

# Reaccreditation of a Master of Pharmacy degree course (MPharm)

## Liverpool John Moores University

Report of a reaccreditation event, 26 - 27 March 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*. 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.

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'.

### Background

The MPharm degree of Liverpool John Moores University was previously accredited by the Royal Pharmaceutical Society of Great Britain (RPSGB) on 24-25 November 2009 to the then RPSGB Standards. The accreditation team agreed to recommend to the Registrar of the RPSGB that the MPharm degree be accredited for a further period of 5 years subject to one condition and two recommendations. The condition was that the LJMU School of Pharmacy reviews its research methods provision to ensure it meets the requirements of accreditation criterion 21 - that students can apply appropriate research approaches and methods to manage scientific and practice problems. The recommendations were that 1) discussions with the University of Liverpool's medical school and with others concerning the provision of Inter Professional Education are developed into a firm project plan with milestones and deliverables; and 2) the School should reconsider its approach to industrial pharmacy. The latter recommendation included the need to consider whether work in this area is core or optional and the introduction of an integrated approach to this sector of pharmacy practice.

## Documentation

The provider submitted submission documentation to the GPhC in line with agreed timescales and a pre-visit took place at the University on 23 February 2015. During the pre-visit the schedule of meetings and timings for the reaccreditation event were confirmed.

## The event

The event began with a private meeting of the accreditation team and GPhC representatives on 25 March 2015. The remainder of the event took place on site at the University on 26-27 March 2015, and comprised a series of meetings with staff and students of the University and included a tour of the University facilities.

## Accreditation team

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

Name	Designation at the time of accreditation event
Professor Terry Healey*	Accreditation team leader, Emeritus Professor of Pharmacy, Robert Gordon University
Professor Larry Gifford	Accreditation team member (Academic), Emeritus Professor, Keele University School of Pharmacy
Professor Chris Langley	Accreditation team member (Academic), Professor of Pharmacy Law and Practice, and Deputy Head of School of Pharmacy, Aston University
Mrs Sandra Hall	Accreditation team member (Academic), Head of Pharmacy Practice, Leicester School of Pharmacy, De Montfort University
Dr Adam Todd	Accreditation team member (Academic), MPharm Programme Director, Durham University
Mrs Gail Fleming	Accreditation team member (Pharmacist), Head of Pharmacy, Health Education Kent, Surrey, Sussex
Mr Shazad Ahmad	Accreditation team member (Pharmacist – recently registered), Pharmacy Manager, Lloyds Pharmacy
Ms Leonie Milliner**	Accreditation team member (Lay), Chief Executive, Nutrition Council

along with:

Name	Designation at the time of visit
Mr Damian Day *	Head of Education, General Pharmaceutical Council
Dr Ian Glendenning Marshall	Rapporteur, Caldarvan Research (Educational and Writing Services)

\*attended pre-visit meeting on 23 February 2015

\*\* was unable to attend but submitted comments and questions

## Declaration of potential conflicts of interest

No potential conflicts of interest were declared

The team also met a group of 28 students comprising 8 from Year 1, 7 from Year 2, 8 from Year 3, and 3 from Year 4, plus a new registrant and a pre-registration trainee.

## Meeting the accreditation standards

<b>Accreditation team's commentary</b>	
<b>Standard 1 – Patient and public safety</b>  There must be clear procedures to address concerns about patient safety arising from initial pharmacy education and training. Concerns must be addressed immediately.	<b>The team was satisfied that the one criterion to meet this standard will be met</b>  The fundamental principle of managing risk and patient safety is reflected in the philosophy of the LJMU 2015 programme, i.e. the provision of a programme that enables students to develop the professional knowledge, attitude, skills and expertise to become safe, effective, confident, creative and patient-centred future pharmacists who are adept at utilising and developing evidence-based practice. Policies and procedures are in place to ensure students are supported, empowered and able to identify and manage risk and, engage in safe practice in all aspects of the MPharm programme. All MPharm off-campus teaching (placements, simulations and interprofessional learning) are covered by a Code of Practice for Placement to ensure that the University meets its responsibilities with regard to safeguarding the student experience as well as their safety and well-being. Students will be supervised during practical laboratory sessions and at placements (by University-employed hospital teacher-practitioners or by the Responsible Pharmacist at community placements) to ensure that they do not compromise patient safety. Students will be monitored during dispensing activities to ensure they develop safe practice and professional responsibility. Fitness to Practise procedures ensure that students who are deemed unfit to progress are identified and dealt with appropriately and in a timely manner. The decision of the Fitness to Practise Panel overrides those of the University's Progression Boards, preventing students graduating with an accredited degree. Students who demonstrate unsafe practice that poses a risk to patient or public safety will fail the assessment. Potential fitness to practise issues are filtered by an administrator and are then referred to the Lead Pharmacist who may refer the case to a fitness to practise panel which could have the Lead Pharmacist as the chair. It was explained that previously, the chair of a fitness to practise panel had been the former Director of School, a pharmacist, and that the need for such a panel had not arisen since the present Director of School had been in post. As a result, the team found it difficult to discern the level of separation between those involved at different stages of any fitness to practise proceedings. The team questioned the advisability of fitness to practise panels containing a student as a panel member and was told that this would likely be a Students Union representative to support the student, or potentially the student's personal tutor. The team detected a level of uncertainty about support for a student called before a fitness to practise panel; on one hand it was stated that the student would be

	<p>allowed to bring a friend for support, but that a lawyer/advocate would not be allowed. As a result of the above explanations, there will be two <b>recommendations</b> associated with this re-accreditation. <b>Firstly</b>, that the University revisit its student fitness to practise policy to ensure that there is full separation between the referral/investigation stage of the fitness to practise process and the hearings stage. This is to ensure that the requirements of the GPhC's <i>Guidance on student fitness to practise in schools of pharmacy</i>, which underpins Standard 1.1.g of <i>Future Pharmacists</i>, have been fully implemented. Specifically, '5.23 Schools must make sure that their proceedings are fair and transparent. Among other things, they must: make sure the panel is unbiased and there are no perceived conflicts of interest between the initial investigator(s), panellists and the student'. <b>Secondly</b>, that the University develop a clear policy on who can support and/or represent students in hearings, in case the University is ever challenged about this. This relates to '5.24 Schools must allow students to be represented at fitness to practise hearings or to have a supporter present' in the GPhC's <i>Guidance on student fitness to practise in schools of pharmacy</i>.</p>
<p><b>Standard 2 – Monitoring, review and evaluation of initial education and training</b></p> <p>The quality of pharmacy education and training must be monitored, reviewed and evaluated in a systematic way.</p>	<p><b>The team was satisfied that the one criterion to meet this standard was met</b></p> <p>The School of Pharmacy and Biomolecular Sciences (PBS) is led by the Director, who is supported by five subject group leaders. The School Management Team advises the Director on School policy, policy matters and resource allocation. SMT instructs and receives reports from other School committees. The Lead Pharmacist has a professional leadership role and is responsible for leading the academic and professional development of pharmacy within the School. The MPharm Programme Leader is responsible to the Lead Pharmacist for the academic management and development of the programme with a primary function to ensure the academic coherence of the programme in terms of quality monitoring and reviewing the effectiveness of delivery and assessment. All placements and simulations are supported by academic staff, teacher-practitioners, placement co-ordinators and a placement administrator. The placement co-ordinators liaise with providers to secure appropriate placements for students and also maintain a record of placement providers and provider sites and supports all aspects of the placement co-ordination and evaluation. The key points in the placement process are suitability of the placement sites, ensuring the health and safety of each student whilst on placement, assessment of the student, obtaining feedback on the placement process from both student and provider. Each provider ensures that there is a responsible pharmacist present throughout the placement period. The team heard from students that they may opt to arrange their own community pharmacy placement instead of the placement allocated by the School. The team was assured that the quality assurance processes applying to a student-selected placement would be identical to that for the School-allocated placement. Nevertheless, the team noted that the LJMU Placement Learning Code did not contain recommendations relating to potential conflicts of interest, particularly between students and their chosen placement location; LJMU may wish to reflect on this.</p>
<p><b>Standard 3 – Equality, diversity and opportunity</b></p>	<p><b>The team was satisfied that the two criteria to meet this standard were met</b></p>

<p>Initial pharmacy education and training must be based on principles of equality, diversity and fairness. It must meet the requirements of all relevant legislation.</p>	<p>The University expects the contributions made by staff and students in terms of quality of experience brought to learning, teaching, support services, research, consultancy, enterprise, widening participation, administration and management to be made with due regard to equitable treatment regardless of age, disability (physical or mental), gender, gender reassignment, race, religion or belief, sexual orientation, marriage and civil partnership, and pregnancy and maternity or other relevant distinction. At the School level all line managers, as part of their managerial responsibilities, have a professional as well as legal obligation to eliminate bullying or harassment of which they are, or should be, aware; the School DisCo provides updates to policy and processes at staff meetings as necessary; all new members of staff are required to contact the DisCo as part of their induction process. At the individual level, members of staff are required to complete <i>Diversity in the Workplace</i> an e-learning module each year. Evidence of meeting this mandatory requirement is reviewed at each annual Personal Development and Performance Review (PDPR) and completion is tracked at Faculty level.</p>
<p><b>Standard 4 – Selection of students and trainees</b></p> <p>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.</p>	<p><b>The team was satisfied that the three criteria to meet this standard will be met</b></p> <p>A prospectus of courses is available the University admissions webpage, and the application process for the MPharm programme is described on the University and School of Pharmacy and Biomolecular Sciences webpages, including the programme entrance criteria, fitness to practise requirements and the application process including the interview and aptitude test. The entrance requirements include a minimum of 3 A-Levels, with A2 Chemistry and minimum AS Biology. All applicants are advised to study at least 2 sciences at A2. UK applicants must have GSCE at Grade C or above in English and Maths, and international students are required have IELTS 7.0 with a minimum of 6.5 in all components. All offers are subject to satisfactory interview, aptitude test and fitness to practise requirements. The team was told that group interviews are held with 2 staff members and around 8 applicants. The interviewers are looking for preparation having taken place and attitudes, the latter partly based on values-based issues, e.g. if the applicant has undertaken charity or voluntary work. The team was told that overseas entrants, like their home counterparts, are required to undergo a DBS check early in the programme but was also told that there are no additional checks sought on their character from their country of origin. Although accepting that in the cases of refugees and asylum seekers such evidence is difficult/impossible to obtain, the team agreed that the School should do more to assure themselves of the good character of overseas entrants to the programme. Accordingly, it will be a <b>recommendation</b> of re-accreditation that the School revisit its procedures in relation to non-UK applicants to ensure that all reasonable steps are taken to obtain relevant good character documents. This recommendation has been made (1) in the interests of patient safety and (2) because many countries can provide relevant documentation on request.</p>
<p><b>Standard 5 – Curriculum delivery</b></p> <p>The curriculum for MPharm degrees and the pre-registration scheme must deliver the outcomes in Standard 10.</p>	<p><b>The team was satisfied that the eleven criterion to meet this standard will be met</b></p> <p>The proposed MPharm programme comprises four 120-credit year-long modules namely: Level 4 (Year 1) Integrated Foundations of Pharmacy, Level 5 (Year 2) Medicines, Patients and the Pharmacist, Level 6 (Year 6) Complexities of Healthcare, Level 7 (Year 4) Advancing Patient-Centred Care. The transition from the existing MPharm to the proposed</p>

<p>Most importantly, curricula must ensure students and trainees practice safely and effectively.</p>	<p>degree would be effected on a year-to-year basis. The team was told that the philosophy is to provide a programme with patient safety as its priority while developing students' confidence, competence and professionalism. It was explained that the programme design includes an increase in the degree of integration as the course progresses; the level of integration moves from complementary in Semester 1 of Year 1 (basic science and practice) to multidisciplinary in semester 2 of that year and from multidisciplinary to interdisciplinary in Year 2 (single morbidities), Year 3 (multiple morbidities) and Year 4 (advancing patient-centred care). The drivers of the integration are body systems and disease states. Students will be introduced to the concepts of integrative learning during the induction stage of Year 1, including the expectations of the School and will be supported by module and programme guides and a logical timetable. It was said that students will not perceive teaching staff as being subject-specific. The spiral curriculum, or vertical integration, will be achieved by revisiting, refreshing and developing content and concepts from within and across modules/levels. An Integrated Learning Day is introduced in Semester 2 of Level 4 and subsequently will be held every semester of the ensuing years focussing on integrating the science and practice that are relevant to each level of the programme. Each Integrated Learning Day based on problem-based learning will be developed and delivered (joint teaching by science and practice staff along with teacher-practitioners) by a small team drawn from each of the four disciplines to ensure that students continue to develop, apply and reflect upon their integrative understanding of the underpinning scientific principles of pharmacy and patient care at all stages of the programme.</p> <p>The programme has off-campus teaching which offers experiential learning in community and hospital settings. In addition, simulated practice sessions (simulations) are undertaken off-campus. Students are required to compare and contrast their placement experiences and reflect on their knowledge and skills when completing workbooks. The outcome feeds into the professional portfolio from which their Personal and Professional Development Plan (PPDP) is devised, a requirement at each level of the programme. The complexity of the tasks increase at each level of the programme undertaken by the students. These tasks range from observational visits at Level 4 to complex patient interactions at Level 7. Thus, during Level 4, students, undertake half-day placement visits to a community pharmacy and a hospital pharmacy. At Level 5, students undertake a 1-day visit to a community pharmacy. At Level 6 there are 3 half-day hospital visits, followed by 3 full-day hospital visits in Level 7. Interprofessional learning ranges from conference sessions with adult nursing students at Level 4, through sessions with medical students and sports science students respectively at level 5, to simulation sessions at levels 6 and 7, the latter with medical and nursing students. As the team was told that the MPharm degree's Inter-Professional Education strategy is still in development and because current provision is at least within the normal range for providers, the visiting team will ascertain the level of progress in 2018 rather than imposing a condition about it. The visiting team will be interested to learn if the amount of IPE is increased overall as part of the ongoing development.</p> <p>Assessment is designed to be an integral part of the programme design, with a clear relation between tasks and learning outcomes. The assessment strategy has been developed to ensure that any student who poses a risk to patient and public safety will not be allowed to continue pharmacy education and training. However, the team was told that the approach is</p>
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	<p>designed to be fair and proportionate, supporting student development. Formative assessments will ensure a developmental approach is undertaken before summative assessments are completed. The assessment at each level of the programme will comprise 60% coursework (six activities at Level 4, and five activities at Levels 5, 6 and 7), 40% final examination (two papers), and six competencies at Levels 4, 5 and 6, and four competencies at level 7. Coursework and competency opportunities will be spread appropriately across the academic year. The focus of the coursework activities will be an in-depth and integrative understanding of the assessed topic. Competencies will be pass/fail, involve zero-academic credits and be based upon and align to the Standard 10 outcomes. There will be a number of similar competencies (with increasing complexity) at each level of the programme, for example, calculations, pharmacy law, dispensing practicals, professional portfolio and a range of clinical skills using OSCEs which will be blueprinted to the GPhC outcomes. Several attempts are allowed depending on the individual competency; the team understood from this approach that the tests were diagnostic/formative in nature allowing both remedial help for those failing, and progression for those passing. The 120-credit modular structure of the programme has necessitated variance from the LJMU Academic Framework to ensure that the programme is aligned to the GPhC standards. This variance and programme requirements includes: no compensation, condonement, or trailing; no extended resit or remedial measures available, although the team was told that failing students are allowed to resit every component part of a failed 120-credit module; no aegrotat MPharm can be awarded; no assessments are to be waived; all competencies are to be passed before progression to the next level; component marking is used in that a minimum of 40% must be achieved in each coursework and examination assessment component to pass the module; students to have six years to complete the MPharm programme; failure to pass all competencies (carrying zero academic credits) at a given level after all opportunities have been taken will result in the student having to fail and withdraw from the programme; compliance with Fitness to Practise requirements prior to entry to the programme, at each level and at the conclusion of the programme; all placements are to be attended, an alternative/equivalent activity will be provided when necessary; and accreditation of prior learning will not be awarded and all students will start Day One at Level 4. Any activity that a student demonstrates which is considered to put patients at risk results in an automatic fail.</p>
<p><b>Standard 6 – Support and development for students and trainees</b></p> <p>Students and trainees must be supported to develop as learners and professionals during their initial education and training.</p>	<p><b>The team was satisfied that the one criterion to meet this standard will be met</b></p> <p>All new students attend an induction programme at the start of their studies at LJMU. This includes a welcome to the University, and the School. Pastoral support for students to develop as learners is provided centrally by the University and Liverpool Students’ Union as well as at School, programme, module and tutor levels. Professional support is provided by the School, at programme level and by GPhC-registered staff. All students will be assigned to a personal tutor who is a member of the academic staff, who may not necessarily be a pharmacist. Students interviewed had varying opinions on the quality of the tutor system with the inevitable personal differences in approach. Students have the opportunity to discuss issues with any member of staff of their choosing. Thus, the team was told that students with academic problems would likely approach the module leader for initial advice. Students meet their personal tutor formally at 10 structured tutorials each academic year. In addition, each academic staff member allocates 4 hours each week to a ‘drop-in’ facility.</p>

<p><b>Standard 7 – Support and development for academic staff and pre-registration tutors</b></p> <p>Anyone delivering initial education and training should be supported to develop in their professional roles.</p>	<p><b>The team was satisfied that the three criteria to meet this standard were met</b></p> <p>All new academic staff are allocated sufficient protected time to complete the Postgraduate Certificate in Learning and Teaching in Higher Education and to gain Fellowship status of the Higher Education Academy. The University has a Personal Development and Performance Review (PDPR) Policy to provide clarity for staff at least once a year, about what is expected of them through their job role. All new staff members are provided with an orientation of the School and the professional context of the MPharm programme. All non-GPhC registrants are introduced to a variety of GPhC policies and standards that govern the initial education and training of pharmacists and the emphasis on patient and public safety across the programme. The Faculty has a Workload Allocation Model covering all academic staff with the aim of achieving an overall balance of workload across staff and finding the appropriate balance for individual staff across teaching, administration duties, research, and enterprise activities.</p>
<p><b>Standard 8 – Management of initial education and training</b></p> <p>Education and training must be planned and maintained through transparent processes which must show who is responsible for what at each stage</p>	<p><b>The team was satisfied that the one criterion to meet this standard was met</b></p> <p>The Programme Leader is responsible to the Lead Pharmacist for the academic management and development of the programme. Level Tutors have been appointed for each level of the programme to offer academic counselling and information to students so that they may make effective and informed choices about their programme. Each module is assigned a Module Leader who is shadowed by another member of the same module team to form a science and practice companion-leadership role. The team was told that module teams are made up of an inner core of around 6 teaching staff members from different disciplines who then communicate with an outer layer of around 30 staff members who are involved in the delivery of the module. Allocation of students to placements is undertaken by placement co-ordinators at each level of the programme. Each liaises with the relevant placement providers to secure appropriate placements. Currently all community placements are undertaken as a 'grace and favour'. The School is looking to the University to provide a more secure footing for these placements with Service Level Agreements being undertaken in the near future.</p>
<p><b>Standard 9- Resources and capacity</b></p> <p>Resources and capacity are sufficient to deliver outcomes.</p>	<p><b>The team was satisfied that the one criterion to meet this standard will be met</b></p> <p>The team was told that the School income is SSR-driven, along with QR income from the REF. The School controls the non-pay budget (devolved from the Faculty) and allocates an equitable share to all programmes according to their needs. Staff requirements are discussed with the subject group leaders, student-staff ratios are consulted and appropriate bids are made through the Faculty of Science for new posts. The School is currently staffed and supported by 87 academic, 16 administrative and 22 technician staff. Within the 87 academics there are 5 Professors, 8 Readers and 3 Principal Lecturers. Of the 36 GPhC registrants on the teaching staff, 12 are full-time academic staff, 5 part-time academic staff, 14 hospital-based teacher practitioners, 4 community-based teacher practitioners and one pharmacy technician. However, the team noted the small number of promoted staff members involved in the delivery of the MPharm. The team was told that 7.8 FTE</p>

	<p>of the above represented newly appointed staff, 4.8 FTE in the clinical area and 3 science-based posts. Recognising the professional nature of the MPharm programme, PBS has now allocated additional staff to Pharmacy to bring the SSR down to 17.7: 1, whereas the SSR for non-Pharmacy area within the School is 23:1. The Dean of Science told the team that it was the intention to reduce the SSR for the entire School to the level currently enjoyed by Pharmacy. The team found the business plan that was submitted just before the visit to be difficult to navigate. The Dean of Science explained that the surplus remaining after the salary and non-salary costs, plus the University overheads of some 46%, had been deducted from the overall income of the School (to include the non-Pharmacy areas) would be used to support additional staff in the School and the planned continued refurbishment of the James Parsons Building. The team particularly noted that the documentation contained statements that the intake target for the MPharm degree was currently 140 (120 home/EU and 20 overseas). The team calculated that even assuming zero attrition, this would lead to an MPharm population of 560, some 80 students less than the current population of 643. As a result, the team found it difficult to reconcile the stated plans to use the current surplus for developmental purposes with the potential reduced income due to the reduced student numbers. In response to this concern, the Dean told the team that although there had been a dip in the number of overseas students, pharmacy was at the top of the overseas applications to the University and that the intake could rise to 160 while keeping UK/EU admissions at 120. The team reminded the University representatives that there were severe visa restrictions for overseas students and was told in response that the University International office was looking into such visa issues, although it was not clear to the team how these could be resolved given the present legislation. Given the inconsistencies between the documentation submitted and the subsequent discussion around the business plan, the team found it surprising to be told that the University did not have a forward-planning document or spreadsheet that would enable it to predict future spending costs against projected income. As the team was told that irrespective of other factors affecting resourcing, the School would continue to maintain the staff-student ratio for the MPharm degree at its current level, and was also told that rolling out the MPharm degree SSR is a University strategic aim for all programmes, the 2018 interim visiting team will verify that the MPharm SSR has been maintained and that the parameters defining the SSR have not been altered.</p>
<p><b>Standard 10 - Outcomes</b></p>	<p>The team scrutinised the learning outcomes by discussions with the teaching staff in two integration and outcomes meetings. Rather than examining each of the 58 outcomes in these sessions, a selection of eight outcomes was chosen for detailed discussion. The outcomes selected were 10.2.3.c, 10.1.e, 10.2.4.a, 10.2.2.b, 10.2.2.g, 10.2.4.b, 10.2.3.a, and 10.2.3.k. Additional outcomes were covered in discussions addressing Standards 1-9 and by the team's scrutiny of the documentation. For each of the eight outcomes scrutinised in detail, the evidence provided by the discussions with the staff gave the team confidence that these outcomes would be met at the required level for the MPharm programme, and the team was confident that all other outcomes would be similarly met. The team agreed that following the satisfaction of the eight outcomes tested that it was confident that all 58 outcomes would be delivered at the appropriate level.</p>

<b>Indicative Syllabus</b>	<p>The team was content with the School's use of the Indicative Syllabus to inform its curriculum.</p> <p>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.</p>
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## Summary and conclusions

The accreditation team agreed to recommend to the Registrar of the General Pharmaceutical Council that Liverpool John Moores University should be reaccredited to provide an MPharm degree for a further period of six years, with a practice visit to take place in three years. This reaccreditation is subject to no conditions and three recommendations:

### *Recommendations*

1. that the University revisit its student fitness to practise policy to ensure that there is full separation between the referral/investigation stage of the fitness to practise process and the hearings stage. This is to ensure that the requirements of the GPhC's *Guidance on student fitness to practise in schools of pharmacy*, which underpins Standard 1.1.g of *Future Pharmacists*, have been fully implemented. Specifically, '5.23 Schools must make sure that their proceedings are fair and transparent. Among other things, they must: make sure the panel is unbiased and there are no perceived conflicts of interest between the initial investigator(s), panellists and the student'. The deadline for considering this recommendation and reporting the University's decision to the GPhC for information is 1<sup>st</sup> August 2015.
2. again in relation to Standard 1.1.g, that the University develop a clear policy on who can support and/or represent students in hearings, in case the University is ever challenged about this. This relates to '5.24 Schools must allow students to be represented at fitness to practise hearings or to have a supporter present' in the GPhC's *Guidance on student fitness to practise in schools of pharmacy*. The deadline for considering this recommendation and reporting the University's decision to the GPhC for information is 1<sup>st</sup> August 2015.
3. in relation to Standard 4.2.d 'Take account of good character checks...', that the School revisit its procedures in relation to non-UK applicants to ensure that all reasonable steps are taken to obtain relevant good character documents. This recommendation has been made (1) in the interests of patient safety and (2) because many countries can provide relevant documentation on request. The deadline for considering this recommendation and reporting the University's decision to the GPhC for information is 1<sup>st</sup> August 2015.

### **2018 interim visit – issues to be revisited**

The purpose of interim visits is to observe teaching and learning and to discuss progress that has been made in the three years since a full reaccreditation visit. Any topic can be covered during an interim visit but the team will be recommending to the interim visit team that it cover two topics in particular:

1. *The SSR*: The team was told that the MPharm degree is resourced within the wider context of the School of Pharmacy and Biomolecular Science. Further, the team was told that irrespective of other factors affecting resourcing, the School would continue to maintain the staff-student ratio for the MPharm degree at its current level. The team was told that rolling out the MPharm degree SSR is also a University strategic aim for all programmes. In 2018 the visiting team will verify that the MPharm SSR has been maintained and that the parameters defining the SSR have not been altered.
2. *Inter-professional Education*: The team was told that the MPharm degree's Inter-Professional Education strategy is still in development. This being the case, and because current provision is at least within the normal range for providers, the visiting team will ascertain the level of progress in 2018 rather than imposing a condition about it. The visiting team will be interested to learn if the amount of IPE is increased overall as part of the ongoing development. Should the School wish to share the revised strategy with the GPhC at any point in advance of the interim visit, it should consider doing so.

### **Standing condition of accreditation:**

These are the conditions which will apply in all circumstances of degree accreditation:

1. The school or department of pharmacy always seeks approval from the General Pharmaceutical Council for curriculum amendments and always at least informs the General Pharmaceutical Council of significant changes to pharmacy undergraduate student numbers or resources for their teaching, learning support and assessment, including any change from internal to teaching, learning and assessment from outside the school or department;
2. The school or department of pharmacy produces and submits to the General Pharmaceutical Council annually requested data on student numbers and progression and degree awards;
3. The school or department of pharmacy produces and submits to the General Pharmaceutical Council annually requested information about the extent of human and physical resources it enjoys for the delivery and support of the degree course;
4. The school or department of pharmacy or the university makes students and potential students aware of the existence and Internet address where they can view the General Pharmaceutical Council's summary reports of degree accreditation exercises, main after- actions therefrom and of the timetable for future accreditation exercises.

The *Pharmacy Order 2010* states:

Part 5 Education, training and acquisition of experience and continuing professional development, Information to be given by institutions or other providers, 46. ...

(3) Whenever required to do so by the Council, any institution or other provider to which this article applies must give to the Council such information and assistance as the Council may reasonably require in connection with the exercise of its functions under this Order.

(4) Where an institution or other provider refuses any reasonable request for information made by the Council under this article, the Council may, in accordance with article 47 ('Refusal or withdrawal of approval of courses, qualifications and institutions'), refuse to approve or withdraw approval from, any course of education or training, qualification, test or institution or other provider to which the information relates.

It is a requirement of accreditation that institutions or other providers provide the GPhC proactively and in a timely manner with any information which is, or has the potential to be, material to the delivery of an accredited course. This includes, but is not limited to: changes in staffing, changes in funding, and/or substantial changes in curriculum or delivery.

**Reference:** <http://www.legislation.gov.uk/ukxi/2010/231/contents/made>

Caution: Preregistration and employment as a pharmacist:

- In respect of all students, 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.

**Following the above reaccreditation event, the Registrar of the General Pharmaceutical Council agreed with the accreditation team's recommendation and approved Liverpool John Moores University MPharm degree for reaccreditation a further period of six years. Reaccreditation will take place in six academic year' time; with an interim visit in three academic years' time (2017/18)**

## Appendix 1 – Standards for the initial education and training of pharmacists

[Note: The parts of the standards shown in grey italics are applicable only to those offering a 5-year MPharm degree with integrated 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 *Code of Conduct for Pharmacy Students (2010) Standards of conduct, ethics and performance (2010)*;
  - 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 & 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 tutors* 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 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 facilities 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
<b>10.1.a</b> Recognise ethical dilemmas & respond in accordance with relevant codes of conduct and behaviour	<b>Shows how</b>	<i>Does</i>
<b>10.1.b</b> Recognise the duty to take action if a colleague's health, performance or conduct is putting patients or public at risk	<b>Knows how</b>	<i>Knows how</i>
<b>10.1.c</b> 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	<b>Does</b>	<i>Does</i>
<b>10.1.d</b> Apply the principles of clinical governance in practice	<b>Knows how</b>	<i>Does</i>
<b>10.1.e</b> Demonstrate how the science of pharmacy is applied in the design and development of medicines and devices	<b>Shows how</b>	<i>Knows how</i>
<b>10.1.f</b> Contribute to the education and training of other members of the team, including peer review and assessment	<b>Shows how</b>	<i>Does</i>
<b>10.1.g</b> Contribute to the development of other members of the team through coaching and feedback	<b>Knows how</b>	<i>Shows how</i>
<b>10.1.h</b> Engage in multidisciplinary team working	<b>Knows how</b>	<i>Does</i>
<b>10.1.i</b> Respond appropriately to medical emergencies, including provision of first aid	<b>Knows how</b>	<i>Shows how</i>

### 10.2 The skills required in practice

#### 10.2.1 Implementing health policy

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

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

Learning outcome	MPharm	Pre-reg
a. Identify and employ the appropriate diagnostic or physiological testing techniques in order to promote health	Knows how	Shows how
b. Identify inappropriate health behaviours and recommend suitable approaches to interventions	Shows how	Does
c. Instruct patients in the safe and effective use of their medicines and devices	Shows how	Does
d. Analyse prescriptions for validity and clarity	Shows how	Does
e. Clinically evaluate the appropriateness of prescribed medicines	Shows how	Does
f. Provide, monitor and modify prescribed treatment to maximise health outcomes	Shows how	Does
g. Communicate with patients about their prescribed treatment	Shows how	Does
h. Optimise treatment for individual patient needs in collaboration with the prescriber	Shows how	Does
i. Record, maintain and store patient data	Shows how	Does
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	Does

### 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	Shows how
10.2.3.b. Apply pharmaceutical principles to the formulation, preparation and packaging of products	Shows how	Shows how
10.2.3.c. Verify safety and accuracy utilising pharmaceutical calculations	Does	Does
10.2.3.d. Develop quality management systems including maintaining appropriate records	Shows how	Shows how
10.2.3.e. Manage and maintain quality management systems including maintaining appropriate records	Shows how	Does
10.2.3.f. Procure and store medicines and other pharmaceutical products working within a quality assurance framework	Knows how	Does
10.2.3.g. Distribute medicines safely, legally and effectively	Knows how	Does
10.2.3.h. Dispose of medicines safely, legally and effectively	Knows how	Does
10.2.3.i. Manage resources in order to ensure work flow and minimise risk in the workplace	Knows how	Shows how
10.2.3.j. Take personal responsibility for health and safety	Does	Does

<b>10.2.3.k.</b>	Work effectively within teams to ensure safe and effective systems are being followed	<b>Knows how</b>	<i>Does</i>
<b>10.2.3.l.</b>	Ensure the application of appropriate infection control measures	<b>Shows how</b>	<i>Does</i>
<b>10.2.3.m.</b>	Supervise others involved in service delivery	<b>Knows how</b>	<i>Does</i>
<b>10.2.3.n.</b>	Identify, report and prevent errors and unsafe practice	<b>Shows how</b>	<i>Does</i>
<b>10.2.3.o.</b>	Procure, store and dispense and supply veterinary medicines safely and legally	<b>Knows how</b>	<i>Knows how</i>

#### 10.2.4 Working with patients and the public

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

#### 10.2.5 Maintaining and improving professional performance

<b>Learning outcome</b>	<b>MPharm</b>	<i>Pre-reg</i>
<b>a.</b> Demonstrate the characteristics of a prospective professional pharmacist as set out in relevant codes of conduct and behaviour	<b>Does</b>	<i>Does</i>
<b>b.</b> Reflect on personal and professional approaches to practice	<b>Does</b>	<i>Does</i>
<b>c.</b> Create and implement a personal development plan	<b>Does</b>	<i>Does</i>
<b>d.</b> Review and reflect on evidence to monitor performance and revise professional development plan	<b>Does</b>	<i>Does</i>
<b>e.</b> Participate in audit and in implementing recommendations	<b>Knows how</b>	<i>Shows how</i>
<b>f.</b> Contribute to identifying learning and development needs of team members	<b>Knows how</b>	<i>Does</i>
<b>g.</b> Contribute to the development and support of individuals and teams	<b>Knows how</b>	<i>Does</i>
<b>h.</b> Anticipate and lead change	<b>Knows how</b>	<i>Shows how</i>

## **Indicative syllabus**

### **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 pharmaceutics, 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)***