Strategies for expanding pharmacy-based vaccination

A policy toolkit for pharmacists

2025

FIP Development Goals

International Pharmaceutical Federation

Colophon

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1 Introduction

1.1 Why pharmacy-based vaccination matters: Global advocacy and rationale

Vaccination is a key public health intervention and a pillar of primary healthcare and universal health coverage. A successful life-course vaccination programme can improve the health of the whole population through both direct and indirect impacts, such as improving productivity, increasing healthy life expectancy and reducing long-term disability. There are now vaccines to prevent more than 30 life-threatening diseases and infections, helping people of all ages live longer, healthier lives. Immunisation currently prevents 3.5 million to 5 million deaths every year from diseases like diphtheria, tetanus, pertussis (whooping cough), influenza and measles.[1]

Vaccine-preventable diseases, such as seasonal influenza, pneumococcal disease, pertussis, and herpes zoster, continue to impose substantial health and economic burdens worldwide.[2-4] Seasonal influenza alone is responsible for up to 650,000 annual deaths globally and causes 3–5 million severe cases each year.[5] In the European Union, failure to meet influenza vaccination targets results in healthcare costs ranging from EUR 190 million to EUR 226 million per year.[6]

While immunisation is one of the most successful public health interventions, coverage has plateaued over the last decade. The COVID-19 pandemic, associated disruptions, and COVID-19 vaccination efforts strained health systems in 2020 and 2021, resulting in setbacks. For example, in 2024, DTP (diphtheria, tetanus toxoid and pertussis-containing vaccine) immunisation coverage was close to being back to 2019 levels.[7] This emphasises the need for urgent and sustained political attention and investment to strengthen immunisation programmes and protect the significant progress achieved in reducing child mortality over the past 50 years.

For several decades now, the delivery of vaccination services has been part of pharmacists' scope of practice or part of the range of services provided by community pharmacies in many countries. In that sense, pharmacy-based vaccination (PBV) can be classified as a "professional pharmacy service".[8] Pharmacists have contributed to vaccination strategies for increased access and uptake in many parts of the world, not only by educating the population and raising awareness about the benefits of vaccination, but also by dispensing, documenting, administering and/or prescribing vaccines to eligible individuals, in jurisdictions with supporting legislation and regulations.[9] However, in various parts of the world, there continues to exist scepticism from various stakeholders about the ability of pharmacists to deliver vaccination services.

Given their accessibility, qualifications, and experience in patient care management, pharmacists, particularly those employed in community pharmacies or primary care facilities, are poised to play a pivotal role in advancing global immunisation endeavours. Through this approach, they contribute to the efficient and resilient operation of the healthcare system and deliver value to patients.

There is growing acceptance of the expanded roles of pharmacists in delivering healthcare services, with significant proportions of the public expressing confidence in pharmacists' capabilities and reflecting an openness to use pharmacists for primary healthcare services. Several studies conducted in several countries not only highlight that public satisfaction with various aspects of PBV, such as scheduling, waiting time, information, hygiene, and safety, was very high but also suggest patients prefer pharmacies for this service, considering its professionalism, organisation, convenience and accessibility, extended hours, and shorter waiting times.[10]

Everyone, everywhere, has the right to the highest attainable standard of health, inclusive of vaccination. This is the fundamental premise of primary health care (PHC), leading to the realisation of universal health coverage.

Recognising the urgent need to improve vaccine uptake and address other gaps in vaccination, FIP has expanded its advocacy and policy efforts to advance pharmacists' roles in vaccination promotion and administration at global, regional, and national levels. FIP's work is grounded in the conviction that prevention is better than cure and that improving vaccination coverage through a life-course approach is a global imperative.

FIP's vaccination efforts align closely with global strategies such as the WHO Immunization Agenda 2030, which aims to leave no one behind in life-course immunisation.

In 2023, FIP released a statement of policy on the role of pharmacy in life-course vaccination. This statement underscored the importance of expanding vaccination schedules and strategies beyond infancy vaccination, as well as integrating pharmacists into patient immunisation pathways. Furthermore, the FIP disease prevention programme has a key element to enhance the role of pharmacists in improving vaccination coverage rates throughout the life course, aligning with the WHO's global imperative of leaving no one behind. We are committed to transforming vaccination by accelerating vaccine equity, access and sustainability through life-course immunisation.

Of 21 FIP Development Goals (DGs) launched in September 2020, vaccination primarily links to 17 goals which indicates the high priority vaccination holds, not only for pharmacy and FIP but also for pharmacy's role in global health. In particular, DG 16 on Communicable diseases, is overtly linked to the prevention of this group of diseases, in which vaccination plays a prominent role. This was followed by a complementary interactive atlas, a dynamic digital resource that highlights the significant findings and key insights from our comprehensive study on pharmacist-led immunisation.

FIP has built on nearly a decade of data collected through surveys to monitor and evaluate various aspects of pharmacist-led vaccination, including advocacy activities, regulatory frameworks, vaccine administration and prescribing, training and certification, access to vaccination records, and remuneration models, and identified barriers to expanding these services within pharmacy practice. By 2024, data from 117 countries was available, confirming that 56 countries currently have legislation in place enabling PBV.[10] This marks an important global momentum and also highlights how much opportunity remains to expand access and impact through pharmacist-led services.

1.2 Purpose of this toolkit

Incorporating vaccination services into pharmacy practice and service provision can help ease the burden on traditional immunisation providers, improve patient convenience, and enhance public adherence to vaccination schedules.

As countries seek to expand PBV, it is important to share lessons learned and evidence from diverse experiences in advancing pharmacists' roles. This applies both to countries that do not have PBV and are considering legislative change, and to those with PBV seeking to broaden pharmacists' scope or optimise implementation.

Drawing on data from FIP's vaccination surveillance and lessons across different country contexts and legislative stages, this toolkit provides practical strategies and policy options for expanding PBV at various levels of maturity and implementation.

Policy categorisation

Countries were grouped based on their legislative frameworks and pharmacist vaccination policies as follows:

a. Legislative framework:
    1. Countries without PBV legislation
b. Pharmacist vaccination policies:
    1. Countries where pharmacists administer vaccines – comprehensive vaccine offerings
    2. Countries where pharmacists administer vaccines – limited vaccine offerings
    3. Countries where pharmacists do not administer vaccines – ongoing policy discussions
    4. Countries where pharmacists do not administer vaccines – no legal framework.

Details of the categorisation of pharmacist vaccination policies are presented in Table 1, Chapter 2.

By applying this toolkit, countries will be able to:

1. Establish or update regulatory frameworks to enable pharmacists to administer and prescribe vaccinations.
2. Develop a skilled pharmaceutical workforce capable of providing vaccination services.
3. Bolster access, equity, and integration within national immunisation strategies.
4. Increase vaccine coverage, build public confidence, and enhance convenience.
5. Position pharmacists as essential contributors to national and global health goals.

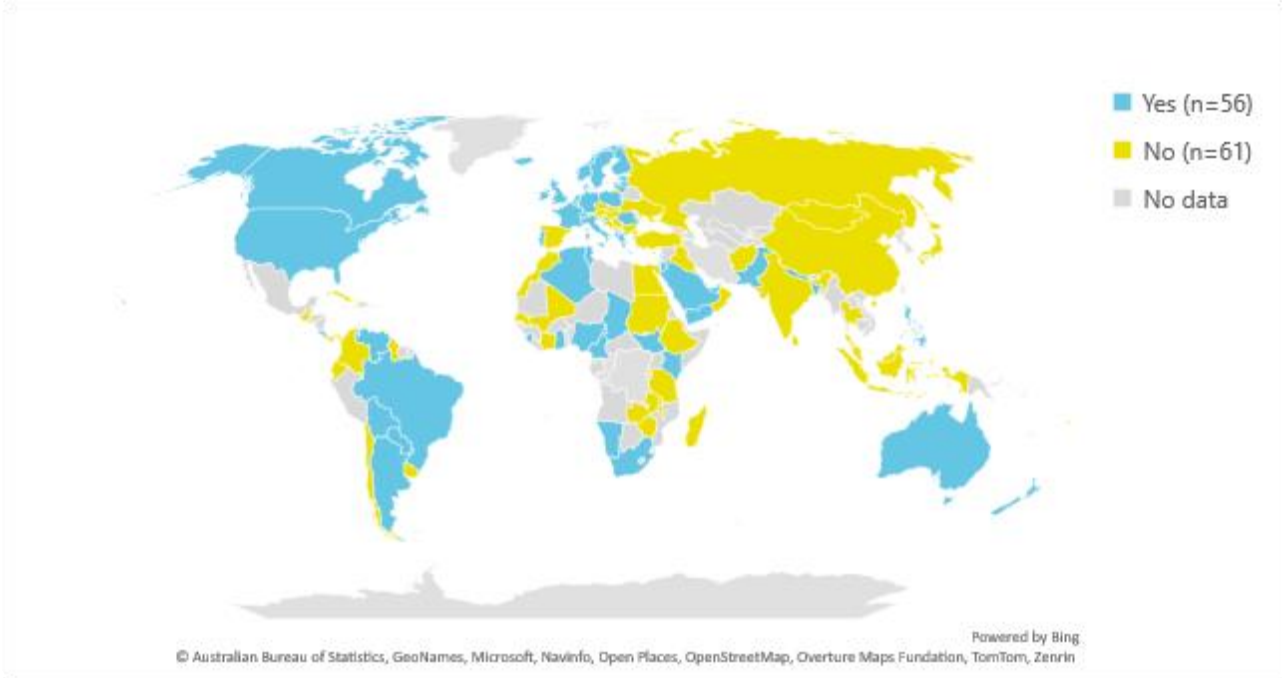
2 Policy and regulatory foundation

2.1 Administration and prescribing authority in PBV

According to the 2024 FIP global intelligence report, which surveyed 117 countries and territories, pharmacy-based vaccination (PBV) is available in 56 countries and territories.[10] This represents a remarkable increase of 22 countries in relation to data reported by FIP in 2020, which had identified 34 countries and territories with PBV. Singapore recently introduced a pilot PBV project that authorises pharmacists to administer influenza vaccines.[11] Furthermore, Ethiopia has just launched a pilot project to allow pharmacies to administer vaccines, a move that expands access by leveraging pharmacies as vaccination hubs.[12]

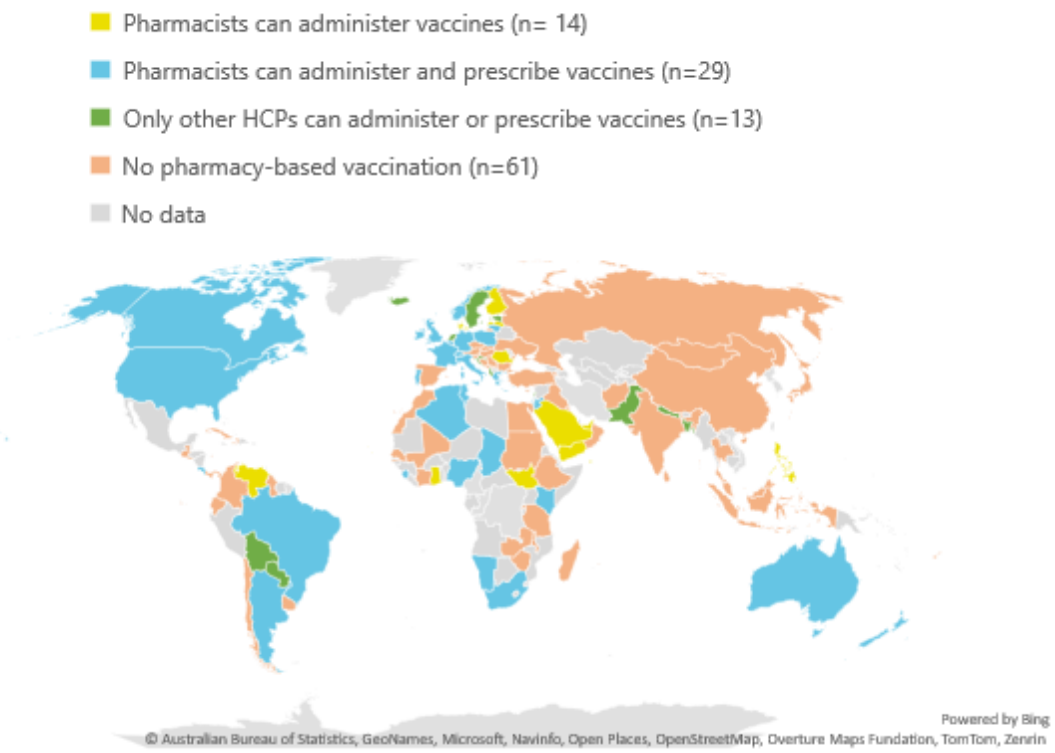
Despite this increase, 61 countries out of the 117 surveyed still do not offer PBV, which underscores ongoing regional and regulatory disparities that limit broader implementation. A geographic overview of countries with or without PBV legislation can be seen in Figure .

Figure 1: Countries with or without PBV legislation



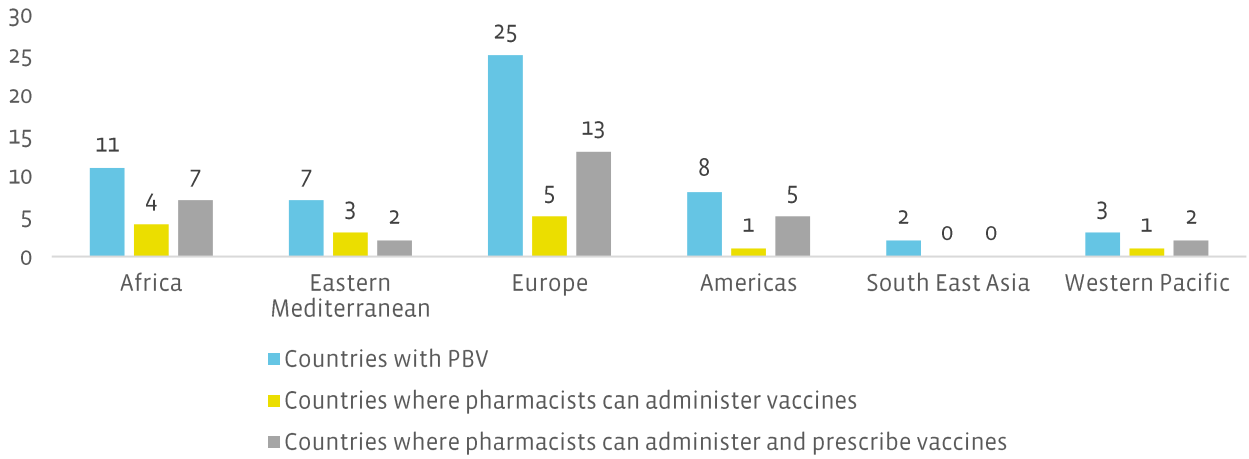
Among the 56 countries that have implemented PBV, 43 authorise pharmacists to administer vaccines, while in 13 countries, vaccines are administered by other healthcare professionals in pharmacies. Of the 43 countries, 29 allow both administration and prescribing of vaccines in pharmacies, while 14 countries allow administration only. The extent of pharmacists' authority also varies significantly, with some countries permitting both administration and prescription, while others limit involvement to specific vaccines, such as those for influenza or COVID-19. Prescribing authority is defined as the authorisation for pharmacists to administer or dispense vaccines without a medical prescription, taking on the responsibility of assessing vaccine eligibility for individuals.[10] The administration and prescribing authority across countries is illustrated in Figure 2.

Figure 1: Scope of administration and prescribing authority across countries



Regional disparities were evident in PBV implementation. The European region has the highest number of countries with PBV adoption, the African, Americas and Eastern Mediterranean regions show moderate PBV adoption, and the Western Pacific region has limited PBV implementation, with just three countries having legislation in place. In contrast, the Southeast Asian region has the lowest PBV implementation. Figure 3 illustrates these regional disparities in PBV implementation. Appendix 2 provides detailed information on administration and prescribing authority. More details on the possible causes of the regional disparities can be found in our report, Policy progress, stakeholder engagement and challenges in pharmacist-led vaccination - Findings from FIP reports and literature.

Figure 3: PBV legislation across regions and the scope of authorised vaccine providers



2.2 Policy developments in pharmacist-administered vaccination

This section presents countries that have reported ongoing policy changes, regulatory reforms, or advocacy efforts aimed at expanding pharmacist-based vaccination. While many countries have established PBV frameworks, policy evolution continues as governments refine regulations, expand pharmacists' immunisation roles, and address implementation challenges. The focus here is on jurisdictions with no regulatory reforms or those actively working toward legislative advancements, whether by increasing vaccine offerings or integrating pharmacists more deeply into national immunisation strategies. These developments span across three key groups: countries with a comprehensive range of pharmacist-administered vaccines seeking further expansion, those with limited vaccine offerings working to broaden their scope, and those where pharmacist-led vaccination remains under policy discussion.

Table 1 outlines the classification of countries into four categories based on the extent of pharmacist involvement in immunisation services.

1. Comprehensive vaccination programmes: Pharmacists administer a wide range of vaccines.
2. Limited vaccination programmes: Pharmacists administer a restricted selection of vaccines.
3. Under policy discussion: Pharmacist-led vaccination is being debated but not yet implemented.
4. No legal framework: Pharmacists are not authorised to administer vaccines.

Table 1: Classification of pharmacist-administered vaccination policies

Archetype	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, and those with pilot projects.	These countries are actively considering regulatory changes that would permit pharmacists to administer vaccines, with ongoing policy discussions and advocacy efforts.	Barbados, Croatia, Estonia, Ethiopia*, Hungary, Iceland**, India, Malta, Serbia, Singapore***, Slovenia, Tanzania, Turkey, 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, 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

*Ethiopia has introduced a pilot project for twelve vaccines in five regions from September 2025.
**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 influenza vaccination in three pharmacies as part of a trial service launched by the Ministry of Health on 28 October 2024.

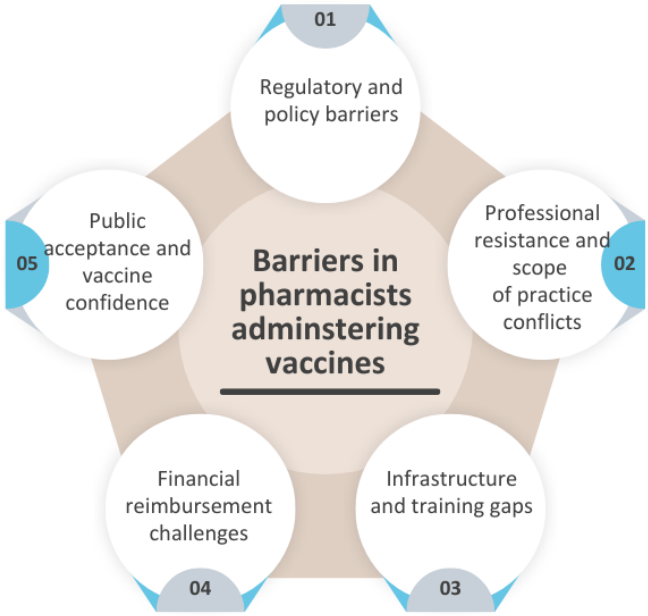
For this toolkit, countries with comprehensive vaccination programmes are used as model case studies and excluded from the scope of this toolkit.

2.3 Barriers to pharmacists administering vaccines

Although challenges vary depending on a country's policy environment and level of implementation, common obstacles emerge across different stages of development. For a structured analysis, these barriers can be categorised into five key areas (see Figure 2 for an overview):

1. **Regulatory and policy barriers**: Challenges related to the absence of clear legal frameworks, fragmented policies, and bureaucratic delays.
2. **Professional resistance and scope of practice conflicts**: Tensions between pharmacists and other healthcare professionals regarding roles and responsibilities in vaccination.
3. **Infrastructure and training gaps**: Limitations in training opportunities, vaccination facilities, and integration with national health systems.
4. **Financial and reimbursement challenges**: Inequitable or unclear payment models and low compensation for vaccination services.
5. **Public acceptance and vaccine confidence**: Barriers linked to vaccine hesitancy, misinformation, and low awareness of pharmacists' roles in vaccination.

Figure 2: Barriers in pharmacists administering vaccines



3 Advocacy and stakeholder engagement

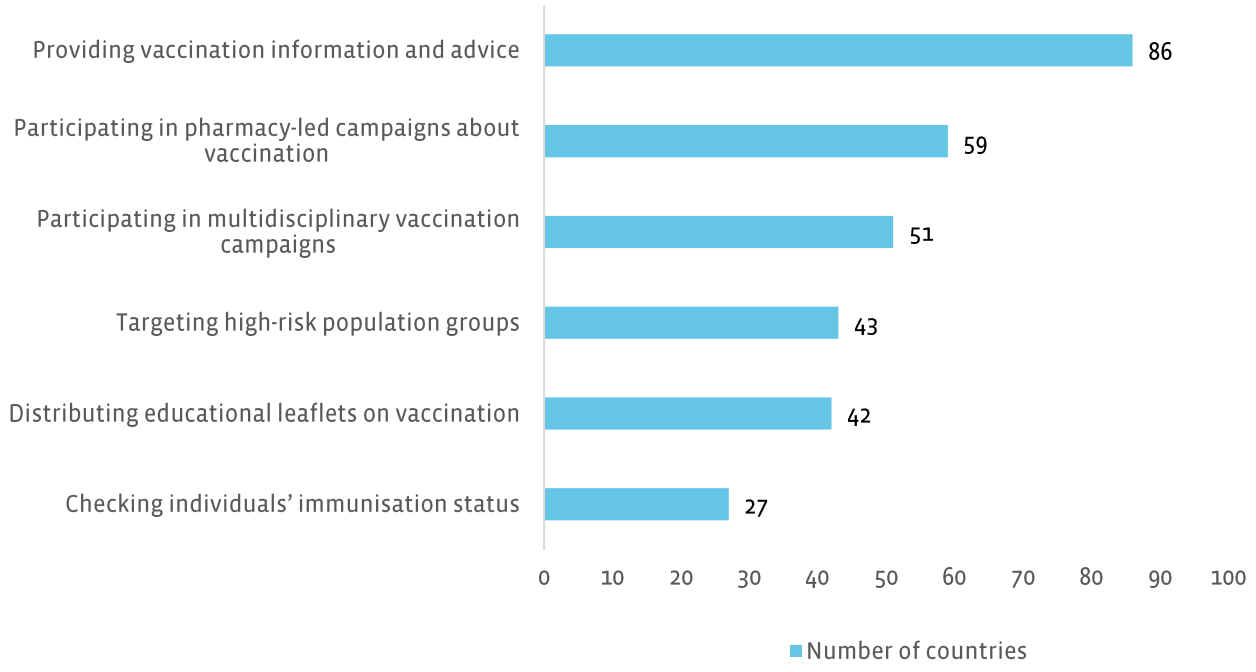
Improving vaccination access and coverage is a global imperative, and pharmacists can contribute to this goal through a multitude of roles. However, any advocacy strategy aiming to achieve an expanded role for pharmacists in this area at country level needs to be grounded in an in-depth understanding of the needs at country level with regards to vaccination services, as well as the requirements, resources (workforce, infrastructure, financial, etc), support systems, stakeholders and various other elements that need to be considered to design a successful and meaningful strategy.[13]

3.1 Advocacy activities in community pharmacies

Remarkable progress is evident from our data, as more countries and territories have engaged in support and advocacy activities that promote pharmacy-based vaccination (PBV), leading to a notable increase in the availability of this service globally.[10]

As shown in Figure 4, community pharmacists play a crucial role in vaccination efforts, with vaccination information and advice being the most frequently reported activity, conducted in 86 countries (78.9%). This highlights their role in educating the public, addressing vaccine hesitancy, and dispelling misinformation. By offering guidance, community pharmacists help individuals make informed decisions about their vaccination. Furthermore, they are involved in activities that improve vaccine reach in diverse populations, particularly those who may not regularly engage with traditional healthcare providers, and collaboration between healthcare professionals to enhance immunisation efforts. Additionally, it is important to promote initiatives that highlight the role of pharmacists in increasing vaccination coverage rates and advocate for seed or grant funds to support practice implementation.

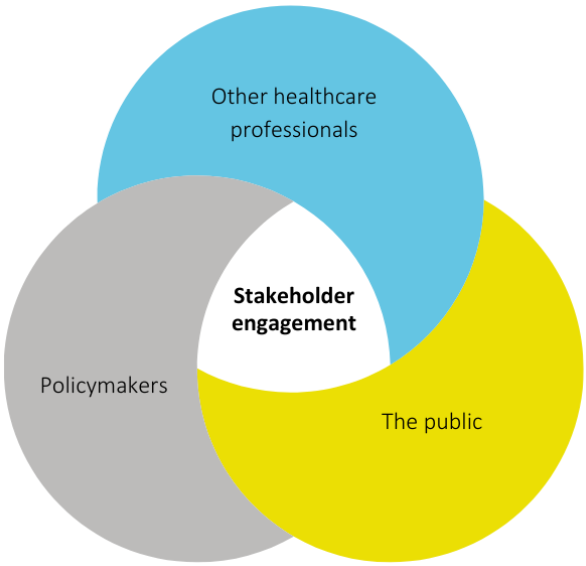
Figure 3: Vaccination advocacy activities in community pharmacies[10]



3.2 Stakeholder engagement

As shown in Figure 5, stakeholders, including health professionals, policymakers and the public, all play crucial roles in introducing and expanding pharmacist-administered vaccination. Efforts have been made to address challenges, enhance education and training, and build supportive environments for PBV implementation. Health professionals have collaborated with pharmacists and contributed to education and training initiatives. Advocacy strategies and evidence-based approaches have been employed to engage policymakers, while educational campaigns have been used to foster public acceptance and increase demand for PBV services. PBV should complement, not compete with, other healthcare providers.

Figure 4: Stakeholder engagement in introducing and expanding pharmacist-administered vaccination



3.2.1 Health professionals

A perceived or effective lack of support and recognition from governmental bodies and other healthcare professions to pharmacist-delivered vaccinations is frequent in countries, both where PBV is present or where it is absent. This suggests a need for enhanced advocacy to educate stakeholders on the benefits of involving pharmacists in vaccination efforts and establishing productive interprofessional relationships.

PBV should complement, not compete with, other healthcare providers. Therefore, early engagement with physicians, nurses, and public health authorities reduces resistance and fosters teamwork. Consider high-quality postgraduate education, often in collaboration with medical professionals, to maintain safety and competency standards.

3.2.2 Policymakers

Policymakers influence PBV legislation through advocacy strategies and by reviewing supporting evidence that demonstrates the benefits and safety of vaccination services in pharmacies. At the political level, it is also relevant to identify not only the stakeholders in the current governmental and regulatory bodies, but also those in political parties, as well as other governmental areas that may play significant roles in the decision-making and technical process in the field of vaccination. These may include, but are not limited to:[13]

- The Ministry of Health and key staff within it;
- Sub-national, regional or local government or departments with a role in vaccination, such as municipalities and regional administrations for health;
- The Ministry of Finance, regarding funding decisions;
- Community pharmacy regulators;
- Chief Pharmaceutical Officers or their equivalent;

- Governmental health administration bodies, such as the High Authority for Health, the Health Department, or the General Directorate for Health);
- The National Immunisation Technical Advisory Group (NITAG);
- Health committees in relevant legislative bodies, such as the Senate and Parliament;
- Party leaders and committees responsible for the health programme.

From the FIP statement of policy on the role of pharmacy in life-course vaccination, key recommendations that can be given to policymakers include:

- Develop formal vaccination schedules that support life-course immunisation;
- Recognise, enable and fully harness the potential and convenience of community and hospital pharmacies;
- Develop country-appropriate policies and remove regulatory barriers;
- Adopt new vaccination policies which will authorise and empower pharmacists to administer and prescribe vaccines;
- Develop appropriate remuneration models for pharmacies to deliver sustainable life-course vaccination services within the private and public sector;
- Ensure health system preparedness and readiness for mass immunisation;
- Include pharmacists and other pharmacy workforce in emergency preparedness and response plans as frontline health workers;
- Establish effective immunisation information systems accessible to healthcare professionals.

Additional FIP vaccination advocacy and policy resources can help navigate engagement with policy makers.

3.2.3 The public

In many countries, access to healthcare facilities is an intricate process due to several factors, such as distance, opening hours, waiting times and waiting lists, loss of hours of productivity, and high costs. For these reasons, the public generally values proximity and convenience with regard to healthcare services, which constitutes an opportunity for community pharmacies to increasingly play the role of a primary healthcare provider, namely in terms of vaccination services.[13] The public influences PBV legislation through their acceptance and demand for vaccination services in pharmacies, often driven by educational campaigns that raise awareness and build confidence in pharmacists' roles in vaccination, as highlighted in Figure 6. Pharmacists play a key role in addressing vaccine hesitancy. Public education campaigns should highlight the convenience and safety of PBV. Hesitancy and misinformation continue to rise due to many factors which hinder efforts.

To effectively navigate communication around vaccine misinformation, pharmacists are urged to adopt evidence-based communication strategies in building vaccine confidence and overcoming hesitancy, such as the ASPIRE framework. ASPIRE is a six-step approach designed to guide pharmacists to foster open, empathetic conversations that build trust and empower patients to make informed decisions.[14] Furthermore, the "Acknowledge, Bridge, Communicate" framework (**Error! Reference source not found.**) can be used to provide the correct information regarding vaccinations, while maintaining a positive attitude towards the individual and maximising the impact of the information content.[15] Building vaccine confidence and communicating vaccine value: A toolkit for pharmacists provides more guidelines on promoting vaccine confidence in communities.

Key guidelines to engage the public:

- Empower pharmacists to combat vaccine hesitancy through targeted communication strategies;
- Leverage educational campaigns using leaflets, media, and surveys to inform the public about pharmacists' role in vaccination and address misconceptions;
- Conduct targeted education initiatives to improve understanding of pharmacists' roles in immunisation and dispel vaccine hesitancy;
- Highlighting pharmacists' expertise through trust-building initiatives (i.e., community outreach and mobile vaccination units);
- Data-driven public engagement strategies.

Table 2. "Acknowledge, Bridge, Communicate" framework[15]

Reasons not to vaccinate	Acknowledge	Bridge	Communicate
"Vaccines contain mercury"	That is not fully correct	More accurately	The mercury-based preservative thimerosal, once used to prevent bacterial and fungal contaminations, is no longer used in children's vaccines, except for some types of influenza vaccination. The WHO has also concluded that the amount and form of mercury in thiomersal-containing vaccines does not pose a cumulative risk of toxicity.
"Vaccines cause disease"	That's not quite right	Let me explain	Most vaccines cannot cause disease because they do not contain any living virus or bacteria. There are some vaccines that contain weakened live bacteria or virus, but even these have not been described to cause the full onset of a disease, but on very rare occasions, a weaker form of disease with mild symptoms.
"Polio is no longer an issue in this country"	That is not what I know	What I do know is	That reductions in vaccination rates can lead to infectious diseases returning: maintaining high vaccination rates prevents infectious diseases from spreading and protects those still susceptible through herd immunity.
"Vaccines cause autism"	There is no evidence for that	What data show is	That there is extensive evidence that vaccines are not linked to increased incidence of autism.
"No one in my son's school had this disease"	That's true	But the real point is	That it likely happened because most children were vaccinated, and the few who could not be immunised were therefore protected through herd immunity.

Figure 6: Vaccine information and advocacy campaigns delivered by pharmacy professional organisations

Portugal

France

Canada

Costa Rica

3.3 Additional tools and resources

- FIP global vaccination advocacy toolkit - Supporting and expanding immunisation coverage through pharmacists
- Achieving pharmacy-based vaccination: Advocacy strategies and stakeholder engagement
- Guidelines for pharmacy-based immunization advocacy and administration
- UNICEF advocacy toolkit
- The Democracy Center – Advocacy resources
- Communication toolkit on immunisation: how to increase immunisation uptake [Internet]. European Centre for Disease Prevention and Control. Available from: https://ecdc.europa.eu/en/publications-data/communication-toolkit-immunisation-how-increase-immunisation-uptake
- Patient education [Internet]. Centers for Disease Control and Prevention. Available from: https://www.cdc.gov/vaccines/resources/
- FIP "Let's talk about vaccines!" Campaign

4 Pathways to expanded pharmacy-based vaccination (PBV)

4.1 Countries with no PBV

Countries with no pharmacist-administered vaccination policies in place can follow the guidance in this section for progress.

Table 3: Countries responding to the FIP 2024 intelligence, characterised by no pharmacist-administered vaccination policies[10]

Archetype	Countries that have replied to the survey (n=71)
Countries where pharmacists are not authorised to administer vaccines, with no clear legal framework in place (n=30)	Albania, Austria, Bangladesh, Bosnia & Herzegovina, Bulgaria, China, China Taiwan, Colombia, Congo (Dem. Rep. of the), Cyprus, Ecuador, Guyana, Hong Kong SAR (China), Indonesia, Japan, Kosovo, Lebanon, Malawi, Malaysia, Mongolia, Montenegro, Morocco, Nepal, Netherlands, Paraguay, Russian Federation, Spain, Sri Lanka, Sweden, Ukraine

4.1.1 Collect the data and analyse the situation

The first important strategy is to increase the involvement of pharmacies in vaccine implementation by motivating pharmacists, as a profession, to engage in the activity.[16] The unified approach of engaging the profession in order to understand their perceptions of PBV and assess their willingness and commitment to change the social context to maximise acceptance is necessary to provide the momentum and political will to overcome barriers, particularly the need for a change to existing legislation. We advise collecting data on:

- Available national vaccination policies and regulations, and pharmacy laws
- National immunisation frameworks
- Workforce readiness
- Public perception and need for service
- Funding models and sustainability of service
- Success stories of other countries.

Regulatory changes require ongoing, in-depth engagement of advocacy groups, associations of industries and groups with allied interests, such as national member organisations, with political and regulatory decision-makers. This will also require ongoing and deep engagement with, and support to, the pharmacist workforce to upskill and build professional capacity.

4.1.2 Develop amendments to regulations or legislation

The regulatory situation of the country must be assessed to identify which dispositions of the law or regulation need to be changed or adapted, in terms of the description of scope and the modalities of practice, to allow the service to be implemented. We also recommend establishing an official list of vaccines as part of the national vaccination schedule. New requirements may need to be laid down if vaccination services were not previously provided in pharmacies, in the interests of public health, such as technical details on the ordering, storage and dispensation of vaccine products, management of staff and vaccination schedules, and facilities required to ensure patient privacy on the premises. These requirements need to be enshrined in the law and/or regulations, with guidelines for practical implementation by the profession.[16]

It is preferable to have open discussions about the exact modalities for implementing vaccine strategies in pharmacies with other healthcare professionals and key stakeholders. We recommend establishing partnerships with medical professionals to clarify roles and reduce resistance, and clarifying role definitions and shared immunisation protocols. The objective is complementarity between healthcare professionals, for the benefit of the population, by improving access to adult vaccination, thus expanding possibilities to reach a broader audience and ensure wider availability of vaccines for the public.[16]

4.1.3 Plan and implement pilot PBV projects

We advise developing a plan for a pilot project involving stakeholder collaboration, including national health ministries, non-governmental organisations (NGOs), and health insurers. A flawlessly conceptualised pilot design can still fail due to implementation challenges or unexpected barriers. Therefore, it is necessary to take into account possible contextual factors, the intended engagement and experience from the programme, pilot sites, selection of appropriate evaluation methods and performance measures, and building in continuous feedback loops. Consider what type of vaccines will be offered, the competencies of the pharmacy workforce, and other logistical considerations. Pilot projects should aim to collect 'evidence of promise'.[17] These are early signs that the programme, or a specific intervention or 'treatment' within it, is effective.

4.1.4 Document, evaluate, and scale-up pilot projects

Generating evidence of the efficacy of pharmacy-based implementation of vaccine strategies is crucial to maintaining motivation among the profession and providing a rationale that policymakers can use to justify wider implementation. Documenting is vital to establishing a precedent for other regions within the same country or for other countries to follow.[16]

As pilots often involve ongoing learning and adjustments to the process, view the monitoring and evaluation plan as a living document that can be adapted to changing circumstances, decisions or emerging new questions. To create such data, it is ideal to start with a small group of motivated, engaged pharmacists and work in collaboration with academics or other partners to assess implementation and effectiveness using validated performance measures such as RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) and PRISM (Practical Implementation Sustainability Model) Framework, or the DHIS2 system. This will help build a robust evidence base of expanded coverage, increased patient satisfaction, and proof that PBV has led to improved access, reaching new populations that had not previously received a vaccine.

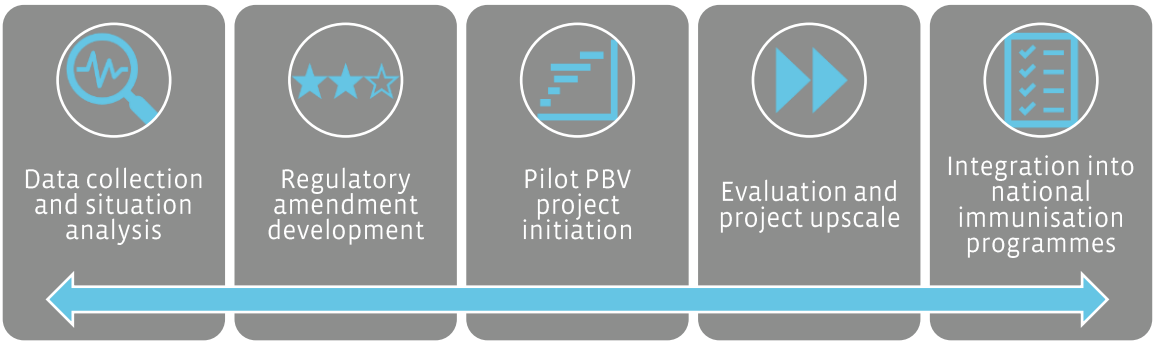
Evidence will help to consolidate the service and support advocacy for remuneration at a regional and national level, which is important for sustainability. Continuous ongoing data collection and audits should also be planned to ensure quality tracking of outcomes and impact.

4.1.5 Integrate PBV into national immunisation policies

Strong disease surveillance and immunisation programmes are integral components of primary health care and are essential for raising immunity, reducing the risk of disease and preventing morbidity and mortality.[18] The usefulness of the monitoring and evaluation findings is dependent on effective communication with the relevant audiences, for example, at national health summits, health professional organisation conferences, and other stakeholder meetings. To ensure that PBV, whose function is essential for shared disease-prevention goals—vaccine-preventable disease surveillance, strong immunisation services, and outbreak responses—is sustainably integrated into national immunisation programmes, we should seek to align national and regional policies to standardise vaccination practices across jurisdictions. Furthermore, we recommend capitalising on how PBV can boost immunity quickly in targeted populations and lobbying for the inclusion of pharmacists in national immunisation strategies and vaccination planning.

The mixture and balance of a strong disease surveillance and PBV depends on the epidemiology of the vaccine-preventable disease, the context and the ability of health systems to deliver vaccines to those who need them most.

Figure 7: Stages to progress from no PBV legislation to initial advocacy or emerging PBV practice



4.2 Countries with limited PBV scope

A phased approach, for example, starting with influenza vaccinations and expanding, can help manage risks and gain stakeholder support. However, once support and confidence have grown, pharmacists must have broader authorities so that their expertise and access can be fully leveraged for wider uptake. Table 4 below shows countries with limited pharmacist-administered vaccination policies who would benefit from following the guidance in this section for progress.

Table 4: Countries responding to the FIP 2024 intelligence survey categorised by limited pharmacist involvement in vaccination

Archetype	Countries that have replied to the survey (n=71)
Countries where pharmacist-led vaccination is under policy discussion but not yet implemented, and those with pilot projects (n=10)	Croatia, Estonia, Ethiopia**, Hungary, Iceland*, India, Malta, Serbia, Singapore**, Slovenia, Turkey, Uruguay
Countries where pharmacists administer a limited range of vaccines (n=21)	Belgium, Cameroon, Cape Verde, Costa Rica, Denmark, Finland, Germany, Ghana, Ireland, Israel, Italy, Jordan, Lithuania, Namibia, Nigeria, Philippines, Romania, Sierra Leone, South Sudan, Tunisia, Yemen

**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.*
***Ethiopia and Singapore did not respond to the 2024 survey; however, they now have an ongoing PBV pilot project.*

4.2.1 Review existing PBV policies

We advise assessing existing policies and developing clear and comprehensive legal frameworks that authorise pharmacists to vaccinate. Furthermore, it is important to engage with policymakers and health authorities to develop supportive legislation. Offering solutions to health regulators and policy teams to achieve their goals and targets will be helpful. Guidance from section 4.1.2 also applies here.

4.2.2 Generate evidence and expand the pilot project

The pilot project data can be used to highlight the impact of pharmacist-administered vaccines on immunisation rates and public health outcomes. We recommend starting with high-priority vaccines (e.g., influenza, COVID-19), then broaden to other routine and travel vaccines based on public health needs. Expanding in phases ensures smooth implementation. Implementing national protocol-style arrangements to expand the vaccinator workforce in emergencies is also advised. For example, in Ireland, where legislation allows pharmacists to administer COVID-19 vaccines and provide flu/COVID-19 vaccinations outside of pharmacy premises, including homes, workplaces, and other sites.[19]

In countries that have a federal governmental structure, or other forms of regional decentralisation of healthcare provision, internal regulatory diversity is an added challenge, since the laws or regulations need to be changed in each province, region or state.[16] In addition, the scope given to pharmacists in terms of vaccination implementation may differ between jurisdictional entities. Nonetheless, evidence shows that when one or several regions successfully initiate the service and collect evidence in support of its efficacy, then, through a domino effect, other regions often follow suit, as reported by studies of the Canadian experience.[20,21]

4.2.3 Implement accreditation and competency frameworks

It is important to develop the necessary competence within the profession to ensure that if either the lobbying is successful or upon successful expansion, pharmacists will be sufficient in number and adequately trained to implement the service and manage any complications.[16] This will require defining suitable learning objectives in line with the services planned to be expanded. This includes, but is not limited to, assessing the person's vaccination status, advising on appropriate vaccinations considering the person's age and health status, prescribing and/or dispensing vaccines, administering vaccines, monitoring for complications, dealing with any emergency complications that may occur, and notifying and reporting adverse events. Incorporating immunisation-related competencies into pharmacy education and training will strengthen the professional argument for expanded scope. More details of this can be seen in Chapter 5.

4.2.4 Build sustainable financing models

We advise a well-structured funding model to ensure equitable access, financial sustainability, and effective long-term integration of PBV services into healthcare systems. It is necessary to consider the adopted PBV funding models across countries and account for barriers, which can include but are not limited to, lack of standardised reimbursement and funding models due to high dependence on national healthcare financing structures, budget constraints and competing healthcare priorities, physician resistance, and scope of practice limitations. Key evidence from successful countries and the pilot project on the direct cost savings from PBV (strengthened immunisation strategies, the effectiveness of pharmacist-led vaccination programmes in enhancing vaccine uptake and addressing healthcare disparities, and mechanisms of these cost-savings) and indirect cost savings such as productivity losses and reducing the burden on non-communicable diseases (NCDs), will be essential in driving policy reforms.

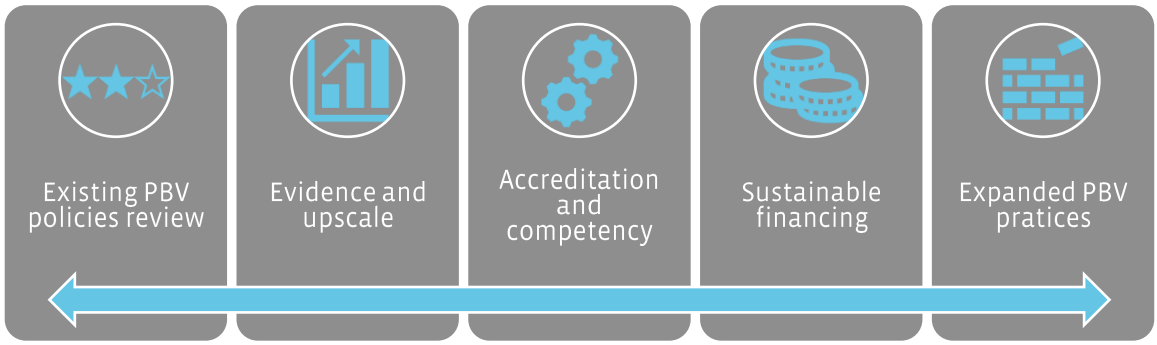
4.2.5 Institutionalise expanded PBV practices

Following on from the above steps, gradual policy implementation can be commenced to expand vaccine scope (e.g., implementing new policies, starting with influenza and COVID-19 vaccines, or moving on to administration and prescription of a broader range of vaccines). Collaboration with health systems and authorities, other healthcare professions, and education and training institutions is required to integrate community pharmacists into national vaccination strategies, including communication campaigns, and reading and writing rights to immunisation registries.

Considering that an investment in training, equipment, and logistics is important even in countries where pharmacists can only administer influenza and/or COVID-19 vaccines, and this service is only provided for a short period during the year, expanding the range of vaccines that pharmacists can administer and spreading them throughout the year could drive and incentivise implementation. Also, some vaccines do not have a seasonality, but campaigning for their administration outside the respiratory vaccine season will reduce pressure during the winter season and spread the service throughout the year.

Expanding the benefits of vaccination to all age groups offers tremendous opportunities, but it will require major shifts in immunisation programmes.[18] We recommend making a case for policymakers to understand that as more vaccines become available for older age groups, new methods will be necessary to deliver integrated, people-centred health services. Programmes will also have to respond to significant global demographic shifts, and therefore, PBV should be leveraged and established as integrated delivery points of contact between immunisation and other public health interventions for different target age groups.

Figure 8: Stages to progress from a limited PBV scope to an institutionalised PBV practice



4.3 Additional tools and resources

1. Guide for evaluating pilot programmes
2. Guide for developing national immunisation policies in the WHO African Region
3. Situational analysis tool in Chapter 3 of FIP global vaccination advocacy toolkit - Supporting and expanding immunisation coverage through pharmacists
4. American Pharmacists Association My Vaccine Action Plan
5. ACT pharmacist vaccination standards [Internet]. Australian Capital Territory Government, Health Directorate. Available from: https://legislation.act.gov.au/di/2025-33/
6. Guidance on the provision of vaccination services by pharmacists in retail pharmacy businesses [Internet]. The Pharmaceutical Society of Ireland; 2019. Available from: https://www.thepsi.ie/gns/Pharmacy_Practice/practice-guidance/PharmacyServices/Vaccination_Service.aspx
7. Guidelines for conducting pharmacist-initiated and administered vaccination service within a New South Wales community pharmacy environment [Internet]. The Pharmacy Guild of Australia; 2021. Available from: https://www.psa.org.au/wp-content/uploads/2021/07/NSW-Pharmacist-Vaccination-Standards-1.pdf
8. Pharmacy-led vaccination services: Regulatory self-assessment and implementation tool

5 Workforce development

Ongoing investment in workforce development, supported by internationally recognised tools and accreditation programmes, is essential not only for maintaining high standards of practice and patient safety, but also for building a pharmacy workforce capable of driving innovation and equitable vaccine delivery worldwide. It is important to support pharmaceutical services in immunisation by implementing training, research, and documentation activities and establishing shared immunisation training programmes with physicians and nurses to build mutual understanding and trust.

Developing a competent and sustainable workforce is essential to the effective delivery and expansion of pharmacy-based vaccination services (PBV). As outlined in the FIP Regional challenges and enablers to leveraging pharmacists as vaccinators: Outcomes from a series of regional roundtables, vaccination programmes must be structured in a comprehensive framework that combines training, infrastructure, standard operating procedures, quality assurance systems, and continuous evaluation.

A robust vaccination programme should include, but is not limited to, the following key elements:[22]

- Comprehensive training programmes
- Infrastructure and equipment requirements
- Written policies and operating procedures
- Appropriate vaccine storage and handling practices
- Patient assessment, screening, and education
- Documentation and reporting standards
- Safe vaccine disposal
- Continuing education and development to stay current with evolving guidelines and technologies
- Training for all pharmacy staff, including technicians who collaborate in vaccine delivery.

The workforce development approach reinforces collaborative, practice-based learning as a driver of quality vaccination services. Interprofessional education (IE), where pharmacists, physicians, and nurses learn and train together, has been repeatedly shown to build a shared understanding of vaccination roles, foster stronger communication, and promote coordinated, patient-centred service delivery. Recent evidence demonstrates that such collaborative training environments increase clinical confidence, accelerate skill acquisition, and facilitate effective problem-solving during vaccination campaigns.[15, 23]

5.1 FIP practical tools and resources to support workforce development

A diverse range of FIP-endorsed tools, resources, and initiatives are available to advance pharmacist workforce development in vaccination services. These resources include comprehensive training programmes, authoritative knowledge and reference guides, and targeted global campaigns, all designed to build essential competencies, ensure high standards of practice, and promote continuous learning.

Table 1 presents key FIP practical tools and resources that support the development of a competent, well-prepared pharmacy workforce in vaccination services. Each tool offers practical guidance, training access, and quality-assured learning opportunities tailored to different aspects of professional growth and public health engagement.

Table 5: Practical tools and resources to support workforce development

Practical tools and resources	Description/links

FIP Provision through partnerships	The FIP Provision Programme offers FIP members and the wider pharmacy profession with a curated library of quality learning opportunities that support pharmacist professional growth and development. It includes the FIP Seal for programmes, CPD Bites as concise learning videos, FIPx online courses, and Knowledge & Skills Reference Guides that define core pharmacy competencies. Together, these tools ensure consistent, relevant professional development, strengthening pharmacy education & training worldwide.
FIP Seal	The FIP Seal is awarded to programmes that meet FIP's criteria for quality CPD and alignment with the FIP Development Goals. It represents a mark of trust and excellence, fostering collaboration between CPD providers and FIP members to address evolving professional needs. To advance pharmacy-led vaccination, Seal-awarded courses are designed to strengthen competence in delivering safe, informed, and effective immunisation services globally. Examples of FIP Seal-approved courses include: ○ Pharmacy-Based Immunisation Delivery International Certificate Training Programme (American Pharmacists Association) – Standardised skills for safe immunisation delivery. ○ Vaccine and Injectable Medicines Administration (National Association of Pharmacies) – Practical training on administration, cold chain, and safety. ○ Impetus to Flu Vaccination Uptake (Omnicuris) – Strengthening influenza vaccination campaigns. ○ COVID-19 Education for Pharmacists (Immunize.io) – Video series on COVID-19 vaccines and communication. ○ Mpox and Vaccinology Training (AKSUMIA Global Learning Solutions) – Specialised training on emerging infectious diseases. These courses support global efforts to advance pharmacy-led immunisation and strengthen public health outcomes.
FIP Continuing professional development (CPD) Bites/videos	The FIP Continuing Professional Development (CPD) Bites are short, flexible video modules designed to support pharmacists' lifelong learning and practical skills in vaccination and public health. These concise, practice-oriented resources help pharmacists build confidence, deepen knowledge, and enhance their role in vaccine advocacy and disease prevention. Access all CPD Bites here: FIP CPD Bites Key FIP CPD bites series: Improving HPV-related cancers and diseases education among pharmacists: • Episode 1: Introduction to HPV and HPV-related diseases • Episode 2: HPV vaccination mechanism, effectiveness and safety • Episode 3: Identifying at-risk populations and overcoming barriers • HPV vaccine and HPV-related diseases: a communication guide Addressing vaccine fatigue, complacency, and confidence: • Episode 1: What can pharmacists in low- and middle-income countries do about adult vaccination mistrust? • Episode 2: What is vaccine complacency and fatigue and how can pharmacists address them among at-risk adults? • Episode 3: Identifying at-risk populations and overcoming barriers "Let's talk about vaccines!" campaign: • Episode 1: Pharmacists' roles in vaccination • Episode 2: Benefits of influenza vaccination in special populations • Episode 3: Benefits of pertussis vaccination These CPD Bites reflect FIP's commitment to empowering pharmacists with up-to-date knowledge, effective communication tools, and practical

	skills to strengthen global vaccination efforts and improve public health outcomes.
FIP Knowledge and Skills Reference Guide	The FIP Knowledge and Skills Reference Guide for Professional Development in Vaccination Services (2025) provides clear and structured guidance on the essential knowledge and skills pharmacists need for effective vaccination practice. It outlines key domains including vaccine science, administration, patient care, safety, regulatory compliance, digital health, and vaccine hesitancy. This concise framework supports pharmacists at all career stages, as well as educators, students, and regulators, by aligning with professional standards and certification requirements. It serves as a foundation for designing education and CPD programmes, ensuring pharmacists are equipped to deliver safe, informed, and effective vaccination services worldwide.

5.2 Additional tools and resources

In addition to FIP's practical tools, several global and national resources provide valuable guidance to enhance immunisation training, policy development, and professional accreditation for pharmacists. These resources offer evidence-based education materials, regulatory standards, and best practice models that support the advancement of pharmacists' roles in vaccination delivery and integration within public health systems. The following list highlights key open-access platforms and reference sources from international and governmental organisations that complement FIP-led initiatives.

- Immunisation education & training [Internet]. Centers for Disease Control and Prevention. Available from: https://www.cdc.gov/immunization-training/hcp/index.html
- Immunisation, vaccines and biologicals [Internet]. Geneva: World Health Organization. Available from: https://www.who.int/immunization/en
- Standards for the accreditation of programmes to support pharmacist administration of vaccines [Internet]. Australian Pharmacy Council. Available from: https://www.pharmacycouncil.org.au/resources/standards-to-support-administration-of-vaccines/
- Pharmacist initiation and administration of vaccines [Internet]. New South Wales Government, Department of Health. Available from: https://www.health.nsw.gov.au/pharmaceutical/pharmacists/Pages/pharmacist-vaccinations.aspx

Expanding pharmacists' roles in vaccination is essential to increasing coverage, enhancing public health, and meeting global health needs. Through continuous education and collaborative training programmes, pharmacists are empowered to provide safe, effective, and accessible immunisation services in diverse settings worldwide. This approach upholds high standards of practice, fosters ongoing professional development, and builds a resilient, adaptable pharmacy workforce equipped to address current and future vaccination challenges.

6 Financing and sustainability

The existence and scalability of pharmacy-based vaccination (PBV) services rely on financing models that are consistent, adaptable, and tailored to the specific context of each country. The administration of vaccines undeniably represents an extra workload for pharmacists, and adequate compensation should be provided to all immunisers. Establishing robust funding mechanisms ensures that pharmacies have the resources necessary to maintain operations, cover vaccine and operational costs, and deliver services efficiently. Effective funding mechanisms and appropriate remuneration are critical policy levers that directly influence pharmacists' capacity to provide these essential public health services, ensuring equitable access and the ability to expand services over time.

Some vaccines may be covered by national health systems, while others are not, and this may influence the choice of the vaccines that pharmacists are willing to provide. Ideally, reimbursement for pharmacy immunisation should be integrated into the national health system (if one exists) in the same way as for drugs that are dispensed there. This is a point that needs to be negotiated in every country, region or can-ton between relevant stakeholders, according to national structures for public and private healthcare coverage.[24]

6.1 Considerations for remuneration

When calculating the funding required to deliver a PBV service, there are several factors which must be considered if the service is to be successfully incentivised for the desired outcomes (in this case, improved vaccination coverage). Several aspects should be considered.[13]

6.1.1 Set up or annual costs

These will be the costs associated with planning for service delivery and regularly reviewing and improving the quality of provision, such as:

- Training costs for all staff involved, including the person administering the vaccine and all those involved in helping make the service a success.
- Development of processes or action plans: delivery of a clinical service such as vaccination should be based on a standard procedure (a standard operating procedure: SOP); planning this will help to make sure that the service is as safe and effective as possible.
- Suitable professional indemnity insurance should be in place. It is important to check with insurance providers before starting any new service.
- There should be a regular review of the service to improve quality and identify any areas of risk.
- Waste management: Vaccination services produce clinical waste, including contaminated sharps/needles, and these will require specialist disposal.
- Capital expenditure: New equipment may need to be purchased, such as chairs or IT systems to allow for recording.

6.1.2 Service delivery costs

These are the direct costs of delivering the vaccination service, such as:

- Staff time: This should include the person administering the vaccine and those involved in service delivery, for example those helping to explain the service to patients and staff who are recording information about the vaccination. Travel costs should also be considered if vaccination will be happening at different locations.
- Consumables: Items such as gloves, needles and syringes, dependent on the local requirements.
- Cost of the vaccine: This will sometimes be accounted for separately from the vaccination service due to the fluctuations of vaccine costs; doing this will help reduced the risk that price rises make the service cost prohibitive.
- Stock holding costs: Costs associated with holding stock such as storage space, refrigeration and finance costs.

- Administration time: Good record keeping is essential to allow for reporting, claiming from healthcare payers, and quality improvement.

6.1.3 Premises costs

Vaccination should be undertaken in a suitable environment, and the cost of premises and a suitable workspace must be considered.

These considerations will enable the estimation of the cost-of-service delivery. To provide an incentive for pharmacies to invest in a vaccination service, it is also important to provide a return on investment. An acceptable level of return will be specific to each area, but it must take into account the increased level of risk for pharmacies entering a new market or providing a new service.

6.2 Overview of sources of funding and remuneration models

Obtaining funding for PBV services often presents a challenge, despite PBV's proven benefits in improving vaccine coverage, enhancing equity, and strengthening public health systems. These services also significantly reduce the burden of infectious diseases, leading to a decreased economic strain on healthcare systems.

Remuneration models account for both the cost of vaccines and the operational expenses required for delivery, including storage, administration, handling, waste management, and pharmacy overheads. The FIP intelligence survey classifies the financing models for PBV into four primary categories based on who pays for the services, as shown in Table 6.[25] A hybrid approach for PBV funding has also been adopted in some countries.

Developing the country-specific financial models outlined in Table 6 is essential for scaling pharmacy-based vaccination effectively. Well-structured funding mechanisms and appropriate remuneration ensures that these services remain sustainable, increase population coverage, and reduce disparities in access. A mix of public and private insurance can further reinforce the sustainability of the service and strengthen pharmacies' commitment to providing vaccination services. These strategies strengthen public health outcomes and contribute to a more resilient and accessible immunisation system.

Table 6. Funding models for PBV services and its characteristics

Funding models	Advantages	Challenges
Public reimbursement (Government-funded or public insurance schemes)	• Minimises patient costs, improving vaccine uptake and equity • Ensures stable revenue for pharmacies through predictable reimbursement • Promotes nationwide consistency and inclusion in public health programmes	• Requires strong policy and budgetary support • May involve administrative delays in claims and payments • Sustainability depends on ongoing government commitment
Private reimbursement (Insurance company-funded or health care systems)	• Reduces out-of-pocket costs for insured populations • Encourages private-sector participation in vaccination delivery • Can complement public financing where coverage gaps exist	• Excludes uninsured or underinsured populations, risking inequity • Reimbursement rates and eligibility vary by insurer • Adds complexity for pharmacies managing multiple payer systems

Out-of-pocket payment (Patient-funded)	• Simple to administer; no need for insurance processing • Provides flexibility in pricing and service models • Immediate cash flow for pharmacies	• Creates financial barriers for low-income populations • Leads to inequitable access and lower vaccination rates • Not sustainable as a sole financing strategy for population-level coverage
Pharmacy-funded (Free of charge)	• Maximises accessibility and promotes goodwill and community trust • Useful for promotional campaigns or Corporate Social Responsibility (CSR) initiatives • Can increase overall footfall and visibility of pharmacy services	• Financially unsustainable long term without external funding • Depends heavily on pharmacy resources and cross-subsidisation • Limited scalability beyond short-term or small-scale efforts
Hybrid models (Combination of public, private, and patient payments)	• Shares financial burden across stakeholders • Allows flexibility to adapt to different socioeconomic contexts • Can balance equity with cost recovery	• Risk of fragmentation and inconsistency across regions • May still leave vulnerable groups uncovered • Requires careful coordination among funders and regulators

6.3 Strategies to enable the sustainability of pharmacy-based vaccination

Long-term sustainability is essential for pharmacy-based vaccination services to deliver consistent, equitable access to vaccines. Effective strategies help maintain service delivery, encourage pharmacist involvement, and expand coverage, ensuring that PBV programmes remain adaptable and resilient within national healthcare frameworks.

We advise leveraging the economic impacts of PBV to influence policymakers in your country to start, continue or expand investment in a comprehensive vaccination programme. This could require local adaptation using data available about the circumstances, particular to the challenges in your country or region. The FIP report '[Funding models, and economic and societal impact of pharmacy-based vaccination - Findings from FIP reports and literature]' provides substantial detail in this subject.

Table 7. Strategies for sustainable funding

Strategy	Action
Ensure equitable remuneration for pharmacists	• Develop standardised guidelines for reimbursement to incentivise pharmacy participation. • Compensate pharmacies at rates comparable to other members of the immunisation community (e.g., health plan-recognised providers such as physicians, nurse practitioners, or physician associates), ensuring payments cover full-service delivery costs. • Introduce financial incentives for pharmacists operating in underserved areas to address regional disparities in vaccine accessibility.
Diversify funding sources	• Utilise government funding, private insurance, employer-sponsored health plans, and patient out-of-pocket payments.

	• Explore international donor programmes and public-private partnerships (PPP) to supplement financing. • Implement hybrid models combining multiple sources to reduce financial risks.
Strengthen collaboration and partnerships	• Encourage partnerships among governments, insurers, pharmacy associations, and NGOs to co-finance PBV initiatives. • Establish public-private partnerships (PPP) to expand access and diversify funding streams. • Collaborate with private insurers to subsidise out-of-pocket costs for non-funded vaccines, making immunisation services affordable for patients.
Integrate PBV into policy and budget frameworks	• Recognise PBV as a complementary vaccination model within national immunisation and public health policies. • Integrate pharmacy services into public health funding schemes (e.g., NHS integration).
Monitor and evaluate programme sustainability	• Develop an electronic immunisation registry to track vaccination uptake, outcomes and financial performance of pharmacy programmes. • Adjust remuneration or funding models based on periodic evaluation and emerging challenges.

7 Service implementation, monitoring and integration

Expanding vaccination access through community pharmacies is a strategic approach to strengthening national immunisation coverage and promoting health equity to achieve universal health coverage. Empowering pharmacists to deliver vaccines enhances convenience, expands reach to underserved populations, and improves public trust in vaccination systems.

It is essential to ensure equity of access to the vaccines that are appropriate for each age or population group, and particularly for special at-risk groups who are vulnerable to the consequences of vaccine-preventable diseases, such as the elderly, people living with non-communicable diseases, and pregnant women.

As discussed, equitable access to vaccination through pharmacies depends on infrastructure readiness, resilient supply chains, digital data integration, and enabling regulatory frameworks. This section outlines a structured approach and practical checklist for policymakers and pharmacy leaders to establish or scale pharmacy-based vaccination (PBV) services that are inclusive, sustainable, and quality-assured.

7.1 Implementing pharmacy-based vaccination services

Expanding access to pharmacy-based vaccination requires services to be implemented systematically and sustainably. Establishing a clear operational and logistical framework ensures that vaccination programmes are safe, efficient, and capable of reaching a broad population. This framework, as shown in Table 8, includes service planning, workforce competency, infrastructure readiness, supply chain management, vaccine administration protocols, data recording, and continuous evaluation, forming the foundation for effective and equitable pharmacy-based vaccination delivery.[26]

Table 8: Operational and logistical framework for safe and efficient vaccination services

Implementation area	Policy requirements / checklist items
Service planning and model definition	• Identify the vaccination model (e.g., influenza, HPV, adult immunisation) based on local disease burden, population needs, and legal scope of pharmacy practice. • Conduct feasibility studies or pilot projects to assess workflow, capacity, and public acceptance. • Define funding, reimbursement, and procurement mechanisms aligned with national immunisation strategies. • Incorporate vaccination advocacy and public awareness activities to improve acceptance and demand, particularly in underserved or hesitant populations. • Mandate identification and prioritisation of vulnerable or special-risk populations, such as older adults, pregnant individuals, and rural residents.
Workforce competency and certification	• Mandate that all vaccinators complete accredited training programmes. • Require development and enforcement of SOPs for safe handling, storage, administration, and disposal of vaccines at all participating pharmacies. • Implement policies for regular skills updates and continuing professional development for staff involved in vaccination logistics, administration, and documentation.
Infrastructure readiness	• Require pharmacies to provide private, hygienic spaces that meet infection prevention and control standards. • Mandate the use of vaccine-grade refrigerators, calibrated thermometers, backup power systems, and continuous cold-chain monitoring. • Enforce secure segregation and disposal of biomedical waste in compliance with national biomedical waste regulations.
Vaccine supply chain and logistics	• Mandate inclusion of pharmacies in national vaccine distribution networks to ensure consistent availability. • Require standardised procedures for ordering, receiving, rotating, and documenting vaccines across all participating pharmacies.

	• Establish regulations for continuous monitoring of storage conditions, with mandatory temperature logging and alarms. • Enforce authorised sourcing.
Administration and safety standards	• Mandate national SOPs covering patient screening, informed consent, vaccine administration, and post-vaccination observation. • Require implementation of safety systems for preventing and reporting vaccine errors and adverse events. • Enforce preparedness standards, including compulsory emergency response protocols for anaphylaxis and other severe reactions.
Data recording and reporting	• Require all vaccination data to be documented using standardised electronic or paper-based systems compatible with national immunisation registries. • Enable secure, interoperable data exchange between pharmacies, healthcare providers, and public health authorities. • Establish national reporting mechanisms for adverse events following immunisation, aligned with pharmacovigilance and surveillance standards.
Evaluation and continuous improvement	• Implement policies to monitor and evaluate pharmacy-based vaccination services continuously. • Formal policy/SOP updates based on regular audits and feedback from service users and pharmacists.

7.2 Ensuring equitable access

7.2.1 Pharmacy infrastructure and logistics

Good pharmacy practice (GPP) is the practice of pharmacy that responds to the needs of the people who use pharmacists' services to provide optimal, evidence-based care. In the context of vaccination, GPP requirements serve to ensure safe, timely and effective immunisation. The following infrastructure requirements relate to the logistics and operational conditions for offering optimal vaccination services:[27]

- Pharmacies should have a suitable and comfortable room in compliance with the technical requirements for the administration of injectable medicines, including car parking space.
- This room should be sufficiently isolated to ensure confidentiality to address patient concerns and administer the vaccine with a level of privacy.
- Because vaccination services may require a considerable amount of time, including waiting time after receiving a vaccine to assess for any adverse effects, the waiting area should be sufficiently spacious for all patients to wait comfortably.
- Ensure vaccination services are conveniently located and available beyond standard healthcare hours.
- Pharmacies should have a system for record-keeping of vaccines administered, including patient details and other information about vaccines.
- Streamline procurement and distribution channels to ensure pharmacies have timely and efficient access to vaccines.
- Use data analytics to predict demand and manage vaccine distribution effectively.
- Connect pharmacies with immunisation registries and public health systems to improve data tracking and coordination. Ensuring that there is a process for an efficient real-time vaccine distribution is also critical; like Canada, consider leveraging the medication wholesale distribution for some vaccines in some jurisdictions, which should be expanded across the country.
- Implement a centralised logistics system, supported by pharmaceutical distributors, to ensure efficient vaccine delivery to pharmacies. This optimisation can improve operational workflows, enhance inventory control, and facilitate the transition of nationwide-provided vaccines to pharmacies.
- Simplify administrative procedures for pharmacies to reduce operational barriers to vaccination services.

7.2.2 Access to data and vaccination records

Vaccination services provided in pharmacies provide valuable data that is beneficial for strengthening national immunisation recording systems, tracking vaccination coverage rates and populations. Vaccination details should be carefully recorded, including at least the following elements:[15]

- Name of the patient, date of birth, and identification number;
- Name of the vaccine, brand, manufacturer, batch and expiration date;
- Professional identification of the person who administered the vaccine; and,
- Date, time, injection site and route of administration.

Self-reported vaccination history might not be sufficient or reliable enough for pharmacists to advance vaccination coverage alone.[15] It is essential for all primary healthcare professionals, including pharmacists, to have access to reliable data about the vaccines a patient has received, enabling them to advise the patient appropriately and take measures, such as providing vaccination or referring the patient to another provider.

Having access to immunisation documentation, including full access to vaccination records (reading), recording administered vaccines in a shared immunisation registry (writing), and reporting capabilities, will enable pharmacists to identify individuals who have not received recommended vaccines according to the national guidelines or who may require booster doses and prevent duplication of services. Collaborative and interoperable systems that facilitate the sharing of vaccination data between pharmacies and other healthcare providers will enable timely reporting of vaccination services entry and adverse effects, facilitate consultation on vaccination history, potentially reduce the risk of both under- and over-vaccination among patients, and ensure a people-centred health ecosystem.

Advocate for policies that:

1. Invest in interoperable digital infrastructure that includes pharmacies as frontline immunisers and core data contributors.
2. Enable real-time sharing of vaccination data between pharmacies, general practice, and national health systems.
3. Reduce administrative burden through digitised consent, scheduling, and reporting tools.
4. Use digital platforms for proactive patient identification and targeted outreach.
5. Ensure clear data governance that upholds privacy and addresses challenges such as resistance to change and any data safety concerns.

7.3 Monitoring and impact

An 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. Practice continuous monitoring through strong surveillance mechanisms and policy adaptation. Collecting data on vaccination rates, coverage improvements, and safety outcomes and being prepared to adjust policies based on real-world experience will enhance PBV effectiveness. In countries with a decentralised health care system, pharmacists likely manage their own immunisation programmes and there is no coordination through provincial or national vaccine registries. This can lead to gaps in tracking vaccination rates and outcomes, since there is no single national vaccine database. Therefore, contextual measures must be embraced to ensure efficient evaluation and quality assurance mechanisms.

7.4 Integration into health systems and governance

Policymakers, professional societies, and healthcare providers, including pharmacists, must collaborate to improve vaccine uptake and integrate immunisation into broader ageing and chronic disease strategies. Implementing all the steps and guidelines provided in this toolkit, alongside advocacy, will ensure service integration. Ultimately, this will contribute to the role of governmental support in ensuring statutory and

strategic inclusion of pharmacists in vaccine technical communities, mandated by national regulations, unequivocally eliminating any ambiguity as seen in Portugal and Malta.[28]

7.5 Additional tools and resources

- Checklist for safe vaccine storage and handling
- Vaccine storage and handling toolkit [Internet]. Centers for Disease Control and Prevention. Available from: https://www.cdc.gov/vaccines/hcp/storage-handling/
- FIP Vaccination handbook for pharmacists
- Quality improvement projects targeting immunization [Internet]. Centers for Disease Control and Prevention. Available from: https://www.cdc.gov/iqip/hcp/strategies/
- Guide and workbook for conducting a situation analysis of immunization programme performance

8 Learnings from other countries

8.1 For countries with no PBV

The case studies below highlight how different countries moved from no PBV legislation to initial advocacy or emerging practice of PBV. It also highlights other best practices to overcome some barriers mentioned in Section 2.3.

Italy - Addressing regional disparities through standardisation

This best practice addresses the following challenges:

- Professional resistance and scope of practice conflicts
- Regulatory and policy barriers

Italy's decentralised National Health System created inconsistencies in PBV implementation, as each of the 21 regional health authorities had different policies on whether and how pharmacists could administer vaccines. This led to fragmented implementation, where some regions fully incorporated pharmacists into immunisation programmes while others restricted their involvement. Additionally, physician scepticism about pharmacists' capability to safely administer vaccines further slowed PBV expansion.

To mitigate these challenges, Italy introduced a nationally standardised vaccination training programme for pharmacists, ensuring that all professionals underwent a 16-hour vaccination course, with annual competency updates. Some training sessions were conducted in collaboration with medical professionals, reinforcing confidence in pharmacists' skills and increasing physician support. Furthermore, in early 2024, legislative proposals were introduced to expand pharmacists' authority to administer all vaccines to individuals over 12 years old, ensuring a nationwide, standardised approach to PBV implementation.

Infrastructure challenges were also addressed through new pharmacy facility regulations, requiring pharmacies to establish dedicated vaccination areas and post-vaccination monitoring spaces. These initiatives helped reduce professional hesitancy, ensure regulatory consistency, and improve the safety and quality of pharmacy-based immunisation services. While legislative efforts to further expand PBV beyond influenza and COVID-19 are still ongoing, early evidence suggests that structured training programmes and infrastructure investments are paving the way for greater pharmacist involvement in immunisation.

Saudi Arabia - Developing a standards-based training programme for pharmacist vaccination

This best practice addresses the following challenges:

- Infrastructure and training gaps

During the COVID-19 pandemic, Saudi Arabia took decisive steps to expand the role of pharmacists in immunisation efforts. Recognising the critical need for accessible vaccination services, the Saudi Ministry of Health collaborated with key regulatory bodies, including the Saudi Society of Clinical Pharmacy, to pass a rule allowing pharmacists to vaccinate.

To ensure safe and effective vaccine delivery, a dedicated team developed an education and training programme for pharmacists, aligned with international standards from the Centers for Disease Control and Prevention (USA) and its Advisory Committee on Immunization Practices. This programme included workshops to educate pharmacists on scientific content related to vaccination, as well as compliance with regulations and best practices. Despite the challenges posed by the pandemic, the programme was finalised and endorsed by Saudi Arabia's Commission for Healthcare Specialties, validating its educational material.

Pharmacists can now access this course online and, upon completion, must pass an examination to obtain the accreditation required for vaccination services.

Sweden - Leveraging data-driven public engagement to improve PBV success

This best practice addresses the following challenges:

- Public acceptance and vaccine confidence
- Infrastructure and training gaps

Sweden has made significant progress in enhancing vaccine access through pharmacy-based immunisation services, even though pharmacists do not administer vaccines themselves. Instead, other healthcare professionals, such as nurses and physicians, provide vaccinations within pharmacy settings, ensuring that pharmacies remain key immunisation access points for the public.

One of the primary challenges in Sweden was ensuring equitable vaccine access, particularly in remote and underserved areas. Additionally, public confidence in vaccines fluctuated, requiring targeted educational strategies to address hesitancy and misinformation. While pharmacies were well-positioned to increase vaccine outreach, their role was initially limited due to policy restrictions on pharmacist-administered vaccinations.

To strengthen pharmacy-based immunisation efforts, Sweden implemented several key strategies. The country leveraged AI-driven tools to track vaccination coverage gaps and identify populations at risk, allowing pharmacies to serve as strategic touchpoints for vaccine education and referrals. Mobile vaccination units staffed by nurses were deployed in rural areas, often in collaboration with community pharmacies, ensuring that vaccines reached populations with limited healthcare access. Additionally, Sweden utilised the WHO's 3C Model (confidence, complacency, convenience) to develop public awareness campaigns, encouraging informed vaccine decision-making.

Through effective collaboration between pharmacies, public health agencies, and medical professionals, Sweden successfully expanded vaccine accessibility while maintaining high immunisation standards. The Swedish model highlights how pharmacies can play a crucial role in immunisation strategies—even when pharmacists themselves are not administering vaccines—by serving as trusted information hubs, supporting vaccine logistics, and facilitating patient access to healthcare professionals for immunisation services.

8.2 For countries with limited PBV scope

The case studies below highlight how different countries moved from a limited PBV scope to an institutionalised practice of PBV. It also highlights other best practices to overcome barriers mentioned in section 2.3.

France - Overcoming professional resistance through collaboration

This best practice addresses the following challenges:

- Professional resistance and scope of practice conflicts
- Public acceptance and vaccine confidence

France's expansion of PBV was initially met with strong resistance from physicians and medical associations, who feared that pharmacist-led vaccination would infringe on the responsibilities of doctors. The lack of interprofessional collaboration created challenges in establishing clear guidelines for pharmacists' vaccination roles. Additionally, public awareness of PBV was limited, which contributed to vaccine hesitancy and scepticism regarding pharmacists' ability to vaccinate safely.

To address these challenges, structured engagement between pharmacists and physicians was initiated to define clear professional boundaries and foster collaboration. Pharmacists worked closely with medical associations to co-develop immunisation training programmes that ensured pharmacists adhered to standardised competency requirements. This approach helped reassure physicians that pharmacist-administered vaccination complemented, rather than competed with, primary care services. Concurrently, public awareness campaigns were launched to educate communities on the safety and efficacy of pharmacist-led vaccination, emphasising pharmacists' training, accessibility, and ability to provide convenient vaccination services.

These efforts led to a remarkable transformation in public and professional perceptions of PBV in France. Pharmacists became the leading providers of influenza vaccinations, and during the COVID-19 pandemic, they administered nearly 80% of the total vaccine doses delivered in France. This shift demonstrated increased public confidence in PBV and validated pharmacists as key players in national immunisation efforts. While some resistance from physicians remains, the implementation of structured professional collaboration and public engagement strategies has significantly strengthened PBV in France.

Ireland - Integrating pharmacists into the NHS immunisation strategy

This best practice addresses the following challenges:

- Regulatory and policy barriers
- Professional resistance and scope of practice conflicts

Ireland's success in institutionalising PBV was driven by strong governance and structured implementation. Initially, pharmacists faced regulatory challenges, as their role in vaccination was not fully recognised within national immunisation strategies. Professional scepticism also hindered pharmacist participation, as physicians and healthcare professionals raised concerns about overlapping responsibilities.

To overcome these barriers, Ireland fully integrated pharmacists into the NHS vaccination strategy, ensuring that they had access to electronic health records and could document vaccinations in real-time. The government ensured that pharmacists were actively involved in decision-making processes, helping shape vaccination policies and strategies. Additionally, Ireland aligned influenza and COVID-19 vaccination laws, simplifying regulatory requirements and reducing legal barriers to pharmacist-led immunisation.

These measures resulted in a well-coordinated and structured PBV model, where pharmacists played an essential role in increasing vaccination accessibility and uptake. The integration of pharmacists into the national immunisation programme ensured continuity and sustainability, making Ireland a model for governance-driven PBV expansion.

Portugal - Strengthening PBV through NHS integration and financial reforms

This best practice addresses the following challenges:

- Financial and reimbursement challenges

Portugal has successfully developed a model for pharmacist-administered vaccinations through strategic integration into the national healthcare system, structured training, and public-private collaborations. Pharmacists were authorised to administer vaccines in 2007, with mandatory accreditation by the Portuguese Pharmaceutical Society ensuring high standards through rigorous training and biannual recertification. Over time, pharmacists' scope expanded, including partnerships with private companies and health insurers to fund vaccine administration.

The COVID-19 pandemic posed significant challenges to Portugal's immunisation strategy. While mass vaccination centres initially took the lead, their closure left a gap in routine immunisation delivery. Pharmacists were expected to step in, but low government reimbursement rates (EUR2 per dose) created financial difficulties for pharmacies, threatening the sustainability of their vaccination services.

To address these issues, Portugal formally integrated community pharmacies into the National Health Service (NHS) vaccination strategy. The NHS began reimbursing pharmacists for vaccinating specific at-risk groups, marking their full integration into public health initiatives. Pharmacists were also granted real-time access to vaccination records through the National Vaccine Bulletin, improving coordination across healthcare providers. Public awareness campaigns further boosted trust in pharmacist-led vaccinations, leading to increased demand for these services.

By 2022, 88.7% of community pharmacies in Portugal provided influenza and COVID-19 vaccinations, making the country the first to surpass WHO vaccine coverage targets. Despite these achievements, financial sustainability remains a challenge, with ongoing discussions about enhancing pharmacist remuneration to ensure the long-term viability of their services. Portugal's experience highlights the importance of collaborative approaches, innovative funding models, and governmental support in expanding pharmacist-administered vaccination services.

UK - Overcoming infrastructure challenges and regulatory fragmentation

This best practice addresses the following challenges:

- Regulatory and policy barriers
- Infrastructure and training gaps
- Public acceptance and vaccine confidence

As early as 2010, pharmacists in England began providing local-level influenza vaccinations. However, in the UK, pharmacist-led vaccination faced three primary challenges: infrastructure limitations, regulatory fragmentation, and public scepticism about pharmacists' role in immunisation. Many pharmacies lacked the necessary private consultation rooms, making it difficult to administer vaccines in a professional and confidential manner. Additionally, regulatory policies differed across England, Scotland, Wales, and Northern Ireland, leading to inconsistencies in how pharmacists

could deliver vaccinations. Another significant challenge was vaccine hesitancy, particularly among communities unfamiliar with pharmacy-based healthcare services.

To address these barriers and further expand pharmacists' scope of vaccine administration and prescription, the UK government launched the "Pharmacy First" programme (the programme varies across the four countries). Training programmes and national accreditation schemes were introduced to ensure pharmacists had the required competencies for these expanded roles. A centralised IT infrastructure was implemented, allowing pharmacists to document vaccinations directly into NHS records, improving continuity of care and patient tracking. Additionally, public advocacy campaigns were launched to counter vaccine misinformation and highlight pharmacists' important contributions to public health.

These initiatives significantly increased pharmacist participation in the national immunisation programme, leading to a substantial rise in influenza and COVID-19 vaccinations administered in pharmacies. However, infrastructure constraints remain a challenge, particularly for independent pharmacies with limited space. The UK's experience highlights the importance of standardised training, national IT integration, and public education efforts in overcoming PBV challenges.

9 Conclusions

Immunisation efforts are under growing threat as misinformation, population growth, humanitarian crises, and funding cuts jeopardise progress and leave millions of children, adolescents, and adults at risk. With new data on plateaued vaccine coverage and hesitancy, new methods will be necessary to deliver integrated, people-centred health services.[29] Expanding access to vaccines through community pharmacies can enhance convenience, reach underserved populations and increase vaccine uptake rates. Pharmacists, as trusted members of the community, can foster trust in the healthcare system and provide tailored communication strategies to address vaccine hesitancy and promote health literacy.

Globally, pharmacists continue to contribute to vaccination strategies for increased access and uptake in many parts of the world. However, the expansion of PBV is still impeded by scepticism from various stakeholders about the ability of pharmacists to deliver vaccination services. For both categories discussed in this toolkit, similar challenges exist, including regulatory and policy barriers, professional resistance and scope of practice conflicts, infrastructure and training gaps, financial and reimbursement challenges, and public acceptance and vaccine confidence. These barriers highlight the structural and operational hurdles that must be addressed to ensure equitable pharmacy-based vaccination services globally and emphasise the need for stronger policy advocacy and regulatory reforms.

By contextualising the guidelines provided in this toolkit and implementing inclusive and accessible vaccination strategies summarised in the PBV transition pathway in Table 9, PBV policies can be initiated, adopted and/or expanded, and pharmacists can work towards achieving health equity and ensuring that everyone, at every age, benefits from the protection offered by vaccines. As the role of pharmacists in vaccination continues to expand in response to global health needs, these collective efforts will shape the future of preventive care and ensure pharmacists remain trusted leaders in life-course immunisation. Programmes will also have to respond to significant global demographic shifts, and therefore, PBV should be leveraged and established as integrated delivery points of contact between immunisation and other public health interventions for different target age groups.

Through this resource, FIP aims to empower pharmacists to confidently meet the demands of modern immunisation services and public health priorities and to empower organisations across nations to implement PBV and deliver life course immunisation globally.

Table 9: PBV transition pathway

Stage	Country context	Priority actions	Expected outcomes
Step 1: Advocacy and awareness	Countries with no clear legal PBV framework and countries with a limited scope of PBV practice	• Assess existing vaccination policies, regulations, and pharmacy laws • Identify key stakeholders and implementation barriers • Provide targeted education on pharmacists' immunisation roles and address vaccine hesitancy • Build trust by showcasing pharmacist expertise (e.g., community outreach, mobile vaccination units) • Engage in data-driven public engagement strategies	Stakeholders recognise PBV as a viable access strategy; policy dialogue is ongoing
Step 2: Policy development, pilot project design and workforce development	PBV policy discussion ongoing; initial authorisation for pilot project given	• Identify and draft regulatory amendments • Develop a plan for a pilot project • Consider various contextual factors, choose the right evaluation methods and performance measures • Develop pharmacy workforce competencies	Pilot project design approved by policymakers/partners; first cohort of trained pharmacist vaccinators identified
Step 3: Pilot project implementation	Pilot project ongoing; PBV under supervision; continuous monitoring and evaluation in place	• Strengthen standard operating procedures • Expand accreditation and training programmes • Monitor and evaluate to adapt to changing circumstances, decisions or emerging new questions • Reading and writing rights to vaccination records	Pilot project implemented safely and effectively; evidence generated is used for policy expansion and project scale-up
Step 4: Expansion and integration	Adoption and scale-up in multiple regions; a limited number of vaccines to be administered	• Increase pilot sites and the scope of vaccines • Develop sustainable funding model(s) • Continue community advocacy engagement and campaigns • Integrate PBV into national immunisation policies with legislation • Sensitise for prescribing authority	Increased vaccine access and coverage; PBV recognised as part of routine nationwide immunisation strategies
Step 5: Institutionalisation of PBV	PBV is established, fully integrated into national immunisation programmes, and pharmacists have representation in NITAGs	• Continue community advocacy engagement and campaigns • Continue collaboration with stakeholders • Implement ongoing monitoring and quality assurance systems • Implement reading and writing rights to immunisation registries • Review policies occasionally	Sustainable PBV is institutionalised, quality-assurance measures are in place, and service is integrated into the health system.

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Appendices

Appendix 1: List of countries and their vaccination authorisation status[10]

Country	Administration in pharmacies	Administration by pharmacists	Administration by trained technician	Administration by other healthcare practitioner	Access (reading rights) to vaccination registries
Afghanistan	No	No	No	No	
Albania	Yes	No	No	Yes	No
Algeria	Yes	Yes	No	No	
Argentina	Yes	Yes	No	Yes	Yes, for all records
Armenia	No	No	No	No	
Australia	Yes	Yes	No	Yes	Yes, for all records
Austria	No	No	No	No	Yes, for all records
Bangladesh*	Yes	No	Yes	Yes	No
Barbados	No	No	No	No	No
Belgium	Yes	Yes	No	No	Yes, for some records
Bolivia	Yes	No	No	Yes	
Bosnia & Herzegovina	No	No	No	No	Yes, for some records
Brazil	Yes	Yes	No	No	Yes, for all records
Bulgaria	No	No	No	No	No
Cameroon	Yes	Yes	Yes	No	Yes, for some records
Canada	Yes	Yes	Yes	Yes	Yes, for some records
Cape Verde	Yes	Yes	No	No	No
Chad	Yes	Yes	Yes	No	
Chile	No	No	No	No	
China	No	No	No	No	Yes, for some records
China Taiwan	No	No	No	No	No
Colombia	No	No	No	No	No
Congo, Dem. Rep. of the*	No	No	No	No	No
Congo, Rep. Of	No	No	No	No	
Costa Rica	Yes	Yes	No	No	Yes, for some records
Côte d'Ivoire	No	No	No	No	
Croatia	Yes	No	No	Yes	No
Cuba	No	No	No	No	
Cyprus	No	No	No	No	No
Czech Republic	No	No	No	No	
Denmark	Yes	Yes	Yes	Yes	Yes, for all records
Ecuador	No	No	No	No	Yes, for some records
Egypt	No	No	No	No	
El Salvador	No	No	No	No	

Estonia	Yes	No	No	Yes	No
Ethiopia	No (pilot phase)	No (pilot phase)	No	No	
Fiji	No	No	No	No	
Finland*	Yes	No	No	Yes	No
France	Yes	Yes	Yes	No	Yes, for some records
Germany	Yes	Yes	No	No	Yes, for some records
Ghana	Yes	Yes	No	No	No
Greece	Yes	Yes	No	No	
Guatemala	No	No	No	No	
Guyana	No	No	No	No	No
Haiti	No	No	No	No	
Hong Kong SAR, China*	No	No	No	No	Yes, for all records
Hungary	No	No	No	No	No
Iceland	Yes	No (pilot phase)	No	Yes	No
India	No	No	No	No	No
Indonesia*	No	No	No	No	No
Iraq	No	No	No	No	
Ireland	Yes	Yes	No	No	Yes, for some records
Israel	Yes	Yes	No	No	No
Italy	Yes	Yes	No	No	Yes, for some records
Japan	No	No	No	No	No
Jordan	Yes	Yes	No	No	No
Kenya	Yes	Yes	No	No	
Korea (Rep. of)	No	No	No	No	
Kosovo	No	No	No	No	No
Kuwait	No	No	No	No	
Latvia	Yes	Yes	No	No	
Lebanon	Yes	No	No	Yes	Yes, for some records
Lithuania	Yes	Yes	No	Yes	Yes, for all records
Luxembourg	Yes	Yes	ND	ND	
Madagascar	No	No	No	No	
Malawi	No	No	No	No	No
Malaysia	No	No	No	No	No
Mali	No	No	No	No	
Malta*	Yes	No	No	Yes	No
Mauritius	No	No	No	No	
Mexico	ND	ND	ND	ND	
Mongolia	No	No	No	No	No
Montenegro	No	No	No	No	No
Morocco	No	No	No	No	Yes, for all records

Namibia	Yes	Yes	Yes	No	Yes, for some records
Nepal*	Yes	No	No	Yes	No
Netherlands	Yes	No	No	Yes	Yes, for some records
New Zealand	Yes	Yes	Yes	Yes	
Nigeria	Yes	Yes	No	Yes	No
North Macedonia (Republic of)	No	No	No	No	
Norway	Yes	Yes	Yes	Yes	Yes, for all records
Oman	No	No	No	No	
Pakistan	Yes	No	No	Yes	
Panama	No	No	No	No	
Paraguay	Yes	No	Yes	No	No
Peru	ND	ND	ND	ND	
Philippines	Yes	Yes	No	Yes	Yes, for all records
Poland	Yes	Yes	No	No	
Portugal	Yes	Yes	No	Yes	Yes, for some records
Romania	Yes	Yes	No	No	No
Russian Federation	No	No	No	No	No
Rwanda	No	No	No	No	
Saudi Arabia	Yes	Yes	No	No	
Senegal	No	No	No	No	
Serbia	No	No	No	No	No
Sierra Leone	Yes	Yes	Yes	Yes	No
Singapore	No* (pilot phase)	No* (pilot phase)	No	No	
Slovak Republic	No	No	No	No	
Slovenia	No	No	No	No	No
South Africa	Yes	Yes	No	Yes	No
South Sudan	Yes	Yes	Yes	Yes	No
Spain	No	No	No	No	No
Sri Lanka	No	No	No	No	No
Sudan	No	No	No	No	
Sweden*	Yes	No	No	Yes	No
Switzerland	Yes	Yes	No	Yes	No
Tanzania	No	No	No	No	
Thailand	No	No	No	No	
Tunisia	Yes	Yes	Yes	No	No
Türkiye	No	No	No	No	No
Uganda	ND	ND	ND	ND	
Ukraine	No	No	No	No	No
United Arab Emirates	Yes	Yes	No	No	
UK	Yes	Yes	Yes	Yes	Yes, for some records
USA	Yes	Yes	Yes	Yes	Yes, for some records

Uruguay	No	No	No	No	No
Venezuela	Yes	Yes	No	No	
Yemen	Yes	Yes	No	Yes	Yes, for some records
Zambia	No	No	No	No	
Zimbabwe	No	No	No	No	

*Countries where discrepancies were found and addressed
ND – No data

Appendix 2: List of countries and the vaccines authorised for administration by pharmacists[10]

Country	Region	Income level	Vaccines administered by pharmacists								
			Influenza	COVID-19	Pneumo-coccal	Shingles	Tdap booster	RSV	Meningo-coccal	HPV	HepB
Afghanistan	EMRO	Low income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Albania	EURO	Upper middle income	No	No	No	No	No	No	No	No	No
Algeria	AFRO	Lower middle income	Yes	Yes	ND	ND	ND	ND	ND	ND	ND
Argentina	PAHO	Upper middle income	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Armenia	EURO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Australia	WPRO	High income	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Austria	EURO	High income	No	No	No	No	No	No	No	No	No
Bangladesh	SEARO	Lower middle income	No	No	No	No	No	No	No	No	No
Barbados	PAHO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Belgium	EURO	High income	Yes	Yes	No	No	No	No	No	No	No
Bolivia	PAHO	Lower middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bosnia & Herzegovina	EURO	Upper middle income	No	No	No	No	No	No	No	No	No
Brazil	PAHO	Upper middle income	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bulgaria	EURO	Upper middle income	No	No	No	No	No	No	No	No	No
Cameroon	AFRO	Lower middle income	No	Yes	No	No	Yes	No	No	No	No
Canada	PAHO	High income	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cape Verde	AFRO	Lower middle income	Yes	ND	ND	ND	ND	ND	ND	ND	ND
Chad	AFRO	Low income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chile	PAHO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND

China	WPRO	Upper middle income	No	No	No	No	No	No	No	No	No
China Taiwan	WPRO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Colombia	PAHO	Upper middle income	No	No	No	No	No	No	No	No	No
Congo, Dem. Rep. of the	AFRO	Low income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Congo, Rep. Of	AFRO	Lower middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Costa Rica	PAHO	Upper middle income	Yes	No	Yes	ND	Yes	No	Yes	Yes	Yes
Côte d'Ivoire	AFRO	Lower middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Croatia	EURO	High income	No	No	No	No	No	No	No	No	No
Cuba	PAHO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cyprus	EURO	High income	No	No	No	No	No	No	ND	ND	ND
Czech Republic	EURO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Denmark	EURO	High income	Yes	Yes	No	No	Yes	No	No	Yes	Yes
Ecuador	PAHO	Upper middle income	No	No	No	No	No	No	ND	ND	ND
Egypt	EMRO	Lower middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
El Salvador	PAHO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Estonia	EURO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethiopia	AFRO	Low income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fiji	WPRO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Finland	EURO	High income	No	No	No	No	No	No	No	No	No
France	EURO	High income	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Germany	EURO	High income	Yes	Yes	No	No	No	No	No	No	No
Ghana	AFRO	Lower middle income	ND	Yes	ND	ND	ND	ND	ND	ND	Yes
Greece	EURO	High income	Yes	Yes	ND	ND	ND	ND	ND	ND	ND
Guatemala	PAHO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND

Guyana	PAHO	High income	No	No	No	No	No	No	ND	ND	ND
Haiti	PAHO	Lower middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hong Kong SAR, China	WPRO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hungary	EURO	High income	No	No	No	No	No	No	No	No	No
Iceland	EURO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
India	SEARO	Lower middle income	No	No	No	No	No	No	No	No	No
Indonesia	SEARO	Upper middle income	No	No	No	No	No	ND	ND	ND	ND
Iraq	EMRO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ireland	EURO	High income	Yes	Yes	Yes	Yes	No	No	No	No	No
Israel	EURO	High income	Yes	No	No	No	No	No	No	No	No
Italy	EURO	High income	Yes	Yes	No	Yes	No	No	No	No	No
Japan	WPRO	High income	No	No	No	No	No	No	No	No	No
Jordan	EMRO	Lower middle income	Yes	Yes	No	No	No	No	ND	ND	ND
Kenya	AFRO	Lower middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Korea (Rep. of)	WPRO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Kosovo	EURO	Upper middle income	No	No	ND	ND	ND	ND	ND	ND	ND
Kuwait	EMRO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Latvia	EURO	High income	ND	Yes	ND	ND	ND	ND	ND	ND	ND
Lebanon	EMRO	Lower middle income	No	No	No	ND	No	ND	ND	ND	ND
Lithuania	EURO	High income	Yes	Yes	Yes	No	No	No	ND	ND	ND
Luxembourg	EURO	High income	ND	Yes	ND	ND	ND	ND	ND	ND	ND
Madagascar	AFRO	Low income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Malawi	AFRO	Low income	No	No	No	No	No	No	No	No	No
Malaysia	WPRO	Upper middle income	No	No	No	No	No	No	ND	ND	ND
Mali	AFRO	Low income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Malta	EURO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND

Mauritius	AFRO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mexico	PAHO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mongolia	WPRO	Lower middle income	No	No	No	No	No	No	No	No	No
Montenegro	EURO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Morocco	EMRO	Lower middle income	No	No	No	No	No	No	No	No	No
Namibia	AFRO	Upper middle income	Yes	No	Yes	No	ND	ND	ND	ND	ND
Nepal	SEARO	Lower middle income	No	No	No	No	No	No	No	ND	ND
Netherlands	EURO	High income	No	ND	ND	ND	ND	ND	ND	ND	ND
New Zealand	WPRO	High income	Yes	Yes	ND	Yes	Yes	ND	Yes	Yes	ND
Nigeria	AFRO	Lower middle income	No	Yes	No	No	Yes	ND	ND	ND	Yes
North Macedonia (Republic of)	EURO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Norway	EURO	High income	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Oman	EMRO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pakistan	EMRO	Lower middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Panama	PAHO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Paraguay	PAHO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Peru	PAHO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Philippines	WPRO	Lower middle income	Yes	Yes	Yes	No	No	No	No	Yes	Yes
Poland	EURO	High income	Yes	Yes	ND	ND	ND	ND	ND	ND	ND
Portugal	EURO	High income	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Romania	EURO	High income	Yes	No	No	No	No	ND	ND	ND	ND
Russian Federation	EURO	Upper middle income	No	No	No	No	No	No	No	No	No
Rwanda	AFRO	Low income	ND	ND	ND	ND	ND	ND	ND	ND	ND

Saudi Arabia	EMRO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Senegal	AFRO	Lower middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Serbia	EURO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sierra Leone	AFRO	Low income	No	No	No	No	Yes	No	Yes	ND	Yes
Singapore	WPRO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Slovak Republic	EURO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Slovenia	EURO	High income	No	No	No	No	No	No	No	No	No
South Africa	AFRO	Upper middle income	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
South Sudan	AFRO	Low income	Yes	Yes	No	No	Yes	ND	No	No	Yes
Spain	EURO	High income	No	No	No	No	No	No	No	No	No
Sri Lanka	SEARO	Lower middle income	No	No	No	No	ND	ND	ND	ND	ND
Sudan	EMRO	Low income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Sweden	EURO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Switzerland	EURO	High income	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Tanzania	AFRO	Lower middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thailand	SEARO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tunisia	EMRO	Lower middle income	Yes	Yes	Yes	No	Yes	ND	ND	ND	ND
Turkey	EURO	Upper middle income	No	No	No	No	No	No	No	No	No
Uganda	AFRO	Low income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ukraine	EURO	Lower middle income	No	No	No	No	ND	ND	ND	ND	ND
United Arab Emirates	EMRO	High income	ND	ND	ND	ND	ND	ND	ND	ND	ND
UK	EURO	High income	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
USA	PAHO	High income	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Uruguay	PAHO	High income	No	ND	ND	ND	ND	ND	ND	ND	ND
Venezuela	PAHO	Upper middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Yemen	EMRO	Low income	Yes	No	Yes	No	Yes	No	No	No	Yes

Zambia	AFRO	Lower middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zimbabwe	AFRO	Lower middle income	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND – No data

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