



Master of Pharmacy
degree (MPharm)
4-year Degree

University of Nottingham
Report of a reaccreditation event

April 2018 (UK) and May 2018 (University of Nottingham Malaysia Campus - UNMC)

Event summary and conclusions	
Provider	University of Nottingham
Course	Master of Pharmacy degrees (MPharm)
Event type	Reaccreditation
Event date	26-27 April 2018 (Nottingham UK campus) and 17-18 May (UNMC)
Accreditation period	2017/18 – 2023/24
Outcome	<p>Approval.</p> <p>At the visit to the University of Nottingham in April, the team agreed to recommend to the Registrar of the General Pharmaceutical Council that the MPharm degree delivered at the University of Nottingham should be reaccredited, subject to a satisfactory visit to the Malaysian campus; this recommendation covered the standard 4-year programme, the 5-year integrated degree and the 2 + 3 degree, the last being regarded by the team as simply a variation on the 5-year integrated programme, with the first two years, which are exactly the same as the first two years of the 2 + 2 degree, being studied on the Malaysian campus. Following the visit to the Malaysian campus, the team agreed to recommend to the Registrar that all of the above MPharm degrees delivered by the University of Nottingham UK and Malaysia should be reaccredited for a full period of six years.</p>
Conditions	There were no conditions
Standing conditions	Please refer to Appendix 1
Recommendations	No recommendations were made.
Registrar decision	Following the event, the Registrar of the GPhC accepted the accreditation team's recommendation and approved the reaccreditation of the programme for a further period of 6 years.
Key contact (provider)	Professor Clive Roberts, Head of School
Accreditation team	<p>Professor Andy Husband (Team Leader) Professor of Clinical Pharmacy and Head of School Newcastle University</p> <p>Dr Adam Todd (Academic) Reader in Pharmaceutical Public Health School of Pharmacy Newcastle University</p> <p>Professor Jane Portlock (Academic) Professor of Pharmacy Postgraduate Education University of Sussex (UK only)</p> <p>Miss Raminder Sihota (Pharmacist) Senior Manager and Professional Development Boots UK (UK only)</p>

	<p>Mr Owen Wood (NQ Pharmacist) Humanitarian Pharmacist Save the Children</p> <p>Ms Leonie Milliner (Lay member) Chief Executive Association for Nutrition</p> <p>Professor Chris Langley (Academic), Professor of Pharmacy Law & Practice, and Head of the School of Pharmacy, Aston University; Associate Dean, Taught Programmes, School of Life and Health Sciences (UNMC only)</p> <p>Dr Ruth Edwards (Academic), Lecturer in Pharmacy Practice, Robert Gordon University (UNMC only)</p>
GPhC representative	Ms Joanne Martin, Quality Assurance Manager, GPhC
Rapporteur	Professor Brian Furman, Emeritus Professor of Pharmacology, University of Strathclyde

Introduction

Role of the GPhC

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). This reaccreditation event was carried out in accordance with the GPhC's 2011 MPharm Accreditation Methodology and the course was reviewed against the GPhC's 2011 education standards 'Future Pharmacists: Standards for the initial education and training of pharmacists'.

The GPhC's right to check the standards of pharmacy qualifications leading to annotation and registration as a pharmacist is the Pharmacy Order 2010. It requires the GPhC to 'approve' courses by appointing 'visitors' (accreditors) to report to the GPhC's Council on the 'nature, content and quality' of education as well as 'any other matters' the Council may require.

The powers and obligations of the GPhC in relation to the accreditation of pharmacy education are legislated in the Pharmacy Order 2010. For more information, visit:

<http://www.legislation.gov.uk/uksi/2010/231/contents/made>

Background

The University of Nottingham MPharm is delivered by the School of Pharmacy with a major (around 30%) input from the School of Life Sciences within the Medical School, which contributes to the teaching of physiology and pharmacology. In 2005 the University also admitted students into a 2+2 version of the MPharm with the first two years being taught at the University's Malaysia Campus (UNMC) close to Kuala Lumpur. In May 2007, this version of the degree completed the Royal Pharmaceutical Society of Great Britain (RPSGB - the previous accrediting body) process for the accreditation of MPharm degrees delivered in part outside the UK; the first students from this programme commenced the final two years of the degree in Nottingham in September 2007, graduating in 2009. The School undertook a root and branch review of the MPharm programme, to further integrate the science of pharmacy with clinical and professional practice. The last reaccreditation in April (Nottingham Campus) and May (UNMC) focussed on the new course, which was rolled out from September 2012. The reaccreditation was granted for a full six-year period (with an interim practice visit at three years) with no conditions or

recommendations; a successful interim visit took place in February 2015. Since the 2012 re-accreditation, the School built on the four-year curriculum and worked with external stakeholders to develop a five-year integrated programme, incorporating pre-registration training; this programme received full accreditation in 2017. On that occasion, it was agreed that all Nottingham MPharm degree programmes would be considered for reaccreditation at a single event. Accordingly, the present event considered the University's standard 4-year programme, including the 2+2 delivered in part in Malaysia and taking into account the 5-year integrated degree with the 2+3 route delivered in part in Malaysia; the event comprised two parts, the first being held at the University's UK campus and the second being held at UNMC.

Documentation

Prior to the event, the provider submitted documentation to the GPhC in line with the agreed timescales. The documentation was reviewed by the accreditation team and it was deemed to be satisfactory to provide a basis for discussion.

Pre-visit

In advance of the main visit, a pre-visit meeting took place by teleconference on 29 March 2018. The purpose of the pre-visit meeting was to prepare for the event, allow the GPhC and the University to ask any questions or seek clarification, and to finalise arrangements for the visit.

The event

The events began with private meetings of the accreditation team and GPhC representatives on 26 April 2018 at the Nottingham UK campus, and on 17 May 2018 on the University of Nottingham Malaysia campus (UNMC). The remainder of the events took place onsite at Nottingham UK campus on 26-27 April 2018, and on 17-18 May at UNMC and comprised a series of meetings with staff and students of the University and, at UNMC, included a tour of the University facilities.

Declarations of interest

Professor Langley was co-supervisor for the PhD of Dr Adam Turner, a member staff at the University of Nottingham. The team agreed that this did not constitute a conflict of interest.

Key findings

Standard 1: Patient and public safety

All criteria relating to this standard are met. (see Appendix 1 for criteria).

There are systems in place to ensure that students do not jeopardise patient safety; these include appropriate supervision and monitoring both in the University and while on placement, and allowing students only to do tasks for which they are competent, as well as having established mechanisms and procedures to deal with fitness to practise. The University's Fitness to Practise policy is supported by, and consistent with, the GPhC Standards for Pharmacy Professionals; students withdrawn from another professional programme on grounds of fitness to practise are not permitted to join the MPharm. Fitness to practise, along with the GPhC Standards for Pharmacy Professionals are introduced to students in the first two weeks of their studies; students sign annually to agree that they will abide by these standards, which are re-emphasised each year. Because of the large number of health professional courses on the UK campus, fitness to practise procedures operate across the whole University; the processes at UNMC are the same as in the UK, with the same reporting and escalation processes. Any concerns about a

student's fitness to practise are raised using a 'concerns form'; staff, placement providers and students have a duty to raise concerns about safety, attitudes and behaviour where these exist. For placements, the placement workbooks and handbooks, as well as teaching sessions, provide students with specific guidance about the expectations of them, including the types of activities in which they may be involved, illnesses and medical conditions that may put themselves or others at risk, meeting infection control requirements in hospitals, and the limitations on their activities during placements; similar guidance is also given to placement providers in the community and in hospitals. Information is provided to Pre-Registration Tutors for placements on the 5-year Integrated MPharm through the Professional (Pre-registration) Placements handbooks, and the training provided by the Pre-Registration Facilitators. Students are appropriately supervised throughout their studies, including while on placements, and only work within the limits of their competency when dealing with patients. During Professional (Pre-registration) Placements, students are supported in a safe, supervised learning environment by their Pre-Registration Tutors or other assigned deputies; these students work to an agreed pre-registration training plan and under a system of supervision, including direct observation, validated training, and standard operating procedures. Supervision issues are discussed with students and tutors during scheduled visits by Pre-Registration Facilitators. Towards the end of the second Professional (Pre-registration) Placement, students take on more responsibility and are encouraged to work under a system of 'indirect' supervision, for example, through following approved standard operating procedures and reporting back to the 'supervising' pharmacist, who countersigns any documentation and follows up any outstanding issues.

Standard 2: Monitoring, review and evaluation of initial education and training

All criteria relating to this standard are met.

There are systems in place to monitor, review and evaluate entry requirements, the quality of teaching, learning and assessment, and of placements and other practice learning opportunities, appraisal and feedback systems for students, and supervision requirements, as well as educational resources and capacity. Quality assurance of the MPharm programmes is undertaken through annual monitoring and through a periodic 'Educational, Enhancement and Assurance Review' process. Annual monitoring requires the School to submit a report on each of its programmes; this considers information from external examiners' reports, module reviews, student evaluation of modules and of teaching, feedback from students received via the undergraduate Learning Community Fora (LCFs), and the number of degrees awarded at different classifications. Modules are reviewed at the end of each semester by panels attended by the Year Heads, UK and UNMC Course Directors, the Director of Teaching and Learning, the School Examinations Officer and relevant School-based Student Services Centre staff; these panels make recommendations to the School's Teaching and Learning Committee. The Learning Community Fora (LCFs) in the UK and at UNMC provide an opportunity for student representatives to meet with key academic staff to address issues raised by their peers; there are also mini-LCFs allowing students of each year group to discuss matters with Year Heads on a monthly basis, so that action can be taken promptly. Further opportunities for students to provide feedback as a year group are offered through the Head of School workshops held each semester for each year group and attended by the Head of School, the Director of Teaching and Learning and relevant Year Head in Nottingham, or the Head of School and Programme Head at UNMC. There are also biannual MPharm Forum meetings that allow the School to share information with members of staff about upcoming developments, and obtain their feedback on how the programmes are running; these provide an opportunity for informal review of the MPharm programmes. Other student feedback on the programme comes from the final year National Student Survey (NSS) and from NSS-style course evaluation questionnaires for earlier years. The School organises an annual stakeholder event in Nottingham to which local pharmacists and MPharm students are invited. The Management Committee for the Professional (Pre-registration) Placements also provides an opportunity for stakeholder input to the development of the 5-year MPharm.

The School offers a range of placement opportunities on the MPharm which are provided in community,

hospital and other settings. The Nottingham School has a network of around 130 community pharmacies in the local area, around half of which are used in any one year. There are over 18 community pharmacies offering placements in Malaysia to first and second year students. The School has Service Level Contracts with three hospitals; these cover the provision of both teacher practitioners and placements. In Malaysia there are seven government hospitals and two private hospitals offering placements for the School. Inter-professional education placements with medical and nursing students and 'insight' placement providers are agreed by the Placements and Pre-Registration Manager with the relevant NHS Trust or provider contact each year. Feedback on placements is sought annually from students and placement providers via an online questionnaire. The feedback is reviewed by the Placements and Teacher Practitioner Strategy Group and any problems are followed-up by the Placements and Pre-Registration Manager. All new placement providers at the Malaysia Campus are contacted by the School to seek feedback; established providers contact the School only if they have any issues or concerns. The academics in charge of assessing placement workbooks review the placement provider feedback pages to identify whether providers noted any problems with individual students, which are then followed up. Feedback is sought annually from students about their placement experiences and is reviewed by the School placement team. Concerning the Professional (Pre-registration) Placements, before a new provider is engaged, the Placements and Pre-Registration Manager checks that there are no concerns about the setting; existing providers are also checked for negative feedback from students on that setting. Professional (Pre-registration) Placement providers are visited by the Placements and Pre-Registration Manager or one of the Pre-Registration Facilitators to conduct a quality assurance audit. These inspections confirm the suitability of the placement provider for delivering pre-registration training and supporting trainees. Training Placement Agreements, the contract used for the Professional (Pre-registration) Placements, are in place for four hospital providers and 12 community providers. The Professional (Pre-registration) Placements are quality assured using the Health Education East Midlands Quality Standards for Local Training and Education Providers. At the start of placement, and following the scheduled appraisals, Pre-Registration Facilitators undertake a visit to each provider and produce a progress report to the Pre-Registration Tutor and to students. At the end of each Professional (Pre-registration) Placement, Pre-Registration Tutors and students are asked for detailed feedback on their experience through an online survey; as the Professional (Pre-registration) Placements are also academic modules they are additionally evaluated by students as described earlier. The School ensures that Pre-Registration Tutors are competent to assess the performance of students by ensuring that they meet the GPhC minimum requirements and undertake appropriate training.

Standard 3: Equality, diversity and fairness

Both criteria relating to this standard are met.

Equality and diversity data are captured and considered as part of the annual monitoring of the programmes, as well as when students register, and in the annual release of equality and diversity data for the monitoring of Athena SWAN action plans. Data from the School's annual equality and diversity survey for MPharm students, and from suggestions obtained using an online form, or suggestion boxes placed in the School, are analysed by the School's Equality and Diversity Committee and any actions are documented in the Committee minutes, which are shared with all staff and students. Information on the gender, race and religion of all Malaysian applicants to the Malaysia Campus is collected and monitored by the Faculty Equality and Diversity Committee. The School holds an Athena Swan Bronze Award and is currently applying for a Silver Award; in 2014 the Faculty of Science at UNMC became the first international holder of an Athena Swan Award from the UK's Equality Challenge Unit. The School's strategy for equality and diversity training is led by the School's Equality and Diversity Committee. In Malaysia, the Faculty's Equality and Diversity Committee, which includes a School representative, leads on all aspects of strategy and training, and is key in monitoring equality and diversity in all aspects of Faculty operation, including the School of Pharmacy. As part of their induction programme, all staff members, teacher-practitioners and Pre-Registration Tutors are required to complete the University's online training packages in 'Diversity in Learning and Teaching', 'Unconscious Bias', and 'Equality and Diversity' in the Workplace, the last two courses also being taken by staff at UNMC; equality and

diversity is an agenda item for all committee meetings. Postgraduate students and external pharmacists who support laboratory and professional practice classes are provided with equality and diversity training as part of their training package. Equality and diversity issues are embedded in the curriculum beginning in the first week with a discussion of the principles when addressing the 'Standards for Pharmacy Professionals', which are considered along with discussions about working with and learning from others, and interacting and engaging with people in a diverse environment; the importance of recognising students and patients as people is emphasised, as well as viewing matters from the patient's perspective and treating patients according to their needs. The third year includes workshops relating to professional behaviour and addressing the importance of showing respect for different religions. Equality and diversity are embedded in case studies, as well as in the fourth year 'Pharmacy Leadership and Management' module, for example, in addressing religious issues and when considering people with disabilities additional to their health problems, such as patients with hearing difficulties. In the 'Pharmacy Leadership and Management' module, students encounter an increasingly ethnically diverse group of simulated patients. The student population is also very diverse; this is reflected in group work, in which students help each other and where Malaysian students talk about their culture. In year 4, issues of equality and diversity run throughout with the intention of integrating different views and cultures. In the 2016/17 academic year, lectures on 'implicit bias' were developed with the Department of Philosophy and these are now delivered by the School of Pharmacy staff; these lectures will be delivered at UNMC starting in the next academic year. In year 4 there are now workshops on the language of teams and the importance of understanding the impact of language. Students on both campuses are invited to International Women's Day events. For 2 + 2 students at UNMC, the Equality Act is covered in year 1; cultural and legislative aspects are addressed during their induction process on arrival in the UK, as well as in briefings before the transit. Conversely, exchange students from the UK receive an induction covering cultural differences; the incoming students from the UK benefit from being informed about these cultural differences and the different approach to equality and diversity issues in Malaysia, which they learn to respect.

Standard 4: Selection of students and trainees

All criteria relating to this standard are met.

All information about the entry requirements and about the MPharm programmes is available in the online prospectus entries for each programme and in the School undergraduate brochure. Additional information prior to application can be obtained by attending one of the University Open Days; these events include talks by staff and students, a hands-on laboratory practical exercise and a case study workshop. Entry requirements for admission to the standard 4-year programme are AAB at A-level, including chemistry and at least one other science subject; on the Malaysia campus the requirements are ABB, including chemistry and biology, as specified by the Malaysian Pharmacy Board, with UNMC having one of the highest entry requirements among Malaysian schools of pharmacy, on par with those of the University of Malaya. All applicants must also have GCSE B grades in English and mathematics, and for non-native English speakers, an IELTS score of 7.0. Unique to the Malaysia Campus is an internal Foundation in Science programme which allows direct entry onto the MPharm degree. Judgements are made on the academic standing of different qualifications, for example, in relation to the Foundation in Science programme and other international qualifications; the School works closely with the providers of the Foundation in Science programme to ensure the appropriate threshold standard of achievement; these require students to pass everything, with an average mark of 70% and at least 65% in chemistry. All applicants must also be successful in a multiple mini-interview (MMI), or equivalent interview process using Skype; this also applies for admission to the 2 +2 programme at UNMC, as well as to students admitted to this programme from the Foundation in Science course, in which an MMI equivalent is integrated into the programme. These MMIs, assess skills, competencies, values, communication and numeracy. Similar MMIs are used in the year 3 matching process for the allocation of students to the pre-registration training placements in the 5-year degree. The School operates a scheme whereby a small number of applicants predicted to achieve excellent A-level scores and who give an excellent performance in the MMI, may receive an unconditional offer. In addition to achieving the required

academic standards and being successful in the MMI, students must also undergo health and good character checks; DBS and occupational health checks are made, and overseas students must present a certificate of good character and conduct before the first placement. A similar procedure applies to students joining at UNMC; here, students complete a health questionnaire before admission and must self-certify and self-declare any health problems. The selectors scrutinise the questionnaires and flag up any concerns to the campus doctor; any problem cases are escalated to a higher level involving the Wellbeing Centre, with any health concerns being flagged up to the UK campus where necessary. Students on the 5-year integrated programme may be required to undertake further Occupational Health and criminal records checks prior to commencing their Professional (Pre-registration) Placement.

Standard 5: Curriculum delivery and student experience

All criteria relating to this standard are met.

The University currently offers three accredited MPharm courses, these being the standard 4-year MPharm, a 2 + 2 MPharm, with the first two years being taught at UNMC, and a 5-year MPharm in which pre-registration training is integrated within the undergraduate curriculum, so that successful graduates can enter the GPhC Registration Assessment immediately on completion of the programme. A fourth course was proposed which is a hybrid between the 2 + 2 and the 5-year integrated programmes; here, the first two years would be delivered at UNMC, with the final three years delivered in the UK in exactly the same way as the current 5-year integrated degree. The accreditation team agreed that this proposed '2 + 3' degree programme was simply a variation on the established programmes, and did not need to undergo a separate accreditation process. The structure of the first two and a half years of the MPharm is identical across all programmes, which commence with two modules designed to facilitate the transition of students into higher education. These modules are followed by a series of 'Drug, Medicine and Patient' (DMP) modules which deliver therapeutic topics integrating the seven vertical themes of the programme (pharmacology and therapeutics; biology and physiology; pharmaceuticals; chemistry; absorption, distribution, metabolism and elimination (ADME); clinical pharmacy and practice; professionalism and leadership); these DMP modules, which become progressively more complex in their clinical and scientific content, cover all the major therapeutic areas, beginning with a description by a patient of the symptoms and including two to three case studies. For all programmes, semester 2 of year 3 includes the research project; the major difference in year 3 for the 5-year and (2 + 3 integrated) programmes, is that semester 2 also includes preparation for the integrated pre-registration training, which comprises 'Professional (Pre-registration) Placements' that take place in semester 1 of year 4 and semester 2 of year 5. The final year of the standard 4-year and 2 + 2 programmes comprises five, fully-integrated modules of advanced studies in clinical pharmacy, practice and science, these modules being split across years 4 and 5 in the 5-year and 2 + 3 year integrated programmes, with some differences that accommodate the additional experience of those students. Each year of the programme includes a zero credit-rated 'Professional Competencies' module. With very minor variations, all aspects of the first two years of the programme, including the curriculum and assessments, are the same on both campuses.

The programmes incorporate placements, inter-professional education (IPE), and contact and interaction with patients throughout all years. Because of the differences in healthcare systems between Malaysia and the UK, there are extra aspects to the Malaysian placements to ensure that students appreciate the UK context; after moving to the UK, the 2 + 2 students' induction includes a two-day visit to a Boots pharmacy and a hospital visit to further orientate them to UK practice. IPE in the UK comprises small group teaching with students from medicine, nursing, midwifery, dietetics, veterinary medicine, physiotherapy, sports rehabilitation and social work. IPE in Malaysia covers the same areas as in the UK but currently is constrained by the limited range of healthcare students at UNMC. Throughout the programme, students work with both simulated and expert patients, where they practise their skills and receive feedback from the patients.

The School's assessment strategy is designed to ensure that students have met the learning outcomes specified in standard 10 at the appropriate level, to demonstrate that students are competent in areas

relating to professional practice, and to provide comprehensive feedback on their performance enabling students to improve, as well as ensuring that they develop appropriate self-assessment skills. Assessments include written examinations, online tests, coursework, objective, structured clinical examinations (OSCEs), and oral examinations. The pass/fail zero credit Professional Competency modules cover continual professional development (CPD), personal development plans (PDP), law and ethics, professional practice (dispensing), calculations, and, for the 4-year MPharm students, require the production of a portfolio of evidence demonstrating meeting each of the 58 GPhC learning outcomes; this portfolio is the subject of a final oral examination based on a selected number of these outcomes. Students on the 5-year-integrated programme meet frequently with their Pre-Registration Tutors during the Professional (Pre-registration) Placements to discuss progress, and build a portfolio of evidence to demonstrate how they meet the Performance Standards, with formal appraisals at weeks 13, 26 and 39. Once deemed competent, students on the 5-year integrated programme are assessed and signed off by their Pre-Registration Tutors against the GPhC Performance Standards, with the Pre-Registration Facilitators assuring the quality of these assessment decisions by sampling of evidence and direct observations of students in practice. To complete the Professional (Pre-registration) Placement modules, the students' portfolios of evidence are assessed summatively, with emphasis on the content and quality of evidence records, reflection on feedback, and the global competency score achieved in work-based assessments, to demonstrate how they have met the required Performance Standards. Students also complete an audit report or reflective essay, along with a summative online examination in the style of the GPhC Registration Assessment. Within the Professional Competency modules and the Professional (Pre-registration) Placements, students must demonstrate safe and effective practice. It is not possible to pass a competency if practice is deemed to jeopardise patient safety, or the required competency/standard has not been adequately demonstrated.

Standard 6: Support and development for students and trainees

The single criterion relating to this standard is met.

All students on both campuses are assigned to a personal tutor with whom they have scheduled, timetabled meetings each semester to address both academic and pastoral matters, with a specific agenda for each session, although students can have additional meetings at any time; the meetings are intended to see if the students are coping, or if they have any problems with their studies or with other matters such as accommodation. Tutors may either deal with matters themselves, or signpost the students to other services within the University, which include Welfare Officers, the Student Services Centre, the Wellbeing and Service Support Centre (in Malaysia), the Students' Union Student Advice Centre, the School Disability Liaison Officer and the University Careers and Employability Services. Tutors also provide feedback on examinations, scrutinise students' CPD/PDP, and discuss their plans for summer placements, checking their CVs where required. The tutors are themselves supported by a number of Senior Tutors. During their Professional (Pre-Registration) Placements, students are additionally supported by their Pre-Registration Tutors and the Pre-Registration Facilitators. Students from the UK who spend part of their studies at UNMC are allocated a tutor at UNMC in addition to their UK tutor. When transferring from UNMC to the UK, the 2 + 2 students are assigned to a UK tutor with the Malaysian students being spread across the existing tutorial groups. The UNMC students are well prepared for their transfer to the UK through talks from visiting students and staff from the UK about aspects such as finance and accommodation, and what life is like in the UK; information is also obtained from the many UK students who spend a semester or a whole year in Malaysia, and with whom the 2 + 2 students establish contacts and friendships, which also helps them to settle down once in the UK. They are also allocated a UK student buddy, and receive support from their seniors in the UK. On arrival, during the welcome week, there are culturally-sensitive social activities with the UK students, including a quiz, and teaching about English language. Exchange students from the UK who spend up to one year at UNMC similarly undergo induction on their arrival in Malaysia and are briefed on Malaysian culture, the pharmacy profession in Malaysia, and on practical aspects of living in that country.

Standard 7: Support and development for academic staff and pre-registration tutors

All criteria relating to this standard are met.

Personal support for staff is provided primarily by line managers within the PDPR process (see below). Considerable peer support is also provided through the divisions, module teams and vertical theme groups. If staff members require further support, they are encouraged to talk to the Head of Operations and/or the Head of School who can direct them to University resources such as the Occupational Health Service. All new staff members undergo induction. In addition to central University induction activities, the School provides its own induction programme, which starts with a checklist ensuring the availability, for example, of office space and IT equipment, and ensuring that induction meetings are arranged, as well as ensuring the provision of an induction booklet that includes key information. Inductions cover safety and IT systems, meetings with line managers and tours to meet other staff members. Further meetings are arranged with the Head of School and key staff members relevant to their role, including the Director of Teaching and Learning, with whom they discuss their teaching activities, talk through the programme, and identify further sources of support, which include Year Heads and Vertical Theme Leads. There is a similar induction for new staff members at UNMC; here, all new full-time academic staff members have the opportunity to spend time at the Nottingham Campus where they meet with the Head of School, Head of Operations, the Director of Teaching and Learning, and the Director of Research, as well as other key people in their research area. All new members of staff are appointed an experienced mentor when they join the School and all staff members can request a mentor at any time. Pre-registration Tutors are supported in their role by the Pre-registration Facilitators, and are required to attend various University training events, which are delivered by or through the School; these include an introduction to the 5-year MPharm and the Professional (Pre-registration) Placements, GPhC guidance on tutoring, tutor development resources, using the electronic portfolio to review and sign off evidence, the GPhC Performance Standards, the assessment tools, preparation for the appraisals and progress reviews, and equality and diversity. In addition to meeting GPhC requirements, the School asks new tutors to carry out a self-assessment against the competencies identified in the GPhC Tutor Development Resource.

The University's Personal Development and Performance Review (PDRP) is compulsory for all University employees on both campuses. In the end-of-year process, performance against previous goals is reviewed and goals are set for the forthcoming year; professorial staff are reviewed by the Head of School, with Heads of Division, or at UNMC, the Head and Deputy Head of School, conducting the reviews for all other academic staff. Goals agreed with reviewers must be relevant, for example, to a staff member's area of research, administrative roles, and teaching load. Following the review meeting, reviewers make recommendations to the School PDPR moderation panel concerning the extent to which their reviewees have met expectations around their goals. Interim PDPR meetings provide a valuable opportunity to review progress against goals, and provide career development support and planning. As Pre-Registration Tutors are employed by the relevant hospital or community pharmacy, their appraisals are conducted by the line manager in their employment setting. The teaching of all staff members is evaluated annually by students; additionally, staff members are required to undertake peer observation of teaching each year, where, paired with a colleague, they observe at least one session of each other's teaching. The scores of members of staff obtained through the student evaluation of their teaching are reviewed by the Pro-Vice Chancellor for Education and the Student Experience and the School's Director of Teaching and Learning.

Members of staff are encouraged and supported to take advantage of the wealth of personal and professional development opportunities offered by the Professional Development Department. Teaching and learning opportunities include the Postgraduate Certificate in Higher Education, which is compulsory for all new members of academic staff, and an extensive programme of short courses covering everything from academic writing to wellbeing. The School's study leave scheme now enables staff members to have a semester's break from teaching and administration to focus not only on research but also scholarship or continuing professional development.

Standard 8: Management of initial education and training

Both criteria relating to this standard are met.

The University of Nottingham uses a devolved management structure in which the School of Pharmacy has considerable autonomy. In the UK, the programme is delivered by the School of Pharmacy with, currently, a 30% contribution from the School of Life Sciences. At UNMC, the programme is delivered by the School of Pharmacy and the Department of Biomedical Science, with the latter delivering a similar proportion of the course to that delivered by the School of Life Sciences in the UK. UNMC staff participate in all the key School meetings by video-conference; these meetings include the School Management Committee, the Teaching and Learning Committee, and the MPharm Module Review Panel. In addition to these senior-level interactions between the two campuses, there are regular visits from UK staff to UNMC and from UNMC to the UK; as well as academic staff, these visits involve technical and administrative staff members and teacher-practitioners. All first and second year assessments and examinations are prepared jointly by the module teams in the UK and in Malaysia, with cross-campus moderation, and with examinations being taken simultaneously on both campuses wherever possible; members of the UNMC staff attend the Examination Board. Formal course management is through the Teaching and Learning Committee (TLC), chaired by the Director of Teaching and Learning who oversees all programmes; this committee includes the Directors of all undergraduate and postgraduate programmes, the Director of the 2 + 2 programme, the School of Life Sciences MPharm Programme Lead, the Director of Admissions, and the Examinations Officer, as well as students representing each of the programmes. The Director of the 4-year and 5-year MPharm programmes meet the four MPharm year Heads every two weeks. There are leads for each of the seven vertical MPharm themes who review the subject content once per year, interacting with the Year Heads and attending course meetings as appropriate. The School's Placements Team is responsible for the day-to-day management of all placements, liaising with placement providers, and for setting up agreements with new providers (with the Head of Operations). The Programme Director for the 5-year MPharm leads the development and operation of the Professional (Pre-registration) Placements. The 5-year MPharm Operations Group meets monthly to discuss planning and operational issues associated with the Professional (Pre-Registration) Placements; this group comprises the Placements and Pre-Registration Manager, the Programme Director for 5-year degree, Pre-Registration Facilitators, the Director of Teaching and Learning, the Head of Operations and the e-Learning and Assessment Manager. While the UK Head of School remains responsible for the delivery of the MPharm across both campuses, UNMC has its own management structure with a School Leadership Team comprising the Head of School (UNMC), the Deputy Head of School, who has specific responsibility for staff PDPR and workload on the Malaysia campus, the MPharm 2 + 2 Programme Director, who feeds into the Teaching and Learning Committee and liaises with the 4-year Programme Director, and Year Heads for each of years 1, 2 and 3 who liaise with their UK counterparts and the 2 + 2 Programme Director. The structure at UNMC is slightly different from that in the UK, with the UNMC School lying within the Faculty of Science, which is the financial unit, and the UNMC Head of School not having the same budgetary responsibility as the UK Head. At UNMC, the Year 3 Head provides induction and support for up to 50 exchange students from the UK, including around 15-20 who come over to undertake their research projects, the rest coming to spend either one semester or a whole year at UNMC. The year 3 Head is also to act as the liaison staff member for the proposed 2 + 3 programme. The School Leadership Team at UNMC receives reports from the School and Faculty level role holders, and feeds back to the MPharm teaching staff via School meetings and away days; it feeds into the UK-based School Management Committee and the Teaching and Learning Committee (TLC).

Standard 9: Resources and capacity

All criteria relating to this standard are met.

At the UK Nottingham Campus there is an annual planning cycle which results in an agreed budget for the following financial year. The School runs as a devolved business unit with considerable autonomy. The School budget is agreed with the Faculty Finance Manager and is approved as part of the Faculty of

Science's budget by the University's Executive Board. This includes student intake targets which are agreed in January each year (covering the next three years) by the University Executive Board. The Faculty Pro-Vice Chancellor is accountable to the University Executive Board for meeting the financial targets for the Faculty as a whole, which allows for flexibility across its seven schools. The School's pay and non-pay budgets remain similar year on year with increases for pay awards, inflation and pro-rata costs linked to student numbers. The School meets its annual budget requirements for sustainable operation. The Head of School and Head of Operations meet with the Faculty Finance Manager each month to review the budget and ensure sufficient resources are in place for the delivery of programmes. The School can apply for additional resources if required through schemes such as the Strategic Development Fund and Space Management Committee. At UNMC, budgets are held at a Faculty rather than school level. The Heads of School in Malaysia and Nottingham meet monthly via Skype to discuss strategic and operational matters, including financial planning. Historically, the percentage of the course delivered by the School of Life Sciences has been 30%; this is to reduce in stages to 25% reflecting the uplift in clinical content that is best delivered by staff within the School of Pharmacy. Accordingly, there has been a corresponding increase in the Professional Pharmacy Practice staff and a 50% increase in the number of teacher practitioners, four of whom are specialists in mental health. Recruitment of the appropriate numbers of overseas students remains a risk, but the business plan is predicated on these decreasing numbers. The decreasing student numbers over the next three years is, in part, due to external factors; these include the current withdrawal of Malaysian government scholarships for students attending private universities, a reduction in applications from overseas and EU students, probably as a result of visa restrictions and a perceived change in the UK culture following the Brexit referendum, and a reduction in home students applying for pharmacy programmes across the UK. For the 2 +2 programme, a decrease in student numbers has occurred, reflective of wider trends in Malaysian education. This reduction in MPharm numbers, which has stabilised, will be compensated by the introduction of new courses such as the BSc in International Pharmacy with the Tianjin University of Traditional Chinese Medicine and the MSci in Pharmaceutical Sciences with a Year in Industry. It is planned to progressively increase the intake on the 2 + 2 programme up to 40 per year by 2020/21, as well as recruiting up to 10 students per year on the proposed 2 +3 programme. UNMC is highly regarded by the Malaysian government, being rated 5* in the Rating System for Malaysian Higher Education (SETARA) in 2015 and 2017, benchmarking UNMC very well against the five Malaysian research-intensive universities, which may well result in the eventual restoration of some government scholarship provision. Student recruitment in Malaysia may also be facilitated by the future ability of UNMC to deliver pre-registration training for 4-year MPharm graduates returning to Malaysia; this is part of a programme of liberalisation of pre-registration training that, subject to Malaysian Pharmacy Board approval, allows part of a 2-year pre-registration training programme to be undertaken in a research-intensive university.

66 members of academic staff from the Schools of Pharmacy and Life Sciences are involved in teaching on the MPharm in Nottingham with occasional teaching delivered by guest lectures from the profession and industry and senior research staff. Of these 66 staff, 17 are UK/EU-registered pharmacists; Two staff members from the School of Life Sciences are medical doctors. In addition to the academic staff, the School funds two community and seven hospital teacher-practitioners, as well as one community pharmacy Research Practitioner. In 2017/18 the School appointed a teacher-practitioner from Rushcliffe Clinical Commissioning Group and four teacher-practitioners from Nottinghamshire Healthcare Trust, including a Chief Pharmacist; this brings the percentage of registered pharmacists on the staff to 39% based on head count. The School has four members of staff who act as Pre-Registration Facilitators during the Professional (pre-registration) Placements; all are registered with the GPhC and have extensive experience of supporting students during pre-registration training. At UNMC, 18 members of academic staff from the Schools of Pharmacy and Biomedical Sciences are involved in teaching on the MPharm. Of these, nine are UK and/or Malaysian registered pharmacists; one member of staff from Biomedical Sciences is a medical doctor. In addition to academic staff, the School in Malaysia has a bank of 16 pharmacy practice consultants (equivalent to teacher-practitioners), all of whom are MPharm degree holders and are UK and/or Malaysian registered pharmacists; they are employed on an 'as required' basis, and mainly help facilitate workshops and placement activities alongside a member of academic staff. There are extensive physical, library and IT resources and accommodation for teaching

and research on both campuses.

Standard 10: Outcomes

The team was satisfied that all 58 outcomes relating to Standard 10 are delivered at the appropriate level.

The team scrutinised the learning outcomes by discussions with the teaching staff in meetings both in the UK and at UNMC. The team selected eight outcomes for detailed discussion; these were 10.1.e (discussed both in the UK and at UNMC), 10.1.g, 10.2.2.h and 10.2.3.n (in the UK), and 10.1.h, 10.2.2.c, 10.2.3.g and 10.2.5.a (at UNMC). In these meetings, the team explored how the outcomes were delivered, how knowledge was integrated, and how the outcomes were assessed to show the appropriate level of achievement ('knows how', 'shows how' or 'does').

Having discussed the selected outcomes with the staff, and having scrutinised the documentation relating to these and to the other outcomes, the team was confident that all 58 outcomes (appendix 2) are met at the appropriate levels.

Indicative syllabus

The team was satisfied with the School's use of the Indicative Syllabus to inform its curriculum

The team agreed that the MPharm degree met the requirements of Directive 2005/36/EC of the European Parliament and of the Council on the recognition of professional qualifications for the initial education and training of pharmacists.

Appendix 1 - Standing conditions

The following are standing conditions of reaccreditation and apply to all providers:

1. The record and report include other comments from the team, and providers are required to take all comments into account as part of the accreditation process. The provider must confirm to the GPhC that required amendments have been made.
2. The provider must respond to the definitive version of the record and report within three months of receipt. The summary report, along with the provider's response, will be published on the GPhC's website for the duration of the accreditation period.
3. The provider must seek approval from the GPhC for any substantial change (or proposed change) which is, or has the potential to be, material to the delivery of an accredited course. This includes, but is not limited to:
 - a. the content, structure or delivery of the accredited programme;
 - b. ownership or management structure of the institution;
 - c. resources and/or funding;
 - d. student numbers and/or admissions policy;
 - e. any existing partnership, licensing or franchise agreement;
 - f. staff associated with the programme.
4. The provider must produce and submit to the GPhC on an annual basis:
 - a. requested data on student numbers and progression and degree awards;
 - b. requested information about the extent of human and physical resources it enjoys for the delivery and support of the degree course.
5. The provider must make students and potential students aware that successful completion of an accredited course is not a guarantee of a placement for a pre-registration year or of future employment as a pharmacist.
6. The provider must make students and potential students aware of the existence and website address where they can view the GPhC's accreditation reports and the timetable for future accreditations.
7. Whenever required to do so by the GPhC, providers must give such information and assistance as the GPhC may reasonably require in connection with the exercise of its functions. Any information in relation to fulfilment of these standing conditions must be provided in a proactive and timely manner.

Appendix 2 – Standards

GPhC standards for the initial education and training of pharmacists

NB. Information that is shaded grey or shown in grey italics is only applicable to providers offering a 5-year MPharm degree with intercalated periods of pre-registration training.

Standard 1: Patient and public safety

1. **There must be clear procedures to address concerns about patient safety arising from pharmacy education and training. Concerns must be addressed immediately.**
 - 1.1 There must be effective systems in place to ensure that students *and trainees*:
 - 1.1.a do not jeopardise patient safety;
 - 1.1.b only do tasks for which they are competent, sometimes under supervision;
 - 1.1.c are monitored and assessed to ensure they always practise safely. Causes for concern should be addressed immediately;

- 1.1.d have access to support for health, conduct and academic issues;
- 1.1.e must not be awarded an accredited degree *or pass pre-registration training* if they might pose a risk to patients or the public;
- 1.1.f understand what is and what is not professional behaviour and are familiar with the GPhC's *standards for pharmacy professionals (2017)*;
- 1.1.g understand what fitness to practise mechanisms apply to them. All schools of pharmacy must have fitness to practise procedures to deal with student causes for concern;
- 1.1.h undergo required health and good character checks;
- 1.1.i understand that it is an offence to impersonate a pharmacist. Pharmacists are registrants of the GPhC.

Standard 2: Monitoring, review and evaluation of initial education and training

2. The quality of pharmacy education and training must be monitored, reviewed and evaluated in a systematic and developmental way.

- 2.1 There must be systems and policies in place covering:
 - 2.1.a information about roles and responsibilities and lines of accountability;
 - 2.1.b university information on:
 - 2.1.b.i entry requirements;
 - 2.1.b.ii the quality of teaching, learning and assessment;
 - 2.1.b.iii the quality of placements and other practice learning opportunities;
 - 2.1.b.iv appraisal and feedback systems for students *and trainees*;
 - 2.1.b.v supervision requirements;
 - 2.1.b.vi educational resources and capacity;

These must be monitored, reviewed and evaluated systematically. When an issue is identified it must be documented and dealt with promptly.

 - 2.1.c *pre-registration tutors evaluating trainees. To do this, tutors must have access to reliable evidence about a trainee's performance. Tutors must be competent to assess the performance of trainees;*
 - 2.1.d *the quality and development of pre-registration tutors*

Standard 3: Equality, diversity and fairness

3. Initial pharmacy education and training must be based on principles of equality, diversity and fairness. It must meet the requirements of all relevant legislation.

- 3.1 Systems and policies for capturing equality and diversity data. Concerns should be documented, addressed and disseminated;
- 3.2 Strategies for staff training in equality and diversity

Standard 4: Selection of students *and trainees*

4. Selection processes must be open, fair and comply with relevant legislation. Processes must ensure students *and trainees* are fit to practise at the point of selection. Selection includes recruitment and admissions.

- 4.1 Selection process must give applicants the information they need to make an informed application.
- 4.2 Selection criteria must be explicit. They should include:
 - 4.2.a meeting academic and professional entry requirements;
 - 4.2.b meeting English language requirements appropriate to MPharm degree study.

Guidelines issued by English language testing bodies should be followed to ensure that admissions language requirements are appropriate;

- 4.2.c meeting numeracy requirements;
 - 4.2.d taking account of good character checks, such as Criminal Records Bureau (CRB)/Disclosure Scotland checks;
 - 4.2.e passing health checks (subject to reasonable adjustments being made). Health checks could include self-evaluations and/or evaluations by healthcare professionals;
 - 4.2.f recognising prior learning, where that is appropriate.
- 4.3 Selectors should apply selection criteria fairly. They should be trained to do this. Training should include equality and diversity matters

Standard 5: Curriculum delivery and the student experience

5. The curriculum for MPharm degrees *and the pre-registration scheme* must deliver the outcomes in Standard 10. Most importantly, curricula must ensure students *and trainees* practise safely and effectively. To ensure this, pass criteria must describe safe and effective practice.

- 5.1 Curricula must be integrated.
- 5.2 Curricula must be progressive, dealing with issues in an increasing more complex way until the right level of understanding is reached.
- 5.3 An MPharm must be delivered in an environment which places study in a professional and academic context and requires students to conduct themselves professionally. *Pre-registration training must be delivered in a professional environment which requires trainees to conduct themselves professionally.*
- 5.4 An MPharm must be delivered in an environment informed by research. This means that whether or not all staff are engaged in research, their teaching must be informed by research.
- 5.5 An MPharm degree teaching and learning strategy must set out how students will achieve the outcomes in Standard 10. Learning opportunities must be structured to provide:
 - 5.5.a an integrated experience of relevant science and pharmacy practice;
 - 5.5.b a balance of theory and practice;
 - 5.5.c independent learning skills.
- 5.6 The MPharm degree curriculum must include practical experience of working with patients, carers and other healthcare professionals. Practical experience should increase year on year.
- 5.7 There must be a clear assessment strategy for the MPharm degree. Assessment methods must measure the outcomes in Standard 10.
- 5.8 The MPharm degree assessment strategy should include:
 - 5.8.a diagnostic assessments;
 - 5.8.b formative assessments;
 - 5.8.c summative assessments;
 - 5.8.d timely feedback.
- 5.9 Academic regulations must be appropriate for a degree that is both academic and professional and may lead to further professional training. As a general principle, all assessments must be passed. This means that condonation, compensation, trailing, extended re-sit opportunities and other remedial measures should be extremely limited, if they are permitted at all. MPharm degree academic regulations may be more stringent than university norms. This may include higher than usual pass marks for assessments demonstrating knowledge and skills essential to safe and effective pharmacy practice.
- 5.10 Marking criteria must be used for all assessments and all pass criteria must reflect safe and effective practice.
- 5.11 Patient safety must be paramount in assessments: any evidence of an assessment demonstrating unsafe practise must result in failure.

- 5.12** *A pre-registration training plan must describe how the learning outcomes for pre-registration will be delivered.*
- 5.13** *A pre-registration training plan must describe all assessments, including tutor evaluations and tutor sign-offs.*

Standard 6: Support and development for students *and* trainees

- 6. Students *and* trainees must be supported to develop as learners and professionals during their initial education and training.**
- 6.1** A range of mechanisms must be in place to support students *and* trainees to develop as learners and professionals.

Standard 7: Support and development for academic staff *and* pre-registration tutors

- 7. Anyone delivering initial education and training should be supported to develop in their professional roles.**
- 7.1.** There must be a range of mechanisms in place to support anyone delivering initial education and training to develop in their role.
- 7.2.** Induction programmes are provided for and university staff as appropriate. This should include induction programmes for non-pharmacists working on MPharm degrees.
- 7.3.** Everyone involved in delivering the curriculum should have:
- 7.3.a** effective supervision;
 - 7.3.b** an appropriate and realistic workload;
 - 7.3.c** effective personal support;
 - 7.3.d** mentoring;
 - 7.3.e** time to learn;
 - 7.3.f** continuing professional development opportunities.
- 7.4.** *Tutors should have an identified source of peer support.*

Standard 8: Management of initial education and training

- 8. Initial pharmacist education and training must be planned and maintained through transparent processes which must show who is responsible for what at each stage.**
- 8.1.** All education and training will be supported by a defined management plan with:
- 8.1.a** a schedule of responsibilities
 - 8.1.b** defined structures and processes to manage the delivery of education and training

Standard 9: Resources and capacity

- 9. Resources and capacity are sufficient to deliver outcomes.**
- 9.1** There must be:
- 9.1.a** robust and transparent mechanisms for securing an appropriate level of resource for delivering an accreditable MPharm degree;
 - 9.1.b** sufficient staff from relevant disciplines to deliver the curriculum to students *and* trainees. Staff must be appropriately qualified and experienced. The staffing profile must include:
 - 9.1.b.i** sufficient numbers of pharmacists – registrants of the GPhC – with experience of teaching in higher education to ensure that an MPharm

- degree can produce students equipped to enter pharmacist pre-registration training in Great Britain.
- 9.1.b.ii** sufficient numbers of pharmacists to act as tutors and professional mentors at university *and in pre-registration*. Not all personal tutors must be pharmacists.
 - 9.1.b.iii** pharmacists who are leaders in the profession and in their university, who can influence university policy relevant to pharmacy
 - 9.1.b.iv** non-pharmacist academics who can influence school and university policy relevant to pharmacy
 - 9.1.b.v** staff who are sufficiently experienced to supervise research. It would be unusual for anyone to supervise research at a particular level unless they had researched to that level or beyond. New research supervisors must be mentored and signed off as being fit to supervise after a period of mentoring
 - 9.1.b.vi** science academics who understand the relevance of their discipline to pharmacy and deliver their area of expertise in a pharmaceutical context
 - 9.1.b.vii** academic pharmacists and other experienced MPharm degree staff who are able to act as mentors to non-pharmacist colleagues
- 9.1.c** *pre-registration tutors who meet the GPhC's standards for pre-registration tutors;*
 - 9.1.d** career pathways in universities for all staff teaching on MPharm degrees, including pathways for practice staff
 - 9.1.e** clear lines of authority and responsibility for the strategic organisation and day-to-day management of placements
 - 9.1.f** training and ongoing support for all non-pharmacists involved in the delivery of MPharm degrees which must help them understand:
 - 9.1.f.i** help and understand the relevance of their work to pharmacy
 - 9.1.f.ii** how to deliver their area of expertise in a pharmaceutical context
 - 9.1.g** appropriate learning resources
 - 9.1.h** accommodation and learning resources that are fit for purpose
 - 9.1.i** *pre-registration premises which meet the GPhC's standards for pre-registration premises*

Standard 10: Outcomes

10.1 Expectations of a pharmacy professional

Learning outcome	MPharm	Pre-reg
10.1.a Recognise ethical dilemmas & respond in accordance with relevant codes of conduct and behaviour	Shows how	<i>Does</i>
10.1.b Recognise the duty to take action if a colleague's health, performance or conduct is putting patients or public at risk	Knows how	<i>Knows how</i>
10.1.c Recognise personal health needs, consult and follow the advice of a suitably qualified professional, and protect patients or public from any risk posed by personal health	Does	<i>Does</i>
10.1.d Apply the principles of clinical governance in practice	Knows how	<i>Does</i>
10.1.e Demonstrate how the science of pharmacy is applied in the design and development of medicines and devices	Shows how	<i>Knows how</i>
10.1.f Contribute to the education and training of other members of the team, including peer review and assessment	Shows how	<i>Does</i>
10.1.g Contribute to the development of other members of the team through coaching and feedback	Knows how	<i>Shows how</i>
10.1.h Engage in multidisciplinary team working	Knows how	<i>Does</i>

10.1.i	Respond appropriately to medical emergencies, including provision of first aid	Knows how	<i>Shows how</i>
---------------	--	------------------	------------------

10.2 The skills required in practice

10.2.1 Implementing health policy

Learning outcome	MPharm	Pre-reg
10.2.1.a Promote healthy lifestyles by facilitating access to and understanding of health promotion information	Shows how	<i>Does</i>
10.2.1.b Access & critically evaluate evidence to support safe, rational & cost effective use of medicines	Shows how	<i>Knows how</i>
10.2.1.c Use the evidence base to review current practice	Shows how	<i>Does</i>
10.2.1.d Apply knowledge of current pharmacy-related policy to improve health outcomes	Knows how	<i>Shows how</i>
10.2.1.e Collaborate with patients, the public and other healthcare professionals to improve patient outcomes	Knows how	<i>Shows how</i>
10.2.1.f Play an active role with public and professional groups to promote improved health outcomes	Knows how	<i>Knows how</i>
10.2.1.g Contribute to research & development activities to improve health outcomes	Knows how	<i>Knows how</i>
10.2.1.h Provide evidence- based medicines information	Shows how	<i>Does</i>

10.2.2 Validating therapeutic approaches and supplies prescribed and over-the-counter medicines

Learning outcome	MPharm	Pre-reg
10.2.2.a Identify and employ the appropriate diagnostic or physiological testing techniques in order to promote health	Knows how	<i>Shows how</i>
10.2.2.b Identify inappropriate health behaviours and recommend suitable approaches to interventions	Shows how	<i>Does</i>
10.2.2.c Instruct patients in the safe and effective use of their medicines and devices	Shows how	<i>Does</i>
10.2.2.d Analyse prescriptions for validity and clarity	Shows how	<i>Does</i>
10.2.2.e Clinically evaluate the appropriateness of prescribed medicines	Shows how	<i>Does</i>
10.2.2.f Provide, monitor and modify prescribed treatment to maximise health outcomes	Shows how	<i>Does</i>
10.2.2.g Communicate with patients about their prescribed treatment	Shows how	<i>Does</i>
10.2.2.h Optimise treatment for individual patient needs in collaboration with the prescriber	Shows how	<i>Does</i>
10.2.2.i Record, maintain and store patient data	Shows how	<i>Does</i>
10.2.2.j Supply medicines safely and efficiently, consistently within legal requirements and best professional practice. NB This should be demonstrated in relation to both human and veterinary medicines.	Shows how	<i>Does</i>

10.2.3 Ensuring safe and effective systems are in place to manage risk inherent in the practice of pharmacy and the delivery of pharmaceutical services

Learning outcome	MPharm	Pre-reg
-------------------------	---------------	----------------

10.2.3.a	Ensure quality of ingredients to produce medicines and products	Knows how	<i>Shows how</i>
10.2.3.b	Apply pharmaceutical principles to the formulation, preparation and packaging of products	Shows how	<i>Shows how</i>
10.2.3.c	Verify safety and accuracy utilising pharmaceutical calculations	Does	<i>Does</i>
10.2.3.d	Develop quality management systems including maintaining appropriate records	Shows how	<i>Shows how</i>
10.2.3.e	Manage and maintain quality management systems including maintaining appropriate records	Shows how	<i>Does</i>
10.2.3.f	Procure and store medicines and other pharmaceutical products working within a quality assurance framework	Knows how	<i>Does</i>
10.2.3.g	Distribute medicines safely, legally and effectively	Knows how	<i>Does</i>
10.2.3.h	Dispose of medicines safely, legally and effectively	Knows how	<i>Does</i>
10.2.3.i	Manage resources in order to ensure work flow and minimise risk in the workplace	Knows how	<i>Shows how</i>
10.2.3.j	Take personal responsibility for health and safety	Does	<i>Does</i>
10.2.3.k	Work effectively within teams to ensure safe and effective systems are being followed	Knows how	<i>Does</i>
10.2.3.l	Ensure the application of appropriate infection control measures	Shows how	<i>Does</i>
10.2.3.m	Supervise others involved in service delivery	Knows how	<i>Does</i>
10.2.3.n	Identify, report and prevent errors and unsafe practice	Shows how	<i>Does</i>
10.2.3.o	Procure, store and dispense and supply veterinary medicines safely and legally	Knows how	<i>Knows how</i>

10.2.4 Working with patients and the public

Learning outcome	MPharm	Pre-reg	
10.2.4.a	Establish and maintain patient relationships while identifying patients' desired health outcomes and priorities	Shows how	<i>Does</i>
10.2.4.b	Obtain and record relevant patient medical, social and family history	Shows how	<i>Does</i>
10.2.4.c	Identify and employ the appropriate diagnostic or physiological testing techniques to inform clinical decision making	Knows how	<i>Shows how</i>
10.2.4.d	Communicate information about available options in a way which promotes understanding	Shows how	<i>Does</i>
10.2.4.e	Support the patient in choosing an option by listening and responding to their concerns and respecting their decisions	Shows how	<i>Does</i>
10.2.4.f	Conclude consultation to ensure a satisfactory outcome	Shows how	<i>Does</i>
10.2.4.g	Maintain accurate and comprehensive consultation records	Shows Does	<i>Does</i>
10.2.4.h	Provide accurate written or oral information appropriate to the needs of patients, the public or other healthcare professionals	Shows how	<i>Does</i>

10.2.5 Maintaining and improving professional performance

Learning outcome	MPharm	Pre-reg	
10.2.5.a	Demonstrate the characteristics of a prospective professional pharmacist as set out in relevant codes of conduct and behaviour	Does	<i>Does</i>
10.2.5.b	Reflect on personal and professional approaches to practice	Does	<i>Does</i>

10.2.5.c Create and implement a personal development plan	Does	<i>Does</i>
10.2.5.d Review and reflect on evidence to monitor performance and revise professional development plan	Does	<i>Does</i>
10.2.5.e Participate in audit and in implementing recommendations	Knows how	<i>Shows how</i>
10.2.5.f Contribute to identifying learning and development needs of team members	Knows how	<i>Does</i>
10.2.5.g Contribute to the development and support of individuals and teams	Knows how	<i>Does</i>
10.2.5.h Anticipate and lead change	Knows how	<i>Shows how</i>

Appendix 3 – Indicative syllabus

It is expected that education providers will use the indicative syllabus to develop a detailed programme of study which will enable pharmacists to meet the learning outcomes.

A1.1 How medicines work

Therapeutics

- Routes of administration
- New therapeutic advances
- Infection control
- Complementary therapies
- Clinical therapeutic uses of drugs

Applied Physical, Chemical and Biological sciences

- Sources and purification of medicinal substances
- Physicochemical characteristics of drugs and biological systems
- Thermodynamics and chemical kinetics
- (Bio)Analytical principles and methods
- Drug design and discovery
- Cell and molecular biology
- Biochemistry
- Genetics
- Microbiology
- Immunology
- Pharmaceutical chemistry
- Drug identification
- Drug synthesis

Pharmacology, pharmacokinetics & pharmacodynamics

- Contraindications, adverse reactions and drug interactions
- ADME
- Prediction of drug properties
- Pharmacogenetics and pharmacogenomics
- Drug and substance misuse
- Clinical toxicology and drug-over-exposure
- Molecular basis of drug action
- Metabolism

Pharmaceutical technology including manufacturing & engineering science

- Biotechnology
- Manufacturing methods
- Quality assurance processes
- Sterilisation and asepsis
- Environmental control in manufacturing

Formulation and material science

- Materials used in formulations and devices
- Biopharmaceutics, developmental pharmaceuticals, pre-formulation and formulation studies
- Design and standardization of medicines
- Microbiological contamination
- Contamination control
- Product stability
- Medical devices

A1.2 How people work

Normal & abnormal structure & function

- Nutrition
- Physiology
- Pathology
- Infective processes

Sociology

- Social and behavioural science

Health psychology

- Health promotion
- Disease prevention
- Behavioural medicine

Objective diagnosis

- Differential diagnosis
- Symptom recognition
- Diagnostic tests

Epidemiology

- Aetiology and epidemiology of (major) diseases

A1.3 How systems work

Healthcare management

- Public health
- Organisations: NHS, DH, govt priorities
- Other professionals
- Health care systems

Evidence-based practice

- Health information systems/ resources
- Health policy and (pharmaco)economics

Professional regulation

- Legislation

- Professional ethics and fitness to practise
- Sale and supply of medicines
- CPD
- Political and legal framework

Medicines regulation

- Evaluation and regulation of new drugs and medicines
- Pharmacopoeial specifications and biological standards
- Medicines licensing
- Product quality, safety and efficacy
- The supply chain
- Packaging, labelling and patient information

Clinical governance

- SOPs
- Research methodology / research ethics
- Risk & quality management
- Good manufacturing/dispensing practice
- Good clinical practice
- Health policy, clinical and science research methods

Clinical management

- Disease management
- Chronic medicines management
- Medicines use review
- Care planning

Workplace Regulation

- Health & Safety
- Sexual boundaries
- Independent Safeguarding Authority
- Data protection
- FOIA
- Consumer protection incl. complaints procedures

A1.4 Core and transferable skills

Professionalism

Research and research methods

Critical appraisal

- Audit and learning from errors

Problem solving

- Study skills
- Team-working skills

Clinical decision making

- Leadership skills

Accurate record keeping

Reflective practice (incl. continuing professional development)

Effective communication

- Interpersonal skills
- Medical terminology

Interpret & interrogate clinical data

Analyse & use numerical data

Pharmaceutical numeracy

Technological literacy

A1.5 Attitudes and values

See the GPhC *Code of Conduct for pharmacy students (2010)* and *Standards of conduct, ethics and performance (2010)*