

Leveraging pharmacy to deliver life-course vaccination

An FIP global intelligence report

April 2024



Colophon

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Executive Summary

Note: This report is accompanied by the interactive online [FIP Pharmacy-based Vaccination Surveillance Atlas](#).

Below is a breakdown (or summary) of the denominators referenced throughout each section of this report:

	<u>Number of countries and territories</u> included in the report from all sources (FIP surveys from 2024, 2020, and 2016 and literature review)	120
	<u>Number of countries and territories</u> that participated in the 2024 survey	73
	<u>Number of countries and territories</u> included in the report with data on the availability of pharmacy-based vaccination	117
	<u>Number of countries and territories</u> included in the report with data on pharmacists' authorisation to prescribe vaccines	53
	<u>Number of countries and territories</u> included in the report with data on policy developments	79
	<u>Number of countries and territories</u> included with data on reimbursement for vaccination services	37
	<u>Number of countries and territories</u> with data on authorisation of pharmacists to administer vaccines outside of the pharmacy premises	77
	<u>Number of countries and territories</u> with data on the availability of vaccination training for pharmacists	116 (47 where pharmacists are authorised to administer vaccines, whether within or outside pharmacy premises and 69 where pharmacists are not authorised to do so)
	<u>Number of countries and territories</u> with data on access to vaccination records (reading rights)	117
	<u>Number of countries and territories</u> with data on access to vaccination records (writing rights) (only for pharmacists who can administer vaccines)	43

The role of pharmacists in global health initiatives has significantly evolved particularly in immunisation, transitioning from traditional responsibilities as medicine experts to recognised integral players in first-line healthcare delivery and interdisciplinary teams. Recognising the increasing authority of pharmacists to administer vaccines across various regions and the associated benefits, this report seeks to provide a comprehensive overview of the status of pharmacist-led vaccination services.

In 2016, the International Pharmaceutical Federation (FIP) initiated the first global survey to identify pharmacists' roles in immunisation. This was followed by another comprehensive survey conducted between December 2019 and March 2020, which engaged organisations from 99 countries and territories. Advancing this work, FIP conducted its latest survey in 2024, to update and expand the data on pharmacist-led immunisation practices worldwide. This report employed a mixed-method approach that integrated recent findings from the 2024 survey with prior surveys, literature reviews, and newly collected data, and represents the most extensive and representative global study on this topic to date.

Survey responses were received from 77 member organisations across 73 countries and territories, thus yielding a response rate of 63.5% (73 countries and territories out of the 115 that were invited). In addition, this study also incorporated data from 39 countries and territories that had participated in previous surveys conducted between 2016 and 2022. Furthermore, the data collection was expanded to include primary and secondary sources. In total, data from eight countries and territories were gathered from these resources so that, after integrating these additional data with survey responses, the dataset for this study covered a total of 120 countries and territories.

In this report, we sought to 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.

This study forms part of the FIP Vaccination Surveillance Project, an ongoing initiative aimed at continuously monitoring and assessing the development of pharmacists' roles in immunisation globally. The ongoing collection of this data from FIP members is important because it establishes a strong base from which members can advocate for supportive policies, regulations, and the broader inclusion of pharmacists in vaccination strategies in their nations. This ongoing surveillance is essential for providing the evidence needed to support our members and lobby for an expanded role of pharmacists in vaccination and immunisation practices worldwide.

KEY FINDINGS

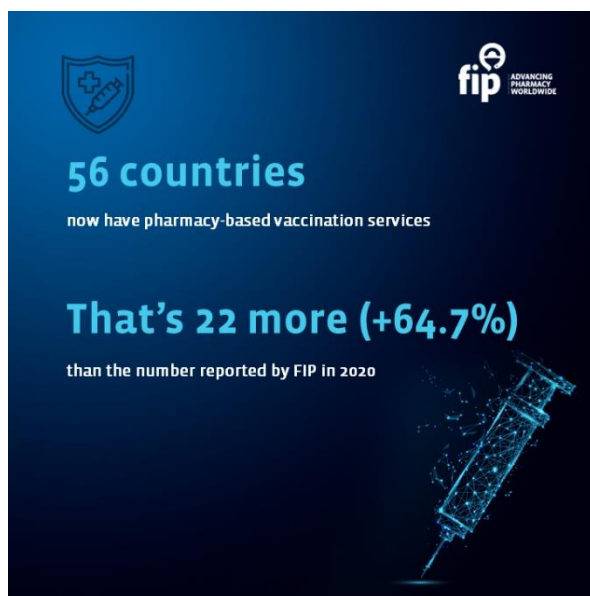
Pharmacists' roles in promoting vaccination awareness and uptake and advocating for vaccination

- Cumulative responses from 109 countries from 2016, 2020 and 2024 surveys confirmed that pharmacists play an active role in promoting and advocating vaccination for individuals. Vaccination information and advice are provided by pharmacists in most countries, as well as participation in pharmacy-led vaccination campaigns.
- Based on current data, it is apparent that pharmacists are underrepresented in national vaccination technical advisory groups in many countries. The inclusion of pharmacists in these vital teams can be fostered through further high-level stakeholder engagement and advocacy efforts.

Regulatory and contractual frameworks for pharmacy-based vaccination

- Current data on pharmacy-based vaccination (PBV) is available for 117 countries and territories. Among these, PBV is authorized in 56 countries and territories, representing 47.9% of the total. This represents an important increase of 22 countries (64.7%) in relation to data reported by FIP in 2020, which had identified 34 countries and territories with PBV. This indicates active changes in pharmacy practice and regulatory frameworks to include vaccination services in pharmacies.

- This increase includes 17 countries that reported not having PBV in their 2020 survey responses but now have it: Albania, Algeria, Belgium, Cameroon, Cape Verde, Croatia, Germany, Ghana, Italy, Jordan, Latvia, Lithuania, Nigeria, Poland, Romania, United Arab Emirates, and Yemen. Additionally, four countries previously without data have now been identified as having PBV: Luxembourg, Namibia, Saudi Arabia, South Sudan, and Tunisia.
- While the overall number of countries with PBV has increased, 61 out of 117 countries and territories analysed still do not offer PBV, which underscores ongoing regional and regulatory disparities that limit broader implementation.
- Of the 56 countries with PBV vaccination, 13 countries have vaccinations in pharmacies that are administered by other healthcare professionals rather than pharmacists. This accounts for about 11.1% of the sample (n=117)
- From the 56 countries or territories with regulated pharmacy-based vaccinations, 53 provided data regarding the prescribing authority of pharmacists. 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.
- In 26 countries or territories (49%) pharmacists are authorised to prescribe certain vaccines for administration. This marks a noticeable increase from 2020 when the majority of respondents (68%) lacked prescribing authority, and only seven respondents (21%) authorised pharmacists to prescribe some vaccines.



Policy developments on pharmacy-based vaccination

- Of the 79 countries surveyed in 2024, 37 (approximately 47%) are actively proposing or developing policies aimed at enhancing pharmacists' authority to administer or prescribe vaccines. This indicates a significant movement towards expanding the responsibilities of pharmacists in the public health sector.
- Notably, 12 of the countries that are currently without any form of pharmacy-based vaccination and four others (Croatia, Estonia, Finland, Malta) that allow vaccinations in pharmacies but do not authorise pharmacists to administer them, are exploring policy changes.
- The remaining 42 countries (53%) reported no ongoing policy changes related to pharmacists' roles in vaccination. This group includes 20 countries with established PBV where pharmacists are already administering vaccines and five countries (Bangladesh, Lebanon, Nepal, Paraguay and Sweden) where pharmacists, despite existing PBV, lack the authorisation to administer vaccines.

Reimbursement for vaccination services

- In most countries and territories (21 out of 37), pharmacy-based vaccination services are paid for by the customer. However, the study identified 13 countries where the service is reimbursed by public health systems and nine with reimbursement by private health systems. And, in 10 countries, the service is provided at no cost to the patient or health system (i.e., the cost is taken up by the pharmacy).
- This report provides a preliminary overview of the remuneration processes for pharmacy-based vaccination services, providing a way for a more detailed analysis to be released in a subsequent report later in 2024.

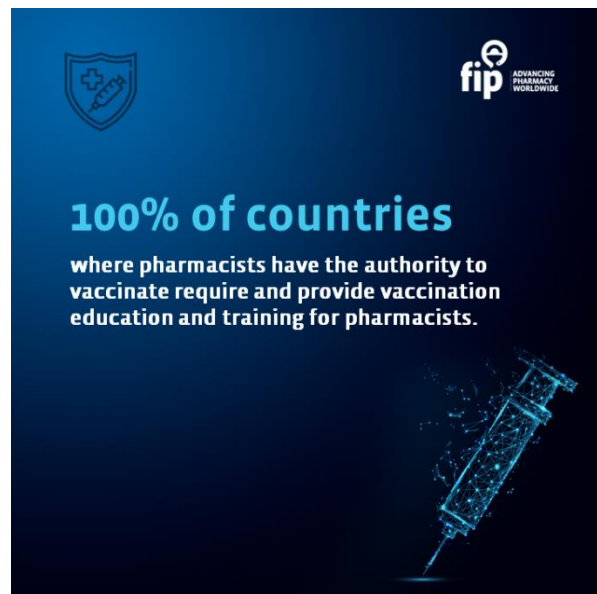
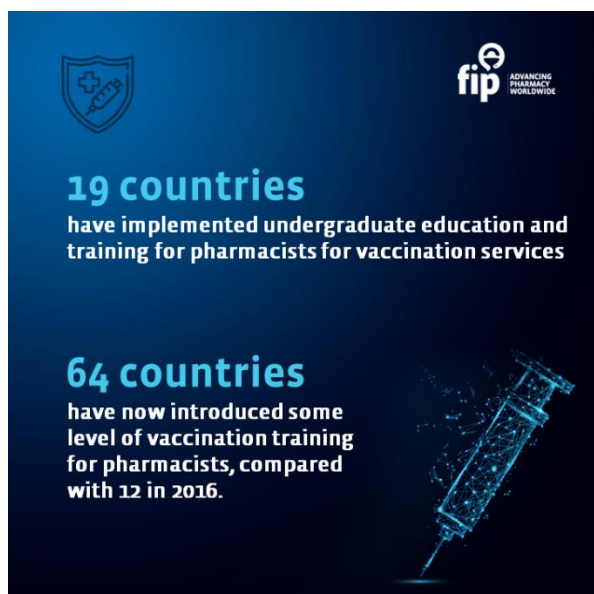
Pharmacy-based vaccine administration

- The influenza vaccine is the most widely administered vaccine by pharmacists, available in 30 countries.
- The COVID-19 vaccine is administered by pharmacists in 29 countries.
- Other vaccines, such as the Tdap boosters (against tetanus, diphtheria and pertussis), hepatitis B, pneumococcal, human papillomavirus (HPV), herpes zoster (shingles) and meningococcal vaccines, can be administered in 14 to 20 of the countries.
- The emergence of the Respiratory Syncytial Virus (RSV) vaccine in eight countries marks a milestone in expanding vaccination options available at pharmacies.
- Variations exist in vaccine administration authority globally, with increases in Tdap boosters and HPV vaccines.
- There are important variations in the age and population groups eligible for vaccine administration: 13 countries allow pharmacists to administer certain vaccines to individuals across all age groups, while others limit eligibility to specific age ranges. Additionally, while eight countries allow the administration of all nine vaccines listed in the survey, others only allow certain vaccines to be administered.
- In countries such as Australia, Canada, Switzerland, and the United States, the eligibility criteria differ across subnational jurisdictions, which leads to variations in practice at the local or regional level.
- In 29 out of 77 countries and territories (38%), pharmacists are authorised to administer vaccines outside of the pharmacy premises, in locations such as clinics and other healthcare facilities, workplaces, nursing homes, schools, or patients' homes. The availability of other locations may offer convenience and accessibility for individuals seeking vaccinations, contributing to increased vaccine uptake rates and overall public health outcomes.



Education and training for pharmacist-delivered vaccination services

- Pharmacists receive vaccination training in over half of the 116 countries (n=64; 55.2%), even including countries where pharmacists do not have vaccination authority. In 100% of countries where pharmacists are authorised to vaccinate, they receive education and training for the provision of this service.
- Since 2016, there has been a notable increase from 12 to 64 countries (+433%) reporting some level of vaccination training for pharmacists. This trend indicates a growing recognition of the vital role pharmacists play in vaccination efforts, accompanied by an increasing emphasis on equipping them with essential skills and knowledge.
- Since 2016, the number of countries reporting vaccination training at the undergraduate level has risen from six to 19, while post-registration, postgraduate, or continuous professional development training has increased from 11 to 41, underlining a growing emphasis on comprehensive pharmacy education in vaccination training.
- With vaccination training mandated in 22 countries and renewal requirements in 17 countries, there is a pressing need to establish ongoing training and certification renewal programmes as more pharmacists gain authority to administer vaccines, ensuring the sustained quality of services.
- In conclusion, there exists a notable variation among countries regarding the extent of authorisation granted to pharmacists to administer vaccines and the availability of essential training to support their role in vaccination service provision.



Access to vaccination records by pharmacists

- The majority of pharmacists do not have access to vaccination records, which is largely associated with countries where pharmacy-based vaccination is not yet available.
- There has been a slight increase observed from 2016 to 2024 in countries where pharmacists have full access to vaccination records, or at least access to some records. Recent data from 2024 (n=73) suggests that vaccination records are fully accessible in only 10 countries (13.7%), whereas limited access to some records is observed in 18 countries (24.7%).
- Positive trends have been observed between 2016 and 2024 in countries where pharmacists are allowed to document patient records for the vaccines they have administered, whether it is mandatory or optional. The latest data from 2024 (n=32) suggests that mandatory recording in a shared vaccination registry is enforced in 20 countries (62.5%), whereas six countries (18.8%) allow pharmacists to record this information voluntarily.

- According to the latest survey in 2024 (n=38), the majority of pharmacies across various countries primarily use a nationally shared electronic system or paper-based registry (e.g., vaccination card or booklet kept by the individual), with 18 countries (47.4%) and 17 countries (44.7%), respectively.

Public satisfaction rates with pharmacy-based vaccination services

- Pilot projects in France, Ireland, Belgium, Estonia, and Poland have shown high patient satisfaction with pharmacist-administered vaccines, emphasising convenience and professionalism.
- Countries like Saudi Arabia, Singapore, and Switzerland are witnessing a growing acceptance of pharmacists' expanded roles in healthcare delivery.
- Challenges remain, including resistance from healthcare professionals in Indonesia and divergent patient preferences in Lebanon and Malaysia.
- Surveys in Canada, Germany, and other nations highlight strong patient satisfaction and willingness to use pharmacy-based vaccination services.

Limitations to the development of pharmacists' role in vaccination

- The changing statistics from 2016 to 2024 indicate a dynamic shift in the perception of barriers, with a general trend towards improved conditions for pharmacists in non-pharmacy-based vaccination settings. Notably, a decline in the lack of confidence by pharmacists was observed, dropping from 81% in 2020 to 33% in 2024.
- New challenges have arisen in settings with established pharmacy-based vaccination. These challenges highlight specific areas needing attention such as enhancing pharmacist training, improving public awareness of pharmacists' roles in vaccination, and addressing the perceptions that may deter patients from utilising pharmacy-based vaccination services.
- A perceived or effective lack of support and recognition from governmental bodies and other healthcare professions to pharmacist-delivered vaccinations is frequent in both countries where pharmacy-based vaccination is present or 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.
- The lack of remuneration for pharmacists' vaccination services is a major barrier, impacting the sustainability and equitable access to vaccination services.
- Various countries have legal restrictions that prevent pharmacists from administering vaccines, significantly impeding their ability to participate in these public health services.

Acknowledgements

The content of this report has been produced independently by the authors and editors.

FIP thanks our member organisations for their contributions to this study. The list of member organisations that responded to the survey can be seen in the Special acknowledgement section.

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Foreword

Achieving Universal Health Coverage (UHC) remains a vital goal globally. Immunisation against vaccine-preventable diseases reduces morbidity and mortality and contributes to herd immunity. It also reduces emergency room (A&E) visits and pressure on existing healthcare facilities, thus releasing resources (including healthcare workforce) for other much-needed healthcare services. In various parts of the world, there continues to exist scepticism from various stakeholders about the ability of pharmacists to deliver vaccination services. However, 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.

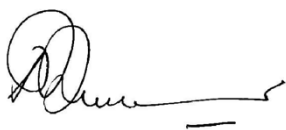
In 2023, FIP released a [Statement of Policy on the role of pharmacy in life-course vaccination](#)¹ (a global policy for the profession) which emphasised the importance of expanding vaccination schedules and strategies beyond infancy, as well as integrating pharmacists into patient immunisation pathways. Recognising and valuing pharmacists' role as vaccinators is imperative for effectively increasing vaccination uptake in communities. Their accessibility and convenience are pivotal to ensuring vaccines reach even the most vulnerable populations. This is especially vital in areas without access to traditional healthcare and vaccination providers. Governments can improve vaccination coverage rates and protect the welfare of the public by taking advantage of pharmacists' accessibility and expertise in administering vaccines to the public.

There is a significant expansion of pharmacists' contribution to vaccination, as more countries are authorising pharmacists to deliver this healthcare and public health service. FIP remains committed to supporting this significant role of pharmacists and advocates for the widespread utilisation of pharmacists to ensure vaccination coverage and improved health systems. Therefore, building on our 2016 and 2020 vaccination surveillance publications, I am pleased to present this global report with the most recent updates on pharmacy's contributions to vaccination.

This report represents findings from 120 countries and territories, and I trust the information provided in this work will be of value to FIP's member organisations and other stakeholders, and their efforts in advocating for pharmacy-based vaccination at the national level. To complement this report, we have developed an [interactive atlas](#), a dynamic digital resource that highlights the significant findings and key insights from our comprehensive study on pharmacist-led immunisation.

The findings of this study reveal a significant increase in the number of countries that have introduced pharmacy-based vaccination—rising by 20 countries since our 2020 report. It is important to note that the 2020 report also included aggregated data from the 2016 survey for countries that did not participate in the 2020 survey, ensuring a comprehensive analysis. As a result, the total number of countries with authorised pharmacy-based vaccinations now stands at 56, marking a 64.7% increase from the 34 countries identified in 2020. This data underscores ongoing policy and regulatory changes in many countries that are necessary to introduce these valuable services in the future.

There remains a significant journey ahead, and FIP will continue to advocate for and support its members in expanding our scope of practice and our contributions to society.



Paul Sinclair
President
International Pharmaceutical Federation

1 Introduction – Pharmacists’ contributions to immunisation

Vaccination is one of the most effective public health interventions to mitigate the burden of disease and saves millions of lives every year.² Vaccination is a highly effective and cost-efficient health intervention that not only keeps vaccinated individuals healthy but also improves the health of the entire population through direct and indirect impacts. Routine vaccination has helped control and eliminate several infectious diseases, preventing millions of deaths annually.¹

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.³ In that sense, pharmacy-based vaccination can be classified as a “professional pharmacy service”^{1, 1, 4}

In 2016, FIP published a report entitled ‘[An overview of current pharmacy impact on immunisation](#)’ to gain a general understanding of pharmacists’ role in immunisation around the world.⁵ According to this report, pharmacists in 32 countries and territories engaged in support and advocacy activities related to immunisations.⁵

Furthermore, a 2018 conference on “Pharmacy-based interventions to increase vaccine uptake” presented an evidence-based review of vaccination administration authorisation for pharmacists and discussed opportunities for further expanding the role of pharmacists in immunisation globally.⁶ It was reported that immunisation rates were higher in countries that authorised pharmacists to administer vaccines such as Canada, Ireland, Portugal, the United Kingdom or the United States, compared with countries that did not authorise it.⁶ Other countries such as Estonia, Croatia, Spain, and Malta shared their benefits from the additional participation of pharmacists in immunisation promotion activities.⁶⁻⁸ These countries are accompanied with the high visibility and accessibility of community pharmacies, and pharmacists are one of the first health professionals that individuals turn to when seeking health care.⁹ Favourable legislation also plays a key role in promoting pharmacists’ involvement.^{10, 11} Thus, in these countries, pharmacists can play a critical role in the prevention, control, and management of high-incidence vaccine-preventable infections and to assist during disease outbreaks and pandemics. They can easily identify patients at higher risk and specific target groups for vaccination, providing necessary counselling and actively participating in reminder and recall systems to ensure that vaccination schedules are met.^{11, 12}

With the spread of the coronavirus disease, there was an immense change in pharmacists’ involvement in increasing awareness of preventive measures and the provision of vaccination services to limit the spread of the virus and ensure the safety of patients and the community at large. Pharmacies ensured they remained open and accessible, providing vaccination services, amongst other essential services at a time of great uncertainty. The COVID-19 pandemic demonstrated that is entirely feasible to integrate community pharmacies as vaccination locations, not only during pandemics and other health emergencies, but also in routine immunisation programmes.^{13, 14}

While immunisation is one of the most successful public health interventions, coverage plateaued in the decade before COVID-19. The COVID-19 pandemic, associated disruptions, and vaccination efforts strained health systems in 2020 and 2021, resulting in dramatic setbacks. However, from a global perspective recovery is on the horizon: coverage has significantly improved for influenza, Tdap, measles, pneumococcal diseases and other vaccines.¹⁵ These improvements could be linked to the increased number of jurisdictions that have granted vaccination administration and/or prescribing authority to pharmacists, and are supported by evidence that shows how the expanded role of pharmacists in vaccination increases vaccination coverage rates.^{6, 16-18} Additionally, the success of pharmacy-led vaccinations can create value for payers and reduce pressure on health systems.^{14, 19, 20}

¹ An action or set of actions undertaken in or organised by a pharmacy, delivered by a pharmacist or other health practitioner, who applies their specialised health knowledge personally or via an intermediary, with a patient/client, population, or other health professional, to optimise the process of care, with the aim to improve health outcomes and the value of healthcare

To support and expand pharmacists' roles in vaccination globally, the FIP Council adopted in September 2023 a [Statement of policy on the role of pharmacy in life-course vaccination](#), which included calls to action and recommendations to different groups of stakeholders — from governments and policy makers to FIP member organisations, and to academic institutions and individual pharmacists — to leverage pharmacist's accessibility and expertise to improve vaccine awareness, confidence and uptake.¹

Following the adoption of this statement of policy, FIP published the report "[Pharmacy-based vaccination: Recent developments, success stories and implementation challenges](#)", a collation of a compilation of 17 case studies and country updates by FIP member organisations from countries with remarkable recent developments in this area, followed by the report from an insight board (focus group) discussion with countries that are at different stages of introducing pharmacy-based vaccination or that are facing specific challenges to achieve this goal.²¹

FIP continued to monitor the role of pharmacists in vaccination, and this new report presents quantitative data and insights into the state of pharmacy-based vaccination globally that can be leveraged to advocate, implement, and sustain this important pharmaceutical service.²²

2 About the study

2.1 Aim and objectives

In 2016, 2019, and 2022, FIP conducted surveys on the role of pharmacists in vaccination and published subsequent reports. Since then, this significant advancement in pharmacists' scope of practice has not only gained momentum for FIP but also for the profession globally, with several countries introducing pharmacy-based vaccination services and related activities.

Considering these developments, through the [Global Pharmaceutical Observatory](#), FIP has collaborated with its member organisations in 2024 to conduct a new comprehensive global survey-based study. This study aimed to gain a better understanding to update the data and intelligence on the following themes:

1. Pharmacists' roles in promoting vaccination awareness and uptake and advocating for vaccination to patients and communities.
2. Regulatory and contractual frameworks for pharmacy-based vaccination
3. Vaccine administration practices
4. Education and training of the pharmacy workforce for vaccination services
5. Access to vaccination records
6. Additional services related to vaccination
7. Limitations to the development of pharmacists' role in vaccination
8. Outcomes and effectiveness of pharmacy-based vaccination programmes
9. Public satisfaction with vaccination coverage.

The aim of this study is twofold: to advocate for an expanded role for pharmacists in increasing vaccination coverage based on the latest evidence, and to monitor the recent advancements in this critical area of pharmacy practice.

Additionally, this report will provide a preliminary overview of remuneration data, laying the groundwork for a more detailed analysis to be released in a subsequent report later in 2024.

2.2 Building an interactive Atlas with study data

This report is accompanied by an [interactive Atlas](#), a dynamic digital tool designed to showcase the highlights and key findings of the global study on pharmacist-led vaccination. The Atlas serves as a visual representation of the data, offering users an engaging way to explore the progress and status of pharmacists' roles in vaccination across different countries and territories.

As such, the Atlas is an integral part of this report, which is presented separately as an online and interactive data platform, so that FIP members and other interested parties can combine multiple search criteria and obtain maps or charts per region, per income level, per vaccine type, and other parameters.

2.3 Data collation methodology, tools, and glossary

Data collation for this survey employed a mixed-methods approach, combining data obtained through surveys conducted from 2016 to 2024 with data extracted from both primary and secondary sources. The longitudinal survey data is designed to monitor trends and changes over time in the global landscape regarding the role of pharmacists in vaccination. Furthermore, the study leverages data from primary sources (e.g., original research articles and

government documents) as well as secondary sources (e.g., review articles). This approach was selected to ensure a comprehensive analysis and the generalisability of findings from this study.

In the 2024 survey, an online questionnaire (

Appendix 1) was distributed to collect country-level data from FIP member organisations. The survey took place from January to February 2024, with biweekly reminders sent to increase response rate. FIP regional account holders were engaged to assist in outreach efforts to increase participation and response rates.

Disclaimer: While the FIP has made every effort to validate and ensure the accuracy of the data presented in this report, we cannot be held responsible for any inaccuracies that may exist within the data provided by survey respondents.

2.3.1 Design of the survey questionnaire

An online questionnaire was created based on the 2016 and 2020 vaccination surveys, with some additional or modified questions. It combined open-ended and multiple-choice questions, and was broadly divided into seven sections as follows: (1) Promoting vaccination awareness and uptake; (2) Advocating for vaccination; (3) Provision, regulation and remuneration of vaccination services; (4) Vaccination records; (5) Training the pharmacy workforce for vaccination services; (6) Limitations to the development of pharmacists' role in vaccination; and (7) Impact of pharmacy-based vaccination. The questionnaire draft went through several stages of review and feedback was incorporated into the final draft.

The final questionnaire draft in English was uploaded to the online survey platform, Question Pro, and was subsequently translated into French and Spanish. An extensive glossary was not provided; however, the following definitions were added in the introduction to provide a clear and shared understanding of these two key concepts:

- 1. Immunisation:** The process by which an individual becomes immune against an infectious disease either by natural contact with an infectious agent or by vaccination.
- 2. Vaccination:** The administration of a vaccine to stimulate immunisation.

The English version of the questionnaire is included under Appendix 1.

2.4 Study sample and demographics

A total of 153 FIP member organisations, representing community pharmacists from 115 countries and territories were invited to participate in the survey this year. Overall, responses were received from 77 member organisations across 73 countries and territories. Organisations within the same country or territory were requested to submit a joint response, thus yielding a response rate of 63.5%, encompassing 73 countries and territories out of 115.

In addition to the responses collected in the 2024 survey, this study also incorporated data from 39 countries and territories that had participated in previous surveys conducted between 2016 and 2022. Notably, only the latest data from each country and territory were included in the analysis. The surveys conducted between 2016 and 2024 covered a total of 112 countries and territories.

Furthermore, the data collection efforts were expanded to include primary and secondary sources. In total, data from eight countries and territories were gathered from these resources, including Chile, Cuba, El Salvador, Guatemala, Luxembourg, Mexico, Peru, and Uganda. After integrating these additional data with survey responses, the dataset for this study encompassed a total of 120 countries and territories.

Figure 1 illustrates the overview of study participants and demographics in this study. Figure 2 shows a map of countries and territories that are included in the report.

Figure 1. Flowchart of study participants and demographics

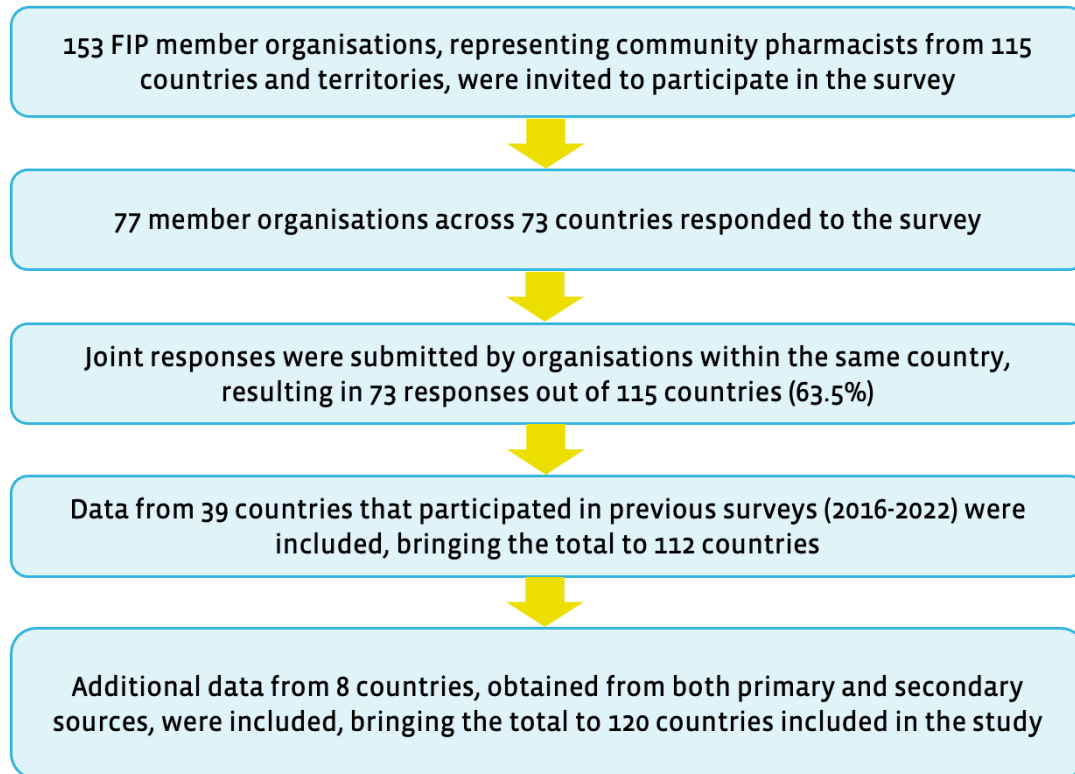


Figure 2 Countries and territories included in the study (n=120)

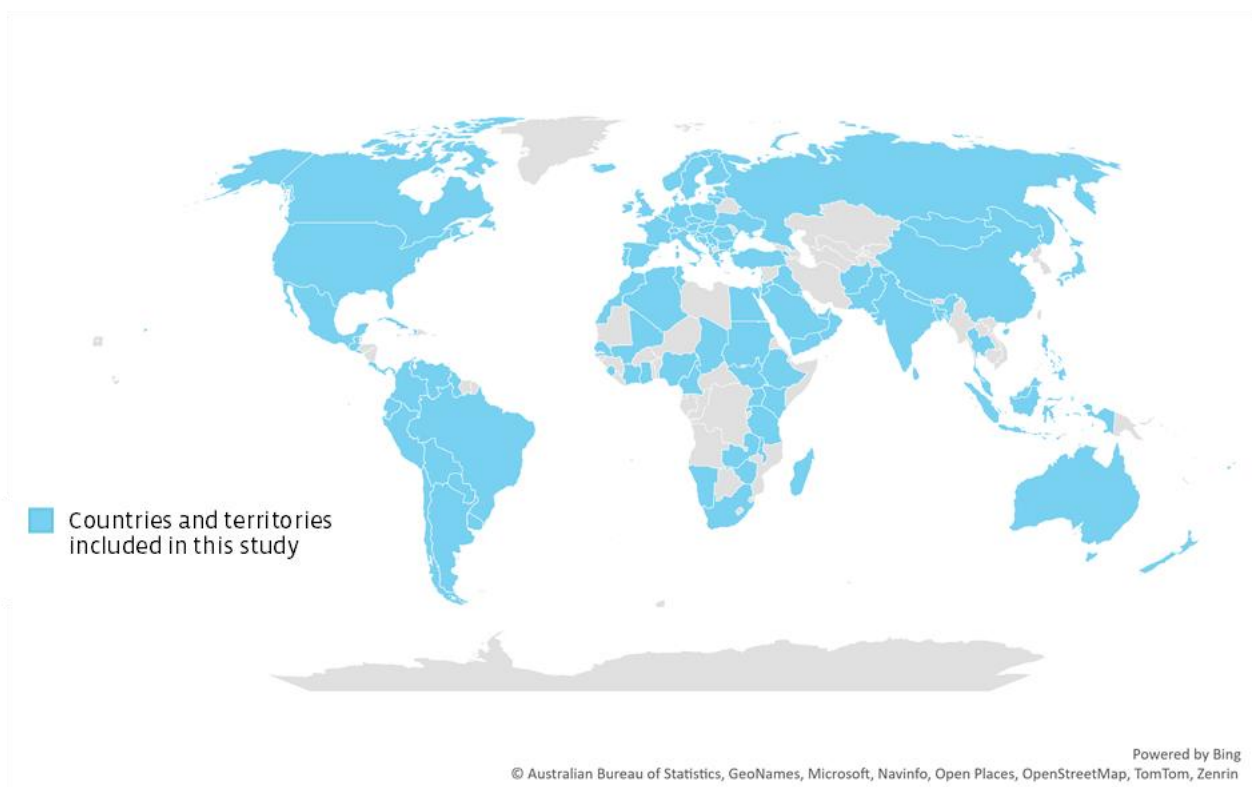




Table 1 shows the distribution of the countries and territories represented in this study, both in terms of number within each WHO region, and population. In terms of the number of respondents, the study is most representative of the European regions.

Table 1. Sample distribution per WHO region covered by the study

WHO region	Number of countries included in the study	Coverage rate per region (%)	List of countries included in the study
Africa	25 (47)	53.2	Algeria, Cameroon, Cape Verde, Chad, Congo (Dem. Rep. of the), Congo (Rep. of), Côte d'Ivoire, Ethiopia, Ghana, Kenya, Madagascar, Malawi, Mali, Mauritius, Namibia, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, South Sudan, Tanzania, Uganda, Zambia and Zimbabwe
Americas	21 (35)	60	Argentina, Barbados, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Mexico, Panama, Paraguay, Peru, United States of America, Uruguay, Venezuela
Eastern Mediterranean	14 (21)	66.7	Afghanistan, Egypt, Iraq, Jordan, Kuwait, Lebanon, Morocco, Oman, Pakistan, Saudi Arabia, Sudan, Tunisia, United Arab Emirates, Yemen
Europe	42 (53)	79.3	Albania, Armenia, Austria, Belgium, Bosnia & Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kosovo, Latvia, Lithuania, Luxembourg, Malta, Montenegro, Netherlands, North Macedonia (Republic of), Norway, Poland, Portugal, Romania, Russian Federation, Serbia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Türkiye, Ukraine, United Kingdom
South-East Asia	6 (11)	54.6	Bangladesh, India, Indonesia, Nepal, Sri Lanka, Thailand
Western Pacific	12 (27)	44.4	Australia, China, China Taiwan, Fiji, Hong Kong SAR, Japan, Korea (Rep. of), Malaysia, Mongolia, New Zealand, Philippines, Singapore

3 Pharmacists' roles in promoting vaccination awareness and uptake and advocating for vaccination

Summary of key statistics and denominators		
	Number of countries and territories with data on pharmacists' role in awareness and advocacy activities (from all sources)	109 out of 120 (90%)
	Number of countries and territories where pharmacists are included in their national immunisation technical advisory groups (NITAGs), based on data from the 2024 survey.	22 out of 73 (30%)

Available evidence from the 74 countries (inclusive of Luxembourg from relevant publications) that participated in the 2024 survey provided supporting insight into the already existing literature on the ability of pharmacists to contribute towards vaccination uptake through vaccine awareness promotion and advocacy activities. While these activities were routinely practiced in 20 countries, they were not routinely conducted in 40 of these countries. In this context, data suggest that pharmacy practice is yet to fully utilise its position to prioritise these activities. Nevertheless, the acknowledgement of the existence and importance of these services is laudable and remains vital in the life-course vaccination roadmap in these countries.

3.1 Vaccination awareness and advocacy activities

As indicated in Table 2 below, data from 2016 and 2020 were pulled with current data to have 109 cumulative responses for countries where different awareness and advocacy activities were performed.

Table 2. Sources of cumulative data for countries and territories involved in vaccination awareness activities

Year of data source survey	Number of countries/ territories	Countries and territories
2016 ²³	1	Bolivia
2020 ¹⁸	35	Algeria, Armenia, Chad, Congo, Rep. Of, Côte d'Ivoire, Czech Republic, Egypt, Ethiopia, Fiji, Greece, Haiti, Iraq, Kenya, Korea (Rep. of), Kuwait, Latvia, Madagascar, Mali, Mauritius, New Zealand, North Macedonia (Republic of), Oman, Pakistan, Panama, Poland, Rwanda, Senegal, Singapore, Slovak Republic, Sudan, Tanzania, United Arab Emirates, Venezuela, Zambia, Zimbabwe
2024	73	Albania, Argentina, Australia, Austria, Bangladesh, Barbados, Belgium, Bosnia & Herzegovina, Brazil, Bulgaria, Cameroon, Canada, Cape Verde, China, China Taiwan, Colombia, Congo, Dem. Rep. of the, Costa Rica, Croatia, Cyprus, Denmark, Ecuador, Estonia, France, Finland, Germany, Ghana, Guyana, Hong Kong SAR, China, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Japan, Jordan, Kosovo, Lebanon, Lithuania, Malawi, Malaysia, Malta, Mongolia, Montenegro, Morocco, Namibia, Nepal, Netherlands, Nigeria, Norway, Paraguay, Philippines, Portugal, Romania, Russian Federation, Serbia, Sierra Leone, Slovenia, South Africa, South Sudan, Spain, Sri Lanka, Sweden, Switzerland, Tunisia, Türkiye, United Kingdom, United States of America, Ukraine, Uruguay, Yemen

These activities as shown in Figure 3 include:

3.1.1 Distributing educational leaflets on vaccination

Educational materials remain one of the most effective methods of public education for improving vaccine uptake and coverage.²⁴ For over one-third of the respondents (42.4%), this activity was practiced. Conveying evidence-based information and advice through educational leaflets in lay language improves the understanding for vaccine recipients, improves literacy and increases vaccine uptake. Information leaflets, posters and other materials can be downloaded from the website of the FIP campaign “Let’s talk about vaccines!”, which can be accessed [here](#).

3.1.2 Participating in pharmacy-led campaigns about vaccination

In over 50% of responding countries (n=59), pharmacists organised vaccination campaigns or participated in such campaigns. This activity, which can increase access to hard-to-reach populations, was one of the most implemented strategies in raising vaccination awareness and advocacy.

3.1.3 Providing vaccination information and advice

Within activities targeted at raising awareness about the benefits of vaccination, addressing vaccination misinformation was practiced by 79% of the member organisations (n=86). This facilitates personalised responses to dispelling existing vaccination myths. In addition, providing personalised advice functions as a complement to general educational approaches such as posters and leaflets, and provides the opportunity to customise vaccine recommendations to the specific circumstances of each individual.

3.1.4 Participating in multi-disciplinary vaccination campaigns

There is a need for concerted multi-disciplinary collaborations to mitigate vaccine hesitancy, improve access to vaccines and portray a unified effort between health professionals to achieve good health for the population. The involvement of pharmacists from over half of the countries (n=51, 47%) in this kind of activity shows an important engagement of the pharmacy profession in public health initiatives.

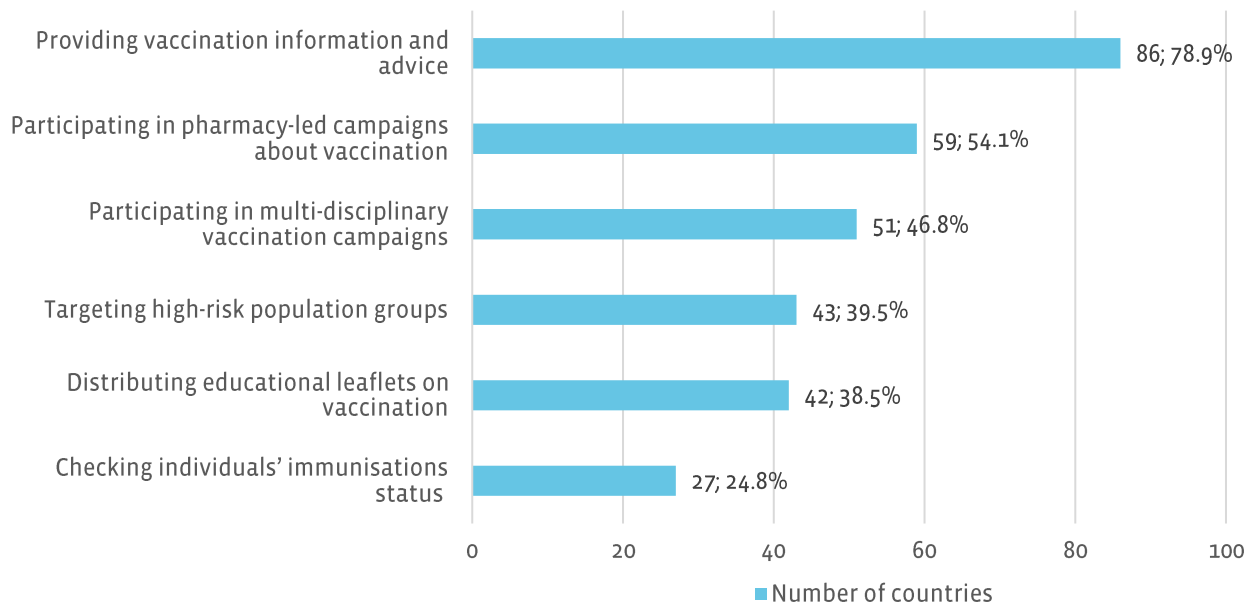
3.1.5 Checking individuals’ immunisation status

Verifying an individual’s immunisation status provides pharmacists with the opportunity to check whether the person has received all vaccines that they may need or benefit from, considering their individual age, clinical situation, pregnancy status or other risk factors, and to provide advice or a reminder to the person about their upcoming or missing vaccine doses. It may also provide the opportunity to identify individuals who have concerns about vaccines or simply have not taken the recommended vaccines. This activity is routinely performed by pharmacists in just over a quarter of the responding countries (n=27, 26%), which suggests that there is significant room for improvement in terms of granting pharmacists access to immunisation records in most countries.

3.1.6 Targeting high-risk population groups

Vaccine-preventable diseases can be mitigated in high-risk groups such as older adults, pregnant individuals, people living with comorbidities, travellers, and immunocompromised individuals. In 39% of respondents (n=43), activities focused on promoting vaccination of high-risk populations are conducted by pharmacists, underscoring the importance of the role of pharmacists in supporting the health of these special populations.

Figure 3. Vaccination advocacy activities that pharmacists participate in (n=109)



3.2 Representation in national immunisation technical advisory groups

The establishment of robust collaborations and stakeholder engagements is imperative for the successful implementation of pharmacy-based vaccination. As shown in Figure 3, it is noteworthy that in only 22 out of the 73 (30%) countries surveyed, pharmacists are represented in their country's national immunisation technical advisory groups (NITAGs).

The representation of pharmacists in NITAGs is crucial for several reasons, and a low level of representation can have significant implications:






1. **Expertise diversity:** Pharmacists bring a unique set of skills and expertise to the table. Their knowledge of medicines, drug interactions, and vaccination protocols can complement the perspectives of other healthcare professionals on the NITAG. Without adequate representation, there may be gaps in expertise that could impact decision-making processes.
2. **Access to immunisation services:** Pharmacists often play a critical role in vaccine administration, particularly in community settings where they may be the primary point of contact for immunisation services. Their involvement in NITAGs ensures that the policies and recommendations developed consider the practical aspects of vaccine delivery and accessibility for the general population.
3. **Public trust and confidence:** Including pharmacists in NITAGs can enhance public trust in immunisation programmes and incorporate elements of building vaccine confidence and addressing hesitancy and complacency into the discussions around vaccination strategies. Pharmacists are widely trusted healthcare professionals, and their participation in decision-making processes can lend credibility to vaccination policies and recommendations. Conversely, a lack of pharmacist representation may raise concerns about the inclusivity and transparency of the advisory group.

4. **Policy development and implementation:** NITAGs are responsible for developing evidence-based immunisation policies and recommendations that guide national vaccination programmes. Pharmacists' input is essential for ensuring that these policies are practical, feasible, and aligned with the realities of healthcare delivery. Without pharmacist representation, there is a risk that policies may not fully consider the operational aspects of vaccine delivery and administration.
5. **Advocacy for pharmacy practice:** Pharmacists can advocate for the expanded role of pharmacy in immunisation services through their participation in NITAGs. By highlighting the value that pharmacists bring to vaccination efforts, they can influence policy decisions that support the integration of pharmacy services into broader public health initiatives.

Considering the points above, a low level of representation of pharmacists in NITAGs can hinder the effectiveness and inclusivity of decision-making processes related to immunisation policies. To maximise the benefits of vaccination programmes, it is essential to ensure that diverse perspectives, including those of pharmacists, are represented in advisory groups tasked with shaping national immunisation strategies.

4 Regulatory and contractual frameworks for pharmacy-based vaccination

4.1 Availability of pharmacy-based vaccination

Summary of key statistics and denominators		
	Number of countries and territories included in the report with data on the availability of pharmacy-based vaccination	117
	Number of countries and territories where pharmacy-based vaccination (PBV) is authorised	56 out of 117 (47.9%)
	Number of countries and territories where pharmacy-based vaccination PBV is NOT authorised	61 out of 117 (52.2%)
	Number of countries and territories where pharmacists are authorised to administer vaccines in pharmacies	43 out of 117 (36.7%)
	Number of countries and territories where only other healthcare professionals are authorised to administer vaccines in pharmacies	13 out of 117 (11.1%)

In the 2024 survey, submissions were received from 73 countries, with 38 reporting the availability of pharmacy-based vaccination (PBV) (52%). Incorporating data from previous surveys and literature reviews, the aggregated submissions reveal that PBV is now accessible in at least 56 countries and territories, out of a collective sample of 117 (47.9%). This analysis indicates that our current study has uncovered 22 new countries with PBV since our 2020 survey.

The samples of the three surveys are quite different (45 respondents in 2016⁵, 99 in 2020¹⁸, and 73 in 2024), but there is a group of 36 countries and territories in common. In this common group, there was a 37.5% increase in the number of countries with pharmacy-based vaccination (PBV) from 2016 to 2020, growing from 16 to 22 countries. From 2020 to 2024, there was a further 13.6% increase in PBV availability, rising from 22 to 25 countries.

Based on the aggregated data, vaccination by pharmacists is authorised in 43 countries and territories, representing 36.7% of the total (n=117). This shows a significant increase from 13 countries in 2016 and 26 countries in 2020. Additionally, in 13 countries, which account for approximately 11.1% of the sample, only other healthcare professionals, not pharmacists, are permitted to administer vaccines in pharmacies. For example, in Paraguay, while there is pharmacy-based administration of vaccines for flu and anti-tetanus vaccines, it is pharmacy technicians, rather than pharmacists, who administer them.

In the aggregated data we use for this study, there was a 3.31 fold increase in the number of countries and territories where vaccination by pharmacists is authorised, rising from 13 in 2016 to 43 in the aggregated data. This data signifies that the authorisation for pharmacists to administer vaccines has seen substantial growth, highlighting an expanding role for pharmacists in global healthcare practices.

Nevertheless, just over half (61 out of 117) of countries and territories in our study still do not have pharmacy-based vaccination, which suggests that there is still a long way to go to expand pharmacy practice in these countries to include this important service.

Figure 4 provides a geographical overview of pharmacy-based vaccination at the international level.

Figure 4. Countries and territories with or without pharmacy-based vaccination (n=117)

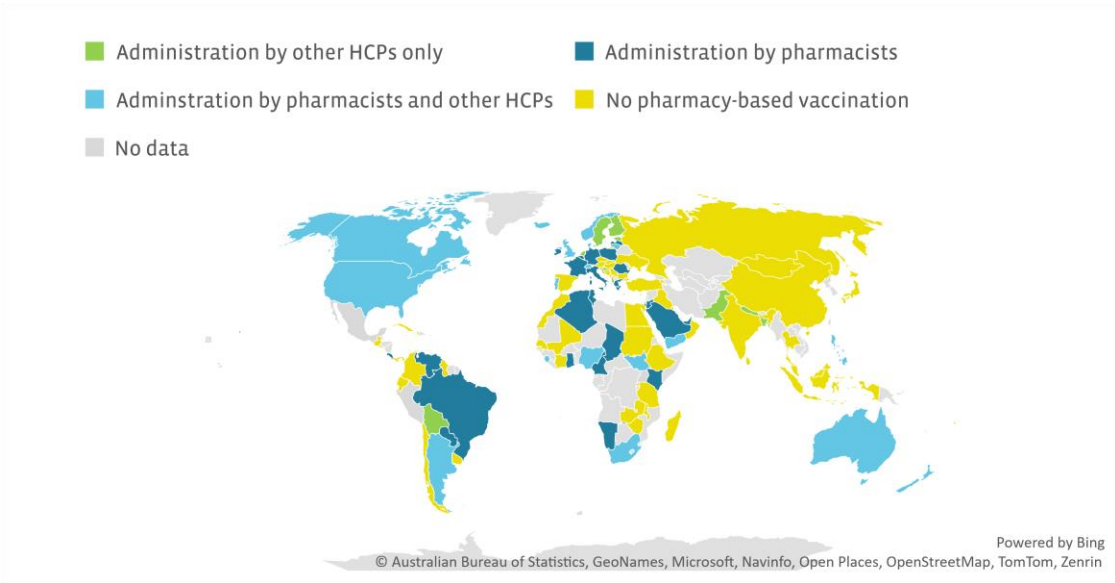


Table 3 showcases the availability of pharmacy-based vaccination across the countries and territories in the aggregated study sample in comparison with 2016, 2020 and 2024 survey data.

Table 3. Comparative overview of vaccine administration in pharmacies by pharmacists or other healthcare professionals in 2016, 2020, 2024 and aggregated data

Countries and territories where administration of vaccines in pharmacies is allowed	% of sample (n)			
	2016	2020	2024	Aggregated data
PBV (by pharmacists)	28.9% (13)	26.3% (26)	43.8% (32)	36.7% (43)
PBV (but only by other HCPs*)	15.6% (7)	8% (8)	6.9% (5)	11.1% (13)
No PBV	55.6% (25)	65.7% (65)	47.9% (35)	52.2% (61)
Total	100% (45)	100% (99)	100% (73)	100% (117) ²

*HCPs: Other healthcare professionals including physicians, nurses, and pharmacy technicians

² Includes aggregated data for 44 countries that were not part of the 2024 survey, incorporating the latest information obtained from previous surveys, recent reports, publications, and other sources

Appendix 2 compiles the most current data on countries and territories where pharmacy-based vaccination is feasible, including details on the healthcare professionals authorised to administer vaccines in pharmacy settings.

After aggregating data from our surveys and additional sources, we have identified some discrepancies in the reporting of pharmacy-based vaccination (PBV) availability across different countries and territories. These discrepancies, resulting from variations in the interpretation of the questionnaire rather than changes in regulations or practices, span the survey years 2016, 2020, and 2024. Below is an overview of these instances:

1. **Congo, Democratic Republic of the:** reported PBV presence in 2016 but indicated its absence in the 2024 survey. This shift is attributed to the misinterpretation of the questionnaire rather than any regulatory changes, confirming that PBV is not permitted in the country.
2. **Hong Kong:** Initially indicated the availability of PBV in 2020, but this was revised in 2024. The revision comes from a reinterpretation; pharmacists in Hong Kong can administer vaccines, but not in the pharmacy setting. Vaccine administration by pharmacists is led by the Hong Kong government, with pharmacists primarily involved in vaccine reconstitution rather than direct administration due to insurance constraints. There are no explicit regulations either prohibiting or endorsing this practice.
3. **Indonesia:** Reported PBV presence in 2020, but not in the 2024 survey. The clarification provided indicates that vaccine administration by pharmacists is confined to military personnel in specific healthcare facilities, narrowing the scope of PBV practice.
4. **Pakistan:** Reported having PBV in 2016 and its absence in 2020. The inconsistency was not due to a regulatory change but rather different interpretations of the questionnaire in those years. It has been confirmed that pharmacy-based vaccination is available in Pakistan; however, vaccine administration in pharmacies is performed only by healthcare professionals other than pharmacists.
5. **Bangladesh, Finland, Malta, Nepal, and Sweden:** These countries reported PBV presence in 2020 but not in 2024. Upon review, it was confirmed that while PBV exists, it is facilitated by healthcare professionals other than pharmacists. For example:
 - In **Malta**, vaccines are typically administered in pharmacies by doctors, not pharmacists.
 - **Nepal** sees this practice occur in pharmacies owned by auxiliary health workers or nurses, indicating a deviation from traditional pharmacy-based settings.
 - In **Sweden**, it is noted that while vaccinations are provided in pharmacies, they are administered by nurses, making pharmacies a common site for receiving vaccinations.
 - In **Bangladesh**, vaccinations can be administered in pharmacies but only by pharmacy technicians or doctors associated with pharmacies. The technicians referred to here receive some training and mainly administer vaccines, operating under the government's expanded programme of immunisation.
 - In **Finland** vaccinations in pharmacies are not administered by pharmacists, although this is anticipated to change, with plans to authorise pharmacists for vaccination soon.

Based on our aggregated data, since 2020, 22 additional countries have implemented pharmacy-based vaccination (PBV). 17 countries that reported not having PBV in their 2020 survey responses now have it: Albania, Algeria, Belgium, Cameroon, Cape Verde, Croatia, Germany, Ghana, Italy, Jordan, Latvia, Lithuania, Nigeria, Poland, Romania, United Arab Emirates, and Yemen. Additionally, five countries previously without data have now been identified as having PBV: Luxembourg, Namibia, Saudi Arabia, South Sudan, and Tunisia.

Table 4 presents the distribution of countries and territories with pharmacy-based vaccination per WHO region, as well as the number of respondents in each region that indicated which health workers are authorised to administer vaccines at pharmacies.

Table 4. Number of countries and territories with pharmacy-based vaccination (PBV) per WHO region





WHO region	Countries and territories in the study	Countries and territories with PBV	% of the countries with PBV per region in the study	PBV by pharmacists	PBV by trained pharmacy technicians	PBV by other healthcare professionals (e.g., nurses or doctors)
AFRO	20.7% (24)	11	45.9%	11	1	4
EMRO	12% (14)	7	50%	5	-	3
EURO	35.3% (41)	25	60%	18	2	14
PARO	16.4% (19)	8	42.1%	6	2	4
SEARO	5.2% (6)	2	33.3%	-	1	2
WPRO	10.3% (12)	3	25%	3	-	3
Total	100% (117)	56	47.9%	43	6	30

Table 5 presents a similar analysis by World Bank income level. While the implementation of pharmacy-based vaccination is proportionally higher in upper-middle income countries, this service is present in 30 high-income countries out of the 48 countries and territories that participated in the study.

Table 5. Number of countries and territories with pharmacy-based vaccination (PBV) per World Bank income level

Income level	Countries and territories in the study	Countries and territories with PBV	% of the countries with PBV per region in the study	PBV by pharmacists	PBV by trained pharmacy technicians	PBV by other healthcare professionals (e.g., nurses or doctors)
High income	41.4% (48)	30	62.5%	24	3	17
Upper middle income	25% (29)	8	27.6%	6	1	3
Lower middle income	23.3% (27)	14	51.8%	9	1	7
Low income	10.3% (12)	4	33%	4	1	3
Total	100% (117)	56	47.9%	43	6	30

4.2 Pharmacists' authorisation to prescribe vaccines

Summary of key statistics and denominators		
	Number of countries and territories included in the report with data on pharmacists' authorisation to prescribe vaccines	53
	No prescribing authority	24 out of 53 (45%)
	Prescribing authority of some vaccines	26 out of 53 (49%)
	Prescribing authority of all vaccines	3 out of 53 (6%)

Among the 56 countries or territories where pharmacy-based vaccination is regulated, 53 provided information on prescribing authority. For the purpose of this study, vaccine prescribing authority by pharmacists was defined as pharmacists being authorised to administer or dispense vaccines without the need for a medical prescription. This transfers to the pharmacists the responsibility of assessing the relevance or eligibility of an individual to receive a given vaccine.

As shown in Table 6, 26 respondents (49%) indicated that pharmacists are authorised to prescribe certain vaccines for administration. This marks a noticeable increase from 2020 when the majority of respondents (68%) lacked prescribing authority, and only seven respondents (21%) authorised pharmacists to prescribe some vaccines.

On the other hand, 24 respondents (45%) stated that pharmacists cannot prescribe vaccines, while three (6%) reported that they can prescribe all vaccines. Details regarding which vaccines pharmacists can prescribe are provided in Table 6.




Further analysis of the data reveals certain discrepancies in relation to previous surveys, which are explained by different interpretations of the survey questionnaire. For example, Lebanon, which had previously indicated that pharmacists had vaccine prescribing authority, revised its response to 'no' in 2024. This change is in accordance with Lebanese law, which prohibits pharmacists from administering vaccines in community pharmacies. Similarly, Uruguay had previously reported that pharmacists could prescribe some vaccines but has now reported that this is not the case.

Table 6. Pharmacists' vaccine prescribing authority, and vaccines they are authorised to prescribe per country (n=56)

Regulatory situation	Country or territory	Vaccines
No prescribing authority (n=24; 45%)	Albania, Bangladesh, Bolivia, Cameroon, Cape Verde, Croatia, Denmark, Estonia, Finland, Ghana, Iceland, Lebanon, Malta, Nepal, Netherlands, Paraguay, Philippines, Romania, Saudi Arabia, South Sudan, Sweden, United Arab Emirates, Venezuela, Yemen	
Pharmacists authorised to prescribe some vaccines (n=26; 49%)	Algeria	Influenza, COVID-19 ²¹
	Argentina	Pharmacists have prescribing authority for vaccines that are part of vaccination campaigns for specific population groups and are pre-paid by public third-party payers, or vaccines included in the national vaccination schedule in some jurisdictions. In those cases, the pharmacy must join the Expanded Immunization Programme and may administer vaccines without a prescription. This also applies to the COVID-19 vaccine
	Australia	Specifics vary by state; refer to the vaccination regulations of the Pharmaceutical Society of Australia, available here
	Belgium	Influenza, COVID-19
	Brazil	All vaccines included in the National Immunisation Programme

Regulatory situation	Country or territory	Vaccines
	Canada	Specifics vary by province, refer to the Canadian Pharmacists Association summary available here
	France	Vaccines for those aged 11+ per the national vaccination schedule, excluding live attenuated vaccines for immunocompromised individuals and travellers' vaccines like hepatitis A
	Germany	Influenza, COVID-19
	Greece	Influenza, COVID-19
	Ireland	COVID-19, Influenza, Herpes Zoster, certain pneumococcal vaccines
	Israel	Influenza for individuals 18+ and non-asthmatic, excluding those with egg allergies or a history of anaphylaxis
	Italy	COVID-19 and influenza vaccines for non-naïve patients (patients with no previous therapeutic exposure)
	Jordan	Influenza
	Lithuania	Tick-borne encephalitis, influenza, pneumococcal, and COVID-19 vaccines
	Namibia	Influenza
	New Zealand	Influenza (ages 3+), MMR, COVID-19, HPV (ages 9+), Meningococcal (ages 16+), Tdap (ages 18+ or pregnant individuals 13+), Herpes Zoster (ages 50+) ¹⁰
	Nigeria	COVID-19
	Norway	Influenza, COVID-19
	Poland	Influenza ²⁵
	Portugal	Influenza, COVID-19
	Sierra Leone	Hepatitis B
	South Africa	Medicines on Expanded Programme of Immunisation and the flu vaccine for general pharmacists. Pharmacists who completed the short course on vaccination and immunisation, and obtained a Section 22A(15) permit from the Department of Health, may prescribe, dispense and administer all vaccines and treat anaphylactic shock
	Switzerland	Varies by canton. Commonly authorised vaccines include flu, tick-borne encephalitis, COVID-19, Hepatitis A and B, and dTpa.
	Tunisia	Influenza, COVID-19 ²¹
	United Kingdom	Covid-19, influenza, travel vaccines such as hepatitis A, typhoid, cholera, polio/diphtheria/tetanus - under nationally or locally commissioned services by the National Health System. Some community pharmacies offer private vaccination clinics where vaccines are prescribed and administered.
	United States of America	Within the 50+ United States and territories, there are varying scopes of practice that may require a prescription from a separate provider. By and large, most states authorise pharmacists to order and administer vaccines recommended by the Advisory Committee on Immunization Practices and routine vaccines without a separate prescription. Additionally, the patient's age is another factor that varies by state/territory as some require a prescription for younger aged populations based upon the vaccine.
Pharmacists authorised to prescribe all vaccines that they administer (n=3; 6%)	Chad, Costa Rica, Kenya	

4.3 Policy developments on pharmacy-based vaccination

Summary of key statistics and denominators		
	Number of countries and territories included in the report with data on policy developments	79
	Actively proposing or developing policies to enhance pharmacists' authority to administer or prescribe vaccines	37 out of 79 (47%)
	Not proposing or developing policies to enhance pharmacists' authority to administer or prescribe vaccines	42 out of 79 (53%)

The evolving role of pharmacists in vaccination is reflected in the legislative changes being explored and implemented across various countries to expand their responsibilities and scope of practice. The findings in this section are based on data provided by 79 countries, offering insights into some trends and challenges in the development of such policies.

Of the 79 countries that provided data on policy developments, 37 (approximately 47%) are actively proposing or developing policies to enhance pharmacists' authority to administer or prescribe vaccines. Notably, within this group, 12 countries currently lack any form of pharmacy-based vaccination (PBV) and four (Croatia, Estonia, Finland, and Malta) permit vaccinations within pharmacies but do not authorise pharmacists to administer them.

Conversely, the remaining 42 countries (53%) reported no ongoing or expected changes to policies concerning pharmacists' roles in vaccinations. This group includes:

- 20 countries with existing PBV where pharmacists are involved in vaccine administration.
- 5 countries (Bangladesh, Lebanon, Nepal, Paraguay, and Sweden) with PBV but pharmacists are not authorised to administer vaccines.

In many cases, existing laws strictly define who can administer vaccines, often excluding pharmacists. For example, in Colombia, legal frameworks explicitly reserve vaccine administration for medical doctors, viewing it outside the scope of pharmacy practice.


During the COVID-19 pandemic, some countries considered temporary policies to allow pharmacists to administer vaccines due to the emergency. However, plans were not extended afterward. In some instances, like Indonesia, pharmacists in military settings received special permission to vaccinate specific groups, such as military generals.

In Spain, an ongoing project aims to assess the role of community pharmacies in vaccination strategies, though a formal policy has not yet been established.

While nearly half of the countries surveyed are advancing toward more inclusive policies, a significant number remain static, often challenged by political, logistical, or institutional barriers. The disparity in policy adoption and implementation highlights the complexity of health service reforms but also points to the potential for future shifts as the benefits of more integrated roles for pharmacists become increasingly evident. Moving forward, leveraging pharmacists in vaccination efforts will require overcoming these barriers through targeted policymaking, stakeholder engagement, and international collaboration.

Details about ongoing advocacy efforts and current or expected policy developments in terms of pharmacy-based vaccination or pharmacist-delivered vaccination services are provided for each country in Appendix 3.

4.4 Reimbursement for vaccination services

Summary of key statistics and denominators		
	<u>Number of countries and territories</u> included with data on reimbursement for vaccination services	37
	Reimbursed by public (state-run) health systems or insurers	13 out of 37 (35%)
	Reimbursed by private health systems or insurers	9 out of 37 (24%)
	Paid for by the customer	21 out of 37 (57%)
	Free of charge (funded by the pharmacy)	10 out of 37 (27%)

This report provides a preliminary overview of the remuneration processes for pharmacy-based vaccination services, providing a way for a more detailed analysis to be released in a subsequent report later in 2024. In this context, "services" specifically refers to the administration of vaccines in pharmacy-based settings.

Figure 5 provides an overview of the reimbursement status for pharmacy-based vaccination across different countries' income levels. Overall, pharmacy vaccination services are paid for by the customer in the majority of countries and territories (21 out of 37). Thirteen respondents (12 from high-income countries and one from upper-middle-income countries) reported that public health systems reimburse the service. Nine countries reported the existence of reimbursement by private health systems, and ten countries also responded that the services are provided free of charge to the patients (the cost is taken up by the pharmacy). There are no examples of reimbursement by third-party payers in the few cases in which low-income or lower-middle countries currently have pharmacy-based vaccination.

A hybrid situation system is common in various countries (such as Argentina and the United Kingdom) wherein pharmacists can receive reimbursement through three funding models, as outlined in Table 7. Conversely, in Denmark, the reimbursement mechanism varies based on the type of vaccination service. The public health system pays for some services, while others are paid for by customers. Table 7 provides an overview of the countries and territories associated with each funding model.

The reimbursement models for pharmacy-based vaccination reflect policies and strategies to foster equitable access and achieve high vaccination coverage rates. In countries where customers pay, economic barriers may limit access, requiring targeted strategies to facilitate vaccinating people most needed. On the other hand, many people prefer to

receive their vaccinations at a pharmacy due to their confidence in pharmacists and the convenience (location and opening hours, walk-in appointment), although they need to pay for the services.

Figure 5. Countries with different models for pharmacy-based vaccination services (n=37)

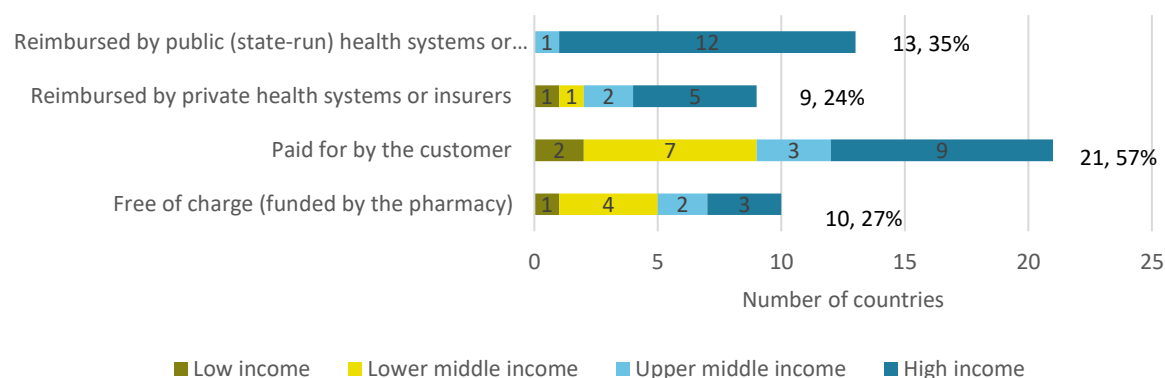















Table 7. Countries and territories per funding model for pharmacy-based vaccination services

Model	Countries and territories
Reimbursement by public (state-run) health systems or insurers	Argentina, Australia, Belgium, Canada, Denmark, France, Germany, the United Kingdom, Iceland, Ireland, Italy, Norway, and the United States of America.
Reimbursement by private health systems or insurers	Argentina, Germany, the United Kingdom, Portugal, South Africa, Switzerland, Tunisia, the United States of America, and Yemen.
Paid for by the customer	Argentina, Australia, Bangladesh, Brazil, Cape Verde, Denmark, Ghana, the United Kingdom, Ireland, Italy, Jordan, Namibia, Nepal, Norway, Philippines, Portugal, Romania, Sierra Leone, Switzerland, Tunisia, and Yemen.
Free of charge (funded by the pharmacy)	Algeria, Cameroon, Costa Rica, Croatia, Israel, Lebanon, Nigeria, Paraguay, Romania, and South Sudan.

5 Vaccine administration

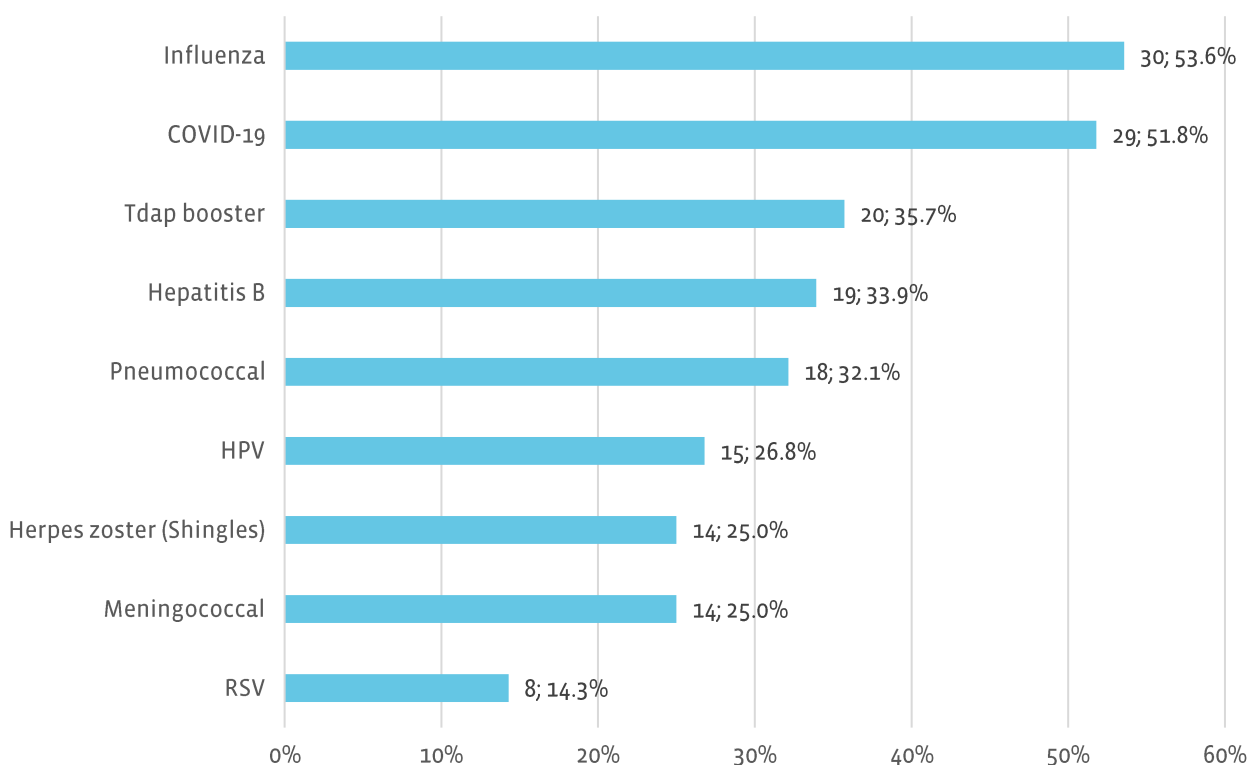
5.1 Vaccines administered at pharmacies

Vaccine administration at pharmacies		
	Number of countries and territories where pharmacy-based vaccination (PBV) is authorised	56
	Influenza	30 out of 56 (53.6%)
	COVID-19	29 out of 56 (51.8%)
	Tdap booster	20 out of 56 (35.7%)
	Hepatitis B	19 out of 56 (33.9%)
	Pneumococcal	18 out of 56 (32.1%)
	HPV	15 out of 56 (26.8%)
	Herpes zoster (Shingles)	14 out of 56 (25%)
	Meningococcal	14 out of 56 (25%)
	RSV	8 out of 56 (14.3%)
	Number of countries and territories with data on authorisation of pharmacists to administer vaccines outside of the pharmacy premises	77
	Yes	29 out of 77 (38%)
	No	48 out of 77 (62%)

There is a variety of vaccines that are commonly administered at pharmacies, including influenza (flu), COVID-19, pneumococcal, and herpes zoster (shingles). Pharmacists are authorised to administer these vaccines in several countries. Figure 6 shows that among a total of 56 countries with pharmacy-based vaccination available, the influenza vaccine emerges as the most widely administered vaccine by pharmacists, available in 30 countries (53.6%). This underscores the critical role pharmacists play in seasonal influenza prevention efforts, serving as accessible providers and vaccination points for communities. Following closely is the COVID-19 vaccine, administered in 29 countries (51.8%). This highlights the pivotal role of pharmacists in the global vaccination delivery against the pandemic and in ensuing strategies to maintain a high level of immunity against the SARS-CoV-2 virus among the population, and particularly among high-risk groups.

The administration of other vaccines by pharmacists, such as the Tdap boosters (against tetanus, diphtheria and pertussis), hepatitis B, pneumococcal, human papillomavirus (HPV), herpes zoster (shingles) and meningococcal vaccines, are available in 14 to 20 of the countries included in the study. This emphasises the diverse range of preventive healthcare services offered by pharmacies. However, it is important to note that Herpes zoster and meningococcal vaccines can be administered in fewer countries compared to other vaccines, indicating potential variations in healthcare priorities and vaccination strategies globally.

Figure 6. Vaccine administered at pharmacies (n=56)



The respiratory syncytial virus (RSV) vaccine has emerged as a significant addition to the variety of vaccines against respiratory viruses and is currently administered at pharmacies in eight countries. This vaccine plays a crucial role in protecting against RSV, a highly contagious virus that can lead to severe respiratory illnesses, especially in vulnerable populations such as infants and older adults. The administration of the RSV vaccine marks a milestone in expanding vaccination options available at pharmacies. Its inclusion not only broadens the scope of preventive healthcare services but also highlights the evolving nature of vaccination strategies.

Notable variations in vaccine administration authority have been observed globally between 2020 and 2024 (see Table 8). Significant increases were noted for the administration of Tdap boosters (42.9% more countries) and HPV vaccine (36.4% more countries), followed by vaccines against pneumococcal disease (20% more countries) and herpes zoster (16.7% more countries). The administration of meningococcal and influenza vaccines showed a moderate increase of 7.7% and 3.4%, respectively. However, despite increases in other vaccine administrations, the authority to administer hepatitis B vaccine between 2020 and 2024 remained unchanged.

Overall, the study data indicate that pharmacies are increasingly involved in the administration of a broader range of vaccines, and the pharmacist's role is also involved more, thus establishing pharmacies as vaccination centres and highlighting their contribution to improving vaccination coverage rates.

Table 8. Variations of vaccine administration authority between 2020 and 2024

Vaccines	Administration authority			
	No. of countries in 2020 (n=31)	No. of countries in 2024 (n=56)	Variation since 2020 (%)	List of countries with administration authority in 2024
Influenza	29	30	3.4	Argentina, Australia, Belgium, Brazil, Canada, Cape Verde, Costa Rica, Denmark, France, Germany, Greece, Ireland, Israel, Italy, Jordan, Lithuania, Namibia, New Zealand, Norway, Philippines, Poland, Portugal, Romania, South Africa, South Sudan, Switzerland, Tunisia, United Kingdom, United States of America, Yemen
COVID-19	NA	29	-	Argentina, Australia, Belgium, Brazil, Cameroon, Canada, Denmark, France, Germany, Greece, Ghana, Ireland, Italy, Jordan, Latvia, Lithuania, Luxembourg, Nigeria, New Zealand, Norway, Philippines, Poland, Portugal, South Africa, South Sudan, Switzerland, Tunisia, United Kingdom, United States of America
Tdap booster	14	20	42.9	Argentina, Australia, Brazil, Cameroon, Canada, Costa Rica, Denmark, France, Nigeria, New Zealand, Norway, Portugal, Sierra Leone, South Africa, South Sudan, Switzerland, Tunisia, United Kingdom, United States of America, Yemen
Hepatitis B	19	19	0	Argentina, Australia, Brazil, Canada, Costa Rica, Denmark, France, Ghana, Nigeria, Norway, Philippines, Portugal, Sierra Leone, South Africa, South Sudan, Switzerland, United Kingdom, United States of America, Yemen
Pneumococcal	15	18	20	Argentina, Australia, Brazil, Canada, Costa Rica, Denmark, France, Ghana, Nigeria, Norway, Philippines, Portugal, Sierra Leone, South Africa, South Sudan, Switzerland, United Kingdom, United States of America, Yemen
HPV	11	15	36.4	Argentina, Australia, Brazil, Canada, Costa Rica, Denmark, France, New Zealand, Norway, Philippines, Portugal, South Africa, Switzerland, United Kingdom, United States of America
Herpes zoster (Shingles)	12	14	16.7	Argentina, Australia, Brazil, Canada, France, Ireland, Italy, New Zealand, Norway, Portugal, South Africa, Switzerland, United Kingdom, United States of America
Meningococcal	13	14	7.7	Argentina, Australia, Brazil, Canada, Costa Rica, France, New Zealand, Norway, Portugal, Sierra Leone, South Africa, Switzerland, United Kingdom, United States of America
RSV	NA	8	-	Argentina, Brazil, Canada, Norway, Portugal, South Africa, United Kingdom, United States of America

NA: Not applicable, as these vaccines were not available at the time when the 2020 survey was conducted.

Tdap: Tetanus-Diphtheria-Pertussis (without polio)

HPV: Human Papillomavirus

RSV: Respiratory Syncytial Virus

5.2 Population groups that can be vaccinated at pharmacies

In many parts of the world, pharmacists can administer a wide range of vaccines across different population groups, catering to adults, older adults, children and adolescents, and other specific population groups such as pregnant individuals. Across countries with established pharmacy-based vaccination services such as United States, Ireland and Canada, there has been a notable increase in vaccination uptake in the community.^{6, 16} For example, in Canada, despite regulatory variations across jurisdictions, pharmacist-administered influenza vaccine increased uptake to 42% in the 2013-2014 season from 36% in the previous year (2012-2013), with a 9.8% rise among individuals aged 65 and older during the same period.⁶ This increase underscores the growing trust and acceptance of pharmacists as vaccine providers among diverse population groups.

The study investigated which age groups are eligible to receive vaccinations at a community pharmacy administered by pharmacists, and for which vaccines. The survey questionnaire divided age ranges into four main groups: babies and children (0-11 years), adolescents (12-18 years), adults (above 18 years) and older adults (above 50 years). There are important variations in the age and population groups eligible for vaccine administration among the countries included in this study: 13 countries authorise pharmacists to administer certain vaccines to individuals across all age groups, while others limit eligibility to specific age ranges. Also, while eight countries authorise the administration of all nine vaccines listed in the survey (Influenza, COVID-19, Tdap booster, pneumococcal, hepatitis B, HPV, shingles, meningococcal, and RSV vaccines), others only allow certain vaccines to be administered.

Moreover, in countries such as Australia, Canada, Switzerland, and the United States, the eligibility criteria differ across subnational jurisdictions, which leads to variations in practice at the local or regional level. Table 9 below shows the list of countries along with details of the population groups eligible for vaccination by pharmacists in pharmacy-based vaccination and for which vaccines.

Table 9. Eligible population groups that can be vaccinated by pharmacists and for which vaccines

Country	Babies and children	Adolescents	Adults	Older adults	Observations
Argentina					All nine vaccines listed in the study can be administered. This administration follows the National Vaccination Calendar (CNV) and registration authorisation. Eligible population groups were not specified.
Australia ²⁶	Influenza, COVID-19, pneumococcal, Tdap, meningococcal, HPV, HepB	Influenza, COVID-19, pneumococcal, Tdap, meningococcal, HPV, HepB	Influenza, COVID-19, pneumococcal, Tdap, meningococcal, HPV, HepB	Influenza, COVID-19, pneumococcal, shingles, Tdap, meningococcal, HepB	Almost all vaccines listed in the study can be administered, except for RSV. The administration authority varies by jurisdiction. However, typically, vaccines can be administered to those aged 5 years and above.
Belgium ²¹		Influenza, COVID-19	Influenza, COVID-19	Influenza, COVID-19	Influenza and COVID-19 vaccines can be administered. Eligibility criteria follows the Superior Health Council.
Brazil					All nine vaccines listed in the study can be administered. Eligible population groups were not specified.
Cameroon	COVID-19 and Tdap	COVID-19 and Tdap	COVID-19 and Tdap	COVID-19 and Tdap	COVID-19 and Tdap booster vaccines can be administered. All age groups are eligible for vaccines.

Country	Babies and children	Adolescents	Adults	Older adults	Observations
Canada ²⁷	Influenza, COVID-19, pneumococcal, Tdap, RSV, meningococcal, HPV, HepB	Influenza, COVID-19, pneumococcal, Tdap, RSV, meningococcal, HPV, HepB	Influenza, COVID-19, pneumococcal, Tdap, RSV, meningococcal, HPV, HepB	Influenza, COVID-19, pneumococcal, shingles, Tdap, RSV, meningococcal, HepB	All nine vaccines listed in the study can be administered. The administration authority varies by jurisdiction. However, typically, vaccines can be administered to those aged 2 or 5 years and above.
Cape Verde	Influenza	Influenza	Influenza	Influenza	Only influenza vaccine. All age groups are eligible for vaccines.
Costa Rica					Influenza, pneumococcal, Tdap booster, meningococcal, HPV, hepatitis B. Other vaccine includes yellow fever. Eligible population groups were not specified.
Denmark	HPV	HPV		Influenza, COVID-19	Influenza, COVID-19, Tdap booster, HPV and hepatitis B can be administered. Eligible age groups for Tdap booster and hepatitis B were not specified. Other vaccine includes TBE.
France	Influenza, COVID-19, pneumococcal, Tdap, meningococcal, HPV, HepB	Influenza, COVID-19, pneumococcal, Tdap, meningococcal, HPV, HepB	Influenza, COVID-19, pneumococcal, Tdap, meningococcal, HPV, HepB	Shingles, influenza, COVID-19, pneumococcal, Tdap, meningococcal, HepB	Almost all vaccines listed in the study can be administered, except for RSV. Most vaccines can be administered for individuals aged 11 and above, while shingles is for those aged 65 to 74 years. Other vaccines include MMR, poliomyelitis (included in DTP), HepA, rabies for prophylaxis, tuberculosis (BCG), chickenpox, yellow fever - only in approved centres.
Germany		COVID-19	Influenza, COVID-19	Influenza, COVID-19	Influenza and COVID-19 vaccines can be administered. Influenza for adults ≥ 60 years of age and people ≥18 of at-risk group. COVID-19 for adults ≥ 60 years of age (primary vaccination + booster); people 18 - 59 years of age (primary vaccination + 1st booster / additional booster only if they have an increased risk of severe COVID-19 disease); children 12 - 17 years of age with underlying diseases (primary vaccination + booster).
Ghana			COVID-19	COVID-19	COVID-19 and hepatitis B can be administered. Eligible age groups for hepatitis B were not specified.
Greece ^{21, 25}			Influenza, COVID-19	Influenza, COVID-19	Influenza and COVID-19 vaccine can be administered to adults. It excludes immunocompromised patients for live attenuated virus vaccines and pregnant women for all vaccines except for the flu shot.
Ireland	Influenza	Influenza	Influenza	Influenza	Influenza, COVID-19, pneumococcal and shingles can be administered. Influenza can be administered to those aged 6 months and older. Eligible population groups for other vaccines were not specified.

Country	Babies and children	Adolescents	Adults	Older adults	Observations
Israel			Influenza	Influenza	Only influenza vaccine can be administered to those aged 18 years and above.
Italy		COVID-19	Influenza, COVID-19	Shingles, influenza, COVID-19	Influenza, COVID-19, shingles can be administered. Influenza and COVID-19 are not for the first vaccination. Shingles is for those aged 65 years and at-risk groups.
Jordan			Influenza, COVID-19	Influenza, COVID-19	Influenza and COVID-19 can be administered to those aged 18 years and above.
Latvia ²⁵			COVID-19	COVID-19	Only COVID-19 vaccine can be administered to those aged 18 years and above.
Lithuania			Influenza, COVID-19, pneumo-coccal	Influenza, COVID-19, pneumo-coccal	Influenza, COVID-19, pneumococcal vaccines can be administered to adults.
Luxembourg ²⁵		COVID-19	COVID-19	COVID-19	Only COVID-19 vaccine can be administered to those aged 12 years and over.
Namibia					Influenza and pneumococcal vaccines can be administered. Eligible population groups were not specified.
New Zealand ¹⁰	Influenza, COVID-19, HPV	Influenza, COVID-19, meningococcal, HPV	Influenza, COVID-19, Tdap, meningococcal, HPV	Shingles, influenza, COVID-19, Tdap, meningococcal	Influenza, COVID-19, shingles, Tdap booster, meningococcal and HPV can be administered. Other vaccine includes MMR.
Nigeria			COVID-19	COVID-19	COVID-19, Tdap booster and hepatitis B vaccines can be administered. Eligible age groups for Tdap booster and hepatitis B were not specified.
Norway		Influenza, COVID-19, pneumo-coccal, Tdap, RSV, meningococcal, HPV, HepB	Influenza, COVID-19, pneumo-coccal, Tdap, RSV, meningococcal, HPV, HepB	Influenza, COVID-19, pneumo-coccal, shingles, Tdap, RSV, meningococcal, HepB	All vaccines listed in the study can be administered. The eligible age groups include individuals aged 12 years and above. Other vaccine includes TBE.
Philippines			Influenza, COVID-19, pneumo-coccal, HPV, HepB	Influenza, COVID-19, pneumo-coccal, HepB	Influenza, COVID-19 (2nd dose or booster dose), pneumococcal, HPV, hepatitis B can be administered.
Poland ^{21, 25}			Influenza	Influenza	Influenza and COVID-19 can be administered. Adults are eligible for influenza vaccine. Population groups for COVID-19 were not specified.

Country	Babies and children	Adolescents	Adults	Older adults	Observations
Portugal	Influenza, HPV, HepB	Influenza, HPV, HepB	COVID-19, influenza, HPV, HepB	Shingles, RSV, influenza, COVID-19, HepB	All vaccines listed in the study can be administered. Eligible age groups for pneumococcal, Tdap booster, meningococcal vaccines were not specified.
Romania	Influenza	Influenza	Influenza	Influenza	Only influenza vaccine can be administered with a medical recommendation or prescription.
Sierra Leone					Tdap booster, meningococcal and HepB can be administered. The eligible age groups were not specified.
South Africa	Influenza, pneumo-coccal, Tdap, RSV, meningococcal, HPV, HepB	COVID-19, influenza, pneumo-coccal, Tdap, RSV, meningococcal, HPV, HepB	COVID-19, influenza, pneumo-coccal, Tdap, RSV, meningococcal, HPV, HepB	Shingles, COVID-19, influenza, pneumo-coccal, Tdap, RSV, meningococcal, HepB	All vaccines listed in the survey can be administered.
South Sudan	Influenza, Tdap, HepB	Influenza	COVID-19, influenza	COVID-19, influenza	Influenza, COVID-19, Tdap booster, hepatitis B can be administered.
Switzerland		Influenza, COVID-19, pneumo-coccal, Tdap, meningococcal, HPV, HepB	Influenza, COVID-19, pneumo-coccal, Tdap, meningococcal, HPV, HepB	Influenza, COVID-19, pneumo-coccal, shingles, Tdap, meningococcal, HepB	Almost all vaccines listed in this study can be administered, except for RSV. The administration authority varies by jurisdictions. Eligible age groups for these vaccines are individuals aged 16 years and above, except for pregnant women. Other vaccines include MMR or rabies.
Tunisia	Influenza, pneumo-coccal, Tdap	Influenza	Influenza, COVID-19	Influenza, COVID-19	Influenza, COVID-19, pneumococcal and Tdap booster can be administered.
United Kingdom	Influenza, Tdap, meningococcal, HPV	Influenza, Tdap, meningococcal, HPV	Influenza, Tdap, meningococcal, HPV	RSV, influenza	All vaccines listed in this study can be administered. The administration authority follows the guideline from the Joint Committee on Vaccination and Immunisation (JCVI). Eligible age groups for COVID-19, pneumococcal, shingles, and HepB follows JCVI. Other vaccines include free NHS travel vaccines (hepatitis A, typhoid, cholera, polio).
United States of America	Influenza, COVID-19	Influenza, COVID-19, pneumo-coccal, Tdap, RSV, meningococcal, HPV, HepB	Influenza, COVID-19, pneumo-coccal, Tdap, RSV, meningococcal, HPV, HepB	Influenza, COVID-19, pneumo-coccal, shingles, Tdap, RSV, meningococcal, HepB	All vaccines listed in the survey can be administered. The administration authority varies by jurisdiction. However, typically, vaccines can be administered to those aged 10 or 18 years and above.
Yemen	Tdap				Influenza, pneumococcal, Tdap, hepatitis B can be administered. Eligible age groups for

Country	Babies and children	Adolescents	Adults	Older adults	Observations
					influenza, pneumococcal, and hepatitis B were not specified.

5.3 Authorisation to administer vaccines outside of the pharmacy premises

The locations where vaccines can be administered play an important role in expanding access to immunisation services and consolidate pharmacists as providers of such services. This may be particularly relevant for patients who may have difficulty in going to a pharmacy or another vaccination centre, or to administer vaccines to entire groups. Naturally, the requirements to safely store and preserve the efficacy and safety of vaccines, and to provide the service in optimal conditions must be observed.











The locations outside the pharmacy premises where pharmacists are permitted to perform the administration of vaccines may include, but are not limited to, clinics and other healthcare facilities, workplaces, nursing homes, schools or patients' homes. The availability of other locations may offer convenience and accessibility for individuals seeking vaccinations, contributing to increased vaccine uptake rates and overall public health outcomes.

More than half of the countries (62%) indicated that pharmacists are not authorised to administer vaccines outside of the pharmacy premises (see Table 10). This finding suggests that there are missed opportunities and room for improvement in terms of the full utilisation of pharmacists as vaccination providers, and to develop people-centred pathways to deliver vaccinations that are accessible, inclusive and achieve higher uptake rates.

Table 10. Authorisation of pharmacists to administer vaccines outside of the pharmacy premises

Administration authority outside of the pharmacy premises	Number of countries (n=77) (%)	List of countries with/without administration authority outside of the pharmacy premises
Yes	29 (38%)	Australia, Brazil, Cameroon, Canada, Cape Verde, Costa Rica, Denmark, France, Germany, Greece, Hong Kong SAR, Ireland, Italy, Jordan, Kenya, Lithuania, Malawi, Malaysia, New Zealand, Nigeria, Norway, Philippines, Poland, Portugal, Sierra Leone, South Africa, South Sudan, United Kingdom, United States of America
No	48 (62%)	Albania, Argentina, Austria, Bangladesh, Barbados, Belgium, Bosnia & Herzegovina, Bulgaria, China, China Taiwan, Colombia, Congo (Dem. Rep. of the), Croatia, Cyprus, Ecuador, Estonia, Finland, Ghana, Guyana, Hungary, Iceland, India, Indonesia, Israel, Japan, Kosovo, Lebanon, Malta, Mongolia, Montenegro, Morocco, Namibia, Nepal, Netherlands, Paraguay, Romania, Russian Federation, Serbia, Slovenia, Spain, Sri Lanka, Sweden, Switzerland, Tunisia, Turkey, Ukraine, Uruguay, Yemen

6 Education and training of the pharmacy workforce for vaccination services

Education and training of the pharmacy workforce for vaccination services		
	Number of countries and territories with data on the availability of vaccination training for pharmacists	116
	No	52 out of 116 (44.8%)
	Yes	64 out of 116 (55.2%)
	Countries where pharmacists are authorised to vaccinate whether within or outside pharmacy premises	47 out of 116
	Some pharmacists receive vaccination training	36 out of 47 (76.6%)
	All pharmacists receive pharmacists training	11 out of 47 (23.4%)
	Countries where pharmacists are not authorised to vaccinate whether within or outside pharmacy premises	69 out of 116
	Pharmacists do not generally receive vaccination training	52 out of 69 (75.4%)
	Some pharmacists receive pharmacists training	10 out of 69 (14.5%)
	All pharmacists receive pharmacists training	7 out of 69 (10.1%)

This section explores the availability of training in vaccination and associated requirements. The questionnaire consisted of six questions, with the initial question focusing on whether pharmacists undergo vaccination training. Subsequent questions aim to delve deeper into various aspects of this training, including the training providers, mandatory status, certification renewal requirements, and timing of training. During the data cleaning process, responses to subsequent questions from those who answered 'no' to the initial question were adjusted to 'not applicable,' as detailed in Appendix 4. Additional sources obtained for this section are outlined in Appendix 2. To differentiate between data obtained from the recent survey and additional sources, all information from the additional sources will be properly cited.

6.1 Overview of vaccination training for pharmacists

Amongst 116 countries represented in this section, pharmacists receive training in vaccine administration in over half of the countries (n=64; 55.2%) (see Figure 7). Since 2016, there has been a notable increase from 12 to 64 countries reporting some level of training for pharmacists (see Figure 8).^{5, 18} This trend suggests a growing recognition of the importance of pharmacists in vaccination efforts, accompanied by a rising focus on equipping them with the necessary skills and knowledge. Country details about the training of pharmacists for vaccination-related roles are presented in Appendix 4.

Figure 7. Availability of vaccination training for pharmacists (n=116)

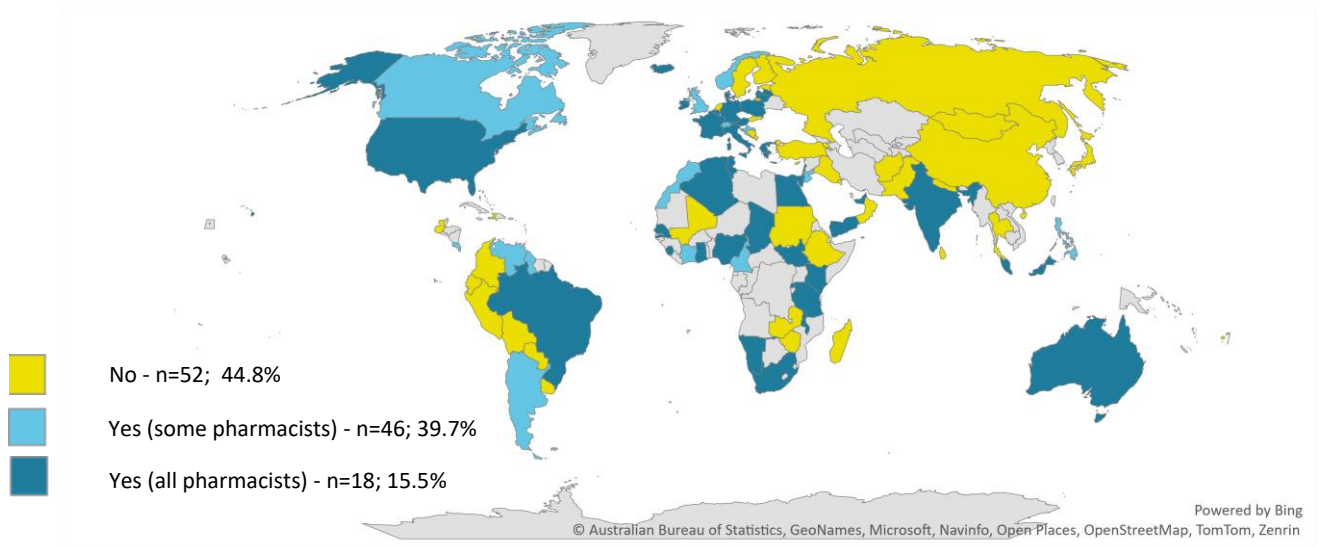
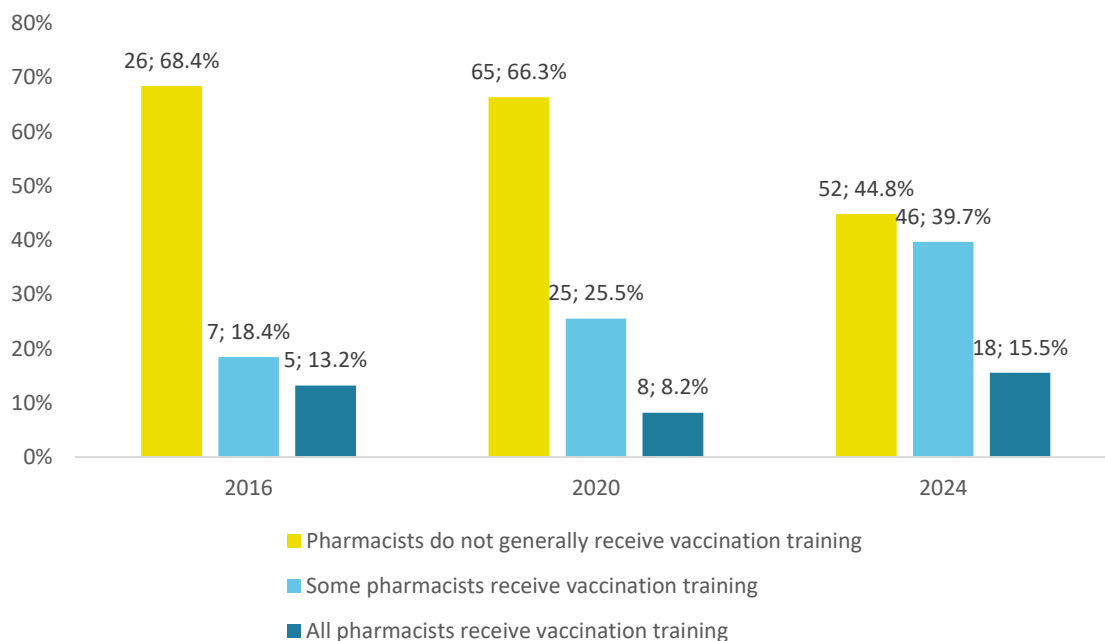


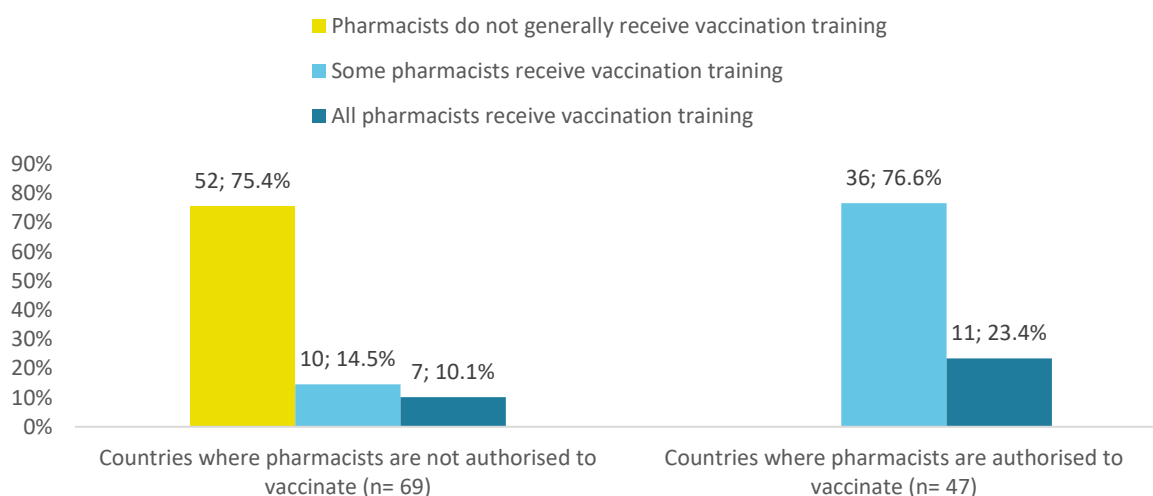
Figure 8. Trends in training for vaccine administration since 2016



In countries where pharmacists are authorised to vaccinate whether within or outside pharmacy premises (n=47), 100% of countries reported that pharmacists receive training for the provision of this service (see Figure 9). Our member organisation in Cape Verde informed us that majority of pharmacists in Cape Verde underwent the training course in other countries and they can administer vaccines after they have been trained abroad in injectables. At the moment, the Government in Cape Verde focuses on vaccination training only for the medical and nursing profession. Interestingly, in seventeen countries (24.6%) where pharmacists are not yet authorised to vaccinate, pharmacists still undergo training. The most reported reasons for pharmacists not being authorised to vaccinate are limited acceptance and/or support by the government/health system and limited acceptance and/or support by other healthcare professionals, which is detailed in the [limitations section](#) of this report. One possible reason why these countries have

pharmacists being trained is to prepare pharmacists for future involvement in vaccination efforts. For example, there are some undergoing or have proposed policy changes in Croatia and Barbados where they are currently proposing legislative changes to expand the scope of pharmacy services, including allowing pharmacists to administer vaccines. In India, pharmacists are listed as potential vaccinators by the Ministry of Health and in Malta, despite policy barriers preventing full implementation of pharmacist-led vaccination services, the Chamber has been proactive in training pharmacists. The details of the undergoing or proposed policy changes in these countries can be seen in the [policy development section](#). Another possible reason why pharmacists still receive training might be because the respondents interpreted the questions as training in general aspects of vaccination rather than training in administering vaccines.

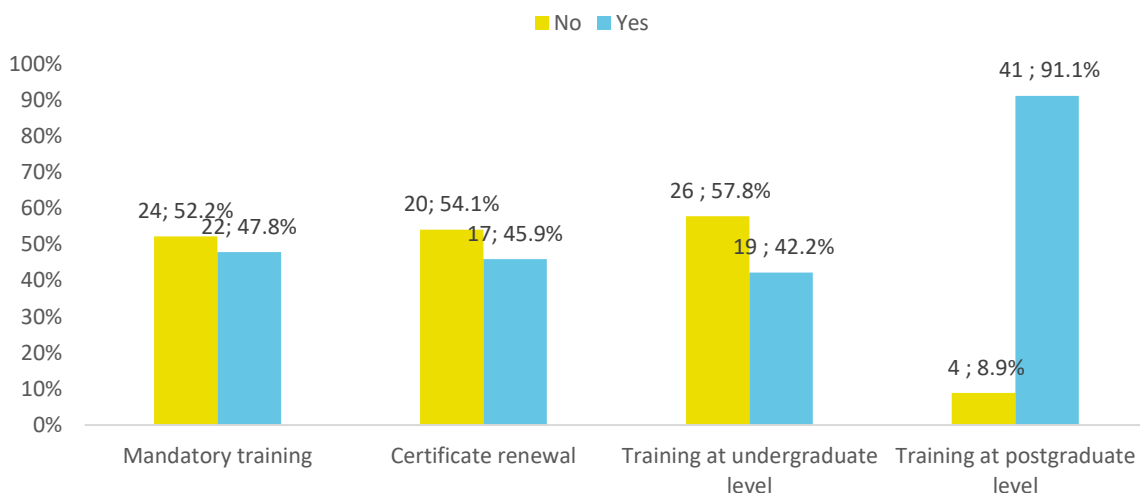
Figure 9. Comparison of vaccination training availability in countries where pharmacists are authorised to vaccinate and those where pharmacists are not.



6.2 Vaccination training requirements

Focusing on countries where pharmacists are authorised to vaccinate whether within or outside pharmacy premises (we do not have detailed data on education and training requirements in Luxembourg, therefore the total countries included in this section will be 46 countries), here we examine the training landscape within these nations (see Figure 10).

Figure 10. Vaccination training requirement for countries where pharmacists are authorised to vaccinate



Vaccination training is mandatory in 22 countries, which is 47.8% of cases (Figure 10). In various countries, pharmacists are undergoing specialised training and certification processes to administer vaccines safely and effectively.^{6, 10, 21, 28-32} For example, Algeria and Tunisia have introduced a vaccination guide and online training for pharmacists.^{21, 30} Some countries, such as Canada and France, have both online and in-person training.^{28, 29} In the Philippines, an advocacy group was formed to promote pharmacy-based immunisation.^{28, 29} Ireland has modular workplace training⁶, while Greek pharmacists complete online certification.²¹ In Latvia, pharmacists can administer vaccines if a course on vaccination confirms their professional competence at a university.³¹ Portugal and Switzerland require a two-stage training covering theory and practice.²¹ Similarly, in France, pharmacists receive training during undergraduate studies or through a certification programme covering both theory and practice, including specific hours for vaccine administration and prescribing.²¹ In New Zealand, a mix of online training, written assessment, and independent clinical assessment is used; additional assessment is varied according to vaccine type.¹⁰

The subjects included in training courses include not only administration techniques but also vaccine composition, vaccine recommendations, and dealing with allergic reactions.²¹ In Canada, additional education focuses on reporting adverse events and maintaining the cold chain supply to ensure patient safety.²⁹ Meanwhile, in Guatemala, training emphasises the proper handling and storage of vaccines.²⁹ Romania offers courses on epidemiology and infectious disease.²¹ These diverse training requirements reflect the commitment to preparing pharmacists for vaccination efforts.

Commonalities emerged among various countries where, beyond completing a training programme, certification or training in basic life support is deemed essential. This requirement is evident in countries such as Australia, Belgium, Brazil, Canada, Jordan, Portugal, Switzerland, and the United Arab Emirates.^{21, 28, 29} Basic life support includes obtaining certifications in managing anaphylaxis, administering first aid, and performing cardiopulmonary resuscitation (CPR) and automated external defibrillation, among other skills.^{28, 29}

Another important aspect of ensuring the quality and sustainability of pharmacist-led vaccination services is through certification renewal programmes. Among 37 countries and territories, the periodic renewal of vaccinator training certification is mandatory in 17 countries (45.9%) (see Figure 10). In Canada, for instance, pharmacists must complete a recertification declaration for injections and immunisations during license renewal. This involves confirming their practice or successful completion of an education programme.^{28, 29}

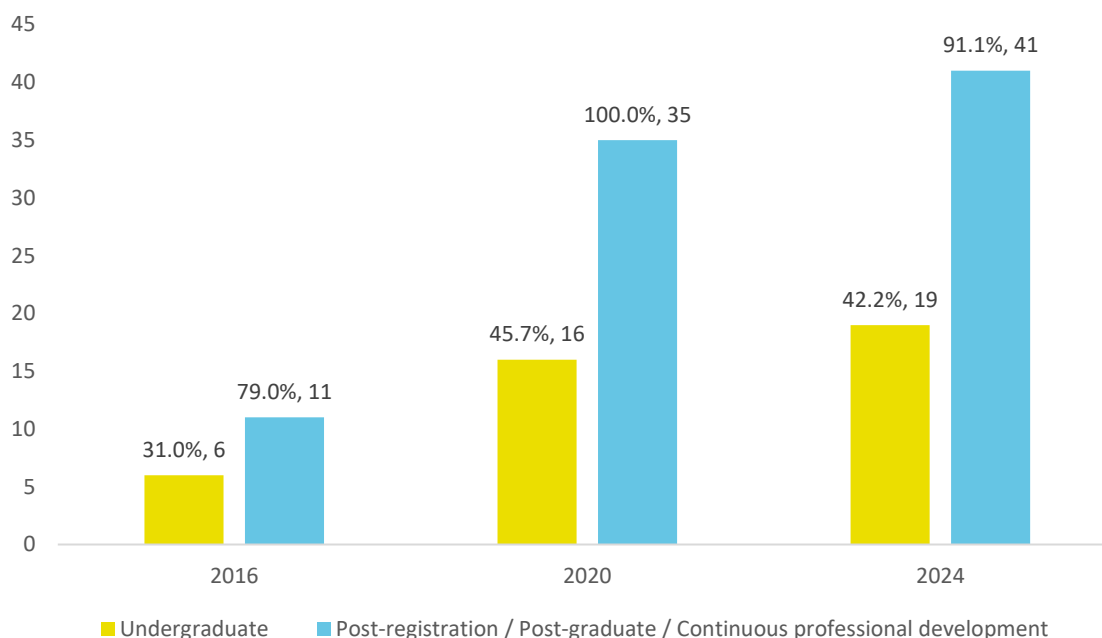
Most countries require certification renewal annually, and some countries reported in this study that this renewal happened every two, three, or five years. While some jurisdictions do not require renewal specifically for injection certification, first aid training necessary for vaccine administration may need renewal every two to three years, such as reported by respondents in Canada. In Ireland, certification lengths vary according to the types of vaccines; for example, COVID-19 training requires recertification when there is a change in programme (i.e. a new vaccine is introduced). The pharmacy regulator in Ireland prompts pharmacists to reflect on their skills and knowledge to administer vaccines safely. If they have not administered vaccines in the past 12 months (or influenza season), they have to repeat the training. Special conditions, like never administering a vaccine or emergency medicine, also mandate training renewal. Ireland and Canada reported that CPR and anaphylaxis management training must be renewed every two years. In Malta, while resuscitation training needs renewal in two years, vaccination training certification as CPD is still under negotiation and has not yet been introduced.

Figure 11 illustrates an increase in the number of countries incorporating vaccination training into both undergraduate and postgraduate education. Greece and Hong Kong, which previously offered training only at the postgraduate level, have now extended it to undergraduate studies. Overall, 41 countries provide training at post-registration, postgraduate, or continuous professional development levels, while 19 countries indicated they offer training at the undergraduate level.

In some instances, such as in Germany, the training curricula for influenza and COVID-19 vaccinations have been unified into one curriculum.²¹ Similarly, the University of Nicosia (Cyprus) has introduced vaccination education at the undergraduate level in its pharmacy programme (year four of study), catering to Greek pharmacists who study in Cyprus but practice in Greece. Jordan and Lebanon reported that they have integrated vaccination training into their curricula

for pharmacy students. Malaysia is also proactively preparing for future roles in vaccination by collaborating with universities to train pharmacists in this field.²¹

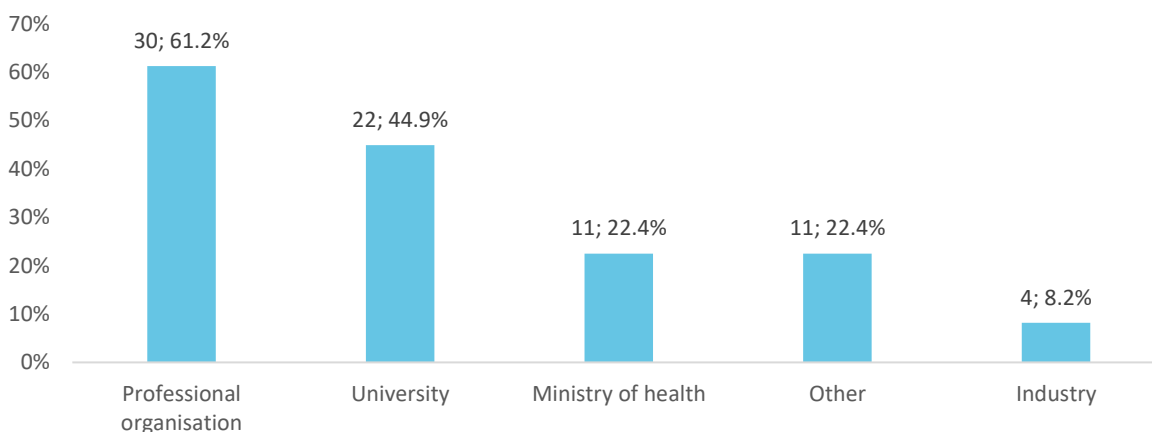
Figure 11. Trends in career stage(s) during which pharmacists receive vaccination training



6.3 Providers of vaccination training




Among 49 countries and territories, the most commonly reported providers of training are professional organisations (n=30; 61.2%) followed by universities (n=22; 44.9%) – see Figure 12. Professional organisations, for example, in Australia, continually streamline vaccination training packages to eliminate variation in content between jurisdictions as much as possible.²¹ Other reported providers are pharmaceutical companies or from United Nations agencies such as the World Health Organization and UNICEF. In Spain, the Pharmaceutical Care Forum in Community Pharmacy has published the definition and general procedure to follow in the event that the pharmacist can provide vaccinations as a professional pharmaceutical care service at pharmacies.

Figure 12. Providers of vaccination training for pharmacists (n=49)



Out of 58 countries and territories, 35 countries and territories (60.3%) also reported that vaccination training is accredited, certified, recognised or approved by a regulatory or competent authority. The certifying authorities typically include the National Pharmacy Council, the Ministry of Health, or professional organisations in the country. Further resources were obtained to provide some examples of the accreditation bodies. For example, in Canada, courses must be approved by the Canadian Council on Continuing Education in Pharmacy.^{28, 29} Similarly, in Argentina, requirements and accreditation vary by jurisdiction. The training in the United States is also certified by the Accreditation Council for Pharmacy Education, and it is recognised by the US Center for Disease Control and Prevention for its quality and content; these training programmes have been reviewed by physicians, nurses and public health professionals who acknowledged that the programme met or exceeded the immunisation training most other health professionals receive.^{28, 29}

7 Access to vaccination records

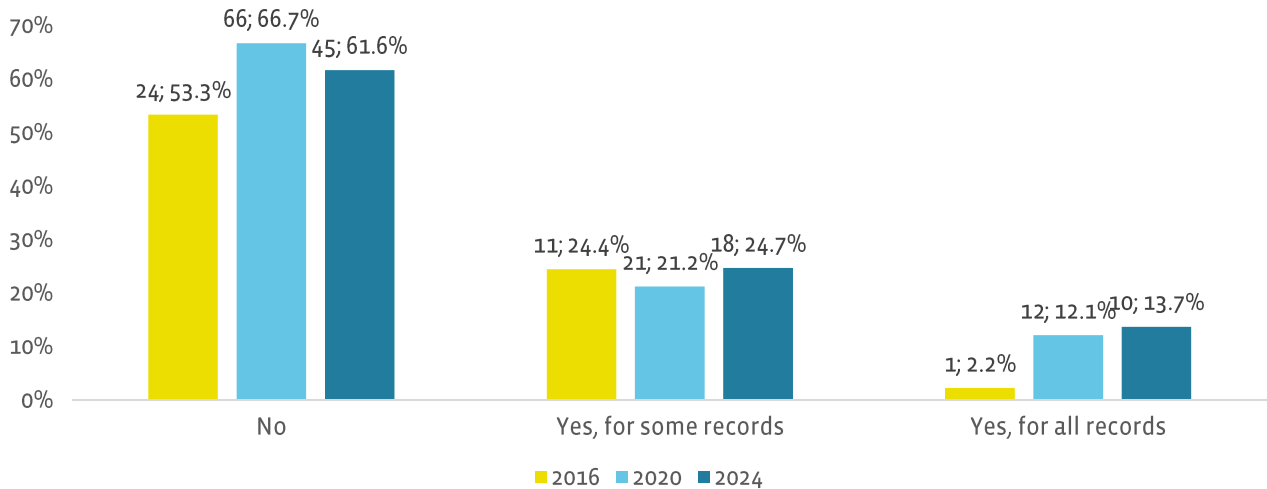
Access to vaccination records		
	Number of countries and territories with data on access to vaccination records (reading rights)	117
	Number of countries and territories with data on access to vaccination records (writing rights) (only for pharmacists who can administer vaccines)	43
	Number of countries and territories with data on the format of vaccination records (only for pharmacies with PBV in 2024)	38

The role of pharmacists in providing vaccination services continues to evolve. Hence, having documentation of immunisation, which includes full access to vaccination records (reading), recording administered vaccines in a shared immunisation registry (writing), and reporting capabilities, has become increasingly important. Within community pharmacies, immunisation documentation enables pharmacists to identify individuals who have not received recommended vaccines according to the national guidelines or who may require booster doses. This allows pharmacists to provide tailored advice accordingly and optimise vaccine delivery.^{33, 34}

Figure 13 illustrates the trends of access to vaccination records (reading rights) among 117 countries included in the study across three different time points: 2016, 2020 and 2024. The trends reveal that the majority of pharmacists do not have access to vaccination records. This observation is largely associated with countries where pharmacy-based vaccination is not yet available. However, there has been a slight increase observed from 2016 to 2024 in countries where pharmacists have full access to vaccination records, or at least access to some records. It is worth noting that in 2016, pharmacists had access to at least some records in 26.6% countries (13 among the 45 countries). This figure had increased to 33.3% (33 out of 99) in 2020 and has further increased to 39.7% (28 out of 73) in 2024.

Recent data from 2024 (n=73) suggests that vaccination records are fully accessible in only 10 countries (13.7%), whereas limited access to these records are observed in 18 countries (24.7%). The trends for countries with limited access to vaccination records have remained unchanged between 2016 and 2024. This lack of access may result in inconsistent communication between pharmacists and other healthcare providers regarding individuals' vaccination status.¹¹ This could further lead to incomplete records of vaccination status or duplication of vaccine administration in pharmacies and other healthcare facilities.³⁵

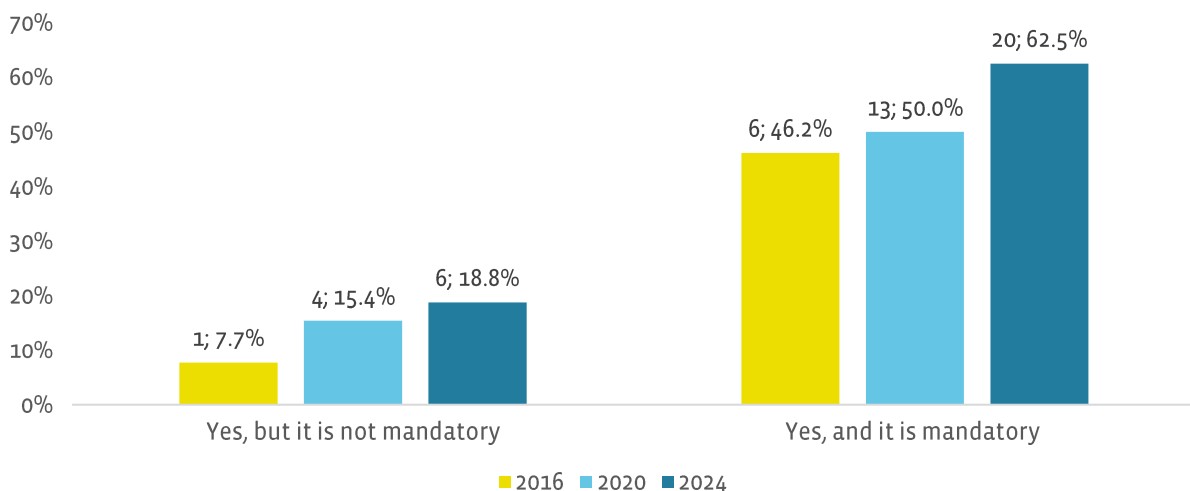
Figure 13. Reading access to vaccination records (n=117)



As shown in Figure 14, pharmacists with administration authority in some countries (n = 43) also possess the authority to record vaccinations and/or individuals' details in a shared vaccination registry (writing rights). Positive trends have been observed between 2016 and 2024 in countries where pharmacists are allowed to document patient records for the vaccines they have administered, whether it is mandatory or optional. The latest data from 2024 (n = 32) suggests that mandatory recording in a shared vaccination registry is enforced in 20 countries (62.5%), whereas six countries (18.8%) allow pharmacists to record this information voluntarily.

Existing literature indicates that in some countries, vaccination providers are not required to document individuals' vaccination details in vaccination registries. There is also variability in jurisdictions across several countries regarding the requirement for pharmacists and other vaccination providers to update the vaccination registries. The lack of a shared and integrated system that enables all providers to document vaccination details could potentially increase the risk of both under- and over-vaccination among patients.³⁶ This situation may also impede other healthcare providers in their follow up procedure for at-risk patient groups.³⁷

Figure 14. Pharmacists authorised to record vaccination details in a shared vaccination registry (n=43)

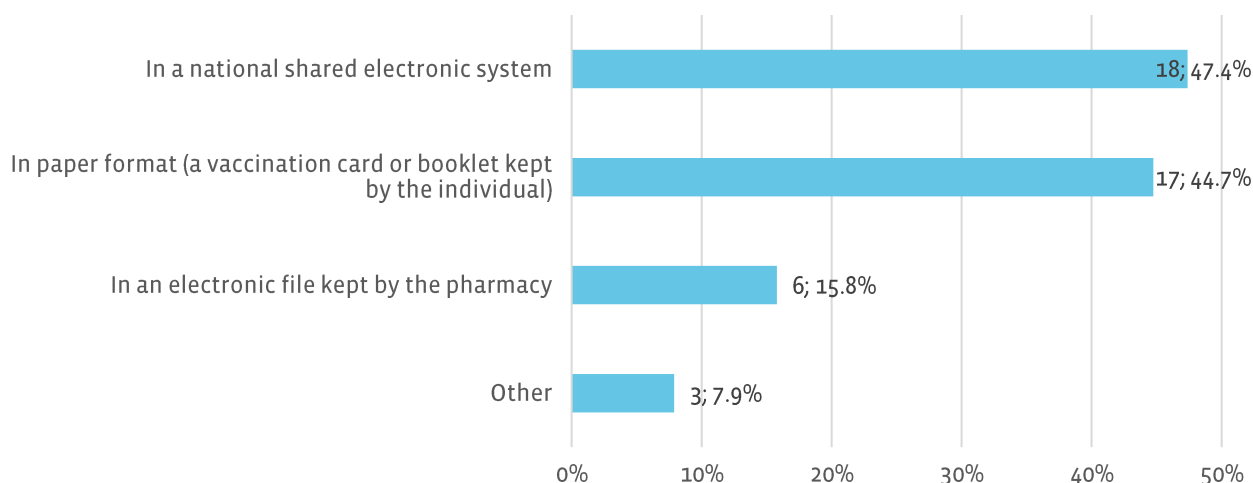


In countries with established pharmacy-based vaccination, reporting capabilities in community pharmacies can be completed either in paper or digital formats. According to the latest survey in 2024 (n = 38), the majority of pharmacies

across various countries primarily use a national shared electronic system and paper-based (e.g., vaccination card or booklet kept by the individual), with 18 countries (47.4%) and 17 countries (44.7%), respectively (see Figure 15). The use of electronic files kept by the pharmacy is less common, observed in only six countries (15.8%).

As technology advances, there has been a shift to an electronic record to provide accurate records of individuals' vaccination data. The transition from paper-based to electronic records is facilitated through a shared immunisation information system. This system has been implemented in several countries and is expected to be adopted by many more in the future. It allows for systematic collection and recording of vaccination data, as well as providing easy access and retrieval of such data.³⁸ Additionally, this system can facilitate the consolidation of individuals' vaccination records from multiple vaccine providers, thereby mitigating the risk of under- or over-vaccination for these individuals.³⁹

Figure 15. Format of vaccination records (n=38)



8 Limitations to the advancement of pharmacy roles in vaccination




Limitations to the advancement of pharmacy roles in vaccination		
	Number of countries and territories with data on limitations to the development of pharmacists' role in vaccination	73
	In countries and territories without pharmacy-based vaccination	30
	In countries and territories with pharmacy-based vaccination	43

Figure 16 highlights the prevalence of the main perceived or hard limitations to the complete integration of pharmacists' role in vaccination and includes countries with or without pharmacy-based vaccination. These limitations are further analysed separately for countries and territories with or without pharmacy-based vaccination in

Figure 17 and Figure 18, which further detail these limitations by national income levels.

In both scenarios—regardless of the presence of pharmacy-based vaccination—there is a noticeable lack of acceptance and support from governmental bodies and other healthcare professions. This observation suggests the need for enhanced advocacy to educate key stakeholders on the advantages of engaging pharmacists in vaccination efforts and establish productive interprofessional alliances. This hurdle is consistently acknowledged across all economic strata. The lack of remuneration for the service is the third most important limitation both in countries with or without pharmacy-based vaccination and is a significant component of sustainability of this service, and in advancing towards equitable access to vaccination services.

Participants who selected the "other" response option highlighted a variety of legislative and professional constraints impeding pharmacists' ability to engage in vaccination practices. The limitations encompass a broad spectrum, notably:

1. Legislative barriers: A significant portion of the responses points to strict legal restrictions as the primary hurdle. Countries like Barbados, Bulgaria, Cyprus (Northern), and Estonia have explicit laws that prevent pharmacists from administering vaccines. This prohibition extends to other countries like Albania and Morocco, where the legal frameworks do not recognise pharmacists' roles in vaccination, effectively excluding them from participation in these critical public health services.

2. Professional and training limitations: In countries such as Colombia and India, the issue is not just legal but deeply rooted in the professional perception and educational framework. Pharmacists are either not considered healthcare providers who can prescribe or administer medicines, or they are not regarded as potential vaccinators within the healthcare system, reflecting a need for curriculum reform and professional development.

3. Operational and regulatory challenges: Responses from Denmark, Finland, Israel, Japan, and Jordan highlight operational difficulties, ranging from the need for a delegating doctor to the absence of incentives and public awareness.

These issues are combined by regulatory ambiguities and the lack of clear guidelines for training, certification, and integration into the public health vaccination strategy.

4. Economic and public health considerations: The feedback also touches upon broader economic and public health considerations, such as the cost of preparing sites for vaccination in community pharmacies (Jordan) and the challenges related to vaccine supply, regulations, and data registry access. These operational challenges are intricately linked to the overarching legal and professional challenges but also indicate specific logistical and infrastructural issues that need addressing.

5. Prospective legal reforms and public reception: Interestingly, responses from Croatia and Ireland hint at a positive shift towards legal reforms that could potentially enable pharmacists to participate in vaccination efforts. These insights suggest a readiness within the public health system and among the public to accept and support pharmacists as vaccinators, contingent upon overcoming the legislative barriers.

Figure 16. Perceived limitations to the development of pharmacists' role in vaccination, all countries and territories (n=73)

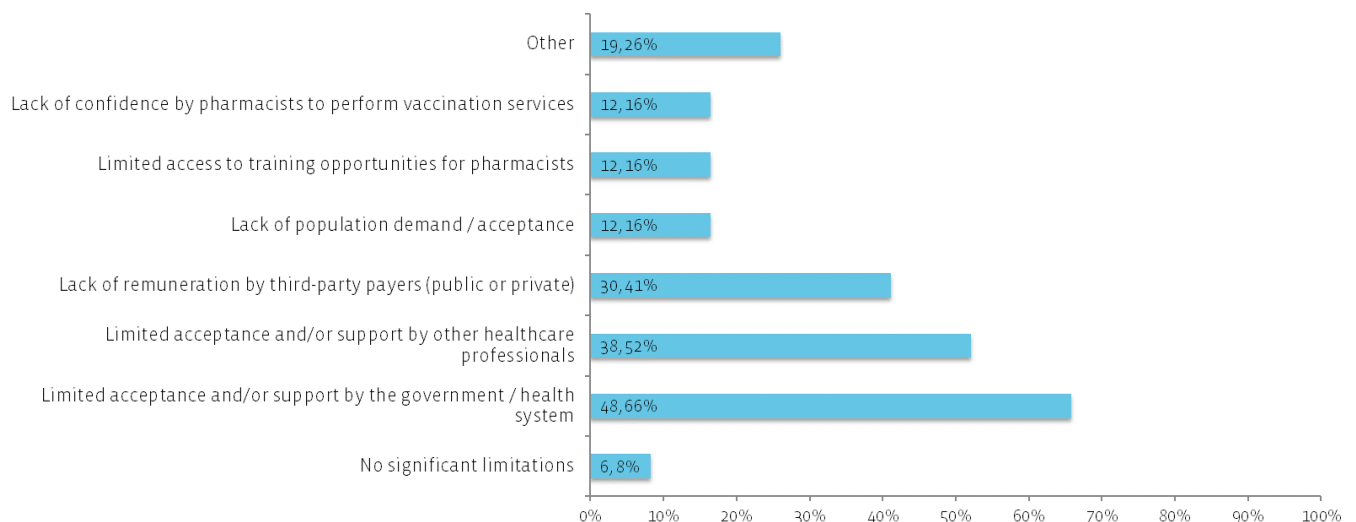


Figure 17. Perceived limitations to the development of pharmacists' role in vaccination in countries and territories without pharmacy-based vaccination, by income level (n=30)

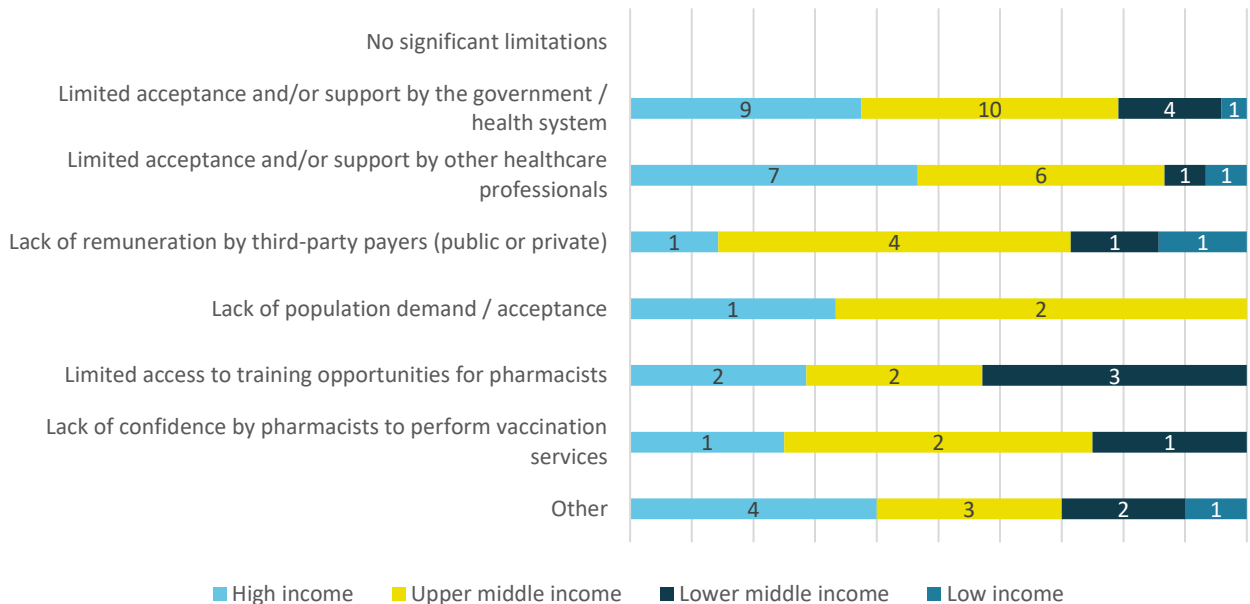
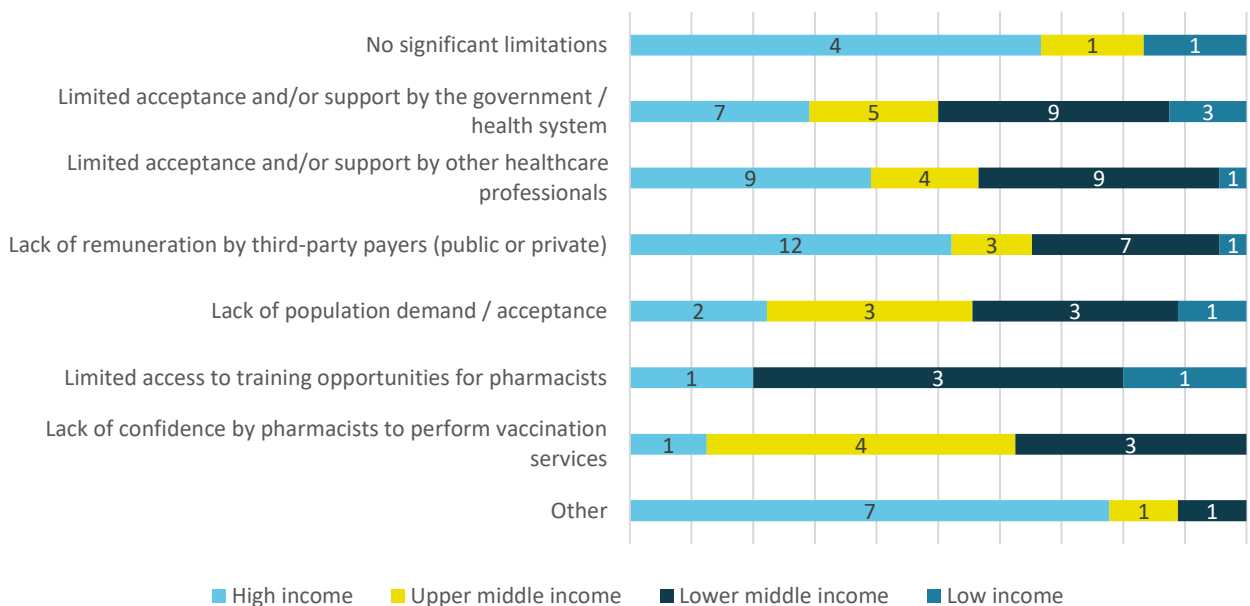


Figure 18. Perceived limitations to the development of pharmacists' role in vaccination in countries and territories with pharmacy-based vaccination, by income level (n=43)



A similar analysis was done for the perceived barriers by WHO region, to inform region-specific advocacy strategies (Figure 19 & Figure 20)

Figure 19. Perceived limitations to the development of pharmacists' role in vaccination in countries and territories without pharmacy-based vaccination, by WHO region (n= 30)

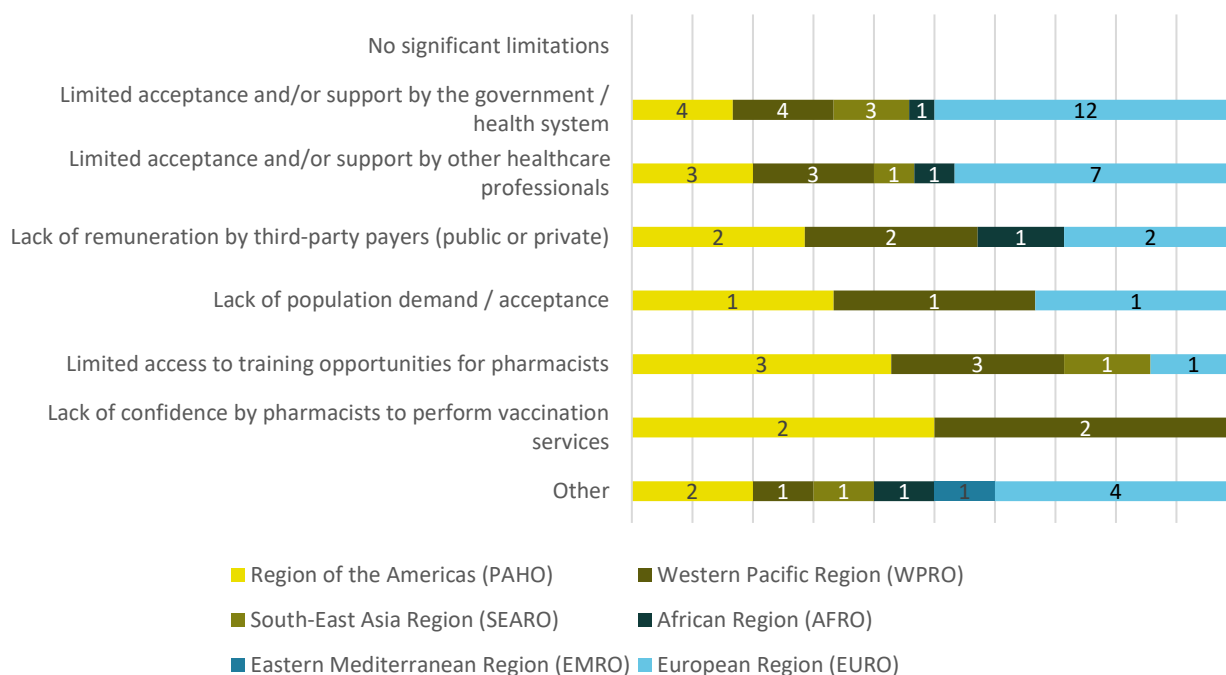


Figure 20. Perceived limitations to the development of pharmacists' role in vaccination in countries and territories with pharmacy-based vaccination, by WHO region (n= 43)

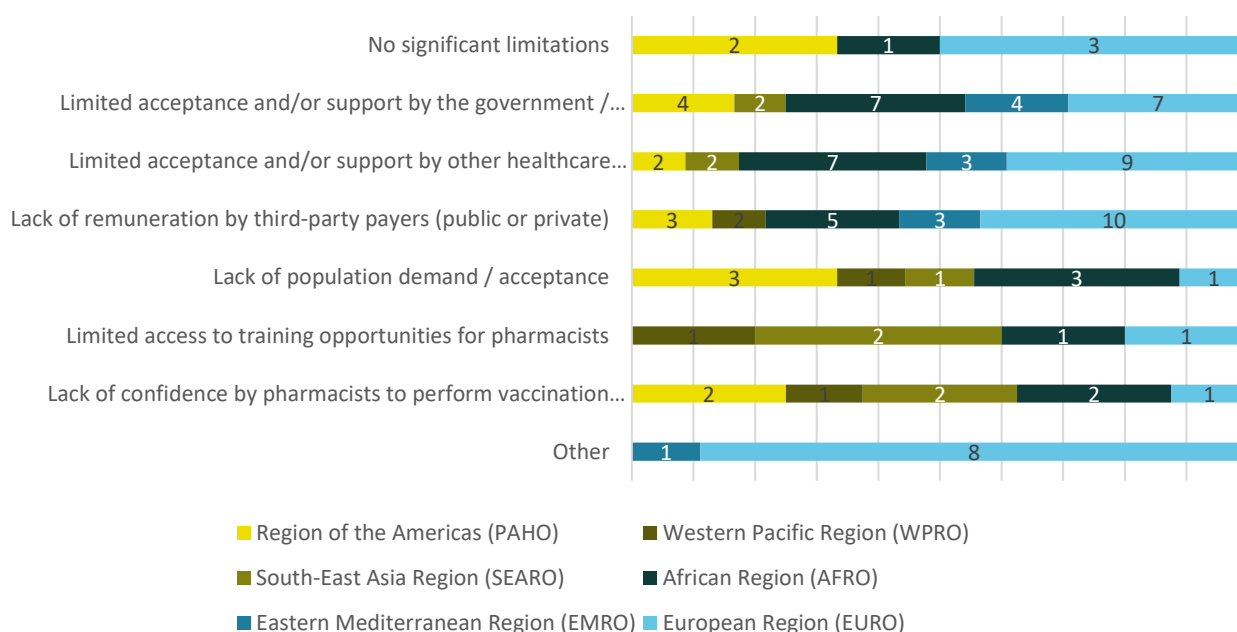


Table 11 Table 1 present an overview of how perceived barriers to pharmacist-based vaccination (PBV) have evolved from 2016 to 2024. The distribution of percentages for the same year on each row within the table adds up to 100%, offering a clear comparative perspective on how these barriers are prioritised differently in contexts with and without PBV. The survey's respondent pools have varied—45 in 2016, 99 in 2020, and 73 in 2024—with a notably higher representation of PBV territories in the latter two surveys.

In the 2024 column of the table, percentages are allocated to various limitations, reflecting the relative weight each barrier holds in the presence or absence of PBV.

Table 11. Comparison between perceived limitations to the development of pharmacists' role in vaccination in 2016, 2020, and 2024

Countries and territories with or without pharmacy-based vaccination (PBV)	Without PBV			With PBV		
	2016	2020	2024	2016	2020	2024
Lack of confidence by pharmacists	46% (6)	81% (26)	33% (4)	54% (7)	19% (6)	66% (8)
Limited access to training opportunities	50% (8)	82% (31)	58% (7)	50% (8)	18% (7)	42% (5)
Limited patient demand / acceptance	80% (4)	95% (18)	25% (3)	20% (1)	5% (1)	75% (9)
Lack of remuneration by third-party payers (public or private)	42% (8)	63% (29)	23% (7)	58% (11)	37% (17)	77% (23)
Limited acceptance by other HCPs	60% (12)	70% (45)	39% (15)	40% (8)	30% (19)	61% (23)
Limited acceptance by government	64% (18)	71% (47)	50% (24)	36% (10)	29% (19)	50% (24)
No perceived limitations or barriers	17% (1)	67% (2)	0	83% (5)	33% (1)	100% (6)

Notably, every perceived limitation, except for remuneration concerns, shows a decline in countries without pharmacy-based vaccination (PBV). For example, there was a notable decline in the lack of confidence by pharmacists, dropping from 81% in 2020 to 33% in 2024, suggesting growing self-assurance or improved support mechanisms for pharmacists in these regions. Despite the differences in the size of the respondent groups across the years, the 2024 data suggest positive developments, potentially indicating enhanced pharmacist training, evolving public perceptions, and policy shifts favouring vaccination services offered by pharmacists.

Conversely, in countries that have adopted pharmacy-based vaccination (PBV), there has been a reported rise in specific perceived challenges. This includes a rise in pharmacists' reported lack of confidence and an increased perception of diminished patient demand. These observed increases highlight the unique limitations that come with the normalisation of PBV, particularly the imperative of upholding service quality. Nevertheless, the 2024 responses, which indicate an absence of perceived limitations, imply a robust integration of PBV into the healthcare framework despite the noted challenges.

The changes in perceived barriers likely arise from a confluence of factors:

1. Targeted education and advocacy may enhance pharmacists' roles, thereby improving confidence and service acceptance.
2. Regulatory adjustments, perhaps accelerated by recent global health crises, could have streamlined the integration of pharmacists in vaccination efforts.
3. The financial aspect of PBV services has gained prominence, particularly in areas where these services are established, emphasising the need for robust reimbursement structures.

In summary, the 2024 snapshot indicates that with maturity comes acceptance, albeit alongside emerging challenges that must be managed. The overall trend suggests a move towards embracing pharmacists as vaccinators, with continuous adaptation and policy support being key for addressing remaining and arising concerns. This analysis underlines the dynamic nature of healthcare service implementation and the need for responsive, flexible approaches to sustain and optimise pharmacist-led vaccination programmes.

9 Public satisfaction with pharmacy-based vaccination services

In France, a pilot project launched in 2017 aimed to improve adult vaccination rates, involving nearly 60% of pharmacies in certain regions. In January 2022, pharmacists in France administered 60% of COVID-19 vaccines, compared with 25% by doctors and 15% by nurses, and pharmacists' service yielded a satisfaction rating of 4.92/5.00.²⁵

Similarly, in Ireland, recent evaluations highlighted 95% of patients expressing high satisfaction levels with pharmacist-provided information on vaccination, and 93% rated the flu vaccination service with a 9 or 10 out of 10.⁶ The evaluation also found that 47% of patients preferred pharmacy flu vaccinations for convenience and 28% for shorter waits, with only 13% citing cost, likely due to free vaccines under national healthcare. In Belgium, over 1,200 citizens expressed interest in receiving vaccinations at pharmacies and from pharmacists.^{21, 25}

Currently, in Estonia, only nurses are allowed to vaccinate at pharmacies. However, around 85 to 90% of vaccinated individuals at pharmacies were satisfied with the service, considering its professionalism, organisation, extended hours and shorter waiting times.^{21, 40, 41} Studies in Poland have also shown that patients are highly satisfied with pharmacist-administered COVID-19 vaccines. They express confidence in their competence and favour pharmacies due to their convenience and extended hours.²¹

Notably, there's a growing acceptance of pharmacists' expanded roles in healthcare services in Saudi Arabia, Singapore, and Switzerland, with significant proportions of the public expressing confidence in pharmacists' capabilities and reflecting an openness to use pharmacists for primary healthcare services.^{21, 29} Although public perceptions of pharmacists in Indonesia as vaccine providers have improved since the pandemic, resistance from other healthcare professionals remains due to the belief in the sufficiency of the current medical workforce. In some countries, such as Lebanon, adults trust pharmacists for vaccinations, while parents prefer paediatricians for their children due to perceived specialisation.²¹ In Malaysia, public perceptions prioritise healthcare provider competence over the profession.²¹

In Norway, Italy and the UK, pharmacy-based vaccination services have gained positive patient feedback. A survey conducted in Norway revealed that patients expressed happiness with the service, as highlighted by the outcomes and interviews conducted to gather public opinions.²¹ Moreover, in the three countries, a significant majority, comprising two-thirds of respondents, reported feeling greater ease in receiving the flu vaccine when it is accessible at a pharmacy.⁴²⁻⁴⁴ A study in Austria revealed that 59% of people support having specially trained pharmacists administer vaccines, expressing willingness to be vaccinated at a local pharmacy. Interestingly, when people were questioned about their vaccination site preferences, pharmacies were the second-preferred vaccination sites at 59%, behind general practitioners at 94%, but surpassing vaccination centres at 47%.⁴⁵

In Romania, high satisfaction with pharmacy services, including interest in pharmacy-provided vaccinations, reflects positive public perceptions. One study shows very high satisfaction rates, driven by factors such as pharmacy characteristics, pharmacist-patient interactions, and information clarity.^{46, 47} Satisfaction is influenced by pharmacy attributes, pharmacist attitude and availability, and medicine cost.

Similarly, in Switzerland, in response to piloting of a customer satisfaction questionnaire regarding COVID-19 vaccinations in Zurich pharmacies, out of 372 surveys completed, nearly all respondents (98.7%) would recommend the service. Satisfaction was high across various aspects: pre-vaccination discussion (98.9%), pharmacy's COVID-19 vaccine information (98.9%), comfort with pharmacy vaccination (99.5%), injection technique (99.2%), and premises (98.1%). Many respondents (57.3%) could have chosen another provider but opted for pharmacies due to convenience and trust.⁴⁸

In 2018, a national survey revealed that 78% of Canadians were willing to visit a pharmacist for influenza vaccination, and 67% were open to receiving other vaccines from pharmacists. Despite initial challenges,

pharmacists have gained increasing acceptance in the immunisation field, with their accessibility and frequent patient interactions contributing to their growing role in healthcare delivery.²⁹ In another recent survey of 2,125 adult Canadians conducted in 2023, the majority agreed that expanding the range of services offered at pharmacies, including vaccinations, will enhance access to and quality of healthcare to some extent by 83% and 78%, respectively.²⁷

A study in Germany found very high patient satisfaction with vaccinations administered in pharmacies, with 91.5% highly satisfied. Satisfaction with various aspects such as scheduling, waiting time, information, hygiene, and safety was also very high (96.5-97.9%).⁴⁹ Another study indicated consistently high satisfaction rates (99% in 2020/21 and 100% in 2021/22) with pharmacy-led vaccinations, with nearly all patients willing to be vaccinated again at the pharmacy (98% in 2020/21 and 99% in 2021/22) and many open to vaccinations against other illnesses (78% in 2020/21 and 98% in 2021/22).⁵⁰

10 Summary and conclusions

Since the previous FIP surveys in 2016 and 2020, remarkable progress is evident from our data. More countries and territories have engaged in support and advocacy activities that promote pharmacy-based vaccination, leading to a notable increase in the availability of this service globally. Additionally, an increase in the number of countries where policy development is underway was observed, which is expected to further enhance pharmacists' involvement in immunisation, improve accessibility to vaccine services, and increase vaccination coverage.

The introduction of pharmacy-based vaccination in 22 new countries since the data were published in 2020 highlights the dynamic expansion of this service. Such developments present a positive trend in healthcare practice, where pharmacists are increasingly recognised as key players in vaccination. However, despite these advancements and the available evidence of impact, substantial challenges remain. Legislative and regulatory barriers still restrict pharmacists' full participation in immunisation strategies. Critical issues that need further advocacy include the establishment of comprehensive reimbursement schemes and the standardisation of training and certification processes for pharmacy-based vaccination.

Furthermore, the uneven and disparate implementation of pharmacy-based vaccination across different regions underscores the necessity for a harmonised and structured approach to accessing vaccination records and pharmacist engagement in immunisation. Continued collaboration with governmental bodies, healthcare providers, and the enhancement of public education about pharmacists' roles in vaccination are essential.

As pharmacists continue to serve as medicine experts and frontline healthcare providers, their expanded involvement in vaccination is crucial. By addressing these challenges through informed advocacy and strategic policy development, pharmacists' potential to significantly contribute to public health—especially in increasing immunisation coverage—can be fully realised. This will not only enhance individual patient care but also strengthen community health resilience against vaccine-preventable diseases.

Current and future FIP activities

Moving forward, FIP is set to continue its influential role in global health with several key initiatives. Notably, FIP plans to produce a detailed report focusing on remuneration for pharmacy-based vaccination services, expected to be released later in the year. This effort complements ongoing surveillance and data collection related to pharmacy-based vaccination practices.

Additionally, on April 24-25, 2024, FIP hosted a global policy development summit, highlighting the expanding role of pharmacy in vaccinations. This summit was a follow-up to the approval of the FIP global policy statement on life-course immunisation approved by the FIP Council in Brisbane in 2023. It aimed to consolidate evidence from 2023's initiatives, analyse global vaccination trends, and evaluate emerging therapies and technologies. These insights are intended to support the pharmacy workforce and enhance public health outcomes.

Looking forward, FIP is eager to advance the implementation of its policy on the role of pharmacists in life-course immunisation. The federation plans to engage with policy-makers, communicate effectively with all relevant stakeholders, and fulfil the mandates set by the FIP Council, thereby amplifying the impact of its policies and strengthening global health infrastructure.

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Austria

Austrian Chamber of Pharmacists

Bangladesh

Bangladesh Pharmaceutical Society

Barbados

Caribbean Association of Pharmacist

Belgium

Association of Pharmacists Belgium

Bosnia & Herzegovina

Pharmaceutical Chamber of the Federation of Bosnia and Herzegovina

Brazil

Brazilian Federal Council of Pharmacy

Bulgaria

Bulgarian Pharmaceutical Union

Cameroon

Cameroon National Order of Pharmacists

Canada

Canadian Pharmacists Association

Cape Verde

Order of Pharmacists of Cape Verde

China

Chinese Pharmaceutical Association

China Taiwan

Taiwan Society of Health-System Pharmacists

Colombia

National College of Pharmacist Colombia

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Order of Pharmacists of the Democratic Republic of the Congo

Costa Rica

College of Pharmacists of Costa Rica

Croatia

Croatian Pharmaceutical Society

Cyprus

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Denmark

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Ecuador

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Estonia

Estonian Pharmacies Association

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French Chamber of Pharmacists
French Pharmaceutical Unions Federation

Finland

Association of Finnish Pharmacies

Germany

Federal Union of German Associations of Pharmacists

Ghana

Pharmaceutical Society of Ghana

Guyana

Guyana Pharmacists' Association

Hong Kong SAR, China

The Pharmaceutical Society of Hong Kong

Hungary

Hungarian Society for Pharmaceutical Sciences

Iceland

Pharmacist association in Iceland

India

Indian Pharmaceutical Association

Indonesia

Indonesian Pharmacists Association

Ireland

Irish Pharmacy Union

Israel

Pharmaceutical Association of Israel

Italy

Federfarma - Italian Private Pharmacy Owners Federation

Japan

Japan Pharmaceutical Association

Jordan

Jordan Pharmacists' Association

Kosovo

Kosovo Pharmaceutical Society

Lebanon

Order of Pharmacists of Lebanon
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Lithuania

Lithuanian Pharmaceutical Union

Malawi

Pharmaceutical society of Malawi

Malaysia

Malaysian Pharmacists Society

Malta

Malta Chamber of Pharmacists

Mongolia

Association of Mongolian Pharmacy Professionals

Montenegro

Pharmaceutical Chamber of Montenegro

Morocco

Sigma Pharm Gie

Namibia

Pharmaceutical Society of Namibia

Nepal

Nepal pharmaceuticals association

Netherlands

Royal Dutch Pharmacists Association

Nigeria

Association of Community Pharmacists of Nigeria

Norway

Norwegian Association of Pharmacists
Norwegian Pharmacy Association

Paraguay

Pharmacists' Association of Paraguay

Philippines

Philippine Pharmacists Association

Portugal

National Association of Pharmacies

Romania

Ethica Independent Pharmacies Association

Russian Federation

Moscow Pharmaceutical Society

Serbia

The Pharmaceutical Chamber of Serbia

Sierra Leone

Pharmaceutical Society of Sierra Leone

Slovenia

Slovene Chamber of Pharmacy

South Africa

Pharmaceutical Society of South Africa

South Sudan

Pharmaceutical Society of South Sudan

Spain

General Pharmaceutical Council of Spain

Sri Lanka

Pharmaceutical Society of Sri Lanka

Sweden

Swedish Pharmacists Association

Switzerland

Swiss Society for pharmacists (pharmaSuisse)

Tunisia

Pharmacist Union Tunisia

Türkiye

Turkish Pharmacists' Association

United Kingdom

Royal Pharmaceutical Society
Pharmacists' Defence Association

United States of America

American Pharmacists Association

Ukraine

All Ukrainian Pharmaceutical Chamber

Uruguay

Uruguayan Association of Chemistry and Pharmacy

Yemen

Community Pharmacy Owner Syndicate

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13 Appendices

Appendix 1. Survey Questions (English Version)

FIP GLOBAL SURVEY ON THE ROLE OF PHARMACISTS IN VACCINATION 2024

INTRODUCTION AND GUIDELINES ON HOW TO COMPLETE THIS SURVEY

This survey will take you approximately 15-25 minutes to complete and the deadline for submission is **9th February 2024**.

If your organisation submitted a case study to FIP in the last quarter of 2023 (included in our report “[Pharmacy-based vaccination: Recent developments, success stories and implementation challenges](#)”) please feel free to leave blank the questions that were covered by the case study, as we can extract your responses from the information you provided.

If you feel that you are not able to participate in this study, we would be grateful if you could forward it to the appropriate person or organisation and inform us. If you have any questions regarding this survey, please contact **Mr. Gonçalo Sousa Pinto** (gspinto@fip.org), FIP Lead for Practice Development and Transformation.

BACKGROUND AND SURVEY AIMS

In 2016, 2019 and 2022, FIP conducted surveys on the role of pharmacists in vaccination and published the ensuing report. Since then, this important development in the scope of practice of pharmacists not only gained momentum for FIP, but for the profession around the world, with several countries introducing pharmacy-based vaccination services and related activities.

In light of these developments, FIP would now like to update our intelligence about this area of our professional practice through a new survey to our member organisations. Our goals are to continue advocating for a greater role for pharmacists in expanding vaccination coverage based on current data and evidence, and to monitor recent developments since our last survey.

Thank you very much for your time and collaboration.

Keywords:

Immunisation: the process by which an individual becomes immune against an infectious disease either by natural contact with an infectious agent or by vaccination.

Vaccination: the administration of a vaccine to stimulate immunisation.

DATA PRIVACY

Please provide your contact details in this form so we can send you any updates and information related to this project. Personal data will be used exclusively to communicate this information and to acknowledge your collaboration in the survey report. It will not be shared with third parties without permission. You may opt-out of our

mailing list at any time. All additional relevant information on the processing by FIP of personal data can be found in the Privacy Statement at <https://fip.org/files/fip/Privacy-Statement.pdf>

CONTACT DETAILS AND INFORMATION ABOUT YOUR ORGANISATION

Country or territory:

Name of your organisation in English:

Person completing this questionnaire

Title:

Ms.

Mr.

Other

First Name:

Last Name:

Email Address:

What is your position or job title in your organisation?

SECTION 1. PROMOTING VACCINATION AWARENESS AND UPTAKE, ADVOCATING FOR VACCINATION

1. Do pharmacists routinely promote and advocate vaccination to individuals in your country/territory?

- ☐ Yes, routinely
- ☐ Yes, but not routinely
- ☐ No
- ☐ Uncertain

2. In what types of vaccination advocacy activities do pharmacists participate? Mark all that apply.

- ☐ Distributing educational leaflets on vaccination
- ☐ Participating in pharmacy-led campaigns about vaccination (at pharmacies or online)
- ☐ Providing vaccination information and advice to individuals (e.g. raising awareness about the benefits of vaccination, dispelling common vaccination myths, etc.)
- ☐ Participating in multi-disciplinary or multi-stakeholder vaccination campaigns
- ☐ Checking individuals' immunisation status and/or vaccination registry to provide personalised recommendations
- ☐ Targeting high-risk population groups with advice on vaccination needs (e.g. older adults, pregnant individuals, people living with chronic medical conditions, etc)
- ☐ Other. Please specify:

3. What is the name of your country's national immunisation technical advisory group/ committee (NITAG or other local designation)?

Name:

URL:

4. Are pharmacists represented in your country's national immunisation technical advisory group/committee?

- ☐ Yes
- ☐ No
- ☐ I don't know

SECTION 2. PROVISION, REGULATION AND REMUNERATION OF VACCINATION SERVICES

5. Can vaccines be administered in community pharmacies in your country/territory?

- ☐ Yes
- ☐ No

6. Who is authorised to administer vaccines at community pharmacies? (mark all that apply)

- ☐ Trained and certified pharmacists
- ☐ Trained and certified pharmacy technicians
- ☐ Trainee pharmacists (pre-registration) / interns
- ☐ Pharmacy students
- ☐ Other healthcare professionals (e.g. nurses or doctors)

7. Are pharmacists authorised to administer vaccines at other premises outside community pharmacies (e.g. workplaces, schools, long-term care centres, etc.)?

- ☐ Yes
- ☐ No

8. Are pharmacists authorised to prescribe vaccines for administration (i.e., they can administer or dispense vaccines without a medical prescription)?

- ☐ Yes, for all vaccines
- ☐ Yes, for some vaccines. Please specify:
- ☐ No

9. Are pharmacists or pharmacies reimbursed by third-party payers for their vaccination services?

- ☐ Yes, by public (state-run) health systems or insurers
- ☐ Yes, by private health systems or insurers
- ☐ No, the service is paid by the customer.
- ☐ No, the service is provided free of charge (i.e., the pharmacy takes on the cost of the service)
- ☐ Other. Please specify:

10. For the following vaccines, please indicate if pharmacists can administer and/or prescribe them, the eligible age & population groups to receive the vaccine at a pharmacy, and the remuneration model in place.

Vaccine	Administration by pharmacists (Yes/No)	Prescribing by pharmacists (Yes/No)	Eligible age & population groups	Third-party remuneration of vaccination service
Influenza (flu)				
COVID-19				
Pneumococcal disease				
Herpes zoster (shingles)				
Tetanus, diphtheria and pertussis (Tdap boosters)				
RSV				
Meningococcal meningitis				
Human papillomavirus				
Hepatitis B				
Other vaccines				

11. Is your country currently proposing or undergoing the development of policy/legislation/regulations to allow or expand pharmacists' authority to administer or prescribe vaccines?

- ☐ Yes. Please provide any details.
- ☐ No

12. You may use the space below to provide any additional information or links to documents related to this section of the survey.

SECTION 3. VACCINATION RECORDS

13. Do pharmacists have access (reading rights) to vaccination registries?

- ☐ Yes for all records
- ☐ Yes for some records. Please specify:
- ☐ No

14. Are pharmacists authorised to record (write) the details of vaccines administered by them in a shared vaccination registry?

- ☐ Yes, and it is mandatory to record both the individual's details and the vaccination details
- ☐ Yes, and it is mandatory to record the vaccination details but not the individual's details
- ☐ Yes, but it is not mandatory.
- ☐ No

15. In what format (and where) are vaccination registries kept?

- ☐ In paper format (a vaccination card or booklet kept by the individual)
- ☐ In a national shared electronic system
- ☐ In an electronic file kept by the pharmacy
- ☐ Other. Please specify:

SECTION 4. TRAINING THE PHARMACY WORKFORCE FOR VACCINATION SERVICES

16. Do pharmacists receive vaccination training in your country/territory?

- ☐ Yes for all pharmacists
- ☐ Yes, some pharmacists do
- ☐ No

17. At what career stage(s) do pharmacists receive vaccination training?

- ☐ Undergraduate / university
- ☐ Post-registration / Post-graduate/ Continuous professional development

18. Is the training mandatory?

- ☐ Yes
- ☐ No

19. Do pharmacists need to renew their certification (i.e., the training is only valid for a certain period)?

- ☐ Yes
- ☐ No

20. If yes, how long is the certificate valid for?

21. Where do pharmacists currently get their vaccination training? (mark all that apply)

- ☐ From a professional organisation (association, chamber, etc.)
- ☐ From the ministry of health
- ☐ From a university
- ☐ From the industry
- ☐ Other. Please specify:

22. Is the training accredited, certified, recognised or approved by a regulator or authority?

- ☐ Yes
- ☐ No

23. If yes, please indicate the name of the certifying authority.

SECTION 5. LIMITATIONS TO THE DEVELOPMENT OF PHARMACISTS' ROLE IN VACCINATION

24. What are the main limitations and or challenges that pharmacists face regarding the provision of vaccination services in your country/territory? Mark all options that apply. Feel free to clarify any answers or leave any comments in the box provided at the end of the section.

- ☐ No significant limitations
- ☐ Limited acceptance and/or support by the government / health system
- ☐ Limited acceptance and/or support by other healthcare professionals
- ☐ Lack of remuneration by third-party payers (public or private)
- ☐ Lack of population demand / acceptance
- ☐ Limited access to training opportunities for pharmacists
- ☐ Lack of confidence by pharmacists to perform vaccination services
- ☐ Other. Please specify:

SECTION 6. IMPACT OF PHARMACY-BASED VACCINATION

25. Please provide any data or evidence of the impact of pharmacy-based vaccination in your country? Please include any data published in peer-reviewed journals or grey literature, including official websites, related to the total number of vaccine doses administered in pharmacies per year, the percentage of pharmacy-administered doses out of the total doses administered nationally, or any economic impact data that you may be aware of.

	Impact data / Highlights	Year of publication	Source	Reference / URL
Publication 1				
Publication 2				
Publication 3				
Publication 4				
Publication 5				
Publication 6				

26. Please provide any data from your country about the vaccination coverage rate among pharmacists and pharmacy technicians against influenza and COVID-19, if available.

	Coverage rate among pharmacists (% of all pharmacists themselves who are vaccinated)	Coverage rate among pharmacy technicians (% of all pharmacy technicians themselves who are vaccinated)	Year of data	Source and reference

Influenza (flu)				
COVID-19				

27. Please provide any data from your country regarding the satisfaction of the public in relation to pharmacy-based vaccination, if available.

	Data / Highlights	Year of publication	Source	Reference / URL
Publication 1				
Publication 2				
Publication 3				
Publication 4				
Publication 5				
Publication 6				

Appendix 2. Comparison of countries where pharmacy-based vaccination is allowed (n=117)

Country	Administration in pharmacies	Administration by pharmacists	Administration by trained technician	Administration by other healthcare practitioner
Afghanistan ¹⁸	No	No	No	No
Albania	Yes	No	No	Yes
Algeria ²¹	Yes	Yes	No	No
Argentina	Yes	Yes	No	Yes
Armenia ¹⁸	No	No	No	No
Australia	Yes	Yes	No	Yes
Austria	No	No	No	No
Bangladesh*	Yes	No	Yes	Yes
Barbados	No	No	No	No
Belgium	Yes	Yes	No	No
Bolivia ⁵	Yes	No	No	Yes
Bosnia & Herzegovina	No	No	No	No
Brazil	Yes	Yes	No	No
Bulgaria	No	No	No	No
Cameroon	Yes	Yes	No	No
Canada	Yes	Yes	No	Yes
Cape Verde	Yes	Yes	No	No
Chad ¹⁸	Yes	Yes	Yes	No
Chile ²⁹	No	No	No	No
China	No	No	No	No
China Taiwan	No	No	No	No
Colombia	No	No	No	No
Congo, Dem. Rep. of the*	No	No	No	No
Congo, Rep. Of ¹⁸	No	No	No	No
Costa Rica	Yes	Yes	No	No
Côte d'Ivoire ¹⁸	No	No	No	No
Croatia	Yes	No	No	Yes
Cuba ²⁹	No	No	No	No
Cyprus	No	No	No	No
Czech Republic ¹⁸	No	No	No	No
Denmark	Yes	Yes	Yes	Yes
Ecuador	No	No	No	No
Egypt ¹⁸	No	No	No	No
El Salvador ²⁹	No	No	No	No
Estonia	Yes	No	No	Yes
Ethiopia ⁵	No	No	No	No
Fiji ⁵	No	No	No	No
Finland*	Yes	No	No	Yes
France	Yes	Yes	No	No
Germany	Yes	Yes	No	No
Ghana	Yes	Yes	No	No

Country	Administration in pharmacies	Administration by pharmacists	Administration by trained technician	Administration by other healthcare practitioner
Greece ^{21, 25}	Yes	Yes	No	No
Guatemala ²⁹	No	No	No	No
Guyana	No	No	No	No
Haiti ¹⁸	No	No	No	No
Hong Kong SAR, China*	No	No	No	No
Hungary	No	No	No	No
Iceland	Yes	Yes	No	Yes
India	No	No	No	No
Indonesia*	No	No	No	No
Iraq ⁵	No	No	No	No
Ireland	Yes	Yes	No	No
Israel	Yes	Yes	No	No
Italy	Yes	Yes	No	No
Japan	No	No	No	No
Jordan	Yes	Yes	No	No
Kenya ¹⁸	Yes	Yes	No	No
Korea (Rep. of) ¹⁸	No	No	No	No
Kosovo	No	No	No	No
Kuwait ¹⁸	No	No	No	No
Latvia ^{21, 25}	Yes	Yes	No	No
Lebanon	Yes	No	No	Yes
Lithuania	Yes	Yes	No	Yes
Luxembourg ²⁵	Yes	Yes	ND	ND
Madagascar ¹⁸	No	No	No	No
Malawi	No	No	No	No
Malaysia	No	No	No	No
Mali ¹⁸	No	No	No	No
Malta*	Yes	No	No	Yes
Mauritius ¹⁸	No	No	No	No
Mexico	ND	ND	ND	ND
Mongolia	No	No	No	No
Montenegro	No	No	No	No
Morocco	No	No	No	No
Namibia	Yes	Yes	No	No
Nepal*	Yes	No	No	Yes
Netherlands	Yes	No	No	Yes
New Zealand ^{10, 18}	Yes	Yes	No	Yes
Nigeria	Yes	Yes	No	Yes
North Macedonia (Republic of) ¹⁸	No	No	No	No
Norway	Yes	Yes	Yes	Yes
Oman ¹⁸	No	No	No	No

Country	Administration in pharmacies	Administration by pharmacists	Administration by trained technician	Administration by other healthcare practitioner
Pakistan ⁵¹	Yes	No	No	Yes
Panama ¹⁸	No	No	No	No
Paraguay	Yes	No	Yes	No
Peru	ND	ND	ND	ND
Philippines	Yes	Yes	No	Yes
Poland ¹⁸	Yes	Yes	No	No
Portugal	Yes	Yes	No	Yes
Romania	Yes	Yes	No	No
Russian Federation	No	No	No	No
Rwanda ¹⁸	No	No	No	No
Saudi Arabia ²¹	Yes	Yes	No	No
Senegal ⁵	No	No	No	No
Serbia	No	No	No	No
Sierra Leone	Yes	Yes	No	Yes
Singapore ¹⁸	No	No	No	No
Slovak Republic ¹⁸	No	No	No	No
Slovenia	No	No	No	No
South Africa	Yes	Yes	No	Yes
South Sudan	Yes	Yes	No	Yes
Spain	No	No	No	No
Sri Lanka	No	No	No	No
Sudan ¹⁸	No	No	No	No
Sweden*	Yes	No	No	Yes
Switzerland	Yes	Yes	No	Yes
Tanzania ¹⁸	No	No	No	No
Thailand	No	No	No	No
Tunisia	Yes	Yes	No	No
Türkiye	No	No	No	No
Uganda	ND	ND	ND	ND
Ukraine ¹⁸	No	No	No	No
United Arab Emirates ²¹	Yes	Yes	No	No
United Kingdom	Yes	Yes	No	Yes
United States of America	Yes	Yes	Yes	Yes
Uruguay	No	No	No	No
Venezuela ¹⁸	Yes	Yes	No	No
Yemen	Yes	Yes	No	Yes
Zambia ¹⁸	No	No	No	No
Zimbabwe ¹⁸	No	No	No	No
Number replying "yes"	56	43	6	30

*Countries where discrepancies were found and addressed

Appendix 3. Overview of undergoing or proposed policy changes

Country	Pharmacy-based vaccination in place?	Details on undergoing or proposed policy changes
Argentina	Yes	<p>In collaboration with Argentina's Undersecretary of Health Strategies, a nationwide initiative has been launched to standardise the training, requirements, and registration of vaccines in community pharmacies. This policy enables pharmacies to administer all vaccines approved by Argentina's national regulatory authority.</p> <p>Pharmacies are authorised to distribute vaccines included in the National Vaccination Schedule (NVS) and those prescribed for individual cases not covered by the NVS. Recent additions to the vaccine registry, such as Gardasil 9, Qdenga, Shingrix, cellular flu vaccines, and Prevenar 19, are dispensed under prescription with varying coverage levels from health insurers.</p> <p>A notable aspect of the national vaccination strategy is the inclusion of the hexavalent acellular vaccine (DTPa/Hib/VPI/HB) for all infants for the initial three doses and a booster at 18 months, an expansion beyond its NVS listing for only premature infants. This decision is based on its lower risk of adverse effects compared to the conventional pentavalent vaccine (diphtheria, pertussis, tetanus, Haemophilus influenzae type b, hepatitis B), often coupled with full coverage by insurance providers.</p> <p>In some jurisdictions, pharmacists are permitted to administer NVS vaccines without a prescription when supplied by government sources at no cost, receiving a fee for their services. These vaccinations are restricted to specific age groups designated by the NVS or authorised by the government. Additional information on vaccination schedules is available on the Ministry of Health's website, listed under the 2024 National Vaccination Schedule: https://www.argentina.gob.ar/salud/boletin-epidemiologico-nacional</p> <p>The Argentinian Pharmaceutical Confederation is updating its vaccination guide, a critical component of ongoing pharmacist training. The guide is accessible online and provides essential information for pharmaceutical practice: https://www.cofa.org.ar/GuiadevacunacionCoFAenactualizacion.pdf</p>
Australia	Yes	<p>Australia is considering a policy to allow pharmacists to administer Respiratory Syncytial Virus (RSV) vaccines, aiming to enhance vaccine accessibility. Additionally, there is a pilot programme underway in Victoria related to travel health services. Should this pilot prove successful, there are plans to make it a permanent fixture. This initiative aims to provide comprehensive health services to travellers, addressing preventative care and potential health risks associated with international travel. The programme's success will be evaluated based on its effectiveness in improving traveller health outcomes and its feasibility for integration into existing healthcare services.</p>
Barbados	No	<p>In Barbados, the Pharmacy Council has proposed legislative changes to expand the scope of pharmacy services. This includes allowing pharmacists to administer vaccines.</p>
Belgium	Yes	<p>Belgium has mandated influenza vaccinations through legislative action until the end of 2024. Concurrently, efforts are underway to develop a more permanent legal framework to sustain influenza vaccination policies beyond this period.</p>
Bosnia & Herzegovina	No	<p>Bosnia and Herzegovina is introducing new regulations in the healthcare sector. These changes will improve the quality and accessibility of pharmacy services across the country.</p>
Brazil	Yes	<p>Brazil is implementing measures to enhance the exercise and inspection of pharmacy activities. Regulations now focus on licensing, quality control, and safety standards, ensuring a robust framework for pharmaceutical practice. Law No. 13021/2014 outlines the standards for the practice and oversight of pharmaceutical activities.</p> <p>New guidelines (RDC/Anvisa No. 197/2017) issued by ANVISA (Brazil's National Health Surveillance Agency) set the minimum requirements for operating human vaccination services. These regulations emphasise storage conditions, administration procedures, and record-keeping to ensure the efficacy and safety of vaccinations.</p> <p>The Brazilian Federal Council of Pharmacy (CFF) resolution (CFF No. 654/2018) and law 14675/2023 both specify the essential prerequisites for pharmacists to provide vaccination services, along with other related provisions.</p>
Canada	Yes	<p>Advocacy efforts are underway to achieve greater harmonisation of pharmacist roles and responsibilities across the country. The goal is to standardise practices and enhance patient care. Currently, authorisation for pharmacists to administer, prescribe, and fund vaccines/services varies by province/territory. Efforts are ongoing to streamline these processes and ensure consistent access to vaccination services.</p>

Country	Pharmacy-based vaccination in place?	Details on undergoing or proposed policy changes
Croatia	Yes	Croatia is currently considering new legislation that would authorise pharmacists to administer vaccines directly within pharmacies. This legislation is under review by the Ministry of Health and awaits approval. Once enacted, this change will significantly expand the role of pharmacists in public health initiatives, allowing them to provide vaccination services. The details of the legislation have not yet been made public.
Egypt	No	No details provided
Estonia	Yes	<p>Estonia is engaged in ongoing discussions with the Ministry of Social Affairs regarding changes to legislation that would affect healthcare services. These discussions include provisions from the "Drug Policy 2030" document, which anticipates the acceptance of pharmacists administering vaccines by 2026. This legislative change aims to enhance access to vaccination services by involving pharmacists more directly in public health efforts.</p> <p>Links: https://www.siseministeerium.ee/sites/default/files/documents/2024-04/Estonian_drug%20policy_2030_white_paper.pdf https://www.emcdda.europa.eu/drugs-library/ministry-interior-estonia-2021-estonian-drug-policy-2021-30_en</p>
Finland	Yes	In December 2023, the Finnish government submitted a proposal to allow pharmacists to administer vaccinations. This legislative change is currently in process. If approved, it would expand the role of pharmacists in public health by enabling them to provide vaccination services directly.
France	Yes	<p>Under the decree no. 2023-736 issued on August 8, 2023, French health authorities have significantly expanded the vaccination responsibilities of various healthcare professionals. This expansion impacts pharmacists in both community and hospital settings, nurses, health professionals in medical biology laboratories, and third-cycle pharmacy students. They are now authorised to prescribe and administer a broad spectrum of vaccines to both children and adults. The authorised vaccines target diseases such as diphtheria, tetanus, polio, pertussis, flu, HPV, and several others. However, the administration of live vaccines is restricted for immunocompromised patients due to safety considerations.</p> <p>In addition to these changes, there is a concerted effort to enhance vaccinology training for health professionals, guided by the recommendations from the Haute Autorité de Santé (HAS).</p>
Ghana	Yes	<p>Ghana has developed its first policy specifically addressing COVID-19 vaccinations, which is currently being employed to train pharmacists across the country. This initiative aims to equip pharmacists with the necessary skills to effectively administer COVID-19 vaccines. The outcomes and experiences gathered from these trained pharmacists will serve as foundational data to revise and extend this policy to include other vaccines.</p> <p>Link: https://gcpharm.edu.gh/wp-content/uploads/2023/06/GUIDELINES-FOR-VACCINATION-1.pdf</p>
Hungary	No	The Chamber of Pharmacists of Hungary has recently submitted a proposal to the competent ministry to involve pharmacists in vaccination.
Iceland	Yes	Iceland is currently conducting a pilot project in which two selected pharmacies have been authorised to administer vaccines. This initiative aims to evaluate the feasibility and impact of expanding vaccination services through pharmacies.
India	No	<p>The Ministry of Health in India has recognised the potential for pharmacists to serve as alternate vaccinators to address the demand for increased vaccination coverage. In response, the Indian Pharmaceutical Association has initiated a Training of Trainers programme for pharmacists and is actively engaging with the Ministry to secure formal authorisation for pharmacists to administer vaccines.</p> <p>Significant references include:</p> <ol style="list-style-type: none"> 1. The National Operational Guidelines for the Introduction of Pneumococcal Conjugate Vaccine (January 2021), which emphasises the need to strengthen immunisation management and includes pharmacists among the healthcare professionals to be trained for new vaccine introductions. Link: https://main.mohfw.gov.in/sites/default/files/PCV_Operational%20Guidelines_Jan%20%202021.pdf 2. The Operational Guidelines: Strengthening Immunization Systems To Reach Every Child (October 2019), which allows for the hiring of alternative vaccinators, including pharmacists, especially in urban areas or where there is a shortage. 3. The Operational Guidelines: COVID-19 Vaccines (December 2020), which outline that vaccination teams may include pharmacists, recognising them as crucial members capable of administering injections. Link: https://covid19.india.gov.in/document/covid-19-vaccines-operational-guidelines/
Ireland	Yes	Ireland is advancing legislative reforms to broaden the role of pharmacists in public health, particularly in vaccination services. The Health (Miscellaneous Provisions) Bill 2023, published in January 2024, amends existing legislation to increase the Minister for Health's authority to regulate the management of and access to medicinal products, including the expansion of vaccination services. This Bill explicitly permits registered

Country	Pharmacy-based vaccination in place?	Details on undergoing or proposed policy changes
		<p>pharmacists to administer vaccinations as part of public programmes managed by the Health Service Executive.</p> <p>Additionally, the Medicinal Products (Prescription and Control of Supply) (Amendment) (No. 5) Regulations 2023 (S.I. No. 422/2023) outline provisions for community pharmacists to administer all primary immunisation vaccines, such as MMR, in the event of a declared public health emergency.</p> <p>Link: https://www.irishstatutebook.ie/eli/2023/si/422/made/en/print?q=medicinal&years=2023</p>
Jordan	Yes	The Jordanian Pharmacists Association is actively lobbying the Ministry of Health (MoH) to expand the role of pharmacists in the administration of additional vaccines.
Latvia	Yes	No details provided
Lithuania	Yes	No details provided
Malta	Yes	The Malta Chamber of Pharmacists has been proactive in training pharmacists for enhanced healthcare roles, including certification in basic life support and automated external defibrillator use by the European Resuscitation Council during October-December 2021, and in vaccine administration. Despite these initiatives, policy barriers have prevented the full implementation of pharmacist-led vaccination services in pharmacies. The Chamber continues to engage with health authorities and other healthcare professionals to overcome these obstacles and advocates for policy changes that would enable pharmacists to serve as vaccinators.
Norway	Yes	No details provided
Philippines	Yes	No details provided
Poland	Yes	Since January 2022, Polish pharmacies have actively participated in the national flu vaccination programme, expanding their role in public health initiatives.
Portugal	Yes	Portugal is currently evaluating the potential for pharmacies to administer certain vaccines included in the National Vaccination Program (PNV), such as the tetanus booster.
Serbia	No	<p>Since 2020, the Pharmaceutical Chamber of Serbia has been actively promoting vaccination and recognising pharmacists as key contributors to public health. The Chamber proposed a project titled "Importance and Role of Pharmacies in the Promotion of Vaccination," which was endorsed by its Assembly and submitted to the Ministry of Health in November 2020. The project aims to deploy pharmacists in a pilot project for seasonal flu vaccinations, although a response from the Ministry is still pending.</p> <p>The Chamber has successfully implemented several significant projects:</p> <ol style="list-style-type: none"> 1. Strengthening the Role of Public Pharmacies in COVID-19 Vaccination: Part 1: November 20, 2021, to December 31, 2021 Part 2: March 23, 2022, to August 31, 2022 Supported by the World Health Organization and USAID, this initiative recorded 28,317 educational counselling services. 2. Ask Me About HPV!: December 1, 2022, to June 30, 2023 Funded by the MSD-Health Equity Catalyst Fund, this campaign documented 26,084 educational counselling interactions. Current Project - The Role of Pharmacists in the Promotion of Vaccination Against Seasonal Flu and Pneumococcus - Vaccination 3. Advisor - The First 50: October 6, 2023, to November 30, 2023 This ongoing project is in collaboration with Amicus SRB, Pfizer, and Medica Linea Pharm. <p>Additionally, the Chamber annually provides vaccination-related education to its members. April 2023,</p>

Country	Pharmacy-based vaccination in place?	Details on undergoing or proposed policy changes
		designated as the Month of Pharmacy to coincide with Pharmacy Day in Serbia (April 30), was dedicated to immunisation. This included educational sessions and the production of a promotional video where pharmacists address common vaccine-related questions and discuss the importance of vaccination, which can be viewed here: https://www.youtube.com/watch?v=VZz_1JGIGCU&t=27s
Singapore	No	No details provided
Slovenia	No	The Slovene Chamber of Pharmacy has initiated a pilot project and established an educational programme aimed at enabling pharmacists to administer vaccinations directly in pharmacies. Currently, the Chamber is in active negotiations with the Ministry of Health to discuss and potentially formalise these changes. These discussions aim to integrate pharmacists more comprehensively into Slovenia's vaccination strategy, enhancing accessibility and efficiency of vaccine delivery across the country.
South Africa	Yes	<p>South Africa has introduced accreditation criteria through a published short course on immunisation and vaccination, allowing pharmacists to administer a wider array of vaccines without requiring a doctor's prescription. The details of the accreditation can be found in the official document here: https://www.pharmcouncil.co.za/Media/Default/Documents/BN241_2022_Immunisation%20and%20Inject%20Tech.pdf</p> <p>Furthermore, there is ongoing advocacy to include COVID-19 vaccines in Schedule 2, which would permit pharmacists to dispense these vaccines based on a pharmacist's prescription. This initiative aims to increase the accessibility of COVID-19 vaccines across the country by leveraging the pharmacist workforce.</p>
Switzerland	Yes	<p>Switzerland is actively expanding the role of pharmacies in public health through pharmacy-based vaccinations. A detailed overview of the types of vaccinations authorised in pharmacies, broken down by canton, has been published by Pharmasuisse: https://pharmasuisse.org/system/files/media/documents/2024-01/240122_Vaccinations%20autoris%C3%A9es%20en%20pharmacie%20par%20canton.pdf</p>
Tanzania	No	In Tanzania, various proposals aimed at reforming healthcare practices have been presented across different health care platforms. Despite these initiatives, high-level decision-makers have not yet issued any approvals or official statements regarding these proposals. The situation remains in a state of anticipation, awaiting directives or endorsements from senior health authorities.
Tunisia	Yes	No details provided
Türkiye	No	<p>Türkiye is actively engaging in advocacy efforts to secure authorisation for pharmacists to administer vaccinations. These efforts include advisory work with public authorities to outline and support the potential role of pharmacists in vaccination services. To bolster these efforts, a survey was conducted among general practitioners and pharmacists to gauge perspectives on vaccination.</p> <p>Furthermore, comprehensive guidelines have been developed and translated to provide Turkish pharmacists with essential resources. These guidelines are intended to enhance pharmacists' knowledge and preparedness for potential vaccination roles. The resources are accessible online: https://dergi.tebeczane.net/public_html/kitaplar/eczanelerinbagisiklamaorininaetkisi/html5/index.html?&locale=TRK https://dergi.tebeczane.net/public_html/kitaplar/eczacinin_asi_rehberi/html5/index.html?&locale=TRK</p>
Ukraine	No	No details provided
United Kingdom	Yes	<p>The UK is introducing legislative changes that enable pharmacy technicians to administer vaccines under patient group directions, broadening their scope of practice. This amendment is part of a broader strategy to enhance the role of community pharmacies in national immunisation campaigns. Pharmacy bodies are actively promoting this expansion, recognising the potential for community pharmacies to increase access and efficiency in vaccine delivery.</p> <p>Further details on the strategy and expected roles of community pharmacies can be found in a comprehensive article here: https://pharmaceutical-journal.com/article/news/community-pharmacy-expected-to-play-greater-role-in-delivering-vaccines-under-new-strategy</p>
United States of America	Yes	<p>During the COVID-19 pandemic, the United States implemented the Public Readiness and Emergency Preparedness Act (PREP Act) as an emergency declaration, which temporarily aligned the varying scopes of practice across states and territories. Under this act, pharmacists, pharmacy interns, technicians, and other healthcare providers were authorised to order and administer COVID-19 and other vaccines to individuals aged three years and older.</p> <p>Following the conclusion of the pandemic emergency status, the provisions of the PREP Act expired, prompting both federal and state-level legislative efforts to make these expanded vaccination authorities</p>

Country	Pharmacy-based vaccination in place?	Details on undergoing or proposed policy changes
		permanent. While some locations are still in the process of enacting these changes, others have already incorporated them to various extents.
Uruguay	No	<p>In Uruguay, the ProVacuna group (a collective initiative dedicated to advocating for and promoting vaccination) has been actively engaging with the Ministry of Public Health through several meetings, advocating for a commitment to enhancing vaccination efforts.</p> <p>Additionally, discussions with the Faculty of Chemistry (Pharmacy) have resulted in plans to incorporate a course on immunisations as an optional subject in the undergraduate pharmacy degree curriculum. This initiative aims to equip future pharmacists with specialised knowledge and skills in vaccination practices, contributing to a more comprehensive approach to public health.</p>

[illegible][illegible]

Country	Training about vaccine administration?	Career stage(s) of vaccination training		Training mandatory?	Renewal of certification?	How long is the certificate valid for?	Vaccination training providers				Training accredited by a regulator?
		Undergraduate	Post-registration/ Post-grad/ CPD				Professional organisations	Ministry of health	Universities	Industry	
Congo, Rep. Of	No ¹⁸										
Costa Rica	Yes (all)	Yes	Yes ¹⁸	No	No		Yes		Yes		No
Côte d'Ivoire	Yes (all)	Yes	Yes	Yes							Yes
Croatia	Yes (all)	Yes		No	Yes	1 year			Yes		Yes
Cyprus*	No										
Czech Republic	No										
Denmark	Yes (some)		Yes	Yes	Yes	1 year					No
Ecuador*	No										
Egypt	Yes (some)		Yes	No							Yes
Estonia*	No										
Ethiopia	No										
Fiji	No										
Finland*	No										
France	Yes (some)	Yes	Yes ¹⁸	Yes	No		Yes		Yes		Yes
Germany	Yes (some)	Yes ¹⁸	Yes	Yes	No		Yes				Yes
Ghana	Yes (some)		Yes	No	Yes	1 year					Yes
Greece	Yes (some)	Yes ¹⁸	Yes	Yes ²¹							Yes
Guatemala	No ²⁹										
Guyana	Yes (all)		Yes	Yes	Yes	1 year	Yes	Yes			Yes
Haiti	No										
Hong Kong SAR, China	Yes (some)	Yes	Yes ¹⁸	Yes	Yes	5 years	Yes		Yes		Yes
Hungary*	No										
Iceland	Yes (some)		Yes	No	No		Yes				Yes
India	Yes (some)	Yes ¹⁸	Yes	No	No						No

[illegible]

Country	Training about vaccine administration?	Career stage(s) of vaccination training		Training mandatory?	Renewal of certification?	How long is the certificate valid for?	Vaccination training providers				Training accredited by a regulator?
		Undergraduate	Post-registration/ Post-grad/ CPD				Professional organisations	Ministry of health	Universities	Industry	
Morocco	Yes (all)	Yes		Yes	No				Yes		No
Namibia	Yes (some)	Yes		No	Yes				Yes		No
Nepal*	No										
Netherlands*	No										
New Zealand	Yes (some)		Yes	Yes ¹⁰	Yes ¹⁰	2 years ¹⁰					Yes
Nigeria	Yes (some)		Yes	No	No		Yes		Yes		Yes
North Macedonia (Republic of)	No										
Norway	Yes (all)		Yes	Yes	Yes	3 years	Yes				No
Oman	No										
Pakistan*	No										
Panama	No										
Paraguay*	No										
Peru	No ²⁹										
Philippines	Yes (all)	Yes ¹⁸	Yes	No	No	3 years ¹⁸	Yes	Yes			Yes
Poland	Yes (some) ²¹		Yes ²¹	Yes ²¹							
Portugal	Yes (some)		Yes	Yes	Yes	5 years	Yes				Yes
Romania	Yes (all)		Yes	Yes	Yes	5 years			Yes		No
Russian Federation*	No										
Rwanda	Yes (some)		Yes	No							Yes
Saudi Arabia	Yes (some) ²¹		Yes ²¹	Yes ²¹							
Senegal	Yes (some)	Yes	Yes	Yes							No
Serbia	Yes (all)	Yes		No	No				Yes		No
Sierra Leone	Yes (some)		Yes	No	No			Yes			No
Singapore	Yes (some)		Yes	No							Yes

Country	Training about vaccine administration?	Career stage(s) of vaccination training		Training mandatory?	Renewal of certification?	How long is the certificate valid for?	Vaccination training providers				Training accredited by a regulator?
		Undergraduate	Post-registration/ Post-grad/ CPD				Professional organisations	Ministry of health	Universities	Industry	
Slovak Republic	No										
Slovenia*	No										
South Africa	Yes (some)	Yes ¹⁸	Yes	No	No				Yes		Yes
South Sudan	Yes (some)		Yes	No	No		Yes	Yes			No
Spain	Yes (all)	Yes	Yes ¹⁸	Yes	No		Yes		Yes	Yes	Yes
Sri Lanka*	No										
Sudan	No										
Sweden*	No										
Switzerland	Yes (all)	Yes	Yes ¹⁸	Yes	No	2 years ¹⁸			Yes		Yes
Tanzania	Yes (some)	Yes	Yes	Yes							Yes
Thailand	No										
Tunisia	Yes (some)	Yes		Yes	No			Yes			No
Türkiye*	No										
Ukraine*	No										
United Arab Emirates	Yes (some) ²¹		Yes ²¹	Yes ²¹				Yes ²¹			
United Kingdom	Yes (all)	Yes ¹⁸	Yes	Yes	Yes	1 year					Yes
United States of America	Yes (some)	Yes	Yes ¹⁸	No	No		Yes		Yes		Yes
Uruguay*	No										
Venezuela	Yes (all)	Yes	Yes	Yes			Yes ²⁹				Yes
Yemen	Yes (some)		Yes	No	No		Yes			Yes	No
Zambia	No										
Zimbabwe	No										

*Data provided for subsequent questions have been removed as they are considered not applicable. ** Data are modified to yes(some) because Cape Verde stated that trained pharmacists administer vaccines in a pharmacy.

Appendix 5. Data summary from the study (part 1)

Country	Region	Income level	Administration in pharmacies	Prescribing by pharmacists	Reimbursement by a third-party				
					Yes, by public (state-run) health systems or insurers	Yes, by private health systems or insurers	No, the service is paid by the customer	No, the service is provided free of charge (i.e., the pharmacy takes on the cost of the service)	Access (reading rights) to vaccination registries
Afghanistan	EMRO	Low income	No	ND	✓				
Albania	EURO	Upper middle income	H	No					No
Algeria	AFRO	Lower middle income	P	Yes, for some vaccines					
Argentina	PAHO	Upper middle income	P/H	Yes, for some vaccines	✓	✓	✓		Yes for all records
Armenia	EURO	Upper middle income	No	ND					
Australia	WPRO	High income	P/H	Yes, for some vaccines	✓		✓		Yes for all records
Austria	EURO	High income	No	No				✓	Yes for all records
Bangladesh	SEARO	Lower middle income	P/T/H	No			✓		No
Barbados	PAHO	High income	No	No					No
Belgium	EURO	High income	P	Yes, for some vaccines	✓				Yes for some records
Bolivia	PAHO	Lower middle income	H	No					
Bosnia & Herzegovina	EURO	Upper middle income	No	No					Yes for some records
Brazil	PAHO	Upper middle income	P	Yes, for some vaccines			✓		Yes for all records
Bulgaria	EURO	Upper middle income	No	No					No
Cameroon	AFRO	Lower middle income	P	No				✓	Yes for some records
Canada	PAHO	High income	P/H	Yes, for some vaccines	✓				Yes for some records
Cape Verde	AFRO	Lower middle income	P	No			✓		No
Chad	AFRO	Low income	P/T	Yes, for all vaccines					
Chile	PAHO	High income	No	ND					

Country	Region	Income level	Administration in pharmacies	Prescribing by pharmacists	Reimbursement by a third-party				
					Yes, by public (state-run) health systems or insurers	Yes, by private health systems or insurers	No, the service is paid by the customer	No, the service is provided free of charge (i.e., the pharmacy takes on the cost of the service)	Access (reading rights) to vaccination registries
China	WPRO	Upper middle income	No	No			✓		Yes for some records
China Taiwan	WPRO	High income	No	No				✓	No
Colombia	PAHO	Upper middle income	No	No					No
Congo, Dem. Rep. of the	AFRO	Low income	No	No					No
Congo, Rep. Of	AFRO	Lower middle income	No	ND					
Costa Rica	PAHO	Upper middle income	P	Yes, for all vaccines				✓	Yes for some records
Côte d'Ivoire	AFRO	Lower middle income	No	ND					
Croatia	EURO	High income	H	No				✓	No
Cuba	PAHO	Upper middle income	No	ND					
Cyprus	EURO	High income	No	No			✓		No
Czech Republic	EURO	High income	No	ND					
Denmark	EURO	High income	P/T/H	No	✓		✓		Yes for all records
Ecuador	PAHO	Upper middle income	No	No					Yes for some records
Egypt	EMRO	Lower middle income	No	ND					
El Salvador	PAHO	Upper middle income	No	ND					
Estonia	EURO	High income	H	No					No
Ethiopia	AFRO	Low income	No	ND					
Fiji	WPRO	Upper middle income	No	ND					
Finland	EURO	High income	H	No					No
France	EURO	High income	P	Yes, for some vaccines	✓				Yes for some records
Germany	EURO	High income	P	Yes, for some vaccines	✓	✓			Yes for some records
Ghana	AFRO	Lower middle income	P	No			✓		No

Country	Region	Income level	Administration in pharmacies	Prescribing by pharmacists	Reimbursement by a third-party				
					Yes, by public (state-run) health systems or insurers	Yes, by private health systems or insurers	No, the service is paid by the customer	No, the service is provided free of charge (i.e., the pharmacy takes on the cost of the service)	Access (reading rights) to vaccination registries
Greece	EURO	High income	P	Yes, for some vaccines					
Guatemala	PAHO	Upper middle income	No	ND					
Guyana	PAHO	High income	No	No					No
Haiti	PAHO	Lower middle income	No	ND					
Hong Kong SAR, China	WPRO	High income	No	No	✓				Yes for all records
Hungary	EURO	High income	No	No					No
Iceland	EURO	High income	P/H	No	✓				No
India	SEARO	Lower middle income	No	No					No
Indonesia	SEARO	Upper middle income	No	No					No
Iraq	EMRO	Upper middle income	No	ND					
Ireland	EURO	High income	P	Yes, for some vaccines	✓		✓		Yes for some records
Israel	EURO	High income	P	Yes, for some vaccines				✓	No
Italy	EURO	High income	P	Yes, for some vaccines	✓		✓		Yes for some records
Japan	WPRO	High income	No	No					No
Jordan	EMRO	Lower middle income	P	Yes, for some vaccines			✓		No
Kenya	AFRO	Lower middle income	P	Yes, for all vaccines					
Korea (Rep. of)	WPRO	High income	No	ND					
Kosovo	EURO	Upper middle income	No	No					No
Kuwait	EMRO	High income	No	ND					
Latvia	EURO	High income	P	ND					
Lebanon	EMRO	Lower middle income	H	No				✓	Yes for some records

Country	Region	Income level	Administration in pharmacies	Prescribing by pharmacists	Reimbursement by a third-party				
					Yes, by public (state-run) health systems or insurers	Yes, by private health systems or insurers	No, the service is paid by the customer	No, the service is provided free of charge (i.e., the pharmacy takes on the cost of the service)	Access (reading rights) to vaccination registries
Lithuania	EURO	High income	P/H	Yes, for some vaccines					Yes for all records
Luxembourg	EURO	High income	P	ND					
Madagascar	AFRO	Low income	No	ND					
Malawi	AFRO	Low income	No	No					No
Malaysia	WPRO	Upper middle income	No	No					No
Mali	AFRO	Low income	No	ND					
Malta	EURO	High income	H	No					No
Mauritius	AFRO	Upper middle income	No	ND					
Mexico	PAHO	Upper middle income	ND	ND					
Mongolia	WPRO	Lower middle income	No	No					No
Montenegro	EURO	Upper middle income	No	No					No
Morocco	EMRO	Lower middle income	No	No			✓		Yes for all records
Namibia	AFRO	Upper middle income	P	Yes, for some vaccines			✓		Yes for some records
Nepal	SEARO	Lower middle income	H	No			✓		No
Netherlands	EURO	High income	H	No					Yes for some records
New Zealand	WPRO	High income	P/H	Yes, for some vaccines					
Nigeria	AFRO	Lower middle income	P/H	Yes, for some vaccines				✓	No
North Macedonia (Republic of)	EURO	Upper middle income	No	ND					
Norway	EURO	High income	P/T/H	Yes, for some vaccines	✓		✓		Yes for all records
Oman	EMRO	High income	No	ND					
Pakistan	EMRO	Lower middle income	P/H	ND					

Country	Region	Income level	Administration in pharmacies	Prescribing by pharmacists	Reimbursement by a third-party				
					Yes, by public (state-run) health systems or insurers	Yes, by private health systems or insurers	No, the service is paid by the customer	No, the service is provided free of charge (i.e., the pharmacy takes on the cost of the service)	Access (reading rights) to vaccination registries
Panama	PAHO	High income	No	ND					
Paraguay	PAHO	Upper middle income	T	No				✓	No
Peru	PAHO	Upper middle income	ND	ND					
Philippines	WPRO	Lower middle income	P/H	No			✓		Yes for all records
Poland	EURO	High income	P	Yes, for some vaccines					
Portugal	EURO	High income	P/H	Yes, for some vaccines					Yes for some records
Romania	EURO	High income	P	No			✓	✓	No
Russian Federation	EURO	Upper middle income	No	No					No
Rwanda	AFRO	Low income	No	ND					
Saudi Arabia	EMRO	High income	P	No					
Senegal	AFRO	Lower middle income	No	ND					
Serbia	EURO	Upper middle income	No	No					No
Sierra Leone	AFRO	Low income	P/H	Yes, for some vaccines			✓		No
Singapore	WPRO	High income	No	ND					
Slovak Republic	EURO	High income	No	ND					
Slovenia	EURO	High income	No	No					No
South Africa	AFRO	Upper middle income	P/H	Yes, for some vaccines		✓			No
South Sudan	AFRO	Low income	P/H	No				✓	No
Spain	EURO	High income	No	No					No
Sri Lanka	SEARO	Lower middle income	No	No					No
Sudan	EMRO	Low income	No	ND					
Sweden	EURO	High income	H	No					No
Switzerland	EURO	High income	P/H	Yes, for some vaccines			✓		No
Tanzania	AFRO	Lower middle income	No	ND					

Country	Region	Income level	Administration in pharmacies	Prescribing by pharmacists	Reimbursement by a third-party				
					Yes, by public (state-run) health systems or insurers	Yes, by private health systems or insurers	No, the service is paid by the customer	No, the service is provided free of charge (i.e., the pharmacy takes on the cost of the service)	Access (reading rights) to vaccination registries
Thailand	SEARO	Upper middle income	No	ND					
Tunisia	EMRO	Lower middle income	P	Yes, for some vaccines		✓	✓		No
Turkey	EURO	Upper middle income	No	No			✓		No
Uganda	AFRO	Low income	ND	ND					
Ukraine	EURO	Lower middle income	No	No					No
United Arab Emirates	EMRO	High income	P	No					
United Kingdom	EURO	High income	P/H	Yes, for some vaccines	✓	✓	✓		Yes for some records
United States of America	PAHO	High income	P/T/H	Yes, for some vaccines	✓	✓			Yes for some records
Uruguay	PAHO	High income	No	No					No
Venezuela	PAHO	Upper middle income	P	No					
Yemen	EMRO	Low income	P/H	No		✓	✓		Yes for some records
Zambia	AFRO	Lower middle income	No	ND					
Zimbabwe	AFRO	Lower middle income	No	ND					

ND: No data

P: Pharmacist

T: Pharmacy technician

H: Other healthcare professionals

Country	Region	Income level	Vaccines administered by pharmacists								
			Influenza	COVID-19	Pneumo-coccal	Shingles	Tdap booster	RSV	Meningo-coccal	HPV	HepB
China	WPRO	Upper middle income	No	No	No	No	No	No	No	No	No
China Taiwan	WPRO	High income									
Colombia	PAHO	Upper middle income	No	No	No	No	No	No	No	No	No
Congo, Dem. Rep. of the	AFRO	Low income									
Congo, Rep. Of	AFRO	Lower middle income									
Costa Rica	PAHO	Upper middle income	Yes	No	Yes		Yes	No	Yes	Yes	Yes
Côte d'Ivoire	AFRO	Lower middle income									
Croatia	EURO	High income	No	No	No	No	No	No	No	No	No
Cuba	PAHO	Upper middle income									
Cyprus	EURO	High income	No	No	No	No	No	No			
Czech Republic	EURO	High income									
Denmark	EURO	High income	Yes	Yes	No	No	Yes	No	No	Yes	Yes
Ecuador	PAHO	Upper middle income	No	No	No	No	No	No			
Egypt	EMRO	Lower middle income									
El Salvador	PAHO	Upper middle income									
Estonia	EURO	High income									
Ethiopia	AFRO	Low income									
Fiji	WPRO	Upper middle income									
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

Country	Region	Income level	Vaccines administered by pharmacists								
			Influenza	COVID-19	Pneumo-coccal	Shingles	Tdap booster	RSV	Meningo-coccal	HPV	HepB
Ghana	AFRO	Lower middle income		Yes							Yes
Greece	EURO	High income	Yes	Yes							
Guatemala	PAHO	Upper middle income									
Guyana	PAHO	High income	No	No	No	No	No	No			
Haiti	PAHO	Lower middle income									
Hong Kong SAR, China	WPRO	High income									
Hungary	EURO	High income	No	No	No	No	No	No	No	No	No
Iceland	EURO	High income									
India	SEARO	Lower middle income	No	No	No	No	No	No	No	No	No
Indonesia	SEARO	Upper middle income	No	No	No	No	No				
Iraq	EMRO	Upper middle income									
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			
Kenya	AFRO	Lower middle income									
Korea (Rep. of)	WPRO	High income									
Kosovo	EURO	Upper middle income	No	No							
Kuwait	EMRO	High income									
Latvia	EURO	High income		Yes							
Lebanon	EMRO	Lower middle income	No	No	No		No				
Lithuania	EURO	High income	Yes	Yes	Yes	No	No	No			

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