

Global vaccination policy development summit

Executive summary

2024



International
Pharmaceutical
Federation

Colophon

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Background

In April 2024, the International Pharmaceutical Federation (FIP) hosted a policy development summit to focus on the growing role of pharmacy in vaccinations and to describe and define the parameters for the implementation of the FIP global policy on life course immunisation.

The [FIP Policy Statement](#) was approved by the FIP Council in Brisbane in 2023.

This summit brought together evidence from 2023 initiatives, the global data on vaccination trends, and emerging therapies and technologies to empower the pharmacy workforce and enhance public health outcomes.

The objectives of the summit were:

1. To synthesise evidence and data from FIP and global sources to inform policy development on pharmacy-based vaccinations;
2. To explore new and emerging vaccines and the regulatory and policy enablers linked to enable pharmacy involvement and empowerment;
3. To understand the wider implication of communicable diseases and vaccines on non-communicable diseases and the policy enablers that can support better public health;
4. To showcase the different remuneration models linked to vaccination;
5. To explore the effect of vaccine confidence on wider public health and the role that pharmacy plays to improve it; and,
6. To lay the groundwork for the development of a global policy framework addressing the above five main areas and any others deemed a priority.

Experts and representatives from a selection of countries with experience of pharmacists as vaccinators were invited to the summit to share their knowledge and expertise as well as country case studies in each of the main areas that the summit focused on: new and emerging vaccines; the wider benefits of vaccines; vaccine remuneration models; vaccine confidence; and, access to data and vaccination records.

Over the course of two days, participants shared success stories, country-based lessons learned, and recommendations, particularly related to policy, on how to improve health equity through life-course immunisation.

This report is a summary of the insights, data, expertise and experiences shared during the summit and will serve as a foundational document for the development of a policy framework for life course immunisation globally. This summit represented the first step in delivering this framework.

Key insights

The summit started with an introduction from FIP President, Paul Sinclair, on FIP's vision and mission to advance pharmacy worldwide:

- FIP's vision is a world where everyone benefits from access to safe, effective, quality and affordable medicines and health technologies, as well as from pharmaceutical care services provided by pharmacists, in collaboration with other healthcare professionals.
- FIP's mission is to support global health by enabling the advancement of pharmaceutical practice, sciences and education.

This was followed by an update from FIP chief executive officer, Catherine Duggan, on FIP's work on vaccination from 2011 to April 2024, including FIP's work on life course immunisation (see Appendix).

Following the introductions and the update, invited representative experts delivered a series of presentations focusing on the importance of life course immunisation and presented case models from Belgium, Ireland, Portugal, Italy, the United Kingdom, Canada, France, Sweden, and the Netherlands, discussing opportunities, challenges, and lessons learned in advancing life course immunisation. They highlighted the role of pharmacy in the application of existing and new vaccines, including the regulatory and policy enablers needed. The COVID-19 pandemic highlighted the essential role of pharmacists and pharmacies within health systems, demonstrating their readiness and capacity to support vaccination efforts. Moving forward, it is vital to sustain and expand these efforts, ensuring pharmacy involvement in the broader vaccination landscape, particularly in preparation for future pandemics.

The summit participants also shared some of the wider benefits of vaccines beyond disease prevention and their country models on how vaccines had wider benefits in addition to preventing certain diseases. These included safeguarding vulnerable populations such as older adults who may be more susceptible to severe complications, and reducing the risk of other health issues such as cardiovascular diseases, diabetes, and arthritis. Moreover, vaccines play a central role in reducing mortality rates and curbing the economic and social costs associated with preventable diseases.

Another key area discussed was vaccine remuneration, which is vital for pharmacy-based vaccinations and life-course immunisation. It ensures pharmacists or pharmacies (or owners) are paid for the services they provide whilst motivating them to continue to deliver these services. Vaccine remuneration typically includes the cost of the vaccine and related expenses, such as storage, administration, handling, and waste management. Experts at the summit shared their country remuneration models, providing insights on successful strategies, recommendations, and lessons learned.

With regards to vaccine confidence, the summit participants highlighted how pharmacists globally play a crucial role in enhancing vaccination coverage rates, particularly during the COVID-19 pandemic, engaging in various activities from advocacy to vaccine administration. Despite their significant contributions, pharmacists encounter obstacles such as vaccine hesitancy. Building trust in vaccines, or vaccine confidence, is influenced by cultural, social, and political factors. As the most accessible healthcare providers, pharmacists can effectively address individuals' concerns about vaccination through communication and education, thereby increasing vaccine confidence. Knowledge and experiences were shared by the summit participants, highlighting the impact that pharmacists (can) play in improving vaccine confidence and thereby vaccine uptake rates.

Key recommendations shared at the summit included the necessity of integrating pharmacies into broader public health strategies, developing comprehensive remuneration models, and enhancing access to vaccination records. The summit also highlighted the importance of continuous advocacy, education, and collaboration among healthcare professionals to sustain and expand the role of pharmacies in vaccination efforts.

Next steps

The FIP policy development summit held in April 2024 successfully highlighted and evidenced the vital role of pharmacies in the vaccination landscape and set the stage for the development and implementation of the global policy on life course immunisation.

Through robust discussions and collaborative exchanges, the summit showcased evidence, explored innovative vaccination strategies, and addressed key regulatory and policy enablers essential for empowering the pharmacy workforce.

The insights gathered from this summit serve as a critical foundation for developing a global policy framework on life course immunisation, which would inform policy development, support regulatory changes, and foster an environment where pharmacies can effectively contribute to improved public health outcomes worldwide. The experts at the summit will participate in a working group, consolidating their knowledge and forming a consensus on the structure and content of the policy framework. The framework outline will inform knowledge gaps for subsequent learnings during a professional developmental symposium at the FIP Congress in September 2024. FIP also aims to deliver an overt advocacy campaign in 2024-2025, highlighting the importance of pharmacists in global immunisation. This campaign will ensure that policymakers, governments, and health ministries are equipped with evidence, impact assessments, and the imperative to engage the profession. It will also aim to maximise the immunisations pharmacists can deliver and the remuneration required. Moreover, building on the campaign, FIP will hold a second face-to-face summit in 2025 that will incorporate learnings from the first summit and dedicate time for workshops, consensus-building, and co-development.

Plans to roll out the framework will target the 56 countries currently engaged in pharmacy-based vaccination, with an expansion to reach all 195 nations by the end of 2025. The aim is to populate the atlas with the status of pharmacy-based immunisation services worldwide, offering a comprehensive overview of global immunisation efforts.

As we move forward, the collective commitment and shared vision of stakeholders will be crucial in realising the full potential of pharmacies in the global immunisation landscape.

Appendices

Appendix 1: FIP’s work on vaccination



2011
 FIP & WHO publish the joint guidelines “Good pharmacy practice: Standards for quality of pharmacy services”. The administration of medicines, vaccines and other injectable medications is defined as a key role of pharmacists

2016
 FIP publishes “An overview of current pharmacy impact on immunisation: A global report”.

2017
 FIP publishes new survey report “Pharmacy – A Global overview”. Pharmacy-based vaccination practices had expanded in just one year.

2018
 Amsterdam summit: “Pharmacists’ role in immunisation — advocacy approaches”

2019
 FIP joins steering committee of Immunisation for all ages (IFAA) coalition
 Launch of the “FIP Global vaccination advocacy toolkit”



FIP publishes “Give it a shot: Expanding immunisation coverage through pharmacists” and “An overview of pharmacy’s impact on vaccination coverage: A global survey”

FIP launches the digital programmes “Increasing vaccination coverage through pharmacists” and “Transforming vaccination globally and regionally”

FIP issues call to action to expand the role of community pharmacies in vaccination, including against COVID-19 and future pandemics

The manifesto “Promoting immunisation throughout life” by the Immunisation for all ages (IFAA) coalition is launched

FIP offers its member organisations a template letter co-signed by the FIP and the MO presidents, addressed to their MoH, advocating for a greater role for pharmacists in vaccination.

FIP contributes to the draft WHO Immunization Agenda 2030 to highlight the role that pharmacists play

FIP launches the FIP Development Goals. DG 16 (Communicable Diseases) describes the role of pharmacists in the prevention and management of these conditions, and particularly in vaccination.



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”



LET'S TALK ABOUT VACCINES!

2023

FIP publishes "Supporting life-course immunisation through pharmacy-based vaccination: enabling equity, access and sustainability: A toolkit for pharmacists"

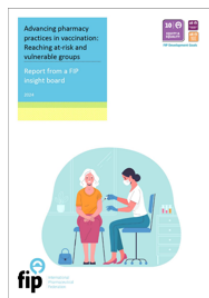
FIP publishes "Pharmacy-led vaccination services: Regulatory self assessment and implementation tool."

FIP launched the "FIP statement of policy on the role of pharmacy in life-course vaccination"

FIP publishes "Pharmacy-based vaccination: Recent developments, success stories and implementation challenges"

FIP publishes "Vaccination: Benefits beyond specific disease prevention — Summaries from the digital events programme"

FIP launches the "Let's talk about vaccines!" campaign



2023 / 2024

FIP publishes "Advancing pharmacy practices in vaccination: Preparing for winter. Report from a FIP insight board"

FIP publishes "Advancing pharmacy practices in vaccination: Reaching at-risk and vulnerable groups. Report from a FIP insight board."

FIP publishes "Advancing pharmacy practices in vaccination: Unlocking vaccine confidence. Report from a FIP insight board"

FIP Global Vaccination Policy Development Summit (April 2024)

FIP launches the report "Leveraging pharmacy to deliver life-course vaccination"

Appendix 2: FIP Statement of Policy: The role of pharmacy in life-course immunisation

FIP STATEMENT OF POLICY

The role of pharmacy in life-course vaccination

Executive summary

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 to control and eliminate several infectious diseases, preventing millions of deaths annually. Vaccination also reduces the burden on healthcare systems and curbs antimicrobial resistance. However, limited and inequitable access to vaccines in some countries, as well as vaccine misinformation and hesitancy, remain significant challenges. The COVID-19 pandemic exacerbated these access problems and strained health systems, highlighting the importance of proper information and storage, handling and distribution of vaccines to ensure public confidence and trust in vaccination.

Pharmacists are increasingly involved in vaccine development, promotion and delivery. They perform a variety of roles in vaccination advocacy, awareness and advice, and in many countries they administer and prescribe vaccines. Through their expertise and trust-based relationships, pharmacists combat misconceptions surrounding vaccines and provide evidence-based information to patients. Pharmacists are uniquely positioned to support the vaccination of various population groups and to remove barriers to achieving high vaccination coverage rates, including hard-to-reach or high-risk population groups.

In addition to pharmacists, the pharmacy workforce includes pharmacy technicians, pharmacy assistants, pharmacist interns and pharmacy students, who also have an important role in vaccination. In some countries, pharmacy technicians and pharmacy assistants are certified or registered through approved educational programmes and have additional responsibilities at the practice site. Along with pharmacist interns and pharmacy students, they may be authorised to provide vaccine information and services.

This statement discusses the importance of expanding vaccination schedules and strategies beyond infancy to ensure access to vaccines for all age groups, including adults and older persons. Pharmacists should be integrated into patient immunisation pathways and provide vaccines to special-risk groups, such as those with long-term conditions, pregnant individuals, healthcare professionals, underserved populations and caregivers. Vaccine-preventable diseases are a significant cause of morbidity, including loss of functional ability, and mortality in older people because a gradual deterioration of the immune system brought on by increased age makes them more susceptible to infections.

This statement also discusses the important role of pharmacists in building vaccine confidence and addressing vaccine hesitancy. Pharmacists are accessible, have expert knowledge and interact frequently with patients within the community and hospitals, making them uniquely positioned to engage in meaningful conversations and increase vaccination coverage rates. However, regulatory requirements and policies are needed to ensure the pharmacy workforce is adequately and appropriately trained and that required structures and conditions are in place to deliver safe and quality vaccination services. Finally, appropriate investment and funding models are needed to support vaccine administration in pharmacies and remove financial barriers to ensure equitable public access to vaccines, especially in low- and middle-income countries and for low-income individuals.

A comprehensive and evidence-informed rationale is presented at the end of this statement, after the policy recommendations to various groups of stakeholders.

To support pharmacists' contributions to life-course vaccination, FIP recommends that:

Governments and policymakers should:

1. Develop formal vaccination schedules that support life-course immunisation;
2. Recognise, enable and fully harness the potential and convenience of community and hospital pharmacies for public health, primary, secondary and tertiary healthcare, and disease prevention strategies, including vaccination;
3. Develop country appropriate policies and remove regulatory barriers to enable adequately trained and certified pharmacists to prescribe and administer all relevant vaccines throughout the life-course;
4. Adopt new vaccination policies which will authorise and empower pharmacists, under the respective health insurance acts, to immunise under the respective national immunisation programmes and also acquire rights to prescribe, provide and administer vaccines not included in those programmes (e.g., travel immunisations);
5. Promote the competence of pharmacists in vaccine prescribing and administration through the definition of the required knowledge and skills as an integral part of pharmacists' foundational education and training, and through continuing professional development requirements;
6. Invest in prevention strategies, including vaccines and vaccination services by all providers, including pharmacists and the pharmacy workforce, to ensure equity in access to vaccinations and sustainability of the service;
7. Develop appropriate remuneration models for pharmacies to deliver sustainable life-course vaccination services within the private and public sector;
8. Ensure health system preparedness and readiness for mass immunisation during vaccine-preventable disease outbreaks, epidemics and pandemics;
9. Include pharmacists and other pharmacy workforce in emergency preparedness and response plans as frontline health workers;
10. Foster the full integration of community and hospital pharmacies in healthcare systems by creating the regulatory and operational conditions for interprofessional collaboration, including read and write access to shared patient health records and vaccination records;
11. Establish effective immunisation information systems accessible to healthcare professionals, especially pharmacists, at all levels of care. Such systems should be integrated within overall healthcare information systems.

FIP member organisations should:

1. Strive towards equity of access to disease prevention interventions, including vaccinations, regardless of age, gender, income, location, ethnicity or other factors, leaving nobody behind;
2. Integrate the prescribing and administration of vaccines into pharmacy practice in all settings, in collaboration with health systems and authorities, other healthcare professions and education and training institutions;
3. Advocate legislative frameworks that provide the regulatory assurance of pharmacist vaccination services and define the conditions, criteria and accountability for this activity as part of pharmacists' scope of practice;
4. Where appropriate, set the necessary requirements, standards and guidelines and provide the necessary tools and resources to ensure the quality of the vaccination services provided;
5. Support ongoing antimicrobial stewardship by providing full vaccination for vaccine-preventable diseases in all settings;
6. Collaborate with other healthcare providers to ensure the local pharmacy workforce is best utilised to ensure maximum vaccination utilisation and coverage, while striving towards the autonomy of vaccination providers to deliver vaccines as per agreed protocols and criteria;
7. Advocate appropriate funding models for vaccines and vaccination services that ensure equity of access for all at the point of delivery across all vaccination providers and the sustainability of these services;
8. Facilitate and promote research designed to demonstrate the benefits to healthcare services of pharmacy-based vaccination, and to improve standards of practice.

Pharmacy academic institutions and providers of continuing professional development training courses should:

1. Provide pharmacy students at undergraduate level and during internship with comprehensive vaccination-related theoretical knowledge and practical skills in prescribing and administration to ensure competence to provide high quality vaccination services and advocating vaccination throughout the life-course;
2. Update curricula to cover the following topics: policies and regulations related to immunisation; guidelines about vaccines; multidisciplinary patient-centred care; ethical practice; vaccine-preventable diseases and their management; immunology; vaccinology; immunisation delivery services; vaccine supply and cold chain management; adverse events following immunisation, their management and reporting; pharmacovigilance and risk management; infodemic management and effective communication to address vaccine hesitancy and complacency and build public confidence in vaccinations with the country's professional and regulatory bodies;
3. Include updated topics in continuing education and professional development for pharmacists and other pharmacy workforce in collaboration with their country's professional bodies;
4. Cooperate with pharmacist organisations to demonstrate the clinical and economic benefits of pharmacy-based vaccination and to improve standards of practice.

Individual pharmacists should:

1. Commit to the principles of public health and primary health care by providing patient-centred vaccination services in all settings, and advocating vaccination to patients and the community;
2. Contribute to building vaccine confidence by addressing vaccine hesitancy, concerns, misinformation and disinformation, ensuring that all people have access to reliable information and evidence-based advice about vaccine safety, efficacy and value;
3. Follow guidelines issued by pharmacist professional organisations and regulators to meet all legislative requirements issued by local health authorities or regulatory agencies related to vaccination services;
4. Be able to identify and implement the FIP-WHO Good Pharmacy Practice standards, where applicable, in performing vaccine-related roles, including the correct storage, at the appropriate temperature, of any thermolabile vaccine, and that the vaccinator ensures the client receives a temperature-appropriate thermolabile vaccine;
5. Commit to their professional obligation and duty to maintain and upskill competence, including knowledge and skills, in undertaking vaccine-related roles;
6. Provide immunisation services in compliance with legal and regulatory standards;
7. Be vaccinated themselves (along with their pharmacy workforce) against all relevant vaccine-preventable communicable diseases, not only to protect themselves and their families against such diseases (considering the frequent contacts they have with patients or biological samples), but also out of the ethical duty of not becoming agents of infection of patients and the community or within healthcare settings, and to protect the resilience and capacity of the health workforce;
8. Reach out to target groups for life-course vaccination, focusing on the special-risk populations.

IN ADDITION, FIP COMMITS TO:

1. Support this important role of pharmacists and pharmacy workforce and advocate the widespread utilisation of pharmacists for life-course immunisation, for overcoming vaccine hesitancy and complacency, and for combatting the spread of misinformation and disinformation around the world. In this way, pharmacists can fulfil their role as advisors, supporters and implementers of public health globally;
2. Join forces with the World Health Organization, and other healthcare professional and allied civil society organisations, to raise awareness about the major threat of vaccine hesitancy and complacency to global health and to advocate actions to minimise their impact on vaccination coverage and on individual- and community-level immunity against vaccine-preventable diseases;

3. Contribute to increasing vaccination coverage rates globally by supporting FIP member organisations in empowering pharmacists to deliver vaccination services, strengthening undergraduate qualification in the area of pharmacists administering and prescribing vaccines, addressing legislative and regulatory barriers to full pharmacist participation in vaccination delivery, and advocating pharmacist access and input to shared records that facilitate collaborative health care and vaccination service delivery;
4. Strive towards attaining the maximum potential of every pharmacist, through continuous innovation, improvement and practice transformation;
5. Advocate for the prioritisation of primary healthcare and disease prevention, including vaccination services, at global, regional and country level, and for the allocation of appropriate funding to ensure access to vaccines and vaccination services for all, which includes the sustainable remuneration of vaccination services for all providers, including pharmacists;
6. Monitor and report on the contribution of pharmacists and other members of the pharmacy workforce to global vaccination strategies by collecting and analysing relevant data and providing FIP member organisations and other relevant bodies with intelligence about such contributions, their regulation and remuneration;
7. Collate and share best practices from around the world through the appropriate channels;
8. Ensure, when other pharmacy workforce members are involved in delivering vaccination services, they are appropriately trained and supervised.

RATIONALE AND SUPPORTING EVIDENCE

This FIP statement of policy is intended to support governments and policymakers, FIP member organisations and FIP itself, pharmacy academic institutions, and individual pharmacists wishing to promote and implement an expanded role for pharmacy in life-course vaccination.

Vaccination as a key public health intervention and a pillar of primary healthcare and universal health coverage

Vaccination is one of the most successful and cost-effective health interventions of all time, second only to clean water, according to the World Health Organization (WHO).¹ The benefits of vaccination spread far further than keeping a vaccinated individual healthy. The impact of a successful vaccination programme can improve the health of the whole population through both direct and indirect impacts. Despite global efforts to increase vaccination throughout the life-course, national vaccination strategies often focus on childhood.²

Several infectious diseases have been controlled and, in some cases, eliminated through routine vaccination. Immunisation currently prevents 3.5–5 million deaths every year from diseases like diphtheria, tetanus, pertussis, influenza and measles.¹

Vaccination is also a powerful tool to reduce pressure on healthcare systems and ensure their sustainability. It helps reduce the burden of severe disease and hospitalisation (frequency and duration of hospital stays) due to vaccine-preventable diseases.³

Vaccination is equally critical to curb antimicrobial resistance — considered by the WHO as one of the top threats to global public health⁴ — by reducing the burden of infectious diseases and the use of antimicrobials.⁵

Moreover, approximately 13% of cancers diagnosed globally in 2018 were attributed to carcinogenic infections, caused by viruses and bacteria, that could have been prevented by vaccines.⁶ Some of the most important infections associated with cancers for which preventive vaccines are available include the human papilloma virus (HPV), which causes cancers such as cervical, vaginal, vulvar, anal, penile and oropharyngeal cancer, and hepatitis B virus (HBV), which causes liver cancer. Raising and attaining higher vaccination rates may help towards the goal of eliminating vaccine-preventable cancers and address the inequality gap that currently exists globally in terms of access to preventive vaccines.

However, important challenges exist that hinder access to vaccines for all, and limit the uptake of vaccinations, thus compromising the goal of optimal vaccination coverage rates across populations in all parts of the world. Limited and inequitable access to vaccines and vaccination services in some countries or territories raises important ethical

questions and represents a threat to public health not only in those countries directly affected by them, but also globally. The risk of vaccine-preventable disease outbreaks will persist if urgent action is not taken to ensure equitable access to vaccines for all and to recover immunisation programme losses.^{7,8} Despite tremendous progress, vaccination coverage has plateaued in recent years and dropped since 2020. Global coverage dropped from 86% in 2019 to 81% in 2021. Twenty-five million children missed out on vaccination in 2021, six million more than in 2019 and the highest number since 2009.⁹

The COVID-19 pandemic and associated disruptions over the past years have further exposed and aggravated the previously existing access problems and strained health systems.^{10,11} The pandemic also amplified existing challenges with supply chains, health workforce capacity and health financing, namely for disease prevention. The pharmacy profession responded to these challenges. For example, hospital pharmacists across the world managed to quickly set up vaccination centres in their hospitals and supported the healthcare system's transformation to provide vaccination in the most efficient way to the public. Through understanding all necessary prerequisites for proper transportation and handling of vaccines, hospital pharmacists helped shape and gain patients' confidence in vaccination and its effectiveness. Likewise, community pharmacists in several countries administered millions of doses of COVID-19 vaccines, contributing to the response to the pandemic, in addition to providing many other key services.

Patients' confidence in the storage, handling and security of the COVID-19 vaccines is essential in building trust that best practices for maintaining the cold chain throughout the supply chain are followed. Moreover, storage, preparation and administration of vaccines within healthcare settings need to be carried out in a way that all safety and security measures have been in line with best standards to avoid vaccines' mishandling. Ensuring the proper receipt, storage, handling and distribution of vaccines is also of utmost importance for both healthcare providers and patients.¹² In addition, increasing vaccine misinformation, disinformation and hesitancy contributed to a decline in vaccination uptake rates in some countries.¹³

The contribution of pharmacy to improving vaccination coverage rates and access

Pharmacists in a variety of practice settings are increasingly involved in vaccine development, promotion and delivery. According to [FIP data from 2020](#), in at least 86 countries pharmacists played a variety of roles in vaccination advocacy, awareness and advice, and in at least 36 countries they played an active role in administering vaccines in the community. By early 2023, following the COVID-19 pandemic, this figure had increased to at least 48 countries.¹⁴⁻²² One of the key levers for increasing vaccination rates across all ages is to increase convenience of access, to which pharmacy can clearly contribute.¹⁴

Across hospitals, hospital pharmacists contribute immensely to combatting misconceptions surrounding the administration of COVID-19 vaccines through educating fellow healthcare professionals. This is essential for spreading the same information to the general public via coordinated and transparent messaging followed by all healthcare professionals.

Pharmacists are committed to delivering evidence-based information, which will not only prove useful in countering misbeliefs but will also help build and maintain the trust of every patient in every healthcare system. Moreover, pharmacists contributed to removing barriers to achieving vaccination rates and reducing patients' hesitancy by counteracting ambiguous and misleading information surrounding the way COVID-19 vaccines are stored, prepared, administered and tracked.¹²

A crucial aspect of providing proper information on vaccines to the public is transparent discussion around vaccines' integrity and supply chain capacity. This does not only entail involving vaccine manufacturers, but also those responsible for the availability of vaccine components and additional resources, such as low dead space syringes, vials and alcohol swabs. Supply chain specificities, including cold chain logistics, storage and distribution of vaccines within a country and healthcare settings, also play an important part when providing proper information to the public and avoiding misinformation about vaccines, which generates vaccine hesitancy in the public. Pharmacists and the pharmacy workforce ensure that cold chain management and proper storage conditions are followed in order to prevent vaccines' deterioration throughout the shelf-life period. Systems put in place to guarantee traceability of vaccines across healthcare settings are essential in ensuring that real-time information is available on where and when the vaccine was received and on who received it.¹²

Community pharmacies are often the first point of contact within a health system. Not only are they staffed with a highly skilled workforce, but they are also trusted, convenient health facilities embedded at the heart of communities.

Pharmacies have the appropriate infrastructure and logistics to ensure the adequate and secure storage and safe distribution of medicines, including those that require strict temperature-sensitive management such as vaccines. In many areas, community pharmacies are open for longer periods and are often more easily accessible than other healthcare facilities, especially in rural, remote or medically underserved areas. Pharmacies provide an essential public service and can be a key partner in primary health care and disease prevention strategies, in full coordination with health systems and other health professions.²³

Pharmacists are also uniquely positioned to support various population groups in achieving high vaccination coverage rates — especially those who may be at higher risk of vaccine-preventable diseases, including older adults and people living with non-communicable diseases, or hard-to-reach groups who often have fewer interactions with the healthcare system.

In summary, pharmacists contribute to vaccination strategies in a variety of ways, with vaccine-related roles including:¹⁴

1. Advocating vaccination and vaccination programmes, through campaigns and individual interactions;
2. Promoting equity of access to vaccination services, by targeting hard-to-reach or special-risk population groups;
3. Building vaccine confidence and reducing vaccine hesitancy and complacency, and the spread of misinformation;
4. Managing the vaccine supply chain, including cold chain management;
5. Recording and keeping vaccination records and counselling on vaccination status;
6. Dispensing vaccines;
7. Prescribing vaccines based on agreed protocols and eligibility criteria;
8. Administering vaccines and managing any potential adverse reactions, including anaphylaxis;
9. Performing vaccine safety surveillance (pharmacovigilance); and,
10. Conducting vaccine research, development, production, quality control, pre-clinical and clinical studies and regulatory activities pre- and post-market.

Depending on the jurisdiction, pharmacists are supported in several of these roles by other groups, including adequately trained pharmacy assistants, certified pharmacy technicians, pharmacy students and pharmacist interns with the required knowledge and skills.

To meet the additional challenges of having multiple types of vaccines with different risk profiles across healthcare settings, pharmacists play a pivotal role in relation to all adverse events following immunisation. No matter how rare these are, they need to be identified and reported to the authorities with the highest accuracy. Moreover, pharmacists are situated at the interconnection of the supply chain, adverse event reporting and immunisation information systems, which gives them even more responsibility in detecting signals of safety concerns and tracking administered vaccines regardless of supplier, healthcare setting or country. Together with other healthcare professionals, pharmacists are able to react in a timely manner and provide optimal care and prevention services to their patients, ensuring their trust in vaccination is safeguarded.^{12, 24, 25}

Life-course vaccination: meeting the vaccination needs of all age groups

In order to attain equity in access to disease prevention measures, and to ensure the highest possible level of quality of life and function at all stages of life and gain the full health and economic benefits from vaccination, it is an ethical and public health imperative to expand vaccination schedules and strategies beyond infancy and across all ages, especially for adults as highlighted in the [manifesto of the Immunisation For All Ages initiative on expanding capacity for immunisation beyond infancy](#).

It is of paramount importance to increase the focus on vaccination throughout the life-course and ensure access to vaccines that are relevant for each age group, namely infants, children, adolescents, adults and older persons. Pharmacists need to be fully integrated into patient immunisation pathways, have access to vaccination records and be included in the patient vaccination journey.²⁶

Life-long vaccination programmes and the importance of vaccination for older adults are often underestimated. Life expectancy has risen dramatically in the past century, with issues specific to an ageing population becoming a priority.

Increased susceptibility to vaccine-preventable diseases and increased likelihood of living with one or more chronic conditions are some of the issues that must be addressed. Vaccine-preventable diseases such as influenza, pneumococcal diseases, herpes zoster and pertussis are a significant cause of morbidity, loss of quality of life and mortality in older people.^{27, 28} Along with the disease burden of vaccine-preventable diseases, there is a gradual deterioration of the immune system brought on by increased age. The progressive decline includes both innate and adaptive immunity, thus contributing to the increased incidence and severity of infections in older adults. Pharmacists can provide vaccines to older adults who could be at higher risk of developing complications from vaccine-preventable diseases.²⁹

Also, pharmacists have a role to play in providing additional opportunities to access full immunisation for those who were not able to complete their childhood vaccination schedule.

In the face of the COVID-19 pandemic and in preparation for future pandemics, it is also imperative for all countries to expand their vaccination pathways and providers in order to achieve high vaccination coverage and collective immunity as quickly as possible.

Targeting higher-risk population groups: people living with long-term conditions, pregnant individuals, healthcare professionals, underserved populations and caregivers

For a complete understanding of life-course vaccination, it is necessary to highlight the importance of vaccination of special-risk groups, such as people living with long-term conditions, pregnant individuals, healthcare professionals, underserved populations and caregivers. These groups may be more exposed or be more vulnerable to severe forms of vaccine-preventable diseases and have a higher risk of hospitalisation, loss of functional ability and even death. These special-risk groups must be the target of proactive and systematic actions by healthcare professionals, including pharmacists and other pharmacy workforce, to ensure they are vaccinated against all diseases that may impact their health in a severe and largely preventable way.³⁰

Leveraging the pharmacy workforce to build vaccine confidence and address vaccine hesitancy, concerns, complacency and misinformation

Vaccination strategies will not be universal and fully successful until the global challenge of vaccine hesitancy is adequately addressed. Pharmacists' accessibility, expert knowledge, trust and frequent interactions with patients and the population make them uniquely positioned to engage in meaningful conversations and address vaccine hesitancy. This crucial role can contribute to increasing vaccination coverage rates and improving protection of individuals and communities.

The WHO cites complacency (a low perceived risk of vaccine-preventable diseases leading to the assumption that vaccines are not needed or are not a priority), inconvenience and lack of confidence as the primary factors behind vaccine hesitancy.³¹ Understanding vaccine hesitancy is complex because a patient's concerns with vaccination often exist on a spectrum. There is variance in the level of fear and distrust towards vaccines across geographical location, patient demographics and type of vaccine in question. Additionally, the new digital age has made it easier than ever to share information which may not be based on sound scientific evidence, yet has just as much potential to shape public opinion.

Vaccine hesitancy and concerns can be due to a variety of factors, including concerns over safety, efficacy, moral or philosophical issues, cultural or religious beliefs, or poor health literacy, for example.²⁴ Healthcare workers themselves are not immune to vaccine hesitancy and it is important that they overcome this hesitancy and are empowered with skills to communicate with confidence.^{32, 33} Most caregivers consider healthcare workers, including pharmacists, as knowledgeable about the science behind vaccination and the benefits and risks of vaccination. What pharmacists say and how they interact with patients and caregivers can strongly influence vaccine acceptance.^{8, 34, 35}

The health and economic benefits of pharmacist involvement in life-course vaccination

Not only are vaccines effective from a public health perspective, but they are also one of the most cost-effective health investments.^{36–38} A healthy population is essential for the growth of economies, and vaccinations should form the foundations of public health programmes if countries are to reach their full potential.

For every US dollar invested in vaccine programmes in 73 Gavi-supported countries¹ from 2021–2030, the estimated

¹ Gavi, the Vaccine Alliance is a public-private partnership that aims to improve access to vaccination in low-resource countries. The alliance includes the World Health Organization, UNICEF, the World Bank and the Bill & Melinda Gates Foundation as main partners, and works with donors, including

return on investment was USD 20.77 (using the cost of illness averted method), or USD 54.11 if the value-of-statistical-life method is used for the calculation, which encompasses the broader economic benefits of vaccines.³⁹

Vaccination can help reduce healthcare costs, allow health budgets to be spent in other areas, and promote the economic success of countries by having a healthier population who are more active and productive. It reduces expenditures on direct disease care, reduces antimicrobial resistance, reduces absenteeism and improves overall productivity. It is sound economic policy to invest in improved vaccination coverage and uptake.^{40, 41} However, despite the growing consensus³⁶ in the economics community about the role of vaccines and improved health as an important strategy for improving economic growth, it too often remains difficult to make the case for expanded vaccination programmes.

Pharmacists, as established advocates, educators and qualified providers of vaccinations, have a significant role to play in promoting and supporting the uptake of vaccination. Vaccination by pharmacists has the potential to positively affect public health by improving vaccination rates among high-risk patients and first-time or occasional vaccine recipients. The findings in literature also demonstrate that pharmacist involvement as immunisers, advocates, or both, significantly increased immunisation uptake. As an example, pharmacists administering influenza vaccine are providing a service that is highly valued by patients, improves access to immunisation, and may increase vaccination rates.²³

Regulatory requirements and policies for the provision of life-course vaccination services by pharmacists

There are still too few countries which allow pharmacists to administer vaccines to the public, and this needs to improve to obtain adequate global vaccination coverage. However, gaining regulatory or legislative approvals represents only one barrier to ensuring the pharmacy profession plays its full role in delivering a successful vaccination programme.

From a professional regulation perspective, it is essential to ensure that the pharmacy workforce is adequately trained to face new challenges and that the appropriate structures and conditions are in place to ensure the delivery of safe and quality vaccination services to patients and the community. When supported by appropriate regulatory frameworks, protocols and training, pharmacists may also prescribe vaccines, thus making the vaccination pathway simpler and more convenient, particularly for adults and older persons. Data from a FIP survey from 2022 indicate that pharmacists have prescribing rights for the DTP (diphtheria-tetanus-pertussis) booster in five countries, for meningococcal meningitis vaccine in four countries, for COVID-19 vaccines in 11 countries and for other vaccines (including influenza, non-live vaccines and yellow fever) in seven countries.¹⁹

To unlock possible pathways for the collaboration of pharmacists in vaccination strategies, regulatory frameworks need to support the development of pharmacy services in vaccination. Recognition by governments and policymakers of the roles that pharmacists can play is a key step towards including more pharmacists in vaccination strategies.

In addition to policy and regulatory reforms, appropriate investment in prevention and suitable funding models need to be in place to support and ensure the sustainability of vaccine administration in pharmacies, either by pharmacists or other healthcare professionals.^{42, 43} Being a cost-effective intervention that delivers value to individuals and societies alike, vaccines and vaccination services should be funded by health systems and third-party payers. Any financial barriers preventing equitable public access to vaccines need to be removed.²⁶ This is especially true for low- and middle-income countries and for low-income individuals.

To enable the involvement of pharmacists and pharmacy workforce in vaccination, it is fundamental to have structured training and certification programmes that support the development of the necessary knowledge and skills. In order to ensure these competencies are acquired at an early stage of the career and become an integral part of pharmacists' foundational training, it is important that they are included in undergraduate pharmacy education. This should be complemented by opportunities for continuing professional development to ensure that the pharmacy workforce can develop or upskill their competence in this area throughout their professional careers.

There are a number of essential requirements that allow pharmacists to develop vaccination-related roles:

sovereign governments, private sector foundations and corporate partners; NGOs, advocacy groups, professional and community associations, faith-based organisations and academia; vaccine manufacturers, including those in emerging markets; and research and technical health institutes.
<https://www.gavi.org/>

- Legal and regulatory frameworks and vaccine policy development;
- Competency, knowledge and skills, and educational requirements;
- Technical and professional guidelines and standard operating procedures;
- Appropriate infrastructure;
- Supply chain management for vaccine orders and procurement;
- Storage conditions and equipment;
- Equipment and material for vaccine administration and disposal;
- Equipment, material and medicines for anaphylaxis management and rescue;
- Timely access to patients' vaccination records and the ability to add data;
- Adequate funding and remuneration models to ensure the economic sustainability of vaccination services at the pharmacy;
- Vaccine safety and pharmacovigilance;
- Stakeholder engagement;
- Vaccine advocacy, communication and social mobilisation;
- Political and financial commitment; and,
- Equity of access for all people.

Education and training requirements for the provision of vaccination services by pharmacists

In order for pharmacists to be ready to practise as vaccinators and offer vaccination services upon graduation and registration, their undergraduate education and training should include basic and tailored content. This should be based on emerging needs of patients, practice and the profession within the country, and include both theoretical and hands-on training.

In countries where vaccination by pharmacists is not supported, it is still important to prepare and future-proof pharmacists because vaccination and related services go beyond just vaccine administration, as pharmacists have an important public health role.

Pharmacists are expected to acquire and maintain their competencies through continuing professional development. Building on the need to maintain competence in areas relevant to a pharmacist's area of practice, their knowledge and skills must also be acquired and updated to advance competence while setting criteria for vaccination training providers, ensuring quality immunisation and vaccination training programmes. These knowledge and skills are outlined in FIP's "Vaccination reference guide: Knowledge and skills in pharmacy education and professional development".⁴⁴

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<i>This Statement references the following FIP Statements and documents:</i>	: <i>See list of references to FIP documents below.</i>

References:

1. World Health Organization. Immunization: 2019. Available at: <https://www.who.int/news-room/facts-in-pictures/detail/immunization>.
2. International Pharmaceutical Federation. FIP Call to Action to expand the role of community pharmacies in vaccination. The Hague: [Internet]. 2020. [Accessed: Available at: <https://transformingvaccination.fip.org/call-to-action/>].
3. Largeron N, Lévy P, Wasem J et al. Role of vaccination in the sustainability of healthcare systems. *J Mark Access Health Policy*. 2015;3:10.3402/jmahp.v3.27043. [Accessed: 13 April 2023]. Available at: <https://pubmed.ncbi.nlm.nih.gov/27123188>; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4802702/>.
4. World Health Organization. Antimicrobial resistance: 2021. Available at: <https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance>.
5. Vekemans J, Hasso-Agopsowicz M, Kang G et al. Leveraging Vaccines to Reduce Antibiotic Use and Prevent Antimicrobial Resistance: A World Health Organization Action Framework. *Clinical Infectious Diseases*. 2021;73(4):e1011-e7. [Accessed: 13 April 2023]. Available at: <https://doi.org/10.1093/cid/ciab062>.
6. De Martel C, Georges D, Bray F et al. Global burden of cancer attributable to infections in 2018: a worldwide incidence analysis. *Lancet Glob Health*. 2020;8(2):e180-e90. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/31862245>.
7. Bragazzi NL. Pharmacists as Immunizers: The Role of Pharmacies in Promoting Immunization Campaigns and Counteracting Vaccine Hesitancy. *Pharmacy (Basel)*.

- 2019;7(4). [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/31817341>.
8. Wubshet BL, Tesfaye WH, Khan MN et al. Public hesitancy to COVID-19 vaccine and the role of pharmacists in addressing the problem and improving uptake. *J Pharm Pract Res.* 2021;51(6):494-500. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/35464639>.
 9. World Health Organization. Immunization coverage Geneva: WHO; 2022. Available at: <https://www.who.int/news-room/fact-sheets/detail/immunization-coverage>.
 10. Lamuda PA, Azar A, Taylor BG et al. Latent class analysis of medical mistrust and COVID-19 vaccine hesitancy among adults in the United States just prior to FDA emergency use authorization. *Vaccine.* 2023;41(16):2671-9. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/36933985>.
 11. Galagali PM, Kinikar AA, Kumar VS. Vaccine Hesitancy: Obstacles and Challenges. *Curr Pediatr Rep.* 2022;10(4):241-8. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/36245801>.
 12. Nenad Miljković. Hospital pharmacists build confidence in COVID-19 vaccines Coalition for vaccination webpage: 2022. Available at: https://coalitionforvaccination.com/news/19/hospital-pharmacists-build-confidence-in-covid-19-vaccines?utm_campaign=IMNNL&utm_source=IMNNL20220324&utm_medium=web.
 13. Helfers A, Ebersbach M. The differential effects of a governmental debunking campaign concerning COVID-19 vaccination misinformation. *J Commun Healthc.* 2023;16(1):113-21. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/36919806>.
 14. International Pharmaceutical Federation. An overview of pharmacy's impact on immunisation coverage: A global survey. The Hague: [Internet]. 2020. [Accessed: 13 April 2023]. Available at: <https://www.fip.org/file/4751>.
 15. Algérie Presse Service. Covid-19: 1,200 pharmaciens adhèrent à l'opération de vaccination 2021. Available at: <https://www.aps.dz/sante-science-technologie/127354-covid-19-1-200-pharmaciens-adherent-a-a-l-operation-de-vaccination-des-citoyens>.
 16. Baltic News Network. Latvian government allows pharmacies to carry out Covid-19 vaccination 2021. Available at: <https://bnn-news.com/latvian-government-permits-pharmacies-to-perform-covid-19-vaccination-230920>.
 17. Birsanu S-E BO-G, NANU C-A. ASSESSING LEGAL LIABILITY IN ROMANIAN 2022;70(3):557-64. [Accessed: 13 April 2023]. Available at: https://farmaciajournal.com/wp-content/uploads/art-24-Birsanu_Banu_Nanu_557-564.pdf.
 18. European Observatory on Health Systems and Policies. COVID-19 vaccine deployment: 2021. Available at: <https://eurohealthobservatory.who.int/monitors/hsrcm/allupdates/hsrcm/lithuania/covid-19-vaccine-deployment>.
 19. International Pharmaceutical Federation (FIP). Advocating expansion of the pharmacist's role in immunisation. A focus on diphtheria-tetanus-pertussis booster, COVID-19 and meningitis vaccinations. The Hague: [Internet]. 2022. [Accessed: 13 April 2023]. Available at: <https://www.fip.org/file/5137>.
 20. Nandini Sircar. UAE pharmacies to soon provide Covid-19 and influenza vaccines Khaleej Times: 2022. Available at: <https://www.khaleejtimes.com/uae/uae-pharmacies-to-soon-provide-covid-19-and-influenza-vaccines>.
 21. Romanian Ministry of Health. ORDEN No. 2.382 din 4 noiembrie 2021 2021. Available at: <https://legislatie.just.ro/Public/DetaliuDocument/248262>.
 22. Syndicat des Pharmaciens d'Officine de Tunisie. Guide de la vaccination dans les officine 2021. Available at: <https://spot.tn/?mayor=articles&id=975>.
 23. International Pharmaceutical Federation. FIP global vaccination advocacy toolkit. Supporting and expanding immunisation coverage through pharmacists. The Hague: [Internet]. 2019. [Accessed: Available at: <https://ipapharma.org/wp-content/uploads/2020/09/FIP-VaccinationToolkit.pdf>].
 24. International Pharmaceutical Federation. Building vaccine confidence and communicating vaccine value - A toolkit for pharmacists. The Hague: [Internet]. 2021. [Accessed: 13 April 2023]. Available at: <https://www.fip.org/file/5093>.
 25. Sturgis P, Brunton-Smith I, Jackson J. Trust in science, social consensus and vaccine confidence. *Nature Human Behaviour.* 2021;5(11):1528-34. [Accessed: 13 April 2023]. Available at: <https://doi.org/10.1038/s41562-021-01115-7>.
 26. Papastergiou J, Folkins C, Li W et al. Community pharmacist-administered influenza immunization improves patient access to vaccination. *Can Pharm J (Ott).* 2014;147(6):359-65. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/25364353>.
 27. Greenberg GM, Koshy PA, Hanson MJS. Adult Vaccination. *Am Fam Physician.* 2022;106(5):534-42. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/36379499>.
 28. Weinberger B. Vaccination of older adults: Influenza, pneumococcal disease, herpes zoster, COVID-19 and beyond. *Immun Ageing.* 2021;18(1):38. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/34627326>.
 29. Tak CR, Marciniak MW, Savage A et al. The essential role of pharmacists facilitating vaccination in older adults: the case of Herpes Zoster. *Hum Vaccin Immunother.* 2020;16(1):70-5. [Accessed: 13 April 2023]. Available at: <https://pubmed.ncbi.nlm.nih.gov/31369322>.
 30. International Pharmaceutical Federation (FIP). Give it a shot: Expanding immunisation coverage through pharmacists. The Hague: [Internet]. 2020. [Accessed: 18 January 2023]. Available at: <https://www.fip.org/file/4699>.
 31. World Health Organization. Behavioural considerations for acceptance and uptake of COVID-19 vaccines: WHO technical advisory group on behavioural insights and sciences for health, meeting report. [Internet]. 2020. [Accessed: 13 April 2023]. Available at: <https://apps.who.int/iris/handle/10665/337335>.
 32. Wiysonge CS, Alobwede SM, de Marie C, Katoto P et al. COVID-19 vaccine acceptance and hesitancy among healthcare workers in South Africa. *Expert Review of Vaccines.* 2022;21(4):549-59. [Accessed: 13 April 2023]. Available at: <https://doi.org/10.1080/14760584.2022.2023355>.
 33. Li C, Su Z, Chen Z et al. Trust of healthcare workers in vaccines may enhance the public's willingness to vaccinate. *Hum Vaccin Immunother.* 2022;18(7):2158669. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/36534602>.
 34. Shen AK, Tan ASL. Trust, influence, and community: Why pharmacists and pharmacies are central for addressing vaccine hesitancy. *J Am Pharm Assoc (2003).* 2022;62(1):305-8. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/34688565>.
 35. Koskan AM, LoCoco IE, Daniel CL et al. Rural Americans' COVID-19 Vaccine Perceptions and Willingness to Vaccinate against COVID-19 with Their Community Pharmacists: An Exploratory Study. *Vaccines.* 2023;11(1):171. [Accessed: 13 April 2023]. Available at: <https://www.mdpi.com/2076-393X/11/1/171>.
 36. Leidner AJ, Murthy N, Chesson HW et al. Cost-effectiveness of adult vaccinations: A systematic review. *Vaccine.* 2019;37(2):226-34. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/30527660>.
 37. Izadi R, Hatam N, Baberi F et al. Economic evaluation of strategies against coronavirus: a systematic review. *Health Econ Rev.* 2023;13(1):18. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/36933043>.
 38. Procter SR, Gonçalves BP, Paul P et al. Maternal immunisation against Group B Streptococcus: A global analysis of health impact and cost-effectiveness. *PLoS Med.* 2023;20(3):e1004068. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/36917564>.
 39. Johns Hopkins University - International Vaccine Access Center (IVAC). Methodology Report: Decade of Vaccines Economics (DOVE) Return on Investment Analysis. Decade of Vaccine Economics: 2019. Available at: <https://immunizationeconomics.org/dove-roi>.
 40. Kuster SP, Böni J, Kouyos RD et al. Absenteeism and presenteeism in healthcare workers due to respiratory illness. *Infect Control Hosp Epidemiol.* 2021;42(3):268-73. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/33239124>.
 41. Pecetta S, Nandi A, Weller C et al. Vaccines for a sustainable planet. *Science Translational Medicine.* 2023;15(685):eadf1093. [Accessed: 13 April 2023]. Available at: <https://doi.org/10.1126/scitranslmed.adf1093>.
 42. Houle SK, Grindrod KA, Chatterley T et al. Publicly funded remuneration for the administration of injections by pharmacists: An international review. *Can Pharm J (Ott).* 2013;146(6):353-64. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/24228051>.
 43. Le LM, Veettil SK, Donaldson D et al. The impact of pharmacist involvement on immunization uptake and other outcomes: An updated systematic review and meta-analysis. *J Am Pharm Assoc (2003).* 2022;62(5):1499-513.e16. [Accessed: 13 April 2023]. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/35961937>.
 44. International Pharmaceutical Federation. FIP vaccination reference guide: Knowledge and skills to support professional development and inform pharmacy education in vaccination. The Hague: [Internet]. 2022. [Accessed: 13 April 2023]. Available at: <https://www.fip.org/file/5158>.

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