniques, a score at which pharmacists could be deemed 'competent' needed to be defined. Pharmacists had been asked to identify the desired performance level for their role for each of the competencies. The desired performance levels for each competency cluster were aggregated to provide a score for the desired performance level of the individual pharmacists. The mode of the desired performance level scores was then calculated and used to define 'competence' in order to apply survival-analysis techniques. Separate modes were calculated for the desired performance levels set by the community pharmacists and the practice pharmacists, and also a combined mode. All were used in the data analysis (Table 1). The mode was deemed more appropriate as it represents the most common desired performance levels and therefore was closer to a consensus than the median.

Results

One hundred pharmacists in total were recruited to the larger trial; 69 were allocated to the intervention group and 31 to the non-intervention group. Of the 69 pharmacists in the intervention group, 27 were practice pharmacists and 42 worked solely in community pharmacy. Of the 27 practice pharmacists, 12 worked solely in primary care and 15 worked both in primary care and in community pharmacy. Nine of the pharmacists with a dual role were salaried pharmacists in community
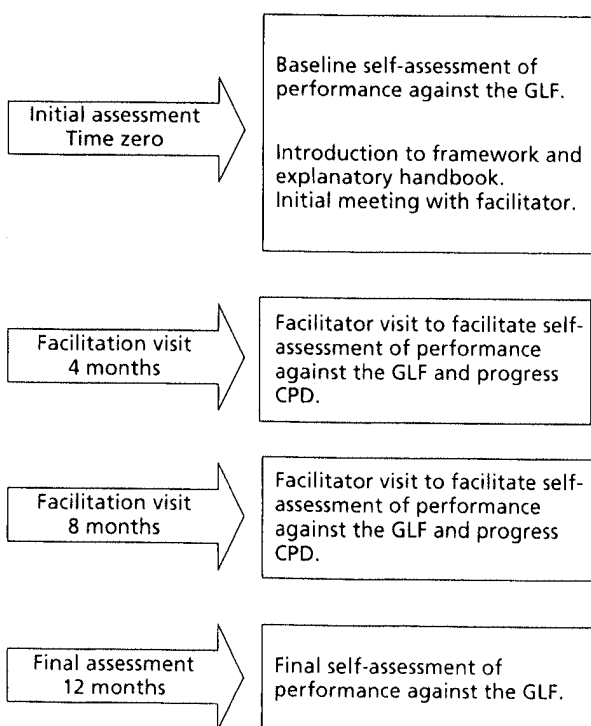
Table 1   Mode of aggregated desired performance levels for community and practice pharmacists

Competencies	Maximum aggregated score possible	Mode of aggregated desired performance level		Mann–Whitney U
		Practice pharmacists	Community pharmacists	
Delivery of patient care	140	127	119	$U = 10.500\ P = 0.001$
Combined delivery of patient care and management and organisation	236	209	200	Not significant $(P > 0.05)$

pharmacy, whereas six were locums in addition to working in primary care. The types of primary care roles described by practice pharmacists included: sessional medication review pharmacists, practice support pharmacists, prescribing advice pharmacists, non-medical prescribing facilitators, a pharmacist at a dispensing practice, provision of substance misuse services, professional executive committee (PEC) pharmacists and locality support pharmacists.

In the intervention group, practice pharmacists were more likely to hold a postgraduate qualification than community pharmacists ($\chi^2 = 15.422$, 1 df, $P < 0.001$). No other demographic differences were found.

When sector-specific desired performance levels (as shown in Table 1) were used to define competence, there was no difference in the probability of either group achieving their specific desired performance level in the delivery of patient care competencies (log rank $\chi^2 = 0.023$, $P = 0.878$). Both groups were equally likely to achieve their desired performance level (Figure 2). When a combined desired performance level – for both sectors together (mode = 127) – was used to define competence, the practice pharmacists were more likely to achieve the overall desired performance levels in the delivery of patient care competencies than the community pharmacists (log rank $\chi^2 = 8.759$, $P = 0.003$) (Figure 3).

The difference in desired performance level between practice and community pharmacists was significant for the delivery of patient care competencies (Table 1).
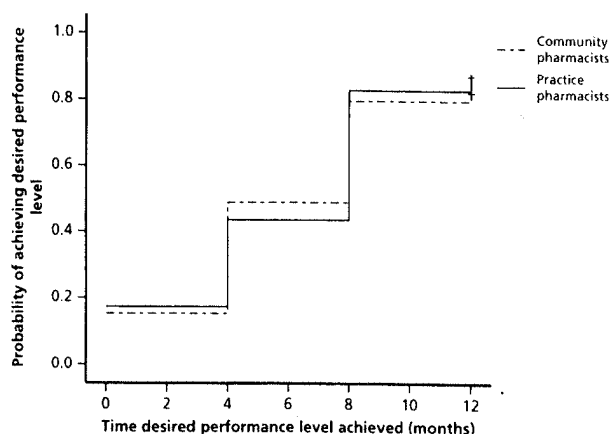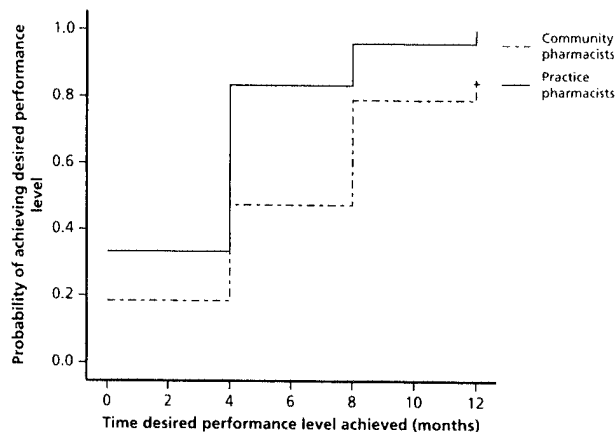
Figure 3   Probability of achieving the overall desired performance level for community and practice pharmacists for the delivery of patient care competencies.

The desired performance levels reported by the pharmacists were compared with the guidance provided. The community pharmacists agreed entirely with the guidance desired performance levels provided for both competency clusters. Practice pharmacists, however, indicated that the suggested performance level in the guidance was too low for some of the behaviours in each competency cluster (Table 2). These differences were not significant (Mann–Whitney U, $P > 0.275$).

Discussion

Main findings

Three key findings arise from the study. First, despite differences in expectations of performance, the GLF can successfully be applied to pharmacists working in different sectors. Practice pharmacists and community pharmacists have shown similar improvements in performance when using the GLF to support their CPD (Figure 2). Second, when the same desired performance levels were applied to both practice and community pharmacists, the practice pharmacists were significantly more likely to achieve these levels, demonstrating the sensitivity of the framework (Figure 3). Thirdly, the higher expectation of practice pharmacists (Table 2) and higher achievement using overall performance levels compared with community pharmacists may reflect differences in working environments.

Figure 2   Probability of achieving the sector-specific desired performance levels for the delivery of patient care competencies.

Table 2 The changes to the guidance desired performance levels made by the practice pharmacists

Competencies	Description of behaviour	Change in desired performance level
Delivery of patient care	Pharmaceutical or health problems are appropriately referred	Usually → always
	Relevant and available patient information is retrieved	Usually → always
	An accurate and comprehensive drug history is documented when required	Usually → always
	Appropriate timing of dose is ensured	Usually → always
	Medicines-management problems are accurately prioritised	Usually → always
	Appropriate action is taken to resolve or refer medicines-management problems	Usually → always
Management and organisation	Looks to improve the quality of the services offered	Usually → always
	Describes key drivers for national and local service development	Usually → always
	Identifies and refers need for service development	Sometimes → usually
	Is active in training other healthcare professionals	Sometimes → always
	Supports staff in their development	Usually → always
	Describes sourcing of pharmaceutical products	Usually → always

Strengths and limitations

The study used self-assessment of performance as an outcome measure. There are many influences on self-assessment that can lead to unreliable ratings. Sternberg[20] has shown that people who under-rate their abilities believe their self perceptions and those that over-rate their abilities engage in protective self-preservation strategies. Under-raters therefore lack confidence in their abilities. Over-raters often lack insight into their own performance and consequently over-rate themselves.[21–23] Asadoorian and Batty[24] have shown that there are four key elements required to carry out valid self-assessments: possession of the prerequisite competencies for self-assessment; awareness of the process of self-assessment; activities that can be applied to put the process into action, for example reflection, discussion and questioning; and finally tools that can be used in the process, including precisely stated standards and feedback on performance. To minimise the likelihood of under- and over-rating, the approach taken in this study provided suggested performance levels for the behaviours in

the GLF and feedback from facilitators on the self-assessments. This was intended to increase the confidence of those with a tendency towards being under-raters and encourage more critical reflection by those who might be over-raters. Despite these measures, there remains a degree of uncertainty about the precision of self-assessment, but it is accepted within the concept of CPD and the study was designed to fit with the real-world deployment of a competency framework in community pharmacy and primary care pharmacy. The study has shown that using the GLF does help individuals to analyse their work practices and does improve self-assessed performance.

Contribution to the field

The study has made a significant contribution to the training and development of pharmacists working in primary care. The GLF is the first competency framework to have been evaluated for its effect on the performance of pharmacists working in three different sectors. This study has shown that the GLF can be applied to different groups of pharmacists with different expectations of performance (Figure 2). There was no difference between the probability of the practice pharmacists achieving their desired level of performance and the community pharmacists achieving their desired level. This ability of different groups of pharmacists, with different expectations of desired performance, to use the framework demonstrates the uniqueness of the GLF. The evaluation of the GLF in secondary care[8] and now primary care clearly demonstrates that it can be applied to different sectors of work and this is due to the explicit assessment ratings allowing a standard to be applied within a sector of work, and the generic competencies within the framework allowing flexibility depending on the working situation. The GLF is amenable to self-assessment with facilitation as well as the more supervisory approach taken in secondary care. Both approaches have been demonstrated to lead to performance improvement.

The GLF is able to detect a difference in performance between different groups of pharmacists when one standard is applied (Figure 3), demonstrating the sensitivity of the framework between specific roles. The practice pharmacists have a higher probability of achieving the overall desired performance levels than the community pharmacists in the delivery of patient care competencies. Use of the GLF to support development does increase performance, but cannot replace the development opportunities provided by team working and peer support within the workplace. This suggests that the working environment influences the rate of performance improvement and justifies the use of specific desired performance levels for different sectors.

Pharmacists were provided with guidance on identifying desired performance levels for the two roles, but were asked to identify their own desired performance levels for their own roles. The desired performance levels identified by the community pharmacists did not differ from the guidance provided. The practice pharmacists, however, identified their desired performance levels to be higher than the guidance provided (Table 2). In addition, the desired performance levels for practice pharmacists in the delivery of patient care

competencies were significantly higher than for community pharmacists, but when the management and organisation competencies are included this difference disappeared, suggesting that community pharmacists have greater performance expectations in this area (Table 1). Practice pharmacists benefit from greater access to clinical information about patients, which might contribute to their higher level of performance expectation in patient care; in addition, their greater use of postgraduate qualifications may contribute to this effect. Practice pharmacists are more likely to work within a clinical team than community pharmacists, who often work in isolation and have less opportunity for discussion with colleagues. As the clinical role of community pharmacists develops and they have more access to patient notes and become more integrated in the primary healthcare team, it is anticipated that these differences in patient care will become less marked.

Conclusion

This study demonstrates that use of the GLF to support CPD has a positive influence on the self-assessed performance of both practice and community pharmacists. Both groups were able to apply the framework to their practice and use it to support their CPD. The GLF is the only framework to have been tested in practice for its effect of performance. It has now been demonstrated in two trials[8] to improve the performance of pharmacists working in three sectors of practice. The GLF is a useful tool for identifying learning needs for CPD and should be integrated into the training of pharmacists in all sectors. The GLF is used as the basis for performance assessment for the Joint Programme Board's diploma in general-level pharmacy practice, which is being developed for pharmacists working in all sectors of practice.

References

1 Department of Health. The regulation of the non-medical health care professions. Leeds: Department of Health; 2006.
2 Bates I, McRobbie D, Davies JG, Webb DG. Why we need a defined career structure in place of informal progress. Pharm J 2004;272:283
3 Webb DG, Davies JG, McRobbie D, Bates I, Wright DJ. Adopting a strategy for practitioner development – the way forward. Hosp Pharm 2004;11:104–9.
4 Davies JG, Webb DG, McRobbie D, Bates I. Consultant practice – adopting a strategy for practitioner development. Hosp Pharm 2004;11:2.
5 McRobbie D, Webb DG, Bates I, Wright J, Davies JG. Assessment of clinical competence: designing a competence grid for junior pharmacists. Pharm Edu 2001;1:67–76.

6 Goldsmith G, Bates I, Davies JG et al. A pilot study to evaluate clinical competence in junior grade pharmacy practitioners. Pharm Edu 2003;3(2): 127–34.
7 Webb DG, Davies JG, Bates I, McRobbie D, Antoniou DS, Wright J. Competency framework improves the clinical practice of junior hospital pharmacists: interim results of the south of England trial. Int J Pharm Prac 2003;11(suppl):R91.
8 Antoniou DS, Webb DG, McRobbie D et al. A controlled study of the general level framework: results of the South of England competency study. Pharm Edu 2005;5(3/4):201–7.
9 Department of Health. Guidance for the development of consultant pharmacist posts. Report no. 267661. London: Crown Copyright; 2005.
10 Department of Health. Implementing care closer to home – providing convenient quality care for patients. A national framework for pharmacists with Special Interest. London: Department of Health; 2006.
11 Royal Pharmaceutical Society of Great Britain. Review of non-medical professional regulation: call for ideas. London: Royal Pharmaceutical Society of Great Britain; 2005.
12 Bellingham C. What the new contract has in store. Pharm J 2004;273:385.
13 Mullen R, Hassell K. The National Workforce Census: (5) The primary care pharmacy workforce in Britain. Pharm J 2003;271: 326–7.
14 Jesson J, Wilson K. Primary care pharmacists: a conceptual model. Pharm J 1999;263:62–4.
15 NHS Executive, National Prescribing Centre. Competencies for pharmacists working in primary care, 1st edn. Liverpool: National Prescribing Centre and NHS Executive; 2000.
16 Mullen R. Clarity of nomenclature is needed for pharmacists who work in primary care. Pharm J 2003;271:772.
17 Silcock J, Raynor DK, Petty D. The organisation and development of primary care pharmacy in the United Kingdom. Health Policy 2004;67(2):207–14.
18 Mills ER, Farmer D, Bates I, Davies JG, Webb DG, McRobbie D. Development of an evidence-led competency framework for primary care and community pharmacists. Pharm J 2005;275: 48–52.
19 General Level Framework, 2nd edition. http://www.codeg.org/pdf/GLF%20October%202007%20Edition.pdf (accessed March 2, 2008).
20 Sternberg RJ. Prototypes of competence and incompetence. In Sternberg RJ, Kalligan J (eds), Competence considered. New Haven, CT: Yale University Press; 1990. pp117–45.
21 Langendyk V. Not knowing that they do not know: self-assessment accuracy of third-year medical students. Med Edu 2006;40: 173–9.
22 Weller JM, Robinson BJ, Jolly B et al. Psychometric characteristics of simulation-based assessment in anaesthesia and accuracy of self-assessed scores. Anaesthesia 2005;60:245–50.
23 Kruger J, Dunning D. Unskilled and unaware of it: how difficulties in recognizing one's own incompetence lead to inflated self-assessments. J Personality Soc Psychol 1999;77:1121–34.
24 Asadoorian J, Batty HP. An evidence-based model of effective self-assessment for directing professional learning. J Dental Edu 2005;69:1315–23.