

Supporting life-course immunisation through pharmacy-based vaccination: enabling equity, access and sustainability

A toolkit for pharmacists

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FIP Development Goals



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1 Background

1.1 A life-course approach to pharmacy-based vaccination

Health equity is only achieved when there are no differences in the quality of and access to health care among all groups and at all ages in a society. Whether to an infant, a child, a young adult, or an older adult, the quality of health care should not change. Similarly, access to care should not vary throughout an individual's life. Because inequities are cumulative, their impacts are not confined to one stage of an individual's life but rather remain and affect a person's life years afterwards. In addition, the impacts are not restricted to a particular individual, but can affect the lives of those around. Vaccine inequities, too, especially among people of different ages, have a cumulative effect. Inequitable access to vaccines not only leaves people at risk of contracting and spreading deadly viruses but also leads to more virus variants emerging, affecting a whole population, even those vaccinated.

While vaccines are recommended for almost everyone, there are specific population groups that can particularly benefit from vaccination, as their health conditions may increase the risk of developing complications, experiencing hospitalisation and developing secondary illnesses or even dying.^{1, 2} This includes people living with diabetes, cardiovascular diseases or chronic respiratory diseases, pregnant individuals and older adults, among other groups.

Due to immune dysfunction and other age-specific factors, older adults are more vulnerable to experiencing more severe forms of, or even die from, several vaccine-preventable diseases, including influenza, COVID-19 and pneumococcal pneumonia. Other diseases, such as herpes zoster, can be highly debilitating and painful, especially in older adults, diminishing quality of life and increasing dependence on potent pain-management medication. Furthermore, at older ages, these diseases can lead to a loss of functional ability and well-being that has a direct impact on the quality of life, family and social interactions or the ability to remain independent for many older adults. All these diseases are preventable — or at least their severity and impact can be diminished — through vaccination. Hence, it is imperative to guarantee access to all vaccines available and indicated for each age group and clinical situation, leaving no one behind.³

This is clearly highlighted in the World Health Organization's Immunization Agenda 2030, which recommends that all member states adopt a life-course approach to immunisation, and whose central vision is a world where everyone, everywhere, at every age, fully benefits from vaccines to improve health and well-being.⁴ In the same vein, the United Nations' Decade of Healthy Ageing Action Plan 2021–2030 exhorts member states to “scale up age-friendly primary health care to provide a comprehensive range of services for older people, including vaccination, screening, prevention, control and management of non-communicable (including dementia) and communicable diseases and age-related conditions”.⁵

Likewise, pregnant individuals have specific vaccination needs, not only to protect themselves but also to protect their babies at birth and throughout their first year of life, when their immune system has not matured sufficiently to protect them from diseases such as influenza, COVID-19 or the respiratory syncytial virus (RSV), which can be lethal in the first few months of life.

The life-course approach to health recognises that health is not shaped by the present moment, but rather by a series of events that occur throughout life. Life-course vaccination, too, is a continuous process of disease prevention and health promotion that does not stop at a certain age and is just as important during older age as it is in childhood. It starts with shifting the narrative from focusing on children's vaccines to lifetime vaccines and requires expanding accessibility to and delivery of vaccines from a healthcare setting to a wider community setting. Harnessing the power that pharmacists and community pharmacies have on vaccine promotion and delivery is key for implementing the life-course approach to health and to vaccination for several reasons.

First and foremost, the presence of pharmacies in every community, with long opening hours throughout weekdays and weekends, allows for the easy, convenient access of community members to a health facility. For that reason, pharmacies can help diversify and simplify vaccination pathways, especially for working adults and older adults. This is particularly important for the most vulnerable members of society, including older adults, immunocompromised individuals, people living with underlying conditions or pregnant individuals, as well as to hard-to-reach social groups with lower access to healthcare facilities.

For all these individuals, hospitals or crowded healthcare facilities exacerbate their risk of contracting infectious diseases, in addition to being less convenient and accessible. Bringing vaccination services closer to the people can significantly increase vaccine uptake rates and can lower the risk of the spread of disease. For that reason, vaccination uptake rates have significantly increased in countries where pharmacists can administer vaccines, and have a potential to increase in countries where they do not.^{6,7}

Secondly, pharmacists play a big role in building trust between the healthcare system and a community for the simple reason that the pharmacists themselves are usually part of that community and often see their patients more than any other health provider does. Any member of a community, at any age, can walk into a pharmacy at any time and have their inquiries or concerns addressed. Pharmacists can therefore build a bond with members of society better than any other healthcare provider can. Furthermore, different needs and different ways of communication are required at different stages in life.

Having a customised communications strategy for every age group is key in health and vaccine promotion. In most countries, information regarding vaccines is usually found online, such as on official websites and on social media. Although access to this information is generally easy for young people, it can be more difficult for older adults. Older adults often need to physically see a health provider who can speak to them in a clear manner and using plain language. This is where the convenient access to community pharmacies and pharmacists offers a plain, simple solution to reaching every member of society while addressing vaccine hesitancy and complacency, and increasing health literacy. Involving pharmacists in vaccination allows them to address the many questions that are asked by anyone and at any time on vaccines, their benefits and their side effects.

1.2 Building on FIP’s work to accelerate life-course immunisation

FIP’s work on vaccination is based on the conviction that improving vaccination coverage and promoting a life-course approach to vaccination are global imperatives to which pharmacists can greatly contribute. Of the 21 FIP Development Goals (DGs) launched in September 2020, vaccination is overtly linked to 17 goals, which clearly indicates the high priority vaccination holds not only for pharmacy and FIP, but also for global health.



Figure 1. Pharmacy-based vaccination and vaccine-related services linked to 17 of the 21 FIP Development Goals

For FIP, enabling life-course immunisation through pharmacy relies on the interconnectedness of these goals: specifically, DGs 10 (Equity and equality), 18 (Access to medicines, devices and services) and 21 (Sustainability in pharmacy). FIP is committed to transforming vaccination by accelerating vaccine equity, access and sustainability through life-course immunisation. It is critical to both recognise and understand the impact of pharmacy-based vaccination delivery on disease prevention throughout life's ages and stages from childhood (including pregnancy) to late adulthood. This is key to supporting countries to develop policies that enable pharmacies and pharmacists to deliver integrated vaccination services throughout the life-course and as part of wider national immunisation policies. By advocating the integration of pharmacy-based vaccination services throughout the life-course, FIP aims to contribute to the broader goal of improving global immunisation coverage, ensuring that individuals of all ages receive timely and appropriate vaccinations to protect their health and well-being.

FIP is also part of the [Immunisation for All Ages \(IFAA\) initiative](#), which seeks to mobilise, accelerate and advance policies that advocate life-course vaccination by communicating the broader societal value of vaccination for all stages of life at a global and local level, such that policymakers, NGOs, governments, healthcare providers and citizens will support policies that prioritise vaccinations. The mission of the IFAA is to expand and improve public awareness and policies that advocate life-course vaccination by learning from and building upon good practices and championing initiatives that will protect lives at all stages around the world.

The [IFAA manifesto](#) highlights three areas where pharmacists can contribute to vaccination strategies:

- Call to action 1: Prioritise prevention — Prioritise immunisation throughout life as a key pillar of expanded prevention strategies and a central component of universal health coverage.
- Call to action 2: Ensure access for all — Remove barriers to access for appropriate immunisation throughout life to ensure all people are protected and no one is left behind.
- Call to action 3: Reduce inequity — Reduce inequities in timely, appropriate and affordable access to immunisation throughout life.

In 2019, FIP published the “[FIP global vaccination advocacy toolkit: Supporting and expanding immunisation coverage through pharmacists](#)”, which aims to provide its member organisations with a guidance toolkit for achieving or expanding the roles of pharmacists in increasing vaccination coverage. The toolkit provided countries with guidance on making the case for pharmacy-based vaccination services, a stepwise approach to developing an advocacy strategy, and how pharmacy-based vaccination can be implemented. This was supplemented with 18 country case studies serving as sources of lessons for others.

Since then, FIP has worked in different areas of vaccination, as highlighted in Figure 1:

- Regulations and practice standards with the creation of self-assessment tools for FIP members, in collaboration with the FIP Regulatory Advisory Group — [Pharmacy based pandemic vaccination programme: regulatory self-assessment tool](#) and [Pharmacy-led vaccination services: Regulatory self-assessment and implementation tool](#).
- Building vaccine confidence and addressing vaccine hesitancy was another important workstream, especially during the COVID-19 pandemic and the increasing issues around vaccine uptake. The resources [Building vaccine confidence and communicating vaccine value: A toolkit for pharmacists](#) and the [FIP commitment to leveraging pharmacists to build vaccine confidence and address vaccine hesitancy and complacency](#) aim to tackle this important issue.
- Practice support and workforce development on vaccine-related roles, with the publication of a [FIP Vaccination Handbook for Pharmacists](#), [The FIP vaccination reference guide. Knowledge and skills to support professional development and inform pharmacy education in vaccination](#) and other tools and guidance such as [Optimising vaccination through coadministration of influenza and COVID-19 vaccines: Guidance for pharmacists](#) and [Vaccination of special-risk groups: A toolkit for pharmacists](#).

FIP also delivered two transformation vaccination programmes in 2021 and 2022, in which national pharmacy organisations from different regions joined in to share their experiences in pharmacy-based vaccination in their countries, highlighting the different models and vaccination systems that exist around the world. Learning from the work delivered, several key points that influence immunisation throughout the life course were identified. Those key points include the following:

- Defining equity is not possible without the inclusion of all members of society and of all ages.
- Whatever happens through an infant’s life will affect their health later in life as well as the health of those around them.
- Inequities are cumulative with an impact on the health of a whole population and on generation after generation.
- The political will to set policies in place is crucial to make the changes required to achieve equity.
- Different communications strategies should be used to reach out to different generations.

Collectively, these programmes and their resulting outcomes formed the 2022–23 programme “Enabling equity, access, and sustainability of life-course immunisation through pharmacy-based vaccination”.

Figure 1. FIP vaccination timeline





2021

FIP publishes "Pharmacy-based pandemic vaccination programme regulatory self-assessment tool"

FIP launches the second digital programme "Transforming vaccination globally and regionally" and several other digital events on vaccination.

FIP publishes "FIP vaccination handbook for pharmacists: Procedures, safety aspects, common risk points and frequently asked questions"

FIP publishes "Building vaccine confidence and communicating vaccine value: A toolkit for pharmacists"



2022

FIP publishes "Advocating expansion of the pharmacist's role in immunisation: A focus on diphtheria-tetanus-pertussis booster, COVID-19 and meningitis vaccinations"

FIP publishes "The FIP vaccination reference guide. Knowledge and skills to support professional development and inform pharmacy education in vaccination"

FIP publishes "Regional challenges and enablers to leveraging pharmacists as vaccinators"

FIP publishes "Optimising vaccination through coadministration of influenza and COVID-19 vaccines: Guidance for pharmacists"

FIP publishes "Vaccination of special-risk groups: A toolkit for pharmacists"

FIP launches the "FIP commitment to leveraging pharmacists to build vaccine confidence and address vaccine hesitancy and complacency"



Using country examples, the events of the recent 2022–23 programme mainly focused on three key policy enablement areas identified by FIP: (i) vaccination services remuneration models, (ii) regulations and prescribing authorities, and (iii) access to data and patient vaccination records.

This toolkit has been developed to capture the outcomes of these digital events and builds on the FIP advocacy toolkit to enable and support implementation — hence it is an “enabler toolkit”. This comprehensive toolkit provides examples, details and guidance on all aspects necessary for delivering life course immunisation, but particularly focuses on policy enablement around vaccination services remuneration models, regulations and prescribing authorities, and access to data and patient vaccination records.

Across each of these areas, the programme — with the support of direct inputs from member organisations — identifies barriers and enablers. At the end of each chapter, a summary table maps the barriers and enablers for each policy enablement area to support members in mapping where they are, what barriers they need to overcome, and the enablers already set in place that support acceleration towards progress. The toolkit is aimed at FIP members worldwide, supporting them with accelerating policy development and transformation in the area of life-course immunisation through pharmacy-based vaccination.

2 Regulations and prescribing

Regulation of pharmacy practice is a critical determinant of pharmacists' authority to administer and/or prescribe vaccines. FIP data shows that regulations on pharmacy-based vaccination vary widely across countries and regions. Understanding the different models and country experiences is key to wider implementation. On 18 January 2023, FIP hosted the event "[Enabling life-course immunisation through pharmacy-based vaccination: Regulations and prescribing](#)" in which experts from Norway, Australia, Lebanon, and Sierra Leone joined to share their experience and country models, along with some enablers and challenges that they encounter with regards to the regulations and prescribing on pharmacy-based vaccination.

The below case studies were summarised from the country case studies presented during the events. Each country case study was derived from the speech of the respective case presenter. FIP acknowledges their contribution to both the events and this toolkit. Their names are listed in the earlier Acknowledgements section.

2.1 Norway

Contributor: Hanne Andresen, Director of pharmaceutical affairs, Norwegian Pharmacy Association, Norway

There are about 1,046 pharmacies in Norway, where the pharmacy market was deregulated in 2001. Three main pharmacy chains exist today that own 88% of pharmacies in the country, and all the pharmacies are members of the Norwegian Pharmacy Association.

With regard to vaccination in Norway, municipalities are primarily responsible for vaccinating their inhabitants. The country has a national immunisation programme that is organised by the Norwegian Institute of Health and through which annual tenders for vaccines are held. Pharmacists in Norway were not allowed to prescribe or administer vaccines until 2020, when they were granted permission to prescribe flu vaccines and to vaccinate after undergoing an education programme. In 2021, they were granted a temporary licence to prescribe COVID-19 vaccines. Therefore, not all pharmacies provide vaccinations, and those that do only offer flu and COVID-19 vaccines. All vaccinations, whether administered by pharmacists or not, are registered in the National Register System, which ensures that healthcare professionals as well as individuals have access to the vaccination records.

To empower pharmacists to take a bigger role in immunisation, the Norwegian Pharmacy Association has been working with its members to develop training programmes for pharmacists and pharmacy technicians to allow them to gain the full knowledge and training required to vaccinate. They also developed patient materials to guide residents on ways to access vaccination services as well as a digital system to report and document the impact of pharmacy in immunisation.

Some of the key drivers of pharmacy-based vaccination in Norway the COVID-19 pandemic that highlighted the importance of pharmacy-based vaccination, the burden on national systems, particularly general practitioners, to prescribe vaccines, as well as the easy accessibility of pharmacies to individuals. Some of the barriers of pharmacy-based vaccination in Norway include the fact that pharmacies are not part of the national vaccination programme and, therefore, do not offer a range of vaccines apart from the flu and COVID-19 vaccines. Patients must pay a higher fee for the vaccine in a pharmacy although vaccination of risk groups and the older population are arranged and paid for by the different municipalities. In addition, local contracts between municipalities and pharmacies to allow pharmacies to vaccinate can be difficult to arrange. For that reason, pharmacy owners who do not have contracts with municipalities are not allowed to prescribe or administer vaccines, which leads to confusion with the local residents as to which pharmacies provide vaccination services and which do not. Lastly, digital systems are not fully integrated in pharmacies, and pharmacists therefore do not have full access to vaccination records.

2.2 Australia

Contributor: Fei Sim, National president, Pharmaceutical Society of Australia, Australia

In contrast to Norway, Australia took the initiative to authorise pharmacists to prescribe and administer vaccines back in 2014, starting with the influenza vaccine across the state of Queensland. Over time, the role of pharmacists expanded, allowing them to administer various vaccines in multiple states. By May 2021, most states in Australia granted

pharmacists the authority to administer COVID-19 vaccines. Pharmacists in Australia have demonstrated their ability to quickly adapt and effectively tackle challenges, particularly during the COVID-19 pandemic. They emerged as the primary providers of COVID-19 immunisation, delivering over 9.2 million vaccine doses. In Australia, vaccines are classified as prescription-only medicines. However, if a pharmacist administers the vaccine in an approved setting, a prescription is not required.

The regulation of vaccines in the country involves several legislative and governing authorities. These include:

- The Therapeutic Goods Administration, which is responsible for evaluating and approving medicines, including vaccines, to ensure their safety, quality and effectiveness.
- The Australian Technical Advisory Group on Immunisation (ATAGI), which established an ATAGI COVID-19 working group during the pandemic. Its role is to advise the minister for health and aged care on the appropriate and fair utilisation of vaccines in Australia.
- The Office of the Gene Technology Regulator, which is responsible for approving and licensing vaccines, including mRNA vaccines.
- The Advisory Committee on Medicines Scheduling, which provides recommendations to the secretary of the department of health on the appropriate accessibility of medicines.
- The Australian National Immunisation Programme (NIP), which determines the accessibility and reimbursement of vaccines. It covers the cost of specific vaccines and aims to increase national immunisation coverage.
- The Australian Immunisation Register, a nationwide real-time register. It is mandatory for all immunisers, including pharmacists, to record all NIP vaccines and other administered vaccinations in Australia. This enables individuals to access their immunisation records when visiting other healthcare providers, ensuring continuity of care.

These governing bodies enable pharmacists to deliver vaccination services in the most advantageous manner for all those involved along with appropriate remuneration to ensure the sustainability of pharmacy-based vaccination.

The gradual adoption of pharmacy-based vaccination in Australia has been a significant driver for its expansion throughout the country. Initiating influenza vaccine administration in one state, Queensland, in 2014 provided an opportunity for stakeholders to see the benefits associated with pharmacist involvement in vaccination efforts. As other states subsequently adopted the practice, the scope of pharmacist-administered vaccines expanded gradually to encompass various vaccine types. The benefits of pharmacy-based vaccination were amplified during the pandemic, when more pharmacists were involved in immunisation against COVID-19. Another driver was the public's acceptance of pharmacy vaccination as a more convenient and accessible way to get their vaccines.

One of the primary obstacles to pharmacy-based vaccination in Australia is the lack of uniformity across different states. This inconsistency manifests not only in the varying availability of pharmacy-based vaccination services among states but also in the differences regarding the types of vaccines that can be administered within pharmacies.

2.3 Lebanon

Contributor: Luna Albizri, Founder and manager, Lunapharm Pharmacy; Clinical assistant professor, Lebanese International University; Adjunct faculty member, Lebanese American University; FIP Health and Medicines Information Section executive member, Lebanon

Vaccination has been a priority for the Lebanese ministry of health since at least 1987, when the ministry established the expanded programme on immunisations. The programme serves as the governing body responsible for the national immunisation strategy. Up until 2016, the country had reached remarkable immunisation rates, especially among children, reaching about 95%. However, the onset of many national crises, most notably the economic crisis in 2019, has led to significant challenges with both the public and private sectors being adversely affected. The private sector, which previously played a major role in vaccine administration, is now facing difficulties, and paediatricians, who are instrumental in childhood immunisation delivery, have been advising families to postpone vaccinations due to their inability to procure vaccines. Throughout the COVID-19 pandemic, vaccination of children and the elderly was prioritised, although the overall vaccination numbers remain relatively low in combating infectious diseases.

As for pharmacy-based vaccination, the scope of practice for pharmacists remains limited as current regulations do not permit them to administer vaccines. The ministry of public health has emphasised this restriction, explicitly stating that pharmacies are not authorised to provide vaccine administration services, despite pharmacists' willingness to participate in immunisation efforts. Throughout the pandemic there was no change in these laws, and pharmacists' involvement was primarily limited to tasks such as handling vaccines, including retrieval from cold storage, dilution, drawing from multidose vials and vaccine labelling. The ministry of health has stressed the importance of pharmacy education and training, not only in the administration of vaccines but also in utilising the same database and COVID-19 vaccine monitoring platform, as well as adhering to waste management standards.

There are several opportunities to empower pharmacists and enhance their involvement in vaccination efforts in Lebanon. Pharmacists can play an active role in advocating vaccination, addressing objections and vaccine hesitancy, and acting as community educators to raise awareness about the importance of vaccines. They can also help collect data on vaccine adverse effects and contribute to the surveillance efforts of the ministry of public health. Incorporating comprehensive vaccine education and training into pharmacy curricula can equip pharmacists with the necessary knowledge and skills to participate in vaccination programmes effectively in the future. Furthermore, for community pharmacists to be fully integrated into national vaccination policies, they must actively engage in policy-making discussions and be recognised as key stakeholders in the decisions. Granting pharmacist access to patient vaccination records can also enable pharmacists to guide and advise their patients on vaccine schedules and requirements. All these efforts can eventually demonstrate the significant impact that pharmacy-based vaccination can have on public health by contributing to improving vaccination rates and ultimately lead to better health outcomes for the population.

2.4 Sierra Leone

Contributor: Joyce Mariama Kallon Team lead for the supply chain and logistics vaccine unit, Immunisation Unit, Sierra Leone

Pharmacy-based vaccination policies in Sierra Leone, unlike in Australia or Lebanon, are unclear. While the Pharmacy and Drug Act does not explicitly mention the practice of administering vaccines by professional pharmacists, neither does it restrict it. Although the Act states that licensed pharmacists can prescribe or administer medicines, there are no clear guidelines and processes in place for implementing pharmacy-based vaccination services. Furthermore, the pharmacies that do provide vaccination services only do so for certain vaccines. As a result, pharmacy-based vaccination is not widely practised in the country.

In addition to the lack of clarity surrounding the role of pharmacists in vaccination in Sierra Leone, another significant barrier is the lack of documentation of vaccination services conducted in some pharmacies. This leads to confusion with patient vaccine schedules and hinders effective monitoring of the vaccination system. The lack of communication and coordination among stakeholders further exacerbates the problem, making it difficult to assess if proper procedures are being followed by healthcare professionals. Moreover, continuous education and training on vaccination services are lacking for most healthcare professionals, including pharmacists.

However, there are some opportunities within Sierra Leone's healthcare system that can empower and enable pharmacists to participate in vaccination efforts. Leveraging the pre-existing pharmacy and drug Acts, which regulate the safety of pharmaceutical products, including vaccines, and collaborating with policymakers, healthcare professionals and other stakeholders to update these Acts and guidelines are crucial steps in prioritising the clear integration of vaccination services in pharmacies. Supporting the currently available trained and qualified pharmacists to take a bigger role in immunisation is also a key enabler that can lead to the expansion of these services, proper documentation of vaccine records, and adherence to established processes and procedures. Setting clear policies that enable pharmacists to be involved in vaccination efforts, enhancing pharmacy curricula to include vaccination education and training, and developing an effective accreditation system by relevant stakeholders can pave the way for the successful integration of vaccination services in pharmacies. This, in turn, will lead to improved immunisation coverage while promoting the safety and effectiveness of pharmacy-based vaccinations.

2.5 Summary of common enablers and barriers of vaccine regulation and prescribing

In summary, pharmacists in the countries mentioned above encounter some common enablers and challenges to vaccine regulation and prescribing in pharmacy. Some of these include:

Enablers	Barriers
Leveraging the public's acceptance of pharmacy-based vaccination as a convenient and accessible way to receive vaccines and to increase immunisation rates	Lack of recognition of pharmacist as service providers and including them in existing vaccination guidelines
Recognising the role of pharmacists in advocating vaccination and addressing vaccine hesitancy	Ambiguity of pharmacists' roles in prescribing and administering vaccines
Enhancing pharmacy education curricula to include education and training on vaccination while supporting trained pharmacists to stay up to date with the latest advancements in vaccination	Lack of uniformity in laws regarding pharmacy-based vaccination within the same country
Advocating to become key stakeholders in national vaccination policies	Lack of documentation of vaccination services in some pharmacies and the impact they have on health coverage
Granting pharmacist access to patient vaccination records	Lack of communication and coordination among stakeholders involved in vaccination services
Collaborating with policymakers and healthcare professionals to update Acts and guidelines and to set clear policies in place to support pharmacy-based vaccination	Limited education and training on vaccination services for pharmacists

3 Service remuneration models

Remunerating pharmacy vaccination services is a key policy enabler of pharmacy-based vaccination, and thus life-course immunisation. It ensures that pharmacists are compensated for their efforts in providing vaccination services and gives them an incentive to continue to provide them. Remuneration typically covers the cost of the vaccine as well as the costs associated with it, such as storage, administration, handling and waste management. However, different countries have different remuneration models, and sometimes, different models exist within the same country. During an FIP webinar, "[Enabling life-course immunisation through pharmacy-based vaccination: Service remuneration models](#)", hosted on 6 December 2022, experts from Greece, Ireland, Jordan, Portugal and South Africa shared their respective countries' remuneration models for pharmacy-based vaccination, providing a better understanding of the topic and highlighting the similarities and differences among these models.

3.1 Greece

Contributor: Eleftherios Marinos, General secretary, Federation of Pharmacists' Cooperatives of Greece, Greece

Greece holds remarkable healthcare records, including having the densest network of community pharmacies globally, with at least one pharmacy per 1,000 inhabitants. The country, however, faces a shortage of general practitioners but excels in the number of specialist doctors available. As a result, community pharmacists in Greece have traditionally played a significant role in providing primary healthcare services, including adult vaccinations, even without official training in this area. This unique situation has led to a lack of regulation in everyday pharmacy practice until recent developments.

While Greece is considered to have good immunisation coverage, there is currently no electronic registry for vaccine records, although one is being developed, and community pharmacies are expected to contribute by providing information. Despite being granted the right to administer flu vaccines and tetanus antitoxin in 2019, there is no active remuneration scheme for immunisation. However, pharmacists are currently compensated for arranging vaccination appointments, which is especially important as COVID-19 vaccinations are conducted in specific locations that may be difficult to access, particularly for those in rural areas.

Pharmacists started with flu vaccination as the first step to try to establish legislation due to its high demand and the fact that community pharmacies were already responsible for the majority of flu vaccinations in Greece. The main constraint encountered was the resistance from physicians who feared losing their authority. However, through collaboration with academics, health economists and primary care supporters, efforts were made in providing data to politicians and policymakers to demonstrate the importance of involving community pharmacists in vaccination services. The process required close monitoring and engagement until it was approved by the parliament in 2019. While the COVID-19 pandemic presented an opportunity to expedite the implementation of vaccination services and potentially introduce remuneration, currently, there is no remuneration offered to pharmacists in Greece except for vaccine appointment arrangements for patients. However, pharmacists are working to achieve the provision of COVID-19 vaccinations through community pharmacies and that it will initiate a positive change and recognition of their role in improving access to immunisation services.

3.2 Jordan

Contributor: Ahmad Al-Rusasi, General manager, Alnoor Drug Store, Jordan

Pharmacists in Jordan collaborated and made substantial efforts to secure acknowledgment and recognition of the significance of pharmacy-based vaccination services, with the ultimate goal of achieving remuneration. The Jordan Pharmacist Association successfully found a way to implement immunisation services for pharmacists in Jordan. It obtained official acknowledgement from the government, allowing pharmacists to provide this service. The process involved forming an immunisation committee and preparing a comprehensive guide to demonstrate pharmacists' capabilities. In 2020, pharmacists received approval to administer only the flu vaccine, but the association is seeking to expand the range of vaccines that pharmacists can administer, such as hepatitis vaccines.

In addition to immunisation services and through collaboration with several other organisations, the association has also achieved recognition for medication therapy management (MTM) in which pharmacists advise patients and initiate immunisation therapy. It is also working on establishing qualification requirements, including a diploma programme, to ensure pharmacists are equipped to offer MTM. Furthermore, it is making progress in getting other services, such as smoking cessation, chronic disease management and point-of-care services recognised by the government.

Overall, the Jordan Pharmacist Association's initiatives have led to significant success in expanding the role of pharmacists and obtaining official recognition for various services, including immunisation and MTM. It continues to strive for not only further advancements in pharmacy services in Jordan, but also for remuneration for all the services pharmacists can and do provide to their communities.

3.3 South Africa

Contributor: Sham Moodley, Community pharmacist; FIP Community Pharmacy Section executive member; Vice chairperson and member of the board of directors, Independent Community Pharmacy Association, South Africa

For over 22 years, community pharmacists in South Africa have actively participated in providing vaccination services and related activities. In 2020, pharmacists' scope of practice was expanded to include the administration of any type of vaccine. Good pharmacy practice guidelines outline the requirements for providing this service, which includes supplementary training on immunisation and injection techniques as well as obtaining a permit from the department of health through the Pharmacy Council that grants pharmacists the authority to acquire, possess and supply vaccines and enables them to conduct consultations in approved settings.

Remuneration for these services varies based on the funding source within each specific setting. One remuneration model involves the state or insurance company covering the full cost of the vaccine and its administration in public hospitals or clinics. In such cases, pharmacists are primarily involved with vaccine cold chain management and ensuring the safe transportation and delivery of vaccines to the healthcare professionals, typically doctors or nurses, who administer them to patients. In a second model, which is a private-public partnership model, the state supplies the necessary vaccines, and pharmacists administer them, charging a separate fee for their services. The vaccines are offered free of charge to patients, with the patient directly paying the pharmacy for the administration fee. A third model involves privately funded initiatives, wherein insurance schemes cover various types of vaccines provided in the private sector. Pharmacies can order and store these vaccines, with some requiring a doctor's prescription, while others, such as flu vaccines, can be directly administered in the pharmacy. In this model, the funder, or insurer, covers both the cost of the vaccine itself and the administration fees. A final model entails out-of-pocket payments, whereby vaccines can be administered in the pharmacy. In this case, patients are responsible for paying for both the vaccine and the associated service.

The pharmacy-based vaccination programme in South Africa operates on a "cost plus-plus" model. The cost of the vaccine itself is determined by the 'single exit price', which is a government-regulated fee established through collaboration between manufacturers and the government, and which is published on the government website and available to anyone. The dispensing fee, the first "plus" in the model, is also regulated by government laws. The second "plus" represents the cost of administering the vaccine. The average administration fee in South Africa varies depending on the insurer, ranging from EUR 2 to EUR 6. Across all schemes, the average fee is approximately EUR 4. Unlike Portugal, where pharmacy regulations are set within the pharmacy profession, South Africa has an independent regulator known as the Pharmacy Council which is an independent regulatory body composed of elected representatives from the pharmacy profession and government and that determines the recommended fee for the vaccination service, which is around EUR 6.30.

The COVID-19 pandemic has presented a significant opportunity to demonstrate the important role of pharmacists in delivering vaccination services, expanding their scope beyond medicines dispensing. In South Africa, the COVID-19 vaccine programme has had a positive impact on the pharmacy profession. Community pharmacists were responsible for administering approximately seven million COVID-19 vaccines, accounting for around 24% of the total vaccinations in the country. Pharmacies purchased the vaccines and were then reimbursed for both the cost of the vaccine and the administration fee. This has also created a new source of professional income for pharmacists through service provision. Therefore, it is essential to ensure that pharmacists receive comprehensive training and education in delivering vaccination services. This involves incorporating vaccination education into pharmacy undergraduate curricula.

Additionally, advocating regulatory reforms and fair compensation for pharmacy-based immunisation can empower pharmacists to play a more significant role in the immunisation process.

However, there are certain challenges in remunerating pharmacists for pharmacy-based vaccination. These challenges stem from additional charges associated with administration services, such as patient history taking, as well as the costs incurred for the safe disposal of clinical waste. It is crucial to accurately calculate the costs involved in immunisation for each vaccine, especially during pandemics, while considering these supplementary factors.

3.4 Ireland

Contributor: Susan O'Dwyer, Head of governance and pharmacy service, Irish Pharmacy Union, Ireland

In 2008, the Pharmaceutical Society of Ireland published a report⁸ that outlined a number of advanced pharmacy services that are not, but could potentially be, delivered by pharmacists. The list included vaccination services. Therefore, discussions began in Ireland about expanding pharmacy services to include vaccinations. In 2009, during a swine flu outbreak, pharmacists were trained as potential vaccinators. Although they were not ultimately needed that year, it marked the beginning of pharmacists being considered as equal partners to general practitioners and practice nurses in vaccination efforts. In 2011, national legislation was introduced, allowing pharmacists to administer influenza vaccines without a prescription. Initially, privately funded vaccination services were available, where individuals could pay for the vaccine and administration at pharmacies. The Health Service Executive, Ireland's national health service, started funding vaccinations for individuals over 65 years of age with a medical card and, in 2012, the programme expanded to include medically at-risk individuals. Pharmacists received a reimbursement of EUR 15 for each vaccine administered to medical cardholders. For those without a medical card, vaccines had to be privately sourced, and the patient had to cover both the vaccine and administration costs.

Over time, the funding model for vaccination services in pharmacies shifted towards more public funding. In 2020, during the COVID-19 pandemic, the government aimed to ensure widespread vaccination and funded vaccines for all individuals over 65 and at-risk patient groups, regardless of medical card status. Funding for children's nasal flu vaccines, known as the live attenuated intranasal vaccine, was provided nationally for the first time across GP practices and pharmacies. In 2022, pharmacists were able to administer publicly funded COVID-19 and flu vaccines to the whole population. While the flu vaccination services received public funding, other vaccines, such as pneumococcal and shingles, were not publicly funded in the pharmacy setting. Private services existed for these vaccines, with patients opting to receive them at pharmacies due to accessibility and convenience.

Pharmacists' involvement in vaccination programmes has significantly contributed to national vaccination campaigns in Ireland. The number of vaccines administered by community pharmacists has been steadily increasing, without diminishing the contributions of other providers, thereby increasing the overall vaccination rates around the country.

One of the key factors facilitating the implementation of pharmacy-based vaccination in Ireland is the comprehension and alignment with national and international policies regarding pharmacy-based vaccination. Engaging in immunisation initiatives that contribute to the well-being of the healthcare system and the nation as a whole is essential. Another critical factor is the assurance of delivering services of exceptional quality, with a strong focus on patient-centredness and safety. This requires the continuous education and training of pharmacists, not only in vaccination techniques but also in relevant aspects such as managing anaphylaxis and administering adrenaline. Furthermore, the accessibility and convenience offered by community pharmacies play a crucial role in expanding the scope of vaccination services. In addition to administering publicly funded vaccines, pharmacies should also be empowered to provide privately funded vaccines. This approach serves to advocate and promote the involvement of pharmacists in vaccination efforts, with the eventual goal of obtaining public funding for a broader range of vaccines.

3.5 Portugal

Contributor: Luís Lourenço, President, The South and Autonomous Regions Branch of the Portuguese Pharmaceutical Society; FIP Professional Secretary, Portugal

In 2007, with the approval of the ministry of health, pharmacists in Portugal were authorised to administer vaccines and, in 2012, this law extended to allow pharmacists to administer medicines such as anti-inflammatory drugs, muscle relaxants and antibiotics. However, to ensure high quality vaccination services, only pharmacists with accreditation from the Portuguese Pharmaceutical Society were licensed to offer vaccination services. The accreditation is composed of two parts, a theoretical and a technical part, that must be renewed every two years to ensure that pharmacists are well-educated and trained to stay involved in vaccination services.

With regard to remuneration for vaccination services provided at pharmacies, an initial scheme was implemented from 2007 until 2012, during which vaccines were required to be prescribed by a medical practitioner prior to their administration by a pharmacist. Under this scheme, the patient paid the cost of the vaccine (about 63%) while the pharmacist received approximately 37% reimbursement from the government. Therefore, the patient was solely responsible for the vaccine cost, while the government remunerated the pharmacist for the provision of the service.

In 2012, the private sector became increasingly involved in supporting and promoting vaccination services at pharmacies through various partnerships. Large companies such as postal services, banks and retailers have taken part in direct procurement of vaccines. They have established schemes where their staff members can choose a pharmacy at which to receive vaccinations, with the vaccines being sent directly to the selected pharmacy. In this arrangement, the staff members do not have to pay for the vaccines or their administration. Instead, a payment of EUR 2.5 per administration is made by the partnering company. This initiative allows the private sector to contribute to the promotion of vaccination within pharmacy settings. Additionally, in around late 2015, health insurance companies also entered into agreements with pharmacies. Under these agreements, patients would obtain vaccine prescriptions from their medical doctors associated with the insurance companies. The patients would then visit the pharmacy, and a similar scheme to the previously mentioned one would apply, with the patient paying 63% of the cost, but a part of it as well as the administration fee was covered by the insurance company.

In 2018, the first agreement was reached between pharmacies and the Portuguese National Health Service (NHS). This agreement allowed pharmacists to administer vaccines to specific patient groups, with the vaccines being provided by the NHS and the service being directly paid for by them. This marked the first time that the NHS directly reimbursed pharmacies for their vaccination services. Later in 2020, the COVID-19 pandemic brought forth several challenges, particularly in terms of flu vaccine accessibility. Despite the continuation of the existing scheme, there was a preference from the NHS to administer vaccines directly through their own providers, such as their public GP centres. Consequently, there were fewer vaccines administered through the pharmacy scheme. Furthermore, there was a strong push from pharmacists to offer COVID-19 vaccinations within community pharmacies, but this initiative was not pursued by the government.

Some key opportunities include the growing recognition of the importance of pharmacist-led services. Not only the general public but also key stakeholders, including ministries of health and governmental authorities, are increasingly open to utilising the network of community pharmacists to enhance vaccination rates and provide additional pharmaceutical services. However, it is crucial to acknowledge that there is still a need for greater involvement of pharmacists in these services, indicating the necessity to expand the number of pharmacies and pharmacists offering them. One of the challenges faced is the perception of healthcare providers. Some healthcare professionals, such as doctors, nurses or others, may resist the idea of pharmacists administering vaccines. Nonetheless, there is a growing trend emphasising the importance of skill sharing and embracing a collaborative approach among healthcare professionals to address the shortage of healthcare personnel. Government involvement is also a critical aspect to consider, particularly when experiencing changes in government leadership. Maintaining leverage and seizing opportunities for negotiating new services may be challenging during transitions of executive boards within public authorities. However, it remains essential to embrace these opportunities and push forward with the expansion of services in community pharmacies.

3.6 Summary of common enablers and barriers to successful pharmacy-based vaccination remuneration

Experts have helped identify some key enablers to successful remuneration models for pharmacy-based vaccination services, as well as some of the barriers that may be encountered. These include:

Enablers	Barriers
Developing an electronic registry for immunisation to help monitor the impact of pharmacy-based vaccination on immunisation rates and demonstrate why pharmacists should be remunerated for their very impactful participation in these services	Absence of active remuneration schemes for pharmacy-based services in general, not only vaccination services
Expanding of the role of pharmacists in delivering various services, including medication therapy management, and smoking cessation, which empowers pharmacists and allows them to take a load off the other health professionals	Disregarding the additional charges associated with vaccine administration, apart from the cost of the vaccine and its administration, such as the cost of disposable consumables used when administering a vaccine
Incorporating vaccination education and training into pharmacy undergraduate curricula to prepare pharmacists to vaccinate and to expand the number of pharmacists and pharmacies that can offer vaccination services	Lack of comprehensive training and education of pharmacists in delivering vaccination services
Advocating regulatory reforms and fair compensation for pharmacy-based immunisation	Competition and resistance from other healthcare providers towards involving community pharmacists in vaccination services
Emphasising the importance of skill sharing and a collaborative approach among healthcare professionals, particularly regarding vaccination, to improve health coverage and eventually health equity	

4 Access to data and vaccination records

The success of pharmacy-based vaccination programmes relies on another policy factor, which is access to data and vaccination records. Efficient and seamless access to accurate and up-to-date vaccination records is crucial for pharmacists to effectively administer vaccines and ensure proper patient-centred care as it allows pharmacists to assess the immunisation status of individuals, identify appropriate vaccines based on age, medical history and recommended schedules, and to track any potential contraindications or adverse reactions. As part of the series, FIP hosted a webinar "[Enabling life-course immunisation through pharmacy-based vaccination: Access to data and vaccination records](#)" on 2 February 2023. During the event, experts from the Costa Rica, Portugal, Saudi Arabia, and United States joined to share their country models of pharmacy access to patient data and vaccination records.

4.1 United States

Contributor: Sarah Sorum, Executive vice president and CEO, Pharmacy Society of Wisconsin, United States

In the United States, the authority of pharmacists to vaccinate differs among states. Each state also has its own immunisation information system, with no national system for the whole country. Some pharmacies in the US still rely on manual entry, often supported by administrative staff and pharmacy technicians. This becomes particularly challenging during peak vaccination periods, such as COVID-19 mass vaccination campaigns or influenza seasons, where keeping up with the pace of manual reporting becomes difficult.

Health systems also typically have their own electronic health records, allowing health professionals to access patient immunisation information and incorporate it into the system for other healthcare providers to view. However, the ability for a health system to access records imported by a pharmacy outside of their system depends on reconciling the data with the electronic health record. In addition, the lack of automatic communication between state-specific immunisation information systems creates challenges when patients receive vaccinations in different states. Each state has its own communications channels and technology for information sharing, making cross-state access to patient records a time-consuming and challenging process.

Another key issue is the provision of training on immunisation record-keeping, which is crucial to ensure that all pharmacists are well equipped with the knowledge and skills to access and report patient data. It is important to ensure that all relevant training is easy to access for pharmacists and acts as a facilitator rather than a barrier to improving the health system.

Although access to patient data and vaccination records is crucial, it is not the top barrier for pharmacists with regard to pharmacy-based vaccination. The top barrier is financial, rather than the immunisation reporting process. While accurate reporting and sharing of immunisation data are important to other healthcare professionals, it is not considered a primary concern for pharmacists.

4.2 Costa Rica

Contributor: Marisol Flores Campos, Pharmacovigilance officer, Punto Seguro, Costa Rica

Despite its small size, Costa Rica has accessible vaccines in both public and private settings, with community pharmacies playing a significant role. Pharmacists are legally authorised to administer vaccines and handle various tasks related to logistics, supply chain control, pharmacovigilance and vaccine disposal.

Costa Rica's legal foundation for immunisation started with the General Health Law in 1973, which had only a few basic articles concerning immunisation. In 2013, the National Vaccination Law was enacted, and in 2017, the Health Monitoring Regulation was introduced. The 2017 regulation specifically focuses on vaccination records and offers pharmacists comprehensive guidelines, definitions, legal requirements, safety measures and responsibilities for providing immunisation services at the community pharmacy level. It is important to note that prior to the existence of the 2017 health monitoring regulations, pharmacists in community pharmacies had already been administering vaccines

for many decades. This demonstrates that the practice of pharmacists providing immunisations in community pharmacies predates the specific regulations introduced in 2017.

The country uses a relatively new vaccination system called Sinovac, which is part of the national health monitoring automated systems in Costa Rica. This system enables the registration of various mandatory notifications, including vaccines, malignant tumours and infectious diseases. Previously, vaccination records and other notifications were done manually and sent in paper form to the health authority. The new vaccination system integrates data from all administered vaccines in the country, aiming to achieve a 100% record of vaccinations. It also facilitates the health authority's strategic monitoring system.

Some enablers to better access to patient records include good communication with health authorities to improve current systems, utilising surveys to get feedback on the contribution of pharmacists to immunisation efforts, as well as understanding the lessons learned from other countries that have tried to implement similar systems.

One of the main challenges is that the current system grants access to pharmacies with user registration instead of providing individual access codes to professionals, resulting in pharmacists having to manually enter patient information and lacking access to complete patient records. This limits their ability to provide comprehensive consultations and recommendations to their patients. Other challenges include the requirement for remote training in immunisation services, the need for individual user codes to track patients across different pharmacies, as well as the demand for a more user-friendly electronic system that makes it easier for the pharmacist to enter and access patient information.

4.3 Portugal

Contributor: Pedro Costa e Silva, Manager of the health services business unit, Associação Nacional das Farmácias, Portugal

As mentioned before, pharmacists in Portugal were authorised to administer vaccines after receiving the required accreditation from the Portuguese Pharmaceutical Society. As with information sharing, the adaptability of the pharmacy network to embrace technological advancements, including electronic prescribing, enables pharmacists to strategically engage with the ministry of health and thereby earn the trust of the Portuguese NHS. For that reason, pharmacies that have registered vaccines on their local software are acknowledged by the health ministry as significant vaccination points, particularly against flu. Since 2017, the administration records of vaccines are automatically transferred from the pharmacy software system to the national e-Vaccination Bulletin, which is digital platform for patient health data. The bulletin has several advantages, including reducing costs, facilitating easy access to vaccination information and ensuring the quality of data.

However, when it comes to vaccination records, access to centralised data is currently restricted to hospitals and health centres within the NHS. Citizens can access their vaccination data through an application, allowing them to share their vaccination records with their pharmacist. Although pharmacies have the same level of access as hospitals and health centres for entering and sending information, their access to vaccination records is still limited to local data and the information shared by citizens.

The data collected on pharmacy-based vaccination provided evidence on the positive impact of the involvement of pharmacists in vaccination services. In the flu season of 2008–2009, pharmacies administered approximately 36% of dispensed flu vaccines. In 2021–2022, the percentage reached 63%. Consequently, in 2018, pharmacies were invited to collaborate with the NHS and serve as vaccination points, allowing them to share local data with the national central data, similar to NHS hospitals. A successful pilot project involving 39 pharmacies focused on vaccinating elderly patients against influenza without the need for a prescription or any associated fees. Due to the positive results, pharmacies were further engaged as NHS vaccination points, demonstrating their impact and collaboration to meet healthcare needs.

Some enablers that can help support pharmacist access to patient data and vaccination records include the ability of pharmacists to adapt to digital transformation and to provide more health services in the pharmacy. Allowing data sharing among healthcare professionals, especially those in the private and public sectors, can lead to better collaboration and, eventually, better health services for patients. It can also empower pharmacists to take a bigger role in improving the country's vaccination rates.

Some of the challenges that pharmacists encounter regarding access to patient data and vaccination records include the lack of coordination between the private and public sector, which is the result of competition between the two. Pharmacists offer higher accessibility and convenience to vaccination than other health centres and are therefore perceived as competitors. Another challenge is the lack of data sharing between the NHS and pharmacists, and the inability of pharmacists to access patient vaccination records.

4.4 Saudi Arabia

Contributor: Omaima Arab, Scientific evaluation expert, Saudi Food and Drug Authority, Saudi Arabia

With the start of the pandemic and in collaboration with different health regulatory bodies including the Saudi Society of Clinical Pharmacy, the Saudi ministry of health has recognised the role of pharmacists in providing vaccinations and passed a new rule that allowed them to vaccinate. A team was formed to develop a vaccine education and training programme for pharmacists to ensure compliance with rules and regulations in vaccine delivery and administration in the pharmacy. The programme underwent further development, and workshops were conducted to educate pharmacists on scientific content related to vaccinations. The programme was based on international standards such as those of the United States Centers for Disease Control and Prevention and its Advisory Committee on Immunization Practices. Despite the timing coinciding with the onset of COVID-19, the programme progressed and received confirmation from Saudi Arabia's Commission for Healthcare Specialties regarding its educational material. Pharmacists are now able to access the course online and, upon completing it, must undergo an examination to receive the accreditation required to participate in vaccination efforts.

4.5 Summary of common barriers and drivers of successful sharing of patient data and vaccination records

Among the countries above, some common enablers and challenges to access to patient data and vaccination records were identified. These include:

Enablers	Barriers
Collaborating and communicating effectively with health authorities to improve current systems	Lack of effective communication between the stakeholders involved in vaccination efforts, particularly between the public and private sectors
Using surveys to gather feedback on the contribution of pharmacists to immunisation efforts and use it as evidence for why it is beneficial for pharmacists to have access to patient information	Lack of pharmacists' training on immunisation record-keeping
Learning from other countries' experiences in implementing similar systems	Limited access to complete patient records for comprehensive consultations
Considering pharmacists' ability to adapt to digital transformation and to provide more health services	

5 Conclusions

Achieving health equity requires ensuring equal access to high-quality healthcare across all age groups in society. Health disparities and inequities in healthcare provision have long-lasting impacts that extend beyond individual lives, affecting the overall well-being of communities. Vaccines play a crucial role in preventing diseases and improving health outcomes, particularly for vulnerable populations such as older adults and pregnant individuals. Embracing a life-course approach to vaccination acknowledges the importance of disease prevention and health promotion throughout all stages of life. Expanding access to vaccines to community pharmacies can enhance convenience, reach underserved populations and increase vaccine uptake rates. Pharmacists, as trusted members of the community, can foster trust in the healthcare system and provide tailored communication strategies to address vaccine hesitancy and promote health literacy. By implementing inclusive and accessible vaccination strategies, pharmacists can work towards achieving health equity and ensuring that everyone, at every age, benefits from the protection offered by vaccines.

Below is a the combined list of policy enablers that can help address key considerations such as service remuneration, access to patient and vaccine records, as well as vaccine regulations and prescribing.

First, establishing appropriate service remuneration models that recognise the value of pharmacist-provided vaccination services can incentivise their involvement and encourage the integration of community pharmacies into vaccination programmes.

Additionally, facilitating access to patient and vaccine records through secure electronic systems can enhance coordination of care and enable seamless tracking of vaccination history across healthcare settings.

Lastly, reviewing and updating vaccine regulations and prescribing guidelines can empower pharmacists to administer a broader range of vaccines according to evidence-based recommendations. By aligning regulations with the evolving landscape of immunisation and expanding pharmacist prescribing authority, barriers to accessing vaccines can be reduced, ensuring timely and convenient vaccination services for all. By addressing these policy enablers, policymakers can create an environment that supports the effective implementation of inclusive vaccination strategies and promotes health equity across all age groups.

Summary of enablers	
Vaccine regulation and prescribing	Leveraging public acceptance of pharmacy-based vaccination as a convenient and accessible way to receive vaccines and to increase immunisation rates
	Recognising the role of pharmacists in advocating vaccination and addressing vaccine hesitancy
	Enhancing pharmacy education curricula to include education and training on vaccination while supporting trained pharmacists to stay up to date with the latest advancements in vaccination
	Advocating pharmacists becoming key stakeholders in national vaccination policies
	Granting pharmacist access to patient vaccination records
	Collaborating with policymakers and healthcare professionals to update Acts and guidelines and to set clear policies in place to support pharmacy-based vaccination
Service remuneration models	Developing an electronic registry for immunisation to help monitor the impact of pharmacy-based vaccination on immunisation rates and demonstrate why pharmacists should be remunerated for their highly impactful participation in these services
	Expanding the role of pharmacists in delivering various services, including medication therapy management and smoking cessation, which empowers pharmacists and allows them to take a load off other health professionals
	Incorporating vaccination education and training into pharmacy undergraduate curricula to prepare pharmacists to vaccinate and to expand the number of pharmacists and pharmacies that can offer vaccination services



	Advocating regulatory reforms and fair compensation for pharmacy-based immunisation
	Emphasising the importance of skill sharing and a collaborative approach among healthcare professionals, particularly regarding vaccination, to improve health coverage and, eventually, health equity
Access to data and vaccination records	Collaborating and communicating effectively with health authorities to improve current systems
	Using surveys to gather feedback on the contribution of pharmacists to immunisation efforts and using it as evidence for why it is beneficial for pharmacists to have access to patient information
	Learning from other countries' experiences in implementing similar systems
	Considering pharmacists' ability to adapt to digital transformation and to provide more health services

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