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Learning with other health professions in the United Kingdom MPharm degree: multidisciplinary and placement education.

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Abstract

This paper reviews the approach to multidisciplinary and placement education in UK schools of pharmacy. The methodology involved triangulation of course documentation, staff interviews and a final year student survey. Staff members were supportive of multidisciplinary learning. The advantages were development of a wider appreciation of the students' future professional role and better understanding of the roles of other professional groups. The barriers were logistics (student numbers; multiple sites; different timetables), the achievement of balanced numbers between disciplines and engagement of students from all participating disciplines. Placement education was offered by all schools, predominantly in hospital settings. Key problems were funding and the lack of staff resources. Currently, multidisciplinary learning within the UK for pharmacy students is inadequate and is coupled with relatively low levels of placement education. In order for things to change, there should be a review of funding and support from government and the private sector employers.

Keywords: *MPharm, Multidisciplinary Learning, Pharmacy Education, Placement Education, Teaching, Undergraduate*

Introduction

Over the past thirty years schools of pharmacy have made many educational advances to prepare their students for work within a rapidly changing healthcare environment. Changes in the role of the pharmacist within healthcare services mean that the pharmacist has more clinical patient contact and spends less time in the dispensary with the product. Coupled with these changes is pharmacy's project of '*reprofessionalisation*', which aims to recognise the pharmacist as a member of the clinical healthcare team (Edmunds & Calnan, 2001).

These changes have led to the need for all healthcare students to develop fitness to practice qualities right from the start of their professional studies, To address these fitness to practice requirements, the concept of 'interprofessional education' has become current in health and social care (Barr et al., 2006).

A reading of the literature shows that the terminology used to describe coeducation with other professions can be conceptually ambiguous. In the USA 'interprofessional education' is the term used by Remington *et al* (2006), Curan and colleagues (2005) and Gibson and Diack (2006), but 'multidisciplinary education' is the term adopted by Yanchick (2004). The benefits of learning with other student health professionals during undergraduate education (Otter *et al*., 2003, Kairuz & Shaw, 2005) and within postgraduate professional education (Derrett & Underwood, 2002) have been demonstrated.

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The UK experience

The training of pharmacists in the UK is unique in that, unlike other healthcare professionals (doctors, nurses, etc), schools of pharmacy tend to stand alone outside medical faculties, often classified as a science discipline, rather than health. But more importantly, the second difference is that most UK pharmacy undergraduates have very little contact with patients or other healthcare professionals during formal education until they enter their postgraduate pre-registration year.

Most pharmacy undergraduates in the UK undertake four years of university-based teaching and graduate, before entering one year of postgraduate practice-based pre-registration training to qualify. This is known as a 'four plus one model'. There is one exception, which allows some students to undertake their professional practice during their undergraduate course, returning to university to complete their academic education over a total of five years. This pattern of education and postgraduate training is a result of the historical way in which UK university education for pharmacy has been funded by the state.

In the UK, pharmacy undergraduates have potentially two opportunities to learn with and from other healthcare professions before they enter the pre-registration year; firstly during some form of multidisciplinary education with other healthcare students and secondly during short-term placement education.

All schools of pharmacy within the UK are required, as part of their accreditation by the regulator, the Royal Pharmaceutical Society of Great Britain (RPSGB), to provide placement education (RPSGB, 2002). However, it is widely accepted that the accreditation criterion which states that students should '*gain first-hand structured experience of practice, including contact with patients and practitioners of other healthcare professions*' is rather indeterminate and interpreted in different ways by each school of pharmacy. Additionally, owing to the way undergraduate pharmacy is funded, unlike most other UK healthcare courses, there is no additional funding to provide specific placement education.

Therefore, multidisciplinary education has been embraced by some schools of pharmacy to meet fitness to practise requirements, which enables pharmacists to work with patients and as part of an integrated healthcare team. There is also the belief that multidisciplinary education will help break down silo thinking and change the mindset of other health professionals so that they understand each other better, have some insight into the skills and expertise that each has to offer, and can then work together.

Aim of the study

This paper presents the evidence from a study of teaching, learning and assessment in schools of pharmacy in the UK (Wilson et al., 2005). This was a mapping exercise to inform policy makers and teachers of the current status in pharmacy education at a time of rapid change. The aim for this part of the study was to document and assess how UK undergraduate pharmacy is responding to fitness to practice requirements in relation to its approach to multidisciplinary and placement education.

Materials and methods

At the time of the study (2003-5) there were sixteen established schools of pharmacy in the UK, although since then at least ten new schools have been or are in the process of being accredited to teach pharmacy. In the design, two terms are used to describe multidisciplinary education with other healthcare students during the undergraduate education. Our two conceptual definitions were *multidisciplinary teaching*, where undergraduates are taught with other healthcare students, but with very limited interaction (e.g. in a lecture-style session) and *multidisciplinary learning* where students from different healthcare disciplines actively learn together and interact with each other.

By a process of information triangulation the study provides a snapshot of UK pharmacy education at the beginning of the twenty-first century. The pluralist study design consisted of three elements. A documentary review collated all published information on teaching, learning and assessment from all sixteen established schools; this formed the basis of knowledge maps. The course documentation, downloaded from the internet or obtained from staff, was subjected to content analysis.

Interviews with the programme director/course leader and a senior member of staff from within pharmacy practice (either separately or jointly) added in-depth information and insights into the delivery of the education. Twenty-nine staff interviews were completed in all sixteen schools. All respondents were sent an outline of the schedule one week prior to the interview, which was audio taped and transcribed. Analysis followed the constant comparative method; texts were subject to multiple readings, so analysis was based on familiarity with the broad analytical themes. A thematic key results framework was used to extract relevant information, for subsequent interpretation of the transcripts.

The design of the student questionnaire was partly based upon a series of focus groups undertaken with forty-four participants from nine schools attending the British Pharmaceutical Students Association (BPSA) annual conference in 2004. The questionnaire was piloted and revised accordingly. The survey was distributed to all final year students via their school of pharmacy using a variety of administrative approaches. The variation in method was dictated by the requirements of the schools and was a pragmatic response to difficulties in achieving agreement with them on a common approach. In all schools, one follow up was undertaken to non-respondents. Response rate to the

survey was 35.2%.

One school declined to participate in the student survey, but did collaborate with interviews and documentation phase. The study and questionnaire were approved by the Aston University Ethics Committee.

Results

Multidisciplinary education

The evidence of multidisciplinary education between the sixteen schools was varied, as Table I shows. In five schools, the whole of the pharmacy programme was delivered solely to pharmacy undergraduates.

Multidisciplinary learning

One school (School 15) had begun a major Department of Health (DoH) funded pilot known as the *New Generation project*, which was designed *"to bring students from medically related professional courses together through their undergraduate courses to get them working in inter-professional groups. They work on tasks related to all members of the group"*. At the time the experiment was only in its first year of operation. It is important to note that this one school, as part of a national study had significant external funding, an acknowledgement of the higher resource costs of introducing new approaches to teaching. Four other schools (Schools 1, 2, 11 & 12) reported some form of multidisciplinary learning.

Staff at the five schools who were delivering multidisciplinary learning said it tended to involve either first year students only (Schools 1 & 15), or third/final year students only (Schools 2 (final year), 11 (third and final year) & 12 (final year)). The two schools working with first years were early into the implementation of new curricula which included plans for a roll-out to students later in the programme (including the school involved in the New Generation pilot).

Multidisciplinary teaching

Only one school reported a significant amount of joint teaching with pharmacy and medical students (School 14). However, staff noted that this was done for the efficient use of teaching resources but that educationally there appeared to be little benefit because of the large numbers involved (the student numbers in some lectures were in excess of 500). Only one other school (School 3) was involved in multidisciplinary teaching (ethics) with other healthcare students.

Of the remaining schools, five taught sessions to both pharmacy and other (non-healthcare) science students (Schools 4, 5, 6, 13 & 16). Four taught their students in pharmacy-only groups (Schools 7, 8, 9 & 10). Most of these schools, with one exception, had formal plans to introduce multidisciplinary teaching or learning with other healthcare students in the near future. The remaining eight were either in the process of developing multidisciplinary teaching/learning or were actively considering the idea.

Perceived value

All members of staff who were interviewed distinguished clearly between the multidisciplinary teaching (both with healthcare and/or non-healthcare students) and multidisciplinary learning with other health professionals. Although both were considered to have some value, it was believed that the primary gains in terms of health professional education were only achievable through multidisciplinary learning.

There was general support in principal for the idea of multidisciplinary learning because staff believed it would enhance pharmacy education. The main perceived advantages were that this type of education experience, which appears to be derived principally from the literature, was that it should give students a wider view of the possibilities of practice in their future profession, a deeper understanding of the roles of other professional groups, as well as recognising the valuable contribution that pharmacists can make to team based patient care. Other potential advantages were stated (see Box 1).

Table I: Summary of extent of multidisciplinary learning and teaching (n=16)

Category of teaching/learning	***Number of Schools***
Multidisciplinary learning	5
Multidisciplinary teaching (with other healthcare students)	2
Multidisciplinary teaching (with non-healthcare (science) students)	5
None, pharmacy only	4

Box 1: Additional advantages to multidisciplinary learning

- Understanding of what other health professionals can bring to the healthcare team
- Breaks down barriers
- Seeing things from a different point of view
- Prevents misconceptions and allows students to appreciate others' strengths and weaknesses
- If implemented early enough, can prevent the development of professional prejudices

> *"I think that experience of other health professionals of just seeing things from a different point of view from people that you're going to be working with in the future would be very useful"* (Programme Director - School 4)

Barriers and difficulties

Despite the widespread idealism and enthusiasm amongst staff, those respondents with actual experience of providing multidisciplinary learning opportunities warned that it was difficult to organise. The core issues are about students, cohorts, structural institutional limitations and management.

> *"It's a challenge. It's a good way of describing it – the logistics of it are frightening"* (Joint interview – School 15)

Careful planning and preparation were considered essential. Respondents described the logistical problems of organising large cohorts of students into small group sessions that had a reasonable disciplinary balance. As noted above, with the size of some groups, a key condition for success was that the sessions must be interactive and not passive.

In such large cohorts of students, adding medics, nurses, and pharmacists, there was the difficulty of achieving a balance between student numbers from the different professions, particularly when working with nursing education which in many institutions have very large student number intakes not just once but twice a year. In addition to discipline mix, some thought also has to be given to the student mix, and which year groups to involve; there was a view that it was not always best to work with students in the same academic year groups because the learning experience on different programmes varied too much.

A basic structural problem was when the school had no medical school within the university and no local teaching hospital nearby.

> *"At the moment it requires students being bussed around the place… hospitals are quite a bus ride away. If we had all these opportunities within walking distance or a short bus ride away then that would be fantastic"* (Programme Director – School 2)

Some useful management advice was given by one lecturer. In his experience a key success factor was to ensure that the multidisciplinary learning curriculum and programme was designed and developed jointly by a multidisciplinary team at the outset rather than adding a student cohort into an ongoing situation designed for different students.

Finally, it is important to be aware that old boundaries and cultural attitudes are deeply ingrained. Two of the respondents spoke of difficulty in engaging the interest of medical students, particularly those in the final stages of their programmes.

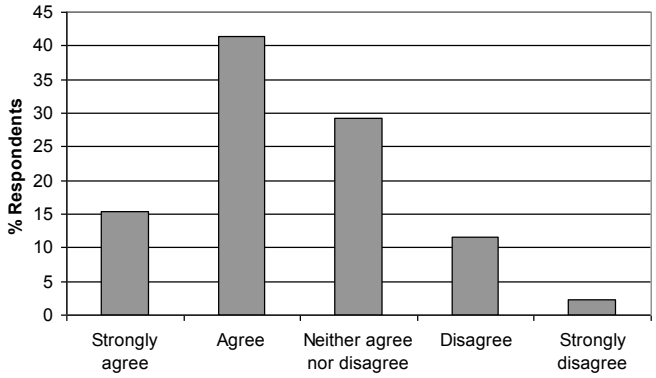
> *"I think on paper it's a good thing, it's unproven so far. My info is that students do tend to split up into their little groups anyway"* (Programme Director – School 12)

The most limiting factor was scarce resources. Small group work and large student cohorts are expensive. Time for course development and ironing out interdisciplinary differences requires thinking space and time that most university lecturers do not have.

Students' perceptions

Over half of the total sample of respondents (56%, n=412) agreed. "*Joint learning with other health professional students should be a requirement for all undergraduate degrees in pharmacy*" (see Figure 1).

Figure 1: Agreement of final year UK MPharm students with the statement "*Joint learning with other health professional students should be a requirement for all undergraduate degrees in pharmacy*" (n=741)



In the sub group of students (n=132) in five of the six schools that did offer multidisciplinary learning, a majority (60%, n=79,) found the experience either very or moderately useful (see Figure 2).

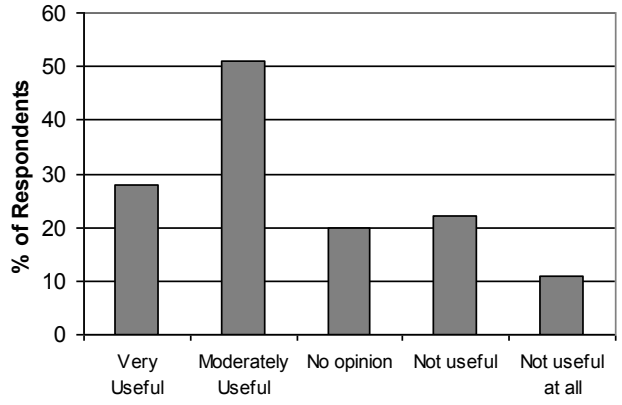
Results from the sub set of respondents (n=59) from the one school that undertook a significant amount of joint teaching with pharmacy and medical students (School 14) showed there was much less support for the process. Only 31% of students stated that they found the experience moderately useful.

Summary

So we conclude that the practice of multidisciplinary teaching is quite common compared with the more challenging multidisciplinary learning. Most members of staff have high expectation of multidisciplinary learning, but little practical experience of it and as one lecturer put it, "*the jury's still out as far as I'm concerned*" (Programme Director – School 12). Most students think they should have multidisciplinary learning. Those students with actual experience of multidisciplinary learning were less convinced of the benefits to their education so far. Staff members with actual

experience of delivering the teaching have useful lessons to share.

Figure 2: Views of final year UK MPharm Students on the usefulness of multidisciplinary learning provided by five schools (n=132)



Placement education

Placement education is another opportunity for multidisciplinary learning. Professional placement education takes place when students visit an establishment which exposes them to professionals and patients in a healthcare setting. However, it is notable that there is nothing in the regulations or guidance from the RPSGB on the length of visits, or on what the learning outcomes should be; individual schools are left to organise and manage their visits in collaboration with the host institution and draw up their own outcome criteria.

The placement context

A key structural feature of healthcare in the UK is that most primary and secondary care is publicly provided and funded; the National Health Service (NHS) provides care to patients free at the point of need. Most healthcare students (e.g. doctors, nurses, etc) enter education with an understanding that they will spend some training time in and probably be employed by the NHS. By comparison, approximately 70% of pharmacy students will work in the community, 20% in hospital, 8% in primary care and 4% in industry (the total is greater than 100% as pharmacists may work in more than one area of practice) (Hassell et al., 2006). But community pharmacy is a privately owned part of the commercial retail sector, so most pharmacists train with an understanding that they may enter the public sector in hospital care, or the private sector as community pharmacists.

Professional work placements

All of the members of staff interviewed were strongly supportive of the concept of professional work placements. All schools provided some learning activity in local hospitals. But only two schools provided formal placements in community pharmacy. Although all schools claimed that students would benefit from working in hospital or community pharmacy during university vacations, only two actually required structured vacational experience. In general placement education was heavily skewed towards the third and final year of study.

So the most common placement is in secondary care. The study showed wide variation between schools in the time that students spent on hospital placements, which ranged from a few hours to a maximum of about sixteen days. Where it occurred in the course, and how long the placement lasted also differed. One school offered two-week placements during the third year, with further hospital based teaching in the final year. In another school there were clinical hospital-based sessions throughout the third and final years amounting to half a day per fortnight for each student.

Staff in all schools welcomed the idea of an increase in placement teaching but both programme leaders and pharmacy practice staff spoke of their frustration at the difficulties involved in developing this aspect of education. The key issues were similar to those discussed above under multidisciplinary education, but the biggest barrier is in engaging external placement partners and in funding the placement teaching.

> *"We are very much aware that we need to expand the ward based teaching. We've been forced to curtail that somewhat over the last two or three years and it has to be expanded back out again, but that can't be handled in the local city. The hospital is uneasy and unwilling really to absorb what we would like to do"* (Programme Director – School 2)

An additional problem specific to community pharmacy is its location in the private sector and the generally small unit size of community pharmacy premises, which does not lend itself to supporting extra people standing in the dispensary.

The most common complaint made by staff was the lack of any explicit funding stream for pharmacy undergraduates to support practice-based education compared with other health professional programmes.

> *"We do have a problem in as much that funding agencies are going to be looking to drop pharmacy down the list in terms of funding. On the other hand they're wanting greater clinical input. That has got to come from somewhere."* (Programme Director – School 2)

All schools recognised the pressing need for increased placements but respondents spoke of their frustration at the difficulties involved in developing this aspect of education.

> *"We would desperately like to do more and we're at a stage where we have a number of options that we can take. We can wait for the Department of Health and HEFCE* [Higher Education Funding Council for England] *to decide that pharmacy really should be funded in a different category, I'll probably have been retired by then. Opportunities locally are to try and wedge them in with*

other professionals." (Head of Pharmacy Practice - School 6)

The problem arising from large cohorts of students was reiterated.

"Logistics are a barrier. Timetabling is a barrier. You know, just getting them out to the hospitals, getting them time to travel, making sure they go there… it's just getting to become a real organised part of the course. It works at the moment but let's say, having dedicated personnel out there is really going to help." (Programme Director – School 4)

So the problems are similar to multi professional learning and education.

Future developments

Several schools were working on plans to improve their current provision. In general, these were extensions of existing (secondary care) provision rather than a major advance on new provision. There was acknowledgement of the need to develop opportunities in community and primary care but little optimism that this could be achieved. One school was linking some interaction with primary care and community pharmacy to their existing hospital based education. Even where there was a history of success in running hospital based teaching, there was concern over the ability of schools to expand this provision.

Student perceptions

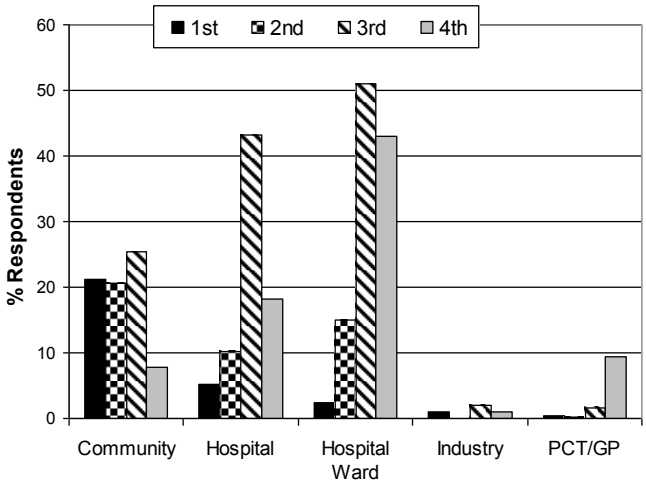
Placement learning was defined for the students as "*a period of practical experience in a pharmacy or clinical setting that is an integral part of your MPharm course - for example, a visit to a hospital pharmacy. We are not talking about vacation work in a pharmacy that you organise yourself*".

Students were strongly supportive of the inclusion of placement education within the MPharm; 90% (n=670) agreed that there should be a placement in at least one year of the programme and 54% (n=402) that there should be professional placements in every year of the programme.

A total of 84% (n=622) of student respondents to the survey stated that they had experienced a formal placement. The results confirmed comments from staff, that hospitals were the most common placement experience and that few hospital placements took place in the first two years of study. The survey distinguished between a placement to a hospital pharmacy department and a placement involving visit(s) to a hospital ward. Figure 3 summarises the data showing the percentage of respondents who had experienced placements in community, hospital, hospital wards, industry and primary care or general medical practice.

Although limited, community placements were mainly in the first three years of study. Those few placements which were in primary care or general medical practice were almost all in the final year; only about one tenth (9%, n=58) of respondents said they undertook such placements. However, these students came from four schools, 86% of them from one school: confirming that community experience is not common across the system.

Figure 3: Percentage of final year UK students who had experienced placement education in different branches of pharmacy shown by year of the MPharm programme



There were very few placements in the pharmaceutical industry (less than 3% of total respondents).

Summary

So to summarise, accreditation requires some placement activity, but lacks specific detail of what exactly should be achieved. Staff members recognise the need for placements. But on the ground most actual placement is in secondary care, which employs only a small proportion of qualified pharmacists. On one hand the problem is identified as with the provider, on the other hand for the school of pharmacy, the problem is access to providers and the logistics of organising large student cohorts, into small groups for placement visits, without disrupting a demanding timetable. Yet students like professional placements. From an education point of view the current situation can be criticised because of the narrow provision and limited range of opportunities and the absence of expected learning outcomes.

Discussion

This study set out to provide a descriptive baseline detailing what was currently happening in pharmacy education at that time (we are aware that since then some progress has been made by several schools with proximity to medical schools). Through documentary analysis and interviews with staff we have been able to quantify and describe the current situation of multidisciplinary learning and placement education. One limitation of this type of study is the lack of common terminology. But the bigger limitation to the study is the student survey, which due to the variation in the method of administration a lower response rate was achieved than we

had expected. Nevertheless we do have some useful insights into the attitudes and experiences of pharmacy students.

Part of the origin of the problem derives from tradition, whereby undergraduate pharmacy education in the UK is funded as a science subject, reflecting the technical origins of the profession. However, as the profession evolves so must the education environment. Both the education literature and the UK Government voice support for the benefits of multidisciplinary learning. Whilst the study showed teacher support for the concept within schools, there was limited actual provision. Only five schools could demonstrate that they did provide multidisciplinary learning and all was of recent origin.

The range of barriers identified linked limited resources, access and staffing. One major problem for many schools was that they were located in institutions with no medical education, another consequence of the historical origin of pharmacy education in the technical education sector.

The second dimension of education discussed in this paper is placement education - or learning in practice (Department of Health, 2001). The format of education for different healthcare professions varies between the professions but can be divided into those professions with a postgraduate portion of training before qualification and those without (i.e. individuals graduate and qualify at the same time). However, irrespective of whether there is any postgraduate training before qualification, in the undergraduate portion of the training, in most other health professional education, there is formal clinical experience in the workplace integrated within the degree and so the university and the health providers (usually the NHS) are involved in a formal collaboration. Therefore, there is in these cases recognition of the need for more education funding. Pharmacy, as a science based paramedical subject loses out, as currently all Department of Health funding for pharmacy goes to fund the postgraduate pre-registration year.

The current RPSGB accreditation requirement is for some patient contact during the programme but as highlighted above, there is no specification of the extent or the nature of the placement (RPSGB, 2002). All of the members of staff interviewed were strongly supportive of the concept of professional work placements but the lack of specific direction or detail of what outcomes are required coupled with a lack of resources, means that current placement teaching within the UK is very *ad hoc*.

Only two schools were organising placement teaching in community pharmacy and the common experiences were difficulty with logistics and with obtaining sufficient co-operation with the private sector owners of community pharmacies. This emerged as a real barrier for many schools and is a specific challenge to the pharmacy profession as a majority of the profession (70%) is employed within the private sector in community pharmacies. As such this sector of the profession is not viewed by the NHS as being its responsibility.

Whilst the government and employers have an opinion on pharmacy education we believe that the drive for educational support should come from the profession itself. Within the medical profession in the UK, there is a long standing commitment whereby doctors support education (General Medical Council, 2001). We would suggest that for the future development of professional pharmacy education, this support has to be an obligation that extends from the individual professional to the corporate operator, particularly through the provision of placement opportunities.

The advent of new schools of pharmacy within the UK is likely to exacerbate the placement problem as this will likely result in increased competition for education opportunities. A similar problem was encountered within the USA where increases in the number of PharmD providers resulted in increased inter-school competition for practice experience (Plaza and Draugakis, 2000). Since the completion of this study, the Report of the All-Party Pharmacy Group, *The Future of Pharmacy*, has drawn attention to the need for multidisciplinary learning experiences, calling for *"the pharmacy curriculum to include collaborative, practical, clinical training with medics and nurses"* (All Party Pharmacy Group, 2007). In addition it suggested that "*the pharmacy undergraduate course should include clinical training within a GP office, with the Department of Health providing funds to incentivise GP engagement"*. We found no evidence that undergraduates were exposed to placement learning in medical practices. This present review points overwhelmingly for an improved access to learning experiences in the community pharmacy sector.

Conclusion

At the time of this study, multidisciplinary learning opportunities were limited. Placement education was mostly in secondary care. This shows there has to be some change if the profession is to achieve its longer term ambitions. However students with actual experience were less convinced of the potential benefits than their teachers, so we do need to be clear about the learning outcomes that are expected from learning and training with other health care professionals.

Further research is needed into the various models of placement teaching highlighted in this study, to develop some agreed common learning outcomes across schools. Since the majority of pharmacists are employed within the primary care sector, in community pharmacy or primary care practice, there is a strong case to be made for more support from the private sector to provide community based practice learning.

Authors' acknowledgements

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