From policy to practice: Global lessons in advancing pharmacist-led vaccination

Report from a FIP insight board

2025

FIP Development Goals

11 IMPACT & OUTCOMES
12 PHARMACY INTELLIGENCE
13 POLICY DEVELOPMENT
16 COMMUNICABLE DISEASES

fip International Pharmaceutical Federation

Colophon

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

Authors
Ms Grace Oluwakemi Adebayo, FIP Project and Data Support Coordinator
Ms Nisa Masyitah, FIP Data and Intelligence Manager
Ms Farah Aqqad, FIP Data and Intelligence Lead
Ms Amira Mustafa, FIP Global Pharmaceutical Observatory intern

Editor
Dr Catherine Duggan, FIP Chief Executive Officer

Recommended citation
International Pharmaceutical Federation (FIP). From policy to practice: Global lessons in advancing pharmacist-led vaccination: Report from a FIP Insight board. The Hague: International Pharmaceutical Federation; 2025.

Cover Image
Image by Jacob Wackerhausen | istockphoto.com

Contents

Acknowledgement

FIP acknowledges the input from all participants, the moderator, staff and the intern who contributed to the delivery of this international insight board report.

FIP also acknowledges that this insight board was supported through unrestricted support from MSD.

1 Insight board participants

Moderator	
Mr Lars-Åke Söderlund	Community pharmacist; Vice president, FIP; Chair, FIP Technology Advisory Group, Sweden

FIP team	
Catherine Duggan	Chief executive officer
Farah Aqqad	Data and intelligence lead
Nisa Masyitah	Data and intelligence manager
Grace Oluwakemi Adebayo	Project and data support coordinator
Amira Mustafa	Global Pharmaceutical Observatory intern

Insight board participants	Member organisation	Country
Agnieszka Madej	Swedish Pharmacists Association	Sweden
Alison Jones	Pharmacists' Defence Association	UK
Anna Legreid Dopp	American Society of Health-System Pharmacists	USA
Brigid Groves	American Pharmacists Association	USA
Carolina Martinez Berganza (written inputs)	General Pharmaceutical Council of Spain	Spain
Christina Tulk (written inputs)	Canadian Pharmacists Association	Canada
Diana Costa	Portuguese Pharmaceutical Society	Portugal
Ema Paulino	National Association of Pharmacies	Portugal
Erminia Pietrobono	Italian Pharmacy Owners Federation	Italy
Fiona McIntyre	Royal Pharmaceutical Society	UK
Jack Janetzki	Australasian Pharmaceutical Science Association	Australia
Magali Van Steenkiste	Association of Pharmacists Belgium	Belgium
Meike Ruschkowski	Federal Union of German Associations of Pharmacists	Germany
Paula Teixeira	National Association of Pharmacies	Portugal
Peter Guthrey (written inputs)	Pharmaceutical Society of Australia	Australia
Roop Gupta	Indian Pharmaceutical Association	India
Sigurbjörg Guðmundsdóttir	Pharmaceutical Society of Iceland	Iceland
Sham Moodley	Pharmaceutical Society of South Africa	South Africa
Wern Chai	Australasian Pharmaceutical Science Association	Australia

Observers	
Amanda Eiden	MSD
Kira Skolas	MSD
Rachel Christine	MSD

2 Introduction

2.1 Background

Community pharmacy services have evolved beyond traditional dispensing roles to include pharmacist-led vaccination, enabled by the widespread presence and accessibility of community pharmacies which bring immunisation closer to where people live and work.[1] However, pharmacy-based vaccination (PBV) is not authorised in all countries globally due to various policy barriers. According to the 2025 FIP report on policy progress, stakeholder engagement and challenges in pharmacist-administered vaccination,[2] PBV is currently authorised in only 56 countries, with just 29 of these allowing pharmacists to both prescribe and administer vaccines, while 60 countries still lack any formal legislative framework.

The 2025 FIP report[2] groups countries into four categories (shown in Table 1 below) based on the extent of PBV development and the extent of pharmacist involvement in immunisation services, from those with no framework to those with comprehensive pharmacist-led vaccination services. Across all categories, common barriers persist, including legislative inertia, fragmented funding, workforce shortages, and interprofessional resistance.

Recognising the need for deeper, country-specific insights to guide effective advocacy, implementation, and scaling of PBV, FIP convened a high-level insight board discussion titled "From policy to practice: Global lessons in advancing pharmacist-led vaccination". The insight board brought together global representatives spanning the PBV policy spectrum, including national pharmacy associations in various countries across all four categories.

Table 1: Classification of pharmacist-administered vaccination policies

Category	Description	Countries
Countries where pharmacists administer a comprehensive range of vaccines	These countries have well-established PBV programmes, allowing pharmacists to administer a broad spectrum of vaccines, including those from national immunisation schedules and travel vaccines.	Argentina, Australia, Brazil, Canada, France, UK, New Zealand, Norway, Portugal, South Africa, Switzerland, USA
Countries where pharmacists administer a limited range of vaccines	In these countries, pharmacists can administer specific vaccines, most commonly influenza and COVID-19 vaccines, but are not authorised to provide routine immunisations.	Algeria, Chad, Belgium, Cameroon, Cape Verde, Costa Rica, Denmark, Finland, Germany, Ghana, Greece, Ireland, Israel, Italy, Jordan, Latvia, Lithuania, Luxembourg, Kenya, Namibia, Nigeria, Philippines, Poland, Romania, Saudi Arabia, Sierra Leone, South Sudan, Tunisia, United Arab Emirates, Venezuela, Yemen
Countries where pharmacist-led vaccination is under policy discussion but not yet implemented	These countries are actively considering regulatory changes that would permit pharmacists to administer vaccines, with ongoing policy discussions and advocacy efforts.	Croatia, Estonia, Hungary, Iceland*, India, Malta, Serbia, Singapore**, Slovenia, Tanzania, Türkiye, Uruguay
Countries where pharmacists are not authorised to administer vaccines, with no clear legal framework in place	These countries lack explicit policies governing pharmacist-led immunisation, and no formal discussions on expanding pharmacists' vaccination roles have been reported.	Afghanistan, Albania, Armenia, Austria, Bangladesh, Bosnia & Herzegovina, Bolivia, Bulgaria, Chile, China, China Taiwan, Colombia, Congo (Dem. Rep. of the), Congo (Rep. of), Côte d'Ivoire, Cuba, Cyprus, Czech Republic, Ecuador, Egypt, El Salvador, Ethiopia, Fiji, Guatemala, Guyana, Haiti, Hong Kong SAR (China), Indonesia, Iraq, Japan, Korea (Rep. of), Kosovo, Kuwait, Lebanon, Madagascar, Malawi, Malaysia, Mali, Mauritius, Mongolia,

Category	Description	Countries
		Montenegro, Morocco, Nepal, Netherlands, North Macedonia (Republic of), Oman, Pakistan, Panama, Paraguay, Russian Federation, Rwanda, Senegal, Slovak Republic, Spain, Sri Lanka, Sudan, Sweden, Thailand, Ukraine, Zambia, Zimbabwe

*Iceland is conducting a pilot project where two selected pharmacies have been authorised to administer vaccines. This initiative aims to evaluate the feasibility and impact of expanding vaccination services through pharmacies.
**Singapore has introduced pharmacist-administered flu vaccination in three pharmacies as part of a trial service launched by the Ministry of Health on 28 October 2024.

2.2 Aims and objectives of the insight board

On 30 June 2025, FIP convened an insight board to capture practical lessons, system enablers, stakeholder dynamics, and real-world experiences from countries that have advanced, stalled, or are just beginning PBV implementation, providing focused intelligence to support countries considering the introduction or expansion of PBV legislation in 2025–2026.

The specific objectives of the discussion were:

1. To gather insights into the levers, barriers, and enablers influencing legislative change and implementation of pharmacist-led vaccination across countries with varying levels of policy maturity.
2. To validate and expand on findings from FIP's report "Policy progress, stakeholder engagement and challenges in pharmacist-led vaccination".
3. To inform the design of a follow-up strategy and technical support package for 2026–2028, including stakeholder engagement tools, legislative templates, and country-specific implementation pathways.

Participants from 13 countries, representing 17 member organisations, contributed diverse perspectives to the insight board discussion. To spotlight this activity and encourage participation in future insight boards, FIP shared a promotional post on its social media channels (see Figure 1 below).

Figure 1. Promotional post highlighting the insight board discussion on global lessons in advancing pharmacist-led vaccination

2.3 Setting the scene: National contexts driving the need for pharmacist-led vaccination

Pharmacist-led vaccination has gained increased relevance and importance across various countries due to a combination of multiple factors such as public health crises, ongoing pressure on health systems, workforce shortages, evolving population needs, and growing public trust in pharmacists.

The COVID-19 pandemic acted as a major catalyst for pharmacist-based vaccination globally, creating an immediate need to leverage pharmacies as accessible, trusted vaccination sites and accelerating the expansion of pharmacist-led vaccination services. However, beyond the pandemic, recurring pressures on health systems, such as human resource constraints and growing demand for lifelong immunisation, have made the inclusion of pharmacists in vaccination efforts a necessary and sustainable strategy.

In many nations, progress has been driven by significant changes in national policies and regulatory frameworks. New or updated authorisations have empowered pharmacists to deliver a broader range of vaccines to diverse population groups, helping to close immunisation gaps, extend reach, and respond more effectively to public health needs. However, many countries continue to face challenges such as legislative gaps, missed opportunities, and fragmentation that hinder the full integration of pharmacist-led vaccination services. Chapter 3 examines in detail how these dynamics have played out in specific countries, offering insight into the legislative drivers, enablers, and missed opportunities shaping pharmacist-led vaccination.

Chapter 4 highlights the main factors influencing PBV implementation and identifies key barriers, whether regulatory, financial, technical, or professional, and outlines strategies that drive progress, such as pilot programmes and engaging public support. Remaining challenges that hinder full-scale implementation is also discussed.

Chapter 5 explores the role of various stakeholders in shaping the PBV landscape. It lays out the influence of medical associations, health authorities, pharmacy associations, and the public, in both supporting and opposing PBV efforts. It evaluates the impact of collaboration, or lack thereof, on the policy process and suggests strategies to strengthen interprofessional cooperation and stakeholder buy-in.

Looking forward, Chapter 6 discusses the future potential for expanding PBV. It examines opportunities for broadening the range of vaccines pharmacists can administer, expanding services to new population groups, or embedding PBV into routine health services. It identifies the specific policy, infrastructure, or workforce changes needed to transition from partial to comprehensive PBV implementation.

Finally, Chapter 7 provides actionable recommendations for FIP to support scale-up efforts across countries, including useful tools, resources, or platforms. Additionally, it highlights the types of evidence or messages that could most effectively influence policy decisions and accelerate PBV adoption in the local context.

Figure 2 below shows the key themes covered in the insight board discussion that guided the development of this report.

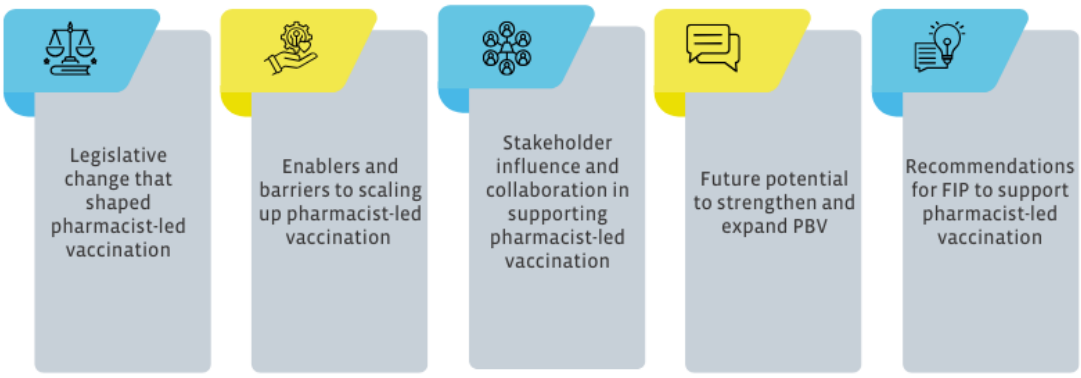

Figure 2. Key themes informing this report from the insight board discussion

3 Legislative changes that shaped pharmacist-led vaccination

The legislation that enables pharmacist-led vaccination varies widely across the globe. While some countries have formalised pharmacists' roles through comprehensive legislation, others have relied on emergency provisions or ad hoc regional decisions.

This chapter examines how legislative and regulatory changes, whether temporary or permanent, have shaped PBV across countries. Drawing on first-hand national experiences, the chapter identifies critical policy triggers, legislative milestones, and gaps that continue to influence PBV implementation.

3.1 Legislative triggers: Health crises, workforce shortages and pressure on the health system

In many countries, legislation to authorise pharmacist-led vaccination was driven by health crises such as COVID-19 or previous pandemics like H1N1. These emergencies revealed systemic gaps in healthcare delivery and highlighted the potential of pharmacists to extend vaccination coverage quickly and safely.

In the USA, legal change began in the 1990s, when pharmacists were first engaged in childhood immunisation campaigns. Emergency authorisation during the H1N1 and COVID-19 pandemics expanded this role further. Pharmacy technicians were also authorised to vaccinate under federal directives to help meet high public demand.

> *"It was actually back in the 1990s when the United States government was looking at expanding vaccines for children in particular... Since then, times have changed, and pharmacists now have a greater role in adult vaccines. During the H1N1 outbreak in 2008–2010, pharmacists really stepped up to help get that vaccine to patients quickly." - USA*

In Germany, legislative change was triggered by the COVID-19 pandemic, which exposed gaps in vaccination coverage and strained healthcare resources. The amendment of the Infection Protection Act (Section 20c of IfSG) in December 2021 legally authorised pharmacists to vaccinate against COVID-19 and influenza. This move was supported by mandatory training, infrastructure requirements, and clear reporting procedures, helping to overcome professional and legal hesitancy.

> *"Germany faced significant challenges in implementing PBV, including regulatory barriers where only physicians could previously vaccinate, and safety concerns from medical associations about pharmacist competence. Momentum built effectively through regional influenza vaccination pilots (2020–2023) and COVID-19 emergency legislation that established the legal framework (Section 20c IfSG) and standardised pharmacist training. The biggest unresolved barrier remains the uncertainty and resistance among physicians." - Germany*

In Belgium, pharmacist-led vaccination was non-existent pre-COVID-19. The pandemic created urgency, and pharmacists demonstrated competence in COVID-19 testing and later in administering vaccines.

> *"I think what triggered it was COVID in Belgium because before COVID, there was no talking about vaccination by pharmacists." - Belgium*

Italy followed a similar emergency-to-permanency pathway. Decree-Laws No. 41/2021 and No. 121/2021 granted temporary authorisation for pharmacists to vaccinate. After the pandemic period, Law No. 52 of 2022 formalised this practice, confirming pharmacists' authority to administer flu and COVID-19 vaccines under a nationally accredited training system. During the pandemic, community pharmacies relieved the burden on both clinics and hospitals. Their

involvement enabled more efficient and decentralised vaccine distribution, ensuring that even people in remote or underserved areas could be reached promptly.

"Pharmacies helped lighten the load on clinics and hospitals, ensuring more efficient vaccine distribution even in peripheral areas." - Italy

In Portugal, an initial legal framework was established as early as 2007 through Decree-Law No. 307/2007, expanded later through multiple ordinances (e.g., Ordinance No. 97/2018, 289/2023, 206/2024) to allow broader participation of pharmacies in national immunisation campaigns. These frameworks define pharmacist competencies, quality assurance mechanisms, and reimbursement rules, providing one of the most robust legal infrastructures for PBV in Europe. Legislative changes in the National Health Services, driven by workforce and infrastructure constraints, have positioned pharmacies as key extensions of the healthcare system, improving access without further straining primary care.

"In 2007, we had the first legislative piece that allowed pharmacies to administer vaccines... it was part of an agreement with the Ministry of Health. What triggered these five years ago was basically the availability of flu vaccines in community pharmacies and because the country was under extreme pressure to vaccinate for COVID and for flu." - Portugal

"Our National Health Service has faced constraints in human resources and infrastructure, and pharmacies have been seen as an extension of the health system, increasing access without overloading primary care services." - Portugal

In Australia, in addition to the COVID-19 pandemic, the outbreak of other local diseases also contributed to the legislation change and scale-up of pharmacist-led vaccination services.

"In Australia, public health threats like COVID-19, Japanese encephalitis, and Mpox have made pharmacist-led vaccination more urgent." - Australia

In Spain, the expansion of the lifelong vaccination schedule, coupled with a shortage of healthcare personnel in primary care, has highlighted the need for alternative delivery channels. Integrating community pharmacies into national vaccination programmes has become a strategic response to allow for wider access and improve the overall capacity of the healthcare system to deliver immunisation services.

"Given the growth of the lifelong vaccination schedule and the shortage of human resources in primary care, the inclusion of community pharmacies in vaccination programmes is needed to improve access and expand care capacity." - Spain

3.2 Sub-national legislation and regional fragmentation

In several countries, legislative control remains decentralised, leading to a variance in PBV authorisation across regions or states.

In Australia, PBV is governed at the state and territory level, resulting in jurisdictional variability that limits national standardisation. Since Queensland first authorised pharmacist-led flu vaccination in 2015, other states have gradually followed. Most recently, South Australia expanded its scope in 2025 to allow pharmacists to administer any vaccine listed in the Australian Immunisation Handbook.

"We have something called a national immunisation programme that's covered at the federal level, but at the individual states, it really comes down to what is the most concerning vaccine." - Australia

"The complexity of the regulatory instruments... Each state has its own rules about what pharmacists can and can't do." - Australia

"In South Australia, we can vaccinate for nearly any vaccine, but drive a few hours into a different state, and it is limited, or pilot only. That inconsistency is a barrier." - Australia

In the USA, the pharmacy vaccination authority is state-based. While all 50 states allow pharmacists to vaccinate, the scope, vaccine types, and eligible patient age groups vary.

"In the USA, unfortunately, it's state by state. We appreciate now that all 50 states have some level of authorisation for pharmacist-provided and initiated and administered vaccines, but to varying degrees." - USA

In Italy, although national law now authorises pharmacist-administered vaccination, inconsistencies across the 20 regional health systems remain a major barrier to universal implementation.

"In Italy, the national health system is fragmented. There's a national system plus 20 regional systems, each with its own legislation to enable or not enable pharmacy-based vaccination." - Italy

3.3 Enabling provisions and policy architecture

Countries that have successfully legislated PBV often did so through dedicated ordinances and regulatory oversight.

In Portugal, legal mechanisms such as Ordinances No. 264/2023 and 201/2024 established operational and eligibility frameworks for seasonal vaccination through pharmacies. Moreover, INFARMED deliberations (No. 139/CD/2010 and 145/CD/2010) ensure that only trained professionals provide the service under strict safety standards, with indemnity insurance and mandatory cold chain management.

"Two years ago, then, we had the contract with the NHS to be able to administer both flu and COVID vaccines for free in pharmacies without prescription." - Portugal

In South Africa, regulations were set as early as 2000 through Regulations 3 and 4 of GNR 1158, mandating supplementary training and certification (Section 22A(15) permit) for pharmacist vaccinators. The South African Pharmacy Council led early policy discussions and implementation, enabling pharmacists to set up fully certified immunisation sites.

"In South Africa, pharmacists were already authorised to administer influenza vaccines before the pandemic. When significant gaps in childhood immunisation coverage became evident, a legislative change was introduced to expand pharmacists' role. The urgent need for more accessible vaccination channels positioned pharmacies as a practical and effective solution, even during the COVID-19 pandemic." - South Africa

In the UK, PBV was legally recognised in 2015, following pilot studies and government commissioning of flu vaccination services through pharmacies. During and after COVID-19, legal and indemnity frameworks were swiftly adapted to allow broader access, including pharmacy technicians who may now vaccinate under Patient Group Directions (PGDs).

"The most significant policy change was in 2015, when a national service was commissioned after some pilots. Having national coverage in England really did start to cement pharmacists as being seen as vaccinators." - UK

3.4 Legislative gaps and missed opportunities

Not all countries have established enduring legal frameworks. In Sweden, pharmacists are not authorised to vaccinate, despite lobbying efforts during COVID-19. Political reluctance and professional resistance have blocked regulatory change.

"We tried to talk to the government and our healthcare minister about this. They said that the regions could have used the pharmacist if they wanted, but other healthcare professionals are not supportive of us doing more." - Sweden

In Spain, no national legislation currently authorises pharmacist vaccination, although temporary regional authorisations during COVID-19 allowed pharmacists to vaccinate peers or staff. In 2025, Spain is still operating under strict legal limitations, with only small, controlled pilots allowed to generate the evidence needed to push for systemic change.

"At the moment, it is not possible to vaccinate in pharmacies… We are currently developing small, controlled projects through which we will generate experience and build the basis on which to justify future negotiations to enable PBV." - Spain

In India, pharmacists were temporarily authorised to administer COVID-19 vaccines during the national emergency but have not been integrated into ongoing immunisation strategies. Vaccination efforts relied heavily on a mix of healthcare providers, including pharmacists, community workers, and nurses, demonstrating feasibility but lacking permanent legislative reinforcement.

4 Enablers and barriers to scaling up pharmacist-led vaccination

The implementation of pharmacist-led vaccination has expanded in recent years, driven by efforts to increase vaccine coverage, enhance accessibility, and strengthen primary healthcare systems. However, the journey from policy to practice has varied greatly across regions. While some countries have successfully embedded PBV into national immunisation strategies, others continue to face barriers that hinder scale-up and sustainability.

This chapter explores key enablers and unresolved challenges in shaping PBV implementation. These real-world experiences offer practical lessons for countries working to embed PBV as a sustainable health service.

4.1 Regulatory and legislative landscape

The most frequently cited challenge was the lack of national legislation to enable the entire process. In several countries, pharmacists are still not legally permitted to administer vaccines, or their authority is limited to certain vaccines, population groups, or emergency contexts. Even where legal authorisation exists, the absence of a unified national policy often results in variation across states, provinces, or regions.

In many countries, pharmacist-led vaccination was initially introduced under emergency legislation—most notably during the COVID-19 pandemic—where it demonstrated practical effectiveness as detailed in Section 3.1. However, these legal frameworks are often temporary or inconsistently applied, resulting in regulatory uncertainty. For example, as detailed in Section 3.2, Spain has a strict national legal constraint that continues to limit the operational scope of pharmacist vaccinators, whereas in contrast, in Australia, the legal authority for pharmacist vaccination is determined at the state and territory level, leading to jurisdictional inconsistencies and a lack of national uniformity.

Similarly, in countries such as Italy and Germany, as shown in Section 3.2, although PBV is legal, there are still ambiguities or limitations in implementation due to fragmented regional governance and professional licensing frameworks.

In Portugal, while pharmacy-based vaccination is legally authorised, implementation is complicated by annual negotiations with the Ministry of Health to define remuneration (e.g., Ordinances No. 289/2023 and No. 206/2024). These arrangements introduce administrative burdens and create uncertainty, limiting pharmacies' ability to plan long-term.

National-level mandates, uniform legal recognition, and integration into primary care strategies are therefore essential to ensure PBV is not treated as a time-limited exception but as a stable, strategic health service.

4.2 Financial and reimbursement challenges

While the cost of the vaccine product is sometimes publicly subsidised, the broader service (i.e., counselling, administration, screening, and follow-up) is often not adequately reimbursed. This disconnect undermines the sustainability of PBV.

In several countries, particularly Australia, the USA, and Portugal, reimbursement mechanisms are inconsistent, negotiated annually, or lower than equivalent payments to other providers. Out-of-pocket costs for patients also vary by region and vaccine type, creating equity concerns.

"The vaccine product might be covered, but time for counselling, screening, and administration often isn't." - USA

"Pharmacy reimbursement is minimal compared to what other providers receive… Patients may face out-of-pocket costs depending on location." - Australia

Even in countries with successful pilots or growing public demand, pharmacy-based vaccination services remain underfunded relative to their impact. In South Africa, while private insurers have established reimbursement pathways, access in the public sector is still inconsistent and subject to provincial-level approval.

> *"Private insurers cover vaccine and admin fees. Undergraduate vaccine training is now embedded in the curriculum. Public sector vaccine programmes are largely free in the Expanded Programme on Immunisation (EPI). Attempts are being made to allow pharmacies to access the vaccine stock for free from the State and provide a service with an agreed vaccination fee. This is a slow process as it is a decision made within the nine provinces individually." - South Africa*

In Portugal, reimbursement is legally governed but administratively burdensome, requiring annual negotiations that hinder long-term planning.

> *"While the National Health Service reimburses select vaccines (e.g., influenza, COVID-19) provided through public campaigns, most vaccines outside the National Vaccination Programme (PNV) are not covered. These typically require a medical prescription to qualify for co-payment, and several remain entirely out-of-pocket expenses for patients, creating economic obstacles, especially for vulnerable populations." - Portugal*

The lack of a national reimbursement framework, combined with limited pharmacy-specific incentives, continues to restrict scale-up. Establishing equitable, sustainable funding models, including appropriate remuneration for the full scope of the service, is a clear priority.

4.3 Professional resistance and intersectoral coordination

Professional resistance from other healthcare sectors, particularly from physicians and nurses, has emerged as a widespread barrier. This resistance is often rooted in concerns about role encroachment, income protection, or lack of trust in pharmacist competencies.

> *"The implementation of vaccination in pharmacies was not without its obstacles. One of the main difficulties involved initial resistance from some medical circles, concerned about a possible encroachment on their competencies. There were also technical problems, such as the integration of pharmacies' information systems with those of the regional health authorities… However, some critical knots remain unresolved: the lack of uniformity between regions, the question of remuneration for the act of vaccination, and, above all, the absence of a definitive regulatory framework to consolidate this practice beyond the emergency context." - Italy*

> *"The most influential stakeholders were medical associations, which initially opposed pharmacist-led vaccination due to safety and competency concerns, creating regulatory barriers." - Germany*

In the early stages of PBV roll-out, several countries reported efforts by GPs or medical associations to dissuade patients from using pharmacy services. In other cases, professional resistance took the form of policy delays or opposition to pharmacist training standards. While public acceptance has generally improved over time, interprofessional friction still hinders full collaboration and integration.

> *"Initially, GPs saw pharmacist vaccination as a threat to their income stream. There was pressure on the public not to use pharmacies. Patients were told, 'Don't go there, go to your doctor.' But over time, public preference spoke louder. Now both GPs and pharmacists vaccinate, and coverage has improved overall."- UK*

> *"Even with years of experience, we still face resistance, especially from nurses. Pharmacies are not fully integrated into local health systems. Coordination is hard. For instance, we can see flu and COVID records but not others. So, counselling patients about other vaccines is difficult." - Portugal*

"One group we've had the most challenges with is our medical colleagues… Medical associations have been a challenge in some states when it comes to what pharmacists can and can't do." - USA

Additionally, coordination across health system actors remains weak. Pharmacies are often not fully integrated into national immunisation planning, and collaboration with primary care networks or local public health teams is limited. These gaps in coordination reduce opportunities for shared data, referral pathways, and aligned service planning.

In Sweden, ongoing regulatory restrictions and professional concerns continue to delay broader implementation.

"Resistance may arise if PBV is mandatory. Voluntary engagement with proper training is more likely to gain acceptance from the profession." - Sweden

In the UK, workplace pressures and service expansion have outpaced workforce growth. The Pharmacists' Defence Association (PDA) advocates for increasing staffing levels, particularly by ensuring more than one pharmacist per pharmacy, to maintain safety and service quality.

"Although skill mix changes—including recent developments to enable pharmacy technicians to deliver vaccinations—have occurred, there is a trajectory to expand clinical services in community pharmacy, which is not currently being matched with increases in the overall workforce… More than one pharmacist per pharmacy is essential to support clinical delivery, patient safety, and workforce well-being." - UK

4.4 Data integration and information access

One persistent limitation is the ability of pharmacists to access or contribute to immunisation records. In countries like Portugal and South Africa, pharmacists have partial visibility, often only to flu or COVID-19 records, making it difficult to offer comprehensive vaccination counselling or identify missed doses.

"The successful integration of community pharmacies into the national digital vaccination registry (VACINAS) facilitated real-time data entry and monitoring… However, pharmacists do not have access to the full vaccination history of patients. This limitation hinders their ability to make informed clinical decisions, avoid duplication of doses, and provide personalised counselling." - Portugal

The lack of real-time, interoperable health data systems undermines both patient safety and operational efficiency. Pharmacists are often required to document vaccinations in separate systems or are excluded from platforms used by other primary care providers.

"Pharmacists have access to the digital vaccination record, which is an enabler… However, this does not fully integrate with the overall health record in each devolved nation. Pharmacists do not have access to the full health record, only the digital vaccination record and an abbreviated summary record." - UK

Countries with strong digital integration, such as Australia, have shown the value of national immunisation registers that allow seamless documentation and access. These systems not only enable pharmacists to deliver better care but also provide governments with accurate, timely vaccination coverage data.

Despite advancements, system fragmentation and decentralised decision-making remain challenges in integrating pharmacists fully into national immunisation efforts.

4.5 Political context and ideological challenges

In some countries, the politicisation of vaccines has emerged as a major challenge, complicating efforts to expand PBV even where legal and professional hurdles have been overcome. Vaccine hesitancy, misinformation, and political narratives have occasionally overshadowed scientific evidence and created public uncertainty about the safety or appropriateness of pharmacy-based services.

"It's no longer always about science or safety—ideology gets in the way." - USA

This is particularly evident in highly polarised environments where vaccine delivery is caught in broader ideological debates. In these settings, pharmacies must not only deliver services but also counter misinformation and navigate public trust dynamics delicately.

The centralised supply model in Portugal, while ensuring cold chain control, creates logistical delays for pharmacies during peak demand. This bottleneck is especially problematic during the influenza season or mass campaigns like COVID-19.

"Portugal's centralised vaccine supply model, controlled by the state, restricts pharmacies' autonomy to manage their vaccine stock. This has at times led to supply delays and mismatches with local demand, particularly during peak vaccination periods." - Portugal

Clear communication, public education, and alignment with trusted health authorities are essential to protect PBV from political volatility.

4.6 Reported enablers for successful PBV implementation

Table 2 presents selected enablers that have supported the successful implementation or expansion of PBV in various countries. These include national infrastructure, regulatory progress, public engagement, and advocacy efforts.

Table 2: Summary of key enablers reported: Country examples

Enablers	Country examples (success stories)
National immunisation registers and data integration	Australia: Use of the Australian Immunisation Register (AIR), automated data upload.
Pilot programmes demonstrating impact	Germany: Regional influenza pilots (2020–2023). Spain: Controlled pilot projects underway.
Public trust and demand for pharmacy services	Portugal and Italy: The public welcomed pharmacy vaccination as convenient and safe. UK: Public preference shifted acceptance.
Strong pharmacy advocacy and coordinated messaging	Portugal and Italy: National associations engaging in structured advocacy and policy discussions.
Embedding vaccination in pharmacy training	South Africa: Undergraduate vaccine training embedded in the pharmacy curriculum.

The transition from policy to practice in pharmacist-led vaccination is far from linear for each country. While public demand and pharmacy readiness have grown, structural barriers, including legal, financial, and interprofessional challenges, continue to limit full integration. Nonetheless, the evidence is clear: when pharmacies are empowered with the right tools, training, and trust, they deliver vaccination services that are safe, efficient, and equitable.

5 Stakeholder influence and collaboration in supporting pharmacist-led vaccination

The expansion of pharmacist-led vaccination across various countries has been shaped by the actions and influence of multiple key stakeholders, including national health authorities, regulators, professional associations, and, importantly, the public. In many countries, supportive engagement from these stakeholders has enabled policy change and operational scale-up. However, in some cases, resistance from other stakeholders has often slowed progress.

This chapter shows how different stakeholders have shaped national policy environments for pharmacist-led vaccination or constrained the progress. In addition, the chapter also shows how interprofessional collaboration has shaped the policy environment and the strategies used to improve interprofessional buy-in.

5.1 Health authorities and ministries

In most countries, ministries of health, regulatory agencies and public health directorates have provided the backbone for policy reform, including setting standards, developing legal frameworks, and commissioning pilot programmes that proved the feasibility and safety of PBV. Their active support has been a decisive factor in embedding vaccination within routine pharmacy practice.

> *"The health authorities, including the Ministry of Health, the Directorate-General of Health, and the Executive Direction of Health Services, were the most influential stakeholders in advancing pharmacist-based vaccination. They provided the regulatory framework and technical guidance necessary for implementation." - Portugal*

In Australia, government officials have played an instrumental role in creating the necessary pathways for the expansion of PBV. However, in South Africa, endorsement from other government officials is required to secure legislative change and unlock new scopes of practice for pharmacists.

> *"Our state health minister has been the main driver behind all this. He really pushed for pharmacists to be allowed to vaccinate across a broad range." - Australia*

> *"Convincing the regulator who reports directly to the Minister was key. Once they were on board, change followed." - South Africa*

5.2 Professional pharmacy associations and regulators

Pharmacy regulators and associations have played a decisive role in recognising pharmacists' vaccination scope and setting standards.

In South Africa, the South African Pharmacy Council (SAPC) provided the necessary regulatory foundation by providing guidelines and issuing permits required for pharmacists to vaccinate.

> *"The SAPC has had a huge influence by firstly recognising the scope, providing the necessary guidelines and requirements, registering the qualification, and issuing the necessary permits to vaccinate." - South Africa*

In Australia, professional bodies such as the Pharmacy Guild of Australia and the Pharmaceutical Society of Australia have actively championed PBV.

> *"The Pharmacy Guild of Australia has been pivotal in advocating for the expanding scope of practice for pharmacists." - Australia*

Professional pharmacy organisations have also collaborated with other associations to set common guidelines and start a combined advocacy.

"The Royal College of GPs and the Royal Pharmaceutical Society don't always agree on everything, but on the issue of improving vaccination rates, they were really aligned. These two prominent stakeholders were able to come together with joint messaging, which was very powerful." - UK

In addition, lobbying for change with decision makers to expand the scope of pharmacy practice is another role of the pharmacy association, as seen in Italy and Portugal.

"The pharmacist professional organisations, like the Pharma Federation and the Chambers, worked together to push the government to recognise the added value of pharmacy-based vaccinations." - Italy

"The Portuguese Pharmaceutical Society and the Pharmacists Association (INFP) also played a positive role, advocating and collaborating with different stakeholders to advance pharmacist-based vaccination." - Portugal

5.3 Medical and allied health associations

While many health professionals have supported pharmacist-led vaccinations, some medical and nursing associations have at times acted as strong gatekeepers, citing concerns about scope overlap, patient safety, and the redistribution of clinical responsibilities in some countries. Their opposition often centres on concerns about professional scope overlap, patient safety, and the redistribution of clinical responsibilities. These tensions have sometimes slowed legislative progress or created implementation barriers, even in settings where PBV has proven safe and effective in practice. For example, public demand and policy momentum have helped advance PBV in countries where pharmacists are widely trusted; however, resistance from medical associations has, in some cases, delayed or diluted reforms. These dynamics are further explored in Section 4.3, where specific country examples highlight how interprofessional relations can either enable or constrain the institutionalisation of PBV within national immunisation programmes.

5.4 General public perception

Public perception has been one of the strongest enablers of pharmacy-based vaccination (PBV). In countries where pharmacies are viewed as accessible, safe and convenient, public trust and patient demand have not only driven policy shifts but also helped sustain momentum for legislative change. Community pharmacies have demonstrated their capacity to deliver high-quality, low-risk vaccination services, particularly in rural or underserved areas, helping to overcome resistance from other medical associations and secure PBV as an integral part of national immunisation programmes.

"Public trust in community pharmacies had previously positively stood out—this grew even more during COVID-19 vaccination drives, where people expected easy-to-access and convenient vaccination services." - Portugal

"Patient groups who have a high satisfaction rate with community pharmacists… Many eligible to receive a vaccine through an immunisation centre choose to access this privately at a community pharmacy." - UK

"The public has welcomed the possibility of vaccination in pharmacies, perceived as a convenient and safe solution." - Italy

Widespread public satisfaction during COVID-19 vaccination efforts strengthened the pharmacy sector's case for permanence. In several cases, governments chose to maintain or expand PBV based on positive patient feedback and reduced burden on primary care systems.

This trust has also been reinforced by the visible presence of pharmacies in communities and their ability to respond flexibly to seasonal or surge demand. The use of automated data systems, for example, linking pharmacy software to national immunisation registers, has further supported service credibility, enabling pharmacists to verify immunisation histories and contribute meaningfully to national data systems.

5.5 Cross-sector collaboration in pharmacy-led vaccination

Cross-sector collaboration and open dialogue with medical and allied health associations have proven essential in advancing PBV. By building trust, clarifying professional roles, addressing concerns about patient safety, and demonstrating the added value of pharmacists in vaccination programmes, these partnerships have unlocked policy progress and expanded public access to vaccines.

Where collaboration between pharmacists, doctors, nurses and public health leaders has been structured and sustained, policy progress has been faster and has improved public trust.

The COVID-19 pandemic underscored the power of such partnerships. In Australia, for example, regular online meetings between primary care providers created a unified response during a time of crisis.

> *"One of the most valuable sources of collaboration came during COVID-19, where primary care providers were in regular online meetings focused on solutions for the community in a crisis. This helped build trust between professions and key stakeholders." - Australia*

Portugal's experience also highlighted the value of early, evidence-based collaboration. A pilot project for flu vaccination before the pandemic showed the practical benefits of working across stakeholder groups.

> *"Before COVID, we had a collaborative pilot project for flu vaccination… It showed us that collaborative work with stakeholders is very important. It provided real evidence that when we work together, we get better results for people." - Portugal*

Collaboration has also helped shape robust policy frameworks and service standards, ensuring public confidence and regulatory clarity.

> *"Collaboration among pharmacists, health authorities, and professional organisations helped design an active policy framework that provided well-defined guidelines on training requirements and stringent safety standards." - Portugal*

In the USA, partnerships with state health departments and immunisation programme managers have strengthened local reach and addressed service gaps in underserved areas.

> *"Collaboration with state health departments and immunisation programme managers helps us reach more communities, especially rural areas that have less access than urban centres." - USA*

In Italy, progress has shown that building and maintaining trust across professional groups remains a priority for sustaining momentum.

> *"Good practices of interprofessional collaboration have emerged. Looking ahead, strengthening this type of collaboration is essential to overcome mutual distrust and build a true alliance for public health." - Italy*

All these experiences confirm that structured cross-sectoral partnerships are supportive measures and central pillars for embedding pharmacist-led vaccination into modern health systems.

6 Future potentials to strengthen and expand PBV

Pharmacist-led vaccination is no longer an emergency response measure. It is becoming a permanent, trusted component of immunisation strategies in many countries. As legal frameworks expand, attention now turns to the future potential of PBV: expanding the list of authorised vaccines, increasing access across all population groups and geographic regions, further integration into national health systems, and aligning digital infrastructure, training, and reimbursement models to support long-term sustainability.

This chapter outlines national priorities and emerging strategies to build on current progress and ensure PBV continues to evolve as a pillar of equitable, accessible public health.

6.1 Expanding the scope of vaccine portfolios

A key theme across countries is the drive to broaden the portfolio of vaccines that pharmacists can administer, moving beyond influenza and COVID-19 vaccinations to include routine, adolescent, travel, and adult-risk-group vaccines.

In Australia, regulatory shifts are already underway. States are moving away from fixed vaccine lists and instead adopting the broader guidance of the Australian Immunisation Handbook. In South Australia, pharmacists are now authorised to administer all vaccines listed in the handbook. Next steps focus on expanding authority to patients under five years of age (currently restricted in most jurisdictions), removing regulatory and financial barriers to outreach and mobile clinic services, and extending authority to inject other medicines such as vitamin B12, denosumab, and long-acting buprenorphine.

> *"In Australia, I think the next priority would be to harmonise what pharmacists are allowed to vaccinate against across all states. In South Australia, for example, we've recently moved to allow pharmacists to vaccinate people of any age, but in most other states, people must be older than five. It really comes down to continued advocacy." - Australia*

In Italy, the 'Simplifications Bill', approved in March 2024, expands the role of pharmacists. It allows pharmacists to administer all vaccines (not only COVID-19 and flu) to individuals over 12 years. The bill also envisions pharmacies as hubs for proximity care, offering telemedicine, point-of-care testing, and even enabling citizens to choose their general practitioner (GP) directly at the pharmacy.

In Germany, pharmacists are now authorised to administer additional inactivated vaccines to adults over 18. Full implementation relies on regional cooperation and direct coordination with physicians to align referral and oversight pathways.

In Portugal, future expansion plans include adding travel vaccines, paediatric and adolescent vaccines for at-risk teens, and chronic disease-targeted vaccines such as herpes zoster and hepatitis B. Portugal's extensive pharmacy network is well-positioned to reach under-vaccinated groups, including working-age adults and those with chronic conditions, thereby improving equity and coverage.

6.2 Further integration into national health systems

Moving forward, PBV must become a routine, integrated part of national immunisation strategies. In many countries, pharmacists are still excluded from full participation in the national vaccination programme or face inconsistent implementation across regions.

For example, Portugal currently authorises pharmacy-based flu and COVID-19 vaccination, but integration into the national vaccination programme for all vaccines is still pending. Stakeholders are calling for formal recognition and funding parity for pharmacy services.

> *"Community pharmacies are not yet fully integrated into local and regional health systems; coordination and information-sharing with primary care systems are still incomplete." - Portugal*

In the UK, pharmacists already deliver national flu and COVID-19 services, and pilot projects for HPV and RSV vaccines are underway. The profession is advocating for wider national commissioning, an expanded pharmacy skill mix, including pharmacy technicians administering vaccines under Patient Group Directions, and greater use of pharmacy contact points to promote public health interventions such as cardiovascular risk assessments.

6.3 Strengthening the systemic enablers

As pharmacists' roles expand, several systemic enablers will be crucial:

Education and training: Many countries are embedding immunisation into undergraduate pharmacy education, as in South Africa. Pharmacists are now formally trained as vaccinators, and public acceptance is growing. The next step is strengthening public sector integration, including broader use of government-supplied vaccines and reimbursement for administrative costs.

> *"We decided to take a step back and ensure that all our pharmacy schools include this as part of the pharmacist's scope of practice and train them in the basics of vaccination." - South Africa*

Other countries, such as Australia, the UK and Belgium, mandate ongoing training in CPR, anaphylaxis management, and injection technique.

> *"Every three years, there has to be training. It has to include the technical approaches, such as how to handle anaphylaxis. We have to have basic knowledge around everything that has to do with vaccinations." - Belgium*

Digital interoperability: Access to comprehensive patient immunisation records is critical for safe, informed care. In Portugal and the UK, pharmacists have access to partial records, but integration remains limited. As described in Section 4.4, real-time, interoperable systems, such as the Australian Immunisation Register (AIR), are essential for clinical decision-making and continuity of care.

Public awareness campaigns: Several countries emphasise the need for better public information to build trust in pharmacist-delivered vaccinations, particularly as vaccine hesitancy and misinformation persist. Highlighting pharmacists' accessibility, safety record, and training can reinforce their role as trusted healthcare providers.

Stable funding models: Long-term sustainability will depend on clear reimbursement mechanisms. In Portugal, for instance, annual negotiations over vaccine fees create planning uncertainty. As discussed in Section 4.2, reimbursement challenges remain a barrier in several countries, prompting efforts to establish standardised funding and co-payment structures to ensure services remain equitable and financially viable.

7 Recommendations for FIP to support pharmacist-led vaccination

As PBV continues to evolve, experiences from across FIP member organisations have shed light on both the key drivers of success and the barriers that limit wider adoption. FIP has a key role to play in accelerating the scale-up of PBV by setting clear strategic priorities, offering practical tools, and strengthening evidence-based advocacy. This chapter outlines the core areas where FIP can focus its efforts to support countries in expanding pharmacist-led vaccination services and achieving broader immunisation coverage through community pharmacies.

7.1 FIP's strategic priorities to support PBV expansion

To effectively scale PBV globally, FIP should focus on several core strategic priorities.

Firstly, FIP should continue its efforts to gain formal recognition for pharmacists' role in vaccination at global levels such as the World Health Organization (WHO) and the United Nations (UN). This recognition is essential for supporting countries where pharmacists are not yet included in national immunisation frameworks. By ensuring that governments are aware of the expanding scope of pharmacists in delivering vaccines, FIP can help drive national regulatory change.

Secondly, FIP should prioritise the collection and dissemination of scientific evidence that demonstrates the public health impact of pharmacist-led vaccination. This includes data on safety, effectiveness, accessibility, and improved vaccination coverage.

Finally, FIP can advocate for a harmonised global approach that encourages national health authorities to formally recognise and use pharmacists in vaccination delivery. This consistent policy stance can support more uniform progress across countries.

7.2 Tools and resources for implementation

Countries at different stages of PBV implementation require tailored tools and ready-made resources to reduce barriers and accelerate adoption. One key recommendation is the creation of comprehensive implementation toolkits for national associations. These toolkits should include:

- Templates and guidelines for setting up a vaccination service in pharmacies.
- Emergency preparedness protocols, including how to assemble and manage emergency kits.
- Cold chain maintenance procedures.
- Documentation and patient record templates.

Training modules should be developed and adapted to local contexts, equipping pharmacists with the competencies needed to administer vaccines safely. Existing protocols and implementation guides from countries with longer PBV histories can serve as a strong starting point for other countries looking to build their own regulatory or professional frameworks.

In addition, FIP should maintain a regularly updated register of pharmacist vaccination authority by country. This global overview would support benchmarking and advocacy at the national level and help associations track international progress and identify opportunities for alignment.

"Some resources and collated evidence from different countries on pharmacist-led vaccination services would be really useful for advocating for expansion of services across the globe" - Australia

7.3 Leveraging evidence to drive policy

Evidence plays a central role in expanding PBV at the national level. FIP should support the generation, publication, and dissemination of real-world data showing the effectiveness, safety, and acceptability of pharmacist-led vaccination.

Data from pilot programmes, especially those involving collaboration with local stakeholders, can serve as strong evidence that demonstrates the safety and effectiveness of PBV. Practical examples from other countries where PBV is well established can offer persuasive references when negotiating with national health authorities.

A global evaluation of PBV outcomes, which include statistics on vaccination rates and coverage, patient satisfaction levels, and pharmacist-reported experiences, could serve as a foundational advocacy tool and provide clear justification for expanding pharmacist-led vaccination.

"In Belgium, what would help tremendously is clear evidence in writing and in data that pharmacy vaccination augments or enhances the vaccination rates in a country, and that it has an impact on vaccination hesitancy." - Belgium

7.4 Peer learning and global collaboration

Learning from countries with similar health system structures was cited as an effective method for scaling PBV. Stakeholders noted that understanding how pharmacists in other nations have successfully implemented vaccination services provides both confidence and actionable strategies.

A shared platform to facilitate these exchanges is essential. FIP should create and manage a space for comparison across countries, where protocols, implementation challenges, and local adaptations are openly discussed. This would avoid duplication of effort and help countries develop context-appropriate strategies.

7.5 Advocacy and political engagement

Targeted political engagement is critical to the expansion of PBV. FIP should assist national associations in crafting compelling, evidence-based advocacy messages targeted at key stakeholders such as public health authorities, ministries, and community leaders.

Furthermore, past collaborative successes, such as those seen during the COVID-19 pandemic, can serve as models for structured and coordinated policy engagement. FIP's support in framing these success stories for advocacy use can make a measurable difference in how PBV is perceived at the national level.

"FIP at the international level could liaise more with advocacy groups like the International Alliance for Patient Organizations, or specific patient groups that may have more interest in this area" - Portugal

7.6 Training and competency programmes

FIP should promote a shift towards a competency-based standard of care approach for pharmacist-led vaccination, encouraging countries to move beyond overly prescriptive regulations such as fixed age limits or vaccine-specific authorisations. To support this transition, FIP can develop guidance and templates for documenting consistent training, education, and experience among pharmacy professionals. This will help national stakeholders demonstrate readiness and competence, strengthen regulatory advocacy, and support broader recognition of pharmacists and pharmacy technicians as qualified immunisation providers.

"It would help to have clear documentation of pharmacists' and technicians' consistent training, education, and experience—so we can demonstrate we are competent and ready for these authorisations." - USA

7.7 Vaccine misinformation and vaccine hesitancy

FIP should develop and disseminate strategic guidance for pharmacists on effectively addressing vaccine hesitancy and misinformation in their communities. Building on insights from member discussions, this guidance should include evidence-based communication techniques, culturally sensitive messaging strategies, and practical tools that pharmacy teams can use to build public trust and promote informed vaccine decisions. Equipping pharmacists with these resources will enhance their role as accessible, credible sources of information and support higher vaccination uptake through improved public engagement.

"Any strategy or guidance out there on how to communicate effectively and help reduce vaccine misinformation among the public, so we can promote higher vaccination uptake." - Australia

8 Conclusions

Pharmacist-led vaccination has become an increasingly important strategy in improving equitable access to immunisation services worldwide. Although the COVID-19 pandemic served as a catalyst for expanding the role of pharmacists in vaccine delivery, long-term success will depend on the extent to which governments and health systems address persistent structural barriers. These include the need for coherent legislative frameworks, fair and sustainable reimbursement models, interoperability of health data systems, robust workforce training, and effective interprofessional collaboration.

This analysis underscores the varied progress among countries in integrating pharmacy-based vaccination into routine care. While some nations have established comprehensive models, others continue to face challenges in legal authorisation, funding mechanisms, and digital infrastructure. Moreover, pharmacists must continue to advocate for their role within national immunisation strategies, engage meaningfully in health policy discussions, and uphold public confidence through accessible, evidence-based care.

As health systems transition from emergency responses to long-term public health strategies, pharmacist-led vaccination offers a scalable and effective means of increasing vaccine coverage, especially in underserved populations. Achieving this requires not only regulatory and financial support but also sustained investment in infrastructure and trust-building across the healthcare continuum. Where these elements are addressed, pharmacists will continue to play a central role in advancing public health goals.

At FIP, we will take on board these learnings in order to share amongst countries, as well as to track the progress of those already implementing PBV, to enable the FIP policy on life course immunisation globally.

9 References

1. Shen AK, Peterson A. The pharmacist and pharmacy have evolved to become more than the corner drugstore: a win for vaccinations and public health. Human Vaccines & Immunotherapeutics. 2020;16(5):1178-80. [Accessed: 25 July 2025]. Available at: https://dx.doi.org/10.1080/21645515.2019.1660119.
2. International Pharmaceutical Federation. Policy progress, stakeholder engagement and challenges in pharmacist-administered vaccination: Findings from FIP reports and literature: The Hague: International Pharmaceutical Federation; 2025. [Accessed: 25 July 2025]. Available at: https://www.fip.org/file/6208.

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