

Transforming Our Workforce

Workforce development
and education: Systems,
tools and navigation

2016

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International
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FIP *Education Initiative*

Developing the health care workforce of the future:
better science, better practice, better health care

Colophon

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Foreword

Workforce development, workforce planning and workforce intelligence are becoming key issues for global healthcare reform. The World Health Organization (WHO) has made it clear that there is no possibility of healthcare delivery without a corresponding capable and competent workforce; universal healthcare coverage is not possible without a fully functional health care workforce. At the International Pharmaceutical Federation (FIP), we have been developing a comprehensive education and workforce development strategy for a number of years — since the formation of the Pharmacy Education Taskforce in 2008 — and have since published a series of influential global reports on subjects ranging from workforce intelligence and capacity building to quality assurance frameworks and continuing professional development. In addition we have developed a number of tools designed to support progressive and transformative workforce development.

This year sees the first **Global Conference on Pharmacy and Pharmaceutical Sciences Education** from FIP that will develop and deliver a coherent global vision for professional pharmacy education and workforce development, together with a set of statements outlining quality education provision and a set of workforce development goals. The intention is to provide a strategic framework whereby organisations across the world can engage with significant workforce development designed to meet the millennium health care needs of our populations. Developing pharmaceutical expertise is a key mission for FIP aligned as it is with the UN Sustainable Development Goals (SDGs) and our imperative is to ensure that all populations have access to medicines expertise in a world of growing complexity.

FIP is developing mechanisms and structures to enable new ways of delivering pharmaceutical healthcare, new ways of developing integrated pharmaceutical care services and new ways of developing an advanced and capable pharmaceutical workforce. This report demonstrates the relevance of this body of work developed over the past 8 years and will act to translate FIP workforce innovation into better education and ultimately a better workforce for better pharmaceutical care delivery. The Report will be a source of inspiration for education, practice and science leaders.

“Transforming Our Workforce” is an enabling document designed to have a long half-life. It describes evidence-based and tested tools and mechanisms whereby leadership bodies and policymakers can gain traction for advancing the pharmacy workforce. We provide a series of case studies that describe where countries have utilised some or all of these tools in order to innovate and transform workforce capability to meet ever-increasing health care demands.

FIP Vision, statements and workforce development goals for education will be published in 2016, and we hope this report will become a companion piece that will aid and assist our member organisations and partners to develop ways and means of transforming the pharmacy workforce. In the same vein, FIPeD will continue to foster partnerships with the WHO, with the United Nations Agency for Education and Social Development (UNESCO) and with leading universities and national leadership organisations to continue the work of developing and implementing strategies for workforce transformation.

“Transforming Our Workforce” is the first publication of its kind to provide a global baseline on the current growing imperative to formally recognise the advancement of practice, which includes elements of specialisation, professional credentialing, quality assurance and governance. We share this knowledge, produced by our members, and for our members and beyond, to trigger dialogue and action towards stronger policies.

We hope this will stimulate further collaborations and partnerships for all stakeholders, including professional organisations, leadership bodies and universities, in taking up the important job of transforming professional development and education at the national level.



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 FIP Education (FIPeD) Executive Committee Chair
 Sir John Monash Distinguished Professor
 Dean, Faculty of Pharmacy and Pharmaceutical Sciences, Monash University

PART 1

KEY MESSAGES

“Transforming Our Workforce” is intended to be an enabling document that builds on previous FIP work setting out the need for transforming the pharmacy workforce, and describes the current evidence and use of a series of mechanisms, tools, policies and intelligence which can be collectively used for transformative national workforce development (FIP education and workforce publications at www.fip.org/educationreports). Collectively, these tools and mechanisms are a support platform to help meet the increasing challenges of healthcare provision with a fully functional and capable pharmacy workforce.

The 2016 global report “Transforming Our Workforce” provides an overview on how FIPeD resources have been developed into country-specific resources necessary to address distinct population healthcare needs. Evaluating the impact and implementation of these resources helps to identify achievement of healthcare goals and to offer guidance for future workforce programmes.

“Transforming Our Workforce” describes the drivers behind the development of each tool as well as the known impact. In part 3, a schematic of the development of Education within FIP is illustrated, as well as a timeline of the tools and platforms, providing an overview of what has been achieved so far. This current report also supports — as background evidence and foundation — the documents published from the **FIP Global Conference on Pharmacy and Pharmaceutical Sciences Education**, November 2016, Nanjing, China: *Global Vision for Workforce Development, Professional Statements on Education* and the *Global Workforce Development Goals*.

From the 14 country case studies presented in part 4, a total of 28 references to FIPeD tools and platforms are highlighted. Globally representing all six regions of the WHO, the quality assurance and global competency frameworks have been the most widely used and together form half of the references. This further emphasises the potential support and guidance that FIPeD resources provide to countries, member organisations, institutions and to the overall pharmacy workforce, by sharing these success stories.

In summary, “Transforming Our Workforce” contains detailed evidence-based descriptions of innovation, data and analysis of workforce development tools that have been used by countries to assist with transforming pharmacy education and creating a flexible and adaptable pharmacy workforce that can meet the significant challenges of new millennial healthcare provision.

PART 2

INTRODUCTION

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Pharmacy, pharmaceutical sciences education and workforce development need to constantly evolve to meet universal health care needs, with nations aligning with the agendas of leading health organisations to meet patient-centred objectives at a local, regional and international level.

FIP Education (FIPeD) has prepared a series of adaptable systems, tools and navigation guides to help support transformative workforce development. The 2016 global report **“Transforming Our Workforce”** provides an overview on how FIPeD resources have been developed into country-specific resources necessary to address distinct population needs. Evaluating the impact of the implemented resources helps to identify if health care goals are met and offers guidance for future programmes.

Global Agenda

Challenges to effective health care provision have become increasingly prevalent and have been described across a universal platform. The World Health Assembly, in May 2016, addressed how rising concerns for climate change, antimicrobial resistance and non-communicable diseases have prompted health care advocates globally to recognise the need for policy reform and long-term investment in human resources. In addition, unequal distribution of the health workforce has ignited ways to modernise workforce and education development conducive to sustainable health care systems.[1]

International health organisations have attempted to support this global agenda by developing strategic initiatives to formulate and foster transformative workforce development. The WHO’s “Global Strategy on Human Resources for Health: Workforce 2030” states that an overall goal is to “improve the health and socioeconomic development outcomes by ensuring universal availability, accessibility, acceptability and quality of the health workforce through adequate investments and the implementation of effective policies at national, regional and global levels”; WHO suggests that clear objectives and progressive evidence-based health policies should be coupled with significant investment in human resources.[2]

The alliance between WHO, the International Labour Organisation (ILO), and the Organisation for Economic Co-operation and Development (OECD) stands firm on the fact that health workers are an asset and that the establishment of larger national health workforces will support economic growth and innovation.

The Global Health Workforce Alliance (GWHA) document “A Universal Truth: No Health Without a Workforce” highlights how WHO’s 2030 workforce agenda for “availability, accessibility, acceptability and equality of the health workforce” is central to attaining, sustaining and accelerating progress on universal coverage.[3] GWHA attributes the inability to uphold WHO workforce principles to varying issues within countries. In order to solve these problems and work towards universal health coverage, GWHA has initiated an action plan to gain political support for the development of a health workforce that can effectively implement the WHO principles.

The OECD states it is possible to respond effectively to the increasing health needs of ageing populations by means of an adequate supply of health workers with the right skills and services in the right places.[4] Progressive health education and training reforms allow for health care workers to be flexible and adaptable in order to satisfy these increasing societal needs. OECD members have already made substantial advances in this aim by supplying universally comparable data and providing advanced analysis and recommendations on a broad spectrum of health policies to improve health systems globally.[5]

Representatives of 19 countries and the European Union recognised as leaders in the global economy, known as Group of Twenty (G20), have been coordinating with OECD to propose “A Skilled Workforce for Strong, Sustainable and Balanced Growth” which vouches for the implementation of a conceptual framework for a skills development strategy. This strategy references national policy objectives that are relevant to the diverse realities and needs among different countries.[6]

Major objectives outlined within the framework include social policies that will match skills supply with current health care demands, educated workers and enterprises prepared to adjust to change and sustained workforce competencies. In other words, a strong, flexible and adaptable health care workforce.

Global action was initiated by Government leaders and the United Nations by introducing a 15-year plan to address a set of 17 Sustainable Development Goals (SDGs). These goals call on governments, private sectors, civil society and the general public to tackle universal issues of poverty, hunger, health, education, gender equality, sanitation, energy, economic growth, industry, equality, cities and communities, consumption and production, climate change, conservation of land and water, society, and global partnership.[7] UNESCO aids and advocates for economic social, environmental factors globally for sustainable development. It also encourages all nations to utilise UN SDGs to progress education, health and employment. OECD supports SDG worldwide goals of high accessibility and affordability for high quality care for patients.

Workforce Development and Education

The emergent global agenda described above has influenced FIPeD to develop global strategies for professional pharmacy education. FIPeD aims for a vision of pharmacy education focused on patient-centred pharmaceutical care to provide patients with high quality medicine and health care services. It models a needs-based approach, which addresses the need for a systematic pharmacy education catered to societal needs, working in partnership with institutions of nations.[8,9]

FIPeD intends ultimately to “stimulate transformational change in pharmaceutical education and engender the development of science and practice, towards meeting present and future societal and workforce needs around the world”. [10] The use of a needs-based strategy is advocated, in which “pharmacy education is socially accountable, practice and science are evidence-based and practitioners have the required competencies to provide the needed services to their communities”. [10]

FIP supports the role of pharmacists as experts in medicines and medication management to improve health care globally. The mission of FIP is to improve global health by advancing pharmacy practice and science to enable better discovery, development, access to and safe use of appropriate, cost-effective, quality medicines worldwide, according to the FIP 2020 Vision. FIPeD, as an executive arm of FIP, intends to create a global strategic framework to support transformative education, both initial and continuing. [10,11]

The FIPeD strategy is to add a new focus on pharmacy education with three primary objectives of FIP: to advance pharmacy in all settings, to advance the pharmaceutical sciences and to enhance FIP’s role in reforming pharmacy and pharmaceutical sciences education. [11]

It is vital to achieve these goals by establishing partnerships, increasing the visibility of FIP in the global environment, efficiently allocating resources and monitoring the progression in pharmaceutical practice and science by FIP. [11]

Vision Alignment

Enhancing and improving training, education and research are the baseline factors identified by health organisations to develop strong and resilient health care systems capable of sustaining population health improvement. FIP is working to implement a strategic framework necessary to guide nations in coordination with the global agenda.

The reports and mechanisms described here focus on quality assurance, workforce intelligence, competency development frameworks, academic and institutional capacity, continuous professional development/continuing education, interprofessional education, advanced practice, specialisations, and platforms to support workforce development, FIP UNESCO-UNTIWIN Global Pharmacy Education Development Network, PharmAcademy and the *Pharmacy Education Journal*.

This report – “Transforming Our Workforce” – evaluates the results and impact of FIP’s global health care tools among nations in order to direct the goals to cater to ever-changing universal needs.

References

1. Chan M. WHO: WHA 69 — Speech by Dr. Margaret Chan, WHO Director-General. Speech presented at 2016 World Health Assembly.
2. Horton R. Offline: How to make human resources (for health) exciting. *The Lancet* 2016;387:928. Available at: [http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(16\)00627-9.pdf](http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(16)00627-9.pdf)
3. Campbell J, Dussault G, Buchan J, et al. A universal truth: no health without a workforce. Forum Report, Third Global Forum on Human Resources for Health, Recife, Brazil. Geneva, Global Health Workforce Alliance and World Health Organization, 2013.
4. Organisation for Economic Co-Operation and Development (OECD). Health Workforce Policies in OECD Countries: Right Jobs, Right Skills, Right Places. OECD Health Policy Studies, OECD Publishing, Paris, 2016. Available at: <http://dx.doi.org/10.1787/9789264239517-en>
5. Organisation for Economic Co-Operation and Development (OECD). Mark Pearson, Deputy Director of Employment, Labour and Social Affairs at the Organisation for Economic Co-Operation and Development. Available at: <http://www.oecd.org/els/mark-pearson-deputy-director-employment-labour-social-affairs-oecd.htm>
6. International Labour Office. A skilled workforce for strong, sustainable and balanced growth: a G20 strategy. Geneva: International Labour Office; 2010.
7. United Nations (UN). Sustainable Development Knowledge Platform. 2016. Available at: <https://sustainabledevelopment.un.org/about>
8. Anderson C, Bates I, Beck D, et al. The WHO UNESCO FIP Pharmacy Education Taskforce. *Human Resources for Health*. 2009;7:45.
9. Anderson C, Bates I, Brock T, et al. Needs-based education in the context of globalisation. *Am J Pharm Educ* 2012;76(4):Article 56.
10. FIP Education Initiative FIPeD. International Pharmaceutical Federation (FIP). Available at: http://www.fip.org/pharmacy_education.
11. FIP. 2020 Vision: FIP’s Vision, Mission, and Strategic Plan. 2008. Available at: <http://www.fip.org/files/fip/strategic%20plan%20no%20annexes.pdf>.

PART 3

DEVELOPMENT OF FIPeD RESOURCES

Overview

Education over the years, FIP reinforced its involvement in education, starting from the *Pharmacy Education Taskforce*, in 2008 (with three areas of action), which evolved to FIP Education (FIPeD) in 2016 (with nine areas of action, 10 reports, two global frameworks and three platforms, in a total of 23 resources to support the transformative education agenda).

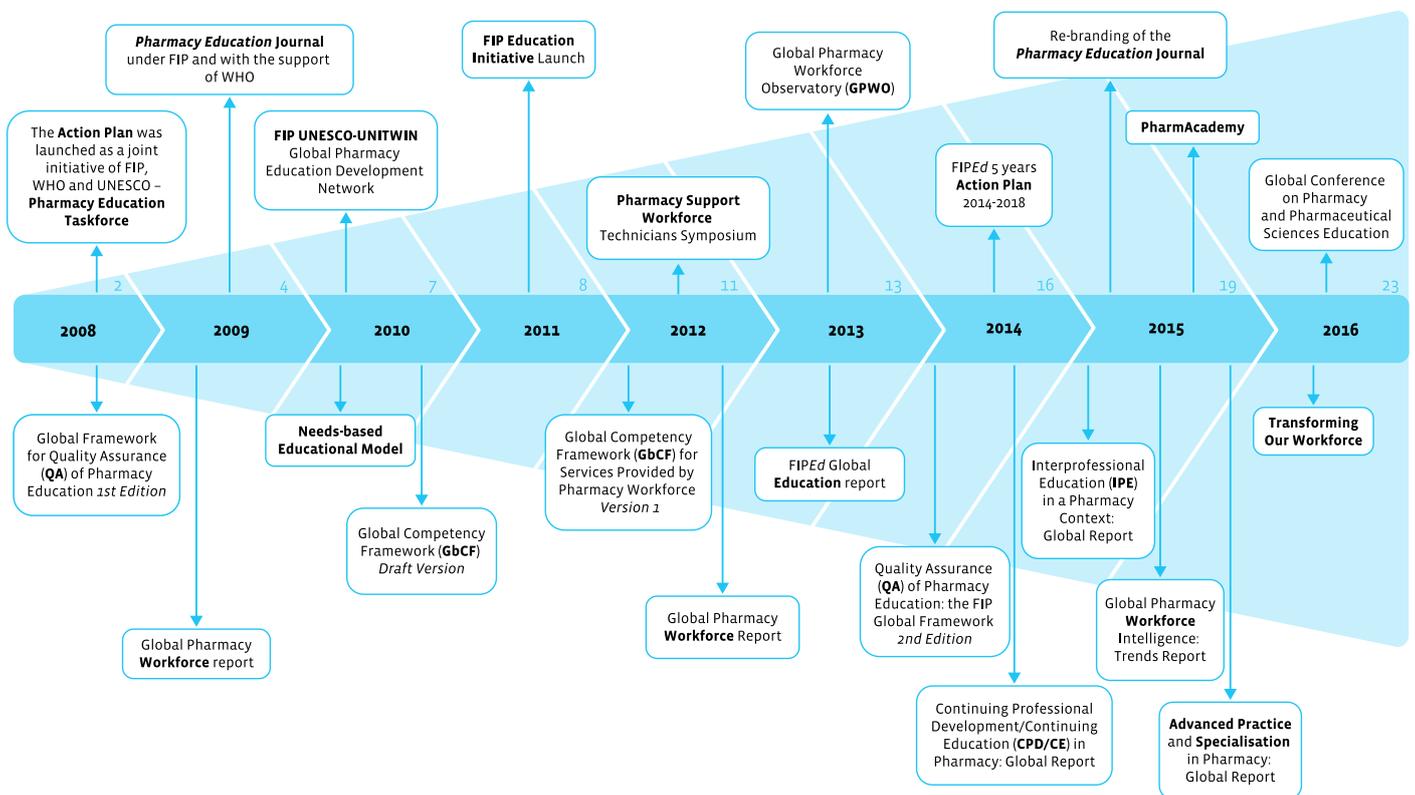
During its eight-year journey, FIPeD has prepared a series of adaptable systems, tools and navigation guides to help transform education workforce development (Figure 3.1).

Part 3 provides an overview of the drivers, development and current perceived impact of all the strategic tools. As seen in figure 3.1, the tools are described in the chronological order of development — above the timeline it illustrates the systems and platforms and below the timeline the frameworks and reports.

As noted in the Key Messages of this Report, in November 2016 FIPeD will release three documents as outcomes of the first and unique Global Conference on Pharmacy and Pharmaceutical Sciences Education. These major publications — a *Global Vision for Workforce*, *Global Workforce Developments Goals* and *Professional Statements on Education* — will set out a roadmap for the long-term strategic direction for FIP and its role in transformative workforce development.

3.1	Quality Assurance http://bit.ly/29zgrSc	
3.2	Workforce Intelligence http://bit.ly/29kipF8	
3.3	FIP UNESCO-UNTIWIN Global Pharmacy Education Development Network	
3.4	Global Competency Framework (GbCF) http://bit.ly/1TIMWe3	
3.5	Pharmacy Support Workforce	
3.6	Global Education Report Academic and Institutional Capacity http://bit.ly/29qvMko	
3.7	CPD/Continuing Education Report http://bit.ly/29vvRUE	
3.8	Interprofessional Education Report http://bit.ly/29qUuUg	
3.9	PharmAcademy http://pharmacademy.org/	
	<i>Pharmacy Education Journal</i> http://bit.ly/2a1pdbC	
3.10	Advanced Practice and Specialisations Report http://bit.ly/29zgP3j	

Figure 3.1: Timeline of FIP Education resources and tools 2008-2016.





3.1 Quality Assurance (QA)

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Summary

- The current Quality Assurance Framework is an updated and expanded version of the FIP Global Framework for Quality Assurance of Pharmacy Education Version 1, adopted by FIP in 2008.
- The framework is presented in four sections:
 - *Section A* provides the context for quality assurance of pharmacy education and the important role that it plays to assure quality and to support initiatives that aim to expand and advance pharmacy education at the national level.
 - *Section B* provides quality criteria and quality indicators for pharmacy education.
 - *Section C* provides a framework for a national quality assurance system.
 - *Section D* provides a glossary of terms.
- A bibliography list is included annex 1.

Drivers

To promote and facilitate international dialogue and collaboration in the area of quality assurance of pharmacy education, the International Forum for Quality Assurance of Pharmacy Education (QA Forum) was established in 2001 and was hosted by FIP. It acted primarily as a network of experts, innovators and other individuals interested in the quality assurance and quality advancement of pharmacy education at the institutional, national and global levels. Early survey work and information exchanged at the annual meetings of the QA Forum provided evidence of the lack of adequate systems for quality assurance of pharmacy education in many countries and the fact that many countries faced similar problems and challenges in assuring and advancing the quality of pharmacy education.

Pharmacy practice and education are facing tremendous changes following new scientific discoveries, technology trends and evolving patient needs, as well as the advanced competencies required of pharmacists for current and future practice as health care professionals and in other roles in society. The basic level of practice has been improved, but many countries are facing critical shortages in their pharmacy workforce capacity in order to make a meaningful contribution to the country's health care system.

There is a need to assure the development of an adequate and appropriately trained health care workforce, along with the academic and institutional infrastructure to deliver the required competency-based education and training. Therefore, many countries are introducing, expanding, or undertaking major transformations of pharmacy education. Such developments must be accompanied by robust systems to assure the quality of the educational context, structure, process, outcomes (short and intermediate term) and impact (long term). In many countries, quality assurance systems for pharmacy education are well developed; in other countries, they do not exist or are still emerging. Ideally countries should have their own national system of quality assurance and standards for pharmacy education. Such standards should reflect contemporary and emerging pharmacy practice and education, and meet the specific needs of the country.

The principles and core elements for quality assurance of pharmacy education do not differ significantly — if at all — from country to country. FIP believes that countries seeking to establish or improve their system of quality assurance will benefit from an internationally developed and adopted framework for quality assurance of pharmacy education. Two versions of a global framework for quality assurance of pharmacy education have been developed; the first was adopted by FIP in 2008 and the second in 2014.

Development

Following several years of initial discussion and development by the QA Forum, in 2007, the finalisation of a global framework became one of the priorities of the partnership between FIP, the WHO and UNESCO. To maximise the value and global applicability of the framework, input was sought and received from individuals and organisations in as many countries as possible. As a result, the document drew from the experience and perspectives of several different systems of quality assurance in pharmacy education. Every effort was made to focus on common elements, and to avoid biases and the use of terminology, principles and specifics that may not be universally applicable.

The first edition of the framework was published by FIP in September 2008. In September 2009, FIP adopted its Statement of Policy on Quality Assurance of Pharmacy Education, using the first edition of the Framework as the resource document for the Statement on quality assurance. The Statement includes a number of recommendations — based on the principles contained in the framework — that are directed at national governments, regulatory and quality assurance organisations, FIP member organisations, universities, colleges and schools of pharmacy.



In 2009–10, the framework underwent a structured validation through a survey of selected individuals from 24 countries with appropriate expertise and experience in pharmacy education, practice, regulation and quality assurance accreditation.

All elements of the framework were found to be “valid” and were retained in the second version. Revision of the Framework was undertaken from 2012–14 and it was informed by comments received during the validation exercise and additional feedback from members of FIP’s Education Initiatives Quality Assurance (QA) Domain and other globally diverse stakeholders.

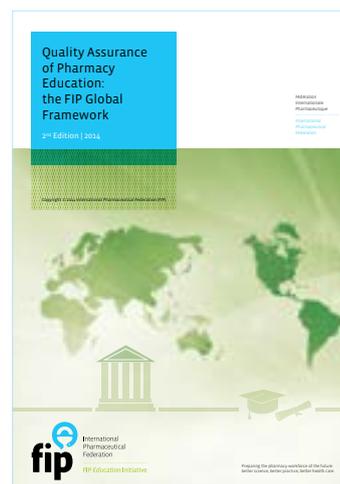
The second edition of the framework was published by FIP in 2014. It added new principles and elements in its content and form, now considered essential for an effective and contemporary approach to quality assurance. The “Pillars of Quality” presented in the first edition were redesigned by adding Context and Impact as new pillars and indicators of quality. In addition, the “Foundations” of Science, Practice and Ethics were added to the model, to assure that education addresses all components of competency (knowledge, skills, attitudes and values), thereby articulating a comprehensive quality model for competency-based education.

The framework is offered primarily as a tool — to be used in whole or in part — to facilitate the establishment of systems of quality assurance in countries where no such formal systems exist or for improvement of existing systems. Where regional similarities and collaborations exist, the framework may also be applied at a regional rather than national level. Where resources or other constraints limit the immediate application of some of the principles outlined in the framework, it is hoped that the document can serve as a “road map” for the future.

Impact

FIP believes that the framework should continue to be a dynamic document that will evolve in line with the transformation of pharmacy education globally. The FIPed QA Domain can support and provide guidance on the use of the framework; in this regard, additional “step-wise” tools and resources for use with the Framework will be developed. FIPed will welcome collaborative projects including adoption, adaptation and improvement of the framework. The submission of feedback on the application and usefulness of the framework, as well as comments and suggestions for improvement, are encouraged and appreciated. The QA Domain will gather more data about systems for quality assurance of pharmacy education around the world. The data will be analysed and inform future revisions of the QA Framework.

The framework has been used in several countries, namely, Chile (see case study 4.2), India (see case study 4.4), Jordan (see case study 4.5), New Zealand (see case study 4.7), Serbia (see case study 4.9), Spain with two case studies — one portraying a collaboration with Angola (see case studies 4.10), and Thailand (see case study 4.11). The framework is referred to frequently in presentations about quality and advancement of pharmacy education, and the “Pillars and Foundations of Educational Quality” have likewise served as a basis for teaching and discussions about the quality and continuous improvement of pharmacy education. Three publications that draw heavily on concepts provided in the framework are listed in the bibliography (annex 1).



<http://bit.ly/29zgrSc>



3.2 Workforce Intelligence

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Summary

- It is important to monitor trends in the workforce over time in order to make an assessment of whether demand for pharmacy services is approaching balance with supply of pharmacists and pharmacy support staff.
- WHO reports and other literature over the past decade have signaled an estimated shortage of the health workforce and a lack of data over time points.
- Data trends from FIP Global Pharmacy Workforce Reports from 2006, 2009 and 2012 were analysed and presented (www.fip.org/educationreports).
- Views on the importance of workforce intelligence vary across the globe as do approaches for collating and using pharmacy workforce data. The case for developing pharmacy workforce intelligence activities needs to be made in some countries.
- A bibliography list is included annex 1.

Drivers

It is important to monitor trends in the workforce over time in order to make an assessment of whether demand for pharmacy services is approaching balance with supply of pharmacists and pharmacy support staff. Workforce data at single time points, although useful, do not convey the whole picture. For instance, if the population of a country and its disease burden are growing over time, then the pharmacy workforce needs to keep pace with this in order to ensure access to medicines and medicines expertise.

Development

A critical appraisal of new human resources for health evidence (relating to the pharmacy workforce) since 2012 was conducted (www.fip.org/educationreports). Analysis of the data collected in the 2006, 2009 and 2012 Global Pharmacy Workforce Surveys was conducted. The data were cleansed and presented in tabular and graphical form.

The data were reviewed critically for intellectual content and a synopsis made of the associated pharmacy workforce intelligence.

Impact

Some feedback was received about the accuracy of the original workforce data and that this made countries seek to identify the most reliable source of their data — their government, professional associations or others.

Views on the importance of workforce intelligence to support human resources for health planning vary across the globe as do approaches for collating and using pharmacy workforce data.

The case for pharmacy workforce intelligence actions needs to be made in some nations. Guidance needs to be produced on the importance of pharmacy workforce data and how it can be collated optimally, identifying barriers and opportunities for using the data to plan and develop the workforce.

Part 4 contains an example that illustrates the use of the workforce reports: Purdue Kenya Project (see case study 4.8).



<http://bit.ly/29kipF8>



3.3 FIP UNESCO-UNITWIN Global Pharmacy Education Development Network

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Summary and drivers

In 2010 a UNITWIN/Cooperation Programme on Global Pharmacy Education Development (GPhED) was created within the framework of the UNITWIN/UNESCO Chairs Programme in order to fulfill an agreed set of objectives.

The activities of the Programme pertain to the field of pharmacy and pharmaceutical sciences. The domains concerned are: global higher education, global higher education development with a special interest in Africa and other low income countries, empowerment of women pharmaceutical scientists and academics, sustainable health workforce development, academic capacity building, quality assurance issues and accreditation standards.

The aims of the programme are:

- To provide a communication means across borders and boundaries, for sharing of best educational practice among higher education institutions and other education providers. This includes developing, piloting and launching regional centres of excellence [for educational practice].
- To provide a means for sharing of resources across borders and boundaries to the greater benefit of our constituency (FIP members — be they individuals, organisations, higher education institutes) with a particular focus on low-income countries.
- To provide an advocacy mechanism for FIP members and the academic institutional members.

Development

In 2008, the FIP Pharmacy Education Taskforce (now Education Development Team) began a process of applying for formal endorsement from UNESCO for a global network relevant to the FIP Education mission, under the globally respected auspices of the UNESCO-UNITWIN programme. FIP was the first non-university to have a UNITWIN network agreement with UNESCO. This was accomplished due to:

- Clear evidence that FIP has formal and strong relations with higher education institutions for pharmaceutical education and research.

- The reputation of FIP as a global professional leadership body.
- Strong argument that a UNESCO network would make a positive contribution to our field of practice, in a global context.

One important aim of UNITWIN networks is the establishment of centres of excellence. FIP UNESCO-UNITWIN Centres of Excellence (in pharmacy education) exist as either of two parallel models — a regional/nodal model and a global/distributed model. Regional FIP UNESCO-UNITWIN Centres of Excellence relate to specific geographic regions with expertise is focused on identifying and addressing local issues of educational need with the aim of improving quality of education and capacity of pharmacy schools to educate sufficient qualified pharmacists to meet workforce needs. Global FIP UNESCO-UNITWIN Centres of Excellence relate to a theme, such as competency, non-communicable disease, healthy ageing, etc, identified through a validated process.

Regional

Needs-based

Focussed areas of interest/expertise

Multiple domains of particular regional interest.
e.g. the African Centre of Excellence with domains such as Expertise mapping, Advanced Practice, Train the Trainer programs, etc.

Global

Topic-based

Distributed areas of interest/expertise

Principally thematic in structure.
e.g. Non-Communicable Diseases Centre of Excellence with domains such as Diabetes, cardiovascular disease, cancer, etc.



A meeting in Ghana in 2013 was convened to determine interest in forming a Centre of Excellence in Africa, attended by representatives from Ghana, Nigeria, Namibia, Uganda and Zambia. Africa was chosen to fulfill the stated purpose of the UNITWIN programme. These five countries were chosen because of their prior involvement with the FIP Education Taskforce, their demonstrated leadership in pharmacy education and their commitment to advancing pharmacy education.

The formation of the centre was announced and the documentation was signed by the five founding partners in Bangkok in 2014. A new Collaborating Partner/Membership agreement was signed by Malawi in June 2015. The founding partners agreed on five domains/areas of activity for the Centre of Excellence (communications, capability, quality, innovation and clinical), with one founding partner taking a lead role for each domain within which projects are undertaken to advance pharmacy education.

Impact

Projects developed and/or endorsed by the Centre of Excellence in Africa include:

- Resource sharing utilising the PharmAcademy website (www.pharmacademy.org).
- The 'Lab-Box' project (see case study 4.6 — Malawi).
- Mapping of academic expertise in African pharmacy schools.



United Nations
Educational, Scientific and
Cultural Organization



UNITWIN Network in
Global Pharmacy
Education Development
for East Africa



3.4 Global Competency Framework (GbCF)

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Summary

- Practitioner development frameworks, containing a structured assembly of behavioural competencies, have become increasingly popular in professional education driven by the need for transparency in the training, development and professional recognition of healthcare professionals.
- A Global Competency Framework (GbCF) for Services Provided by Pharmacy Workforce was developed based on documents that were closely related to education development frameworks for practitioners.
- The development of the framework containing a core set of behavioural competencies went through a process of consensus group meetings, content validation meetings, iterative content phase and online validation (through a public consultation survey).
- The GbCF v1 is divided into four clusters/areas of practice, 20 competencies and 100 behavioural competencies.
- It is intended to act as a mapping tool and will continue to progress as the profession evolves and can be adapted according to the country or local needs.
- A bibliography list is included annex 1.

Drivers

A competent and capable practitioner workforce is an essential pre-requisite for all health care professions. The capacity to improve therapeutic outcomes, patients' quality of life, scientific advancement and enhancement of our public health imperatives are dependent on a foundation of competence. Before overarching capability, or competence, can be determined, the specific competencies that comprise that capability must be identified. In this case, competencies refer to the knowledge, skills, attitudes and behaviours that an individual develops through education, training, development and experience. Taken together, these competencies can be formulated into a framework that can contribute towards supporting practitioner development, within an individual, for effective and sustained performance.

Continuing Professional Development (CPD) is advocated as a means of ensuring the competence of health care professionals and is now mandatory for many of the health care professions. In order for CPD to be meaningful, health care professionals need to know the areas of competence for their role, what it is they need to be able to do, to enable them to accurately identify their learning needs. Competency frameworks are based on real life roles and experience and so can provide a starting point, while experiential or applied learning is essential for the development of competence.

It is important to recognise that the GbCF for pharmacy is intended to act as a mapping tool (which by its nature will continue to progress as the profession evolves). The Framework has a foundation in the outcomes of initial education and training, and hence the GbCF will have interest and applicability for leaders, educators, regulators and practitioners.

This has important applications for fostering transnational collaboration and enhancing our professional scope of practice across all sectors and settings.

The scope of the Framework encompasses foundation level (or early years) practice and represents global consensus on the capability competencies of the outcomes of registration (licensing) levels of initial career education and training. There is an implicit assumption that the pharmaceutical sciences are a de facto underlying component of these practice-based competencies; the Framework does not seek to replicate the foundations of pharmaceutical science, but to support the translation of pharmaceutical science within the components of practice, independently of the setting or sector of one's practice.

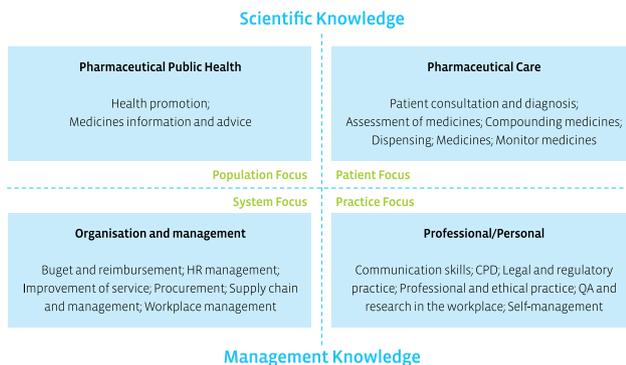
Development

Following a literature search (2008) and global survey (2009), 47 documents were retrieved and grouped into categories (e.g., competency frameworks, good pharmacy practice, or regulatory documents). Eight documents were closely related to educational development frameworks for practitioners.

A comparative study was conducted to identify common behaviours within the different frameworks, resulting in a comprehensive table of elements which were further categorised into the domains of Pharmaceutical Public Health, Pharmaceutical Care, Organisation and Management, and Professional/Personal (Figure 3.2).



Figure 3.2: Domains and illustrative competencies from the GbCF v1 for pharmaceutical services.



Impact

GbCF v1 can be a starting point to provide guidance for foundation level practice, not only at an individual level but also for further development into advanced practice. It can also be an aid in providing an overview of how practice at a foundation level can be translated into “what” and “how” students should learn and interact with pharmaceutical care skills during their initial degree, always with country specifications in mind (the GbCF does not imply that there should be a single global curriculum that would fit all countries).

Acting as a mapping tool for the creation of country-specific needs for the development of practice and practitioner professional development, the GbCF can be attached to an assessment grid and, together with appropriate assessment tools, can aid countries that do not currently have a competency framework but wish to develop one. By creating a portfolio, in synergy with other assessment tools, countries can implement the GbCF into practice, developing education and training infrastructures for their practitioners.

There are several ongoing regional and national projects looking at outcomes-based frameworks for practitioner development (inspired by the original FIP work — GbCF draft version, August 2010 and current version GbCF v1, 2012).

Ireland, Portugal and Brazil have conducted studies and initiated country-level competency frameworks, using the FIP draft GbCF as a basis for their workforce development. Organisations in Singapore, Australia and Croatia (see case study 4.3) are implementing practitioner frameworks linked with the GbCF; The P HARMINE European joint initiative is also demonstrating transnational evidence of consensus in competence and outcomes.

The GbCF was also used as basis for collaboration with the Pan-American Health Organization, Pharmaceutical Forum of the Americas and Pan-American Conference on Pharmaceutical Education (Technical Group for the Development of Competencies for Pharmacy Services). The Royal Pharmaceutical Society in the UK also recommends the use of frameworks at all stages of a professional’s career, as national development (see case study 4.12).

Other countries that used the GbCF are Chile (see case study 4.2), Jordan (see case study 4.5), Serbia (see case study 4.9), Thailand (see case study 4.11), Bosnia and Herzegovina, Montenegro, Macedonia, Lithuania and the Philippines, as well as Pacific island countries and some universities across the globe.



<http://bit.ly/1TIMWe3>



3.5 Pharmacy Support Workforce

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Summary

- A pharmacy workforce shortage in many low and middle income countries, combined with a need to support pharmacists' expanding clinical roles, saw the launch of the Pharmacy Support Workforce (PSW) Domain in 2011.
- The domain initiated an annual FIP Global Pharmacy Technician and Pharmacy Support Workforce Symposium in 2012, which has been the basis for increased sharing and practice development.
- The work of the domain has also influenced medicines supply competency development in the Pacific Islands and globally through a People that Deliver Health Supply Chain Management Competency Framework for Leaders and Managers.
- The FIP Board of Pharmacy Practice, with support from the PSW Domain, will publish an FIP Technical Report on the Global Pharmacy Support Workforce, which will form the basis for further work in this area.
- A bibliography is included annex 1.

Drivers

Access to quality medicines and the availability of competent, capable health care professionals are fundamental aspects of any healthcare system, with up to a third of the world's population without access to essential medicines. The healthcare system requires the appropriate number of competent health care professionals to ensure the uninterrupted supply of quality medicines to the population, their management and responsible use. In 2009 FIP published a workforce report that noted large shortages of both pharmacists, pharmacy technicians and other pharmacy support workforce cadres in many low and middle income countries and at the same time the United Nations Population Fund (UNFPA) noted significant medicines availability issues in the Pacific Islands.

The Pharmacy Education Taskforce (PET) was aware of the need in low and middle income countries but also recognised that a focus on PSW in high income countries was also important. As pharmacists were seeking to engage further in clinical care, PSW cadres, are considered as an option to take on administrative responsibilities to free up the pharmacist.

In 2011, the PSW Domain was launched, with a focus on applying the FIP needs-based approach to the education of pharmacy technicians and other PSW cadres. During this first year an initial global survey of the PSW was conducted and the first Global Symposium of Pharmacy Technicians and Pharmacy Support Workforce cadres was convened in 2012 (Amsterdam, Netherlands), to share these data and hear more of the existing global diversity from country representatives.

In high income countries there is a growing recognition and demand for pharmacists and pharmacy services in the health care system, there is also a growing need to define the roles for PSW cadres to identify the competencies, education and practice models that will allow them to make the best contribution possible within the pharmacy team. In contrast low to middle income countries continue to have insufficient pharmacists for their needs and have a high dependence on PSW cadres, particularly in rural and remote areas.

This continued need has seen the delivery of further Global Symposiums for Pharmacy Technicians and Pharmacy Support Workforce cadres associated with the FIP congress in: 2013, Dublin, Ireland; 2014, Bangkok, Thailand; 2015, Dusseldorf, Germany; 2016, Buenos Aires, Argentina.

Development

The Pharmacy Support Workforce Domain is now part of the FIP Education Initiative structure with two co-leads Susan James of Canada and Andrew Brown of Australia. The leads are supported by a wider group of interested individuals from a variety of countries and contexts. This group meets quarterly with a focus on developing the program for the annual symposia but has also begun to explore further initiatives, including an online community of practice.

Impact

The Pharmacy Support Workforce domain has had impact in increasing global engagement through annual FIP Pharmacy Support Workforce Symposia, influenced the development of health supply chain manager's competency framework and increased the tools available for essential medicines competency development in the Pacific Islands (see annex 1).



3.6 Global Education Report | Academic and Institutional Capacity

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Summary

- The 2013 FIPeD Global Education Report is the first publication of its kind to provide a baseline on the current status, transformation and scaling up of pharmaceutical education worldwide.
- Advancement of our profession is dependent on robust, and contemporary education programmes for initial and lifetime education.
- Universities need to provide quality education and engage in a socially accountable manner to serve the needs of individual patients and society as a whole.
- There needs to be a strong alignment between the outcomes of pharmacy and pharmaceutical education and the overall health needs of countries.
- A bibliography is included annex 1.

Drivers

The roles and responsibilities of pharmacists have been evolving from product-oriented to patient-oriented service provision in the past two decades. A foundation of professional education and training is a key factor in order for health care professionals to develop the capability to improve therapeutic outcomes, enhance patients' quality of life and help people to stay healthy, as well as advance science and practice. For pharmacy, too, contemporary forms of initial education and training are vital for the profession to meet the increasingly complex health care demands of populations in any country.

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.

Pharmacy and pharmaceutical education globally continues to face many issues, including rapid expansion in the number of schools of pharmacy and pharmaceutical sciences in some countries and regions, that challenge the quality of teaching and learning at a time when there are limited resources to meet these challenges. The paradigm in education has shifted accordingly. This challenge and shift is explored in the report by considering the role of higher education, curricula trends and quality assurance.

Development

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. The quantitative work was complemented by 14 case studies included in the report, providing 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, 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 understanding of education and the factors that influence it are essential for human resource planning and for achieving universal access to medicines. This report will act as a baseline and reference point for further national and international studies. 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.



Impact

The work has been presented at an FIP congress, as well as at number of important international conferences for example, China (Forbidden City International Pharmacy Forum); India, Indian Association of Colleges of Pharmacy India; USA, ASHP Mid Year meeting; Brazil, Brazilian Pharmaceutical Education Congress.

In part 4 there are a few examples, which illustrate the use of the education report: Purdue Kenya Project (see case study 4.8) and Serbia (see case study 4.9).



<http://bit.ly/29qvMko>



3.7 Continuing Professional Development/ Continuing Education | Report

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Summary

- In 2002, FIP defined CPD as “the responsibility of individual pharmacists for systematic maintenance, development and broadening of knowledge, skills and attitudes, to ensure continuing competence as a professional, throughout their careers”.
- To maintain competence as a pharmacist, the professional and profession should incorporate the following CPD principles (Reflect, Plan, Act, Evaluate).
 - Identify an opportunity to reflect on ones learning;
 - Enumerate a clear plan towards achieving specified learning goals or objectives;
 - Demonstrate deliberate involvement in learning activities;
 - Evaluate the outcomes of such learning activities to assess the success or progress toward achieving the goals.
- For country systems of CPD/CE to function, it is encouraged that countries utilize this and other FIP key documents and related publications stated here as talking tools.
- A bibliography list is included annex 1.

Drivers

At the 2013 FIP congress, during a focus group meeting of interested CPD/CE providers, it was clear that several countries operated and implemented continuing education and CPD quite differently. It was also observed that several countries’ expertise was on different portions of the continuum of understanding of the subject matter. In comparison with other health professions, we identified that many pharmacy organisations and CPD/CE providers had robust websites. However publications were scarce.

Furthermore, it was difficult to locate a summary of the literature on CPD/CE activities. FIP published a statement in 2002 on CPD/CE (<http://bit.ly/29jGqcV>) and since then there have been a number of iterations and advancements in the concept, implementation and understanding of CPD/CE around the world. The consensus among FIPeD development team leads was then to embark upon a summary of the literature regarding CPD/CE related work and present it as scholarly work.

Simultaneously, the decision was made to prepare this report to summarise and highlight the data in select countries, further educate member nations and organisations on what data currently exist in different nations implementing CPD/CE.

Development

An introduction summarising the updated status of CPD/CE in the world was compiled. A survey was created by the education development team to identify qualitative and quantitative information pertinent to CPD/CE matters around the globe. The survey was disseminated to all member organisations by FIP. Later invitations were extended to experts in select countries to summarise matters regarding CPD/CE in their respective countries of interest to our members, by submitting a case study.

The following questions/information was requested of each country case study submission:

- Summary;
- Current drivers in the national or regional level around CE or CPD;
- With regards to the FIP CPD/CE framework, where are you in the continuum? (For example, would you consider yourself a novice, beginning, maturing or advanced compared with other nations? What policies and strategies have supported you?);
- Identify the challenges you are facing in implementing the FIP CPD/CE framework;
- List three to five lessons learnt from studying and implementing the CPD framework in your region;
- Mention one or two key tools that helped in each stage;
- What are your plans for the future;
- Identify CE/CPD links with national or regional strategies for health care services/delivery (For example, how has your country aligned CPD/CE towards meeting the needs of society?);
- References.

The following countries participated in the 2014 CPD/CE Technical report case study submission: Australia, Canada, Croatia, Japan, Namibia, New Zealand, Northern Ireland, Oman, USA.

Lastly the team leads in FIPeD were invited to provide linkage statements on how the CPD/CE work related to their area of leadership, vis-à-vis academic capacity, quality assurance, workforce development, etc. The country case studies were edited by the domain leads and combined with the introduction document. The compiled document was then sent to the FIPeD editors for addition of the survey data and final production.



Impact

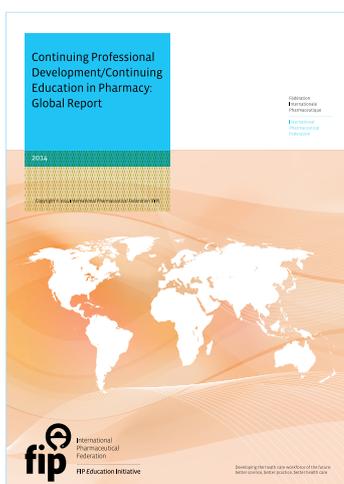
The studies show that while pharmacists value the need to utilise CPD/CE to renew licensure, they are frequently constrained by the lack of time, resources, interest, motivation, support or accreditation constructs. Also, systems vary from country to country even in other health professions. Many professionals are familiar with the term CE, however the concept of CPD (Reflect, Plan, Act/Learn, Evaluate) is still foreign to some countries and pharmacists.

Additionally, information on CPD use in colleges and schools of pharmacy is critical to making sure the professionals develop lifelong learning principles and habits.

After the launch of the technical report in Bangkok 2014, there was some interest in the focus group sessions that followed with an interest in producing a follow up document for developing countries to assist in the implementation of CPD/CE related work.

Since then there has been a follow-up publication to assist schools of pharmacy, academics, regulators and associations on their responsibility in implementing CPD/CE in their respective areas of influence. Subsequently, a publication to assist academics in implementing CPD principles in pharmacy curricula was also released (see annex 1).

Also specific countries have indicated their interest in using the FIP CPD/CE technical report, namely: Tanzania, Angola (see case study 4.10) and Thailand.



<http://bit.ly/29vvRUE>



3.8 Interprofessional Education | Report

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Summary

- Interprofessional education (IPE) is a transformative training approach associated with developing and fostering the knowledge, skills, and attitudes required for collaborative practice. Collaborative practice is one facet of a strong health care system. Strong health care systems are linked to improved patient health outcomes.
- IPE training efforts should begin before registration/licensing and persist through the course of the career via continuing professional development activities that include multiple health professions.
- Successful examples of incorporating IPE strategies in didactic and experiential systems across different resource intensities are highlighted in the report.
- Professional organisations must enhance the awareness of IPE, facilitate opportunities for IPE and encourage research efforts for evaluating the outcomes of IPE.
- A bibliography list is included annex 1.

Drivers

The need for collaborative health care practice is not new. For decades, there has been awareness that patients get better care when they are engaged in and supported by integrated teams of health professionals working at the top of their scopes of practice. But the training models that produce said health professionals have largely not provided substantial opportunities for trainees and practitioners to experience learning about, from, and with one another with the common goal of enabling collaboration and improving health outcomes within the systems in which they work. Further, these models have not supported development of the leadership skills trainees need to affect systems change. Although there is some geographic variability in how these challenges manifest, this is a worldwide phenomenon.

Early/repeated exposure to and practice with IPE is critical to advancing these collaborative models of practice. This requires sweeping philosophical and structural changes during the formal education period.

Shifting of attitudes and behaviours is an evolutionary transformation that will take many years and requires extensive study at the interface of education and practice.

To be sure, determining the impact of IPE on practice and ultimately patient outcomes is an emerging science and one that requires sophisticated research models applied over time to determine population-level impact. Shifting accreditation and professional standards in several health professions may accelerate action in these areas, however.

Collaborative pharmacy practice is defined as the clinical practice where pharmacists collaborate with other healthcare professionals in order to care for patients, carers and public. Five distinct levels^[1] of collaborative pharmacy practice have been identified from a number of models across the world. The level of collaboration between pharmacists and other health care professionals goes from minimal contact through to pharmacists who are seen and recognised as a core member of the multi-disciplinary team with the authority and responsibility to initiate and modify medicine therapy. Advanced collaborative pharmacy practice is often reserved for practitioner who are able to demonstrate competence.^[2,3]

Development

The report includes a compilation of relevant IPE literature, IPE case studies of individual academic or practice units, and information from selected organisations intimately involved with IPE.

The actual evidence of IPE and its effect on health outcomes is still emerging. Little more than a decade ago, a Cochrane review found no well designed studies showing the impact of IPE on patient outcomes or the health care process in the published literature. In 2008, six relevant studies were found and, in 2012, nine more were added.^[4] This demonstrates the growing interest in and importance of studying IPE within health care systems.

The report was based on a review of the published and grey literature. Following this, an open call was sent via the FIP Education community of practice. Targeted requests were made to professional organisations, accreditation systems, and IPE student efforts. Case study proposals were accepted, reviewed, refined and arranged thematically in the final report.

Impact

To continue to advance IPE, successes must be highlighted, hurdles identified and gaps addressed. Because IPE systems are, by their nature, more complex, even the methods of sharing such information are more complicated.



The Global Report on Interprofessional Education in a Pharmacy Context provides not only a historical perspective of IPE but also snapshot of where IPE is today and a vision for where it could go in the future.

The document incorporates the perspectives of international organizations, national organizations, universities, and practice groups that have developed guidelines on, systems for, and activities with IPE.

The report's case studies, representing almost every continent and experiences with many different health professions, provide a breadth of examples where IPE has been implemented. These serve as lessons learnt for educators and pharmacists regarding their potential to engage other professionals effectively, to build bridges and to find ways to foster IPE/collaborative practice in their settings.

The case studies also highlight that although much of the published literature supporting IPE comes from Australia, Canada, the UK, and the USA, in some cases transformative work is being prioritised in lower-resource settings where, potentially, the walls between health professions training programmes are not as high.

In part 4, there is an example from Serbia (see case study 4.9).



<http://bit.ly/29qUuUg>

References

1. FIP Reference Paper on Collaborative Practice. FIP, 2009. Available at: www.fip.org/statements
2. FIP Statement of Policy Collaborative Pharmacy Practice. FIP, 2010. Available at: www.fip.org/statements
3. WHPA Statement on Interprofessional Collaborative Practice. World Health Profession Alliance, 2013. Available at: http://www.whpa.org/WHPA_Statement_collaborative_practice.pdf
4. Reeves S, Perrier L, Goldman J, et al. Interprofessional education: effects on professional practice and healthcare outcomes (update). Cochrane Database of Systematic Reviews 2013;3.



3.9 PharmAcademy

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Summary

- The creation of Pharmacademy.org (consisting of SABER and FIP Pharmacy Education Journal) was built around the concept of creating communities of practice.
- Pharmacademy.org launched softly at Prato Pharmacy Education Symposium July 2015 and at AACP Annual meeting July 2015.
- Formal launch of Pharmacademy.org at 75th FIP World Congress of Pharmacy and Pharmaceutical Sciences September 2015.
- PharmAcademy has over 600 individual members.
- Twelve communities of practice created.
- 27 news stories written by members.
- Journal statistics — 13,341 journal article downloads from August 2015 to May 2016.
- Number of institutions using MyDispense grew from three to 21.

Drivers

SABER, a site under FIP patronage for sharing and building education resources, was widely acknowledged to be a useful tool but was receiving only a modest number of visitors and resource uploads/downloads. Measures to increase traffic included adding a journal hosting system for the FIP education journal, adding news story and blogging functionalities and adding tools to facilitate the development and maintenance of communities of practice.

PharmAcademy was created and will become the 'go-to' place for pharmacy educators worldwide to connect, and share knowledge and resources. PharmAcademy is a community site designed to connect globally pharmacy educators. It delivers significant enhancements to the SABER service from which it is born, as mentioned above.

In fact, SABER is now just one of three principle components that make up PharmAcademy – the other two components being the updated portal for Pharmacy Education journal and a community networking component designed to keep educators informed and in touch with the pharmacy education world.

The new portal for *Pharmacy Education* significantly streamlines the review and publication process, and the informal community publishing and peer networking space invite the worldwide community of pharmacy educators to connect dynamically online.

Development

Workshops were conducted at both the Prato Pharmacy Education Symposium July 2015 and the AACP Annual meeting July 2015 to allow a wide range of existing and potential Pharmacademy.org users to recommend site design and functionality.

FIP *Pharmacy Education* journal editors were consulted to design and structure journal hosting functionality.

Monash University managed PharmAcademy development.

Current uses: member created communities of practice, downloading and uploading of education resources, submitting and downloading education research articles, member written news stories and blogs.

Impact

Evidence of use: Twelve member-created communities of practice, downloading and uploading of education resources, submitting and downloading (> 11,000) education research articles, member written news stories (27) and blogs, number of institutions using MyDispense grew from three to 21.

A case study is included in part 4 from Australia (see case study 4.1b) and another one from Malawi (see case study 4.6).



 **PharmAcademy**

<http://pharmacademy.org/>



3.10 Advanced Practice and Specialisations Report

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Summary and drivers

- There is global interest in practitioner development, advanced competencies (advanced practice), and focused practice (specialisation) for pharmacists. Lack of harmonisation of understanding around these concepts and great variation in their degree of recognition and implementation is evident.
- This report aimed to provide an initial snapshot of activity around advanced practice and specialisation, with a view to promoting global debate about advancement of practice.
- The report contains case studies from 17 countries describing a range of approaches to the development and recognition of advanced practice and specialisation.

Development

Following a literature review, FIP member organisations were invited to complete a survey to inform understanding of global thinking around advancement and specialisation. Forty-eight countries and territories contributed to the data set.

In addition to demographic information, data were sought on use of frameworks, formal recognition pathways, role of pharmacy organisations and definitions of relevant terminology. In addition 17 countries contributed a case study describing in more detail an approach to advanced practice and specialisation.

Impact

Evidence of impact is currently limited due to recency of publication of the report. Impact is evident in Australia (see case study 4.1a) as the development of the report closely followed implementation of a pilot credentialing programme for advanced practice — the FIP report and the Australian experience were able to corroborate and reinforce both activities.

A case study — a collaboration between Spain and Angola — is included in part 4 (see case study 4.10b).



<http://bit.ly/29zgP3j>

	Country	Title of case study	Stakeholder/s	FIPeD Tool used	Used for/as
4.1	Australia	Credentialing of advanced practice International perspectives - local application	Accrediting Authority		Background and guidance Advocacy and promotion
		Health literacy medicines Sharing research	University		Building and sharing research collaborations
4.2	Chile	New pharmacy curriculum National collaboration	University	 	Guidelines for the new Pharmacy curriculum
4.3	Croatia	Development of the Croatian competency framework	Professional association + University		Adaptation and validation
4.4	India	National taskforce for quality assurance in pharmacy education	Professional association		Guidance in developing systems and strategies
4.5	Jordan	Multi-dimensional national-level study	University + Professional and regulatory organisations	  	Collecting baseline information Conceptual model
4.6	Malawi	New resource limited college Helpful collaborations	University	 	Building and sharing resources
4.7	New Zealand	The ENHANCE professional development programme	Professional association		Foundation for accreditation standards
4.8	Kenya/USA	Purdue Kenya Project - building a robust student pharmacist and Kenyan pharmacy intern-training programme	University	 	Benchmark the programme framework

	Country	Title of case study	Stakeholder/s	FIPEd Tool used	Used for/as
4.9	Serbia	Reinforcement of the framework for experiential education in healthcare in serbia	University	   	Guidelines to advocate for changes and develop national regulation
4.10	Spain	Internal quality assessment system SGIC	University		Guidance in developing systems, structures and strategies
	Spain in collaboration with Angola	Project for the CPD for pharmacists from speaking-Portuguese countries	University	  	Guidance in developing systems, structures and strategies
4.11	Thailand	Thai pharmacy professional development and education	Professional association + University	  	Adoption of global concepts to develop national needs-based frameworks and guidelines Adaptation and validation
4.12	United Kingdom (Great Britain)	Pharmacy frameworks RPS Foundation Programme & RPS Faculty	Professional association	  	Overview for foundation level practice competencies Guidance for the development of resource accreditation standards



4.1 Australia

a. Credentialing of advanced practice International perspectives — local application

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Summary

- Throughout 2015, the Australian Pharmacy Council (APC) undertook a credentialing of advanced practice pharmacists pilot programme. The purpose of the pilot programme was to establish a contemporary, sustainable, robust and appropriate method for recognising and credentialing registered pharmacists using the Advanced Pharmacy Practice Framework for Australia (APPF)[1]:
 - 43 pharmacists who participated in the pilot were evaluated against the APPF after each submitting a practice portfolio.
 - 67% were evaluated at Advanced Stage 3 and therefore were awarded with the credential Advanced Practice Pharmacist.
 - 33% were evaluated at Advanced Stage 2.
- The FIP Advanced Practice and Specialisation in Pharmacy: Global Report 2015[2] was utilised throughout the pilot programme. It allowed reflection on the work that was being undertaken when completing the case study template; and upon release of the report, the document was used for advocacy and promotional purposes.
- Aspects of the report formed a key chapter of our final pilot programme evaluation report that was submitted to the Board of the APC.

Rationale

Throughout 2015, the APC undertook a Credentialing of advanced practice pharmacists pilot programme. The purpose of the pilot programme was to establish a contemporary, sustainable, robust and appropriate method for recognising and credentialing registered pharmacists using the Advanced Pharmacy Practice Framework for Australia (APPF).

The FIP Advanced Practice and Specialisation in Pharmacy: Global Report 2015 was a critical report for two key reasons:

- Providing background and guidance on progress internationally in this area that supported the APC work;
- Advocacy and promotion that advanced practice recognition was a key workforce development activity globally and therefore better justified to the stakeholders that there was broad support for the initiative.

Education and professional development

The APPF was released in 2012 and endorsed by the ten major pharmacy organisations in Australia. Hence the Framework is owned by the profession and was designed to be sufficiently flexible to serve as a template for describing advanced practice expectations in all areas of professional practice.

The APPF was based on the UK CoDEG Advanced and Consultant Level Competency Framework[3] and adapted for Australian needs. The impetus for an advanced practice framework grew from the review of the National Competency Standards Framework for Pharmacists in Australia[4] in 2010. Ironically, learnings from the 2015 pilot have since informed the 2016 review of the National Competency Standards Framework.

Though the APPF was the foundation document, the APC developed a range of additional tools and resources to support practitioners involved in the pilot to develop a practice portfolio for evaluation.

Putting into practice

In contributing to the Australian case study in the FIP Advanced Practice and Specialisation in Pharmacy: Global Report, the questions allowed reflection on the work that was being conducted and how it could be clearly explained to a global audience. It provided the opportunity to reflect on issues such as professional recognition, supporting regulation, and lessons learnt (both positive and challenges).

Upon release of the document, the key findings of the report were utilised in advocacy and promotion of advanced practice recognition in Australia. Importantly, the report demonstrated that Australia was not isolated in implementing a programme of advanced practice recognition. It showed international examples of progress around advanced practice and specialisation, and emphasised the use of national frameworks, like our Australian APPF, are a key workforce development activity.

The FIP “Key Findings” document (a summary of the Global Report), was also used as a useful handout at conferences where the APC had an industry exhibition.



Development of country-specific resource

The FIP Advanced Practice and Specialisation in Pharmacy: Global Report formed the basis of the literature review chapter “Advanced Practice programs in other jurisdictions” that was included in the final pilot programme evaluation report considered by the APC Board. This report was responsible for the decision by the Board to implement a formal programme of advanced practice recognition and credentialing in Australia in June 2016.

The FIP report was referenced in various other APC presentations and publications. An example presentation is available at <https://www.pharmacycouncil.org.au/media/1093/ap-presentation.pdf>.

Impact

In its own way, the FIP Advanced Practice and Specialisation in Pharmacy: Global Report 2015 contributed to the successful 2015 credentialing of advanced practice pharmacist pilot programme in Australia. It was the success of this pilot that has now led to a formal programme of advanced practice recognition and credentialing in Australia, commencing from June 2016.

Future

As the pharmacy profession transforms, where more advanced and complex care is provided, the profession must promote and highlight to the public that such services are being provided by a pharmacist who has much broader skills and experience. A formal programme of advanced practice recognition against a nationally endorsed advanced practice framework is an important initiative for Australia.

Finally, a structured developmental pathway for the practitioner now exists and evaluation of advanced practice will help develop a capable and competent workforce, fit for purpose to deliver expanded pharmacy roles.

References

1. Advanced Pharmacy Practice Framework Steering Committee. An Advanced Pharmacy Practice Framework for Australia. Canberra: APPFSC Secretariat; October 2012. Available at: <http://advancedpharmacypractice.com.au/publications/>
2. International Pharmaceutical Federation (FIP). Advanced Practice and Specialisation in Pharmacy: Global Report 2015. The Hague: International Pharmaceutical Federation; September 2015. Available at: www.fip.org/educationreports
3. Competency Development and Evaluation Group (CoDEG). Advanced to Consultant level Framework- a developmental framework for pharmacists progressing to advanced levels of practice. London: CoDEG. 2009. Available at: <http://www.codeg.org/fileadmin/codeg/pdf/ACLF.pdf>
4. National Competency Standards Framework for Pharmacists in Australia. Canberra: Pharmaceutical Society of Australia; 2010.



b. Health literacy medicines | Sharing research

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Summary

- PharmAcademy is a potentially useful resource for building and sharing research collaborations and outputs.
- As an existing platform it provides an easily accessible, pharmacy focused environment reducing the need for separate planning, design and development.
- The Health Literacy and Medicines Use group is in the establishment phase with no evaluation so far but anecdotally the concept has been well received.

Rationale

PharmAcademy was chosen as it provided an existing pharmacy education and research communication platform that met the needs for international research collaboration.

Putting into practice

The Health Literacy and Medicines use site within PharmAcademy is in the process of being established with collaborators from around the world starting to join up. It is a site for sharing research protocols, communicating outcomes, establishing research partnerships and collaborations.

This site will underpin a workshop at the International Social Pharmacy Workshop (ISPW) in Aberdeen, 2016. In the workshop on Health Literacy focusing on next steps in research and development/evaluation of interventions small groups will directly enter summaries of discussions and key points around the topics being explored.

This will include research topics and designs, opportunities for collaboration and identify nationally and regionally specific issues. The information will be immediately accessible and provide a platform for connection and collaboration beyond the workshop.

Impact

It is too early for any evaluation of resource use and effect. Anecdotally, the concept has been positively received within the health literacy research community.

After the ISPW workshop increased resources and opportunities for collaboration will be publicly accessible to researchers and practitioners in many settings who may then act on opportunities created. The next several months will indicate whether this method was both useful and successful.

Future

The aim is to consolidate resources within the site and encourage wider use. It may be a useful model for research and educational collaboration around specific areas of practice in the future.



4.2 Chile: New pharmacy curriculum National collaboration

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Summary

- Chile is located in the WHO Americas Region. Since 2010 it has been a member of the Organization for Economic Cooperation and Development (OECD), although there exists income inequality between rich and poor.[1]
- Pharmacy education has gone through important educational and health changes and there is a demand for the pharmacist to be an active part of the health care team. Also, quality assurance of pharmacy education has been a main concern. The number of pharmacy Schools, both public and private, has increased and accountability has become an essential issue.
- Moving to a patient and medicines-centered, competency-based and learner-oriented curriculum, a network of six out of nine schools of pharmacy carried out a project at a national level considering global, regional and local contexts.
- FIP needs-based professional education model, Pan-American Health Organisation (PAHO) orientations and Chilean guidelines were considered.
- Stakeholders and preceptors have played an important role in delineating the pharmacist's new role. The new curriculum integrates both undergraduate and professional graduate studies and students are able to obtain a master's degree in the professional areas of pharmacy practice.
- Bringing the curriculum at the "classroom level" has been one of the main tasks. Modifying teaching methodologies and counting on well trained preceptors and pharmacy practice settings are some examples.

Rationale

In Chile, pharmacy education has traditionally been linked to faculties of science or chemistry, which explains the strong basic science component that prevails in the current pharmacy curriculum. Moreover, the final requirement for graduation was for many years a thesis to be carried out in the research laboratories of the Faculty/School of Chemistry and Pharmacy. As a result, the relationship of pharmacy students with patients and the health care team has been late and shallow.

The new pharmacy curriculum at the Valparaíso University has existed since 2013 and is the product of a work carried out by six Faculties/Schools of Pharmacy at a national level.[2] The driving force to carry out a big curricular change was to move from a patient-centred to a medicines-centered curriculum.[3]

The FIPed Global Competency Framework (GbCF) v1 (2012) and the Global Framework for Quality Assurance of Pharmacy Education have been important guidelines and frameworks to count on regarding pharmacy education at a global level, which is not much different to Chilean needs. The two documents have been essential in terms of emphasizing the specific professional aspects the group wanted to enhance in pharmacy students.

Considering the undergraduate curriculum is just a start for pharmacy practice; graduate studies at a professional level are also a requirement that is not completely satisfied nowadays in Chile. However, life-long learning has been a matter of concern to the Faculty of Pharmacy. In addition to many courses usually on offer to pharmacy practitioners, the new undergraduate curriculum permits integration to a professional master's programme. Both graduate and undergraduate programmes are conceived under quality assurance standards. At a national level, the undergraduate pharmacy curriculum has been re-accredited for a five-year period, and the two professional master's programmes are under the accreditation process.

Education and professional development

Chile has a well-established Quality Assurance System for Higher Education. The National Accreditation Commission (CNA Chile)[4] is the national body responsible for both graduate and undergraduate programmes, and institutional accreditation. Private agencies, national and international, are also allowed to carry out accreditation processes at the undergraduate level. Mission and vision, policies and procedures, accreditation standards, guidelines, and all information are available at the webpage of CNA Chile.[5]

This is especially important because education is not regulated according to national professional needs, and the higher education market defines the number of professional programmes at the different levels. Concerning pharmacy education in Chile, once curricular requirements are accomplished the pharmacist is legally enabled to practise in community pharmacy, hospital and health care system pharmacy, pharmaceutical and cosmetics industries, regulatory entities, universities, and clinical laboratories, among other practice areas.

Some of the common characteristics of the chemistry and pharmacy curricula are: generalist and all curricula are defined as scientific and professional.



Pharmacy curricula (actually, chemistry and pharmacy) may vary from five to six years (11 to 12 semesters) depending on the particular school. It gives no specialisation in a certain area of pharmacy practice, i.e. hospital, industry, etc., and after graduation the new practitioner may perform in any of the various areas of professional development. Thus, we can say the pharmacy curriculum in Chile is generalistic, and specialisation in pharmacy practice is considered at the graduate level.

Putting into practice

Although Chilean pharmacy schools may define their own pharmacist professional profile to support the pharmacy curriculum (most of them are defined by competencies), CNA Chile has defined it as: “Health Professional, specialist in medicines and other biologically active substances with solid knowledge in biological and chemical sciences with particular emphasis on pharmaceutical sciences, able to participate in actions related to the drug and its application to the individual in order to promote rational drug use and participate in the promotion of public health and improvement of the quality of life.”[6]

Considering this profile was built in 1998, there is an urgent need for a representative professional profile and an actualised framework for quality assurance of pharmacy education in Chile. *FIPEd* Global Competency Framework (GbCF) v1 (2012) and the Global Framework for Quality Assurance of Pharmacy Education have been considered to provide an actualised point of view of what is the role of the pharmacist in the 21st century. These two documents have been closely followed by the Faculty of Pharmacy and have served as inputs to our current pharmacy curriculum (since 2013).

At a regional level (Americas) the Pan American Conference in Pharmaceutical Education has been working on two documents to serve as guidelines in terms of competency framework and of accreditation standards for pharmacy curricula of American countries, and the Chilean experience has been considered.

Development of country-specific resource

Currently, there are 10 faculties/schools of pharmacy in Chile. However, there is neither a Pharmaceutical Education Association nor a constant and systematic communication with the National Association of Pharmacy Practitioners. Nevertheless, the Faculty of Pharmacy at Valparaiso University is expected to develop a document in this respect in the near future.

However, as mentioned before, the Pan American Conference on Pharmaceutical Education soon will be publishing the following two documents that represent a Regional point of view not far apart from those published by *FIPEd*: “Quality of Pharmaceutical Education in the Americas: Criteria and standards. A proposal” and “New Basic Plan for Pharmaceutical Education in the Americas: A proposal”.

Both of these documents are in press having strongly considered the *FIPEd* frameworks to support and guide the development of them.

Impact

Chilean pharmacy education has usually been close to practitioners themselves, especially because many of them are the current preceptors at the pharmacy practice sites. The new pharmacy curriculum introduces more pharmacy practice at a curricular level from the first to the fifth year. Preceptors as well as the stakeholders have had an important role in monitoring student's performance to improve the quality of pharmacy education.

Nevertheless, an outstanding issue is the establishment of a formal and close relationship with the National Association of Pharmacy Practitioners.

Future

The faculties of pharmacy in Chile should found a Chilean Faculties of Pharmacy Association to work at a national level in establishing the future of the pharmaceutical education. The main issues to be considered are:

- Leadership development;
- Redefining the current graduation profile of the pharmacy student since the one that guides pharmacy education in the country is from 1998;
- Faculties/Schools/Colleges of Pharmacy relationships to facilitate student mobility and student exchange across the country and abroad;
- Integrating undergraduate and graduate studies to benefit pharmacy specialisation;
- Considering life-long learning as an obligation to certify pharmacy knowledge and expertise of pharmacy practitioners;
 - Evaluate the possibility to agree on a PharmD programme at a national level in order to enhance practice over theory in professional settings.



Knowing various experiences around the world in this regard, both successful ones and those that have been difficult to develop, especially those carried out between faculties of pharmacy belonging to developed and under developed countries, would inform the next steps.

References

1. Organization for Economic Cooperation and Development (OECD) 2014. Available at: <http://www.oecd.org/chile>.
2. The six Faculties/Schools of Chemistry and Pharmacy corresponding to the Pharmaceutical Education Network were the following: Universidad de Valparaiso (coordination), Universidad Arturo Prat, Universidad Católica del Norte, P. Universidad Católica de Chile, Universidad Nacional Andrés Bello y Universidad Austral de Chile.
3. Project UVA0401. Improvement of the Quality of Higher Education Program (MECESUP). 2004. Chilean Ministry of Education. Department of Higher Education.
4. Acronym corresponding to the name of the organization in Spanish: Comisión Nacional de Acreditación.
5. National Accreditation Commission (Comisión Nacional de Acreditación) Webpage: www.cnachile.cl/Paginas/Inicio.aspx.
6. National Accreditation Commission (CNA). Chemistry and Pharmacy Curricula: Accreditation Criteria. 1998. Available at: <http://www.cnachile.cl/Criterios%20de%20carreras/quimicayfarmacia.pdf>.



4.3 Croatia: Development of the Croatian competency framework

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Summary

- The aim of the project was to adjust and validate the Global Competency Framework (GbCF) to be relevant for Croatian community and hospital pharmacists.
- A descriptive study was conducted in three consecutive steps: translation, consensus development and validation by an expert panel and public consultation. Panel members were representatives from community pharmacies, hospital pharmacies, regulatory and professional bodies, academia and industry.
- The adapted framework consists of 96 behavioural statements organised in four clusters: Pharmaceutical Public Health, Pharmaceutical Care, Organisation and Management, and Personal and Professional competencies. When mapped against the 100 statements listed in the GbCF, 27 matched, 39 were revised, 30 were newly introduced and 24 were excluded from the original framework.
- The adaptation and validation proved that the GbCF can be adaptable to local needs, thus the Croatian Competency Framework emerged from it. Key amendments were conducted within Organisation and Management and Pharmaceutical Care clusters, demonstrating that these issues can be country-specific.

Rationale

Currently, one of the major drawbacks of Croatian continuing education (CE) model is a lack of a supporting system that could assist pharmacists in identifying their learning needs and supporting their development. Therefore, the development of the Croatian Competency Framework (CCF) for pharmacists, with its minimum competencies required, is a way towards resolving those issues, namely assessing the differences between the current and desired levels of their performance and informing development of a competency-based curriculum aimed at achieving the desired level of competency.

Furthermore, the CCF could assist both individuals and organisations with career planning opportunities and allow the pharmacy sector to implement useful and harmonised professional development at national level.

Education and professional development

Since no support mechanisms or frameworks are in place in Croatia to support professional development and education, the CCF was developed based on General Level Framework and the GbCF.

Putting into practice

In order to develop a foundation competency framework for community and hospital pharmacists in Croatia the GbCF developed by FIPEd was used. A descriptive study was conducted in three consecutive steps: translation, consensus development and validation by an expert panel and public consultation. Each subsequent phase was informed by and built upon the preceding phase.

Following translation and back-translation of the framework, a consensus development panel consisting of 10 pharmacists reviewed the list of behavioural statements to adjust the GbCF according to Croatian national needs in 18 rounds (focus groups) between February and July 2014. The draft framework that had emerged from the consensus development group was evaluated for content validity using pharmacists with years of experience in an iterative process of five rounds between July and September 2014.

The final competency framework resulting from the process was made available for a public consultation with the aim of collecting comments and suggestions from members of the Croatian Pharmacy Chamber before the final document.

Impact

Since 2011/2012 the Croatian pharmacy study programme has been harmonised with the Directive 2005/36/EC, which stipulates among other points a “six-month traineeship in a pharmacy open to the public or in a hospital”. Therefore, a new competency-based pre-registration training programme was developed and is currently being used and tested in student populations during their six-month pre-registration period and by practising pharmacist-mentors. Therefore, the competency framework is used for the purpose of the development of pharmacy curricula and pre-registration educational programmes and subsequently informing the educational standards for accreditation of undergraduate education and training.



Future

Currently we are testing whether a pre-registration programme based on the CCF will enhance both students' and mentors' competence development. Based on the results, it is intended to revise the pharmacy curricula to address as many competencies in the undergraduate curricula as possible in order to address societal needs and prepare future pharmacists to be fit for practice.

Also, the regulatory body is preparing to change the current continuing education model where pharmacists are collecting points into a CPD model. Hopefully, the CCF will assist in that process.



4.4 India: National taskforce for quality assurance in pharmacy education

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Summary

- Pharmacy education in India is at a crossroads with an increasing number of pharmacy institutions and a decreasing number of students aspiring to take pharmacy as a career. One of the reasons is an apparent perception of decreasing quality in pharmacy education.
- Drawing inspiration from the initiative of the International Forum for Quality Assurance of Pharmacy Education which operates under the auspices of the Academic Section of FIP and also the Global Framework for Quality Assurance of Pharmacy Education (QAPE) document published by it, and also realising the need for quality assurance in pharmacy education, the Pharmacy Council of India (PCI), established the National Taskforce for Quality Assurance in Pharmacy Education.
- The initiative is dedicated to three domains of action: quality assurance, academic and institutional capacity, and competency and vision for pharmacy education and profession.
- The PCI envisages that by the year 2020 the National Taskforce on Quality Assurance in Pharmacy Education will help overcome weaknesses in the education system and help produce appropriately trained pharmacists with the competencies to meet not only the demands of the country, but also be a part of a globally competent health care workforce.

Rationale

There is a steady and growing demand from stakeholders, including governments, professional organisations, quality assurance bodies, providers of continuing education and schools of pharmacy that look towards the PCI for guidance in developing systems and strategies to assure and improve quality in pharmacy education. The PCI QAPE which is based on the FIP “Quality Assurance of Pharmacy Education: the FIP Global Framework” document, aims at supporting institutions in the country to improve the quality of their pharmacy education, the pharmacy services, and ultimately, the delivery of care to patients.

The PCI aims to partner with other countries and organisations in their efforts to improve the knowledge and skills of pharmacists and enhance and expand local resources where needed, thereby contributing to improved patient and population health care outcomes.

Education and professional development

The PCI is a statutory body under the Ministry of Health and Family Welfare, Government of India, and was established by the Pharmacy Act 1948. Its aim is to regulate pharmacy education and the pharmacy profession in India and it has framed and implemented the following regulations:

1. Education Regulations 1991 — providing for minimum standards for the two year Diploma in Pharmacy programme (DPharm) for practising as a pharmacist in community and hospital pharmacies.
2. PharmD Regulations 2008 — providing for the minimum standards for conduct of six year Doctor of Pharmacy programme so as to produce pharmacists who can practise pharmacy in clinical settings.
3. Bachelor of Pharmacy (BPharm) course Regulations 2014 — providing for minimum standards for the conduct of the said course in pharmacy institutions.
4. Master of Pharmacy (MPharm) course Regulations 2014 — providing for the minimum standards for the conduct of the said course in pharmacy institutions.
5. Pharmacy Practice Regulations 2015 — providing for the practice of the profession of pharmacy in the country and the standards to be maintained.
6. Minimum Qualification for Teachers in Pharmacy Institutions Regulations 2014 — setting standards for pharmacy teachers, particularly with regard to their qualification and experience for taking up a career in academia.
7. Bachelor of Pharmacy (Practice) Regulations 2014 — providing for pharmacists with Diploma in Pharmacy qualification, mentioned above, to upgrade their qualification, knowledge and competencies.

These regulations were framed only recently, with the objective to provide a framework and tools for assuring quality in pharmacy education. They were framed by the PCI through its own resources. However the Quality Assurance framework document served as a basis for initiating discussions, factoring various requirements for standards and also to develop a quality framework for the council to be able to assure the quality of pharmacy education and the practice of the pharmacy profession in India.



Putting into practice

The FIPeD framework on quality assurance in pharmacy education served as important document to initiate discussions with various stakeholders, on the need to change pharmacy education in India from its then format and standards and evolve towards global standards and expectations. The quality criteria in the framework helped prepare the tools for the various regulations mentioned above. Lastly it helped the council to develop its vision for quality assurance in education.

Development of country-specific resource

The PCI developed its own country-specific resources. This was done through the consensus generated among PCI members and various PCI committees, the inputs given by experts who were given the responsibility to develop the resources, obtain feedback from stakeholders and incorporating the same in the resources and, lastly, working with policy makers and the Government to adopt the resources as Regulations to be complied with by all stakeholders.

Impact

It has significantly impacted on enhancing the quality of pharmacy education in India with stakeholders knowing exactly how to realise the goals and objectives in producing competent pharmacists who support health care in India and globally.

Future

The PCI has now defined its Vision 2025, redefining the role of the pharmacist in creating a Healthy India (Swasth Bharat). The vision envisages that the pharmacist will be recognised as the expert in medicines and shall be responsible for development of new medicines and delivery systems and for supporting appropriate treatment and management of diseases.

It relies on Quality Assurance and Advancement in Pharmacy Education to support creating a globally competent workforce by collaborating with global leaders. It will also support pharmacist welfare and recognition, and partner with the Government of India in its various initiatives in developing a Healthy India.

Towards this, the PCI will continue to strive to work with its own resources, besides partnering with other countries in its efforts to improve the knowledge and skills of the pharmacists and enhance and expand local resources where needed, thereby contributing to improved patient and population health care outcomes.



4.5 Jordan: Multi-dimensional national-level study

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Summary

- The Global Competency Framework was used in a research study to evaluate the preparedness for practice of pharmacy graduates in Jordan and identify skills and competency gaps.
- The Global Survey of Pharmacy Schools revised in 2013, was used to collect information on pharmacy schools in Jordan to create a baseline snapshot of the status of pharmacy education in the country.
- An education-regulation-practice conceptual framework, which featured in the Quality Assurance of Pharmacy Education report, was adopted and tested in a study on identifying challenges to the advancement of pharmacy.

Rationale

At face value, pharmacy in Jordan seems to be advancing. It is witnessing considerable growths in the size of the pharmacy workforce, number of pharmacy schools, and number of community pharmacies — which have all doubled over the past decade. But underlying these quantitative growths, the profession has remained somewhat stunted in its development. Advancing pharmaceutical care and upgrading the role of pharmacists has been at the top of the educational agenda as educational institutions introduce new clinically oriented programmes (e.g., PharmD). Despite the scale ups in quantity and the education sector's transformative attempts, all available evidence points to a clear and persistent lag in practice.

This multi-dimensional project was carried out to provide guidance for the development of pharmacy in Jordan. In light of the absence of any local frameworks or resources in the country, the tools and resources made available by FIP were used.

Putting into practice

The project consisted of multiple studies. Three of them used FIPeD resources as a methodological tool or analytical framework.

1. The Global Schools Survey was employed to collect baseline information on the 14 pharmacy schools in the country, providing the most comprehensive overview of Jordanian pharmacy education to date.
2. The Global Competency Framework was used as a coding framework in a unique needs-assessment study involving interviews with pharmacy stakeholders. The stakeholders identified several competency gaps in graduates and those were mapped against the GbCF.
3. The Quality Assurance of Pharmacy Education report provided the background information on a conceptual framework we employed (p.11), to identify challenges to the advancement of the pharmacy profession. The model allowed for a dynamic and interactive analytical exercise led by the stakeholders.

Impact

Using the Global Survey and Framework served not only to facilitate the project's aims and objectives, but also to further validate these tools and offer insight to researchers and policymakers alike. The conceptual model presents a novel approach to evaluating the status of health care professions and can potentially compete with traditional theories of professions. The study that employed this model was published by a leading journal in the field (reference below). This is hoped to widen its scope and heighten its impact.

Future

With the aid of a number of FIP tools and resources, an original, multi-dimensional national-level project was conducted in Jordan to provide guidance for the needs-based development of pharmacy education and the profession. Each of the project's studies resulted in the formulation of evidence-based recommendations for educators, regulators and practitioners. The participants involved in our study came from multiple stakeholder groups, including professional and regulatory organisations. This high level of engagement is hoped to positively influence the impact of the findings and uptake of the recommendations.

Bibliography

Bader LR, McGrath S, Rouse MJ, et al. A conceptual framework toward identifying and analysing challenges to the advancement of pharmacy. *Res Soc Admin Pharm. Advance online publication*: doi:10.1016/j.sapharm.2016.03.001



4.6 Malawi: New resource limited college Helpful collaborations

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Summary

- The school of Pharmacy is a relatively new school trying to grow with very limited resources. And like many schools of pharmacy in developing countries lack adequate facilities to provide all aspects of the pharmacy curriculum.
- From research conducted within the school, the Malawi pharmacy students are good at grasping knowledge after seeing pictures and demonstrations. The subjects that were particularly in need were the practical lessons in the chemistry part of the programme.
- The study conducted showed that students needed to know their style of learning to achieve better results, as well as, lecturers can improve on their teaching style to improve student's learning.
- The coming of the FIP UNESCO-UNITWIN network and formation of the Centre of Excellence, and the lab box project provided an opportunity to acquire 50 lab boxes (one box per student) for our school.

FIP UNESCO-UNITWIN network

Lab box project: the concept envisaged a box of equipment suitable for one student to be able to conduct laboratory exercises throughout the pharmacy educational curriculum that would improve educational outcomes. The Pharmacy Department received 50 Lab Boxes with equipment suitable for 50 pharmacy students to be able to conduct laboratory exercises as part of the pharmacy educational curriculum. With the lab boxes, students were able to synthesize Aspirin from manufacture to quality analysis in the lab. With limited lab space at the college, the box is versatile and can be carried to have classroom demonstrations for basic identification tests.



Image: Jennifer Marriot (FIP UNESCO-UNITWIN) visited Pharmacy Department 26th May 2014 and Nettie Dzabala (Front) with staff and students of the department.



Image: Lab-box used by demonstrator in class.



Image: Pharmacovigilance team and collaborators at College of Medicine Louise Hughes (Cardiff university), Heide (Pharmacy Department).



Image: Nettie Dzabala (HOD Pharmacy Department and Frider Chimimba (lecturer Pharmacy Department).

PharmAcademy

Through the FIP UNESCO-UNITWIN network, the school was introduced to PharmAcademy (SABER, My Dispense, among other resources) to assist in the delivery of practical classes and development of skills in several modules.



Rationale

The FIP UNESCO-UNITWIN project offered a unique opportunity for a new resource limited college to:

- Find evidence for the necessary tools for effecting teaching and learning;
- Acquire the necessary tools for effective teaching and learning;
- Improve on the laboratorial skills of students; and
- Learn how pharmacovigilance is introduced and practised in the region and how is it possible to better introduce it at the country level.

PharmAcademy resources were very useful, as a new school, the lack of equipment and/or resources to deliver practical classes in many of the subjects that were taught is a recurrent issue (pharmaceutics, pharmacology, pharmacy practice, among others).

Useful links:

http://www.fip.org/www/index.php?page=programmesandprojects_pharmacyeducationtaskforce_UNITWIN

<http://pharmacademy.org/items>

<http://www.monash.edu/pharm/innovative-learning/technologies/pharmatopia/student-learning-modules>

Education and professional development

Collaborative work with other schools like the chemistry department at University of Malawi's Chancellor College (an older school than ours, with more equipment) has given our students opportunities to work in their lab and use their equipment.

Collaborative work with other government departments, such as, the National Herbarium for delivery of some pharmacognosy classes.

Professional development:

- Curriculum review;
- Open lectures for pharmacists in practice — currently on pharmacovigilance;
- Refresher dispenser courses for pharmacy assistants in practice.

Putting into practice

The school signed a memorandum of understanding with Malawi's regulatory authority to introduce pharmacovigilance in Malawi and therefore become a member of the WHO drug safety monitoring programme. The WHO collaborating centre for Sub Saharan Africa visited the national regulatory authority in March 2016 to assess work done on the ground towards establishing a Pharmacovigilance system in Malawi. As a result of this visit Malawi is now an associate member of the WHO drug safety monitoring programme.

This achievement was greatly helped by our school being a member of the FIP UNESCO-UNITWIN Centre of Excellence as it was easy to communicate and learn from the other countries within the Centre of Excellence on how pharmacovigilance is run in the other member countries.

MyDispense tool has been of great assistance in for students to develop skills and confidence in their theoretical knowledge of Pharmacology, Pharmacy Practice, toxicology and clinical pharmacy.

Delivery of practical classes in: Pharmaceutical chemistry; Pharmaceutics; Pharmacology and Pharmacy Practice were improved due to the FIPEd resources.

Impact

Lab boxes: the lab boxes are ideal scientific accessories and useful tools for conducting hands-on experiments in the field of science including chemistry and pharmaceutical related activities. It provided a convenient, streamlined process to maximise glassware storage. They offer a way of allowing students to take ownership of various scientific tools and therefore handled with care, frequent replacement of the glassware is avoided. Therefore, from economic perspective, the lab boxes ensure massive saving to the procurement of new laboratory apparatus.

Pharmacovigilance: the apparent interest by all healthcare cadres.

PharmAcademy resources: extemporaneous preparation of creams and other preparations available can be of help to enhance practical skills and demonstrations for students in several modules



Future

Improvements to the lab box content will be considered, in order to further improve the teaching and learning experience.

The roll out of Pharmacovigilance, as well as the incorporation into curriculum, as pharmacovigilance has been proposed into the curriculum of all health care professional programmes (Doctors, pharmacists, among others), senate approval has been sought





4.7 New Zealand: The ENHANCE professional development programme

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Summary

- Any lifelong learning programme framework requirements must remain fit for purpose beyond initial implementation.
- It is essential to expand quality assurance process to encompass the programmes that enable ongoing and future competence in an individual's professional pharmacy practice.
- FIP Foundations and Pillars quality model form the foundation of the NZ Accreditation Standards for pharmacy continuing education activities, providing a validated structure against which continuing education (CE) activities are evaluated and accredited.
- The model was extended to enable the complete PSNZ ENHANCE recertification programme to align with the quality indicators, thus ensuring the programme is delivered in accordance with internationally recognised and accepted pharmacy education quality assurance criteria providing indicators that enable support of initiatives to expand and advance pharmacy practice.
- Regular intentional review measurement of the programme structure, content and outputs against the quality criteria assures the structure of, and activities within, the programme are future proofed by using mechanisms to assure relevance and impact on individual professional practice.

Rationale

The current focus and emphasis on quality assurance lies predominantly in the accreditation of university based pharmacy programmes. However it is essential that the quality assurance process is further expanded to encompass the programmes that enable ongoing and future competence in an individual's professional pharmacy practice. Any lifelong learning programme framework and its programme content must guarantee they remain fit for purpose beyond initial implementation, and ensure pharmacists are enabled to improve their knowledge, skills and behaviours relevant to their current and emerging professional roles.

Quality assurance mechanisms need to be established to ensure the existing provision for lifelong learning fulfils its aims and is able to ensure growth and adaptation within the rapidly changing professional environment.

Education and professional development

The New Zealand Recertification Framework is set by the regulator — The Pharmacy Council of New Zealand. The ENHANCE professional development programme, developed and managed by the Pharmaceutical Society of New Zealand, has been compulsory since 2006.

The programme contains a complete support structure with tools for pharmacists to meet their annual recertification requirements. These have been developed by the PSNZ, but have been informed by developments in similar programmes internationally, and by collaboration with international peers.

Putting into practice

The PSNZ encourages the development and delivery of innovative continuing education opportunities that promote lifelong learning. The “Quality Assurance of Pharmacy Education: the FIP Global Framework” (2nd Edition 2014) identifies three foundations and five pillars of quality for pharmacy education programmes. The indicators and criteria that define quality from the report have been embedded into the recertification programme, allowing it to be dynamic and therefore assuring quality of learning which supports expansion and advancement of professional practice.

Initially the model of the foundations (science, practice, ethics) and pillars (context, structure, process, outcomes, impact) of quality were used to form the foundation of the NZ Accreditation Standards for pharmacy continuing education activities in New Zealand[1]. These provide a validated structure against which CE activities are evaluated and accredited, and allow ongoing competence development for individual pharmacists after initial registration.

The implementation of the CE Accreditation Standards succeeded so well that we then extended the use of this model and reconfigured the entire PSNZ ENHANCE recertification programme to align with the quality indicators, thus assuring that not only the life long learning of individual pharmacists would be quality assured but that the programme that underpinned and supported their learning and professional development would also be quality assured for its relevance to current and future professional practice.

Development of country-specific resource

The New Zealand CE Accreditation Policy and Standards are directly based on the ‘Quality Assurance of Pharmacy Education: the FIP Global Framework’ (2nd Edition 2014).

The standards are intended to assist education providers in the planning and submission of an accreditation application.



Providers must understand and adhere to the standards as well as understand their accountability for the quality of the continuing pharmacy education activities they deliver.

To be accredited, it must be demonstrated that a learning activity satisfies all of the accreditation standards.

Accreditation for CE activities using the standards:

- Enhances the quality of continuing pharmacy education;
- Provides pharmacists with a reliable basis to select quality activities;
- Promotes the provision of appropriate, high quality continuing education to support improved evidence based pharmacy practice.

Following the implementation of the policy and standards The PSNZ ENHANCE Programme's Strategic Plan was reviewed and reworked to align with the Foundations and Pillars of Quality as described in the FIP standard for pharmacy education "Quality Assurance of Pharmacy Education: The FIP Global Framework" 2014, and is underpinned by a Strategic Quality Management Plan (also aligned with the Foundations and Pillars).

The outcome has been that the regulator can be assured that the structure and outputs of the programme meet the statutory requirements of the recertification programme and are being proactively managed and maintained.

Impact

Using the foundations ensures the ENHANCE programme addresses all the characteristics of competence — knowledge, skills, attitudes, behaviours and values.

The development of the content and delivery of the programme is supported by the pillars, which provide the framework for quality, relevant and effective learning, supported and enabled by the recertification programme. These address the requirement of the ENHANCE programme for pharmacists to engage in effective learning, see the relevance of CPD to their everyday practice, reduce barriers to engagement and therefore result in positive outcomes for both the individual pharmacist and support the development of the future pharmacy profession.

It ensures that the programme is delivered in accordance with internationally recognised and accepted pharmacy education quality assurance criteria and indicators that also enable support of initiatives to expand and advance pharmacy practice.

Formal accreditation or endorsement of any learning activity or programme will ensure that it meets the PSNZ Accreditation Standards, and provides assurance to pharmacists that the activity has been reviewed and evaluated for educational quality and relevance to professional pharmacy practice using internationally recognised quality indicators and that core quality elements in the design and delivery of the activity are established and being maintained.

The restructured strategic plan and its programme for implementation was submitted to the Pharmacy Council of NZ (the Regulator) as part of the ongoing accreditation of the PSNZ ENHANCE recertification programme for a pharmacist's Annual Practising Certificate.

The standards require that feedback is collected from the users of any accredited activity to allow evaluation of expected individual practice changes and improvements, as well as ensuring that the activity is informed by ongoing evaluation of all aspects including quality, relevance, effectiveness of delivery and any perception of bias. Any relevant changes or improvements to the design, delivery and content of an activity is then expected to be incorporated into the activity based on the feedback.

Future

From now on, the entire PSNZ ENHANCE programme and the Accreditation Standards structure, content and delivery will be internally reviewed quarterly against the strategic plan, and externally reviewed biennially against the quality criteria by users and an independent focus group on alternate years.

It will provide ongoing measurement of the ENHANCE programme structure, content and outputs against the quality criteria and therefore assurance that the structure of, and activities within the programme are future proofed by using mechanisms to assure relevance and impact on individual professional practice.

References

1. PSNZ Standards for Accreditation of Continuing Education Activities 2015. Available at: <http://www.psnz.org.nz> -> ENHANCE -> CE Accreditation



4.8 Purdue Kenya Project | Building a robust student pharmacist and Kenyan pharmacy intern-training programme

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Summary

- Purdue University entered the AMPATH (Academic Model Providing Access to Healthcare) Consortium in 2003 to provide and expand pharmacy services.
- The Purdue Kenya Partnership (PKP) built a robust student pharmacist and Kenyan pharmacy intern-training programme.
- In 2011, the PKP established a Global Health Residency supported by Purdue, AMPATH and Moi Teaching and Referral Hospital.
 - The first residency offered in Kenya and the teaching modality is primarily experiential training.
 - The residency class is comprised of Kenyan and American pharmacists.
 - The residency has led to the development of an experiential training based diploma programme and Master of Clinical Pharmacy curriculum.



Image: Susie Crowe provides clinical pharmacy care services in the critical care unit.



Image: Team photo of Kenyan and North American pharmacists who completed the Global Health Residency Programme.

Rationale

In 2010, when the PKP was building the Global Health Pharmacy Residency the 2009 Global Pharmacy Workforce Report served as resource for the residency development. The report highlighted the significant shortage of pharmacists in Africa and specifically utilised a case report from Kenya. The materials in the report provided critical background on the need for the type of training programme and were specific to the setting in Kenya. The document was discussed in key stakeholder meetings.

As the programme has continued to develop, the 2013 FIPed Global Education Report has been utilised to benchmark the programme framework that was created for the residency. The report cites a needs-based approach to educational development, which the PKP has continually employed as well as discusses challenges in building capacity and infrastructure, which the residency has been working to address.

Education and professional development

The PKP adheres to a set of core values and the residency programme has maintained these values while developing a distinct guiding vision and mission. In addition to the PKP's mission, the Global Health Residency utilised the following resources to build the educational framework:

1. 2009 FIP Global Pharmacy Workforce Report;
2. American Society of Health-System Pharmacists (ASHP) residency standards;
3. United Nations Millennium Development Goals;
4. Government of Kenya Millennium Development Goals.

Additionally, Purdue University College of Pharmacy and Department of Pharmacy Practice strategic plans support professional development and education.



Putting into practice

The 2009 FIP Global Pharmacy Workforce Report was used when initiating the residency training programme. The workforce shortage was highlighted to showcase the need for this type of training. The case report for Kenya and the “Actions & Directions” sections were used to support the development of a residency programme.

The report was integrated when meeting with local stakeholders to address the critical need for a postgraduate training programme that focused on direct patient care. The FIPeD Global Education Report was used during the development and continued assessment of the programme.

The PKP implemented a needs-based approach to the creation and refinement of the educational framework that was developed. It also utilised the resource to continue efforts to build the now approved diploma programme, citing the need for increased capacity of adaptable practitioners as well as increased educator capacity.

Development of country-specific resource

The Global Health Residency framework is the education system developed. It is country-specific and has focused on the needs of Kenya but could be adapted to fit other practice settings. The framework has been utilised to build not only the residency but a diploma programme and Master of Clinical Pharmacy curriculum.

These frameworks could be utilised in other countries or sites and allow for modifications/updates. The development of the frameworks used many different strategies. The FIPeD reports mentioned above were used for data during the consensus gathering periods with key stakeholders involved with the residency, diploma and master degree programmes.

Impact

Through the implementation of teaching programmes firmly rooted in experiential learning, the PKP has been able to see the impact on direct patient care, the development of clinical care programmes, and successful grantsmanship. Since the establishment of the Global Health Residency Programme, there have been 14 pharmacy residents, eight of whom were Kenyan pharmacists.

The four residency classes combined developed or augmented 11 sustainable pharmacy-led patient care services, including the following:

- An inpatient anticoagulation programme (>1,400 patients have received care);
- Self-sustaining pharmacies for rural clinics (>154,000 patient encounters);

- Rural outpatient diabetes and hypertension programmes (>3,000 patients received services);
- A gestational diabetes screening and treatment service (>600 patients screened);
- Peer-based patient education for patients with HIV (>1,000 patients counseled for testing and >400 patients receiving outpatient follow-up);
- Counterfeit medicines detection (>2,000 medicines sampled);
- World Health Organization (WHO) supported pharmacovigilance programme (highest reporting facility in Kenya);
- A drug information and medication safety centre, and oncology and cardiac intensive care unit (10-bed unit) services.

Outside of the residency programme, pharmacists in the clinical internship programme have been able to show an impact on patient care through the interventions documented. When compared with students trained in the United States through a Doctor of Pharmacy programme, Kenyan pharmacy interns achieved 16.7 interventions per day compared with 12.0 interventions per day for the US pharmacy students within the same setting.

The data suggest that with adequate mentoring and clinical training through direct patient care, the knowledge gained from a bachelor's degree in pharmacy can achieve similar clinical success in a resource limited setting.

Future

For the Kenyan pharmacists, the Global Health Residency Programme has recently been approved as a Post-Graduate Diploma in Clinical Pharmacy course available through Moi Teaching and Referral Hospital with approval from the Pharmacy and Poisons Board of Kenya. Approval of this type of diploma programme (with a focus on experiential and specialty training) is outside the norm of progression to a more clinical position within pharmacy in Kenya.

Ideally, improved recognition for training in this matter will result in development of more clinically focused positions within pharmacy or the encouragement of patient-centred practice standards. This one year, fully experiential training programme will allow the country to rapidly increase the number of pharmacists in clinical practice.



Bibliography

- American Society of Health-System Pharmacist and the Academy. 2012 ASHP international accreditation standard for postgraduate year one (PGY1) pharmacy residency programs. Available at: <http://www.ashp.org/DocLibrary/Accreditation/ASDInternationalStd010410.aspx>.
- AMPATH. Academic model providing access to healthcare. Available at: www.ampathkenya.org.
- Draft progress in attainment of MDGs and way forward towards achieving MDGs by 2015 in Kenya. Government of Kenya, UNDP, 2010. Available at: <http://planipolis.iiep.unesco.org/upload/Kenya/KenyaDraftMDGReport2010.pdf>
- IOM (Institute of Medicine). Investing in global health systems: Sustaining gains, transforming lives. Washington, DC The National Academies Press, 2014.
- Miller ML, Karwa R, Schellhase E, et al. Creation of a global health residency in Kenya. *Pharmacotherapy* 2011;31(10):397e.
- Miller ML, Karwa R, Schellhase EM, et al. Meeting the needs of underserved patients in Western Kenya by creating the next generations of global health leaders. *Am J Pharm Educ* 2016;80(2):Article 22.
- Pastakia SD, Karwa R, Maina M. Reframing the focus of international health experiences. *Pharmacy Times* 2013;(15 November).
- Pastakia SD, Schellhase EM, Jakait B. Collaborative partnership for clinical pharmacy in Kenya. *Am J Health-Syst Pharm* 2009;66(15):1386–90.
- Pastakia SD, Vincent WR 3rd, Manji I, et al. Clinical pharmacy consultations provided by American and Kenyan pharmacy students during an acute care advanced pharmacy practice experience. *Am J Pharm Educ* 2011;75(3):42.
- Pekny C, Karwa R, Miller ML, et al. The impact of a global health pharmacy residency on a public health sector, teaching hospital in western Kenya. Abstracts from the American College of Clinical Pharmacy 2015 Global Conference on Clinical Pharmacy — Scientific. *Pharmacotherapy* 2015;35:e175–e325.
- Purdue University College of Pharmacy. The academic model providing access to healthcare program. Available at: www.ampath.pharmacy.purdue.edu (accessed 25 June 2015).
- United Nations. 2014 The Millennium Development Goals. Available at: <http://www.un.org/millenniumgoals/2014%20MDG%20report/MDG%202014%20English%20web.pdf>.



4.9 Serbia: Reinforcement of the framework for experiential education in healthcare

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Summary

- Health sciences faculties in the Republic of Serbia worked together on the reinforcement of a framework for experiential education, on the introduction of interprofessional teaching and learning activities, and on a teaching competencies development programme.
- Respective actions are supported through the EU funded Erasmus+ Capacity Building Project ReFEHS.
- There is an increased awareness of the emerging issues in pharmacy education and the need for joint efforts of all the interested parties towards the accomplishment of a common aim: improved, contemporary, transformative pharmacy education.
- In order to progress, relevant quality standards specific for students' professional practice experience and interprofessional education should be introduced in the national regulation for higher education; academia and professional organisations should collaborate and share the responsibility to ensure comparable, learning rich practice experiences for all pharmacy students.

Rationale

The established system for quality assurance in higher education in Serbia provides general accreditation standards and does not recognise specific expectations for contemporary pharmacy education. Relevant initiatives from professional organisations are still nascent. However, lack of undergraduate professional practice experience has been recognised as a major deficiency of current pharmacy curricula by all the stakeholders — students, employers and academia, as well as the need to introduce interprofessional teaching and learning activities within the health sciences.

Health sciences faculties (medicine, pharmacy, dental medicine and nursing) in Serbia worked together on the reinforcement of the framework for experiential education, on the introduction of interprofessional teaching and learning activities, and on a teaching competencies development programme.

Education and professional development

There is a slow paradigm shift from content-based towards competency-based pharmacy education in Serbia. Elemental support mechanisms are available, since clearly defined programmatic educational outcomes are requested as part of the study programmes' accreditation. The national Strategy for Development of Education by 2020 and the accompanying action plan promotes establishment of a system of professional practice, application of new methods of learning, information technology and e-learning, enhancing cooperation with employers, didactic training of academic staff and establishment of international mobility of teachers, students and researchers.

In 2014, the Serbian Pharmaceutical Chamber issued a national framework for professional competencies evaluation, based on the FIPeD Global Competency Framework (GbCF). In 2015, Education Audiovisual and Culture Executive Agency (EACEA) has approved funding for the Erasmus+ Capacity building project "Reinforcement of the Framework for Experiential Education in Healthcare in Serbia".

Putting into practice

FIPeD documents are being used as valuable resources and guidelines to advocate for changes and develop national regulation. The FIPeD Global Competency Framework (GbCF) has been adopted to define a national framework for professional competencies evaluation which will be used as a reference for establishing competency-based pharmacy education outcomes; quality indicators defined in the "Quality Assurance of Pharmacy Education: the FIP Global Framework" have been used to assess the "need for change" and benchmark the existing pharmacy curricula against the standards for contemporary pharmacy education; "Interprofessional Education in a Pharmacy Context: Global Report" is being used as a guide to understand the expected challenges and develop needs-specific guidelines for interprofessional education of health care professionals.

Development of country-specific resource

A comprehensive survey among health science students, teachers and practitioners was conducted in February 2016 at the four Serbian universities with support from professional organisations and health care institutions. The total number of respondents was 1,508 (comprising 27% academic staff, 58% students and 15% health care practitioners).



The results obtained provide valuable information about the current situation in health care professionals' education in Serbia and insights into the attitudes of students, academic staff and health care practitioners on the importance of the improvement of professional education as foundation for improved quality of health care. An overview of the survey results, current situation within the health professionals education in Serbia and the recommendations for improvement are included in the ReFEEHS Need for Change Report (available at <http://refeehs.com/>).

Impact

There is an increased awareness of the emerging issues in health professionals' education and the need for joint efforts of all the interested parties towards the accomplishment of a common aim: improved, contemporary, transformative health professionals' education. Increased interaction between students, academic staff and practice sites/clinical practice staff will foster quality improvement of both health professionals' education and patient health care.

Future

In order to progress, relevant quality standards specific for students' professional practice experience and interprofessional education should be introduced in the national regulation for higher education; academia and professional organisations should collaborate and share the responsibility to ensure comparable, learning rich practice experiences for all students.

Bibliography

- Parojčić J. Pharmacy education in Serbia at the turning point between traditional and contemporary. Belgrade: Tempus Foundation, 2014.
- Pharmaceutical Chamber of Serbia. National framework for professional competencies evaluation. Belgrade, 2014.
- ReFEEHS Project Report: Current practice and challenges in education within the health professions — the need for change, Belgrade, 2016.
- Tasić Lj, Parojčić J, Krajnović D. Transforming pharmacy education — societal and professional challenges, *Arh Farm* 2015;65:1–16.



4.10 Spain

a. Internal quality assessment system SGIC

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Summary

- The higher education system in Spain is evaluated by means of a certification process that is homogeneous for all degrees and universities.
- The University of Valencia Faculty of Pharmacy recognises continuous quality improvement as one of its goals. There is an internal system to assess quality (SGIC) in the institution.
- A workshop was organised to involve all the staff in the ongoing certification process.
- A comparison with other standards (mainly FIP Global Framework) was facilitated.

Rationale

The FIP Global Framework on Quality Assurance has two main advantages. It represents the conclusions of a global organisation, which enforces broadmindedness and an orientation towards the future. On the other hand, it has the flexibility to be adapted to the Spanish national and regional reality as it refers to different elements and how to use them, without dependency on specific index. It is user-friendly, which allows it to be adopted by a community of teachers during a short workshop.

Education and professional development

Among other procedures and mechanisms to support education, every Spanish university must undergo accreditation and certification processes of the degrees taught. The National Agency is called ANECA, and delegates the implementation to regional agencies, such as the Valencian Community one (AVAP). The procedures are public and correspond to VERIFICA and ACREDITA.

In order to successfully pass these processes, the University of Valencia developed its own internal quality assessment system.

The system is called SGIC and consists of procedures covering different aspects, such as facilities, academic and technical staff and their qualifications, mobility, external traineeships, as well as student satisfaction with enrolment or methodologies and stakeholders' opinions.

Even if the system is considered adequate, it lacks specificity towards pharmacy and does not consider all the aspects highlighted in the FIP Global Framework.

Putting into practice

The Faculty of Pharmacy in Valencia organises workshops for teachers involved in the pharmacy degree to improve the learning-teaching process for students. The main purpose of these activities is to serve as a tool of communication, cohesion and evaluation of good practices, as well as an instrument of coordination among the staff.

As a part of this series of meetings, considering the certification process we were undertaking during the course 2015–16, it was decided to focus on quality assurance in the present edition. A workshop was organised entitled “Achieving Excellence in Pharmacy Education”, held as a face-to-face activity on 9 and 10 December 2015, complemented by an online individual task.

Forty-two teachers attended voluntarily. Moreover it was attended by the vice-director of quality and innovative policies at the university, the director of the quality unit at the university and three technicians from the unit. The frameworks used were the Global Framework as well as with ACPE International Quality criteria. The sessions were developed in teams to facilitate discussion. Initially, an analysis was carried out based on these two frameworks.

Secondly, a comparison between regional standards, American standards and FIP Global Framework was accomplished. Finally, points of improvement were envisioned and proposals agreed.

The individual work online consisted of the comparison between the FIP index and national index, taking into account the five pillars of quality.

A report will be produced and published to disseminate conclusions of the workshop while the AVAP (Evaluation and Foresight Valencian Agency) report on certification will be issued.



Development of country-specific resource

The University of Valencia as a whole has implemented an internal quality assessment system (SGIC) that is mandatory for all its faculties. This fact represents that changes in the quality assurance system are beyond the competencies of the Faculty of Pharmacy.

Nevertheless, the participation of the director of the quality unit and the technical staff enabled reflection on specificities, at least, for health sciences centres.

Impact

It is a recent action, so it is difficult to assess the impact it can have. The satisfaction survey conducted among participants reflected a high rating of the value of the workshop.

Commitment to change was also perceived by attendees as a positive goal achieved. Young teachers also expressed the perception of the wide scope of quality assessment.

As an immediate reaction for the group, a better understanding of the importance of stakeholders and professional societies was attained. In line with this, an agreement with the Spanish Society of Community Pharmacists has been signed.

Long-term consequences are to be expected, in particular, better definition of the professional competencies and better orientation to the actual context of societal needs.

Future

The preparation and diffusion of a report considering the items proposed by FIP as well as the ones highlighted by AVAP (Evaluation and Foresight Valencian Agency) (if so) will be the next step. A comparison between conclusions will help the university community to focus on the important features to achieve excellence in education.



b. Project for the continuing professional development for pharmacists from Portuguese-speaking countries

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Summary

- Angola is the second largest country south of the Sahara with a population of around 25 million people. Based on the “Quality Assurance of Pharmacy Education: the FIP Global Framework” (2nd Edition), a background of the continuing professional development project for pharmacists from Portuguese-speaking countries was presented. The case study presents a characterisation of Angolan pharmacy education and the role of pharmacists and their contribution to the health care system.
- Due to rapid expansion in the number of pharmacy schools (five public and two private), ensuring high-quality pharmacy education is a major challenge for Angola. Data collection on pharmacy workforce and practice, and specific needs of the country, were used to develop comprehensive education as a first step towards improving the quality of pharmacy education.
- Some challenges for pharmacy education and practice in Angola in the near future are: to set up a national framework for pharmacy programmes as a guideline to developing specific pharmacy curricula, to improve standard pharmacy textbooks with updated and advanced content, and to develop postgraduate pharmacy programmes to offer continuing education and professional development in cooperation with overseas organisations.

Rationale

The Global Framework for Quality Assurance of Pharmacy Education was used to support the vision for pharmacy practice and professional education in Angola, defining the pharmacist’s role and contribution to health care and identifying the current pharmacy education status.

From a historical point of view, the need for skilled pharmacists in Angola came soon after independence in 1975 to bridge the professional void and the lack of pharmacy Schools. Since then, many students were sent abroad with scholarships to Cuba, Congo, Russia, Brazil and Portugal to ensure their training. In 2001, the Jean Piaget University of Angola offered a bachelor of pharmacy degree for the first time.

Current drivers:

- Consistent with the FIP Education Initiative’s 2013 Global Education Report,[1] Africa as a continent has the fewest pharmacists per capita in the world. According to the 2012 Angola National Directorate of Medicines and Equipment by 2004, pharmacists (919) were fewer than doctors and nurses (18,485 nurses and 1,165 physicians).[2]
- There is an increasing number of BPharm programmes in Angola — since 2001, six universities have opened BPharm programmes bringing the total to seven in 2015.[2]
- Pharmacy schools are regulated by the Ministry of Higher Education and the number of private institutions has significantly increased.
- There is a lack of postgraduate pharmacy programmes and concern about the quality of higher education. As a result, pharmacists seek PharmD, masters or PhD degrees overseas.
- Student migration to Portugal for continuing pharmacy education remains a reality today. Currently, there is an increasing tendency to study in Brazil, due to agreements and mobility programmes between the two countries.[3]
- There is a lack of accreditation standards and guidelines for pharmacy education.[4]

Education and professional development

Although the pharmacy profession has been established in Angola for a number of years, to meet higher quality standards is a professional requirement not yet achieved. New regulations and pharmaceutical policies, as well as new pharmacy education tendencies are being developed, but it will take some time to overcome the huge needs in Angola today.

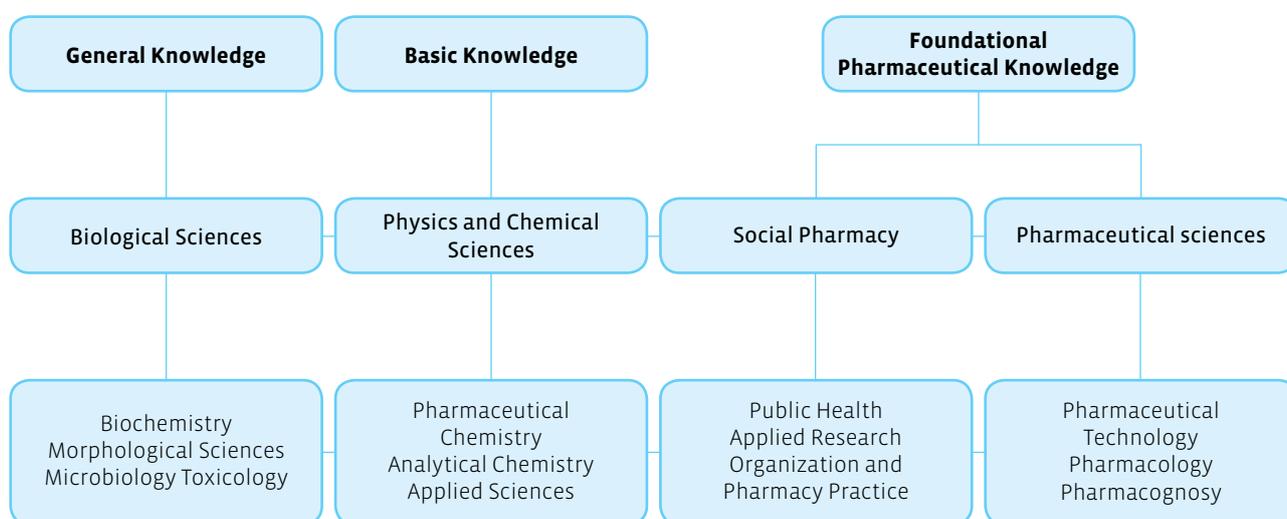
In accordance with FIP CPD/CE statement[5] and Quality Assurance framework,[6] the National Association of Pharmacists (<http://www.ordemfarmaceuticosangola.org/> — no English site) recognises that the emergence of various schools of pharmacy with different teaching programmes. Consequently, the establishment of guidelines for pharmacy education is an imperative.

A new approach to the pharmacy curriculum could be submitted through the project by Londa et al,[7] specially designed for the School of Pharmacy at the Agostinho Neto University. The five-year pharmacy course includes theory and practice with a unique professional setting. In order to graduate and as a last curricular prerequisite, all students are required to do a research project, write a dissertation, and present their results to a scientific committee.



The pharmacy curriculum was structured to provide students with all the essential information and knowledge in both basic and pharmaceutical sciences required to lead them to pharmacy practice (Figure 4.1).

Figure 4.1 : Overview of BPharm Curriculum in Angola.



Education Quality Assurance

In accordance with Isaac[8] self-evaluation in the Angolan higher education institutions is at an initial stage. Some autonomy to define their evaluation stage according to organisational specificities should be exercised taking into account reference patterns of the national, regional and international system of evaluation.

Likewise, Nascimento[9] also acknowledged that higher education development in Angola was not followed by appropriate measures to ensure the quality of the courses and programmes offered by these institutions. As expected, this truth characterises Angolan pharmacy education. Currently, there is an absence of Angolan universities among the best in Africa.[10]

Putting into practice

There are 1,261 pharmacies in Angola[11] covering the entire country, with 0.5 pharmacy for every 10,000 inhabitants. In relation to pharmacy services, pharmacy practice in Angola is also guided by the Associação Brasileira de Países de Língua Portuguesa (AFPLP) Resolution, which brings together professionals from Angola, Brazil, Cape Verde, Guinea-Bissau, Mozambique, Portugal and Sao Tome and Principe, approved in General Assembly held in Luanda, Angola, in 2013.[12]

At the end of 2015, the National Association of Pharmacists adopted a Minister Council Decree 28/97 related to Pharmacist Performance at the National Health System. This document updates pharmacists' competences and sets a minimum of requirements for each of them.[13]



Development of country-specific resource

Based on “Continuing Professional Development/Continuing Education in Pharmacy: Global Report 2014” and Rouse[14] reports about CPD/CE in pharmacy, a private initiative entitled “Project for the continuing professional development for pharmacists from Portuguese-speaking countries” was developed and launched in May 2015 to support CPD/CE in these countries. This project currently supports CPD/CE at a basic level and development of a support system for advance practice is under way.

The efficacy of pharmaceutical services for the quality of life of patients and for society is based on the skills, abilities and attitudes of pharmacists to assure their skills through lifelong learning. Thus, the aims of the project are:

- To contribute to improving the quality of pharmacy education;
- To increase the value of the pharmacist at a pharmacy practice level.

Lessons learnt

The role of the pharmacist is one of the keys to maintaining the health of the community. At the moment, there is no standardised pathway for professional recognition; however, pharmacy practice is increasing in different areas. To improve the quality of actual and future pharmacy practice, clear standards for professional recognition are needed. There is a need to switch from a product-oriented service to patient-focused care. Clinical pharmacy and pharmaceutical care philosophy is non-existent and unknown to most Angolan pharmacists. Thus, a transformation for pharmacy services in Angola is needed, in order to align with current developments worldwide.

Pharmacists and pharmacy students are willing to undergo training for advanced practice. Pharmacists also find it difficult to attend continuing pharmacy education programmes, since there is not a CPD/CE system at the national level.

Challenges to implementation

The main challenges of the project so far are:

- There is a lack of technical know-how for implementing a robust online system to support the CPD process.
- Practitioners are distributed sparsely across a wide geographical area that is currently not accessible to internet.
- There is a lack of an accreditation culture, and a lack of understanding of the CPD concept. Therefore, there is a necessity of an attitudinal change towards competence rather than completion of a task (CE).
- There are difficulties in finding partners, practitioners and educational institutions, and stakeholders’ engagement to transform both practice and pharmacy education.

Impact

The project is being favourably accepted. Three training activities have been developed relating to CPD, continuing pharmacy education and good pharmacy education practice. A total of 25 pharmacists have signed up for the mailing list created for the project, from Mozambique, Angola, Brazil, Iceland, and USA.

Professional organisations and higher education institutions should continue to work on the quality of education, accreditation and certification to achieve optimal outcomes with professional recognition. The project has produced two documents to support continuing pharmacy education. One of them is an eBook entitled “Pharmaceutical care is a solution”, free to all participants in the project, and the text “Pharmaceutical Care: Suggestions for designing a Pharmacy Curriculum based on patient centred-care” (in Portuguese).

Future

The continuing growth of Africa’s pharmaceutical industry, shortages in the number of trained pharmacists, increasing access of patients to medicines previously unavailable in the continent, the rise of main cities, the expansion of health care capacity and the development of a business environment make Africa a continent of opportunities for pharmacy practice and patients.[15,16]

In this context, a coordinated and multifaceted effort to advance on pharmacy workforce planning, training and education is being made in order to train highly qualified pharmacists in Angola.

Some efforts to improve the system include: extending the number of existing and new pharmacy schools; increasing investment in public pharmacy schools; and improving teaching facilities such as classrooms, laboratories, learning resources, computing facilities and computerised services. Similarly, to improve the quality of pharmacy education some policies take into account the National Statement of Pharmacy Education Standards in consistence with the seven-star pharmacist concept introduced by the WHO and taken up by FIP (2000) in its document “Good Pharmacy Education Practice”. [17]



References

1. International Pharmaceutical Federation — FIP 2012 FIP Global Pharmacy Workforce Report. The Hague, The Netherlands: International Pharmaceutical Federation. 2012.
2. Angola. Health Workforce. Pharmacists. Available at: http://knoema.es/atlas/Angola/topics/Salud/Recursos-Humanos-en-Salud/Farmac%C3%A9uticos?action=export&gadget=indicator-preview-host#=_ (accessed 16 February 2016).
3. Liberato E. A Formação de Quadros Angolanos no Exterior: Estudantes angolanos em Portugal e no Brasil. *Cadernos de Estudos Africanos* 2012;23:109–30.
4. Kamgno J. A história do ensino farmacêutico em Angola. *Revista da Ordem dos Farmacêuticos de Angola* 2014;2:25.
5. International Pharmaceutical Federation — FIP. (2002) FIP Statement of Professional Standards on Continuing Professional Development (on-line). The Hague: FIP. Available at: www.fip.org/www/uploads/database_file.php?id=221&table_id= (accessed 20 February 2016).
6. International Pharmaceutical Federation — FIP (2008). *Quality Assurance of Pharmacy Education: the FIP Global Framework*, 2nd Edition, 2014.
7. Londa-Vueba M. Formação pré-graduada, pós-graduada E contínua em Angola. IX Congresso Mundial de Farmacêuticos da Comunidade de países de Língua Portuguesa (CPLP). Praia, Cabo Verde, 24 Abril 2008.
8. Isaac O, López A, Mohar F. Higher education, Angola. *Rev Cie Téc Agr* 2014;23(2):76–80.
9. ANGOP. Ministro do Ensino Superior analisa atual estado do sector. 10 Novembro de 2014 | 06h46 - Actualizado em 10 Novembro de 2014 | 08h51. Available at: http://www.portalangop.co.ao/angola/pt_pt/noticias/educacao/2014/10/46/Ministro-Ensino-Superior-analisa-actual-estado-sector,a351c097-bb17-408a-83cd-01127c565f10.html (accessed 16 November 2015).
10. Lista das Farmácias atualizada. Ordem dos Farmacêuticos de Angola. Available at: <http://www.ordemfarmaceuticosangola.org/PDF/Lista%20das%20Farmacia%20Atualizadas12.pdf> (accessed 20 February 2016).
11. Prestação de serviços pelas farmácias. Resolução AFPLP. Available at: http://www.ordemfarmaceuticosangola.org/PDF/Prestacao%20de%20Servicos%20pelas%20Farmacias_Resolucao%20AFPLP.pdf
12. Ordem dos Farmacêuticos de Angola (OFA). A carreira de Farmácia no Serviço Nacional de Saúde. *Revista da Ordem dos Farmacêuticos de Angola* 2015;8:28–29.
13. VOA-Voz da America. Ausência de universidades angolanas entre as melhores de África fere o orgulho nacional. Available at: <http://www.voaportugues.com/content/angolanos-descontentes-com-ausencia-de-universidades-angolanas-no-ranking-africano/1830814.html> (accessed 17 November 2015).
14. Rouse MJ. Continuing professional development in pharmacy. *Am J Health-Syst Pharm* 2004;61:2069–76.
15. IMS Health. Libro blanco para las farmacéuticas en África. Available at: http://guinguinbali.com/index.php?lang=es&mod=news&task=view_news&cat=2&id=3484 (accessed 21 February 2016).
16. Holt T, Lahrichi M, Mina J et al. Insights into pharmaceuticals and medical products Africa: a continent of opportunity for pharma and patients. April 2015. Available at: <http://www.mckinsey.com/industries/pharmaceuticals-and-medical-products/our-insights/africa-a-continent-of-opportunity-for-pharma-and-patients> (accessed 21 February 2016).
17. WHO — World Health Organization. The role of the pharmacist in the health care system. Preparing the future pharmacist curricular development. 1997. Available at: <http://www.who.int/medicinedocs/en/d/Js2214e/> (accessed 21 February 2016).



4.11 Thailand: Thai pharmacy professional development and education

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Summary

- Thai pharmacists have to get involved in every aspect of the pharmaceutical supply chain, from manufacturing through to patient care. There are several tools and support mechanisms from the professional regulatory body, educational institutions and pharmacy organisations that support Thai pharmacy professional development and education.
- To prepare pharmacy graduates for the diversity of responsibilities among different practice settings, the Thai pharmacy profession and pharmacy education are attuned to the recommendations of FIP and the World Health Organization and aim to produce highly educated pharmacists who meet the standard of global competencies and who are able to serve the various local health care requirements and Thai society.

Rationale

Thai pharmacists have to get involved in every aspects of pharmaceutical supply chain, from pharmaceutical manufacturing through to pharmaceutical care.[1] Similarly to other countries, Thai pharmacy education and pharmacy practice are facing remarkable changes following new scientific discoveries, evolving patient needs and the requirements of advanced pharmacy competencies for practice.[2]

Several standards and guidelines recommended by FIP, Joint FIP/WHO and FIPED have been adopted in Thai pharmacy practice and pharmacy education, which aim to improve and update pharmacy practitioners' competencies to match global competencies and their ability to serve the various local health care requirements and national society.

Education and professional development

There are several tools and support mechanisms from the professional regulatory body, educational institutions and pharmacy organisations that support pharmacy professional development and education. These tools are outlined in the following section:

1. Thai legislation relating to pharmacy profession and higher education system

1.1 Drug Act BE 2510 (AD 1967): The Drug Act is an enabling Act providing a system of licensing affecting medicines manufacture, importation, sale and supply in Thailand; types of medicines; regulatory procedures and other related issues, to ensure that, through the Act, high quality and safe medicines are provided to the public. The Act was mainly enforced by government pharmaceutical agencies (e.g., the Food and Drug Administration, the Provincial Public Health Office and community hospitals). The content of the Act is periodically reviewed.[3,4]

1.2 The Pharmacy Profession Act 1994: This act was enacted in order to promote and supervise the Thai pharmacy profession through the Pharmacy Council of Thailand. The council acts as the representative of licensed pharmacists in Thailand.[4]

1.3 The Guidelines for Standards Criteria Management of Higher Education Programmes, the Standard Criteria of Undergraduate Programme and the Standard Criteria of Graduate Programme: These three standards, which were published by the Office of the Higher Education Commission (OHCE) on 21 February 2005 and revised on 7 October 2015, are related to regulations to assure the quality of higher education in Thailand (e.g., the qualification of instructors, accreditation system, credit systems, grade assessment system).[5-7]

2. The Pharmacy Council of Thailand

The Pharmacy Council of Thailand (TPhC) is the regulatory body for Thai pharmacists. The TPhC has a role to protect and maintain the wellbeing of the public by maintaining standards and public trust in pharmacy (e.g., setting standards for conduct, ethics and competency; accrediting pharmacy degree programmes and pharmacy educational institutions; processing licensure examination and registration; setting requirements; and collaborating with the accrediting bodies for continuing pharmacy education). They must ensure that pharmacists receive appropriate education and training and thus are competent to deliver services.[8-10]

3. The Pharmacy Education Consortium of Thailand

The Pharmacy Education Consortium of Thailand has 19 pharmacy educational institution members across the country. The PECT aims to promote the advancement of pharmacy education, support pharmacy professional practice, protect common interests among members, facilitate pharmacy student activities, and take part in collaborative work with other professional organisations (e.g., TPhC and Thai pharmacy associations).[11]



4. Pharmacy professional associations

These include the Pharmaceutical Association of Thailand under Royal Patronage and sub-professional associations (e.g., the Association of Hospital Pharmacy (Thailand), the Community Pharmacy Association (Thailand), The Marketing Pharmacy Association of Thailand, Thai Industrial Pharmacist Association, Regulatory Affairs Pharmacy Association (Thailand)).

5. Other organisations that related to pharmacy profession

Related organisations include the Government Pharmaceutical Organisation, the Department of Medical Science, the National Health Security Office, the Thai Health Promotion Foundation (Thai Health), and non-governmental organisations (e.g., Drug Study Group, Rural Pharmacist Society, Rural Pharmacist Foundation, Community Pharmacy Foundation, Pharmacy for Society Foundation).[4]

6. Professional standards

6.1 The Professional Standards for Hospital Pharmacy

(since 1999) were announced by the Association of Hospital Pharmacy (Thailand) in cooperation with the Department of Pharmacy, Division of Provincial Hospital. These standards are used as a guideline for hospitals to standardise their pharmacy services under the process of hospital accreditation.[4]

6.2 The Standard of Accredited Community Pharmacy

(since 2001) was developed by the Pharmacy Council of Thailand and is intended to be used as an evaluation tool for the “Community Pharmacy Development and Accreditation project”. [4]

7. Postgraduate education

Postgraduate education is provided by Faculties of Pharmacy, the College of Pharmacotherapy of Thailand, the College of Pharmaceutical and Health Consumer Protection of Thailand, the Federation of Asian Pharmaceutical Associations College of Pharmacy, and the Centre for Continuing Pharmaceutical Education under the management of the TPhC.

Putting into practice

In pharmacy practice:

In 1992, FIP developed the standards for the Good Pharmacy Practice concept and programme. Later, it was developed with collaboration with WHO, namely, the Joint FIP/WHO guidelines for Good Pharmaceutical Practice (GPP): Standards for quality of pharmacy services.[12–14] This standard created major reforms of pharmacy practice in Thailand, particularly relating to the provision of pharmaceutical care.[15]

In pharmacy education:

Tools and frameworks that are mainly use in pharmacy education are “the FIP Education Initiative (FIPed) – needs-based education model”, FIPed Global Competency Framework (GbCF) v1 2012” and “Quality Assurance of Pharmacy Education: the FIP Global Framework 2014”.

The TPhC has adopted these global concepts to develop the “Thailand Qualification Framework (TQF) for certification of the 6-year Doctor of Pharmacy degree 2016” — a national framework that all Faculties of Pharmacy in Thailand have to use as guideline to revise and accredit their curricula.[16]

In workforce planning strategies:

The Global Pharmacy Workforce Intelligence Reports are very useful in Thai pharmacy workforce planning strategies. The pharmacist-to-population ratio in Thailand is lower than four pharmacists per 10,000 population whereas the global mean is approximately six pharmacists per 10,000 population.[17]

International benchmarking can enable individual countries to reflect critically on the needs of their pharmacy workforce. Changes in education might move faster than those in pharmacy practice. New PharmD graduates might struggle to start advanced or specialised services that they have been trained for due to the system not encouraging their new roles, the high workload in dispensing services and the shortage of pharmacists.[2] This might help the government and policymakers to consider the future supply of pharmacy workforce based on numbers practising in each sector.

Development of country-specific resource

Examples of Thailand-specific resources that were developed to regulate, support and improve pharmacy practice and pharmacy education based on a FIPed report or other FIP resources are outlined as the following:

From the recommendations of the Joint FIP/WHO guidelines for Good Pharmaceutical Practice (GPP):

- The Professional Standards for Hospital Pharmacy.[4]
- The Standard of Accredited Community Pharmacy.[4]

From the recommendation of FIP Education Initiative (FIPed) — needs-based education, FIP statement of Policy on Good Pharmacy Education Practice and WHO — seven star pharmacist, FIPed Global Competency Framework (GbCF) v1, Quality Assurance of Pharmacy Education: the FIP Global Framework.[18]

The TPhC developed the “Thailand Qualification Framework (TQF) for certification of the 6-year Doctor of Pharmacy degree 2016”, which all Faculties of Pharmacy has been using as guideline to revise and accredit their curricula.[2]

The Pharmacy Education Committee of the TPhC developed “Good Pharmacy Education Practice in Thailand”, which collected 28 examples of best model case studies for pharmacy education in 2013 from both public and private pharmacy faculties.[18]



The TPhC developed three “Thai pharmacy Competency Standard Guidelines for Certification of the 6-year Doctor of Pharmacy Graduates”, namely, core competency guidelines, functional competency standards for pharmaceutical care and functional competency standards for industrial pharmacy). [19–22]

Impact

1. There were some studies reported about the perceptions of pharmacy graduates and stakeholders regarding pharmacy graduates’ competency. They have been reviewed as follows:

Data from the Prince of Songkla University (PSU) were collected to identify pharmaceutical care activities, attitude, and characteristics of PSU PharmD graduates, and revealed that most employers, colleagues and patients were satisfied with the graduates’ competencies in pharmaceutical care as they took a high responsibility toward their work and the self-learning competencies. [23]

Suwannaprom P et al, reported the first national survey to assess the differences in graduates’ competencies of the first cohort of PharmD graduates who graduated in the academic year 2014. The results showed that the pharmacy graduates in pharmaceutical care and pharmaceutical science tracks reported confidence in their expected specialised competency domains. [24–26]

2. The transition of pharmacy graduates’ competency from generalist to specialist has been encouraged by the government and other organisations, for example, the National Health Security Office and the TPhC have been working collaboratively to integrate and manage primary care pharmacy services into the health care system and promote the concept of a “primary care pharmacist” [27] who can work in public hospitals and community pharmacies to provide pharmaceutical care to patients in the community and who can monitor the safety of medicines and health products at the individual, family and community levels. [28,29]

In addition, the Ministry of Public Health launched the 2012–16 National Health Service Plan, which needs pharmacists at three levels of care (primary, secondary and tertiary care). [30] Therefore, the system of compulsory service of new pharmacists in public universities that was revoked in 2004 has been reintroduced for those graduating to work from 2011 onwards. [31]

Future

To address the development of pharmacy practice in Thailand, which needs more specialties in specific practice areas, the TPhC expanded the five-year Bachelor Pharmacy to a six-year Doctor of Pharmacy Programme in 2008, with the expectation that this would change the competency of pharmacy graduates from generalist to specialist and meet the needs of society. However, monitoring the quality of pharmacy education, co-ordination among regulatory bodies, pharmacy organisations, faculties of pharmacy and pharmacy practitioners to reflect the gap of competencies of pharmacy professionals in real life situations are worth mentioning in this transition stage of pharmacy education and pharmacy practice in Thailand. [32,33]

References

1. Pongcharoensuk P, et al, Centennial pharmacy education in Thailand. *J Asian Assoc Schools Pharm* 2012;1(1):8–15.
2. Chanakit T, et al, Does a transition in education equate to a transition in practice? Thai stakeholder’s perceptions of the introduction of the Doctor of Pharmacy programme. *BMC Med Educ* 2015. 15(205):DOI 10.1186/s12909-015-0473-4.
3. The Constituent Assembly in the capacity of the National Assembly, Drug Act, B.E. 2510 (1967). 1967.
4. Pramyothin P, Archives of 100 years Pharmacy Profession, edition. Pramyothin P, et al. 2013, Bangkok: Pharmacy for society foundation (PSF).
5. The Royal Thai Government Gazette Vol 132 SPN, dated 13th November. Announcement of the Ministry of Education, Thailand: the Guidelines for Standards Criteria Management of Higher Education Programmes. 2015.
6. The Royal Thai Government Gazette Vol 132 SPN, dated 13th November. Announcement of the Ministry of Education, Thailand: the Standard Criteria of Graduate Programme. 2015.
7. The Royal Thai Government Gazette Vol 132 SPN, dated 13th November. Announcement of the Ministry of Education, Thailand: the Standard Criteria of Undergraduate Programme 2015
8. Rouse M, et al., Quality assurance of pharmacy education: the FIP Global Framework, edition. Bruno A. 2014, The Hague, The Netherlands: International Pharmaceutical Federation (FIP).
9. Maitremit P, et al., Pharmacist perceptions of new competency standards. *Pharm Pract (Granada)* 2008;6(3):113–20.
10. Hall J, The profession and practice of pharmacy. Pharmacy practice, edition. Hall J. 2013, Oxford: Oxford University Press.
11. The Pharmacy Education Consortium of Thailand (PECT). The Pharmacy Education Consortium of Thailand: Organization profile 2014. 2014.
12. International Pharmaceutical Federation. Good Pharmacy Practice (GPP) in developing countries: recommendations for step-wise implementation. 1997; www.fip.org/files/fip/Statements/latest/Dossier%20003%20total.PDF. (accessed 01 Jan 2016).
13. FIP/WHO, Good Pharmacy Practice, Joint FIP/WHO Guidelines on GPP: Standards for quality of pharmacy services. 2012.



14. FIP. FIP reference guide on Good Pharmacy Practice in community and hospital settings. 2009; https://www.fip.org/www/uploads/database_file.php?id=331&table_id=. (accessed 23 March 2014).
15. Wongpoowarak P, Pharmaceutical care practice in Thailand, in In: The seminar on pharmaceutical care practice in Thailand and Malaysia. 2002: Songkla, Thailand.
16. The Royal Thai Government Gazette Vol 133 SPN, dated 12th January,, Thailand Qualification Framework (TQF) for certification of the 6-year Doctor of Pharmacy degree 2016. 2016.
17. International Pharmaceutical Federation (FIP). 2012 FIP Global Pharmacy: Workforce report. 2012; 4. Available at: www.fip.org/static/fipeducation/2012/FIP-Workforce-Report-2012/?page=hr2012 (accessed 10 December 2013).
18. The past, current status and future trends of pharmacy education in Thailand. In: Tassaneeyakul W, et al (eds). The General Assembly of Thai Pharmacy to Mark 100 Years of Pharmaceutical Practice and Studies in Thailand. 2013.
19. The Pharmacy Council of Thailand. The core pharmacy course structure guideline. 2012. Available at: www.pharmacycouncil.org/share/file/file_193.pdf (accessed 10 October 2013).
20. The Pharmacy Council of Thailand. Competency in Pharmaceutical care. 2011. Available at: http://www.pharmacycouncil.org/share/file/file_192.pdf (accessed 24 June 2015). [Thai].
21. The Pharmacy Council of Thailand. Competency in industrial pharmacy. 2013. Available at: www.pharmacycouncil.org/share/file/file_469.pdf (accessed 20 March 2014). [Thai].
22. Chanakit T, et al., Hospital pharmacists' perceptions of the suitability of doctor of pharmacy graduates in hospital settings in Thailand. *BMC Med Educ* 2015;15(181):DOI 10.1186/s12909-015-0471-6.
23. Sitaruno S, et al., Satisfaction toward the Doctor of Pharmacy (Pharm.D.) graduates and Pharm.D. program: perspective of graduates, employers, colleagues and patients. *Thai J Hosp Pharm* 2013;23(2):75-85.
24. Suwannaprom P, et al., Difference in professional competencies across specialty tracks among Thai pharmacy graduates in The First International Conference on Pharmacy Education and Research Network of ASEAN (ASEAN PharmNET I). 2-4 December 2015 in Bangkok, Thailand.
25. Suwannaprom P, et al., Self-assessment professional competency and perceptions towards pharmacy profession among pharmacy graduates 2014. 2015, Community Drug System Research and Development (CDR), Faculty of Pharmacy, Chiang Mai University.
26. Suttajit S, et al., How good am I? A self-assessment of Thai pharmacy graduates for thier entry-level competency, in The First International Conference on Pharmacy Education and Research Network of ASEAN (ASEAN PharmNET I). 2-4 December 2015 in Bangkok, Thailand.
27. National Health Security Office (NHSO) Thailand, Documents of the conference on primary care pharmacy guidelines. 2013, Nonthaburi: NHSO.
28. Sottiyotin T, et al., What are pharmacist's expectations regarding primary care pharmacy service?: a preliminary study of normative expectations in the public health system in Thailand. *J Health Res* 2015;29(4):293-9.
29. Tunichart S, Roles of primary care pharmacist. The General Assembly of Thai Pharmacy (99 Years) 2012, Bangkok, Thailand.
30. Bureau of Health Administration, et al., Criteria of pharmacy workforce management, in 2012 Development of multidisciplinary workforce management, Sirikarin S, et al., Editors. 2013, Bureau of Health Administration: Nonthaburi. 27-29.
31. Steering Committee on Formulation of 11th National Health Development Plan 2012-2016: Ministry of Public Health Thailand, The 11th National Health Development plan under the National Economic and Social Development Plan B.E. 2555-2559 (A.D. 2012-2016). 2012, Nonthaburi: Bureau of Policy and Strategy, Office of the Permanent Secretary, Ministry of Public Health.
32. International Pharmaceutical Federation (FIP). FIP statement of policy on Good Pharmacy Education Practice. 2000. Available at: https://fip.org/www/uploads/database_file.php?id=188&table_id= (accessed 1 Feb 2016).
33. Bruno A, et al., Advanced practice and specialisation in pharmacy: global report. 2015, The International Pharmaceutical Federation (FIP): The Hague, The Netherlands.



4.12 United Kingdom (Great Britain): Pharmacy Frameworks | Royal Pharmaceutical Society Foundation Programme and RPS Faculty

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Summary

- The Global Competency Framework (GbCF) provides a useful overview of foundation level practice competencies at an international level. It complements and maps to the existing Royal Pharmaceutical Society (RPS) frameworks and development tools, creating a valuable set of tools for pharmacy practice.
- The GbCF will continued to be used to as an important reference in the development of professional development resources.
- The RPS has recently launched the RPS pre-Foundation project, a new programme that provides access to guidance and tools to support students from day one of their MPharm degree and beyond. An international perspective of professional development needs of pharmacy students would help inform our work.

Rationale

The Royal Pharmaceutical Society (RPS) is the professional body for pharmacists and pharmacy in Great Britain (GB). It supports, leads, represents and recognises its members, providing access to professional development support to enabling pharmacy students, pre-registration trainees and pharmacists to develop the necessary knowledge, skills, experience and behaviours to practise safely and effectively, and also be able to effectively adapt and respond to the changing needs of patients.

Pharmacists living and practising overseas are also able to be members of the RPS, hence the need to have some awareness and appreciation of their development needs. The RPS is keen to ensure that evolving professional development tools are aligned and have synergies with existing tools, frameworks and programmes.

The Global Competency Framework (GbCF) provides a useful overview of foundation level practice competencies at an international level. It was acknowledged that it may not fully meet the needs of pharmacists in GB, however it complements existing RPS frameworks and development tools, creating a valuable set of tools for pharmacy practice.

Education and professional development

The RPS Foundation Programme and the RPS Faculty have been developed to support pharmacists from day one post registration to career end, across all sectors, areas of expert practice, both specialist and generalist, in order to improve the quality of patient care and public health.

The RPS Foundation Programme is for RPS members who are in their first 1,000 days of practice, members returning to work after a career break, changing their scope of practice or practice environment, and those who are simply working steadily in their practice setting.

The RPS Faculty is a professional development programme for three stages of advanced pharmacy practice. It is aimed at RPS members who have completed a minimum of two years' post-registration experience, once early or foundation years have been completed. The three stages are:

- **Advanced Stage One** — members in their second 1,000 days of practice and beyond, established members returning to work after a career break or changing their scope or sector of practice;
- **Advanced Stage Two** — members who are established in their careers or aiming to demonstrate excellence in their roles;
- **Mastery** — members who are practising at an exceptional level, in highly complex environments and in very senior roles in the profession locally, regionally or nationally.

Both the Faculty and Foundation programmes contain key elements for professional support, development and recognition:

- Frameworks to establish Foundation and Advanced practice for the pharmacy profession, the RPS Foundation Pharmacy Framework (FPF), RPS Advanced Pharmacy Framework (APF) and associated tools and web-based portfolios.
- Quality assurance (accreditation) of education and training courses to support development in line with the FPF and APF.



• A system for awarding credentials following quality assured assessments for practice beyond day one, including the journey through Foundation training, then consolidating this development in the next phase of advancement: the first 1,000 days following registration through the Foundation Programme, the next 1,000 days through building evidence of advancement as they start their Faculty journey.

• Professional curricula, knowledge guidance and support tools to enable members to identify opportunities to progress in line with their career development.

• Alignment of these stages of professional development with Agenda for Change pay bandings in the National Health Service, and community pharmacy roles, emergent roles in GP practice, urgent and emergency care and care homes (to name a few).

<http://www.rpharms.com/development/foundation-practice.asp>
<http://www.rpharms.com/development/faculty.asp>

Putting into practice

The GbCF provides a useful overview of foundation level practice competencies at an international level. It has been of value in the development of guidance and resources for the RPS Foundation Programme and will continue to be used as an important reference in the evolution of professional development resources.

Development of country-specific resource

The work around the development GbCF informed the development of the FPF and APF. As with the GbCF, the FPF was developed from General Level Framework: a Framework for Pharmacist Development in General Pharmacy Practice, developed by the Competency Development and Evaluation Group.

The FPF sits at the core of the Foundation Programme; tools and resources have been subsequently developed to enable pharmacists to demonstrate and develop the competencies within the framework.

Impact

The RPS Faculty was launched in June 2013. The RPS Foundation Pharmacy Framework was launched in January 2014, with the programme being developed during 2014 and 2015. The first cohort of RPS Foundation Pharmacists enrolled with either an RPS Pharmacy Foundation School or RPS Foundation Training Provider, commenced their Foundation Training in September 2015. Below is a summary of the number of practitioners engaging with the RPS Faculty and RPS Foundation Programmes:

Number of members accessing RPS Faculty tools, building portfolios, submitting for assessment (June 2013–December 2015):

Members accessing Faculty tools = 3,003
 Members building Faculty portfolios = 1,650
 Members submitting for assessment = 402

Sector of practice of submissions:

- Community
- Hospital
- Academia
- Regulatory
- Industry
- Government

Number of Foundation pharmacists and Tutors accessing tools and building portfolios (January–December 2015):

Foundation pharmacists who have activated portfolio = 1,588
 Foundation tutors who have activated portfolio = 408
 Pharmacists enrolled in Foundation Programme with accredited provider = Approximately 1,000
 Percentage of pharmacists registered in 2015 (UK) enrolled in RPS Foundation Programme with accredited provider = Approximately 20%

Future

The impact of the RPS professional development programmes will be evaluated over the next five to 10 years. The RPS will see (and be able to measure):

- A competent workforce;
- Increased evidence of impact on patient care and public health;
- Increased access to research funds/clinical academic careers/cross-sector collaborations;
- Increased multidisciplinary working;
- Recognition by employers;
- Recognition by the General Pharmaceutical Council — the pharmacy regulator.

The FPF and APF will be regularly reviewed and updated to reflect current practice and support new emerging roles, such as pharmacists working in GP practices, in care homes and in urgent and emergency care.

PART 5

SUMMARY

“**Transforming Our Workforce**” is an enabling document that describes evidence-based and tested tools and mechanisms whereby leadership bodies and policymakers can gain traction for advancing pharmacy workforce education (see table 5.1). It provides a baseline by which workforce planners, policy makers and educators can map national initiatives for workforce development against the growing imperative to stimulate advancement of practice and the potential impact of transformational tools for pharmacy workforce education and training.

This report is the most comprehensive collection of all the evidence developed so far by FIPeD in an attempt to elucidate the impact of the tools and resources developed. It provides an overview of the drivers and development with country case examples. Since the inception of Education at FIP (FIPeD) a total of 23 resources have been developed and 10 strategic tools are described in depth.

Fourteen case studies illustrate where countries and institutions have used some or all of the FIPeD strategic tools in order to innovate and transform workforce capability to meet health care demands. The case studies cover all WHO regions and provide a total of 28 references (of the tools), half being from the Quality Assurance and the Global Competency frameworks. Overall the case studies references are as follow:

- . *Quality Assurance Framework* — Chile, India, Jordan, New Zealand, Serbia, Spain and Thailand
- . *Workforce Intelligence* — Great Britain, Kenya (PKP) and Thailand.
- . *FIP UNESCO-UNTIWIN Global Pharmacy Education Development Network* — Malawi.
- . *Global Competency Framework (GbCF)* — Chile, Coratia, Great Britain, Jordan, Serbia and Thailand.
- . *Global Education Report* — Jordan, Kenya (PKP), Serbia and Thailand.
- . *Continuing Professional Development/Continuing Education Report* — Spain.
- . *Interprofessional Education Report* — Spain.
- . *PharmAcademy* — Australia and Malawi.
- . *Advanced Practice and Specialisations Report* — Australia and Great Britain.

The report showcases the clear support provided by FIPeD tools to develop and implement at national level, improving the transformation of initial and continuing education, as illustrated in the following quotes:

"FIPeD documents are being used as valuable resources and guidelines to advocate for changes and develop national regulation related to health professions education in Serbia."
— Serbia

"Comparison between FIP quality criteria and those required by Spanish accreditation agencies helped UV Pharmacy teachers to focus on specific objectives to improve quality."
— Spain

"To prepare pharmacy graduates for diversities of responsibilities among different practice settings, Thai pharmacy profession and education are attuned to the recommendations of the International Pharmaceutical Federation and the World Health Organisation that aim to produce highly educated pharmacists to meet the standard of global competencies and able to serve the various local healthcare requirements and Thai society." — Thailand

"The Royal Pharmaceutical Society Foundation and Faculty Programmes support pharmacists from day one post registration to career end, across all sectors, areas of expert practice, both specialist and generalist. They have been developed, implemented and evaluated to support, develop and recognise a pharmacist's current practice, providing a structure for learning and development that widens the scope and/or depth of their practice. The frameworks that sit at the heart of these programmes align to global competency frameworks, thus supporting practice at an international level." — Great Britain

Transforming Our Workforce will complement the launch and publication of Global Workforce Development Goals in the latter half of 2016, following the first FIP Global Conference on Pharmacy and Pharmaceutical Sciences Education to be held in Nanjing, China.

Table 5.1: Overview of the FIPeD tools.

	FIPeD Tools/Description	Concept/Content	Aimed for:
	<p>Quality Assurance</p> <p>The Framework is offered primarily as a tool — to be used in whole or in part — to facilitate the establishment of systems of quality assurance in countries where no such formal systems exist or for improvement of existing systems. Where regional similarities and collaborations exist, the Framework may also be applied at a regional rather than national level. Where resources or other constraints limit the immediate application of some of the principles outlined in the Framework, it is hoped that the document can serve as a “road map” for the future.</p>	<ul style="list-style-type: none"> • Prerequisites for Quality Assurance in Pharmacy Education • Quality Criteria and Quality Indicators for Pharmacy Education • The Quality Assurance Agency • Glossary 	<ul style="list-style-type: none"> • Higher Education Institutions • Professional Associations • Regulators
	<p>Workforce Intelligence</p> <p>The reports have set out to recognise the major challenges facing both the profession and global health care systems. The quality, scope and capability of the workforce are dependent on the nature of initial and life long professional development curricula, and the quality of available practitioner support and recognition structures.</p>	<p>2006</p> <ul style="list-style-type: none"> • Data from 17 countries and territories • Case studies from 7 countries and territories [Australia, Canada, Ireland, Ghana, Kenya, New Zealand, United Kingdom] <p>2009</p> <ul style="list-style-type: none"> • Data from 56 countries and territories • Case studies from 7 countries and territories [Australia, Canada, Great Britain, Kenya, Jordan, Uruguay, Vietnam] • Needs-based Educational Model • WHO chapter <p>2012</p> <ul style="list-style-type: none"> • Data from 90 countries and territories • Case studies from 9 countries and territories [Afghanistan, Costa Rica, Ghana, Great Britain, Japan, Pacific Islands, Singapore, South Africa, Tanzania] • WHO chapter <p>2015</p> <ul style="list-style-type: none"> • Trends analysis conducted with data from the workforce reports (2006, 2009 and 2012) • Data from 51 countries and territories 	<ul style="list-style-type: none"> • Professional Associations • Regulators • Higher Education Institutions • Industry

	FIPEd Tools/Description	Concept/Content	Aimed for:
	<p>FIP UNESCO-UNITWIN Global Pharmacy Education Development Network UNITWIN/Cooperation Programme on Global Pharmacy Education (GPhED) was created within the framework of the UNESCO-UNITWIN Programme to fulfil objectives such as sharing best educational practice between and among education institutions and other education providers across borders.</p>	<ul style="list-style-type: none"> • Network of Schools • Centres of Excellence: Global – 1st one, African Centre of Excellence [Founding partners: Ghana, Uganda, Nigeria, Namibia, Zambia, Malawi] 	<ul style="list-style-type: none"> • Higher Education Institutions • Educators
	<p>Global Competency Framework (GbCF) Promotes the development of knowledge, skills, attitudes and behaviours that an individual develops through education, training, development and experience as means to create a capable practitioner workforce in all healthcare professions. The GbCF v1 is divided in 4 clusters/areas of practice, 20 competencies and 100 behavioural competencies. It is intended to act as a mapping tool and can be adapted according to the country or local needs. These competencies improve therapeutic outcomes, patients' quality of life, scientific advancement and enhancement of public health imperatives.</p>	<p>The GbCF contains:</p> <ul style="list-style-type: none"> • The drivers for the development of a global competency framework. • The process of the GbCF development. • The concept of the GbCF competencies. • Guidance on how to use the GbCF. • The GbCF framework. 	<ul style="list-style-type: none"> • Professional Associations • Regulators • Higher Education Institutions • Employers • Industry • CPD/CE providers • Individual Pharmacists
	<p>Pharmacy Support Workforce Pharmacy technicians and support staff, pharmacists and individuals who work with the pharmacy support workforce in education, practice, regulation, development and promotion explore how to educate, develop and fully utilise the pharmacy support workforce within the healthcare system. The discussions and debate during this one-and-a-half-day symposium focus on areas of critical importance for sustainability of health care programmes, with a focus on global initiatives that support and strengthen the work of mid-level cadres in the delivery of pharmacy services.</p>	<ul style="list-style-type: none"> • The domain initiated an annual FIP Global Pharmacy Technician and Pharmacy Support Workforce Symposium in 2012, which has been the basis for increased sharing and practice development. 	<ul style="list-style-type: none"> • Professional Associations • Regulators • Higher Education Institutions • Employers
	<p>Global Education Report Academic and Institutional Capacity Domain FIPEd Global Education report provides a baseline on the current status, transformation and scaling up of pharmacy and pharmaceutical sciences education globally.</p>	<ul style="list-style-type: none"> • Data from 109 countries and territories • Case studies from 14 countries and territories [Chile, Great Britain, Japan, Jordan, Malaysia, Namibia, Philippines, Portugal, Saudi Arabia, Switzerland, Thailand, UAE, USA, Zimbabwe] 	<ul style="list-style-type: none"> • Professional Associations • Regulators • Higher Education Institutions

	FIPEd Tools/Description	Concept/Content	Aimed for:
	<p>Continuing Professional Development/ Continuing Education (CPD/CE) Report</p> <p>CPD is “the responsibility of individual pharmacists for systematic maintenance, development and broadening of knowledge, skills and attitudes, to ensure continuing competence as a professional, throughout their careers”. An ongoing cyclical process involving: self-appraisal, developing a personal learning plan, taking action or implementing the learning plan, and evaluation.</p> <p>The report has presented the current trends and activities with regard to professional development and lifelong learning across countries and territories globally.</p>	<ul style="list-style-type: none"> • Data from 66 countries and territories • Case studies from 9 countries and territories [Australia, Canada, Croatia, Japan, Namibia, New Zealand, Northern Ireland, Oman and USA] 	<ul style="list-style-type: none"> • Professional Associations • Regulators • Higher Education Institutions • Employers • Industry • Other providers of CPD/CE
	<p>Interprofessional Education (IPE) Report</p> <p>The report presents a collection of case studies and examples that reflect innovation and creativity centred on IPE. These case studies highlight diverse approaches and show that IPE is becoming a more mainstream education activity for students, trainees and practitioners worldwide. Still, FIPEd acknowledges the limited evidence and evaluation regarding the long-term impact of IPE initiatives. This suggests that it is needed to continue to follow projects such as those highlighted here and also encourage stronger interprofessional dialogue about monitoring and evaluation methods.</p>	<ul style="list-style-type: none"> • A WHO case study. • Case studies from 12 regional, national and institutional-level examples and initiatives [Professional bodies, Accreditation agencies, Student organisations, Australia, China, Kenya, Lebanon, Malaysia, Namibia, Philippines, UK (Great Britain), Uruguay] 	<ul style="list-style-type: none"> • Professional Associations • Higher education institutions • Employers
 	<p>PharmAcademy</p> <p>PharmAcademy is the go-to place for pharmacy educators worldwide to connect, and share knowledge and resources. It is a community site designed to connect pharmacy educators globally.</p> <p>Pharmacy Education Journal</p> <p>Hosted by PharmAcademy, the journal is a peer-reviewed publication, allowing free submission and access to over 500 articles around pharmacy and pharmacy education workforce. 14,000 journal article downloads since August 2015.</p>	<p>PharmAcademy, is an online platform where is possible to:</p> <ul style="list-style-type: none"> • Learn from others with more experience. • Teach and guide others with less experience. • Publish stories and news items of interest to the community. • Join or create groups of peers that share common interests. • Participate in the development of pharmacy education. • Publish on the <i>Pharmacy Education Journal</i>. 	<ul style="list-style-type: none"> • Educators • Individual Pharmacists • Authors

	FIPEd Tools/Description	Concept/Content	Aimed for:
	<p>Advanced Practice and Specialisations Report This report is the most comprehensive collection of data and evidence that relates to practitioner advancement of practice and policy, and maps out a wide range of national initiatives worldwide. This report should be viewed as a first attempt to map out global trends and will stimulate further reportage and analysis as engagement in this practice continues to progress.</p>	<ul style="list-style-type: none"> • Data from 48 countries and territories • Case studies from 17 country and territories [Argentina, Australia, Canada, China, India, Ireland, Japan, Malaysia, New Zealand, Philippines, Portugal, Singapore, South Africa, Spain, Switzerland, United Kingdom (Great Britain), USA] 	<ul style="list-style-type: none"> • Professional Associations and Regulatory Authorities • Employers • Individual Pharmacists
	<p>Transforming Our Workforce Transforming Our Workforce is an enabling document designed to have a long half-life. It describes evidence-based and tested tools and mechanisms whereby leadership bodies and policymakers can gain traction for advancing the pharmacy workforce.</p>	<ul style="list-style-type: none"> • Development case studies of the 10 FIPEd tools • Case studies from 14 national and institutional-level examples and initiatives [Australia, Chile, Croatia, India, Jordan, Malawi, New Zealand, Kenya, Serbia, Spain, Thailand, UK (Great Britain)] 	<ul style="list-style-type: none"> • All Stakeholders • Professional Associations • Regulators • Higher Education Institutions • Employers • Industry • Individual Pharmacists

ANNEX 1. BIBLIOGRAPHY

Bibliography related to 3.1. Quality Assurance

Bader LR, McGrath S, Rouse MJ, Anderson C. A conceptual framework toward identifying and analysing challenges to the advancement of pharmacy. *Research in Social & Administrative Pharmacy* (2016) (in press).

International Pharmaceutical Federation – FIP (2009). Statement of Policy on Quality Assurance of Pharmacy Education. The Hague, The Netherlands: International Pharmaceutical Federation.

Meštrović A, Rouse MJ. Pillars and Foundations of Quality for Continuing Education in Pharmacy. *American Journal of Pharmaceutical Education*: Volume 79, Issue 3, Article 45. 2015.

Rouse MJ, Vlasses PH, Wadelin JW, Zarembski DG, Joshi MP, Mabarizi D, and Saleeb SA. 2016. Continuing Pharmaceutical Education: Guide to Establishing Quality Assured and Accredited Programs Submitted to the US Agency for International Development by the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program. Arlington, VA: Management Sciences for Health.

Bibliography related to 3.2 Workforce Intelligence

International Pharmaceutical Federation (FIP). Global Pharmacy Workforce Report 2006. The Hague: FIP (online), 2006. Available at: <http://www.fip.org/educationreports>

International Pharmaceutical Federation (FIP). Global Pharmacy Workforce Report 2009. The Hague: FIP (online), 2009. Available at: <http://www.fip.org/educationreports>

International Pharmaceutical Federation (FIP). Global Pharmacy Workforce Report 2012. The Hague: FIP (online), 2012. Available at: <http://www.fip.org/educationreports>

World Health Organisation (WHO) and Global Health Workforce Alliance. A Universal Truth: No Health without a Workforce. Paris: WHO (online), 2013. Available at: <http://www.who.int/workforcealliance/knowledge/resources/hrhreport2013/en/>

World Health Organisation (WHO). The World Health Report 2006 – working together for health. Geneva: WHO (online), 2006. Available at: <http://www.who.int/whr/2006/en/>

Bibliography related to 3.4 Global Competency Framework (GbCF)

Bates I, McRobbie D, Davies G, et al. Why we need a defined career structure in place of informal progression. *Pharm J* 2004;272:283

Bates I, Bruno A. Competence in the Global Pharmacy Workforce. A discussion paper. *Int Pharm J* 2009;23:30–33

Bruno A, Bates I, Brock T, et al. Towards a Global Competency Framework. *Am J Pharm Educ* 2010;74(3):Article 56.

Competency Development and Evaluation Group. General Level Framework, a Framework for Pharmacist Development in General Pharmacy Practice. October 2007. Available at: http://www.codeg.org/fileadmin/codeg/pdf/glf/GLF_October_2007_Edition.pdf

Coomes I, Avent M, Cardiff L, et al. Improvement in pharmacist's performance facilitated by an adapted competency-based general level framework. *J Pharm Prac Re* 2010;40(2):111–8.

FIP, UNESCO, & WHO. Pharmacy Education Taskforce, Action Plan 2008–2010.

Hill L, Delafuente J, Sicut B, et al. Development of a competency-based assessment process for advanced pharmacy practice experiences. *Am J Pharm Educ* 2006;70(1):1–11

International Pharmaceutical Federation. FIP Global Conference on the Future of Hospital Pharmacy, Final Basel Statements. December 2008. Available at: <http://www.fip.org/files/congress/globalhosp2008/Final%20Basel%20Statements%2012-4-08%20Formatted.pdf>

Malson G. Global agreement reached for the future of hospital pharmacy. *Hosp Pharm* 2008;15:296

Mills E, Farmer D, Bates I, et al. The General Level Framework — use in primary care and community pharmacy to support professional development. *Int J Pharm Prac* 2008;16:325–31

National Association of Pharmacy Regulatory Authorities. Model standards of practice for Canadian pharmacists. 2003. Available as updated version 2009 at: http://napra.ca/Content_Files/Files/Model_Standards_of_Prac_for_Cdn_Pharm_March09_Final_b.pdf

Nyoni J, Bwalya C, Hazemba O. Background paper on human resources development. Republic of Zambia, Ministry of Health. 1996; 26–28 & 53–57

Pharmaceutical Society of Australia. Competency standards for pharmacists in Australia 2003. 2003.

Pharmacy Council of New Zealand. Competency framework for the pharmacy profession. August 2006. Available as update version 2011 at: http://www.pharmacycouncil.org.nz/cms_show_download.php?id=201

Thai Pharmacy Council. Standard criteria for pharmacy practitioners 2002. Bangkok: Thai Pharmacy Council. 2002

The Council on Credentialing in Pharmacy. Scope of contemporary pharmacy practice: roles, responsibilities and functions of pharmacists and pharmacy technicians. A Resource Paper of the Council on Credentialing in Pharmacy. 2009

The Omnibus Budget Reconciliation Act of 1990. Pub. L. no. 101-508, 104 Stat 1388, § 4401.

World Health Organization. A model quality assurance system for procurement agencies, Interagency Guidelines. 2007

World Health Organization. Operational principles for good pharmaceutical procurement. Essential Drugs and Medicines Policy, Interagency Pharmaceutical Coordination Group. Geneva, 1999

References for the definitions in the glossary obtained and adapted from the following sources (<http://bit.ly/1T1MWe3>):

2006 International Pharmaceutical Federation (FIP) Global Pharmacy Workforce and Migration Report. Available at: www.fip.org/hr

Ashcroft D, Morecroft C, Parker D, et al. Patient safety in community pharmacy: understanding errors and managing risk. School of Pharmaceutical Sciences & Department of Psychology, University of Manchester. May 2005.

FIP Global Hospital Pharmacy Conference Glossary (2009). Available at: <http://fip.org/basel-statements#Resources>

FIP Quality Assurance Framework for Pharmacy Education (2008). Available at: <http://www.fip.org/files/fip/PharmacyEducation/Global%20Framework%20Final%20Draft.pdf>

International Labour Organization. International Standard Classification of Occupations (ISCO-08). Group definitions: Occupations in Health. Draft 4 April 2009.

United Nations. International standard classification of all economic activities (ISIC). Revision 4. 2008.

World Bank. Human resources for health glossary. Available at: <http://www.hrresourcecenter.org/node/1080>

Bibliography related to 3.5 Pharmacy Support Workforce

FIP Global Pharmacy Technician and Pharmacy Support Workforce Symposiums:

2012, Amsterdam, Netherlands. 135 participants from 32 countries.

Available at:

http://www.fip.org/amsterdam2012/pharmacy_technicians_symposium

2013, Dublin, Ireland. 97 participants from 38 countries. Available at:

http://www.fip.org/dublin2013/?page=dublin_programme_persection&mod=congresssection&congresssection=section§ion_id=42

2014, Bangkok, Thailand. 117 participants from 38 countries. Available at:

http://fip.org/bangkok2014/?page=&mod=congress&congress=program&program_id=55

2015 Dusseldorf, Germany. 200 participants from 53 countries. Available at:

http://dusseldorf.fip.org/?page=programme_persection&mod=congresssection&congresssection=section§ion_id=42

2016, Buenos Aires, Argentina. Anticipated 125 participants from 40 countries.

Available at:

http://buenosaires2016.fip.org/?page=programme_programmebyday&mod=congress&congress=program&program_id=34

Brown A, Cometto, G. et al. Mid-Level health providers: a promising resource. *Rev Peru Med Exp Salud Publica*. 2011;28(2):308–15.

Pacific Islands

Brown, A. Sustaining pharmacy education for the Pharmacy Support Workforce where pharmacists are few – A case study from Pacific Island Countries International Pharmacy Journal, 2011;27(1):29–35. Available at: http://www.fip.org/files/fip/IPJ/IPJ_Vol27_No1_web_def.pdf

People that Deliver

Literature Review, PtD, 2011, EN, FR

This paper presents the results of a review of published literature related to workforce excellence in supply chain management in developing countries.

Situation Analysis, PtD, 2011, EN, FR, SP

2011 This paper examines the current situation for healthcare supply chains in low- and/or middle- income countries (LMICs), how the public and private healthcare supply chains in these countries are organized, and how they perform using some key availability and affordability indicators.

Pacific Islands capacity development tools

Brown AN, McCormack C. Twenty cultural and learning principles to guide the development of pharmacy curriculum in Pacific Island countries. *Rural and Remote Health* 2014;14:2,581. Available at: <http://www.rrh.org.au>

Brown A, Gilbert B, Bruno A. Using participatory action research to develop an essential medicine supply competency framework for primary health care personnel in Pacific Island countries. *Int J Nursing* 2012;1:2. Available at: <http://www.ijnonline.com/index.php/ijn/article/view/23>

Brown AN, Zink P, Smith N. The development and trial of a new approach to pharmaceutical competency development for primary healthcare personnel in Pacific Island Countries. *Pharmacy Education*: 2015;15. Available at: <http://pharmacyeducation.fip.org/pharmacyeducation/article/view/353>

Other references

Brock T, Brown A, Rennie T, et al. Pharmacy Education. Are we nearly there yet? *Int Pharm J* 2012;28(1):4–11. Available at: <http://fip.org/publications>

Brown A, Cometto, G. et al. Mid-level health providers: a promising resource. *Rev Peru Med Exp Salud Publica*. 2011;28(2):308–15.

Brown A. Sustaining pharmacy education for the Pharmacy Support Workforce where pharmacists are few — A case study from Pacific Island Countries. *Int Pharm J* 2011;27(1):29–35. Available at: http://www.fip.org/files/fip/IPJ/IPJ_Vol27_No1_web_def.pdf

Brown A, Gilbert B. The Vanuatu medical supply system — documenting opportunities and challenges to meet the Millennium Development Goals. *Southern Med Review* 2012;5(1):14–21. Available at: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3471189/>

Brown A, Gilbert B. The Papua New Guinea medical supply system — documenting opportunities and challenges to meet the Millennium Development Goals. *J Pharm Policy Pract* 2014;7:5. DOI: 10.1186/2052-3211-7-5 Available at: <http://www.joppp.org/content/7/1/5>

Brown A, Gilbert B, Cooper G, et al. The development of a competency framework for various cadres of personnel involved in the delivery of pharmaceutical services within Pacific Island Countries. *J Pharm Prac Res* 2012;42:268–72. Available at: http://jppr.shpa.org.au/lib/pdf/2012_12/A_Brown_RE_abs.pdf

Brown A, McCormack C, Cooper G, et al. Developing medicines supply competency in Pacific Island Countries: A needs-based approach to education. *Pharm Educ* 2012;12(1):49–52. Available at: <http://pharmacyeducation.fip.org/pharmacyeducation/article/view/283>

Brown A, Ward-Panckhurst L, Cooper G. Factors affecting learning and teaching for medicines supply management training in Pacific Island Countries — a realist review. *Rural Remote Health* 2013;13:2,327. Available at: <http://www.rrh.org.au>

Brown AN. New tools for culturally appropriate training, to develop competency in Pacific Island Countries in pharmaceutical healthcare service delivery. Thesis, PhD Health, University of Canberra, ACT, Australia, 2014. Available at: <http://www.canberra.edu.au/researchrepository/items/faa38e11-70ee-2fc7-9e8f-a6bd274b7d64/1/>

Claire A, et al. Needs-based education in the context of globalization. *Am J Pharm Educ* 2012;76(4):Article 56. Available at: <http://www.ajpe.org/doi/pdf/10.5688/ajpe76456>

Doherty K. A review of the current Global Pharmacy Support Workforce: how scarcity and need drive the development of a new competent workforce. Masters thesis, Canberra, University of Canberra, 2014. Available at: <http://www.canberra.edu.au/researchrepository/items/ce2815ee-801d-40fa-8bbd-2386e9b7a760/1/>

Health Supply Chain Competency Framework for Managers & Leaders. People that Deliver, Copenhagen, Denmark, 2015. ISBN: 978-1-74088-411-2. Available at: <http://www.peoplethatdeliver.org/sites/peoplethatdeliver.org/files/FINAL%20Validated%20SCM%20leadership%20%20management%20framework%2013th%20April%202015.pdf>

Bibliography related to 3.6 Global Education Report | Academic and Institutional Capacity

2013 FIPeD Global Education Report. Available at: <http://www.fip.org/educationreports>

Accreditation Council for Pharmacy Education — ACPE, 2006. Accreditation Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree: Illinois. Available at: <https://www.acpe-accredit.org/pdf/Standards2016FINAL.pdf> (accessed 6 June 2013).

Aggarwal R, Bates I. The relationships between approaches to study in higher education and life-long learning attributes in an undergraduate pharmacy cohort. *Pharm Educ* 2000;1:45–52.

AlGhurair S, Simpson S, Guirguis L. What elements of the patient-pharmacist relationship are associated with patient satisfaction? *Patient Preference Adherence* 2012;6:663–76.

Anderson C, Bates I, Brock T, et al. Highlights From the FIPed Global Education Report. *Am J Pharm Educ* 2014;78(1):Article 4. Available at: <http://www.ajpe.org/doi/pdf/10.5688/ajpe7814>

Anderson C, Bates I, Brock T. Seven billion humans and 98 trillion medicines doses. *Am J Pharm Educ* 2011;75(10):Article 194.

Anderson C, et al. Transforming health professional education. *Am J Pharm Educ* 2011;75(2):Article 22.

Anderson C, et al. Needs-based education in the context of globalization. *Am J Pharm Educ* 2012;76(4):Article 56.

Anderson C, et al. Global perspectives of pharmacy education and practice. *World Med Health Policy* 2010;2(1):Article 2.

Anderson C, Rennie T. Oversupply and under-resourced: the global context of pharmacy education. *Am J Pharm Educ* 2013;77(6):Article 111. Available at: <http://www.ajpe.org/doi/pdf/10.5688/ajpe776111>

Aspin DN, Chapman JD. Lifelong learning: concepts and conceptions. *Int J Lifelong Educ* 2000;19(1):2–19.

Aspin DN, Chapman JD. Towards a philosophy of lifelong learning. In: Aspin DN et al (eds). *International Handbook of Lifelong Learning, Part 1*. London: Kluwer Academic Publishers, 2001.

Breland BD. Believing what we know: pharmacy provides value. *Am J Health-Syst Pharm* 2007;64(12):1284–91.

Candy PC. Knowledge navigators and lifelong learners: producing graduates for the information society. In: Rust C (ed). *Improving student learning — improving students as learners*. Oxford Brookes University: The Oxford Centre for Staff and Learning Development, 1998; pp1–16.

DiPiro JT. Preparing our students for the many opportunities in pharmacy. *Am J Pharm Educ* 2011;75(9):Article 170.

FIPed Steering Committee, FIP. The future of pharmacy education — how we are creating it. *Int Pharm J* 2012;28(1):12–14.

Fitzgerald N, Pinto G, Kos M. Pharmacy education, a vision of the future — a comprehensive collaborative study by pharmacy students worldwide of essential developments in pharmacy education: University of Ljubljana-Faculty of Pharmacy, 2007. Available at: <http://www.sf.ffa.uni-lj.si/PhEduVisFut.pdf> (accessed 16 March 2013).

Frenk J, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *The Lancet*, 2010;376(9756):1923–58.

Gazzola A, Didriksson A. Trends in higher education in Latin America and the Caribbean. Caracas: International Institute of UNESCO for Higher Education in Latin America and the Caribbean, 2008.

Gruppen LD, Mangrulkar RS, Kolars JC. The promise of competency-based education in the health professions for improving global health. *Human Resources for Health* 2012;10:43.

International Pharmaceutical Federation — FIP, 2009. FIP Statement of Policy: Quality Assurance of Pharmacy Education. Available at: http://www.fip.org/www/uploads/database_file.php?id=302&table_id= (accessed 12 March 2013).

International Pharmaceutical Federation — FIP, 2012. FIP Global Pharmacy Workforce Repor. Available at: http://www.fip.org/static/fip_education/2012/FIP-Workforce-Report-2012/data/FIP%20workforce%20Report%202012.pdf (accessed 17 November 2012).

International Pharmaceutical Federation, Pharmacy Education Taskforce — FIP PET, 2008. A Global Framework for Quality Assurance of Pharmacy Education. Available at: <http://www.fip.org/files/fip/PharmacyEducation/QA%20Booklet.pdf> (accessed 4 March 2013).

Lim Z, Anderson C, McGrath S. Professional skills development in a resource-poor setting: the case of pharmacy in Malawi. *Int J Educ Dev* 2012;32(5):654–64.

Murray CJL, Lopez AD (eds). *The Global Burden of Disease. A comprehensive assessment of mortality and disability from diseases, injuries and risk factors in 1990 and projected to 2020 (GBD Series Vol. I)*, Cambridge, Massachusetts: Harvard School of Public Health on behalf of the World Health Organization and the World Bank, vol I. 1996.

Nguyen K, Hart S, Pidcock K, et al. Creating learning opportunities for pharmacy students through an observership program. *Am J Health-Syst Pharm* 2012;69:1905–09.

Schwartzman S. Higher Education and the Demands of the New Economy in Latin America, 2002. Available at: <http://www.schwartzman.org.br/simon/pdf/flagship.pdf> (accessed 29 May 2013).

Sorensen T, Traynor A, Janke K. A pharmacy course on leadership and leading change. *Am J Pharm Educ* 2009;73(2):Article 23.

Task Force on Higher Education and Society. Higher education in developing countries — peril and promise, 2000. Available at: <http://elibrary.worldbank.org/doi/abs/10.1596/0-8213-4630-X> (accessed 29 May 2013).

Tuijnman A, Boström A-K. Changing notions of lifelong education and lifelong learning. *Int Rev Educ* 2002;48(1/2):93–110.

World Health Organization — WHO, 2011. Transformative scale up health professional education — an effort to increase the numbers of health professionals and to strengthen their impact on population health. Geneva: Health Systems and Services (HSS/HRH), WHO. Available at: http://www.who.int/hrh/resources/transformative_education/en/ (accessed 30 May 2013).

Bibliography related to 3.7 Continuing Professional Development/ Continuing Education | Report

Janke K, Tofade T. Making a curricular commitment to continuing professional development in Doctor of Pharmacy programs. *Statement. Am J Pharm Educ* 2015;79(8):Article 112.

Phytilla J, Tofade T, Beardsley B. Usefulness of reflective journals in a continuing professional development process for a pharmacy leadership course. *Pharm Educa* 2014;14(1):116–22.

Tofade T, Duggan C, Rouse M, et al. The responsibility of advancing continuing professional development and continuing education globally — View Point. *Am J Pharm Educ* 2015;79(2):Article 16.

Tran D, Tofade T, Thakker N, et al. US and international health professions' requirements for continuing professional development. *Am J Pharm Educ* 2014;78(6):Article 129.



Bibliography related to 3.8 Interprofessional Education | Report

Brock T, Boone J, Anderson C. Health care education must be more of a team sport. *Am J Pharm Educ* 2016;80(1):1. Available at: <http://www.ajpe.org/doi/full/10.5688/ajpe8011>

Brock T. Interprofessional jewels: rethinking what's precious and semi-precious. The Society of Hospital Pharmacists of Australia. Medicines Management Conference. December 2015.

Brock T. Otters, elephants, mobile phones, and empty tins — global change agents for interprofessional education. *Stanford MedX Ed*. Available at: <https://medicines.wistia.com/medias/rmqy03zetu>

FIP. Interprofessional education in a pharmacy context: Global report 2015. Available at: https://www.fip.org/files/fip/PharmacyEducation/IPE_report/FIPEd_IPE_report_2015_web_v3.pdf

Reeves S, Perrier L, Goldman J, et al. Interprofessional education: effects on professional practice and healthcare outcomes (update). *Cochrane Database of Systematic Reviews* 2013;3.

Bibliography related to 3.10 Advanced Practice and Specialisations | Report

Janke K, Tofade T. Making a curricular commitment to continuing professional development in Doctor of Pharmacy programs. *Statement. Am J Pharm Educ* 2015;79(8):Article 112.



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