

How hospital teacher-practitioners contribute to undergraduate and preregistration education and training

This article, from the workforce development subgroup of the West Midlands Chief Pharmacists Network, describes an education and training scheme that not only benefits undergraduate pharmacy students and preregistration trainees but also helps recruitment into hospital pharmacy

The provision of health care in the UK has changed significantly over the past decade, with improved access to treatment, reduced waiting times and reduced length of stay in hospital. An important factor in these changes has been the increasing use of medicines.¹ Central to the medicines management agenda is the pharmacist, whose role in the delivery of health care has also changed, with an increased emphasis on the clinical aspects of practice. These developing clinical and professional roles have dictated changes in pharmacy undergraduate education.

In recent years there has been a move to increase the clinical component of pharmacy education to match the modern role of pharmacists within health care,^{2,3} and further change will be driven by the Royal Pharmaceutical Society of Great Britain review of core competencies.⁴ Furthermore, a previously published paper on the perceptions of preregistration trainees has shown that graduates believe they need more clinical pharmacy training.⁵

The move from a three-year bachelor's degree in pharmacy to a four-year master's degree in 1997 provided schools of pharmacy with the opportunity to increase significantly the clinical teaching component of the undergraduate curriculum to meet the needs of modern pharmacy practice. However, in many schools of pharmacy the additional year has been used to teach more of other elements of the undergraduate curriculum.⁶ This might have arisen because delivering a more rigorous clinical training requires appropriate infrastructure including the involvement of clinically based pharmacist practitioners in the teaching of the undergraduate pharmacy students and the opportunity for undergraduate students to access the clinical environment.

The latter has traditionally been achieved through students undertaking vacation employment and the former has been delivered through the appointment of teacher-practitioners (TPs). However, most established schools of pharmacy have only a small number of TPs relative to the total academic establishment, which limits the delivery of the above criteria.

Furthermore, many TPs in schools of pharmacy are community-based⁷ and, al-

though these people can provide some clinical pharmacy training, hospital-based TPs are better placed to expose the student to the full spectrum of clinical conditions.

Evidence in the literature indicates that there was still a significant gap in the transition from graduate pharmacy student to practising pharmacist.⁸ The workforce development subgroup of the West Midlands Chief Pharmacists Network recognised that, by building a TP infrastructure, it should be possible not only to improve undergraduate clinical teaching, but also to facilitate the transition of undergraduate pharmacy student to pharmacist practitioner.⁹

Therefore, a bid was submitted to The Birmingham and the Black Country Workforce Development Directorate (WDD) for seven hospital pharmacy TP posts based in NHS trusts across the Birmingham and the Black Country Strategic Health Authority to work with the local school of pharmacy at Aston University.

The bid was successful, and subsequently one full-time lead TP post and six 50/50 TP posts were filled in 2003–04. The full-time post was fully funded by the WDD. Half the TP posts was funded by the WDD (for the educational element of the posts) and half by the employing trusts (for the practice element of the posts). The responsibilities of the WDD, trusts and university are set out in a service level agreement between the WDD as the commissioner and the relevant hospital pharmacy as the employer for each post.

Roles of teacher-practitioners

The roles of teacher-practitioners include the following:

- Co-ordinate hospital placements for undergraduate pharmacy students in appropriate West Midlands NHS hospital trusts, and deliver clinical pharmacy teaching in the hospital environment
- Develop, in partnership with the university and trusts, an appropriate teaching, learning and assessment process for delivering professional workplace education
- Help identify, facilitate and support final year action research projects based within trusts
- Oversee the provision of information to undergraduate pharmacy students on vacation and preregistration training placement opportunities in NHS hospitals and to support students with their applications
- Assist in the training of preregistration trainees and to contribute to the cross-sector training of community pharmacy graduates in the hospital service in accordance with the new national agreements
- Contribute to the work of the participating trusts on a pro rata basis to balance the contributions of trust staff to the workplace educational programme, in clinical pharmacy practice

All clinical pharmacy teaching is undertaken in the hospital environment, thus putting the content into context. All teacher

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practitioners are enrolled on Aston University's postgraduate teaching certificate course in order to ensure a high standard of teaching for students.

Co-ordination and delivery of practice-based clinical teaching One of the key themes for the TP team was to develop and improve the quality of practice-based clinical teaching available through the Aston University MPharm degree. The TP team has restructured the delivery of practice-based clinical teaching, and students now undertake hospital-based teaching in all years of the course.

Each session is designed to complement the theory taught at university. The sessions provide an opportunity to develop problem-solving skills through the application of knowledge in a real-life practice-based setting. An outline of the clinical pharmacy teaching programme is shown in the Panel above.

As a result, student contact time with practice-based clinical teaching has significantly increased and, in terms of notional student hours, the cumulative time the TPs are now spending with undergraduates in the secondary care environment has increased by almost 150 per cent during the past two years (Table 1).

Each Aston University pharmacy graduate can now expect to have on average 21 hours of clinical practice-based teaching compared with 11 hours before the TPs came to post, which represents an increase of 90 per cent. Table 2 shows the change in number of hospital visits over time, and demonstrates that as well as a total increase in clinical teaching, students are now exposed to hospital practice much earlier in their undergraduate course than before the appointment of TPs.

As well as to increase the amount of clinical pharmacy teaching, one of the objectives of the initiative was to increase undergraduate exposure to hospital pharmacy practice. Previous research has shown that as much as 91 per cent of pharmacy undergraduates have little or no experience of hospital pharmacy before the introduction of a hospital-based TP.⁷

As Table 2 shows, this objective has been achieved with an increase in the total number of hospital visits, and exposure to practice at an early point in the undergraduate curriculum. Such early exposure is not common in most undergraduate pharmacy degrees and is particularly important because it inculcates professional values at an early stage of the curriculum, and helps put other elements of the undergraduate degree course into context.

Furthermore, it exposes students to hospital pharmacy practice, which they are unlikely to have experienced previously. Aston University has piloted this approach and shown a positive change of attitude to hospital pharmacy among pharmacy students.⁷

Outline of the clinical pharmacy teaching programme

Year of study	Hospital time	Description of session	Assessment
1st	1 x 3 hours	An introduction to hospital pharmacy: <ul style="list-style-type: none"> ■ Department tours and the role of each department ■ Department staff and their roles ■ Types of prescriptions used in hospital and the prescription journey ■ Introduction to the ward environment including medical notes, drug charts and ward based staff. ■ Careers in hospital pharmacy 	NA
2nd	1 x 3 hours	An introduction to clinical pharmacy: <ul style="list-style-type: none"> ■ The use and interpretation of medical notes including layout, medical abbreviations, history and laboratory data. ■ Consultation with two or more patients to establish an accurate pre-admission history (especially an accurate drug history) 	NA
3rd	2 x 3 hours	Clinical pharmacy (respiratory and cardiology): <ul style="list-style-type: none"> ■ Apply and develop the knowledge acquired in university taught therapeutics ■ Use appropriate communication skills to establish an accurate patient history and the identification of any drug-related problems a patient may have ■ Interpret medical notes, bedside notes, laboratory data ■ Identify and prioritise the key pharmaceutical care problems and counselling points 	One pharmaceutical care plan and one group case presentation
4th	3 x 3 hours	Clinical pharmacy (infection, endocrinology and neurology or immunology): <ul style="list-style-type: none"> ■ As per 3rd year 	Two pharmaceutical care plans and one group case presentation

Recruitment into hospital pharmacy

Since their appointment, the TPs have played a major role in supporting undergraduate students in their applications for preregistration training places. In conjunction with the university careers service, the TPs have organised annual careers fairs for undergraduates and have devised presentations to support the application process. Ad hoc support and advice is also available to individual undergraduates.

As a result there has been a progressive year-on-year rise in the percentage of students applying for hospital preregistration places in West Midlands hospitals (70 per cent in 2005 compared with 64 per cent in 2002). Furthermore, 82 per cent of the total preregistration applications to hospitals within the West Midlands region were for hospitals with a BBC-funded TP in post.

Recruitment of vacation students

To support recruitment of pharmacists to the NHS in the West Midlands, the TP team developed a vacation training package. This includes a task-based workbook together with administration of an electronic centralised recruitment process and materials, to support trusts during the training period. A pilot centralised recruitment system began with six trusts within the BBC area which had a TP.

The online application system was devised from that used for preregistration pharmacist applications, and reviewed by many of the human resources departments of the individual trusts participating in the scheme to assess local suitability. The final working version can be viewed at www.wmhp.org.uk/vacation.htm, together with additional information about the scheme. To promote the scheme, all universities in the UK with an accredited undergraduate pharmacy programme were sent a poster to display on their pharmacy careers notice boards.

All trusts involved in the pilot scheme recruited people to the 42 available placements. In previous years students applied to individual trusts. However, those students who performed well at interview were often able to secure more than one hospital placement, thus denying other students opportunities of training. Because of the demand for places, students are now allocated only one placement in the region through the centralised scheme. This enables more students to experience a summer vacation placement. A clearing process is also in place to ensure the highest scoring candidates at interview are offered a placement, thus enabling more of the better performing students to be placed.

Table 1: Clinical pharmacy contact time according to academic year

Year	Time (h)
2002/03	1,400
2003/04	2,100
2004/05	2,925
2005/06	3,400

Table 2: Number of hospital visits per year

Academic year	Undergraduate year			
	Year 1	Year 2	Year 3	Year 4
2003/04	0	2	1	3
2004/05	0	1	2	3
2005/06	1	1	2	3

Table 3: Hospital workshop usefulness graded by community preregistration trainees

Workshop topic	Mean score for usefulness (max=5)	
	2005 (n=90)	2006 (n=82)
Interface	4.43	4.50
Medication history	4.28	4.58
Clinical	4.34	4.47
Medicines information	3.79	4.55
Aseptics	3.95	4.31

Table 4: Community workshop usefulness graded by hospital preregistration trainees

Workshop topic	Mean score for usefulness (max=5)	
	2005 (n=36)	2006 (n=36)
Drug Tariff	4.77	4.56
Emergency hormonal contraception/simvastatin supply	4.36	4.31
Appliances/medicines use review	4.63	4.59

As a result of this scheme hospitals in the pilot received a total of 191 applications for 42 places (a ratio of 4.5:1). Of these applications 56 per cent (106) were from students at Aston University. It is planned to roll out this scheme to all hospitals in the West Midlands during 2007.

The content of the vacation experience was also changed to offer a more structured experience directly relevant to the preregistration year, with students covering the basics of staff roles, hospital career structure, dispensary services, clinical pharmacy, medicines information, aseptic production, non-sterile production, procurement and formulary. The placements are offered to students following on from their third year of study. This ensures the experience will remain current for a student undertaking a preregistration placement

in hospital pharmacy the following year. Thus graduate students are better prepared for their preregistration year through having a standardised, structured summer vacation scheme. The centralised vacation scheme also enables trusts to showcase their departments to potential preregistration trainees. It also provides the host trust to identify those undergraduates who may perform well as a hospital preregistration trainee. Indeed, 60 per cent of preregistration trainees for 2006/07 have undertaken a vacation placement in their base trust and 73 per cent had undertaken a placement within the BBC region.

Support for cross-sector training of preregistration trainees

The West Midlands has embraced the concept of cross-sector placements since its inception by the Royal Pharmaceutical Society, and members of the Workforce Development Subgroup meet annually with training managers from all the community pharmacy multiples to plan individual student cross-sector placements for the coming year. In view of the large difference in numbers of preregistration trainees between the sectors, the arrangement is built around the principle that, for every one hospital preregistration trainee spending one month in a community pharmacy, the hospital will take two community preregistration trainees for two weeks each. The placements usually occur between February and April of the preregistration year. All TPs assist the preregistration tutors working in their base hospital in delivering a high quality of hospital experience for community students, and in four of the six hospitals with a TP, the TPs co-ordinate the cross sector experience locally.

The TP team has taken the lead in developing training materials and delivering training sessions necessary to support the cross-sector experience. This has involved the co-ordination and development of mandatory study days, aimed at introducing hospital pharmacy to those community trainees allocated places across the West Midlands. Topics covered in the study day include a clinical case study, primary/secondary care interface case study, medicines information workshop, medication history taking and aseptics. These study days have been running for two years, and all of these sessions have been well received by community preregistration trainees as demonstrated by the high scores for the various sessions (Table 3).

In addition a training resource/workbook has been produced for hospital preregistration trainees, to ensure that their reciprocal community placement is as fulfilling and relevant as possible. To supplement this training package, hospital preregistration trainees working in the three West Midlands strategic health authorities (now a single strategic health authority) also attend a study day on community pharmacy practice. This is co-ordinated by the lead hospital TP in association with both Boots and Lloyds community TPs, and aims to provide information regarding, sup-

plying emergency hormonal contraception and over-the-counter simvastatin, the Drug Tariff, and trusses and hosiery. Similar high scores from students have been received for these study days (Table 4).

Although these cross-sector placements had been planned on a region-wide basis, before the appointment of the TPs the actual training in each placement was organised locally. As described here the learning experience of preregistration trainees from both sectors has been greatly enhanced by the standardised training material, and study days developed and co-ordinated by the TPs.

Conclusion

This article has described how a team of TPs working across the interface between a university and a number of NHS hospitals can make a significant contribution to the quality and quantity of clinical pharmacy teaching to undergraduate pharmacy students.

This scheme is similar to that described in one other UK school of pharmacy.² However, it is unique in the UK in that it involves TPs fully funded by the NHS, but with academic status within the university, who perform a much wider range of duties than traditional university TPs. These duties include facilitating vacation employment in hospital, improving the learning experience for preregistration trainees during their cross-sector placement, as well as ward-based clinical pharmacy teaching.

The NHS funded TPs have made a significant contribution to the undergraduate clinical pharmacy teaching, and together with their involvement in vacation placement facilitated recruitment of hospital preregistration trainees.

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