Funding models, economic and societal impact of pharmacy-based vaccination

Findings from FIP reports and literature

EXECUTIVE SUMMARY

2025

16 COMMUNICABLE DISEASES
12 PHARMACY INTELLIGENCE
11 IMPACT & OUTCOMES
FIP Development Goals

Colophon

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Foreword

Vaccination has long been recognised as one of the most cost-effective public health interventions, offering protection against infectious diseases while simultaneously reducing healthcare expenditures and supporting economic resilience.[1, 2] Despite these benefits, vaccine-preventable diseases (VPDs) continue to impose a significant global burden, exacerbating health inequities, straining healthcare systems, and leading to productivity losses across various sectors.[3-5]

The role of pharmacists in public health has evolved significantly, with increasing recognition of their capacity to provide critical vaccination services. Traditionally, pharmacists were involved in vaccine distribution, storage, and education,[6] but regulatory changes in many countries have expanded their role to include direct vaccine administration, improving accessibility to the public. Beyond administration, pharmacists also contribute by raising awareness, addressing vaccine hesitancy, ensuring proper vaccine storage, and reporting adverse events.[7, 8]

Studies show that the integration of pharmacy-based vaccination (PBV) into healthcare systems has led to improved vaccine accessibility and uptake, particularly among underserved populations.[8-11] As healthcare systems seek sustainable strategies to expand vaccination coverage, understanding the funding mechanisms and the broader economic and societal impact of PBV is essential. A well-structured funding model is critical to ensuring equitable access, financial sustainability and effective long-term integration of PBV services.

Recognising the need to further support and expand pharmacists' role in vaccination, the FIP Council took a significant step in September 2023 by adopting a Statement of policy on the role of pharmacy in life-course vaccination. This policy statement outlines key calls to action and recommendations for stakeholders to maximise pharmacists' contributions to vaccine awareness, confidence and uptake, thereby strengthening vaccination strategies worldwide.

In 2024, FIP launched the "Think Health, Think Pharmacy" campaign. This global initiative aims to raise awareness of pharmacies as pivotal points for primary healthcare provision and to advocate for universal recognition of the pharmacy profession's unique role in enhancing public health outcomes. A core message of this campaign is that when individuals consider their health needs, they should naturally think of pharmacy as a primary resource. This perspective extends to vaccination services, reinforcing the idea that **when you think about vaccination, you think pharmacy**.

This report presents an analysis of funding models that support and sustain PBV services across various countries. Beyond funding mechanisms, it highlights the economic and societal impact of these services, including direct cost savings, such as reduced hospitalisations and lower healthcare costs, and indirect cost savings, such as improving productivity and maintaining functional ability in aging populations. The report also addresses broader societal benefits of vaccination, including improved public health equity and increased vaccine accessibility in underserved areas. Additionally, the report summarises the challenges pharmacists face in securing sustainable funding models and provides case studies showcasing different remuneration and reimbursement approaches.

We hope this report serves as a valuable resource for FIP members, policymakers and healthcare professionals seeking to advocate for stronger vaccination programmes and sustainable funding models that fully leverage pharmacists' contributions to vaccination.

Forward with Pharmacy, Forward with FIP.

Paul Sinclair
President
International Pharmaceutical Federation

Executive summary

Vaccination is a cornerstone of public health, delivering far-reaching benefits that extend well beyond disease prevention. It enhances health equity, protects vulnerable populations, reduces healthcare system strain, and drives societal progress by improving productivity and life expectancy. Pharmacy-based vaccination (PBV) services are a powerful extension of this impact, offering accessible, trusted, and efficient points of care, particularly for underserved communities.

As pharmacists increasingly serve as vaccinators, educators, and public health advocates, their role in strengthening immunisation efforts has become critical. PBV services improve vaccine coverage through extended hours, walk-in access, and widespread community presence. They also help address vaccine hesitancy and support life-course immunisation, including maternal and adolescent health needs. Pharmacists' involvement contributes to stronger public health infrastructure by enhancing vaccine equity and closing access gaps in rural or marginalised areas.

This report draws on data from the 2024 FIP global vaccination surveillance survey, literature reviews, and international case studies. Figure 1 summarises the structure and key themes of the report. It presents five core areas that guide the report's narrative and analysis. The report begins by establishing the broader societal value of vaccination, including its role in improving health equity, education, and community trust. It then explores the different health system types and examines trends of the four main PBV funding models adopted across countries: public reimbursement, private insurance, out-of-pocket payments, and pharmacy-funded services. The report then identifies barriers to sustainable implementation, such as regulatory challenges, workforce constraints, and limited financial support, followed by an overview of procurement strategies essential to ensuring timely and equitable vaccine supply. The subsequent section highlights the economic impact of PBV, drawing on global evidence to demonstrate its cost-effectiveness and return on investment.

To complement this analysis, the final section presents a selection of country case studies from FIP member organisations to showcase diverse national approaches to PBV. Each case highlights:

- Legislative frameworks
- Funding models
- Economic and public health impacts
- Lesson learned from implementation.

The featured countries are:

- Australia
- Canada
- Costa Rica
- Portugal
- South Africa
- UK (England, Scotland, Wales, Northern Ireland)
- USA.

These components provide an overview of the enablers, barriers, and opportunities for scaling up pharmacist-led vaccination services globally.

This document presents only the executive summary of the full report. This executive summary is accompanied by a dedicated infographic to visually highlight the key messages and findings. The infographic provides a concise visual overview of the report's core themes, funding models, and global case study insights. This can be accessed here.

Figure 1. The overall structure and key themes of the report

This executive summary synthesises major insights from each chapter of the report:

1. Broader societal impact of vaccination

Vaccination is an affordable health intervention that promotes equity, benefiting individuals regardless of gender, race, religion, political beliefs, or socioeconomic status. It helps bridge the gap between high- and low-income groups and ensures better healthcare access in both urban and rural settings.[12]

Community pharmacies play a pivotal role in expanding vaccination coverage, especially in underserved areas. Their wide presence, flexible hours, and walk-in services increase vaccination rates among populations with limited healthcare access.[10]

Vaccination enhances cognitive development, physical health, and educational outcomes in children by preventing infectious diseases.[12, 13]

Vaccination safeguards maternal health by mitigating the risk of miscarriage, preterm birth, or low birth weight while also providing newborns with passive immunity for better neonatal health.[12]

Pharmacists offering vaccination services can play a key role in promoting public health by delivering essential health education and social awareness messages.[1, 14]

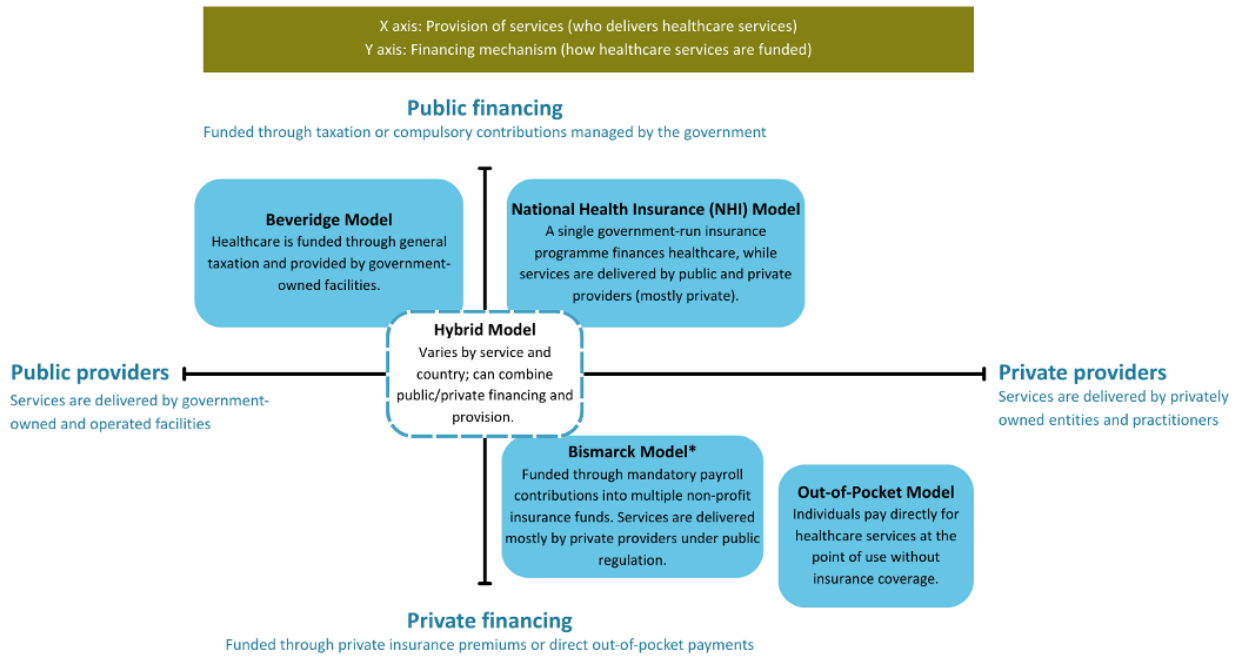
2. Health system financing models and their relevance to PBV

Five health system models according to different provision and financing structures:

Health system model	Primary funding	Service provision	PBV implication	Country examples
Beveridge model[15, 16] Tax-funded model National Health Service (NHS) model	General taxation	Healthcare services are primarily provided by government-owned facilities; many healthcare professionals are government employees	Pharmacists administering vaccinations are typically reimbursed directly by government health programmes	UK, Spain, Cuba, New Zealand, and Nordic countries
Bismarck model[15-17] Social health insurance (SHI) Statutory health insurance Multi-payer insurance system	Funded through mandatory payroll contributions from both employers and employees Insurance operates through multiple non-profit insurance funds or "sickness funds"	Services are delivered by a mix of public and private providers (mostly private, publicly regulated)	Pharmacist-administered vaccinations are reimbursed by insurance funds, contingent upon insurer policies. PBV accessibility depends heavily on regulatory frameworks and fund negotiations, which may create variability in service availability	Germany, France, Belgium, and Japan
National health insurance (NHI)[15, 16] Single-payer system	General taxation or mandatory insurance premiums A single, government-run insurance programme covers all residents	Services are provided by a mix of public and private providers (mostly private).	Pharmacies are reimbursed directly by the government or public insurance scheme, enabling widespread participation in vaccination programmes. This ensures consistent funding for pharmacist-delivered	Canada, South Korea, Taiwan

Health system model	Primary funding	Service provision	PBV implication	Country examples
Public insurance with private providers			vaccines and supports broader immunisation goals	
Out-of-pocket model[15, 16] Fee-for-Service model	Individuals pay directly for healthcare services at the time of use	Services are typically provided by private providers	PBV services are limited and primarily available on a fee-for-service basis, restricting access to those who can afford them. Pharmacists may not be formally integrated into national immunisation efforts	Rural areas in India, parts of Africa, and parts of South America
Hybrid model[16] Mixed financing model Multi-tier health system	Combines elements from various models, including taxation, social insurance, private insurance, and out-of-pocket payments May include multiple insurance schemes catering to different population segments	Services are provided by a mix of public and private providers	The availability and structure of PBV services depend on insurance coverage specifics, regulatory frameworks, and public-private collaboration. Pharmacies may be reimbursed through multiple channels, leading to inconsistencies in access	USA

Figure 2 provides a visual framework that categorises these models based on who funds healthcare (public vs. private financing) and who provides these services (public vs. private providers).



*Some systems, such as Bismarck, involve private insurance funds but are mandatory and publicly regulated.

Figure 2. Overview of healthcare system models: Provision and financing structure

3. Funding models for PBV services

Drawing from FIP intelligence surveys,[18, 19] four distinct financing mechanisms have been used, based on who ultimately pays for the service:

- **Public reimbursement:** Vaccination costs, including administration fees, are covered by the government or a national health insurance scheme.
- **Private reimbursement:** Private insurers or healthcare systems reimburse vaccination services, either partially or fully, as part of their coverage plans.
- **Out-of-pocket payments:** Patients pay the full cost of the vaccine and its administration at the point of service, without reimbursement.
- **Pharmacy-funded (free of charge):** Pharmacies offer vaccines at no cost to patients, absorbing the associated costs themselves.

Of 37 countries, out-of-pocket payments dominate globally (reported in 21 countries), followed by public reimbursement (13 countries), pharmacy-funded services (10 countries), and private insurance reimbursement (9 countries). Figure 3 presents an overview of funding models for PBV services across various countries.

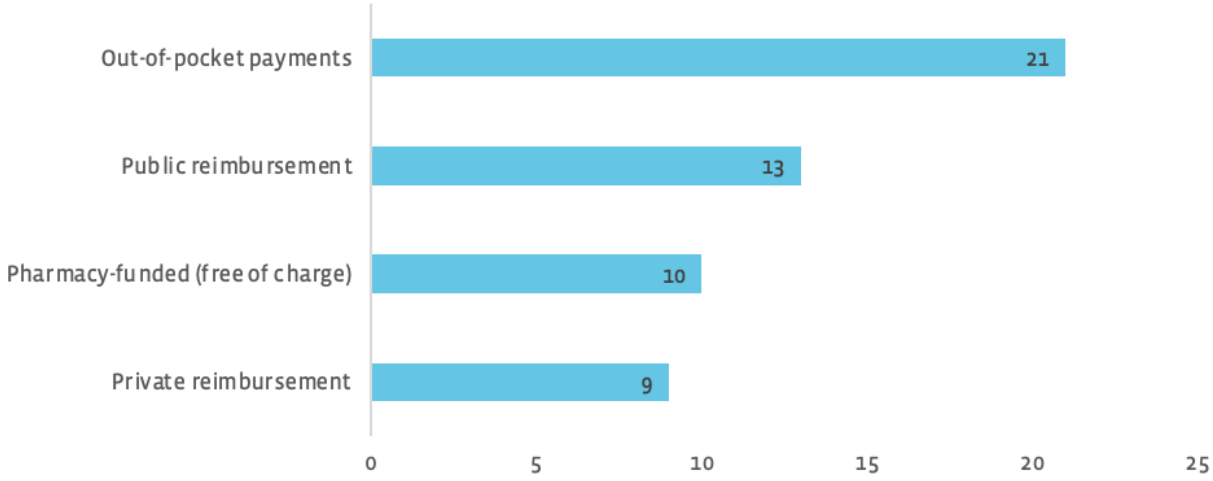


Figure 3. Funding models for PBV across countries (n=37)

While public reimbursement models are more common in some regions (e.g., Europe), out-of-pocket costs remain prevalent worldwide.

Country case studies from FIP member organisations show variations such as:

- Australia, Canada, Portugal, and the UK rely on public reimbursement through national immunisation programmes.
- The USA and South Africa rely on private reimbursement and out-of-pocket payments, with limited public funding.
- Costa Rica relies on private funding for pharmacy-based vaccination.
- Canada's public reimbursement varies by province, while the USA and South Africa have fluctuating reimbursement rates.

4. Barriers to achieving sustainable funding mechanisms

Challenges to PBV scale-up include financial instability from inconsistent reimbursement, limited government backing, and regulatory barriers. Workforce constraints—such as insufficient training, staffing, and physician resistance—further limit expansion. Funding inequalities among different vaccine providers also risk creating disparities in patient out-of-pocket costs.[20-23]

Establishing fair remuneration for pharmacists is essential for long-term viability, as is better integration of PBV into national healthcare frameworks. Evidence-based advocacy and strategic efforts (e.g., accreditation, training, economic assessments) can help secure support from both policymakers and other healthcare professionals.

5. Procurement strategies to ensure timely and adequate supply of vaccines

Vaccine procurement depends on each country's income level, health system structure, and market context. Approaches include:

- **Public procurement:** Government-led tenders/bulk purchasing[24]
- **Private procurement:** Private insurers reimburse vaccines in benefit packages[25]
- **Individual purchase:** Patients pay for optional vaccines directly[26]
- **Donor-supported procurement:** Pooled mechanisms via UNICEF, GAVI, and PAHO.[27]

WHO also distinguishes between direct (self) procurement, centralised or decentralised purchasing, and international pooled procurement initiatives, as shown in Figure 4 [28, 29] These strategies aim to reduce costs, ensure adequate supply, and address equitable distribution, particularly in low-resource settings.

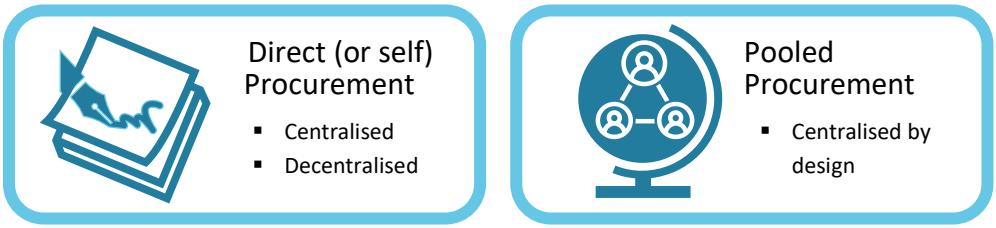


Figure 4. Vaccine procurement strategies according to the WHO

6. The economic impact of PBV

The growing economic burden of vaccine-preventable diseases (VPDs)

Vaccine-preventable diseases, such as seasonal influenza, pneumococcal disease, pertussis, and herpes zoster, continue to impose substantial health and economic burdens worldwide.[3-5] Seasonal influenza alone is responsible for up to 650,000 annual deaths globally and causes 3–5 million severe cases each year.[30]

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.[11]

The economic case for investing in vaccination

Vaccination is a high-return investment, generating significant economic benefits beyond direct health protection.

The Office of Health Economics (OHE) estimates that for every EUR 1 invested in vaccination, societies receive up to EUR 19 in returns through reduced healthcare costs, lower absenteeism, and improved quality of life.[31]

Cost saving potential:

- In the European Union, achieving influenza vaccination targets could save between EUR 190 million and EUR 226 million per year.[11]
- In Canada, influenza-related hospitalisations cost over CAD 1 billion (EUR 638 million) annually, with additional indirect losses from workforce absenteeism.[32]
- In the USA, broadening influenza vaccine coverage could prevent up to 16 million cases annually, leading to USD 1.9 billion (EUR 1.7 billion) in healthcare savings.[33]

Pharmacy-based vaccination yields substantial economic benefits through:

- Direct savings: Reduced hospital admissions, emergency visits, and physician consultations.

- Indirect savings: Lower absenteeism, improved productivity, and mitigated disease spread.

Direct savings

1. Lower hospitalisation and emergency visits:
   - In Canada, expanding flu vaccine access through pharmacies prevented 717,000 hospital visits, saving CAD 457,854 (EUR 290,346) per year.[32]
   - In Switzerland, pharmacist-led flu vaccines prevented 17.6 primary care visits, 0.33 hospitalisations, and 1.1 hospital days per 100,000 people per season, leading to CHF 143,021 (EUR 148,930) in savings.[34]
   - In the USA, pharmacy-based flu vaccinations prevented 11.9 million influenza cases per epidemic season, saving over USD1 billion (EUR 918 million) in hospitalisation costs.[33]

2. Reduced outpatient and physician visits:
   - In Ontario, Canada, pharmacist-administered flu vaccinations saved CAD 763,158 (EUR 487,375) annually by reducing unnecessary doctor visits.[32]
   - Pharmacist-led vaccination could play a critical role in reaching EU coverage targets for at-risk groups. Achieving full coverage could save up to EUR 39.45 million in reduced primary care visits across five major EU countries.[11]

3. Lower medication uses and treatment costs:
   - Fewer prescriptions for flu-related complications lower antimicrobial resistance concerns.[11]
   - In the USA, pharmacy-led vaccination programmes saved over USD 3.5 million (EUR 3.21 million) in avoided hospitalisations.[35]

Evidence from systematic reviews:

- Pharmacist-led vaccination significantly increases vaccine uptake, particularly when pharmacists also engage in patient education and advocacy.
- A meta-analysis found that pharmacist interventions improved vaccination rates by up to 51% compared to usual care.[36]
- When pharmacists assumed advocacy roles, vaccine uptake rates doubled (RR = 2.09; 95% CI: 1.42–3.07).[36]

Indirect savings

Key insights on productivity losses:

- In the USA, pharmacist-led flu vaccinations could prevent up to 16 million cases annually, reducing lost workdays and saving an estimated USD 69.5 billion (EUR 63.89 billion) in productivity losses.[33]
- In Italy, increasing flu vaccination rates among healthcare professionals from 30% to 70% prevented 23,213 influenza cases and saved EUR 4.48 million in productivity losses.[37]
- In England, flu vaccination efforts saved GBP 28.9 million (EUR 34.39 million) in sick day costs and prevented GBP 269.7 million (EUR 320.9 million) in productivity losses from premature mortality.[38]
- Among adults over 65, flu vaccines reduce hospitalisation rates by 40%, preventing caregiver productivity losses and minimising financial pressures on healthcare systems.[39]
- Utilising pharmacies as vaccination sites during an influenza epidemic reduced work absence, averting up to 16.5 million symptomatic influenza cases and productivity losses ranging from USD 4.2 billion to USD 65.5 billion (EUR 3.87 billion to EUR 60.41 billion), producing overall societal savings of USD 5.2 billion to USD 67.3 billion (EUR 4.79 billion to EUR 62.04 billion).[33]

Key insights on the role of vaccines in reducing non-communicable disease (NCD) burden:

- In Denmark, annual flu vaccination lowers cardiovascular-related deaths by up to 18%, with even greater benefits for those consistently vaccinated over the years.[40]
- In Hong Kong, receiving sequential pneumococcal vaccination reduced the risk of cardiovascular disease by 25% compared to receiving a single pneumococcal vaccine.[41]
- In Sweden, quadrivalent human papillomavirus (HPV) vaccination was associated with a lower risk of invasive cervical cancer, and the reduction in the incidence was more pronounced among women vaccinated earlier in life.[42]

Conclusion

PBV has become a key part of public health efforts against VPDs. However, its sustainability depends on robust funding mechanisms to ensure the continuity of the service. The influence of national health system financing models on PBV implementation, including how system structure (i.e. Beveridge, Bismarck, National Health Insurance, Out-of-Pocket, and Hybrid) affects PBV reimbursement and service integration. Globally, out-of-pocket payments are the most common funding model adopted in pharmacies. Regional variations exist, with Europe primarily relying on public reimbursement, while many other regions rely more on out-of-pocket payments.

PBV contributes to direct cost savings by increasing immunisation rates, reducing healthcare expenditures, and improving vaccine accessibility. Pharmacists offer convenient, community-based vaccination services, complementing traditional healthcare settings and addressing disparities in vaccine uptake. Evidence from multiple countries highlights PBV's economic impact, with cost savings driven by reduced hospitalisations, fewer medical consultations, and lower treatment expenses. Studies demonstrate that pharmacist-led vaccination enhances vaccine coverage and trust, further strengthening vaccination strategies.

Beyond direct cost savings, PBV also contributes to indirect economic benefits by reducing productivity losses, enhancing workforce efficiency, and mitigating disease-related economic burdens. By increasing vaccine accessibility, PBV minimises absenteeism, presenteeism, and caregiver burdens while preventing long-term disability and premature mortality. This leads to greater economic stability and reduced strain on healthcare systems. Additionally, vaccines play a crucial role in lowering the risk of non-communicable diseases (NCDs), such as cardiovascular events, pneumonia-related complications, and cervical cancer.

PBV's impact extends beyond economic benefits to broader societal outcomes, including improved healthcare equity, enhanced cognitive development for children, and reduced antimicrobial resistance. By expanding vaccination access, PBV narrows disparities, supports universal health coverage, and strengthens preventive healthcare systems. Vaccination also protects school attendance by reducing absenteeism, empowers women's health by safeguarding pregnancies, and extends life expectancy by reducing infectious disease-related mortality. Additionally, vaccine contributes to stronger public health infrastructure by integrating preventive care and health education, reinforcing their role as essential, long-term public health investments.

Despite these benefits, sustainability remains a challenge due to funding inconsistencies, reliance on out-of-pocket payments, and limited public reimbursement in many regions. Ensuring the long-term success of PBV requires structured funding mechanisms, policy integration, and multi-sector collaboration. Governments, insurers, and healthcare stakeholders must work together to establish equitable reimbursement models, expand public funding, and promote hybrid financing strategies that balance public and private contributions.

Additionally, investments in pharmacist training, digital health infrastructure, and public awareness campaigns will further support the scalability and impact of PBV programmes. As more countries recognise the clinical, economic, and societal benefits of PBV, integrating it into national healthcare strategies will be essential for achieving universal health coverage and strengthening global vaccination efforts.

Moving forward, a coordinated approach involving policymakers, healthcare professionals, and pharmacy associations will be critical to ensuring that PBV remains a sustainable, accessible, and impactful public health intervention.

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Costa Rica

College of Pharmacists of Costa Rica

Portugal

National Association of Pharmacies

Portuguese Pharmaceutical Society

South Africa

Pharmaceutical Society of South Africa

United Kingdom

Royal Pharmaceutical Society (Scotland, England and Wales)

Pharmacists' Defence Association (England, Scotland, Wales and Northern Ireland)

United States of America

American Pharmacists Association

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Appendix: Summary of funding models for PBV[9]

Country	Is PBV available?	Can pharmacists administer vaccines in pharmacies?	Remuneration (Yes/No)	By public (state-run) health systems or insurers	By private health systems or insurers	The service is paid by the customer	The service is provided free of charge (i.e., the pharmacy takes on the cost of the service)
Afghanistan	No						
Albania	Yes						
Algeria	Yes	Yes	No				✓
Argentina	Yes	Yes	Yes	✓	✓	✓	
Armenia	No						
Australia	Yes	Yes	Yes	✓		✓	
Austria	No						
Bangladesh	Yes		Yes			✓	
Barbados	No						
Belgium	Yes	Yes	Yes	✓			
Bolivia	Yes						
Bosnia & Herzegovina	No						
Brazil	Yes	Yes	Yes			✓	
Bulgaria	No						
Cameroon	Yes	Yes	No				✓
Canada	Yes	Yes	Yes	✓			
Cape Verde	Yes	Yes	Yes			✓	
Chad	Yes	Yes	Yes				
Chile	No	No					
China	No						
China Taiwan	No	No					
Colombia	No						
Congo, Dem. Rep. of the	No						
Congo, Rep. Of	No						
Costa Rica	Yes	Yes	No				✓

Côte d'Ivoire	No						
Croatia	Yes		No				✓
Cuba	No						
Cyprus	No						
Czech Republic	No						
Denmark	Yes	Yes	Yes	✓		✓	
Ecuador	No						
Egypt	No						
El Salvador	No						
Estonia	Yes						
Ethiopia	No						
Fiji	No						
Finland	Yes						
France	Yes	Yes	Yes	✓			
Germany	Yes	Yes	Yes	✓	✓		
Ghana	Yes	Yes	Yes			✓	
United Kingdom	Yes	Yes	Yes	✓	✓	✓	
Greece	Yes	Yes					
Guatemala	No						
Guyana	No						
Haiti	No						
Hong Kong SAR, China	No						
Hungary	No						
Iceland	Yes	Yes	Yes	✓			
India	No						
Indonesia	No						
Iraq	No						
Ireland	Yes	Yes	Yes	✓		✓	
Israel	Yes	Yes	No				✓
Italy	Yes	Yes	Yes	✓		✓	
Japan	No						
Jordan	Yes	Yes	Yes			✓	

Kenya	Yes	Yes	Yes				
Korea (Rep. of)	No						
Kosovo	No						
Kuwait	No						
Latvia	Yes	Yes					
Lebanon	Yes	Yes	No				✓
Lithuania	Yes	Yes	Yes				
Luxembourg	Yes						
Madagascar	No						
Malawi	No						
Malaysia	No						
Mali	No						
Malta	Yes						
Mauritius	No						
Mongolia	No						
Montenegro	No						
Morocco	No						
Namibia	Yes	Yes	Yes			✓	
Nepal	Yes		Yes			✓	
Netherlands	Yes						
New Zealand	Yes	Yes	Yes				
Nigeria	Yes	Yes	No				✓
North Macedonia (Republic of)	No						
Norway	Yes	Yes	Yes	✓		✓	
Oman	No						
Pakistan	Yes						
Panama	No						
Paraguay	Yes	Yes	No				✓
Philippines	Yes	Yes	Yes			✓	
Poland	Yes	Yes	Yes				
Portugal	Yes	Yes	Yes		✓	✓	
Romania	Yes	Yes	Yes			✓	✓

Russian Federation	No						
Saudi Arabia	Yes						
Senegal	No						
Serbia	No						
Seychelles							
Sierra Leone	Yes	Yes	Yes			✓	
Singapore	No						
Slovak Republic	No						
Slovenia	No						
South Africa	Yes	Yes	Yes		✓		
South Sudan	Yes	Yes	No				✓
Spain	No						
Sri Lanka	No						
Sudan	No						
Suriname							
Sweden	Yes						
Switzerland	Yes	Yes	Yes		✓	✓	
Tanzania	No						
Thailand	No						
Tunisia	Yes	Yes	Yes		✓	✓	
Turkey	No	No					
Ukraine	No						
United Arab Emirates	Yes	Yes					
United States of America	Yes	Yes	Yes	✓	✓		
Uruguay	No						
Venezuela	Yes	Yes					
Yemen	Yes	Yes	Yes		✓	✓	
Zambia	No						
Zimbabwe	No						

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