

Well-rounded pharmacists: a longitudinal evaluation of a multi-sector pre-registration programme

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Abstract

Introduction Pharmacists traditionally work in either hospital or community settings and increasingly in primary care. As demands on health care continue to rise, pharmacists need a well-rounded understanding of the patient journey and transfer of care and be capable of working in any setting. In response, Health Education and Improvement Wales (HEIW) launched a multi-sector pre-registration pharmacy training programme. Trainees experience all three pharmacy settings throughout the year, in contrast to the traditional, single-sector programmes.

Objectives To explore the views of the now-qualified pharmacists, their tutors and line managers on the multi-sector programme and how it prepares pharmacists for practice.

Methods This longitudinal study followed pharmacists through the multi-sector programme, to approximately 1 year post-registration. Data were collected via interviews ($n = 27$) with pharmacists, tutors and line managers. All data were pattern coded and analysed thematically.

Key findings Pharmacists maintained that they benefited from the multi-sector training programme and would choose this option again. Pharmacists, tutors and line managers considered that the programme provided a more holistic perspective of pharmacy than single-sector programmes and a greater understanding of patient journeys and transfer of care. Nonetheless, there remains a lack of consensus on how the programme is best structured, and there is scope to increase the hands-on experience in primary care settings.

Conclusions Greater communication across sectors and smoother transfer of patient care benefit employers and patients as well as the pharmacists. Recommendations for future multi-sector programmes are suggested.

Keywords: pharmacy; multi-sector training; pre-registration pharmacists; skill-mix.

Introduction

Pharmacists play a critical role in healthcare services, advising both patients and other healthcare professionals on safe medicine use.^[1] Traditionally, pharmacists trained in either community or hospital setting and then enter the workforce in the relevant sector. However, demands for healthcare professionals are becoming ever greater, and traditional models of care within the UK National Health Service (NHS) are increasingly unsustainable.^[2] To meet this increasing need for health services, increasing attention is being given to the role of pharmacists. The *NHS Long Term Plan* emphasised the necessity for ‘the right care, at the right time, in the optimal care setting’.^[3] More recently, the Covid-19 pandemic highlighted the importance of multidisciplinary healthcare teams for high-quality patient care.^[4] Since the 2011 publication of the General Pharmaceutical Council’s (GPhC) standards for pharmacists’ initial education and training (IET), there has been a shift towards integrated health and social care across Great Britain.^[5] Health Education England^[6] describes current times as ‘a period of rapid and seismic change in working locations of pharmacists’. In response, the GPhC published new IET standards in January 2021 and new learning outcomes for the 4-year undergraduate MPharm

degree plus the pre-registration year (now known as the Foundation year). Training is included to enable pharmacists to independently prescribe at the point of registration.^[5]

The vision in Wales is to prepare pharmacists as capable of working in any setting, with a well-rounded understanding of the patient journey and transfer of care, and capable of leading innovation in medical therapies.^[7] The goal is to embed pharmacy education and training within multi-sector sites by 2030. The Wales Centre for Pharmacy Professional Education (WCPPE), part of Health Education and Improvement Wales (HEIW), launched a multi-sector pre-registration pharmacy training programme across three University Health Boards with a vision of preparing pharmacists with a well-rounded understanding of the patient journey and transfer of care, capable of working in any setting. Trainees spend time in hospital, community and primary care settings throughout their Foundation year, in contrast to the traditional, single-sector pre-registration programmes. All trainees have a tutor (‘designated supervisor’) in each setting. Tutors were responsible for supporting the trainees onsite, overseeing their progress and verifying evidence of competence.

Similar programmes have been introduced in England and Scotland. However, there has been little study of the

experiences and perceptions of stakeholders. In Wales, a longitudinal evaluation study was commissioned by HEIW with the aim of investigating trainees', tutors' and line managers' perceptions of the multi-sector programme. Given that multi-sector Foundation training will become compulsory in Wales, the primary objective of this longitudinal study was to assess whether a multi-sector programme can suitably prepare pharmacists for practice in any setting. Specific objectives were 3-fold:

1. Explore trainees' experiences of the multi-sector pre-registration programme during training and after entering practice as qualified pharmacists
2. Elicit the views of training programme tutors and line managers on these trainees' preparedness for practice
3. Ascertain any added value of a multi-sector programme and provide recommendations for future multi-sector programmes.

Methods

This two-phased study employed a longitudinal, qualitative descriptive approach.^[8] In the first phase (2017–18), face-to-face interviews were held with trainees and tutors, during the training programme. Interviews were held on HEIW premises or within the School of Pharmacy at Cardiff University. In the second phase (2019), follow-up telephone interviews were conducted with the now-qualified pharmacists, approximately 1 year into practice, and their current line managers.

Twelve individuals pursued the multi-sector training programme in Wales in the 2017–18 academic year. Recruitment for the training programme was carried out via Oriel, a UK-wide portal for pre-registration pharmacy training, and all those who applied to the multi-sector programme were accepted. All 12 trainees were invited to participate in the evaluation study and 9 consented. HEIW distributed information on the study to the pharmacists and tutor participants on behalf of the researchers. As each trainee had 3 tutors, 1 tutor in each sector, 27 tutors were invited to participate. The information included an invitation email, an Information Sheet detailing the study and the email address of author A.B., the contact for those interested in participating in the evaluation. Upon contacting A.B., individuals were invited to give written consent. Line managers were invited to participate in this study via the now-qualified pharmacists. At the conclusion of the interview, pharmacists were asked to pass on the researchers' contact email to their line manager and the invitation to contact us if interested in participating in an interview. Upon contacting the researchers, line managers

were sent a formal invitation email and Information Sheet, and those participating provided written consent.

Question schedules (see [Supplementary Material](#)) were guided by the research objectives and the format and components of the multi-sector training programme. In developing the question schedules, literature was reviewed alongside GPhC documents on performance standards and findings from the team's previous work.

Interviews were recorded, transcribed and data transferred into NVivo (QSR International, Burlington, MA, USA) for pattern coding and analysis. Analysis was thematic, following six steps.^[9] Codes were initially identified by one author in each phase (B.B. for phase1; S.B. for phase2), who then discussed and agreed the codes and how they should be assigned to the data with author A.B. Following this, all data and final themes were mapped against research objectives for reporting. The authors involved in the analysis were not involved in the training programme itself. To provide additional context without revealing the identities of participants, we distinguish between participant roles (programme participant, tutor or line manager) and study phases.

Ethical approval was granted for each phase of this study through the Cardiff School of Pharmacy and Pharmaceutical Sciences Research Ethics Committee.

Results

Data were collected from 27 participants via one-to-one telephone interviews: 9 pre-registration pharmacists (6 of whom continued their participation in the longitudinal follow-up), 16 tutors and 2 line managers. A total of 8 h and 39 min of conversation was recorded, this equated to 7 h 4 min in phase1 (average interview duration: 17 min, range: 12–60 min) and 1 h 35 min in phase 2 (average interview duration: 12 min, range 7–21 min). [Table 1](#) summarises the total data collected.

Those who completed the multi-sector training programme in 2018 are herein referred to as pharmacists. We focus on the six pharmacists for whom we have longitudinal data, reporting on their interviews in phase 2 and drawing comparisons with key points from phase 1. This enables commentary on the evolution of pharmacists' views as they transitioned from pre-registration trainee to qualified status and also the longevity of views. We also report the perspectives of tutors and line managers.

Of the six pharmacists who were followed up in phase 2, five were working in hospital settings and one was a pharmaceutical representative outside the UK, providing training to general practitioners and nurses on the applications of drugs. This skew is noted in our interpretations.

Table 1 Summary of data collection

Participant	On multi-sector programme	Phase1: during training	Phase2: longitudinal follow-up
Pre-registration pharmacists	12	9	6 (now-qualified pharmacists)
Tutors	27 (36) ¹	16 (8 primary care, 5 hospital and 3 community)	
Line managers			2
Total conversation time (approx.)		7 h 4 min	1 h 35 min

¹We did not invite all 36 tutors to participate in the evaluation study but only those linked to the 9 pre-registration pharmacists who had consented to participate. This equated to 27 tutors.

Pharmacists' reflections on training experiences

In phase 1, the then-trainees reflected on their positive experiences of the multi-sector. Leslie remarked that they 'enjoyed it' and would 'choose to do it again'. Morgan described gaining from the experience in different sectors:

It was a really good opportunity to see how the different sectors work and to become confident and competent in all sectors of pharmacy. (Morgan, phase 1)

Positive responses were maintained after pharmacists had been in practice for up to a year. Both Alex and Drew felt 'more people should do a multi-sector one' (Alex, phase 2), would recommend the training to others and thought this approach was the future of pre-registration pharmacy. Alex (phase 2) remarked 'more people should do a multi-sector one' and Drew (phase 2) 'I still tell people to this day, it's the way things should go in the future'.

Pharmacists were expressive about the different experiences and skills they developed across sectors. Hospital experience provided extensive clinical knowledge and insight into patient discharge. Experience in community settings helped develop communication skills, both with patients and with health-care professionals. The primary care setting offered an opportunity to manage long-term medications of patients with chronic conditions. Some also reflected on the access it provided to patient information such as test results.

Despite the largely positive reflections, pharmacists also identified limitations. Some were concerned about the reduced availability of hands-on experiences and learning opportunities in the primary care setting compared with hospital and community settings, complaining about a lot of 'sitting around and watching other people' and 'shadowing':

In GP it was really interesting, but it wasn't kind of hands-on and I don't know how much that helped towards the exam. I felt I wasn't learning as much as I was learning in hospital and community. (Alex, phase 2)

Preparedness for day-one practice

In phase 2, pharmacists were asked to reflect on their sense of preparedness for day one of practice. Although all but one pharmacist interviewed in phase 2 entered the hospital sector, views were heterogeneous: some reported feeling 'definitely prepared' and others 'didn't feel very prepared'.

Communicating with both patients and healthcare professionals was an area that pharmacists felt well prepared. This confidence seemed to stem from their experiential knowledge around processes in the different sectors. For example, Sam applied their knowledge of community settings into the hospital sector:

Where I'm in the hospital, I have more insight as to how can I communicate this [patient information] in community or how can I communicate patient details or patient issues in primary care. (Sam, phase 2)

Some pharmacists reflected on softer skills such as organisation and flexibility, which developed from managing movement across sectors. This was particularly helpful for hospital pharmacists who felt well prepared for managing their rotations across multiple wards: to them, being in different places felt like 'the usual thing'.

Nonetheless, pharmacists reported feeling less prepared in other areas and suggested that more time in hospital settings was needed to gain sufficient clinical knowledge. Charlie contrasted hospital and community sector experiences:

Community pharmacy is one room and it's pretty standard wherever you go. I think hospitals just take a while to get used to... because there's so much clinical knowledge. (Charlie, phase 2)

Similar comments were raised in phase 1 from tutors. Although they argued that trainees would become more rounded practitioners through the multi-sector programme, they recognised that trainees might need more time in the hospital setting to develop their confidence in clinical skills:

'The confidence isn't there because they haven't spent so much time in the hospital sector... clinically, that's one thing that I'm picking up for next year. (Hospital Tutor, phase 1)

Line managers echoed such views, believing that hospital settings required greater clinical knowledge than community settings: 'Community can be a little less clinical than hospital' (Line manager, phase 2). This line manager suggested that the multi-sector programme should provide 'a bit more hospital and then a bit less time in community and even less time in primary care to make sure they have enough clinical'.

However, other pharmacists expressed that their sense of unpreparedness was not a result of their training but due to the step change from pre-registration to the qualified pharmacist. Some also reflected that such feelings were not long-standing: they 'adapted quite well, it didn't take long for me to get used to it'. This prompt adaptation was echoed by a line manager:

She is one of our very conscientious, very organised students. So, I think in her case she got up to speed in hospital pharmacy (Line manager, phase 2)

Perceptions of multi-sector versus single-sector training

Pharmacists sometimes interacted with single-sector trainees and commented on both advantages and disadvantages of the multi-sector programme. Advantages included providing a more holistic perspective of pharmacy and a greater understanding of the patient journey and the transfer of care:

I'm learning a lot, especially from the different sectors and how they link together. The patient journey – it's good to see that and what happens between acute assessing and then managing in the community. (Morgan, phase 1)

This perception was carried into phase 2. Pharmacists referred to their training as having provided a 'rounded idea of that patient's journey', which helped them to support a smoother transition of care:

I feel that it's prepared me much better in terms of what I know about the services in community or what services are provided in primary care that I can integrate into being a pharmacist in the hospital. (Sam, phase 2)

Tutors and line managers agreed and remarked on pharmacists' understanding of 'the bigger picture' (Line manager, phase2):

They do have this very holistic view of the patient that you don't get at the single sector (Hospital Tutor, phase1)

These individuals were well positioned to comment on potential contrasting outcomes as they had experience of tutoring or line managing both single- and multi-sector trainees. Some (both a pharmacist and line manager) thought that the multi-sector programme would be more advantageous than single-sector training for career prospects in the longer term, a view also echoed by a line manager:

When applying for future jobs ... I feel that I have that little bit more of an edge in terms of experience of skills. (Sam, phase 2)

It's good to put on their CV. So, in the future it's much better for trying for different jobs, if you want to go and work in primary care or community. (Line manager, phase 2)

The perceived disadvantages of the multi-sector programme centred on shorter durations in individual sectors, resulting in less opportunity to develop clinical knowledge or understanding of how a pharmacy runs as a business:

I'd say maybe the people that did hospitals full time had a better clinical place, but I think that was just because they were there more (Charlie, phase 2)

In community I don't know if someone would employ me as a Manager because I didn't really get to know the business side of community pharmacy [...] I wouldn't feel confident in knowing that I could run a business. That's definitely a disadvantage. (Alex, phase 2)

However, this comparative disadvantage did not appear to be long-lasting in the hospital setting: 'there is no difference between myself having done the multi-sector pre-registration year and them having done the hospital pre-reg'. (Morgan, phase 2).

Improvements to the multi-sector training programme

Suggested improvements focussed largely on programme structure and rotations across sectors. In reporting these, we note again that phase 2 participants were almost solely hospital pharmacists. Knowing they were planning to enter the hospital setting once qualified, some of these pharmacists thought it would have been preferable to have had more experience in this setting during their training. Line managers endorsed this view, commenting that greater time in hospital settings was necessary for developing clinical knowledge.

To enhance the primary care experience, suggestions were made to increase hands-on opportunities for 'consultations' and 'medication reviews'.

Discussion

This study demonstrated that pharmacists who pursued the multi-sector programme benefited from the training and

would choose the programme again. Pharmacists, tutors and line managers all considered that the programme provided a more holistic perspective of pharmacy and understanding of the patient journey than single-sector programmes.

Since this study's inception, the GPhC published new standards, and the IET of pharmacists is changing. The move towards all pharmacists being independent prescribers at the point of registration and the incorporation of additional experiential learning throughout the MPharm programme with enhanced clinical placements^[4] will influence the content and structure of the multi-sector training programme. Nonetheless, by providing a longitudinal insight into the experiences of multi-sector trained pharmacists, this study can inform future development.

A qualitative descriptive approach was well suited to this study; as although our sample was small in size, it was rich in its range of perspectives and timeframe. This approach permitted sensitivity towards participants with unique and changing roles over time (trainee pharmacists to qualified pharmacists; tutors and line managers). As a result, we demonstrated how views were not only long-standing among the pharmacists but also corroborated by tutors and by current line managers who had no reason to be biased in favour of the multi-sector training programme. Descriptive approaches are praised for their usefulness when seeking to understand the *who* (i.e. participant characteristics), *what* (i.e. their experiences and perceptions) and *where* (i.e. where experiences took place and where now?) questions.^[8]

Longitudinal follow-up of participants is challenging, and we were pleased to interview two-thirds of the original sample 2 years after the programme started. We recognise that some interviews were of short duration, particularly in phase 2. As these interviews were carried out during working hours, we were sensitive to participants' availability and needed to ensure question schedules were suitably brief. This study could also be strengthened by further follow-up in later years. This could potentially increase numbers and gain additional sector representation; however, this was beyond the scope and funding for this study. We acknowledge that the voice of the line managers is limited to just two participants. Their recruitment was challenging because they had no previous involvement in the training programme. The sample of post-registration pharmacists did not provide a spread across the sectors as it transpired that all but one worked in hospital settings. Although we cannot say with certainty that multi-sector trained pharmacists who had pursued careers in community or primary care settings would hold a different opinion, the views of participants suggest that preparation for hospital pharmacy is perhaps the biggest test for the multi-sector programme in terms of its ability to prepare pharmacists for practice. This study could be strengthened by further follow-up in later years, which could increase numbers and gain additional section representation; however, this was beyond the scope and funding for this study.

During the multi-sector training, trainees and tutors expected that pharmacists would be less prepared for hospital pharmacy. Our data demonstrate the longevity of that opinion although it is reassuring that later reports, from the pharmacists themselves and line managers, indicated that they quickly adapted to the hospital setting. Pharmacists did not feel disadvantaged relative to their single-sector-qualified peers. We note the common suggestion for additional time in hospital settings to increase the opportunity to

acquire a large quantity of clinical knowledge. However, this viewpoint is biased by the predominantly hospital-based pharmacists within our sample. It is perhaps only an important consideration for those following the multi-sector programme whose goal is to enter the hospital setting post-registration. A less hospital-focussed view is reported elsewhere, suggesting that it would be beneficial to have longer in all pharmacy settings.^[10] However, a change such as this would likely require an extension to the pre-registration programme. Time spent in primary care appears to be a matter of quality rather than quantity, with scope to incorporate more hands-on experiences (e.g., consultations and medication reviews).

A notable benefit of multi-sector training, not only to the pharmacist but also to their managers, is in the development of a more holistic perspective and rounded view of the patient journey. This was reflected on by pharmacists, tutors and line managers and confirms reports elsewhere.^[10, 11] Pharmacists' lived understanding of patients' transition across sectors enabled them to smooth the patient journey and improve communication between sectors.^[2, 11] Furthermore, the transfer of this holistic knowledge to other members of the team has also been detected.^[10] The acquisition of softer skills (communication and organisational abilities) was a further welcome gain from the multi-sector experience.

Findings from this study support suggestions made elsewhere that multi-sector training could also improve the retention of pharmacists.^[10, 11] Single-sector training means that pre-registration pharmacists have largely committed to a sector before experiencing day-to-day practice. By experiencing all three sectors, pharmacists are better placed to make an informed decision on their career path^[10] and are able to acquire an understanding of the individual complexities that accompany each sector.^[11]

Conclusions

The main added value of multi-sector, pre-registration pharmacy programme appears to lie in trainees' acquired understanding of the transfer of care across pharmacy settings. This benefits the pharmacists themselves, but additionally, the resulting enhanced communication can smooth transitions across sectors, potentially benefiting both employers and patients. We suggest this finding has relevance to international settings.

In light of our findings, we suggest that when a multi-sector training programme is being designed:

- Careful consideration is given to the amount of hands-on experience and opportunity to develop clinical skills; pharmacists valued the learning opportunities offered across the three sectors but experience in primary care settings could be enhanced.
- Educators give due regard to the future intentions of multi-sector trainee pharmacists; although some will be undecided on their preferred career pathways, those fixed on pursuing hospital pharmacy may benefit from increased exposure in this setting to ensure sufficient opportunity to gain clinical knowledge.

Supplementary Material

Supplementary data are available at *International Journal of Pharmacy Practice* online.

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Author Contributions

All authors performed data collection. S.B. and B.B. involved in data analysis; S.B., B.B., A.B. and L.D. involved in interpretation. A.B. supervised the study. S.B. and A.B. contributed to the first manuscript drafting; B.B. and L.D. reviewed draft. All authors were involved in the study design. All authors had complete access to study data that support the publication.

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Conflict of Interest

None declared.

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