International perspectives on integrating pharmacists into collaborative practice

Report from a FIP insight boards

2024

FIP Development Goals

4 ADVANCED AND SPECIALIST DEVELOPMENT

7 ADVANCING INTEGRATED SERVICES

8 WORKING WITH OTHERS

fip International Pharmaceutical Federation

Colophon

International Pharmaceutical Federation (FIP)
Andries Bickerweg 5
2517 JP The Hague
The Netherlands
www.fip.org

Authors and editors:
Barry Maguire, School of Philosophy, Psychology and Language Sciences, University of Edinburgh, Edinburgh, United Kingdom
Paul Forsyth, Lead Pharmacist Clinical Cardiology, NHS Greater Glasgow & Clyde
Dalia Bajis, FIP Senior Programme Lead
Farah Aqqad, FIP Data Integration Specialist

Recommended citation
International Pharmaceutical Federation (FIP). International perspectives on collaborative practice report from two international insight boards. The Hague: International Pharmaceutical Federation, 2024.

Contents

Foreword

It is my pleasure to introduce "International perspectives on integrating pharmacists into collaborative practice," a report presenting the collective insights and views gathered from two International Insight Boards held in June and September 2023. Bringing together experts from fifteen countries, this report presents the global differences in professional postgraduate career pathways and structures in pharmacy, and the extent of pharmacists' integration in multidisciplinary healthcare teams, including collaboration and autonomy.

Pharmacists worldwide are increasingly recognised for their key role in advancing patient care through innovative and collaborative healthcare models. This report captures the insights shared on the professional values and aspirations of pharmacists globally, as well as the common challenges faced in different countries. The discussion covered several critical areas including the development of postgraduate skills, career pathways in pharmacy, and the integration of pharmacists within multidisciplinary healthcare teams.

One of the key discussions was the systemic underutilisation of the pharmacy workforce and the sub-optimal levels of societal recognition that many pharmacists experience. For example, in South Africa, despite the critical role pharmacists play in public health emergencies, their full potential is often overlooked. Similarly, in Zimbabwe, conflicts over roles and responsibilities with other healthcare professionals highlight the need for clearer policies that support the integration and recognition of pharmacists.

Encouragingly, there are also many examples of progress. In Indonesia, proactive efforts to integrate pharmacists into multidisciplinary teams in specialist areas such as oncology and paediatrics have started to produce results. In Nigeria, the inclusion of community pharmacies in vaccination programmes during the COVID-19 pandemic has significantly raised the profile and recognition of pharmacists.

The report highlights the drive among pharmacists to expand their roles beyond traditional boundaries. There is a critical interplay between legislative enablers, reimbursement strategies, and professional recognition.

Overall, the insights suggest that while progress is being made, there is still a need for targeted efforts to address the gaps in integrating pharmacists into collaborative practice across all sectors, particularly community pharmacy, to further promote and recognise pharmacists' expanding roles.

At FIP, we are committed to supporting pharmacists in their pursuit of professional autonomy and recognition. We believe that by sharing best practices and learning from the experiences of countries with successful integration models, we can help build more cohesive and effective healthcare systems globally.

We extend our gratitude to all the participants and contributors who dedicated their expertise and time to this important work. Your contributions have been invaluable in shaping this insightful report. Together, we will seek to establish a path towards a more collaborative and effective global healthcare system, with pharmacists at its core.

Catherine Duggan, FIP Chief Executive Officer

About this report

Worldwide, pharmacists are actively contributing to advancing patient care through collaborative healthcare practices. In alignment with FIP Development Goal 4 (Advanced and Specialist Development), pharmacists must deliver workforce development strategies, and cultivate advanced skills and high levels of professional agency. By addressing these common objectives, valuable insights can be gained from diverse approaches, systems, and drivers employed by various nations.

The insight board collected views from experts on the following topics:

- Global similarities and differences in postgraduate skills development, career pathways and continuing professional development strategies in pharmacy;
- The degree of pharmacist collaboration and participation within multidisciplinary healthcare teams;
- The level of structured integration within multidisciplinary healthcare teams;
- The extent of pharmacist professional autonomy.

Two related insight boards were convened in June and September 2023. The first meeting focused on post-registration career pathways and continuing professional development strategies, with presentations from participants that highlighted current practices and challenges. The second meeting comprised an open stakeholder discussion on needs-based postgraduate skills development, service integration with other healthcare stakeholders, and skills development across different professional domains (professional practice, leadership, education, and research).

Representatives from across fifteen countries—including Australia, Brazil, Chile, Germany, Indonesia, Japan, Jordan, Lebanon, New Zealand, Nigeria, South Africa, Switzerland, the United Kingdom, Yemen, and Zimbabwe—contributed their national perspectives and expertise.

It should be noted that the views expressed during the insight boards are those of the individuals based on their expertise and experience and do not represent FIP policy or positions, and they are not indicative of global trends or statistically reliable. Reports from FIP insight boards provide qualitative, descriptive viewpoints and descriptive observations. They are not necessarily generalisable or global, nor are they fully evidenced. These findings can inform further policy development or confirm positions already held but they do not occupy the status of a full FIP report. FIP will use the insights in this report to consider what further support will be required by pharmacists to support evidence-based decision making and appropriate patient-centred care.

Appendix 1 includes written responses from participants addressing the opportunities for pharmacists to develop their skills post-registration, their integration within multidisciplinary healthcare teams, and the prioritisation of the four pillars (practice, leadership, research, and education) in national workforce development strategies.

Table 1 provides definitions of select terms used throughout the report.

Table 1: Glossary of key terms

Term	Definition	Source
Advanced pharmacists (advanced pharmacist practitioners)	Pharmacists who provide complex services and take on roles which are extended, specialised and more advanced than current entry level scope of practice.	International Pharmaceutical Federation (FIP). Advanced Practice and Specialisation in Pharmacy: Global Report 2015. The Hague: International Pharmaceutical Federation; 2015. https://www.fip.org/file/1397
Actively practicing	A registered/licensed or authorised professional who is currently active	From the questionnaire glossary that was used for the study entitled FIP

	in the provision of pharmacy services.	2017 Global Trends Shaping Pharmacy
Collaborative practice (or interprofessional collaborative practice)	FIP Def 1: Collaborative practice is defined as clinical practice where pharmacists collaborate with other healthcare professionals in order to care for patients, carers and the public. WHO Def 2: According to WHO: "Collaborative practice happens when multiple health workers from different professional backgrounds work together with patients, families, carers and communities to deliver the highest quality of care across settings"	Ref 1: FIP statement on Collaborative Pharmacy Practice FIP, 2010. Available at: https://www.fip.org/file/1492 Ref 2: World Health Organization. (2010) Framework for action on interprofessional education and collaborative practice. Geneva, Switzerland: WHO.
Continuing Professional Development (CPD)	"CPD as a self-directed, ongoing, systematic and outcomes-focused approach to lifelong learning that is applied into practice. It involves the process of active participation in formal and informal learning activities that assist individuals in developing and maintaining continuing competence, enhancing their professional practice, and supporting achievement of their career goals."	Accreditation Council for Pharmacy Education. Continuing Professional Development. Accessed 4 September 2023. https://www.acpe-accredit.org/continuing-professional-development/#:~:text=CPD%20is%20an%20approach%20to,that%20is%20applied%20into%20practice.
Mixed career pathway	Integrates both structured and unstructured elements within the career development framework. This model incorporates a blend of mandatory and optional courses and qualifications, providing pharmacists with the flexibility to tailor their professional development to meet individual career goals and aspirations.	International Pharmaceutical Federation (FIP). FIP Global Advanced Development Framework: Supporting the advancement of the profession version 1. The Hague: 2020. https://www.fip.org/file/4790 International Pharmaceutical Federation (FIP). FIP Development Goal 2: Early Career Training Strategy Internet: updated [accessed: 04 July 2024]. Available at: https://developmentgoals.fip.org/dg2/
Post-graduate pharmacist	A pharmacist who has completed their foundational, entry-level education and training, and is now pursuing advanced or specialised education, training, and development beyond the initial pharmacy degree. This can include master's degrees, doctoral programmes, or specialised residencies and fellowships.	International Pharmaceutical Federation (FIP). FIP Global Advanced Development Framework: Supporting the advancement of the profession version 1. The Hague: 2020. https://www.fip.org/file/4790 International Pharmaceutical Federation (FIP). FIP Development Goal 2: Early Career Training Strategy Internet: updated [accessed: 04 July 2024]. Available at:

		https://developmentgoals.fip.org/dg2/
Post-registration pharmacist	A pharmacist who has completed the necessary professional registration with a regulatory body to legally practice pharmacy.	International Pharmaceutical Federation (FIP). FIP Global Advanced Development Framework: Supporting the advancement of the profession version 1. The Hague: 2020. https://www.fip.org/file/4790 International Pharmaceutical Federation (FIP). FIP Development Goal 2: Early Career Training Strategy Internet: updated [accessed: 04 July 2024]. Available at: https://developmentgoals.fip.org/dg2/
Professional autonomy	The right and privilege granted by a governmental authority to a class of professionals, and to each licensed individual within that profession, to exercise independent, expert judgment within a legally defined scope of practice, to provide services in the best interests of the client.	International Pharmaceutical Federation (FIP). Pharmacist Ethics and Professional Autonomy: Imperatives for Keeping Pharmacy Aligned with the Public Interest. The Hague. Available at: https://www.fip.org/file/1368
	The empowerment and agency to act on one's own values and skills, being directly accountable for the devolved delivery of patient care (or a component thereof) as part of a collaborative clinical team or healthcare system.	Rushworth GF, Forsyth P, Radley A, Duggan C, Sampson R, Cunningham S, Maguire B. A Pharmacist Clinician Model as part of a collaborative clinical workforce: A philosophical critique. Res Social Adm Pharm. 2024; ISSN 1551-7411. Available from: https://doi.org/10.1016/j.sapharm.2024.06.006
Professional career pathway	The structured sequence of roles, responsibilities, and development opportunities available to pharmacists after their initial registration. This pathway can be structured, offering a clear and defined sequence of roles and responsibilities leading to advanced and specialised positions. Alternatively, it can be unstructured, where the progression lacks formal stages and is more flexible, depending on individual initiatives and opportunities. There is also a mixed model pathway, which combines elements of both structured and unstructured systems, featuring mandatory training and optional advancements.	International Pharmaceutical Federation (FIP). FIP Global Advanced Development Framework: Supporting the advancement of the profession version 1. The Hague: 2020. https://www.fip.org/file/4790 International Pharmaceutical Federation (FIP). FIP Development Goal 2: Early Career Training Strategy Internet: updated [accessed: 04 July 2024]. Available at: https://developmentgoals.fip.org/dg2/
Structured career pathway	A formal and well-defined series of educational and training programmes. These are specifically designed to support post-graduation	International Pharmaceutical Federation (FIP). FIP Global Advanced Development Framework: Supporting the advancement of the

	training, which includes both advanced and specialised practices. These pathways aim to systematically equip pharmacists with the necessary skills and knowledge required for specific roles in clinical practice and pharmaceutical science areas.	profession version 1. The Hague: 2020. https://www.fip.org/file/4790 International Pharmaceutical Federation (FIP). FIP Development Goal 2: Early Career Training Strategy Internet: updated [accessed: 04 July 2024]. Available at: https://developmentgoals.fip.org/dg2/

1 Participants

Co-Chairs		
Paul Forsyth (1st and 2nd Insight Board)	Lead Pharmacist Clinical Cardiology, NHS Greater Glasgow & Clyde	Scotland, United Kingdom
Catherine Duggan (1st Insight Board)	FIP Chief Executive Officer	FIP

FIP team – Facilitators and support		
Facilitators		
Dalia Bajis	FIP Lead for Provision and Partnerships	
Lina Bader	FIP Lead for Equity, Sustainability Policy and Development (until September 2023)	
Marwan El Akel	FIP Projects Manager – Workforce development, evidence & impact (until September 2023)	
Farah Aqqad	FIP Data integration specialist	
Anna Domin	FIP Programme Manager	

We express our sincere gratitude to the insight board participants:

Participants		
Patricia Acuna-Johnson	Retired Professor, U. Valparaiso, Chile Academic Coordinator, Pan American Conference on Pharmacy Education (PAHO) Chilean Academy of Pharmaceutical Sciences, Full academician *With support from Jorge Cienfuegos, Chilean Pharmaceutical Chemists (Pharmacists) and Biochemists Association, President*	Chile
Chima Amadi	Policy-making experience in the training of the Nigerian pharmacy and pharmacy support workforce; continuous professional development at Pharmacists Council of Nigeria (PCN)	Nigeria
Naoko Arakawa	Assistant Professor in International Pharmacy, University of Nottingham, School of Pharmacy	Japan
Ian Bates	FIP Global Pharmaceutical Observatory Director	United Kingdom
Amy Chan	Professional Development and Research Lead, Commonwealth Pharmacists' Association; Senior Clinical Research Fellow, University of Auckland	New Zealand
Astrid Czock	CEO of QualiCCare, Scientific Staff member of the Swiss Society of Endocrinology and Diabetology	Switzerland
Rula Darwish	Professor in School of Pharmacy/The University of Jordan Chair of Continuous Professional Education (CPD), Chair, Jordan Pharmaceutical Association (JPA)	Jordan
Mariet Eksteen	Professional Development and Support at the Pharmaceutical Society of South Africa (PSSA)	South Africa
Desak Ernawati	Academic and researcher Pharmacology and Therapy Faculty of Medicine Universitas Udayana, Bali, Indonesia	Indonesia

Kirstie Galbraith	Director, Experiential Development and Graduate Education Faculty of Pharmacy and Pharmaceutical Sciences Monash University	Australia
Barbel Holbein	Lecturer and Researcher at the University of Bremen and Duale Hochschule Baden Württemberg; community pharmacist	Germany
Silvana Nair	Professor, Pharmaceutical Sciences, Federal University of Santa Catarina	Brazil
Mohamad Nuzili	President, Community Pharmacy Owner Syndicate	Yemen
Shepard Mhlaba	Pharmacist, Drug and Toxicology Information Services	Zimbabwe
Pascale Salameh	Professor of Epidemiology Founder & Director, INSPECT-LB Institut National de Santé Publique, d'Épidémiologie Clinique et de Toxicologie-Liban	Lebanon
Arit Udoh	FIP HUB DG4 Global Lead Research Fellow, University College London, Institute of Child Health Guildford Street, London	United Kingdom

Observers - part of the research group who instigated the insight boards		
Barry Maguire	School of Philosophy, Psychology and Language Sciences, University of Edinburgh	Scotland, United Kingdom
Andrew Radley	Public Health Pharmacy, NHS Tayside. Clinical Reader/Consultant in Public Health (Honorary), School of Population Health and Genomics, University of Dundee Medical School	Scotland, United Kingdom
Gordon Rushworth	Honorary Professor, School of Pharmacy & Life Sciences, Robert Gordon University. Director of Pharmacy Education & Research, Highland & Islands Pharmacy Education & Research (HIPER), NHS Highland.	Scotland, United Kingdom

2 Postgraduate development and career pathways

2.1 Global aspirations for postgraduate development and enhanced career pathways

Despite key differences in healthcare structures and country-specific factors, participants across all regions and countries described common professional values and aspirations. These included collaboration, integration, global unity and support, professional autonomy and competence, and a focus on patient-centred care.

Participants expressed a strong sense of global unity in enhancing healthcare quality and accessibility, emphasising the importance of supporting each other across economic divide. Catherine Duggan, FIP CEO, highlighted this by saying, "This doesn't mean that only the countries with high income and strong economies can progress faster than everyone else. We reach behind us and pull everyone along, leaving nobody behind."

The development of a well-educated, flexible workforce is seen as crucial to improving healthcare outcomes. Ian Bates, GPO director stressed, "There is no health without a workforce, and in our case, that means there's no pharmaceutical health without a pharmaceutical workforce."

As patterns of disease and patient demographics evolve, it is imperative for pharmacy teams to be responsive and adaptive. Emphasising skills over tasks, pharmacy professionals are empowered to act, innovate, integrate, and collaborate effectively to address unmet needs within their communities.

Common goals include enhancing professional autonomy and ensuring competence through continuous education and specialised training. Astrid Czock from Switzerland pointed out, "These federal postgraduate specialist titles give us more competencies but also oblige that if you want to be an independent pharmacist in a community and responsible for a community pharmacy or a hospital pharmacy, you need to have this specialist title."

Ensuring that pharmacy practice remains patient-centred is a priority highlighted by many participants. This includes initiatives like embedding pharmacists in aged care homes, as mentioned by Kirstie Galbraith, and developing residency programmes for early career pharmacists to work in public health systems, as highlighted by Silvana Nair from Brazil.

2.2 Career pathways in global pharmacy practice

Across various countries, the structure of postgraduate career pathways for pharmacists varies, reflecting different national contexts, healthcare systems, and professional regulations. Despite these differences, some common elements and aspirations shape the professional journey of pharmacists globally.

In nearly all countries, pharmacists have core career choices available to them, including roles in community pharmacy, hospital pharmacy, industry, and academia. These pathways provide a foundation for pharmacists to build their careers, although the specifics can vary widely.

Many countries are developing formal postgraduate career pathways, often structured around foundation and advanced practice stages. These structured pathways are more commonly found in hospital settings or government-employed roles, ensuring that pharmacists can progress through clearly defined career stages.

A structured career pathway refers to a formal and well-defined series of educational and training programmes. These are specifically designed to support post-graduation training, which includes both advanced and/or specialised practices (i.e., clinical practice and pharmaceutical science areas).

The mixed model integrates both structured and unstructured elements within the career development framework. This model incorporates a blend of mandatory and optional courses and qualifications, providing

pharmacists with the flexibility to tailor their professional development to meet individual career goals and aspirations.

Table 2 summarises the reported availability of career paths for pharmacists in each country, as well as the nature of the formal career pathways. If any specific data was not provided, it is marked as "ND" (No Data).

Countries such as Australia, Switzerland, and Germany have well-defined and structured career pathways, ensuring clear progression and development opportunities for pharmacists. Countries such as Nigeria, Lebanon, Indonesia, Japan, and Scotland have a combination of structured and unstructured elements in their career pathways. In countries like South Africa, Yemen, and Brazil, career pathways are less formalised and may lack consistent progression and development frameworks.

Table 2: Overview of reported pharmacy career pathways by country

Country	Formal Career Pathway
South Africa	Unstructured
Zimbabwe	ND
Nigeria	Mixed Model
Jordan	Mixed Model
Lebanon	Mixed Model
Yemen	Unstructured
Indonesia	Mixed Model
Japan	Mixed Model
Australia	Structured
New Zealand	Mixed model
Brazil	Unstructured
Chile	Mixed Model
Switzerland	Structured
Germany	Structured
Scotland, UK	Mixed Model

Countries such as Australia, Switzerland, and Germany offer well-defined and structured career pathways, providing pharmacists with clear progression and development opportunities:

- **Australia**: Career pathways are well-structured around foundation and advanced career stages. Pharmacists can work in community pharmacy, hospitals, consultant pharmacy, industry, primary care, and academia.

- **Switzerland:** Pharmacists follow structured career pathways that demand formal protected titles and qualifications for practice in community and hospital pharmacy. Numerous sub-specialist certificates are needed for specific roles, ensuring that pharmacists are well-prepared for advanced practice areas.

- **Germany**: General and certified pharmacist titles available for multiple specialties. This includes hospitals, geriatric pharmacy, palliative pharmacy, nutrition counselling, oncological pharmacy, prevention, and health promotion. These are regulated and controlled by each state chamber of pharmacists.

Countries such as **Chile, Nigeria, Lebanon, Indonesia, Japan, and Scotland** have a combination of structured and unstructured elements in their career pathways:

- **Chile**: While structured educational and career opportunities exist, particularly in academia and regulatory roles—mandated by laws and specialised postgraduate programmes such as those offered

at the University of Valparaiso—there are also unstructured pathways. These are characterised by non-systematic courses across various practice areas, reflecting a flexible approach to professional development and specialisation.

- **Nigeria:** A mixed model where mandatory training is required for pharmacists five years post-registration. This model aims to balance foundational education with continued professional development, preparing pharmacists for various roles across community pharmacy, hospitals, industry, academia, and regulatory sectors.

- **Lebanon:** The career pathway is also mixed with established routes in clinical and academic pathways. However, it lacks a formal credentialing system, which can create challenges for pharmacists seeking official recognition of their specialised skills and training.

- **Indonesia:** A mixed model with structured career pathways in government sectors but less so in private sectors like community pharmacy. Career options are broad but require modernisation efforts to ensure consistency and recognition across different sectors.

- **Japan:** Employs a mixed model with numerous portfolios, programmes, and credentials, although these are not standardised across all sectors. Specialties like oncology require specific credentialing for pharmacists to be eligible for promotion, reflecting the importance of structured career development.

- **Scotland, United Kingdom:** Different approaches exist across the four nations of the UK. In Scotland, a mixed model exists with structured foundation career stages, but the advanced practice stages are in Scotland are not standardised, as this is essentially the case at the profession-wide level. There are many non-mandatory courses and qualifications available across both public and private sectors. Pharmacists have access to various sectors, with increasing integration in community pharmacy. The new community pharmacy contract (Pharmacy First Plus) incentivises independent prescribing and advanced practice, highlighting the evolving role of pharmacists in healthcare.

In countries like **South Africa, Yemen, and Brazil**, career pathways are less formalised and may lack consistent progression and development frameworks.

- **South Africa:** Career pathways for pharmacists are relatively unstructured. Pharmacists can work in community pharmacies, hospitals, industry, academia, and regulatory/professional roles, but their scope of practice is heavily regulated and limited by law.

- **Yemen:** Presents a contrasting scenario with unstructured career pathways. Pharmacists in Yemen have access to many non-mandatory courses and qualifications, but there is no formal system to guide career progression.

- **Brazil:** Features unstructured career pathways with numerous non-mandatory courses and qualifications. This system provides flexibility but may lack the consistency needed for cohesive professional development and recognition. Certain scopes of practice, such as homeopathy, aesthetic procedures, and cytopathology, require specialisation.

- **Zimbabwe:** Has made progress by establishing a specialty register to recognise pharmacists with advanced training in specific areas such as oncology, cardiovascular health and clinical pharmacists. This register helps formalise career pathways for those who pursue further specialisation and training. The pharmacy sector primarily consists of retail pharmacies, followed by hospital pharmacies within the public health sector. The economic environment has led to most pharmacists working in the private sector.

2.3 Continuing Professional Development

Continuing professional development (CPD) is recognised as essential for maintaining and enhancing the skills and knowledge of pharmacists. Most participants highlighted established national requirements for annual CPD, which are necessary to maintain their registration as pharmacists.

Participants described varying structures and requirements for CPD across different countries. Here are some examples:

1. **Australia**: Pharmacists are required to complete a minimum of 40 CPD credits each year, which can be obtained through various activities. This system is regulated by the Pharmacy Board of Australia and ensures a comprehensive approach to professional development. The categories include:
    - Group 1: Information accessed without assessment (1 hour = 1 CPD credit).
    - Group 2: Knowledge or skills improved with assessment (1 hour = 2 CPD credits).
    - Group 3: Quality or practice-improvement facilitated (1 hour = 3 CPD credits).

2. **Brazil**: While CPD is not mandatory for registration, there are significant incentives for continuing education, particularly within the public health system. Various residency and postgraduate programmes are available, with numerous continuing education courses offered by the Ministry of Health and professional bodies.

3. **Chile**: A variety of institutions, including public and private higher education institutions and Technical Training Organizations (OTEC) provide CPD. These organisations regularly offer courses that enhance professional skills and ensure practitioners are up-to-date with advancements. Additionally, private organisations also deliver non-systematic training programmes in compliance with the legal regulations under the Compliance Act.

4. **Germany**: CPD requirements vary by state and specialisation. CPD includes specialised certifications and additional "pharmaceutical services" to strengthen local community pharmacies. Pharmacists engage in various specialised training programmes regulated by the Federal Union of German Associations of Pharmacists.

5. **Indonesia**: Pharmacists need to collect 150 CPD credit points over five years, applicable to all areas and levels of practice. The system is currently self-directed and unstructured, mostly organised by special interest groups, but efforts are being made to modernise it based on advanced practice competencies. The Indonesian Association of Pharmacists (IAI) has developed an online system to assist pharmacists in maintaining and organising their professional development portfolios throughout their practice.

6. **Japan**: CPD is encouraged but not mandated. Various specialties require specific credentialing, particularly for roles such as oncology specialist pharmacists. The Japan Pharmaceutical Association (JPA) provides a CPD system called JPALS, which includes an online portfolio system to record learnings based on JPA Professional Standards. There are also national lifelong learning certification systems for pharmacists.

> "…the continuing professional development system in Japan is more like a point system for continuing education…"
>
> **Naoko Arakawa, Japan**

7. **Jordan**: Pharmacists must collect 50 CPD credit hours over five years, averaging 10 credit hours annually.

8. **Lebanon**: There is a legal obligation for CPD (15 CPD credits annually, with five credits needing to be in-person and the remaining 10 through live or online courses), though its application varies. All CPD courses are provided free by the national pharmacy association. Some pharmacists pursue higher education degrees to specialise, often driven by personal or institutional encouragement.

"...there is only a continuing education law. It is not a continuing professional development system per se. This law says that 15 credits per year are required in order for the pharmacist to still be registered..."
Pascale Salameh, Lebanon

9. **New Zealand:** Pharmacists must meet a range of multiple annual CPD requirements defined by the regulatory body Pharmacy Council of New Zealand. These requirements are a part of recertification each year, as reassurance of ongoing competency, including creating a personal development plan, completing two personal development cycles, writing one reflective account, participating in two peer group meetings, and taking actions toward cultural safety and staying up-to-date.

10. **Nigeria:** The Pharmacy Council of Nigeria mandates CPD, providing opportunities for pharmacists to expand their knowledge and adapt to changing healthcare needs. Additional opportunities are offered by the West African Pharmacy College and various pharmaceutical associations.

11. **South Africa:** Pharmacists need to collect six CPD learning activities annually. Non-compliance results in designation as non-practicing or referral to the professional conduct unit. CPD includes short courses, supplementary training for broader scopes of practice, and specialisations in clinical pharmacy, public health pharmacy, radiopharmacy, and other areas.

12. **Switzerland:** CPD requirements are governed by federal law, which mandates continuous education for all medical professionals, including pharmacists. Pharmacists must demonstrate ongoing professional development to maintain their specialist titles and practice privileges. The requirements vary per sector and are determined by professional associations. Pharmacists in specialist roles must collect four days of CPD annually and undergo revalidation every seven years.

"...we have to show proof of annual continuous education...Pharmacists must show proof of four days annually and one day has to be face to face..."
Astrid Czock, Switzerland

13. **Yemen**: CPD opportunities exist, though economic and regulatory barriers limit their implementation. Continuing education is necessary to bridge the gap between academic education and practical, patient-centric concepts.

14. **Zimbabwe:** Pharmacists must collect 60 CPD credits annually, structured around different professional groupings and largely self-directed. Fines are imposed if CPD points are missed.
The Pharmaceutical Council of Zimbabwe oversees the CPD programme, which is structured into five categories:
    1. Attending conferences, congresses, workshops, lectures, and seminars: This category awards a maximum of 35 points.
    2. Employer-organised workshops and refresher courses: This category awards a maximum of 30 points.
    3. Supervising pre-registration pharmacists and undergraduate students on attachment (mentoring activities): This category awards a maximum of 15 points.
    4. Being a member of an approved association recognised by the Pharmaceutical Council of Zimbabwe: This category awards a maximum of 10 points.
    5. Conducting online activities, supervising master's or PhD students, part-time lecturing, research, publications, and participation in policy and developmental activities: This category awards a maximum of 10 points.

15. **Scotland, [one nation of the United Kingdom]:** To maintain their professional registration, pharmacists must collect four CPD records annually, including planned events, peer discussions, and reflective accounts. This structured approach supports continuous learning and professional development.

For more detailed information on opportunities for pharmacists to develop their skills post-registration, expand their scope, and respond to the changing health needs of society, please refer to Appendix 1, which includes written responses from participants on this topic.

2.3 Specialisation

Specialised qualifications for post-graduate pharmacists are available in almost every country, across a variety of therapeutic areas and sectors of care. The extent to which these qualifications are mandatory or optional, and their link to the legal scope of practice, varies:

"…Pharmacists can become certified in medication management in hospitals, geriatric pharmacy, palliative pharmacy, nutrition counselling, oncological pharmacy, prevention, and health promotion. Curricula and exams vary from one federal state to another. A framework is provided by the Federal Union of German Association of Pharmacists…"

Barbel Holbein, Germany

"…Some pharmacists pursue higher education degrees to specialise and acquire advanced skills in a given pharmacy specialty. Some may even specialise late after graduation and registration, on a personal initiative, or based on their professional institution's encouragement or requirement of continuous professional development…"

Pascale Salameh, Lebanon

"…Pharmacists graduating with a master's degree from a university get a Federal Diploma. To be authorised to manage a community pharmacy or replace a managing community pharmacist for a longer period – cantonal requirements differ depending on the canton - the pharmacist must work in the community pharmacy under the responsibility of a managing pharmacist while obtaining their Federal postgraduate (PG) title of specialist in community pharmacy for 2-5 years. The PG title ends with an examination and is issued by the Federal government as is the master's degree. The cantonal authorities regulate the workforce in their respective canton (26 cantons) and each canton can demand certain requirements regarding the mandatory continuous education or licensure…"

Astrid Czock, Switzerland

Across various countries (including varying sizes of economies), oncology was one of the more established pharmacy specialisations, with developed additional training and accreditation/registration:

".A specialty register was established to accommodate pharmacists with advanced training to be recognised in their area of practice e.g. Oncology Pharmacist…"

Shepard Mhlaba from Zimbabwe

2.4 Four pillars of practice

Across many regions and countries, there was a key focus on the development of four pillars of practice—**professional practice, leadership/management, education, and research**. These pillars are recognised as essential for comprehensive professional development and are integrated into national workforce strategies.

"The four-pillars are recognised as essential for professional development and are integrated into national workforce strategies. The integration of these pillars supports pharmacists' roles across various aspects of healthcare, balancing their responsibilities and contributions…"

Kirstie Galbraith, Australia

"…Yes, these four pillars are integrated [into jobs]….Various leadership styles (coaching, guiding, supporting, and delegating authority) must adhere to the national concept and manifestations of leadership, tailored to each society individually. Education is the second cornerstone, focusing on quality that matches social needs and services provided, reducing the gap between academics and practice. Education that fulfils social needs will improve practice and integrate pharmacists with the healthcare system efficiently. Research is a vital pillar to evaluate, guide, uncover multidisciplinary attitudes, and develop the national workforce…"

Mohamad Nuzili, Yemen

The importance placed on each of the pillars varies, with research often being less emphasised compared to practice and education:

"...Practice is the main focus, and other aspects depend on their [the pharmacist's] role and sector working...leadership and research development are less focused..."

Naoko Arakawa, Japan

"...Much of the resourcing in pharmacy predominantly focuses on practice followed by leadership, education, then research. This is seen by the relative lack of clinical pharmacy academics in the country with practice often prioritised over research due to the need to meet day to day clinical needs and staff shortages being seen as more important than investing and prioritising research, where the benefits are only felt longer term. There are no clear career pathways that focus on education nor research outside academia, and the development pathways for leadership roles are only just becoming clearer..."

Amy Chan, New Zealand

And some countries were still struggling to systematise their attempts to improve the four pillars:

"...The four pillars are not considered priorities in the pharmaceutical area as part of national workforce development strategies. Although they can be found in individual aspects, nothing addresses them systematically..."

Patricia Acuna, Chile

Appendix 1 includes the written responses of participants addressing the question: "Would you consider that the four pillars—practice, leadership, research, and education—are priorities in national workforce development strategies? Are these separate functions or integrated into all job roles?"

3 Multidisciplinary & intra-professional integration

3.1 Multidisciplinary integration of pharmacists in healthcare settings

Feedback from the participants of both insight boards showed that multidisciplinary service integration was common in most countries, especially in hospital roles, specialist roles, and/or roles of pharmacists directly employed by the public sector (i.e., government).

It is important to note that there likely exists a spectrum of integration, depending on various factors such as the skills of the local pharmaceutical workforce and the specific healthcare setting. In some cases, pharmacists may be attached to GP practices but might not be fully integrated into the clinical workflows and decision-making processes.

In **Jordan**, as emphasised by Prof. Rula Darwish, pharmacists collaborate closely with other healthcare team members to optimise patient care: "*Pharmacy is an integrated part of Jordan's healthcare system. Pharmacists collaborate closely with other healthcare team members (physicians, nurses, and allied health professionals) to optimise patient care.*"

Similarly, in **Japan**, the Integrated Community Care System has been implemented to provide lifelong healthcare for the elderly. Naoko Arakawa noted: *"Pharmacists play an important role in providing effective pharmaceutical care to the elderly. Pharmacists attend Community Care team meetings and discuss pharmaceutical care for patients with domiciliary care."* This system ensures that pharmacists are actively involved in the care planning and management processes.

However, the level of integration varies across different settings. In many countries, integration in primary care or community pharmacy settings is less developed, often centred around traditional supply functions.

In **Switzerland**, Astrid Czock pointed out the challenges in the ambulatory sector: "*Unfortunately, interprofessional collaboration is still not a reality in the ambulatory sector, as it is merely encouraged but not remunerated.*"However, in other sectors, pharmacists are well-integrated.

Successful integration often occurs in healthcare systems designed to foster collaboration through regulations or incentives. Amy Chan from **New Zealand** highlighted this, saying, "*Pharmacists are well integrated into multidisciplinary healthcare teams across primary and secondary care. In pharmacist prescribing, it is a requirement that pharmacist prescribers can only prescribe as part of a collaborative healthcare team.*" This regulatory framework ensures that pharmacists are integral members of the healthcare team.

Brazil offers another example where incentives drive integration. Silvana Nair highlighted the role of pharmacists in the public health system: "*In the public health system, primary healthcare services have incentives to hire multi-professional teams (now called eMulti). Hospitals have evolved in integrating pharmacists, particularly clinical pharmacists, into clinical teams.*"

In **Indonesia**, policies also support multidisciplinary teams. Desak Ernawati explained, "*Policy requires that pharmacists are involved in certain multidisciplinary healthcare teams (e.g., tuberculosis).*" Such policies ensure that pharmacists contribute their expertise in critical areas of public health.

Yemen faces significant barriers to integration, including economic factors, weak healthcare systems, and regulatory challenges. Despite these barriers, pharmacists in Yemen are involved in drug safety, adherence, patient compliance, and other essential healthcare activities. Integration efforts are ongoing, with the CPOS board emphasising the importance of detailed regulations and roles for each cadre in the healthcare system.

Table 3 provides a summary of how pharmacists are integrated into multidisciplinary healthcare teams across various countries.

Table 3: Pharmacists integration within multidisciplinary healthcare teams

Country	Pharmacists' integration within multidisciplinary health care teams
Australia	Pharmacists are integrated into multidisciplinary healthcare teams, supported by the Pharmaceutical Society of Australia (PSA) and the Pharmacy Board of Australia. This integration is better established in hospital and consultant settings.
Brazil	Integration within the public health system; multiprofessional teams in primary healthcare and hospitals. Primary healthcare facilities and hospitals incentivise the hiring of multi-professional teams (eMulti).
Chile	Integration needs better regulation, especially in private community pharmacies. The Health Code recognises pharmacies as health centres, but comprehensive integration is lacking.
Germany	No legal requirements for integration; relationships are dictated by personal arrangements with strong sectoral separation. Integration occurs primarily at the local community level and in hospital pharmacies.
Indonesia	Better-established integration with pharmacists working within healthcare teams in special populations or cases, such as in intensive care units (ICU), oncology, and paediatrics. Policies mandates involvement in teams like tuberculosis care.
Japan	Comprehensive integration of hospital and community pharmacy teams with multidisciplinary teams, especially under the Integrated Community Care System for elderly care.
Jordan	Integration is improving in hospitals, clinics, primary care centres, and community pharmacies.
Lebanon	Integration is strong for hospital and clinical pharmacists, though community pharmacists tend to work solo with limited multidisciplinary integration. University hospitals have better integration.
New Zealand	Well-integrated across all sectors. Pharmacist prescribing is specifically allowed only where the pharmacist is integrated into a multidisciplinary team. The regulatory and professional bodies support this integration.
Nigeria	Pharmacists are integrated into primary health centres and national immunisation programmes. They are a key workforce in delivering health outcomes, supported by financial incentives for pharmaceutical manufacturers.
Scotland, UK	Reasonably well-integrated hospital and primary care pharmacists. Integration of community pharmacists is improving with new national contracts and the formation of new primary care healthcare structures called Health & Social Care Partnerships
South Africa	Integration in hospital settings is well-established. Pharmacists and pharmacy support personnel deliver pharmaceutical care services in various settings. Collaboration is common in multidisciplinary activities. However, community pharmacy integration remains suboptimal.
Switzerland	Well-integrated pharmacists across most sectors, including research and education. However, interprofessional collaboration in the ambulatory sector is still limited and not remunerated.
Yemen	Pharmacy should be an integrated part of the healthcare system, but economic and regulatory barriers hinder full integration. Pharmacists are involved in drug safety, adherence, patient compliance, and pharmacovigilance.
Zimbabwe	Little to no integration in community pharmacy, and there is poor public and multidisciplinary recognition of pharmacist skills. The public sector shows segregation of services and activities between pharmacists and doctors, while some collaboration exists in the private sector.

In summary, countries with strong integration frameworks, especially in hospital settings, demonstrate the benefits of collaborative practice. While progress is being made, integration in primary care and community pharmacy settings remains less developed. Moreover, the need for policy changes and financial incentives is critical to enhance integration in these settings.

Appendix 1 includes written responses from the participants addressing the question: "Would you consider pharmacy to be an integrated part of the healthcare system? How are pharmacists integrated with other

members of multidisciplinary teams?" These responses provide insights into the extent and nature of pharmacists' integration within various healthcare systems globally.

3.2 Intra-professional integration

Sectoral, organisational, and skills-based silos within pharmacy are common, reflecting a fragmentation that hinders cohesive professional development and practice integration. This division within the pharmacy profession often results in limited collaboration between different pharmacy sectors, such as community and hospital pharmacy.

Efforts to break down these silos are key for enhancing intra-professional integration (i.e., within pharmacy) and ensuring that pharmacists, regardless of their specific roles, can work together more effectively. Promoting intra-professional integration involves strengthening communication, collaboration, and shared goals among pharmacists from various sectors.

4 Professional autonomy & recognition

The International Pharmaceutical Federation (FIP) has previously defined professional autonomy as 'the right and privilege granted by a governmental authority to a class of professionals, and to each licensed individual within that profession, to exercise independent, expert judgment within a legally defined scope of practice, to provide services in the best interests of the client'. However, recent discussions within our insight boards have highlighted the need to reassess this definition especially in the context of collaborative healthcare environments.

In recognition of the changing healthcare landscape, an updated definition was considered during this insight board session, aiming to better align with contemporary practices and insights. This revised perspective emphasises the empowerment and agency of professionals to act based on their own values and skills, while being directly accountable for the devolved delivery of patient care, or a component thereof, within a collaborative clinical team or broader healthcare system. Such elements are vital in today's interprofessional settings and may not be fully encapsulated by FIP's previous definition.

Several key challenges regarding professional autonomy were shared across most countries and regions during our insight boards. These challenges typically included systemic underutilisation and sub-optimal levels of societal recognition, which further supports the need for a more nuanced definition that incorporates the balance between independent action and collaborative practice.

Professional autonomy allows pharmacists to make independent clinical decisions and manage patient care within their scope of practice. However, the degree of autonomy varies significantly across countries, shaped by local regulations, healthcare policies, and professional practices.

South Africa is a case where pharmacists often feel underutilised. Mariet Eksteen described initial struggles to get the government to fund pharmacy care: *"The prioritisation and utilisation of the pharmacy workforce in South Africa is not yet optimal. There was a cholera outbreak in South Africa towards the end of May 2023. When patients present with acute watery diarrhoea, they will 99% likely to receive sufficient treatment and advice when visiting a pharmacy or a primary healthcare facility. Regardless, the National Department of Health advised patients to visit doctors and hospitals if in doubt. It is unfortunate that the pharmacy workforce has not yet been fully integrated into a multidisciplinary team."*This example underscores the need for better recognition and utilisation of pharmacists in public health crises.

Without this recognition, pharmacies often lack the agency or authority to help patients and struggle against the societal recognition and autonomy of doctors and medically dominated hierarchical professional healthcare structures.

In **Zimbabwe**, Shepard Mhlaba described the struggles pharmacists face to integrate due to conflicts over roles with doctors: *"...our public policy, which kind of has a challenge in terms of the roles and responsibilities of pharmacists and doctors, so there is some form of conflict whereby when you have pharmacies trying to integrate themselves into the multidisciplinary healthcare teams. Then they have doctors saying 'OK, you know, you are not supposed to do this because this is our responsibility.' So that has also been a problem because our public health policy gives a lot of our responsibility and autonomy to doctors...."*

Professional recognition involves acknowledging pharmacists' contributions to health care by other healthcare professionals, patients, and the broader healthcare system. Recognition enhances job satisfaction, professional identity, and the overall impact of the pharmacy profession.

In **Indonesia**, fostering strong local multidisciplinary relationships has strengthened the recognition of pharmacists, especially in specialist hospital teams. Desak Ernawati noted, *"...the extent to which the Indonesian pharmacies have integrated in multidisciplinary healthcare team, mostly pharmacies involved in healthcare team in special population or special cases (e.g., oncology, paediatrics) ... But in order to have those teams, it needs a champion like a pharmacy champion to facilitate our teamwork within the healthcare service...."*This proactive approach has helped increase the societal recognition and autonomy of pharmacists.

Rather than focusing on medications and drugs as the starting point, delivering a professional focus on contemporary public health issues, consistently and equitably, eventually increased the societal recognition and autonomy for many.

Chima Amadi from **Nigeria** explained, *"…Venture into public health trying to do something different from the normal traditional pharmacy areas of traditional areas of pharmacy practice. Some of them are also embracing you… Public health response, like the COVID-19 pandemic, actually led to the inclusion of community pharmacies in vaccination exercise, not just for COVID-19, but it has created so much awareness…."* The inclusion of community pharmacies in vaccination efforts has significantly raised their profile and recognition.

There is often a 'chicken and egg' relationship between legislative/regulatory levers, macro-economic reimbursement strategies, and recognition. Often, pharmacy needs to first deliver a critical mass of work to gain recognition and eventual reimbursement strategies, rather than secure remuneration up front. These macro-level levers thereafter often cemented the professional autonomy and recognition of pharmacists.

5 The FIP Global Advanced Development Framework (GADF)

The FIP Global Advanced Development Framework (GADF) is a validated tool designed to enhance the professional development and recognition of pharmacists and pharmaceutical scientists globally. This framework builds on existing developmental resources like the Global Competency Framework, offering a comprehensive pathway that supports the entire career lifecycle of a pharmacist, including sector transitions and career breaks. It organises professional growth into six competency clusters, distributed across 34 competencies and three advancement stages, allowing clear identification of growth opportunities and recognition.

Development of the GADF began officially in 2015, building on the earlier Advanced to Consultant Level Framework (ACLF), which has been effectively implemented in countries like Australia and parts of the UK. The GADF has undergone significant adaptation to meet the diverse needs of a global workforce, including culturally relevant translations and modifications validated through a series of international Delphi studies.

The release of the initial version of the GADF at the FIP congress in Abu Dhabi in 2019 marked a significant milestone, incorporating feedback from across the FIP community. This feedback helped refine the framework, culminating in the 2020 release of Version ONE of the GADF Handbook. This comprehensive guide includes not only the framework details but also practical case studies and implementation examples, illustrating its application across various settings.

The GADF supports the advancement of pharmacy practice at national and institutional levels. It offers a structured yet adaptable approach for both individual practitioners and scientists to effectively map and plan their professional development. This approach ensures that pharmacists can align their growth with both global standards and personal career objectives.

Figure 1 illustrates the multi-level application of the GADF, from individual practitioners to global standardisation. It serves as a benchmarking tool for developing pharmacist competencies worldwide, helps shape national healthcare policies, and supports organisations in aligning their curricula with international standards, thus enhancing the professional development landscape in pharmacy.

Figure 1: Utilisation of GADF across different scales

Global:
- Adopt and adapt
- Work with FIP to transform workforce (WTP)

Country:
- Develop national systems for advancement and recognition

Organisation:
- Career pathways and structures
- Job descriptions and recruitment
- Education framework

Individual:
- Support professional career learning and development

For more information, see: https://www.fip.org/gadf

Conclusions

Despite regional differences, participants shared common professional values and aspirations. A consistent dedication to advancing patient-centred care and contributing to innovative and sustainable healthcare models was evident. However, key challenges also surfaced, which are pervasive across most regions. These challenges include **systemic underutilisation of the pharmacy workforce, sub-optimal levels of societal recognition and autonomy, and the dominance of medical hierarchies within professional healthcare structures.**

The often systemic underutilisation of pharmacists can result in their expertise being overlooked, especially in critical public health situations. The lack of societal recognition and professional autonomy further exacerbates this issue, limiting pharmacists' abilities to make independent clinical decisions and fully engage in multidisciplinary healthcare teams. Additionally, the entrenched medical-dominated hierarchies in healthcare systems frequently overshadow the roles and contributions of pharmacists.

However, the discussions also highlighted several enablers that can overcome these barriers and enhance the integration and recognition of pharmacists within healthcare systems. A strong focus on **public health initiatives** has proven to be a significant facilitator. Engaging pharmacists in public health roles, such as vaccination programmes and health promotion activities, has increased their visibility and recognition.

Successful **integration into healthcare teams (individuals and systems)**, particularly in specialised areas like oncology and paediatrics, requires champions within the pharmacy profession to advocate for and demonstrate the value of pharmacists' contributions. **Legislative and regulatory** support is also vital. Clear policies that define and expand the scope of practice for pharmacists, coupled with appropriate reimbursement strategies, can significantly enhance professional autonomy and recognition.

Macro-economic strategies that include pharmacists as essential members of the healthcare workforce further support their professional development and integration. Ensuring that pharmacists are adequately compensated for their services and contributions encourages sustained engagement and advancement within the profession.

It is also important to note that the FIP maintains definitions derived from global consensus, which may sometimes need to be reviewed, amended, or even just attended to. This ensures that our standards and guidelines remain relevant and responsive to the changing dynamics of healthcare practices worldwide.

In conclusion, while significant progress has been made in recognising, supporting, regulating and remunerating advanced roles, there is a clear need for targeted efforts to address the gaps in integrating pharmacists into collaborative practice across all sectors, particularly community pharmacy. By sharing best practices and learning from successful integration models, the global pharmacy community can work towards a more cohesive and effective healthcare system. Emphasising the importance of CPD, encouraging interdisciplinary collaboration, and implementing supportive policies will be crucial in achieving this goal. Through collective effort and commitment, the full potential of pharmacists can be realised, ultimately enhancing patient care and health outcomes worldwide.

Appendices

Appendix 1: Written responses from participants

Country	Opportunities for pharmacists to develop their skills post registration, to expand their scope and respond to the changing health needs of the society	Would you consider pharmacy to be an integrated part of the health care system? How are they integrated with other members of multidisciplinary teams?	Would you consider that the four pillars 'practice, leadership, research, education' are priorities in national workforce development strategies? Are these separate functions or integrated in all job roles?
Australia	Post-registration career pathways are available for pharmacists through the Pharmaceutical Society of Australia (PSA) to enhance their skills. There is a continuing professional development system regulated by the Pharmacy Board of Australia, which includes policies and guidelines. Pharmacists must complete at least 40 CPD credits annually through various categories: • Group 1: Information accessed without assessment (1 hour = 1 CPD credit). • Group 2: Knowledge or skills improved with assessment (1 hour = 2 CPD credits). • Group 3: Quality or practice-improvement facilitated (1 hour = 3 CPD credits).	Pharmacists in Australia are integrated into multidisciplinary healthcare teams, working alongside other healthcare professionals to ensure comprehensive care. Organisations like the Society of Hospital Pharmacists of Australia (SHPA) and the Pharmacy Council of Australia play a role in fostering this integration.	The four pillars of practice, leadership, research, and education are recognised as essential for professional development and are integrated into national workforce strategies. The integration of these pillars supports pharmacists' roles across various aspects of healthcare, balancing their responsibilities and contributions.
Brazil	In Brazil, continuing education or professional development is not an obligation for all registered pharmacists. Only some particular scopes of practice, such as homeopathy, aesthetic procedures and cytopathology require specialisation. About 220 residency programmes offer places and study grants for pharmacists, including multiprofessional programmes and pharmacy programmes, in primary healthcare and hospitals. Sixty nine postgraduate programmes in pharmacy and pharmaceutical sciences are available in the country, mostly at public-funded universities. The Ministry of Health and professional body institutions offer a great number of continuing education courses. A great number of private institutions offer specialisation and advanced practice courses, in a variety of areas of practice.	Yes. Almost all the primary healthcare facilities (from the public health system) have pharmacies and dispense medicines free of charge. About 30,000 community pharmacies (private system) are integrated in the Farmacia Popular Programme, dispensing selected medicines free of charge (reimbursed by the Ministry of Health). Pharmacists are also integrated in healthcare teams. In the public health system, primary healthcare services have incentives to hire multiprofessional teams (now called eMulti). Hospitals have evolved in the integration of pharmacists, particularly clinical pharmacists, in the clinical teams.	In Brazil there is no workforce development plan for pharmacists as a definitive guide. There are some documents and agreements that guide some aspects of the profession, such as the National Curricular Guidelines. It clearly defines the practice and science pillars, and the management of health services as a third one, including leadership skills. Education is also an important pillar, although the CE is not obligatory. Regulation is another important pillar for professional development, and pharmacists are recurrently being threatened by projects from the Congress that attempt to reduce the scope of practice of pharmacists.
Chile	Many higher education institutions, both public and private, and other institutions usually provide continuing professional development.	Regulation is a crucial aspect of the pharmaceutical field. Like the Pan American Health Organization (PAHO), which distinguishes between primary health care and the first	The four pillars are not considered priorities in the pharmaceutical area as part of national workforce development strategies. Although they can be found in

	Pharmacists can work in community pharmacies (the majority), hospitals, primary healthcare, industry, academia, and regulatory roles; their scope of practice is considerably regulated and constrained by laws. Advanced or specialised education is mandatory in academia and also in some specific scope of practice. Thus, different postgraduate programmes in Pharmacy are offered (e.g., Professional Master in Pharmaceutical Management and Healthcare Pharmacy from the U. Valparaiso). Since 2017, five Pharmaceutical Specialties have been recognised by Decree of the Ministry of Health: Clinical Pharmacy, Hospital Pharmacy, Public Health, Clinical Laboratory, and Forensic Laboratory (https://www.bcn.cl/leychile/navegar?idNorma=1112962). Also, there are other non-systematic courses that are usually delivered or offered in different pharmacy practice areas. For example, the so-called Technical Training Organizations (OTEC) periodically offer continuing education courses to pharmacists and other health professionals. These opportunities, whether accessed individually or as part of an organisation's annual training plan, enhance professional skills and knowledge, ensuring practitioners stay updated with the latest advancements in their fields. Other private organisations also provide information and develop non-systematic training programmes, mainly in the medical field, but also extended to pharmacists and other health team members in accordance with legal regulations (Compliance Act).	level of care, the Chilean Pharmaceutical Chemists (Pharmacists) and Biochemists Association view community pharmacy as linked to both denominations. However, it is still necessary to regulate their integration into the national health system, particularly in private community pharmacies (the majority). This regulation is essential to maintain the high standards of health care and ensure the safety and well-being of patients[1]. Despite this, the Health Code, in its Article 19, explicitly recognises its character as a health centre. Art. 129: "…Las farmacias son centros de salud, esto es, lugares en los cuales se realizan acciones sanitarias y, en tal carácter, cooperarán con el fin de garantizar el uso racional de los medicamentos en la atención de salud. Serán dirigidas por un químico farmacéutico y contarán con un petitorio mínimo de medicamentos para contribuir a las labores de farmacovigilancia". Available at: https://www.bcn.cl/leychile/navegar?idNorma=5595 On the contrary, hospital and primary care pharmacists are important and active members of healthcare teams and more than ever, their expertise and performance has been strengthened with the recognition of pharmaceutical specialties.	individual aspects, nothing addresses them systematically. However, these aspects can be identified in pharmaceutical specialties, which are required in the Technical Operational Standards (NTO) that define general and specific requirements for each of the five specialties: clinical pharmacy, hospital pharmacy, clinical biochemistry, public health, and forensic laboratory[2]. Available at: https://www.minsal.cl/wp-content/uploads/2016/02/DECRETO-NTO.pdf
Germany	In Germany, pharmacists can pursue specialised certifications through various "Fachapotheker" programmes offered by the Federal Union of German Associations of Pharmacists. These programmes cover a wide range of areas within the field of pharmacy. Pharmacists can specialise in clinical pharmacy, drug information, clinical chemistry, and pharmaceutical analytics and technology. Additionally, there are certification programmes available for medication management in hospitals, geriatric pharmacy, palliative pharmacy, nutrition counselling, oncological pharmacy, and prevention and health promotion. Each of these specialised areas has its own curriculum designed to equip pharmacists with the	Pharmacies play an integral role in the healthcare system (proven during the pandemic) and are integrated in the healthcare system. Due to the fragmented healthcare system with several sectors operating separately, there is no interdisciplinary and interprofessional care for patients (apart from a small number of hospital pharmacies and rare cases on micro-local community level). Within community pharmacy, in general there is a dispensing-only role, with few owners offering the newly allowed pharmaceutical services.	The pillar 'practice' is considered in a national strategy. Workforce development strategies depend on the pharmacy owners' leadership, understanding and willingness, as well as the pharmacy's business model; it is very individual, and these factors determine opportunities offered to pharmaceutical staff.

	knowledge and skills necessary to excel in these specific fields.		
Indonesia	Pharmacists should attend continuing professional development activities held by their own special interest groups (e.g., hospital pharmacist, community pharmacist, etc) Pharmacists need to attend further structured trainings on certain competencies required in their practice.	Yes – due to policy, pharmacists involved in certain multidisciplinary teams (e.g., tuberculosis) are required to be involved in the healthcare team.	Practice and education are priorities, but leadership and research less so.
Japan	Lifelong learning is not mandated for pharmacist registration, but a national lifelong learning certification system (the Continuing Education Credentialing Programmes provided by the Japan Pharmacists Education Centre) is in place. To emphasise the importance of lifelong learning, the Japan Pharmaceutical Association (JPA) provides a continuing professional development system, called the JPA Lifelong Learning Support System (JPALS), to keep an online portfolio system to record learnings undertaken based on the JPA Professional Standards. For advanced practices, there are two levels of recognition for pharmacists, consisting of certified pharmacy specialists and nationally recognisable specialists. Only 'Oncology Pharmacist', certified by the Japanese Society of Pharmaceutical Health Care and Sciences, can be a nationally recognisable title for a pharmacy specialist, but other certified pharmacy specialists can be achieved by training.	The Integrated Community Care System has been implemented to provide lifelong healthcare for the elderly in the community. In this system, pharmacists play an important role to provide effective pharmaceutical care to the elderly. Pharmacists attend Community Care team meetings and discuss pharmaceutical care for patients with domiciliary care. Pharmacists are integrated into a interprofessional team at hospital, supporting effective and safe pharmaceutical care for in-patients.	Practice is the main focus, and other aspects depend on which role and sector the pharmacist is working in. However, leadership and research development are less focused.
Jordan	Pharmacists have opportunities to further develop their skills through continuing education programmes (CPD). These programmes offer opportunities for pharmacists to stay updated with the latest advancements in pharmaceuticals, patient care, and healthcare regulations. Also, CPD recently became a requirement for licensing in Jordan. CPD can be in the form of courses, workshops, and seminars on different relative topics.	Yes, pharmacy is an integrated part of Jordan's healthcare system. Pharmacists collaborate closely with other members of the healthcare team (physicians, nurses, and allied health professionals) to optimise patient care. They are the drug experts, and thus contribute by providing medication expertise, conducting medication reviews, offering medication therapy management services, and participating in treatment planning and monitoring. This collaboration ensures comprehensive and coordinated care for patients, addressing their healthcare needs effectively.	I believe the four pillars should be more prioritised in national workforce development strategies for pharmacists. They should be integrated into all job roles, emphasising the importance of continuous professional development and advancement. For pharmacists and other healthcare providers these pillars would ensure the delivery of high-quality healthcare services. Pharmacists are better able to meet the ever-changing health requirements of the population as a result of this integrated approach.
Lebanon	In Lebanon, there is a law regarding the obligation of continuing education for all registered pharmacists, although its application is imperfect. Many pharmacists enjoy continuing education activities, but others do not engage in such endeavours.	Pharmacy is legally integrated into the Lebanese healthcare system, mainly in community, hospital, and primary healthcare settings, where medications are only delivered through a pharmacist. In these settings, it is	I am sure that practice, research, and education are three pillars of pharmacy, but I would rather say that leadership is an overarching concept of these three "domains". Leadership is needed in every domain and is also needed to bind the three in a comprehensive strategy.

	Furthermore, some pharmacists pursue higher education degrees to specialise and acquire advanced skills in a given pharmacy specialty. Some may even specialise late after graduation and registration, on a personal initiative, or based on their professional institution's encouragement or requirement of continuous professional development.	possible (but not common) to see the pharmacist as part of a multidisciplinary team, mostly in university hospitals. While collaboration with nurses is easy, barriers could arise during interprofessional practice with physicians. This is thought to be related to cultural and local issues. As for the pharmaceutical industry and academic settings, communication with physicians has different aims and boundaries, which makes working with others more or less easy, according to the situation.	Leadership cannot function without other soft skills (communication, organisation, management, emotional intelligence, courage, etc.); most importantly, a leader should also be knowledgeable and have the experience, strategic thinking, and the will to serve the profession and lead the change.
New Zealand	There are many career opportunities for pharmacists after graduation. This can be done officially post-registration via formal postgraduate degree training (e.g., certificates, diplomas and doctorate programmes offered by universities), online courses via our professional bodies (e.g., Pharmaceutical Society of New Zealand who offer webinars and training, and annual symposia) and in-house training, for example via local hospital continuing professional development initiatives, peer mentorship and knowledge exchange, and self-directed learning. Whether the skills development responds to the changing needs of society depends on how the skills gap is identified. Often it is more driven by the individual's own interests, but these are shaped by the types of patients and conditions they see in practice (i.e., the needs of society)) and in some cases, by peer-group discussions and guidance from mentors or colleagues. Some of the training is more responsive as it is driven by the government or professional body in response to a need. For example,. funded COVID-19 antivirals being available due to regulatory changes led to the development of online courses for accrediting pharmacists to supply these antivirals. Barriers to career development: 1) Funding - there is little negotiated funding in our contracts to support CPD; 2) Time – similarly, there is no protected time in our contracts to support CPD; 3) Professional identity – there remains a lack of clarity about professional development pathways and what career positions or options further skills development or training would lead to. Significant variation exists between different sectors and industries within pharmacy.	Our government refers to pharmacy in most of its health initiatives and health workforce plans and our regulatory authority works closely with other regulatory authorities to deliver on key competencies – for example, a shared prescribing statement. Pharmacists are a core part of health service delivery in primary and secondary care and are integrated well with other multidisciplinary teams, although the roles still tend to differ between community and hospital practice. In community, the role of the pharmacist remains primarily a supply function and the integration with other teams focuses on supply (e.g., out of stocks, funding criteria, patient non-adherence) though there are champions within community pharmacy where the pharmacist role is much more integrated within the team and more focused on medicines optimisation. In contrast, in secondary and tertiary care, where pharmacists are part of primary health organisations, or hospital teams, or GP practices, the role is generally more clinical with pharmacists being seen as a key part of medicines-decision making and management. The two professional bodies supporting pharmacy practice for NZ and medical practice - the Pharmaceutical Society of NZ (PSNZ) and NZ Medical Association (NZMA) - have released an integrated healthcare framework document that outlines some of the ways of working together: Pharmacist Frameworks : Pharmaceutical Society of NZ (psnz.org.nz)	The four pillars are not prioritised equally in the delivery of pharmacy practice. There are limited national workforce development strategies- most of these are local, e.g., NZHPA national career framework: see National Career Framework » New Zealand Hospital Pharmacy Association Incorporated (nzhpa.org.nz) and nzhpa-hospital-pharmacy-national-career-framework-feb17.pdf and a Health Workforce Plan 2023/24 – Health New Zealand, Te Whatu Ora for NZ for all health professions. Much of this focuses predominantly on practice ›› leadership ››education ››research. This is seen by the lack of clinical academics in the country with practice often prioritised over research due to the need to meet day to day clinical needs and staff shortages being seen as more important than investing and prioritising research, where the benefits are only felt longer term. There are no clear career pathways that focus on education or research outside of academia, and development pathways for leadership roles are only just becoming clearer. Are these separate functions or integrated into all job roles? Both. There are clearly roles within the sector where individuals or positions focus on one pillar over others. Our national competency framework tries to take into account all four pillars, but again, not necessarily equally with safe and effective practice being the core part of the job role, and the other three pillars named in the competency framework but not to an equal degree.
Nigeria	The Pharmacy Council of Nigeria has established mandatory continuous professional development that allows pharmacists to increase their knowledge and scope and adapt better in an ever-changing health care system.	Yes, pharmacy is an integrated part of the health care system. For instance, community pharmacies have been included as part of national immunisation/vaccine administration centres in Nigeria. Pharmacists have been	Yes, they are priorities in national workforce development strategies but I think there is room for more improvement in the implementation of these priorities. These separate functions are partially integrated in all job roles.

	Also, the West African Pharmacy College provides additional opportunity for pharmacists to acquire new skills and expand their knowledge. Apart from these two opportunities, pharmaceutical associations in Nigeria also provide professional development opportunities to their respective members.	included as a key workforce in primary health centres to deliver health outcomes for the public. The federal government has also provided some form of financial incentives to support pharmaceutical manufacturers in the country. Furthermore, there has been significant multidisciplinary collaboration between pharmacists and other health care professionals.	
Scotland, UK	For early careers post-registration pharmacists, there is standard wide-scale adoption of the Royal Pharmaceutical Society (RPS) Post-Registration Foundation Curriculum in all the major sectors of employment (e.g., community pharmacy, hospital pharmacy, and general practice-based pharmacy). Beyond this stage, there is a growing adoption of the RPS Core Advanced Pharmacist curricula and the RPS Consultant Pharmacist curricula, although these levels of practice are still in an early phase of implementation. All three levels of these curricula are designed to help grow a skills-focused, rather than task-focused, workforce, capable of adapting to changing population need. Numerous other non-mandatory clinical training programmes and/or courses exist for pharmacists to specialise in a range of different clinical topics, across all sectors of care.	Within the three main sectors of employment (e.g., community pharmacy, hospital pharmacy, and general practice-based pharmacy) pharmacists are integrated into patient treatment pathways and multidisciplinary models of care. A few examples: • Community pharmacists now have a new national contract that allows them to work with local communities and stakeholders (e.g., general practitioners) to independently prescribe for a growing range of common clinical conditions. • Hospital pharmacists are often embedded into specialist multidisciplinary teams and are taking on devolved responsibilities for delivering independent prescribing out-patient clinics, following-up pharmaceutical care plans following hospital discharge and/or specialist review. • General practice-based pharmacists are supporting general practitioners (family physicians), through a new national contract, to deliver pharmaceutical care for patients, using independent prescribing and other skills.	The concept of four-pillar working is rising up the priority of national pharmacy workforce strategies. Research skills are the topic with the most unmet development needs, followed by leadership skills. However, various different programmes and strategies are being developed to further support these. Historically, these four-pillar duties are fragmented into separate functions and jobs. Only a minority of the current workforce regularly work across all four pillars. However, moving forward all pre-registration and post-registration foundation pharmacists have the four pillars of practice integrated into their professional curricula. And future adoption of the advanced practice and consultant curricula with further this transition.
South Africa	There are different levels of opportunities: 1. Short courses for becoming a tutor and supervising the in-service learning of pharmacist interns and pharmacy support personnel. 2. Supplementary training, where the scope of practice of the pharmacist broadens and they can prescribe certain prescriber-only medicines to patients after consultation: • Primary Care Drug Therapy (PCDT) • Family planning • Immunisation and injection techniques • Pharmacist-initiated Antiretroviral Therapy. 3. Specialisations, where the pharmacist has advanced roles: • Clinical pharmacy • Public Health Pharmacy and Management • Radiopharmacy • Clinical pharmacokinetics • Industrial Pharmacy	Yes, pharmacy is an integrated part of the health care system with pharmacists and pharmacy support personnel delivering pharmaceutical care services in a variety of settings. • Pharmacists may refer patients to other healthcare professionals if the patient's need is more serious than primary care. • Collaborate in multi-disciplinary activities or decisions. • Discuss treatment options with authorised prescribers.	Yes, it is prioritised in national workforce development. In the Competency Standards it is integrated in certain general competencies or listed separately. Example of leadership integrated in primary care: "Play a leading role in a multidisciplinary healthcare team to optimise therapeutic outcomes." Example of leadership as separate functions: "Apply assertiveness skills to inspire confidence as an accountable leader."

Switzerland	Pharmacists graduating with a master's degree from a university get a Federal Diploma. To be authorised to manage a community pharmacy or replace a managing community pharmacist for a longer period – cantonal requirements differ depending on the canton - the pharmacist must work in the community pharmacy under the responsibility of a managing pharmacist while obtaining their Federal postgraduate (PG) title of specialist in community pharmacy for 2-5 years. The PG title ends with an examination and is issued by the Federal government as is the master's degree. The cantonal authorities regulate the workforce in their respective canton (26 cantons) and each canton can demand certain requirements regarding the mandatory continuous education or licensure. Registration as a pharmacist comes with the master's degree. Specialisation in community or hospital pharmacy comes with the PG title. This PG title was developed to prepare the future community pharmacist to take up the responsibility as a medical professional in primary care. New services are introduced into the curriculum of this course, which ensures that all new graduates with a Federal title have already acquired the new competences. All other community pharmacists already in practice can obtain the certification to provide certain new services by getting trained and graduating with a certificate of advanced studies or a PG certificate in this specific service area. Examples are: PG certificate in vaccinations and blood sampling; PG certificate for anamnesis in primary care; PG certificate nursing home consultancy; CAS in emergency pharmacy. All new services can get introduced via a PG certificate to the practicing pharmacists, via the PG title to incoming community pharmacists and via university curriculum to the graduates at the master's level, while the latter takes the longest to introduce as the university curriculum is somewhat more stringent and less flexible. For hospital pharmacists, the PG title of specialist in hospital pharmacy is acquired after a minimum of three years and often required by the canton or the hospital. A PG certificate in clinical pharmacy is obtainable by community and hospital pharmacists, and clinical pharmacy is now also taught at the university level in all Swiss universities.	Pharmacists are an integrated part in the healthcare system, but they need to make themselves visible. Unfortunately, interprofessional collaboration is still not a reality in the ambulatory sector, as it is encouraged but not remunerated. Currently, the Swiss parliament are discussing the extension of the remuneration of new services provided by pharmacists, in prevention within cantonal or national programmes, and in therapy optimisation of or adherence improvement. Many other services, such as the methadone programme and other addiction programmes, are remunerated but they are mainly tied to a prescription or delegation by a physician. Prolongation of prescriptions, dispensing of documentation-requiring drugs (formerly prescription-only) are offered by pharmacists but must be paid for by the patient. The integration into interdisciplinary teams depends largely on the region in Switzerland. In the German-speaking region the dispensing doctors and physicians are closer to nurses than pharmacists. Community pharmacists adapted and now also work more with other professions or within their pharmacy team. In the hospital setting, interprofessional collaboration is easier, but it also depends on the respective region and hospital how close the pharmacist is integrated. In the French-speaking part of Switzerland, some pharmacists and physicians have common quality circle meetings and due to non-dispensing doctors, the relationship between pharmacists and physicians is closer.	I consider the four pillars as essential priorities in the Swiss workforce development strategy. When it comes to workforce development, all pillars are addressed. Equally, all job roles require all four pillars, but some jobs might tend towards some pillars more than towards others. Community pharmacists commonly don't use the research function, but they need to understand research and use it passively whereas an industry pharmacist needs to actively do research and their role is prominent less in some other field. Altogether, all pharmacists need to be competent in all four areas which is why all four functions are integrated into university education. Many pharmacists switch from one job role into another and therefore, one cannot take one pillar as a single function but only have them intertwined.
Yemen	Yes, there are numerous opportunities in this field. Professional needs and materials are available, alongside	Yes, pharmacy should be an integrated part of the healthcare system.	Yes, these four pillars are integrated.

	advancements in information technology and benchmarking with successful global models. Barriers: • Official regulations at the national level. • Low income for pharmacists and pharmacy owners to fund such activities. The markup for pharmacies does not exceed 16.6% from sales as profit margin, with net profit not exceeding 4% after expenses, compared to more than 300% gross profit typically gained by importers and manufacturers. • Weakness in the healthcare system and lack of strategic vision for the pharmacy profession at the national level. • A large gap between academic education and practice, which must focus on patient-centric concepts and patient safety. • Economic factors that lead to low income and lack of resources needed for implementing opportunities.	Pharmacists are concerned with all drug-related issues, including drug safety, adherence, patient compliance, monitoring drug therapy, disease education, patient advocacy, minimising drug side effect costs, drug supply, and monitoring the quality and efficacy of medicines through regulatory authorities like the FDA (SBDMA). They also evaluate and manage drug cost issues and risks, such as interactions, appropriate dosing, and safety in pregnancy, paediatrics, and special populations. They engage in pharmacovigilance and various types of research.	Various leadership styles (coaching, guiding, supporting, and delegating authority) must adhere to the national concept and manifestations of leadership, tailored to each society individually. Education is the second cornerstone, focusing on quality that matches social needs and services provided, reducing the gap between academics and practice. Education that fulfils social needs will improve practice and integrate pharmacists with the healthcare system efficiently. Research is a vital pillar to evaluate, guide, uncover multidisciplinary attitudes, and develop the national workforce. The four pillars are integrated into all job roles, with varying ratios based on the type of job and level of staff within the institutional hierarchy. **Additional note**: The CPOS board highlights the importance of implementing healthcare provider integration through detailed regulations and roles that specify each cadre's role in the healthcare system and their limitations. This should include real participation from professional bodies representing each cadre and profession, along with other stakeholders. Regulations must also be flexible to accommodate accelerated developments in professional practice worldwide.
Zimbabwe	• Retail Pharmacy: majority (private sector) • Hospital pharmacy • Manufacturing • Pharmaceutical wholesaler • Academia/research • Regulatory affairs A specialty register was established to accommodate pharmacists with advanced training to be recognised in their area of practice, e.g., Clinical Pharmacist, Oncology Pharmacist, CVS. The government is yet to fully recognise the established register. However, the majority of pharmacists enter the retail sector due to economic pressures. The retail sector has little room for expansion with most regulations restricting the scope of practice compared to other countries such as vaccination.	Pharmacy in Zimbabwe is not fully integrated as part of the healthcare system. Despite being considered an essential health profession, there is still room for improvement in the public health sector which is predominantly led by doctors. Pharmacists are partially integrated into the multidisciplinary healthcare teams. In the public sector, there is segregation of services and activities between pharmacists and doctors. However, there are some collaborations being forged in the private sector where multidisciplinary teams exist.	I would consider the four pillars as priorities for national workforce development strategies as the government of Zimbabwe has mapped their national development policy emphasising on the role and impact of practice, leadership, research and education in nation building and sustainable growth.

International
Pharmaceutical
Federation

Fédération
Internationale
Pharmaceutique

Andries Bickerweg 5
2517 JP The Hague
The Netherlands
-
T +31 (0)70 302 19 70
F +31 (0)70 302 19 99
fip@fip.org
-
www.fip.org