

Accreditation of Master of Pharmacy Degrees

Interim standards, Sept 2010

Introduction

This document sets out the standards against which we, the General Pharmaceutical Council (GPhC), will accredit those providers currently progressing through the accreditation process for new UK MPharm degree courses.

This document is aimed solely at those providers currently progressing through the accreditation process for new UK MPharm degree courses (provisionally accredited courses). This manual details the 2003 standards for undergraduate degrees in pharmacy.

Any institution wishing to either begin, or re-join, the accreditation process for new MPharm degrees will be accredited against the new education and training standards which are due to be introduced in 2011, following a period of consultation. All fully accredited MPharm degree courses will undergo reaccreditation against these new standards. Potential new providers, and currently accredited provider should contact the accreditation department at accreditation@pharmacyregulation.org or 0203 365 3452 for information on accreditation of MPharm degrees to the new education and training standards.

Criteria for degree accreditation

Organisation and status of the criteria

The criteria for degree accreditation are structured as follows:

- Pre-requisites
- Outcomes
- Processes
 - The student
 - The degree course
- Structures

The GPhC's main concern is for the outcomes, processes and structures of, and for, the MPharm degree course. As such there is just a single criterion related to degree course entry requirements. The pre-requisites are dictated by the European Directive 85/432/EEC and resolutions of the EC Advisory Committee on Pharmaceutical Training.

Prerequisites

1. The student undertakes at least 3,000 hours of directed study of pharmaceutically-relevant subjects within a full-time degree course of four years' duration.
2. The greater part of the curriculum and not less than 50% of the final year of the degree course is core content, i.e. common to all students.
3. Those components of the degree course which collectively deal with the actions and uses of drugs and medicines occupy no less than 35% of the curriculum, irrespective of the extent of specialisation in the final year.
4. At least 35% of those parts of the degree course common to all students involve the student in preparing for, undertaking and analysing the outcomes of experiments, exercises or observations wherein s/he reaches his/her own findings or conclusions.
5. The degree course includes a significant research project of three to six months duration, but not necessarily with all curriculum time during this period being devoted to this activity alone. The student must undertake the project alone or as his/her individual contribution to a team endeavour. The project must address a research question or problem, must involve a critique of research methodology employed, and must include an analysis of results generated directly by the student or indirectly by others as primary researchers.
6. All pharmacy degree course entrants must have achieved GCSE at Grades A to C, or equivalent qualifications, in English Language and Mathematics

Outcomes

The graduate...

7. takes personal responsibility for his/her learning, developing a foundation for subsequent continuing professional development,
8. can communicate effectively, orally and in writing, with his/her teachers and peers, as a sound basis for future interaction with patients, carers and other healthcare professionals,
9. can undertake structured problem-solving,
10. is able to recognise ethical dilemmas in healthcare and science, and understands ways in which these might be managed by healthcare professionals, whilst taking account of relevant law,
11. appreciates and has an understanding of main sources of drugs; ways in which drugs are purified, characterised and analysed; their physico-chemical properties; and properties drugs display as biologically active molecules in living systems,
12. has an understanding of the design, manufacture and performance of drug dosage forms and is able critically to appreciate the inter-relationship between formulation, drug delivery and therapeutic effectiveness,
13. understands how medicines are developed, manufactured and brought to the market place,
14. has proved him/herself capable of performing pharmaceutical calculations accurately,
15. has the capability to prepare extemporaneously any medicine for which this would be regarded as the normal means of provision, including by aseptic technique,
16. is able to interpret and evaluate, for safety, quality, efficacy and economy, prescriptions and other orders for medicines, and to advise patients and other healthcare professionals about medicines and their usage,
17. is aware of and understands systems for the quality assurance of products and pharmaceutical services. This includes the management of risk,
18. is able to design, improve, and operate within standard operating procedures, including Patient Group Directions,
19. is able to supply medicines in accordance with legal and professional requirements,
20. can undertake critical appraisal of information or conjecture in all forms of presentation,
21. can apply appropriate research approaches and methods to manage scientific and practice problems,

22. has a foundation of knowledge, understanding and skills for promoting good health; diagnosing disease; and prescribing medicines.
23. Understands and can explain concepts of medicines management and pharmaceutical care.

Processes

The student...

24. is inculcated with a concern for the patient, normally above other considerations,
25. gains first-hand structured experience of practice, including contact with patients and practitioners of other healthcare professions,
26. is required to communicate with individuals and audiences,
27. is instructed in the use of, and required to apply, library and other information resources,
28. is required to apply routinely, word-processing, spreadsheet, database, e-mail and information retrieval computer applications,
29. has brought to his/her attention the continuing professional development opportunities open to practising pharmacists,
30. is made aware of the advantages of, and encouraged to undertake, employment or attachment for vacation experience in pharmacy practice,
31. Is encouraged to seek networking opportunities in professional pharmacy organisations

The degree course...

32. is planned with reference to the indicative syllabus at Appendix 1 and as an integrated programme. This means that the inter-relationships of its component parts are considered and made explicit,
33. seeks to develop students' skills of self-management, teamworking and peer assessment,
34. has the features of positioning knowledge, understanding and skills in a pharmaceutical context and with reference to pharmacy practice,
35. in the processes of curriculum review and development, benefits from the academic staff properly taking account of major advances and developments potentially impacting on pharmacy,

36. features a variety of approaches to achieving and assessing learning appropriate to its stated objectives, including lectures, practical classes, seminars, workshops, tutorials, computer-based/ aided learning, clinical visits, problem-solving exercises, essays, projects, dissertations and other assignments, and examinations,
37. includes significant staff-led or supervised time devoted to the topics of pharmacy law and professional requirements, and their applications in practice, this being in addition to the assimilation of legal and professional requirements into a substantial proportion of a dispensing practical course,
38. where appropriate and possible, has the student taught and learning alongside and together with students of other healthcare professions,
39. has pharmacy undergraduate teaching taking place alongside and with reference to research and other postgraduate activities.

Structures

40. For its proper ethos, quality assurance, and scientific and professional leadership, the degree course is within the control of, and predominantly delivered by, an autonomous school or department of pharmacy,
41. accommodation, human, equipment, and other resources available to the school or department of pharmacy are sufficient for the effective delivery of the planned degree course to the numbers of students in each year of the degree course, and overall; properly taking account of the teaching, research and other commitments of the unit,
42. the school or department of pharmacy has an appropriately expert academic staff, including such in the practice of pharmacy,
43. the school or department of pharmacy has within its academic staff at least one pharmacist who is a professor or of equivalent authority in the institution,
44. teacher-practitioners and visiting lecturers from all of community, hospital and industrial pharmacy practice, and appropriate persons from other healthcare professions are involved in teaching/support for learning and assessment,
45. the student has access to a personal tutor or tutors for academic guidance and pastoral care,
46. there is an active staff-student consultative committee,
47. pharmacy law, professional requirements and practice are taught - predominantly by pharmacists - from within the identifiable organisational unit which provides the bulk of teaching and other support for learning for the degree course,

48. there is assessment of competence in dispensing either by an examination at the end of a dispensing course, taken under full examination conditions with an external examiner present or by a series of tests taken under examination conditions, with an external examiner having the right to attend any of the practical tests and attending some part of the assessment every year. The external examiner is associated with the overall assessment.
49. There is a requirement for achievement of satisfactorily high standards in assessments of both dispensing practice, and pharmacy law and professional requirements, irrespective of the student's performance in other subjects. Compensation of marks for these subjects is not allowed and success in these subjects is either a condition of entry to the final year or, if undertaken in the final year, for the award of the degree.
50. During the final year, the student is required to pass an assessment of knowledge and understanding of any important recent changes in pharmacy law and /or professional requirements.

Standing conditions of accreditation

These conditions apply in all circumstances of degree accreditation:

- i. The provider always seeks approval from the General Pharmaceutical Council (GPhC) for curriculum amendments and always at least informs the GPhC of significant changes to pharmacy undergraduate student numbers or resources for their teaching, learning, support or assessment, including any change from internal to teaching, learning and assessment from outside the school or department.
- ii. The provider produces and submits to the GPhC annually requested data on student numbers, progression, and degree awards.
- iii. The provider produces and submits to the GPhC annually requested information about the extent of human and physical resources it enjoys for the delivery and support of the degree course.
- iv. The provider makes students and potential students aware of the existence and internet address where they can view the GPhC's summary reports of accreditation events.

Appendix

Indicative syllabus for UK pharmacy degree courses

The syllabus is as titled, indicative, that is indicative of items which should appear in an actual syllabus. It is not an exemplar syllabus. Reflecting this, while the syllabus items are grouped in a certain way, to give prominence to the patient and avoid traditional categorisations, this organisation is not intended to be imposed on or in schools of pharmacy. Similarly, while each of the items is intended to be of a size which is meaningful, they are not suggested to be all of the same weighting or scale. Thus, for example, Item 7 is likely to command far more curriculum time and assessment effort than Item 11.

The patient

The patient is the main or ultimate focus of everything in the degree course. The items grouped under this heading address the biological, environmental, psychological and some of the social foundations of treatment with medicines. Although these items relate to all of the Outcomes required of a degree course, they especially relate to Outcomes Criteria 10 and 22.

1. The unique role of the pharmacist in ensuring that the patient benefits from pharmaceutical intervention.
2. Principles and methodologies of the social and behavioural sciences relevant to pharmacy.
3. Health and illness: definitions and perceptions.
4. Theory and practice of personal and inter-personal skills, including written and verbal communication skills, and study skills.
5. The ideas and approaches of compliance or concordance in health care provision, particularly as they apply to medicines-taking.
6. The pharmacist's contribution to the promotion of good health and disease prevention.
7. Normal and abnormal bodily function: biochemistry, genetics, microbiology, nutrition, immunology, physiology, pathology, pathophysiology and infective processes.
8. Aetiology and epidemiology of major diseases and the principles of their drug treatment.
9. Symptoms recognition and management, the principles of differential diagnosis, important diagnostic methods and tests, and medical terminology.
10. Disease management and care planning, including application of clinical guidelines, prescribing guidelines and medication review.
11. Complementary therapies.
12. Drug and substance misuse, and physiological and psychological dependence. Clinical toxicology associated with drug over-dosage, drug or substance misuse or accidental exposure.

Medicines : drug action

The focus here is on drugs in use, particularly in the patient. The first three items in this short list are large in scale and high in importance. There is an especially strong relevance to Outcomes Criteria 16 and 22.

13. Molecular basis of drug action and the actions of drugs within living systems; molecular, cellular, biological and physical aspects.
14. Clinical therapeutic uses of drugs and medicines in man, including contraindications for, adverse reactions to, and interactions of drugs, and their relevance to treatment.
15. Drug absorption, distribution, metabolism and excretion and influences thereon, including formulation, route of administration, dosage regimen, ageing and disease.
16. Clinical evaluation of new and existing drugs and medicines, and post-marketing surveillance. Good Clinical Practice.
17. Prospects for new approaches in therapeutics.

Medicines : the drug substance

For patient safety and often for the quality and efficacy of treatment, it is important that the pharmacy graduate, uniquely among the team of health professionals, has an appreciation and understanding of the sources and properties of the drugs which form the biologically active and therapeutic components of medicines. These items are especially relevant to Outcomes Criteria 11 and 13.

18. Sources and purification of substances used in medicine of biotechnological, chemical synthetic, immunological, mineral and plant origin.
19. Physico-chemical aspects of drugs and biological systems, including thermodynamics and chemical kinetics.
20. Specifications of substances used in medicine, including physical and chemical tests.
21. Analytical methods: principles, design, development, validation and application.
22. Prediction of drug properties, including chemical compatibilities, from molecular structure.
23. Drug design and discovery: principles, approaches and future prospects.
24. Cell and molecular biology, including genomics, proteomics and gene therapy relevant to pharmacy.
25. Biological methods of measuring drug activity and biological standards.
26. Biotechnology and biotechnological processes.

Medicines : the medicinal product

The formulation and compounding of medicines, taking the pure drug substance and producing a dosage form for administration to the patient, are at the heart of pharmaceutical science. This is established as the main area of contribution of pharmacy to the pharmaceutical sciences. More importantly, for the safety, quality, efficacy and economy of treatment with medicines, all pharmacy graduates need knowledge, understanding and capability in this area. The listed items are especially relevant to Outcomes Criteria 12, 13, 14, 15, 17, 18 and 19.

27. Sale and supply of medicines, including evaluation and management of risk and provision of advice.
28. Medicines: licensing of medicines; consumer protection, including product liability and unlicensed medicines; legal classifications of medicines, including controlled drugs and their sub-classes.
29. Materials used in formulations and devices for the delivery of drugs, their biological, chemical and physical properties, and the development and application of standards.
30. Biopharmaceutics, developmental pharmaceutics, pre-formulation and formulation studies; design and standardisation of medicines for administration to the body by different routes and for delivery to specific target sites.
31. The influence of manufacture and distribution on product quality with respect to biological safety, bioavailability (including bio-equivalence), dosage uniformity and stability.
32. Packaging and labelling; purpose, design and evaluation.
33. Quality assurance of pharmaceutical products and processes, including Good Laboratory Practice, Good Pharmaceutical Manufacturing Practice and the role of the Qualified Person.
34. Microbiological contamination: sources, determination, consequences and control.
35. Sterilisation processes and aseptic procedures in the preparation of pharmaceutical products and medical devices; monitoring of sterilisation processes.
36. Environmental control in manufacturing facilities and in the supply chain.
37. Degradation of medicines; evaluation and control of biological, chemical and physical degradation.
38. Immunological, biotechnological and radiopharmaceutical products.
39. Dressings and other wound management products.
40. Medical devices: their types, regulation and, particularly, their use for the measurement or maintenance of physiological function or medicine delivery.
41. Statutes and main regulations related to medicines and poisons.

Healthcare systems and the roles of professionals

For pharmacy graduates to be able to practise effectively, efficiently and confidently they need to know about, understand and have some of the skills to operate within healthcare systems, alongside and together with other health professionals and other scientists. The listed items are especially relevant to Outcomes Criteria 17, 18, 19 and 23.

42. Health care systems: NHS community, primary, secondary and tertiary care; private health care; the pharmaceutical industry; scientific and medical publishing; all including the roles of pharmacists, and other healthcare professionals and other scientists. (To include coverage of concepts of medicines management and pharmaceutical care.)
43. Public health and the role of the pharmacist.
44. The duty of care to the patient and the wider public: concept, scope and application of the Standards of conduct, ethics and performance.
45. Codes, standards and systems of governance and practice; risk management; and personal accountability, to include the need for, and means of, continuing professional development.
46. Professional and multi-professional audit. Managing and learning from errors.
47. Present and potential use of information technology in pharmacy and more widely in healthcare.

The wider context

The pharmacy graduate needs a realistic and well-informed view of how healthcare, and pharmacy within it, fits and operates within the wider world. The listed items are especially relevant to Outcomes Criteria 10, 20 and 21

48. The political and legal framework, requirements and processes relevant to pharmacy.
49. Health policy and economics, including particularly pharmacoeconomics.
50. Scientific, clinical, health services and social services research; methods and results relevant to pharmacy.
51. Laboratory, other workplace and environmental safety and protection, including health and safety at work, the Control of Substances Hazardous to Health, Chemicals Hazard Information and Packaging for Supply, and waste disposal.

The Outcomes Criteria not mentioned above, i.e. 7, 8 and 9, are generic outcomes expected of any pharmacy graduate; overarching syllabus content.