

**Swansea University Master of Pharmacy degree
(MPharm) step 3 accreditation event report -
September 2020**



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Event summary and conclusions

Provider	Swansea University
Course	Masters of Pharmacy degree (MPharm)
Event type	Accreditation
Event date	8-9 September 2020
Accreditation period	Working towards accreditation: next visit due 2021
Outcome	<p><i>Approval with conditions</i></p> <p>The accreditation team agreed to recommend to the Registrar of the General Pharmaceutical Council (GPhC) that Swansea University should be permitted to progress from step 3 to step 4 of the GPhC's MPharm accreditation process, subject to one condition (see below). This means that students can be admitted to year 1 from 2021 and any offers made to date can be confirmed, once the outcome of the event has been ratified by the Registrar.</p> <p>The team agreed that Swansea University is likely to be in a position to deliver the proposed MPharm degree from 2021, if current plans remain on track. Should staffing, finances or facilities change significantly, or be delayed before the start of the 2021-2022 academic year, the GPhC must be informed along with an action plan to address the change(s).</p>
Conditions	Swansea University must remove the vacation optional module between years 2 and 3 because it is potentially unfair to students who may not be able to engage with it for personal, family or other reasons and who have to schedule non-academic activity during those periods. This is to satisfy Standard 3 in the GPhC's standards for the initial education and training of pharmacists, <i>Future Pharmacists</i> : 'Initial pharmacy education and training must be based on principles of equality, diversity and fairness ...'.
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 confirmed Swansea University can be permitted to move from step 3 to step 4 of the accreditation process for new MPharm degrees. The accreditation team will review the condition at step 4, 2021-2022 academic year.
Key contact (provider)	Professor Andrew Morris, Head of Pharmacy

Accreditation team	Peter Curphey, (Team Leader), Pharmacy consultant Dr Katie Maddock (Team member, academic), Head of School of Pharmacy, Keele University Professor Anthony Smith (Team member, academic), Vice-Provost Education and Student Affairs, University College London Professor Anne Watson (Team member, pharmacist) Postgraduate Pharmacy Dean, NHS Education for Scotland Daniel Greenwood (Team member, newly-qualified pharmacist), Senior Lecturer in Clinical Pharmacy, Anglia Ruskin University School of Medicine Susan Bradford (Team member, lay member), Adjudicator, Social Work England
GPhC representative	Damian Day, Head of Education, 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/ukxi/2010/231/contents/made>

Background

Early in 2018, the General Pharmaceutical Council (GPhC) was approached by Swansea University Medical School with a view to the University entering the process for accrediting a new MPharm degree, the intention being to admit the first cohort of students in the 2020/2021 academic year.

Consequently, a meeting, constituting a Step 1 event, was convened on 25 May 2018. The GPhC representatives were told that the introduction of MPharm degree sits wholly within the strategy of the Swansea University Medical School. The new degree will be developed and offered by the Medical School, in close partnership with the College of Human and Health Science. Swansea University will provide state-of-the-art laboratories, mock consultation rooms and simulation suites; students will also benefit from easy access to the hospital environment through the Medical School's close proximity to ABMU* Singleton Hospital. Pump prime funding will be provided by the University to allow the admission of the first cohort of students. Following advice from the GPhC that included the need for key staff to be in place, a step 2 event was arranged for September 2019. On that occasion, the team agreed to recommend to the Registrar of the General Pharmaceutical Council (GPhC) that Swansea University should be permitted to move from step 2 to step 3 of the accreditation process for new MPharm degrees. There were no conditions and no recommendations were made; however, the team suggested that in preparation for step 3 the University should give particular attention to equity in admissions across applicant groups (this relates to standard 4), further development of the assessment strategies for assessment (criterion 5.7), experiential learning (criterion 5.6) and inter-professional education (criterion 5.6), as well as the quality assurance and management of the proposed summer module between years 2 and 3. A step 3 event was arranged for September 2020 and the following is a report of that event.

*ABMU Health Board was subsequently redesignated as Swansea Bay University Health Board.

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 via Zoom on 14 August 2020. 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 event began with a private meeting of the accreditation team and GPhC representatives via Zoom on 8 September 2020. The remainder of the event took place via Zoom on 9 September 2020, and comprised a series of meetings with staff of the University.

Declarations of interest

There were no declarations of interest.

Key findings

Standard 1: Patient and public safety

The team was satisfied that all criteria relating to this standard will be met. (See Appendix 2 for criteria)

The University has systems in place to ensure that students do not jeopardise patient safety. During enrolment students will undertake relevant health checks and submit to a Disclosure and Barring Service (DBS) criminal records check to confirm good character. At the start of each subsequent academic year existing MPharm students will make a self-declaration confirming that there are no changes to their health or good character. A compulsory induction week at the start of their first year will familiarise students with fitness to practise procedures, the GPhC Standards for Pharmacy Professionals, Swansea University student regulations and the behaviours expected of students, including good timekeeping and attendance. Students will sign up to a learning agreement which will include the requirement to meet the GPhC's Standards for Pharmacy Professionals. Patient-centred professionalism will be heavily embedded in the programme and students will be assessed on patient safety elements. Professionalism elements in all modules will assess students' self-awareness of their abilities and competence and their ability to practise safely. All pharmacy students will be required to work within their own competence to ensure patient safety. Competence in dispensing, calculations, clinical checking and law and ethics will be monitored and assessed regularly through formative and summative OSCEs, as well as other types of assessments. Students will be made aware of the impact of accidents and near-misses on patient safety and will be expected to demonstrate that they know how to deal with these. Throughout the programme, all modules must be passed in order to progress to the next stage and to graduate, and any student who may pose a risk to patients or the public will not be awarded an MPharm degree.

Students will undertake a number of experiential learning placements, which will include patient contact, and therefore the importance of safe practice will be reinforced. Before contact with patients, students will undertake simulated role play sessions to ensure that they have the necessary skills prior to undertaking any patient-facing activities. Placement workbooks for each placement will outline students' roles and responsibilities in these settings. While on placements, students will always be supervised and will never be given responsibility for any clinical, professional or legal decision that might jeopardise patient safety; all student interaction with patients, including simulated patients, will be supervised by academic staff and/or placement supervisors. Initial placements will primarily involve shadowing, observation and reflective activities. As the course progresses, students will complete specific patient-facing tasks under supervision, and as their competencies develop the level of support will decrease to promote student autonomy within a framework of safe practice and standard operating procedures (SOPs). Training will be provided to placement supervisors in the form of a supervisor handbook hosted on the Pharmacy Portal to ensure that supervisors understand the expectations of the University, and know where to access support should any issues arise, as well as how to report any concerns. There is an expectation that all stakeholders (students, academic staff, placement providers, patients and the public) will raise concerns if there are issues around safe practice. Where causes for concern are identified, they will be referred to the Pharmacy Health and Conduct Subcommittee, which oversees all matters relating to the

progress and professionalism of individual students enrolled on the MPharm degree. Fitness to practise procedures, of which all MPharm contributors, placement providers, students and other stakeholders will be made aware, ensure that any unsafe practice is managed in an appropriate way with expulsion from the programme as the ultimate sanction, where a student's behaviour/health concern is incompatible with continuation as an MPharm student.

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

The team was satisfied that all criteria relating to this standard will be met.

Pharmacy lies within the Swansea University Medical School (SUMS), one of eight Academic Colleges in the University; within SUMS, which has a considerable degree of autonomy, Pharmacy has its own distinct identity. In an imminent restructuring, the eight Academic Colleges will be organised into three faculties, in which the Medical School will be merged with the College of Human & Health Sciences to form the Faculty of Health, Life Sciences & Medicine, bringing together all healthcare-related disciplines. Although details of the new structure are yet to be determined, Pharmacy will retain its own identity. Currently, the Head of the Medical School reports directly to the University's Senior Management Team (SMT) via the Provost, who is the SMT project sponsor for the introduction of the MPharm degree; the MPharm Project Board includes the Head of Pharmacy, and the MPharm Project Manager, along with representation of other University bodies such as Human Resources, Estates, and IT Services. SMT is the institutional executive body chaired by the Vice-Chancellor and consists of the Registrar and Chief Operating Officer, the Provost, the PVC (Education), the PVC (Research & Innovation) and the Director of Finance. The quality of the Medical School's learning and teaching provision and the student learning experience is overseen by the SUMS Learning and Teaching Committee, which is chaired by the Director of Learning and Teaching. The Head of Pharmacy and the MPharm Programme Director are members of the SUMS Learning and Teaching Committee, which includes student members. The Committee also oversees the implementation and monitoring of University strategy and policy for learning, teaching and assessment for taught programmes as well as overseeing the activities of the Boards of Studies within the Medical School. The Committee reports to the University Learning, Teaching and Quality Committee which is chaired by the PVC (Education). The Board of Studies for Pharmacy, which will report to the SUMS Learning and Teaching Committee, will be chaired by the Head of Pharmacy; its membership will comprise the MPharm Programme Director, Year Heads, the module coordinators and student representatives. The responsibilities of the Board of Studies will include annual reviews of the MPharm programme and all MPharm modules, as well as reviewing and acting on National Student Survey (NSS) data. There will also be an Examination Board, the membership of which will be similar to that of the Board of Studies, although it will have no student members and will include three external examiners appointed to cover the breadth of the MPharm curriculum. The Pharmacy Board of Studies will be responsible for assuring and enhancing the quality of the teaching, learning and assessment and the students' learning experience in the MPharm degree. Both an Annual Programme Review and an Annual Module Review are employed in assuring the quality of teaching, learning and assessment. These programme and module reviews incorporate feedback from students obtained using module feedback questionnaires, 'Head of Pharmacy workshops' held midway through each semester, the Student-Staff Committee and student representation on the SUMS Learning and

Teaching Committee. The Pharmacy Board of Studies, which will also receive reports from the external examiners, will then provide a summary of the key issues and risks affecting the MPharm degree to the SUMS Learning and Teaching Committee. Staff feedback in relation to teaching and learning and assessment practice is sought via a variety of methods. Presently, the small size of the Pharmacy Team enables staff to input directly into discussions via the fortnightly Pharmacy Development Committee meetings. As the size of the Pharmacy Team expands, the Head of Pharmacy will hold scheduled monthly drop-in sessions. Ultimately, the biannual MPharm Forum, which will cover issues related to the pharmacy profession and MPharm delivery, will have a particular emphasis on matters relating to teaching, learning and assessments.

In addition to participating in the annual NSS, the University conducts an annual Student Experience Survey for non-final year undergraduate students; this will ensure that the views of MPharm students are captured ahead of the first cohort graduating. External stakeholders have had, and will continue to have, input to the MPharm curriculum.

The quality of placements in hospitals, community pharmacies, GP practices, care homes and other settings will be underpinned by written agreements, which are currently being reviewed by providers and the University's Legal Department. These agreements outline duties and obligations of University staff, placement providers and students with reference to clearly identified, evidence-based competencies. Prior to attending their first placement, students will undertake a timetabled placement induction session, which will outline professional behavioural standards. Each placement site is expected to have a supervisor who will be responsible for the management of the placement at that site. Training will be provided to placement supervisors, who will all receive the Placement Handbook to ensure they understand the expectations of the University and know where to access support should any issues arise. Students will be given a placement workbook; this will contain tasks for completion and will allow them to record the activities they observe or undertake. Feedback will be obtained from students on their placement experiences, highlighting what went well and areas for potential improvement.

Standard 3: Equality, diversity and fairness

Although the team was satisfied that both criteria relating to this standard will be met, the standard as a whole is not met and is subject to a condition.

The University's Equality Committee, reporting directly to SMT, one role of which is to monitor progress made against the objectives of the Strategic Equality Plan, which is also supported by an equality team based within Human Resources. Student equality and diversity data are captured annually during online enrolment, while staff data are captured as part of the recruitment process. These data are published each year in the Equality Annual Report, which is reviewed by the institutional Equality Committee and ultimately by SMT and Council. As part of the Medical School's Athena SWAN Charter Silver Award, College-level equality and diversity data are reviewed annually. The University is also committed to the use and promotion of the Welsh Language; in this context, Welsh language placement opportunities are being created for MPharm students, and Welsh-speaking patients/simulated patients will be used during some practice workshops. Welsh speaking students will also have the option of submitting their assessments (and receiving feedback) through the medium of Welsh, and requesting a Welsh-

speaking Academic Mentor. However, competence in communication in English remains essential and is a regulatory requirement. Some of the key mechanisms through which the MPharm programme will promote and enable inclusivity through learning and teaching include respecting diversity, developing MPharm content which is accessible and consistent, interactive teaching which promotes dialogue, and managing group work sensitively and fairly.

Swansea University holds an Athena SWAN Silver Institutional Award and the Medical School has achieved an Equality Challenge Unit Athena SWAN Charter Silver Award. The Athena SWAN self-assessment team oversees the Medical School's equality and diversity action plan, which outlines an annual calendar of training, workshops, talks and events, as well as focus groups with staff and students to discuss current challenges and Athena SWAN action points. The University is also currently a member of the Race Equality Charter which aims to improve the representation, progression and success of minority ethnic staff and students within Higher Education. Career development uptake is monitored through annual data collation by the self-assessment team. Swansea Academy of Inclusivity and Learner Success (SAILS) ensures support for students from diverse backgrounds and provides a number of learning resources and training events for staff. As part of their induction, all new staff members must complete the Equality and Diversity in the Workplace (EDI) course run by the University.

While the team was satisfied that both criteria constituting this standard will be met, a problem in meeting the standard was identified, because of the intention to offer an optional, pharmacy-related work placement during the vacation period between years 2 and 3. Students undertaking this placement would have the option of registering for the year 3, 10-credit, online 'Learning in Practice' module. The team recognised that there may be some students for whom this option was not possible, and therefore agreed that the proposal was in contravention of the requirement of this standard that initial pharmacy education and training must be based on principles of equality, diversity and fairness. The team therefore imposed a condition that the University must remove the vacation optional module between years 2 and 3, because it is potentially unfair to students who may not be able to engage with it for personal, family or other reasons and who have to schedule non-academic activity during those periods.

Standard 4: Selection of students

The team was satisfied that all criteria relating to this standard will be met.

The selection criteria for applicants, as well as the fact that an interview will be required in order to gain admission to the programme, are made clear through the undergraduate prospectus and the MPharm webpages, and this information is also provided to potential applicants at University Open Days and during interview events; the recruitment materials also explain that character and health checks are required to ensure that applicants are fit to practise as pharmacy students. Academic entry criteria are ABB-BBB at A-level, which must include chemistry and at least one other STEM subject; other, equivalent qualifications, including the International Baccalaureate (IB) Diploma, will also be considered. From 2021/22, a 'Foundation Year' entry route will also be offered to potential MPharm students who have not met the standard entrance requirement. Applicants must demonstrate an appropriate level of numeracy, for example, through obtaining GCSE mathematics at grade C or above, and must also satisfy English language requirements, either by achieving GCSE English at grade C, or, for applicants whose first language is not English, an IELTS score of 6.5 with a minimum of 6.0 in

each individual category. Prospective students may apply using either the English or Welsh language and will be asked if they would like to receive future communications in either English or Welsh. All offers will be subject to the satisfactory completion of an interview and a numeracy test; this will include multiple mini-interviews (MMIs) and will be typically conducted face-to-face at the University. The MMIs will comprise three stations covering the themes of patient ethical dilemmas, problem solving and the profession of pharmacy, and will also test oral communication skills; applicants will also engage in a group task based on team challenges. Prospective international students, those unable to attend face-to-face interviews and students applying through 'Clearing' will also undertake MMIs, although the process will be adapted to allow for video communication and the group exercise will be replaced with scenarios that address examples of teamwork skills. Assessors will use a score sheet for each station and the consistency of scores will be monitored before any offers are made. Those candidates who do not perform well during the MMI process will be reviewed by the admissions team and the application will either be dismissed or be referred to the MPharm Programme Director for a decision. All members of staff involved in the selection of prospective MPharm students as well as those involved in the interview process, will have completed training in equality, diversity and inclusion, as well as in interviewing.

Accepted applicants will be required to undergo an enhanced criminal disclosure via the DBS, and those international applicants who cannot undergo a DBS check will need to produce a 'Certificate of Good Conduct' (or equivalent) from their home countries. Health checks will also be undertaken for all successful applicants; this will be achieved using a health declaration form which must be signed by the applicant's GP to confirm its accuracy. The declarations will be reviewed by the University's Occupational Health staff, who may invite applicants to discuss the information provided in order to assess their fitness to practise.

Standard 5: Curriculum delivery and student experience

The team was satisfied that all criteria relating to this standard will be met.

Each of the first two years of the programme, as well as the final year, will comprise 120 credits of compulsory modules. The third year includes an extended research project, comprising either 40 or 60 credits; where students choose the 40-credit project, they will also take 20 credits from a selection of optional modules, covering topics such as 'Substance Misuse', 'Medical Genetics' and 'Tissue Engineering and Regenerative Medicine'. Each year will also incorporate a zero-credit 'Pharmacist as a Professional' module. Science and practice are progressively integrated across the four years of the programme, using a spiral curriculum in which information becomes increasingly more complex, with concepts being revisited to reinforce knowledge and trigger higher level objective and critical thinking. The programme is delivered in seven themes (pharmaceutics, pharmaceutical chemistry, pharmacology, biology & biochemistry, anatomy & physiology, clinical pharmacy and pharmacy practice) which run horizontally in the first year and then vertically in later years. Material delivered in the first year modules covering 'Drugs & Medicines', 'Practice of Pharmacy' and 'Health, Disease & Patients', as well as in the zero-credit 'Pharmacist as a Professional 1' module, will be integrated using case studies. Years 2 and 3 include semester-long 'Patient-Centred Learning' modules which are integrated using specific systems, diseases or patient groups as conceptual hooks; here the integrated curriculum will allow contextualisation and the development of skills in scientific reasoning, communication, patient consultation, leadership, research and problem solving, enabling students to make

decisions in new, previously unseen patient-related situations. The year-4 focus is on patients with multiple chronic conditions, the importance of public health and the integration of health and community care. The curriculum will be delivered through a mix of taught, group work, and independent, self-directed and guided learning activities; a balance of theory and practice will be achieved by linking the taught science to clinical scenarios. Inter-professional education with students of other healthcare professions, including medicine and nursing, research-informed teaching and placements will be used alongside the simulation facilities in the Pharmacy Skills Suite to facilitate the contextualisation of science into practice. Exposure to patients, carers and the wider healthcare team will increase as the programme progresses; students will encounter real patients, as well as simulated and virtual patients. Placements will take place in a variety of sectors, including community and hospital pharmacy, industry, care homes, and GP practices, and students will be exposed to real-life clinical scenarios in hospitals.

Assessments, designed to demonstrate meeting the Standard 10 learning outcomes at the appropriate level and to assure competence in critical areas relating to professional practice and patient safety, employ a range of methods including examinations, written reports, dissertation, oral/poster presentations, poster presentation and objective, structured clinical examinations (OSCEs); students must also maintain a CPD portfolio demonstrating reflective practice throughout the course. Diagnostic, formative and summative assessments will be used throughout and students will be provided with timely, comprehensive feedback on their coursework and assignments. Students have the right to undertake assessments through the medium of Welsh; here, wherever possible, feedback will be provided through the medium of Welsh. Some summative assessments, such as calculations and specific OSCE stations, will include 'must pass' elements focusing on competence, patient safety and ethics to ensure that the safety of patients and the public will not be jeopardised. In such assessments, students who consistently demonstrate unsafe practice which could put patients and/or the public in danger will not be allowed to pass.

Standard 6: Support and development for students

The team was satisfied that the single criterion relating to this standard will be met.

Extensive support is provided to students for health, conduct and academic issues. During the induction week at the beginning of year 1, sessions will be held to facilitate students' transition into higher education; these sessions will enhance their understanding of studying at university, helping them to transform into active, independent and life-long learners. The concept of CPD and revalidation and their relevance to pharmacy will be introduced early in the first year. Students will undertake CPD activities in every year of the programme through the zero-credit 'Pharmacist as a Professional' modules. Students will maintain an electronic portfolio of their CPD entries which they will be encouraged to discuss with their peers and Academic Mentors. Each student will be assigned an Academic Mentor, equivalent to a personal tutor, with whom they meet throughout the year in a series of compulsory individual and group sessions; these Academic Mentors, who are all teachers on the MPharm programme, will be the primary point of academic contact for students and will provide personalised support and guidance on a range of issues that may affect students' wellbeing, development, attendance and educational progress. Typically, students will retain the same Academic Mentor throughout the duration of

their studies, thus establishing an effective mentor-mentee relationship. As well as offering students help with their personal development planning and career advice, Academic Mentors may also signpost them to welfare and other support services as appropriate. Students are encouraged to contact their Academic Mentor at any time by email, telephone or in person during working hours if they have any questions or concerns. Meetings will be timetabled with an agenda in place for each session covering key themes, such as CPD or careers; records of meetings will be kept. Students will also be supported by a peer mentoring system, whereby those in year 1 will be paired with a 'senior' student with the aim of supporting the transition to higher education. This system will be incorporated into the 'Pharmacist as a Professional' modules, because contributing to the development of others forms part of the GPhC's Standards for Pharmacy Professionals.

The University offers a wide range of support for students, including through the Swansea Employability Academy, the Disability Office, Swansea Academy of Inclusivity and Learner Success (SAILS), and, for Welsh-speaking students, through the Academi Hywel Teifi. Information about pharmacy careers and enhancing employability will be built into the MPharm degree. This will include timetabled careers advice seminars delivered by employers and external pharmacy organisations, and support and advice for students seeking pharmacy vacation experience. Year 3 will include a week-long series of events delivered by employers and other experts covering employability skills and information relevant to future practice.

Standard 7: Support and development for academic staff

The team was satisfied that all criteria relating to this standard will be met.

Members of staff are supported through a variety of mechanisms; these include induction for new staff members and for those changing roles, supervisory arrangements, training for line managers, mentoring, and the provision of CPD opportunities, as well as protected time for research and scholarship activities. On appointment, all members of academic staff are assigned a line manager and a mentor. There is a comprehensive induction process for all new members of staff, including Teacher Practitioners; this process familiarises new colleagues with the culture, structure, and norms of the University, and how it functions. Within the Medical School, as part of their induction, new members of staff meet with their line managers, or a nominated individual, for a structured discussion based on an induction checklist covering the physical layout of the department, the people, the organisational structure, the rules, procedures and practices, health and safety, and the relevant job description. This induction discussion also addresses the specific online training courses that all new staff members are expected to complete. New members of staff undergo a three-year probationary period during which agreed targets must be met, with each probationary staff member having a mentor and being supervised by their line managers, normally the Head of Pharmacy. Those members of staff who are not pharmacists will be assigned a pharmacist mentor during their induction.

After completion of the structured probationary period, academic staff development is then supported via the University's Performance Development Review (PDR) process, through which staff members undergo two professional review meetings each year. The PDR provides an opportunity for staff members and their line managers to reflect on the past year's achievements and to plan for the coming year. The Medical School does not use a quantitative

workload model, the aim being for staff members to take ownership of their own specific workloads through agreement with their line manager, whose role is to ensure that it is appropriate. Workload can sometimes be managed through more flexible working arrangements and all employees have the right to request adjustments to their working pattern. There are extensive opportunities for staff development; these are provided both within the Medical School and by University-wide organisations, including Swansea Academy of Learning and Teaching (SALT), which supports pedagogic research and enables the development of teaching excellence, and Swansea Academy of Inclusivity and Learner Success (SAILS) which works across the University to ensure the accessibility of inclusive learning, teaching and assessment. The University expects all academic staff to work towards attainment of Fellowship of the HEA supported by SALT. Peer review of teaching in various settings, including classrooms, laboratories or workshops, will be conducted between pharmacy academics to enable constructive feedback on the effectiveness of interventions aiming at promoting student learning. Where members of staff need additional support, their line managers can signpost them to appropriate services provided by the University, including the Occupational Health Service, the Staff Counselling Service the Medical Centre, and the Health & Wellbeing Academy.

Standard 8: Management of initial education and training

The team was satisfied that both criteria relating to this standard will be met.

Responsibility for the delivery of all programmes within the Medical School lies with the Head and Dean of the Medical School, with responsibility for the MPharm programme delegated to the Head of Pharmacy, who chairs the Pharmacy Board of Studies and, along with the MPharm Programme Director, is a member of the SUMS Learning and Teaching Committee. Oversight of the curriculum within each year will be the responsibility of Year Heads, who will each oversee a team of module coordinators with responsibility for the modules in that specific year. Year Heads, module coordinators and other key individuals make up the membership of the Pharmacy Board of Studies. The delivery and quality of student placements will be managed by the MPharm Placements Lead, who will work closely with the Medical School Student Information and Education Office and the placement providers within the defined agreements. An electronic system, the Student Attendance Monitoring (SAM) system, is used to monitor the attendance of students at scheduled learning sessions, including lectures, seminars and practical classes. The system allows monitoring of MPharm student attendance by the Medical School Student Information and Education Office, and processes are in place to deal with those students who are not engaging with the programme.

Standard 9: Resources and capacity

The team was satisfied that all criteria relating to this standard will be met.

Each spring, the Medical School, like the other Colleges, submits a business plan to the University's central planning department. This plan covers income and expenditure for each course and a detailed business plan was produced to model all aspects of the MPharm programme, covering student and staff numbers, income, and expenditure; this business plan

has been incorporated into the College Business Plan. In order to cover the costs of introducing the MPharm, pump-priming funding was approved through a mechanism allowing the Medical School to reduce its overall annual contribution to the University. This funding, totalling £1.587M, was approved in January 2018 and will end in 2022/23. The development of the MPharm is overseen by the MPharm Project Board, which meets every six weeks to review the major achievements and address any risks. The Project Board is co-chaired by the University's Provost and the Head of the Medical School, and its membership includes the Head of Pharmacy, along with representatives from Estates, Human Resources and Marketing. The overall plan includes the appointment of 23.9 FTE academic staff to ensure coverage of the seven themes of the MPharm (pharmaceutics, pharmaceutical chemistry, pharmacology, biology & biochemistry, anatomy & physiology, clinical pharmacy and pharmacy practice). These appointments will be phased to ensure that sufficient staff members are in post to plan, write and deliver the MPharm programme and to ensure that the staff/student ratio remains at an appropriate level; the staff/student ratio at steady state is planned to be around 1:16, which is the sector average. Three of the first seven members of academic staff so far appointed are GPhC-registered pharmacists, and a further two are pharmacists registered overseas; it is anticipated that approximately one third of the Pharmacy Team will ultimately be practising UK pharmacists. Discussions with Swansea Bay University Health Board (SBUHB), Hywel Dda University Health Board and community pharmacy chains have indicated a strong willingness to release their employees for sessional teaching roles on the MPharm and to develop jointly funded posts such as Teacher Practitioners; one Teacher Practitioner is about to be appointed. The MPharm programme will be supported by the Medical School Student Information and Education Office, led by the Medical School Senior Administrator. The Pharmacy Business Plan makes provisions for the recruitment of five additional members of staff to support the extra workload involved in administering the new programme, along with 5.2 technician posts.

The Singleton Park Library holds an extensive print and electronic journal collection, supporting the wide range of topics covered by the Medical School and the College of Human and Health Sciences. The major databases for medical and life sciences are available on and off campus. The MPharm development team has been in discussions with the Academic Liaison Librarian for Medicine from an early stage to ensure that necessary resources are available. Where possible, resources will be available to MPharm students as both hard copies and e-books. MPharm students will also be able to join the Society of College, National and University Libraries programme, allowing access to the majority of academic libraries throughout the UK; they will also be able to access reference material in local Swansea Bay University libraries. The major databases for medical and life sciences, including pharmacy-specific databases and reference resources, such as Medicines Complete and the British Pharmacopoeia, will be available to MPharm students. In response to the closure of the University Library buildings enforced by the COVID-19 pandemic, many resources have moved online. Items on reading lists have been sourced electronically wherever possible, and publishers approached to convert material not currently available online into an electronic format. All information and digital literacy classes are now delivered online, and support to individual students is provided via individual Zoom meetings, email or live chat. MPharm students will benefit from PC suites, and campus-wide free WiFi. Since August 2020, the University has employed Canvas as its VLE for learning and teaching.

Funding (£2.1M) has been agreed to establish a dedicated core pharmacy area at the heart of

the Medical School, allowing the co-location of Pharmacy students, Medical students and Physician Associate students. This area will include the Pharmacy Skills Suite, a versatile space that will allow for different teaching techniques and for the preparation of students for patient-facing roles. Consultation rooms will allow undergraduate students to practise consultation skills and a 'simulation centre management system' will be used to capture simulated clinical experiences in teaching and assessment. Each consultation room will have recording equipment to allow the evaluation of clinical skills. The Medical School has input in the development of the new £15 million Swansea Wellness Centre in the centre of the city; this will include a GP practice, a pharmacy and other health services, as well as sessional space for education and training, to which the University will have access.

Standard 10: Outcomes

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

Although these learning outcomes were not specifically addressed during the step 3 event, scrutiny of the documentation allowed the team to be satisfied that they are likely to be delivered at the appropriate level; the team will scrutinise them in depth during step 4 of the accreditation process.

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 accreditation 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 timescales 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	Does
10.2.1.b Access & critically evaluate evidence to support safe, rational & cost effective use of medicines	Shows how	Knows how
10.2.1.c Use the evidence base to review current practice	Shows how	Does
10.2.1.d Apply knowledge of current pharmacy-related policy to improve health outcomes	Knows how	Shows how
10.2.1.e Collaborate with patients, the public and other healthcare professionals to improve patient outcomes	Knows how	Shows how
10.2.1.f Play an active role with public and professional groups to promote improved health outcomes	Knows how	Knows how
10.2.1.g Contribute to research & development activities to improve health outcomes	Knows how	Knows how
10.2.1.h Provide evidence- based medicines information	Shows how	Does

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	Shows how
10.2.2.b Identify inappropriate health behaviours and recommend suitable approaches to interventions	Shows how	Does
10.2.2.c Instruct patients in the safe and effective use of their medicines and devices	Shows how	Does
10.2.2.d Analyse prescriptions for validity and clarity	Shows how	Does
10.2.2.e Clinically evaluate the appropriateness of prescribed medicines	Shows how	Does
10.2.2.f Provide, monitor and modify prescribed treatment to maximise health outcomes	Shows how	Does
10.2.2.g Communicate with patients about their prescribed treatment	Shows how	Does
10.2.2.h Optimise treatment for individual patient needs in collaboration with the prescriber	Shows how	Does
10.2.2.i Record, maintain and store patient data	Shows how	Does
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	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	<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 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)*

