tomorrow’s pharmacist will need to have the attributes of a professional, a practitioner, a scholar and a scientist, irrespective of the sector in which they work. This was the view expressed by Anthony Smith, principal and dean, professor of pharmacy at the School of Pharmacy, University of London, chairman of the Council of University Heads of Pharmacy (CUHOP) and a member of the Modernising Pharmacy Careers (MPC) programme board.

Professor Smith outlined some of the health policy drivers that are leading to change. QIPP (quality, innovation, productivity and production) is driving the Department of Health at present and provides the background context to the work of Medical Education England (MEE). Bringing care closer to patients mean that services are being migrated from tertiary to secondary and then on to primary care. This also necessitated the migration of skills of the workforce in the various sectors.

Pharmacy is one of the four work streams of MEE, which, Professor Smith said, shows that pharmacy finally has a place at the top table. MPC has a programme board that is looking at teaching learning and assessment at both pre- and post-registration. It also has a role in career development and ensures there is adequate workforce development and planning. It is not just about pharmacists, since it is also for pharmacy technicians and all pharmacy teams in England. One of its remits is to liaise with the devolved administrations and Professor Smith said that this is important, since MEE’s ambitions have to fit in with the ambitions of other countries.

MPC has the remit to provide leadership and oversight and promote stakeholder engagement in its work. But it will not be setting standards or accrediting programmes. That is the remit of the General Pharmaceutical Council. Also, it will not be drafting curricula or delivering education and training; those are the roles of academia working with practitioners. It is, however, following up the recommendations made in the pharmacy White Paper, which said that there should be meaningful clinical content throughout the undergraduate programme and which proposed the integration of the degree course with the preregistration year. However, Professor Smith reminded the audience that, two years ago, when the White Paper was written, we were in a different financial climate.

He spoke of funding and fees, saying that the Browne Review into higher education funding would become significant. It was the precursor to lifting the cap on fees, but it could lead to changes beyond that, with differential pricing, producing a fundamental impact on the shape of higher education. The impact of fees showed there had been a decline in unit resource (i.e., the amount to teach each student). Higher education has to face, for its first time, no additional funding and it was feeling the cuts.

Despite this position, MPC is addressing the challenge of how pedagogic conditions could be created within higher education to support students to recontextualise knowledge and skills. Professor Smith believed that a formal collaboration between higher education and employers is essential to design, deliver and assess the scientific and organisational knowledge and skills in both education and workplace contexts. He believes strongly that graduation and registration should be coterminous.

For students, some of the key issues are the potential for increased costs and fees, and whether there would be a salary or bursary for time on placement. Also, unlike the "fallow year", the new proposals could create a "double preregistration" in one year.

Professor Smith said that the current thinking about pharmacy has been presented to MEE, which had given MPC the green light to go ahead. More stakeholder events would be held in 2010/11.

Developing educational standards

Stephen Denyer, head of Welsh School of Pharmacy, Cardiff University, described how the educational standards to support the changes are being developed. The science base of pharmacy is seen as integral to underpin the necessary competence and skills of the future pharmacist. The practice framework had defined the competencies for novice pharmacists as part of the Royal Pharmaceutical Society’s “Fit for the future” education reform. These were developed by an independent drafting group, comprising CUHOP nominees and preregistration experts. They had been developed as aspirational rather than immediately achievable and deliverable. Following consultation, hosted by the Council for Healthcare Regulatory Excellence, the learning outcomes have now been modified and there will be a further consultation. This will move them from being aspirational to deliverable.

Professor Denyer explained how the emphasis for education in the future would be on output rather than input. Outputs would be assessed in line with Miller’s triangle (see Figure below). The emphasis for assessment of competence will be on demonstrating that a student “knows how”, whereas for assessment of performance in practice it would be necessary to assess “does”. At this level of assessment, future pharmacists will need to show that they can act independently and consistently in a complex situation of an everyday or familiar context. Evidence at this level will demonstrate the learning outcomes in a complex everyday situation repeatedly and reliably. To do this, students and trainees will need to be observed by an appropriately experienced practitioner.

The roles of the GPhC in future pharmacy education

Soraya Dhillon, head of school, Hertfordshire School of Pharmacy, and member of the General Pharmaceutical Council, said that the GPhC will be responsible for the assessment and approval of education and training providers, and any courses and qualifications that lead to either registration or specialist annotations in the register. This is in line with its role as a registrar to uphold standards and quality. In that respect, a person will be considered to be a practicing pharmacy professional if “while acting in the capacity of or purporting to be a pharmacist or a pharmacy technician, that person does any work or gives any advice in relation to the preparation, assembly, dispensing, sale, supply or use of medicines, the science of medicines, the practice of pharmacy or the provision of healthcare”.

Professor Dhillon said that the GPhC’s draft education standards describe what is expected of higher education institutions and employers who are responsible for teaching, learning and assessment. This ensures that future pharmacists are competent to practise safely and effectively and meet the standard of proficiency. The standards are set in a context of greater patient involvement and clinical focus, where there is a key role for science and pharmaceutically literate scientists. Although they are intended to be deliverable within existing resources, the GPhC recognises that, without additional funding, this may be difficult in clinical areas.

The GPhC has no plans for student registration at inception, although it has not ruled this out for the future. In the meantime, schools of pharmacy will remain responsible for fitness to practise as they are now. This is based on the Royal Pharmaceutical Society’s recommended student code of conduct, which strengthens the relationship between the MPharm and the regulator. In support of this, the council of the GPhC is due to consider proposals for a student code of conduct.

The consultation on standards indicated that, although there is some support for the proposed changes, there is also a level of uncertainty. Professor Dhillon said that, although 45 per cent of respondents thought that undergraduate education and preregistration training should be integrated, 39 per cent were unsure and 17 per cent disagreed. There is more agreement with the statement “that standards should be based on an increased clinical role for pharmacists”, with 58 per cent in agreement, 27 per cent unsure and 15 per cent disagreeing.

Pharmacists are ideally placed to be involved in providing pharmacogenomic testing

The importance of personalised medicine to the future of pharmacy practice and undergraduate education was raised by David Thurston, professor of anticancer drug design, London School of Pharmacy. The availability of the first commercially available pharmacogenetic microarray, the AmpliChip cytochrome P450 test, which provides comprehensive coverage of several gene variations, could help with the choice of both starting and maintenance doses of several prescription drugs used in the treatment of cancer (e.g., tamoxifen, ondansetron, codeine, dextromethorphan and tramadol).

There is broad agreement that clinical application of such technologies will bring personalised medicine into more general clinical practice in the future, although there are varying views on the likely time lines. Pharmacists are ideally placed to be involved in pharmacogenomic testing, perhaps even point-of-care testing in community pharmacies, interpretation of results, and advising prescribers and patients accordingly.

The quantity and quality of teaching provided in the pharmacogenomic sciences is currently highly variable in pharmacy schools and, in addition, qualified pharmacists appear to have little enthusiasm to become involved in this area. Professor Thurston proposed a national syllabus for the teaching of personalised medicine sciences. He believed that pharmacy schools and pharmacists should seize this opportunity to become the front-running healthcare professionals involved in applying the pharmacogenomic sciences to all aspects of healthcare, including risk determination, disease prevention, treatment, monitoring and the public understanding of science.

Pharmacists are ideally placed to be involved in providing pharmacogenomic testing

He concluded that, if pharmacy does not, then another profession will.

Science is pharmacy’s unique selling point

Aspects of the integration of scientific knowledge with the clinical role were presented by Jayne Lawrence, of King’s College London, and chief scientific adviser, Royal Pharmaceutical Society. She said that science is pharmacy’s unique selling point.

We are the only healthcare profession that understands medicines and medicines use. The science in pharmacy is essential for our future roles as pharmacist consultants, advanced practitioners, and for extended roles in the community. She pointed out that she had heard it said that, if you take the science out of pharmacy and pharmacists, you are left with nursing and nurses.

At King’s College London, an advanced pharmacy studies component in year 4 provides practice in solving scientific problems using a case-based learning format. It consolidates learning from the three previous years and allows students to take part in a scientific and ethical debate on current pharmaceutical issues relating to science and ethics in practice.

The cases are based on actual enquiries to the Society’s drug information centre and, in addition, provide insight into the role of the pharmacist in a drug information centre. They remind students that the science of today is the practice of tomorrow.