

# MPharm Interim Visit

University of Nottingham

February 2015

# Master of Pharmacy degree course (MPharm) interim visit

## University of Nottingham

Report of an interim visit, 19 February 2015

### Introduction

The General Pharmaceutical Council (GPhC) is the statutory regulator for pharmacists and pharmacy technicians and is the accrediting body for pharmacy education in Great Britain. The GPhC is responsible for setting standards and approving education and training courses which form part of the pathway towards registration for pharmacists. The UK qualification required as part of the pathway to registration as a pharmacist is a GPhC-accredited Master of Pharmacy degree course (MPharm). The GPhC's right to check the standards of pharmacy qualifications leading to annotation and registration as a pharmacist is the *Pharmacy Order 2010*.

The Pharmacy Order 2010 requires that the 'nature, content and quality' of education and training provision is reported to the GPhC by its accreditation panel. As such the GPhC has incorporated interim visits within its accreditation methodology to provide suitable opportunities for the accreditation panel to review MPharm course provision in this way. The GPhC carried out a series of pilot interim visits in the early part of the 2013-14 academic year to help inform the development of the structure and content of the interim visits to ensure that they would be fit for purpose. Five schools of pharmacy took part in the pilot phase.

The purpose of an interim visit is to allow an accreditation team to:

- Monitor progress of delivery of the accredited MPharm degree since the accreditation or reaccreditation to the *GPhC Standards for initial education and training of pharmacists*.
- Evaluate a selection of the educational activities on the accredited course in conjunction with information provided at the main accreditation visit. The accreditation team will wish to satisfy itself of the quality, particularly of the practice opportunities available, and to ensure that they continue to meet the *GPhC Standards for initial education and training of pharmacists*. In particular, the accreditation team will be evaluating how well the accredited MPharm degree meets standard 5.6, which states:  
*The MPharm/OSPAP curriculum must include practical experience of working with patients, carers and other healthcare professionals. We are not suggesting that off-site placement visits are the only way to achieve this. Schools should articulate their strategy for meeting this criterion, which may include off-site placement visits, using patients, carers and other healthcare professionals' in-class, and simulation.*
- Evaluate these practice activities in relation to the student's ability to demonstrate the relevant outcomes in Standard 10.

Interim visits take place three years after a main successful accreditation or reaccreditation visit and the report of the visit forms an appendix to the main accreditation report. Prior to the visit, a School is provided with the document 'MPharm degree interim visits: guidance for providers' and asked to submit the

necessary documentation and to describe, and give dates for, a range of student activities that will be taking place both on-site at the university as well as off-site. The visit date is selected so that there are suitable opportunities for the accreditation team to observe activities that had been timetabled to take place that day, without the need to make special arrangements. Prior to the visit, a number of satellite visits are arranged to allow one or more members of the accreditation team to observe the off-site activities. Findings from the satellite visit, as well as information and observations gleaned on the day of the visit, help to inform the accreditation team's overall view on developments since the last visit as well as the quality of education and training being delivered.

This document summarises the visit activities and accreditation team's conclusions following the interim visit to the School of Pharmacy at the University of Nottingham

## **Background**

Prior to the interim visit the University submitted documentation to the GPhC and a pre-visit meeting took place by teleconference on 2 February 2015. The purpose of a pre-visit meeting is to help the School of Pharmacy to prepare for the visit, allow for the GPhC and School to ask any questions or seek clarification, and to finalise arrangements for the visit.

## **Satellite visit**

In advance of the interim visit one satellite visit took place on 21 November 2014 to allow team members to observe off-site activities in advance of the main visit.

## **The interim visit**

The interim visit itself took place on site at the University of Nottingham on 19 February 2015. The event began with a private meeting of the accreditation team and GPhC representatives on 18 February 2015. The remainder of the event took place on site at the University of Nottingham on 19 February 2015, and comprised a series of meetings with staff and students of the university, along with observations of a number of teaching and learning activities.

Meeting number	Meeting	Time
	<i>Day 1 February 18 2015</i>	
1.	Private meeting of accreditation team and GPhC representatives	15:00 – 18:00
	<i>Day 2 February 19 2015</i>	
2.	Presentation by the University of Nottingham MPharm staff team on progress to date and meeting with senior staff	08:30 – 09:30
3.	Private meeting of accreditation team and GPhC representatives	09:30 – 10:00
4.	Groups of accreditation team and GPhC representatives observed activities which ran concurrently	10:00 – 12:00
5.	Meeting with students	12:00 – 13:30
6.	Private meeting of accreditation team and GPhC representatives	13:30 – 14:00
7.	Groups of accreditation team and GPhC representatives observed activities which ran concurrently	14:00 – 15:00
8.	Private meeting of accreditation team and GPhC representatives	15:00 – 16:30
9.	Feedback to University of Nottingham MPharm staff team	16:30 – 17:00

### Accreditation team

The GPhC's accreditation team ('the team') comprised:

Name	Designation at the time of accreditation event
Dr Andrew Husband*	(Team Leader) Dean of Pharmacy, Durham University
Professor Brenda Costall	Team member – Academic) Professor of Neuropharmacology, former Head of School of Pharmacy, University of Bradford
Mrs Sandra Hall	(Team member – Academic) Head of Pharmacy Practice, Leicester School of Pharmacy, De Montfort University
Dr Adam Todd	(Team member – Academic) Senior lecturer in Pharmacy Practice and MPharm programme Director, Durham University
Mr Mark Brennan	(Team member – Pharmacist) Director of Pharmacy Education and Deputy Head of School of Pharmacy, University of Lincoln
Ms Raminder Sihota	(Team member – Pharmacist) Senior Professional L&D Manager, Boots UK
Mrs Barbara Wensworth	(Team member – Pharmacist) Previous hospital Pharmacist, Freelance Consultant Pharmacist, Lecturer, External Verifier, assessor and writer
Ms Samantha Hayman	(Team member – Pharmacist recently registered) Senior Clinical Pharmacist, Maidstone and Tunbridge Wells NHS Trust
Ms Leonie Milliner	(Team member – Lay member) Chief Executive, Association for Nutrition

along with:

Name	Designation at the time of visit
Ms Joanne Martin *	Quality Assurance Manager (Education), General Pharmaceutical Council
Professor Brian Furman	(Rapporteur) Emeritus Professor of Pharmacology, University of Strathclyde Rapporteur

\*attended pre-visit meeting by teleconference on 2 February 2015

## Course provider

Representatives of the University of Nottingham. The team met with the following:

Name	Designation at the time of accreditation event	Meetings attended
Allen, Dr Stephanie*	Director of Teaching and Learning	2
Anderson, Professor Claire	Head of Year 4	2
Boardman, Dr Helen	Head of Year 1	2
Bridges, Dr Stephanie	Clinical Practice Lead	2
Chan, Dr Sue	Head of Year 3	2
Laughton, Dr Charlie	Head of Year 2	2
Naylor, Morrell Ms Lauren	Placements and Pre-Registration Manager	2
Roberts, Professor Clive*	Head of School	2
Tallant, Mrs Katherine*	Director of Operations	2

\* attended pre-visit meeting by teleconference on 2 February 2015

In addition, the accreditation team met with a group 12 students, comprising a mix of students from each year.

## The visit

In meeting 2, a presentation by senior members of staff built on the information provided in the submission and gave an update on progress since the last visit in 2012. As described below, this provided an overview of the programme and covered changes made since the 2012 reaccreditation, as well as aspects of patient facing activities and inter-professional learning. Points raised in the presentation, as well as other matters, were discussed with the staff (meeting 2) and with students (meeting 5) and the following narrative incorporates those discussions.

### 1. *Overview of the MPharm degree.*

The documentation and a presentation (meeting 2) provided an overview of the philosophy underlying the MPharm programme and the broad structure of the degree, in which years 1-3 of the new programme have now been rolled out. The structure has not changed since the reaccreditation in 2012, and the programme comprises four phases, starting with the first semester of year 1, which provides a transition to higher education and gives students an introduction to the fundamentals of the pharmacy profession. This is followed a series of 11 'Drugs, medicines and patients' integrated modules (DMPs), each lasting for four weeks and running from semester 2 of year 1 through to semester 1 of year 3. These modules are each based around at least two case studies and commence with videos of patients describing their symptoms, followed by a series of scenarios that develop the case, with the cases illustrating the science underpinning pharmaceutical interventions and becoming increasing complex. Students work through the cases in small groups, with their discussions being facilitated by members of staff. Within the DMPs science is integrated with practice through the use of seven vertical themes (Biology and Physiology;

Pharmacology and Therapeutics; Chemistry; Absorption, Distribution, Metabolism and Elimination (ADME); Pharmaceutics; Clinical and Pharmacy Practice; Professionalism and Leadership) running throughout the course, which is built on the principles of a progressive, spiral curriculum, dealing with and revisiting issues in an increasing complex way until the right level of understanding is reached. After completion of the DMP modules, students undertake their research projects in semester 2 of year 3, along with 20 credits of optional modules, followed by year 4, most of which will be spent on complex patient case studies in the Integrated Patient and Pharmaceutical Care modules; these case studies will build on those encountered in the DMPs. Year 4 also includes the Pharmacy Leadership and Management module, in which students will work in teams of 5-6 to run a simulated pharmacy; here, the teams will be competitive and the module is designed to provide an experiential learning simulation, where students will draw on skills of leadership and management, together with clinical problem solving in a safe environment. Two other modules in year 4 are Advanced Drug Discovery and Future Medicines, which will provide an insight into industrial pharmacy. In response to the team's wish to know how the new course is rolling out and how it compares with the previous course, the senior staff expressed the view that the students were now quite different, being more mature and able to talk to patients, as well as showing improved performance in OSCEs and being capable of "doing things". They were more challenged and can synthesise information; the DMP modules, including their assessments, are particularly challenging for students. Thus the first semester of year 1 provided very important preparation. Moreover, the reason for introducing the MMIs now used in the admissions process (see section 2 below) was to improve the selection of students who are capable of doing the course. Students are constantly reminded that they are required to remember and use material from previous years. Feedback from placement providers and stakeholders indicated that the students were much improved compared with those on the previous programme, and informal stakeholder feedback stated that students were much better prepared and were better at the clinical aspects; a provider from a small independent chain had commented that the students were much better with patients than the pre-registration trainees from the old course. Similarly, laboratory demonstrators had observed that the year 2 students were better in the laboratory classes, compared with students on the old programme. The team was told that the challenge is to maintain the science content and year 4 will be especially important in this context. Material from the new course has been incorporated into the previous MPharm course which is in its final year of delivery, so that students on that programme can derive the benefit of the changes. The team was also concerned to learn how the staff had responded to the new programme and was told (meeting 2) that the School had brought the entire staff on board and everybody has signed up to it. Members of staff are now often teaching outside their areas of expertise and are given as much support as possible when moving into new areas. There has been a very good, collegiate approach across both Schools, with everybody engaged, to create the required new material and much time has been spent to bring everything together at module and course level. Noting the staff workload, the team asked about the time conflict with research and was told that staff members accepted that much time resource needed to be invested in development, with the DMPs being very intensive. However, teaching is in blocks and time can therefore be used more efficiently; teaching time is managed through the workload model. As stated earlier, all members of staff have bought into the fact that time had to be devoted to the new programme and the Head of School paid tribute to his predecessor's leadership in this regard. Despite the workload, the School had still performed well in the REF.

In response to the team's wish to know how students had taken to the integrated approach, the staff re-emphasised the importance of the transitional six month period at the beginning of the course, as well as the role of the students' personal tutors; the integration message was always there. The hardest part had been the rolling out of the old course, so that those students did not feel disadvantaged, especially with the interface between year 3, which comprises students on the new programme, and the last students on the old programme in year 4. The students (meeting 5) were clearly aware of integration in the curriculum referring spontaneously to integration in response to the team's general question about the course and how they were enjoying it. They told the team how science was integrated within the DMP modules, for example the Renal and Endocrine Diseases module, where there was integration of chemistry, pharmacology, pharmacy practice, leadership and professionalism, providing them with sufficient knowledge to deal with diseases. Students could see the links between different modules such as the cardiovascular and gastrointestinal and liver diseases modules and how these fit in with metabolism. With each

DMP module, knowledge is revisited and built upon. A fourth year student was able to draw comparisons with the old course, where material was taught separately and only brought together by year 3. In response to the team's specific question as to how the students saw integration working within the programme, the students (meeting 5) explained that at the start of each module the curriculum was set out in a table with the learning outcomes and how these were to be met ('knows how', 'shows how'). Integration was second nature and students expected every module to include chemistry, biology, pharmacology and the other subjects. Different areas were covered in each module. Some material, such as ADME, recurred in different modules at different levels with different diseases, for example, with ADME being covered in the Dyspepsia module, and progressing to the module on Gastrointestinal and Liver Diseases. When students went into community pharmacies they could see the medicines and drugs about which they had been learning and knew what they were. They knew about enteric coating of tablets and could discuss the relevant formulation issues with patients, for example, in relation to not crushing enteric coated tablets. They were aware of the need to be able to talk to patients using appropriate language that patients can understand and the need to filter the information. The students told the team that integration is helpful and motivating, making the course more interesting, and enabling students to see the relevance of science to clinical practice. They felt like pharmacists right from the start and were confident to talk to patients; this was facilitated by the OSCE early in the course, where they talked to real patients and actors.

## **2. *Changes to the admission process since the 2012 reaccreditation event***

A review of the admissions process in 2013 resulted in the introduction of pre-screening of applicants to determine which to take forward to interview and the use of Multiple Mini Interviews (MMIs) to ensure more robust and less subjective admissions decisions, and to incorporate 'values-based recruitment'. The MMIs are similar to OSCEs, with students rotating through a series of stations with different members of staff; the stations cover motivation, calculations, knowledge of pharmacy, the integration of science with practice, communication and team-working skills, as well as ethical and professional values. The same process is used at UNMC and in Hong Kong, and other overseas applicants are interviewed using Skype. Noting the new selection process and the introduction of MMIs, the team wished to learn if this had changed the type of the students who were selected/rejected. In meeting 2, the senior staff responded that the initial screening process looked for well-rounded individuals and considered aspects such as previous experience in healthcare and leadership roles, such as completion of Duke of Edinburgh Awards. Interviews tested communication skills and values in looking at ethical decision making; students who can talk only about science will not be selected. The result had been the selection of a slightly different profile of students who were more rounded, with better communication skills, but whose grades were not very different. The pre-screening process resulted in only the best students being interviewed but it was still a labour-intensive process with 600-800 applicants being interviewed in each year. There had also been an improvement in the conversion rate but this could also reflect a greater interaction of the School with applicants. The School had only one year of data but these data were being analysed currently; the staff could not yet state how many applicants had been rejected.

## **3. *Placements***

In the UK, hospital placements are provided by Nottingham Universities Hospital Trust, Chesterfield Royal Hospitals NHS Foundation Trust and Derby Hospitals NHS Foundation Trust, while there is access to 120 community pharmacies, 80 of which take students each year. Teacher practitioners are provided by both hospital and community pharmacy. In Malaysia, the University has signed a Memorandum of Understanding with BP Healthcare, which can provide insight placements in the areas of diagnostics and specialist clinics, and Lovy Pharmacy. Community pharmacy experience at UNMC is supplemented by simulated experience using the on-campus pharmacy under the supervision of staff with experience of UK pharmacy. While hospital pharmacy experience in Malaysia was confined previously to two hospitals, the University has also now signed a Memorandum of Agreement with the Malaysian Ministry of Health, which will additionally provide access to six, large government-funded hospitals. In the UK, industrial visits to Boots have been withdrawn but a student-led Industrial Pharmacy Network has been established and insights into industry are provided in a number of ways, including talks from industrial leaders and

entrepreneurs and by the final year Advanced Drug Discovery and Future Medicines modules. Quality assurance of placements is affected through their arrangement within the framework provided by the University's policy on 'Managing Higher Education Provision with Others', supported by the use of student workbooks and provider handbooks which define the expectations of both students and providers. Prospective new providers receive a visit from University staff. Feedback on placements is obtained annually both from providers and students using, for example, online surveys and questionnaires, as well as through meetings with providers, and the team was given examples of feedback, as well as the resultant changes. These included emphasis from placement providers on the importance of students seeing pharmacy role models early in the course, as well as having early exposure to patients to give students confidence; this resulted in activities to help students understand the context of pharmacy in semester 1 of year 1 and the introduction of placements in semester 2. Students had also asked for clearer links to be made between the taught material in year 1 and the hospital placements; as a consequence, a case study was specifically linked to the Dyspepsia module. Another change resulting from provider feedback was the change of the year 3 hospital placement from a hands-on activity to the shadowing of pharmacists by students; this had arisen from concerns about students working with little supervision during the placement. In response to the team's wish to learn more about the placement and practice activities in the new programme, the senior staff (meeting 2) informed the team that these had not changed dramatically but with small improvements being made. The overall strategy is to increase students' awareness of practice and to relate practice to academic study, with application in practice of what is learned in the modules, as exemplified by the Dyspepsia DMP module (referred to above). It was also important that students were aware of the healthcare team. On asking if the placements were only observational, the team was told that this was the case in early years. Thus, first year placements were entirely observational, while in year 2 students were required to take a drug history. In year 3 students interacted with patients; this was continued in year 4, where students looked at case notes and interviewed patients. When asked how students were prepared for placements, the staff explained that they receive briefing sheets, with the briefing increasing in complexity as the complexity of the tasks to be undertaken increased, for example, in relation to the preparation of care plans, where increased preparation was required. Failure to prepare adequately would be fed back to the School, as would poor ability in soft skills. In meeting 5, the students broadly reiterated what the team had learned about placements from the staff in meeting 2. The students told the team about the community and hospital placements in years 1 and 2 and the hospital visit in year 3, and how time had blocked out for these placement activities. The team was told that the early placement in community pharmacy focussed on a general introduction so that students became familiar with the layout of a pharmacy, including where various things are kept and how the pharmacy is organised, and were asked to think of the underlying reasons for the organisation. In hospital the students considered the role of the pharmacist, which was quite different from the role in community pharmacy, and in the second year observed pharmacists undertaking asthma reviews and medicines reconciliations; the students told the team that they could undertake tasks if they wished. While the first and second year hospital placements provided an introduction, the third year hospital placement took place after completion of all the DMP modules, so that the students knew the drugs and were able to read drug charts. Here, they shadowed pharmacists, and could see their exact role and how they interacted with patients. The pharmacists questioned the students on the various patients' treatments and the students themselves were able to interact with patients if they so wished, checking the patients' medication and asking patients questions under supervision and receiving feedback; this depended entirely on the students' own initiative. Following the placement, students were required to make a CPD entry, as well as to hand in their completed placement workbooks in which they reflected on the placement, after which there was a review session with feedback. The team was told about the progressive nature of the placements with questions in year 2 being more advanced, as well as the tighter structure of year 1 and 2 placements with thicker placement workbooks, compared with year 3. Students also told the team about the insight placements, for example, a post-natal midwifery placement, which, although not directly linked to pharmacy, brought to their attention other aspects of patient care including the involvement of social services; here, the students had seen, for example, the case of a mother with poor English who could communicate only via a third party, illustrating other issues of patient care. The students also made comments on placements when asked about their involvement with patients; see section 5.

#### 4. *Inter-professional learning (IPL)*

There has been no change to the overall inter-professional learning strategy since the reaccreditation, although there have been some refinements and minor improvements. The year 1 activities have been broadened to help students to understand the role of nurses; this has also been implemented at UNMC using a nurse-led workshop. In year 2, the insight placements have now incorporated small group 'interviews' with a variety of healthcare professionals, and a case-based workshop involving students of pharmacy and physiotherapy has been introduced to enhance students' appreciation of the role of physiotherapists and to provide a more holistic view of pain and its treatment. Workshops with veterinary students and a placement with final year medical students have been introduced into year 3. IPL was explored further by the team, who wished to learn how the strategy for inter-professional education was maturing and how this activity has progressed over the last few years. The team was told that in the context of the whole IPE agenda, students were introduced to the role of pharmacists in multidisciplinary teams through lectures, although this was not taught as a separate issue, but was illustrated and experienced throughout the course, by for example, seeing interactions of doctors with pharmacists in the treatment of patients with asthma and seeing the pharmacist as part of the healthcare team. As described in the presentation, in year 1 there is a basic introduction to other members of the healthcare team, with students now understanding the role of nurses in hospital; this understanding is extended through the insight visits. In year 2, students are more challenged by different environments, for example, seeing patients in homes and experiencing the social issues, where the impact is much more personal; in year 2 they also see the role of occupational therapists. They not only learn how to talk to other healthcare professionals but also learn their different points of view, for example, in the management of stroke patients, where every healthcare profession has a role. As mentioned in the presentation, the second year Pain DMP module now allows pharmacy students to work with physiotherapists, thus enabling a more holistic view to be taken. In their inter-professional learning, while students are set broad objectives, they are also expected to set their own. When asked about their work with other healthcare professionals, and the benefits derived from these activities, the students (meeting 5) told the team that this was very useful, with students learning and discussing what other professions do at the start of each session. Throughout the course, they dipped into many other healthcare professions and learned about them. The students told the team that while they were good at describing the roles of other health care professionals, students of other professions were unaware of the role of the pharmacist; the students illustrated this with an example of an IPL session in which a medication error had been discussed and the students of the other healthcare professions had not appreciated the need to involve a pharmacist or the role of the pharmacist in that situation. The students could not confirm if the other students had changed their views as a result of this session or had taken away that new knowledge into their practice; the pharmacists know to which key healthcare professionals patients should be referred in different situations. As they had not yet encountered medical students, the third year pharmacy students were unable to confirm if the medical students now knew more about pharmacy; most IPL sessions with medical students will be in year 4. In placements, students were tasked to actively find out about the roles of other healthcare professionals as members of the healthcare team. There are facilitators in the room for IPL sessions, in which students must complete a range of tasks and instigate conversations with the other students. The mixed student groups also work together online as well as meeting physically. As a result of these sessions, pharmacy students make friends with students of other professions. While the first year students reported a varied but overall positive experience of inter-professional learning, the interactions in the second year were very good, for example with physiotherapists. All of the students agreed that the best IPL sessions would be multidisciplinary, involving students of pharmacy, nursing, medicine and physiotherapy. When asked if the insight placements helped students to understand the role of pharmacists in the healthcare team, the students stated that this depends on the particular placement. For example, on a 'mental health' insight visit, the student had not seen a pharmacist and a doctor who was asked if they interacted with pharmacists gave the opinion that the pharmacist's role was simply the completion of drug charts. The team was told that the insight visits provide a different outlook in meeting various healthcare professionals, and in seeing their roles and understanding their contributions; the students learned that treatment was not just about drugs and that other factors needed to be considered, such as swallowing difficulties. The students also illustrated this with the example of an insight visit with a nutritionist, which again demonstrated that it was not only drugs that helped patients but also nutrients and minerals.

## 5. *Patient involvement*

Additional patient involvement has been incorporated into some year 2 DMP modules. In the module B32AA1 (Asthma, Allergies and Immune Diseases) there is now a one hour session in which students speak to patients with conditions such as asthma, COPD and rheumatoid arthritis, while the session previously focussed only on patients with asthma. The Renal and Endocrine Diseases module includes a session at the end of a lecture in which students speak to a dialysis patient, and the module B32PAI (Pain) incorporates a workshop where patients with chronic pain talk to small groups of students, as well as students being able to see some patients with acute pain during hospital visits. In the final year, patients will be recruited to provide input into the design of the case-studies for use in the Integrated Pharmaceutical Patient Care modules. Additionally, in the Pharmaceutical Leadership and Management Module, students will encounter patients who will present as 'real' cases within their simulated pharmacy business scenarios. When asked about where they encountered patients, the students meeting 5) confirmed the year 1 workshops where they speak to patients about their health and medications; they told the team that they prepared for this workshop by working in groups to practise speaking to patients and acquire confidence to do this. The students also referred to the Asthma, Allergies and Immune Diseases module, where they talked in small groups to patients about their disease; this made them aware of the importance of patient-centred care and taught them compassion and to have professional attitudes. In their year 3 hospital placements, they take patient drug histories; they examine patients' notes with the pharmacist and ask the patients questions (See also section 3). Additionally, the students could shadow pharmacists on ward rounds, again being able to question the patients (See also section 3). These activities gave students confidence, especially when they were able to answer questions correctly. Bearing in mind that the year 4 students were still on the old course, the team was told that there was no patient interaction here, this having been completed in year 3, where they had considered patient medication records. In the Diseases, Goals and Treatment modules they had been required to consider five diseases/conditions in one semester, followed by assessment. The team was told that the old course had been more research orientated and that more patient contact would have been helpful, for example, in preparation for summer placements.

In response to the team's wish to learn how students develop the communication skills to equip them to deal with the variety of patients they encounter each year, the staff (meeting 2) explained that basic communication skills are introduced in year 1 in a workshop, in which they also learn to adopt a holistic view of patients; this is covered by the Boots teacher practitioner who covers aspects such as how students should introduce themselves, as well as how to terminate an interview. As described in the presentation, students also meet patients with long-term conditions, and are tasked with finding out about their experience of living with these conditions, not just in relation to medicines but taking a holistic view. After being informed that counselling skills are taught with one pharmacist demonstrator per five students, the team asked how this was progressed throughout the course and was told that high standards are set from the beginning with the Calgary Cambridge consultation model being used from the outset. The School wishes the students to improve as they move up the course and they are faced with more complex consultations later on, with pharmacy practice being embedded in most, if not all, modules, and students practising their skills throughout. When asked how patients have informed the development of student skills, the staff gave the team examples of this input; these included the introduction of the first year workshop in which students talked with patients and healthcare professionals, enabling them to structure their thoughts. Another example was the use of the induction week for 2+2 students arriving from Malaysia, where the students were introduced to how people speak and the use of dialects, as well as the colloquialisms used to describe bodily functions. In this context, the team asked how the Malaysian students were integrating into year 3 and was told they had settled in and were doing very well. This had been facilitated by the students being told about the course nine months before their arrival and by their induction in relation to placements and spoken English. Additionally, in year 2, there had been buddying between UK and Malaysian students via Facebook and they had also met UK students who have elected to undertake some of the programme on the Malaysian campus.

## 6. Teaching, learning and assessment strategy

The overarching teaching, learning and assessment strategy has not changed from the 2012 reaccreditation event, although there had been some minor amendments to the delivery and timing within the DMP modules. Thus, it had been agreed that the number of case-studies used within each DMP module should be reduced from three to two. The biggest change to delivery was in the Sexual Health and Pregnancy DMP module, where a 'flipped classroom' approach (detailed in the documentation) had been adopted, whereby students look at the material in their own time, accompanied by a small number of keynote lectures, and staff-student contact time is utilised to facilitate understanding of the topic. The approach also utilised a number of 'bow-tie' workshops, whereby topics are introduced broadly, followed by drilling down to the molecular level, before broadening out again to address clinical aspects; details of this approach were again provided in the documentation. The DMP in-module assessments had also changed, with the requirement that each DMP must have an in-module formative assessment, with most in-module online ROGO summative assessments now taking place at the end of the module. Noting the increased use of e-learning, and comments made in LCF minutes about students valuing personal contact, the team wished to know how successful the approach had been, as well as student feedback on this. The staff explained that the new programme included more small-group teaching and more personal staff contact, with electronic material being used as a back-up. Lectures are supported with recorded material and use the electronic resources, while retaining face-to-face contact. In meeting 5, the students also referred to the use of e-learning, with most lectures being voice-captured and all of the materials for lectures and laboratory classes, including reading lists and journal papers, being made available online through the Moodle VLE; the students found it very useful to access material online and to go back to points that they have not understood, but reiterated that they value personal contact with members of staff and do not want everything to be delivered electronically. The staff (meeting 2) told the team that the School considers student feedback and re-balances teaching in response to this, and also plans to evaluate new teaching approaches such as the flipped classroom/bow-tie workshop approaches, with a view to examining ways to use these further. Consideration is also being given to rolling out the use of formative quizzes.

When asked how their assessments promoted integrated thinking, the staff explained that the separation of material into subjects was removed progressively as students moved through the course, requiring them to bring material together from all areas. In response to a question about a reduction in the number of assessments as a result of student feedback, the team was told that some DMPs, for example, Gastrointestinal and Liver Disease, had been particularly challenging and were very content heavy; there had been a reduction in the length of assessments, rather than in their number. The students (meeting 5) told the team about the range of assessments used, which covered diagnostic, formative and summative assessment, and which varied among the different DMPs but included ROGO tests, written coursework (essays, laboratory practical reports) presentations and OSCEs, with assessments complying with the GPhC requirement to demonstrate, for example, 'knows how' and 'shows how'. CPD entries were also assessed. The students also told the team about the integration within assessments to link science with practice, depending on the assessment. In OSCEs, it was impossible to set specific science questions and students were required to draw on all of their knowledge, for example, in relation to drug interactions, and were required to explain their answers; OSCEs were used to test clinical abilities. ROGO and written examinations incorporated calculations questions and science. In meeting 2, the team also asked about the use of peer assessment to support inter-professional education, as well as to encourage students to relate to each other, and was told that this was used in a number of places, including the Pain, Sexual Health and Pregnancy, and Cancer DMP modules, and in the final year, where students participate in teaching and assessing each other. In the Pain module, students produced posters and all students look at each other's and in the Sexual Health and Pregnancy module they provide feedback on the posters, demonstrating that this was true peer assessment. In the context of inter-professional education, feedback is provided from other healthcare profession students on insight placements. In meeting 5, the students confirmed the use of peer assessment in the presentation associated with the Cancer DMP and in 'bow tie' presentations in the Sexual Health and Pregnancy DMP; they told the team that the final mark for these included a contribution from the peer assessment.

The team was told about the assessment of the zero-credit, pass/fail Professional Competency modules, in which all elements must be passed to enable progression. Assessment of these competencies includes the CPD portfolio, PDP, attendance at placements, calculations (in years 2-4), the law examination (years 3 and 4) and Professional Practice (Dispensing) in years 3 and 4. Although placements are not assessed formally, the team was told that assessment is based on attendance and completion of the placement books, with students being required to reflect upon them in their portfolios. Moreover, placements are linked to in-module learning and will be assessed within the module learning outcomes. The year 4 Professional Competency module is also used to monitor the meeting of the GPhC standard 10 learning outcomes, with students being signed off against these outcomes. The team asked how the portfolios encouraged reflective learning and how the staff monitor the progress of students in developing as reflective learners. The staff (meeting 2) explained that, although portfolios must be submitted by Easter, students are encouraged to submit early to obtain feedback from their tutors and from the module convener. 10% of first students fail on CPD at their first attempt but pass on resubmission. When asked how they were introduced to reflective learning, the students (meeting 5) told the team that three weeks into the course they had a two hour introduction to explain the nature of CPD, following which they had to make CPD entries and bring them back to the workshop for feedback on the use of the CPD cycle. The students confirmed that they are encouraged to discuss their CPD records with, and obtain feedback from, their personal tutors. The CPD portfolios can be submitted early for feedback and detailed comments. In response to the team's wish to know what benefit students derived from CPD, the students explained that the emphasis on CPD encouraged professionalism, enabling students to see how they had progressed in their actions and behaviour, for example, through placements; it also encouraged reflection on what they learned in the modules, stimulating them to consider different aspects, such as the cost-effectiveness of different drugs. Early reflection on the CPD itself enabled students to see what they needed to do in their development in all areas and taught them to use appropriate resources; students were encouraged to challenge themselves for CPD. The CPD entries were well defined and directed to specific GPhC outcomes, which could be science-related, or could relate to some aspect of the Code of Conduct, but there was also scope for optional entries.

Staff members are reminded to adhere to the requirement to provide feedback on assessments within 21 days. Consistency of this feedback has been achieved, as most feedback is provided online using Turnitin. When asked about the level and timeliness of feedback they receive the students told the team (meeting 5) that this varies from module to module. One problem had arisen in relation to the workbook in year 2, as the staff had not appreciated the size of the task, but this had been resolved. There have been other minor problems with timeliness but these have been sorted, as well problems due to staff illness, although the students were warned about this at the start of the particular module and were kept informed. Feedback is generally good, with written comments from the assessor provided online and students can seek additional feedback if they wish. Students receive 1:1 feedback on their performance very soon after examinations. However, they appreciate that, with a very integrated course, the examinations cover a variety of different topics with different people marking each question, thus increasing the time required to produce feedback. In response to the team's wish to know how feedback helped them for the future, the students gave the example of feedback following a calculations test that was done badly, with the result that optional calculations workshops were offered.

## **7. Feedback on the programme**

There are many opportunities for students to provide feedback on the programme, including their evaluation of teaching and of modules. There are also regular meetings of the Learning Community Forum (LCF), which are formal meetings involving year heads and other members of staff including the Director of Teaching and Learning, the Senior Tutor and the Director of Operations, along with student representatives from each year. The Head of Department also holds regular workshops with students and in meeting 5 the students told the team that they can provide feedback at these, raising issues and informing the Head of School about good and bad aspects of the programme; the team was provided with several examples of minutes of the LCF meetings, as well as notes from the Head of School workshops. The team was also told of the introduction of an annual NSS-style course evaluation. In meeting 5, the students told the

team about the LCF where opinions are gathered and which has resulted in action being taken on most points raised. There are two student representatives from each year on the LCF; these representatives conduct surveys of their years and interact with most of the students to get feedback. Matters can also be taken directly to members of staff who respond quickly, for example, in providing additional calculations workshops.

Feedback is also obtained from the MPharm Stakeholder meetings attended by placement providers, patients, staff and others, as well as from the Advisory Board established to develop the 5-year Integrated MPharm; this comprises pre-registration training providers and experienced pre-registration tutors. External stakeholders, including hospital and community pharmacists are also working with members of academic staff to develop the new final year Pharmacy Leadership and Management module, which is currently being piloted by 12 students as a research project. Patient feedback comes from both stakeholder meetings and from genuine and simulated patients who participate in workshops and OSCE assessments; such feedback has challenged students, as well as staff members, to address the patient perspective through the involvement of patients in modules.

#### **8. Improvements in social and learning space**

Improvements in social and learning spaces have been made on both the UK campus and at UNMC. In Malaysia, since the last accreditation visit the old main student cafeteria has been converted into a very large social learning space and the campus library has been completely remodelled, being completed in January 2015. In the UK, improvements included the University's investment in the creation of the Pharmacy Professional Development suite in the Pharmacy School Building; this incorporates 10 small-group teaching rooms, which will be used primarily as simulated pharmacies for the Pharmacy Leadership and Management module. It also includes social study space.

#### **9. Resources**

When asked about the range of resources available to them, the students (meeting 5) told the team that there were extensive library facilities both through the University and the Medical School; there was 24/7 access to these facilities electronically and almost 24/7 access physically. Students had access to Medicines Complete, Medline and paper reviews. The students also told the team about the mock dispensary, which was laid out like a pharmacy with medicines and which was also where they took their examinations. When classes were not being run, the staff would open up teaching laboratories, if for example, students wished to practice their dispensing. Equipment for research projects was readily available and there was good support in the research laboratories from PhD students and postdoctoral workers, with staff being very knowledgeable about their research areas. Reference was also made to the final year exercise in which groups of students will run their own pharmacy using the new facilities.

#### **10. Student support**

In response to the team's wish to learn about the personal tutor system, the students (meeting 5) explained that tutor meetings were scheduled in each semester, with the meetings being either examination focused or CPD-focused. Meetings may take place in small groups as a general meeting at the start of the year but other meetings, for example, to discuss examination performance, are conducted individually. Students can make appointments at any time to see their tutors, who can also provide help and advice in obtaining pre-registration places. Most students reported a good experience with their tutors, although one, who had a tutor who was not from the School of Pharmacy expressed concern that the particular tutor was research-focused and not familiar with the new course; however, that student also stated that it was simple to get specific help from other members of staff if the tutor was unable to assist. Students know the resources that are available to provide help and the team was told that the Careers and Employability Service was very helpful if they needed advice in that area.

### **Observation of student activities:**

In addition to a satellite visit (21 November 2014), during the interim visit itself various members of the team observed a number of activities, some of which ran concurrently. The date of the interim visit was selected to coincide with timetabled activities which would best demonstrate a range of sessions/activities and allow the accreditation team to review examples of student learning experiences and how the MPharm course had progressed. The students (meeting 5) confirmed that the day of the visit was a typical working day. Between these activities, the team members convened a number of private meetings to share their observations. The team also took this time to review the additional documentation that had been provided by the School for review. These activities are summarised below and further detail of each is provided in Appendix 1.

**Satellite visit:** Year 1 discussions with patients (B31ESP: Essential Skills for Pharmacists)

The aim of this session was for year 1 students to discuss with patients what it is like to have a long-term illness and to take medicines for its treatment. This is the first time students meet patients during their course. They meet the patient in groups of 3-4 students and are briefed to discuss with the patient what it is like to have a long term condition not just from a medical perspective but also in relation to the possible impact the condition on their life. Students prepare for the session by deciding in their groups the questions they want to ask patients and then meet two or three patients during the session for 15 minutes each, without prior knowledge of their conditions. The activity follows a series of three lectures titled 'The Patient as a Person' which include discussion of the sociology of health, definitions of health, beliefs about health and illness, experiences of illness, coping, patient-professional interactions and stress. They have also previously received lectures on communication skills. The students were all professionally presented (professional/smart dress) and introduced themselves by first name to the patient, some shaking the patient's hand before sitting down. Most of the students commenced the patient conversation with an open question. The students used good eye contact, listened attentively and used appropriate body language, with nearly all the students contributing. While some patients were relaxed and responsive, one or two were quieter and declined to answer some questions; this made the students appreciate the difficulties in eliciting information from patients. The rooms used allowed for private conversations in small groups without being overhead or being distracted. While students had been nervous beforehand, afterwards, they were enthused by the experience and animated. They had not provided feedback to each other on their performances, which the accreditation team member considered to be a missed opportunity.

**Activity 1:** Hospital placement-year 3 City Hospital (Professional competencies -33PRO)

The aims of this placement were a) for students to gain experience of the specialist roles of the hospital pharmacist b) to enhance understanding of the role and the contribution hospital pharmacists make in medicines optimisation c) to appreciate the collaborative roles of a variety of professionals and providers in patient care d) to apply principles of gaining consent and respecting confidentiality in practice e) to demonstrate appropriate communication with patients and other healthcare professionals, for example appropriate introduction, seeking and gaining consent, effective communication and f) to critically reflect upon learning and experience gained through the placements. During this session, students, working in pairs and supervised by a clinical pharmacist, spent two hours in an infectious diseases ward, where they saw a number of complex patients, including a hip-replacement patient with an infection, as well as seeing the notes of a patient with HIV and another patient with tuberculosis. The students spent the time shadowing the pharmacist who was undertaking normal working duties. The pharmacist was excellent, knowing the students' expected tasks and getting students to discuss drug interactions. However, the students did not interact with patients or with the doctors and nurses and were not introduced to the other staff members; the students were not expecting to speak to patients. While the placement was good and enjoyable, the accreditation team members suggested that the placement did not move the students forward and that opportunities were being missed.

**Activity 2:** Research project – year 4 (B34H09)

This project was being run by final year students on the old course. The students were piloting the new final year module Pharmacy Leadership and Management in which groups of students will run a simulated pharmacy for which the new Pharmacy Professional Development Suite has been created. The team members who viewed this activity agreed that the simulated pharmacy was excellent.

**Activity 3:** Poster presentations from insight placements (Professional competencies B32PRO)

The aim of this exercise was to gain an appreciation of other healthcare professions and their roles within the wider healthcare environment. The observed session comprised reflective posters produced by the students following visits to various establishments and interactions with various healthcare professionals; the establishments included a mental health hospital, a Rehabilitation Centre and an accident and emergency department, where the health care professionals encountered included a dietitian, occupational therapists, nurses, and a gastric surgeon. For the exercise, students split into groups of six with an academic facilitator assigned to each group, with students presenting posters based on their visits and what had been learned from working with other healthcare professionals. The posters covered student observations and reflections. Students gave 5-minute presentations, followed by questions from fellow students and the facilitator. In some groups, the facilitator also asked the students to feedback on the quality of the poster, including its content, although other facilitators did not. Students would eventually receive formal oral and written feedback from the facilitators. The four accreditation team members who observed this session reported a variable experience, with some facilitators being excellent and others less effective. The students showed varying levels of reflection from their visits, all recognising the importance of the role of other healthcare professionals in the care of patients. In general, the students presented well and some had obviously interacted effectively with the healthcare professionals whom they had met, while this was less clear with others. Overall, it was clear that much care had gone into the placement provision and the running of this session and this appeared to be an effective way for students to share their experiences of atypical placements. The facilitators are key to the success of the presentation sessions, but, before the visits, it is important for the students to fully appreciate what is expected of them. The observing accreditation team members also believed that students needed more direction, so that weaker students can gain more from this activity.

**Activity 4:** Hospital placement year 2 Queen's Medical Centre (Professional Competencies B32PRO)

The main aim of this placement, which comprises three half-day visits, was to enable students to gain an insight into the role of the hospital pharmacist. The students had been supplied with a workbook which outlined the visits and gave the necessary background information; they came well prepared, were enthusiastic and showed a good range of clinical knowledge for students at this level. The focus was on medicines reconciliation. They were taken to the acute medical admission ward, where many patients are quite ill and not in a position to talk, and shown a patient's notes and drug chart but were not introduced to the patient or to any of the pharmacy/hospital team. Students were not assessed in this activity, although they were asked many questions to test their knowledge as they were guided through the patient notes by the clinical pharmacist. The session was related to many of the outcomes in standard 10, although it would have been useful for the facilitator to take the opportunity to further explore with the students the multidisciplinary healthcare team. The session met the overall aim of the placement, which was to broaden the students' knowledge and experience of hospital pharmacy. Overall it appeared to be a worthwhile experience which could have been further enhanced by taking the opportunity to encourage students to speak to patients and other healthcare professionals.

**Activity 5:** Laboratory session year 3 (Research Project B33RPJ)

This session was a snapshot of students undertaking their year 3 research projects. The broad aim is to provide first-hand research experience, culminating in the production of a written dissertation. The students had selected this project because they were enthused by the previous work they had undertaken in the course, including the cancer module. The work was based on the use of liposomes to carry drugs into cells; students chose one of four areas within this theme. The project was of the highest calibre and the students had ample access to advanced equipment, and were enthusiastic, some having chosen this project as a route towards taking a PhD. Students spoke well of support from the PhD student demonstrators.

**Activity 6:** Laboratory session year 3 and 4 (Research Project B34H09 and B33RPJ)

This session was a snapshot of students undertaking their year 3 and 4 research projects; year 4 students were included as this is the last year of the rollout of the old degree. The broad aim is to provide first-hand research experience, culminating in the production of a written dissertation. The project was a medicinal chemistry research project, in which students were working in teams under a team leader to synthesise analogues of lead compounds, which would be subjected to biological testing by a major pharmaceutical company; the teams were working competitively but would eventually use all of the biological data for the students' individual project reports. Again, this was a high level research project in a well-equipped research laboratory.

## Conclusions

The accreditation team advised the School that the team's conclusions from this visit were based on both what team members had been told, what they had observed, and documents they had read, over the course of the visit and the satellite visit. Looking at the progress that has been made since the last visit, the principal observation is that the team is confident that the GPhC's initial education and training standards will be met. There are no additional conditions or recommendations as a result of this interim visit and the judgement made by the GPhC's visiting accreditation team in 2012 stands.

### *Feedback on individual standards*

Interim visits cover selected topics and not all standards are discussed; thus standards 1, 2, 3, 7, 8 and 9 were not specifically discussed, although some of the narrative is relevant to aspects of these standards.

### *Standards 5 & 10 (curriculum delivery and learning outcomes):*

Overall, the panel was convinced that the course is appropriately integrated intellectually and that the staff team is integrated as well. It was evident that there has been much effort in developing the programme and embedding the new concept across the School, as well as across the School of Life Sciences. The team recognise the significant differences between the current MPharm degree and the previous one. It has a greater patient and clinical focus and this was confirmed by the students in their discussions with the team. The team gained a very clear picture that the students value the level of integration and appreciate the approaches to this learning, as they develop into independent professionals.

The range of activities observed has given the team an insight into the students' opportunities to engage with patients, to undertake practice and to engage with other healthcare professions. The team recognises that some of these areas are still evolving and would encourage the School to explore opportunities where more meaningful patient engagement can take place. The team acknowledges that only a snapshot is seen on a visit such as this; however some students stated that they were able to engage with patients but only under their own initiative during placements and other activities. The team suggests that the less confident students could be supported to have a similarly meaningful engagement with patients in the same circumstances.

The team had opportunity to review the range of materials in the base room. The examination papers viewed demonstrated an innovative approach to integrated assessment.

In the observations both during the interim visit itself and the satellite visit there was good evidence that the student groups are cohesive and worked collaboratively. The tasks were well constructed and there was good interactions between students and staff. One particular area of strength is the simulated pharmacy in the Pharmacy, Leadership and Management module. The team view this as an example of good practice which has huge potential and from which students can only benefit in developing their professional skills; the team looks forward to seeing how this has progressed at the next reaccreditation event.

Another area that the team viewed as particularly strong was the responsiveness of the School to student feedback. The students articulated well how concerns or points raised were addressed by the School in a timely manner. This was also confirmed in the student meeting.

Finally, the team took pleasure in meeting with the students who came across as intelligent, articulate and mature in their engagement with the team; the students clearly appreciate their status as Nottingham students and the support they receive from the staff.

All sessions observed met the objectives stated in the documents given to the visiting team and there is no evidence that standards 5 and 10 are not being met. The MPharm degree is developing according to the original requirements of the accreditation at Nottingham.

## Appendix 1 – Activities observed by the Accreditation team

**Satellite visit:** Year 1 discussions with patients (B31ESP: Essential Skills for Pharmacists)

### *Aims of the session*

To discuss with patients what it is like to have a long-term illness and take medicines for its treatment.

### *How the activity links to other learning activities (Including horizontal and vertical integration)*

Links to communication skills (especially introducing yourself, using patient friendly language, listening to patients and closing conversations). The activity follows a series of three lectures titled 'The Patient as a Person' which includes discussion of the sociology of health, definitions of health, beliefs about health and illness, experiences of illness, coping, patient-professional interactions and stress. Also provides an important foundation for future placements and OSCE examinations within the course.

### *How the activity relates to outcomes in standard 10 and how it is assessed:*

The assessment is based on an OSCE and on a compulsory CPD entry on how students feel about becoming a pharmacist.

### *Relevant standard 10 outcomes*

10.2.1.e - Collaborate with patients, the public and other healthcare professionals to improve patient outcomes (*Knows how*)

10.2.2.b - Identify inappropriate health behaviours and recommend suitable approaches to interventions (*shows how*)

10.2.2.g - Communicate with patients about their prescribed treatment (*shows how*)

10.2.4.a - Maintain accurate and comprehensive consultation records (*shows how*)

10.2.5.a - Demonstrate the characteristics of a prospective professional pharmacist as set out in relevant codes of conduct and behaviour (*Does*)

**Activity 1:** Professional competencies (B33PRO) Hospital placement year 3 City Hospital

### *Aims and objectives*

- To gain experience of the specialist roles of the hospital pharmacist
- To enhance understanding of the role and the contribution hospital pharmacists make in medicines optimisation
- To appreciate the collaborative roles of a variety of professionals and providers in patient care
- To apply principles of gaining consent and respecting confidentiality in practice
- To demonstrate appropriate communication with patients and other healthcare professionals, for example appropriate introduction, seeking and gaining consent, effective communication
- To critically reflect upon learning and experience gained through the placements

*How it links to other learning activities (Include horizontal and vertical integration)*

Building on placements from the previous year, in which students received close tutoring from hospital pharmacists, these placements encourage students to be more independent learners and illustrate how pharmacists actually work in practice, in their everyday roles. Students shadow a pharmacist in both a ward setting and in a more specialist area. This helps students to learn about the application of knowledge in practice, observe procedures and processes and, for their potential future careers, gain good insight into some aspects of pharmacists' roles.

*How activity relates to outcomes in standard 10 and how it is assessed*

The assessment is based on placement attendance and completion of the placements workbook.

*Relevant standard 10 outcomes*

10.2.1.h - Provide evidence-based medicines information (*shows how*)

10.2.2.e – Clinically evaluate the appropriateness of prescribed medicines (*shows how*)

10.2.2.f – Provide, monitor and modify prescribed treatment to maximise health outcomes (*shows how*)

10.2.3.l - Ensure the application of appropriate infection control measures (*shows how*)

**Activity 2:** Research Project B34H09 pilot of Pharmacy, Leadership and Management B34PLM – simulated pharmacy year 4

*Aims and objectives of the session*

The research project aims to provide first-hand research experience and insights into research methodology; to perform a review of published work; to execute a programme of experimental, clinical/social science or computer-based work to investigate a selected topic, culminating in a written dissertation. This is the last year of projects occurring in year 4 as part of the old course and the particular activity of this project was the evaluation of the simulated pharmacy exercise that will form a key part of the new Pharmacy Leadership and Management module.

*How it links to other learning activities (Include horizontal and vertical integration)*

The research project builds on skills developed in year 1 and 2 modules (e.g. through problem-solving workshops, practical classes, and essay writing), and provides a dedicated module to develop skills in:

- researching and critically appraising scientific literature
- Designing and executing experiments (or the equivalent of)
- Data analysis, statistical techniques and interpretation in the light of current scientific knowledge.
- Communication of research: through a written report and a poster
- Other generic research skills such as deductive reasoning and problem-solving, communication and time management.

*How activity relates to outcomes in standard 10 and how it is assessed*

The assessment of the research project comprises the marks for the dissertation, a research poster and a mark from the supervisor.

*Relevant standard 10 outcomes*

10.2.1.g - Contribute to research & development activities to improve health outcomes (*shows how*)

**Activity 3** Professional competencies B32PRO Poster presentations from insight placements

*Aims and objectives*

To gain an appreciation of other healthcare professions and roles within the wider healthcare environment.

*How it links to other learning activities (Include horizontal and vertical integration)*

This placement builds on the inter-professional learning in year 1 and in the early part of year 2, and provides students with first-hand experience of an atypical pharmacy role or, more usually, a different healthcare setting. These placements help students to understand and reflect upon wider aspects of healthcare and how pharmacy does or could play a part in them. Students are often taken out of their comfort zones, as evidenced by their reflective learning posters, and accounts, which are presented after these placements.

*How activity relates to outcomes in standard 10 and how it is assessed*

This activity supports the attainment of the following (, which is assessed in other modules):

10.1.h – Engage in multidisciplinary team working (*knows how*)

**Activity 4:** Hospital placement year 2 (Professional Competencies B33PRO)

*Aims and objectives*

- To enable students to gain an insight into the role of the hospital pharmacist
- By the end of the ward placements students will have been given the opportunity to:
  - familiarise with the hospital environment
  - gain an understanding of the methods and skills needed for obtaining an accurate patient medication history for a patient recently admitted to hospital
  - familiarise with medical abbreviations
  - apply theoretical clinical knowledge to practice
  - discuss how some disease states are managed clinically
  - develop a systematic approach to identifying and solving pharmaceutical problems experienced in practice
  - use patient case notes and biochemical results
  - gain an understanding of how the role of the pharmacist is an important part of the multidisciplinary care of the patient.

*How it links to other learning activities (Include horizontal and vertical integration)*

Hospital pharmacists provide detailed teaching in practice for these placements. The placements enable students to experience in practice, some of the key roles of ward pharmacists; namely medication history taking and medication review. Clinical knowledge learnt in the course is applied and communication skills are put into practice in a 'real' environment. The placements support students' knowledge of disease states and management.

*How activity relates to outcomes in standard 10 and how it is assessed*

Assessment is through placement attendance and completion of the placements workbook.

*Relevant standard 10 outcomes.*

**10.2.1.h** – Provide evidence- based medicines information (*shows how*)

**10.2.2.e** - Clinically evaluate the appropriateness of prescribed medicines (*shows how*)

**10.2.2.f** – Provide, monitor and modify prescribed treatment to maximise health outcomes (*shows how*)

**10.2.3.i** – Ensure the application of appropriate infection control measures (*shows how*)

**Activity 5** Research Project B33RPJ Laboratory session (year 3) and **Activity 6:** Research Project B34H09 and B33RPJ laboratory session years 3 and 4

*Aims and objectives of the session*

The research project aims to provide first-hand research experience and insights into research methodology; to perform a review of published work; to execute a programme of experimental, clinical/social science or computer-based work to investigate a selected topic, culminating in a written dissertation.

*How it links to other learning activities (Include horizontal and vertical integration)*

The research project builds on skills developed in year 1 and 2 modules (e.g. through problem-solving workshops and practicals, and essay writing), and provides a dedicated module to develop skills in:

- researching and critically appraising scientific literature
- Designing and executing experiments (or the equivalent of)
- Data analysis, statistical techniques and interpretation in the light of current scientific knowledge.
- Communication of research: through a written report and a poster
- Other generic research skills such as deductive reasoning and problem-solving, communication and time management.

The development of these skills provides an important foundation for all level 4 modules, where critical/deductive reasoning and research methodologies will be utilised.

*How activity relates to outcomes in standard 10 and how it is assessed*

The assessment of the research project comprises the marks for the dissertation, a research poster and a mark from the supervisor.

*Relevant standard 10 outcomes*

10.2.1.g Contribute to research & development activities to improve health outcomes (*knows how*).