

## SPECIAL ARTICLES

### Highlights From the FIPEd Global Education Report

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The International Pharmaceutical Federation Education Initiative (FIPEd) launched the 2013 FIPEd Global Education Report (available at: [www.fip.org/educationreports](http://www.fip.org/educationreports)) in September 2013. This is the first publication of its kind to provide a baseline on the current status and transformation of pharmacy and pharmaceutical science education worldwide.

A foundation of scientific and professional education and training is a key factor for pharmacists to develop the capability to improve therapeutic outcomes, enhance patients' safety and quality of life and help people to stay healthy, as well as advance science and practice. For pharmacy, contemporary forms of initial education and training are vital for the profession to meet the increasingly complex pharmaceutical and public health care demands of populations. The 2013 FIPEd Global Education Report was conducted using surveys in English, French, Portuguese, Arabic, Japanese, Chinese, and Spanish. This resulted in education and workforce data for 109 countries and territories representing around 175,000 pharmacy students and 2,500 education institutions worldwide. Data indicate that education, in both capacity and infrastructure, varies considerably between countries and World Health Organization (WHO) regions, and generally correlates with a country's population size and economic development indicators. Those countries and territories with lower economic indicators tend to have relatively lower educational capacity and pharmacist production.

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African countries tend to have lower educational capacity and supply pipelines for pharmacists. This has implications for future parity for access to medicines and medicines expertise. There needs to be an ongoing effort to ensure capacity building linked with initial education and training to meet the health needs of populations. Initial education is key in the development of the health care workforce for the future; better science, better practice, and better health care are all linked to the responsible use of medicines.

The proportion of the female undergraduate population is a majority globally, with some regions having an average female pharmacy student enrolment of more than 70%. The relative costs of pharmacy and pharmaceutical education also varies across countries and territories. Fourteen countries in this sample reported no direct student tuition fees (including Afghanistan, Austria, Czech Republic, Denmark, Estonia, Greece, Hungary, Malta, Poland, Serbia, Slovenia, Sweden, Turkey and Uruguay). For those countries in the sample that do charge a direct tuition fee (for domestic students in public universities) the correlation of direct tuition fee payments with gross national income (per capita) is significant. Similarly with the total student costs (ie, direct tuition fee plus public capitation contribution) there are strong positive correlations with gross national income. There is an associated variation in the relative contributions of direct (individual) and public contributions for initial undergraduate education in the higher education sectors.

Respondents provided high-level information on quality assurance. Information was sought to characterize

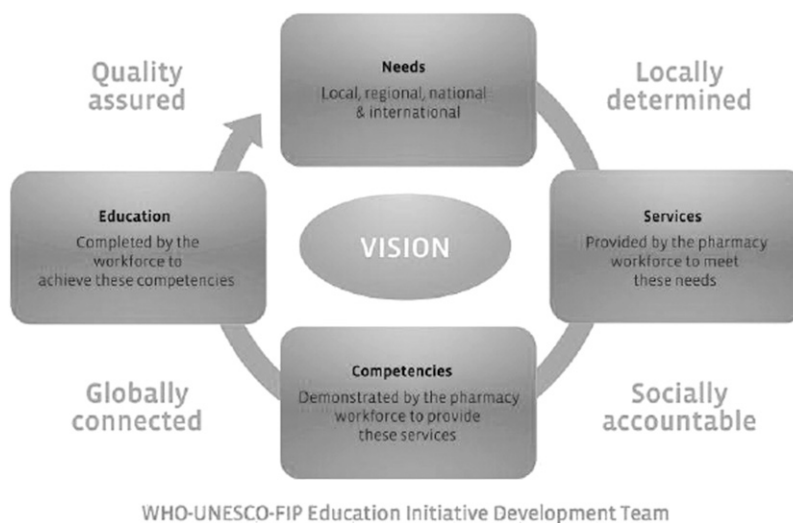


Figure 1. Needs-based professional educational model.

whether quality assurance and accreditation was in place within the country and the accrediting body responsible. Sixteen percent of respondents claimed to have no accreditation mechanisms.

Of the 64 countries and territories who supplied data in this section, 38 (59%) indicated the existence of a national core curriculum or syllabus for initial education. Forty-seven countries and territories provided data on the proportion of time spent on science-based laboratory learning in the core curriculum, which ranged from 6% to 70%, with a sample mean of around 36% (one third) of curriculum time spent on laboratory-based learning.

Degree titles and lengths vary, which suggests differences in content and education provision models between countries and regions. This variance suggests that additional research is needed to examine similarities and differences in the educational outcomes associated with differing degree titles and lengths.

The 14 case studies included in the report provide an overview of the transformation that is occurring in pharmacy and pharmaceutical science education globally. Fourteen countries, Chile, Great Britain, Japan, Jordan, Malaysia, Namibia, Philippines, Portugal, Saudi Arabia,

Switzerland, Thailand, UAE – Abu Dhabi, USA and Zimbabwe, were purposively sampled based on existing knowledge and asked a series of questions about pharmacy education, relating to current drivers, trends, innovations, transformation and links with national strategy for health care services. The case studies provide an overview of the transformation that is occurring in pharmacy and pharmaceutical science education globally. Notably, there is a shift to patient-centered, team-based practice and to clinically focused, integrated curricula with increasing opportunities for patient and practice-centered and interprofessional learning. Nonetheless, there is still a shortage of pharmacist academics and of clinical preceptors worldwide.

The understanding of education and the factors that influence it are essential for human resource planning and for achieving universal access to medicines (Figure 1). We need to provide quality education that meets national and global standards and engage in a socially accountable manner to serve the needs of individual patients and society as a whole. Moreover, there needs to be a strong alignment between the outcomes of pharmacy education and the overall health needs of nations.