

Optimising vaccination through coadministration of influenza and COVID-19 vaccines

Guidance for
pharmacists

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Colophon

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Executive summary

Vaccination is key to preventing disease and improving quality of life for people of all ages. In the past couple of years, vaccination has become an important topic on the agendas of policy makers, healthcare professionals and society overall. The recent pandemic highlighted the central role that immunisation plays as a pillar of primary health care and universal health coverage.

While vaccination against seasonal influenza has been well established for decades and is recommended in many countries on a yearly basis, particularly for older adults and other vulnerable population groups, flu vaccination coverage rates remain below the World Health Organization (WHO) recommended target of 75% of adults above 65 years of age except in a handful of nations.^{1, 2} As COVID-19 evolves into a post-pandemic phase, with multiple variants of the virus that, albeit less lethal, are highly transmissible, it will continue to affect millions around the world and to be a significant threat — just as flu is — to the health and lives of the most vulnerable members of our communities. Having access to the vaccine is therefore an important step to prevent disease and alleviate pressure on health systems.³

Coadministration of COVID-19 and influenza vaccines can provide a critical opportunity to increase protection of patients and the community against the dual impacts of the respiratory illness caused by these viruses, as highlighted by this publication. This publication explores how vaccination strategies for two important respiratory conditions — COVID-19 and influenza — can and should be considered together, combined in an effective way to improve uptake rates for both vaccines.

Vaccination for COVID-19 was one of the main contributors to the decrease of disease transmission and to bring the pandemic under control. As of 7 July 2022, there were over 550 million confirmed cases and over 6.3 million confirmed deaths. The total number of vaccine doses administered at that date was over 12 billion doses.⁴ At the onset and throughout the pandemic, pharmacists played a crucial role in ensuring continuity of care, patient education, disease testing and screening, providing critical care to COVID-19 patients as part of interprofessional healthcare teams, and leading or participating in clinical trials for COVID-19 vaccines.⁵

Regarding the influenza virus, in addition to pharmacological and non-pharmacological supportive care, flu vaccines are the mainstay intervention to prevent the morbidity associated with Influenza A and B, with vaccine effectiveness varying from season to season, but with an average of above 42% in the past 12 seasons⁶ (noting that in 2020–2021 flu vaccine effectiveness was not estimated due to low flu virus circulation during that flu season).

The influenza vaccine is one of the most common vaccines that are allowed to be dispensed and administered in community pharmacies around the world.⁷ Vaccination for seasonal influenza can be a great opportunity for community pharmacists to support national health systems' prevention strategies and contribute to increased vaccine uptake.⁸

Concern about coinfection by COVID-19 and influenza focused on the impact it could have on healthcare systems and which treatment options would be available for this condition. This combined condition was sometimes referred to as “flurona” or “flucovid”.⁹ Previously, the WHO recommended a 14-day interval between COVID-19 and any other vaccine.¹⁰ However, with further research, WHO reviewed its recommendation and now many countries are encouraging coadministration to optimise protection from vaccine-preventable diseases, to maintain vaccination rates, to decrease hospital and medical visits and to improve health services by the concurrent implementation of both programmes. This change was also based on positive evidence from quality use of medicines and public health outcomes.¹¹ Coadministration of the influenza vaccine in persons aged over six months will help reduce the prevalence of influenza symptoms that may be mistaken for symptoms of COVID-19 or other respiratory illnesses.¹²

Pharmacists can highlight the importance of vaccination to high-risk groups, as those are frequently visiting community pharmacies to access medicines and services. Pharmacies were used in several countries as places to deliver COVID-19 vaccines and to provide another extensive access point to these vaccines. Many countries also provide influenza vaccination in pharmacies.¹³ However, as many countries still do not have pharmacy-based vaccine administration, it is important to reflect on the main aspects that can facilitate its implementation in the future. Coadministration of vaccines can have a big impact on the increase in vaccination coverage rates, as it can be convenient, save patients' time and increase the probability that

people will be fully vaccinated, as they might not return for a second vaccine in situations where they are given separately.

Key messages

- Scientific evidence and WHO guidelines support that coadministration of influenza and COVID-19 vaccines with inactivated vaccines is acceptable in terms of safety and reactogenicity, as well as efficacy and immunogenicity.
- The WHO considers that “coadministration of an inactivated seasonal influenza vaccine and any dose of a COVID-19 vaccine is acceptable, given that the known risk of serious illness for adults infected with influenza virus or SARS-CoV-2 is substantial”.
- Coadministration is convenient, saves time, avoids missed opportunities and provides a safe and effective win-win for people and healthcare professionals.
- Each time a person walks into a pharmacy is an opportunity to engage in conversations about vaccination.
- Leveraging the accessibility, convenience and professionalism of community pharmacies to build confidence in vaccines, raise awareness of the importance of vaccination — especially among vulnerable groups — and ultimately to administer vaccines is an effective and powerful way of increasing vaccine uptake.
- Actively promoting the coadministration of the influenza and COVID-19 vaccines in the same visit further enhances convenience, which is a central pillar of any person-centred approach to vaccination.
- Pharmacists can highlight the importance of vaccination to high-risk groups, as these frequently visit community pharmacies to access medicines and services.
- High-risk groups for flu and COVID-19 vaccination include older adults and people with comorbidities, among other groups that pharmacists may target — in addition to getting vaccinated themselves.

Foreword

As the world slowly emerges from the recent COVID-19 pandemic and its associated restrictions, vaccination is a key topic on the agendas of policy makers, healthcare professionals and society overall. The pandemic represented a huge wake-up call with regard not only to the important part that vaccination plays in health policies for the prevention of transmissible diseases, but also to their enormous social, economic and humanistic impact. Health systems, policy makers and the public in general are now fully aware of the effect that transmissible diseases (and especially those transmitted through respiratory aerosols) can have in a world without vaccines.

This new guidance for pharmacists explores how vaccination strategies for two important respiratory conditions — COVID-19 and influenza — can and should be considered together and combined in an effective and impactful way to improve uptake rates for each vaccine. These two important conditions are especially impactful during winter seasons across the globe, and particularly for population groups who may be more exposed to the viruses or be at higher risk of suffering more severe forms of either or both diseases. This includes older adults, patients with underlying conditions (such as cardiovascular diseases, diabetes or chronic respiratory diseases, among others), pregnant persons and healthcare professionals.

Each disease spreads in similar ways and can have a big impact on the quality of life and functional ability of individuals. Likewise, each has vaccines that support a lower risk of transmission of the disease and minimise its clinical severity. However, we know that vaccination against seasonal influenza has generally failed to meet the rates recommended by the World Health Organization (WHO) and other organisations over the years. This represents a challenge for health systems, and it is critical to learn from the past to avoid repeating the same mistakes when it comes to designing long-term vaccination strategies for COVID-19.

Leveraging the accessibility, convenience and professionalism of community pharmacies to build confidence in vaccines, raise awareness of the importance of vaccination — especially among those vulnerable groups — and, ultimately, to administer those vaccines is an effective and powerful way of increasing vaccine uptake. In addition, actively promoting the coadministration of the influenza and COVID-19 vaccines in the same visit further enhances convenience, which is a central pillar of any person-centred approach to vaccination.

FIP recently conducted a survey of its member organisations that led to the publication of the report [Advocating expansion of the pharmacist's role in immunisation: A focus on diphtheria-tetanus-pertussis booster, COVID-19 and meningitis vaccinations](#). This publication provides a fresh update on the roles of pharmacists in vaccination around the world, from our [previous survey](#) on this subject in 2020. A key finding was that, out of the 36 countries that took part in the study (all countries with pharmacy-based vaccination), 20 (71%) authorise community pharmacists to administer COVID-19 vaccines, and 11 authorise pharmacists to independently prescribe these vaccines.¹⁴

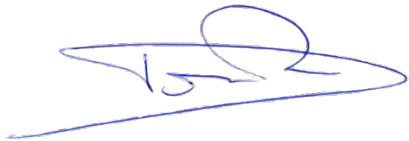
Also, after years delivering influenza and other vaccines in many parts of the world, the number of countries where community pharmacies are authorised and actively engaged in delivering vaccinations has continued to grow during the pandemic: in addition to the 36 countries identified in our 2020 report,¹⁵ at least 10 more have adopted regulatory changes to allow community pharmacies to offer vaccination services, including Algeria,¹⁶ Belgium,¹⁴ Germany,¹⁴ Italy,¹⁴ Jordan,¹⁴ Latvia,¹⁷ Lithuania,¹⁸ Poland,¹⁴ Romania,^{19, 20} Saudi Arabia¹⁴ and Tunisia.²¹

This is a significant expansion of the role of pharmacists in vaccination, and an important recognition of the contribution of pharmacies to the management of the pandemic. These figures also suggest that policy makers are increasingly counting on pharmacies to support the delivery of life-course vaccination programmes. As stated at the [FIP microsite dedicated to vaccination](#), “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”. This work has been developed for over a decade, aligned with the work the WHO and many other allied organisations around vaccination.

I invite you to become familiar with the different FIP programmes of work and publications available in the area of vaccination. The [Transforming Vaccination](#) website contains a range of resources focusing on this important topic, including intelligence from multiple regional roundtables and expert-delivered events

organised by FIP in 2020 and 2021. More recently, FIP also published the [FIP vaccination reference guide. Knowledge and skills to support professional development and inform pharmacy education in vaccination](#). This document provides an overview of the knowledge and skills that the pharmacy workforce needs to deliver a range of vaccine-related services, allowing individual colleagues to map their competence against these recommendations. This resource is also valuable for providers of undergraduate pharmacy education and continuing professional development initiatives.

I trust you will find this guidance useful to design and advocate services that combine the administration of influenza and COVID-19 vaccines to drive vaccination uptake.



Dominique Jordan
FIP President

1 Introduction

Vaccination is key to preventing disease and improving quality of life for people of all ages, as defined by the World Health Organization in its strategic policy recommendations document “Immunization agenda 2030: A global strategy to leave no one behind”.²² This landmark document highlights the central role that immunisation plays as a pillar of primary health care and an essential stepping stone towards universal health coverage. It complements the priorities highlighted in the WHO Decade of Healthy Ageing Baseline Report²³ and places a particular focus on expanding vaccination beyond infancy, adopting a life-course approach and targeting vulnerable population groups towards achieving healthy ageing for all and retaining functional ability. In some countries, progress in vaccination strategies has stalled or slowed down in recent years due to the pandemic. Therefore, urgent measures are required to recover and further improve previously achieved coverage rates and to avoid jeopardising past achievements.

Through the impact of the COVID-19 pandemic, the world was reminded of the need to use vaccines to their full potential not only to protect people and save lives, but also to improve the sustainability of health systems, to keep schools and businesses open and to allow societies and economies to thrive.

The transmission of respiratory infectious diseases, such as COVID-19 and influenza, are reduced through preventive measures such as hand and respiratory hygiene, use of masks and regular disinfection, seeking care when unwell and social distancing.²⁴ Yet, however powerful these simple measures may be in reducing widespread transmission, they are not enough to prevent each virus from infecting millions of individuals around the world and, in particular, they are not sufficient to protect the most vulnerable individuals from developing the more severe clinical forms of these diseases or even death.

The combination of the above preventive measures with vaccination provides much more effective protection against both influenza and COVID-19 and reduces the prevalence and mortality of both diseases.

While vaccination against the seasonal influenza has been well established for decades and is recommended in many countries on a yearly basis, particularly for older adults and other vulnerable population groups, flu vaccination coverage rates remain below the WHO recommended target of 75% of adults above 65 years of age except in a handful of nations.^{1,2}

On the other hand, vaccination against COVID-19 is relatively recent, and has been implemented in many parts of the world as mass vaccination programmes — depending on vaccine availability — to bring the pandemic under control, while prioritising a similar range of vulnerable population groups: older adults, people living with underlying non-communicable diseases, healthcare professionals and pregnant persons.

As COVID-19 evolves into a post-pandemic phase, with multiple variants of the virus that, albeit less lethal, are highly transmissible, it will continue to affect millions around the world and to be a significant threat — just as flu is — to the health and lives of the most vulnerable members of our communities.

It is therefore essential to develop and implement ongoing vaccination strategies that can effectively protect these groups from developing severe disease by regularly enhancing and sustaining their immune response. Raising awareness about this need in the community is essential, in parallel with building confidence in vaccines.

Pharmacists’ knowledge and effective communication skills allow them to address vaccine hesitancy and concerns, and correct any form of misinformation, thereby building trust and encouraging uptake of the appropriate vaccines by each individual.²⁵ There are numerous ways of engaging in effective conversations about vaccines. These include explaining the benefits of vaccination for the patient and their families, as well as the risks of not being vaccinated, asking about current vaccination status and framing vaccination as a public health measure, so patients can both protect themselves and contribute to the general well-being of their neighbourhoods.²⁶

In addition to this important public health role, pharmacists in an increasing number of countries are actively engaged in administering vaccines against flu and COVID-19, among other vaccines.^{14,27}

The importance of optimising vaccination opportunities was highlighted during the COVID-19 pandemic where communities saw reductions in routine recommended vaccines across the lifespan.²⁸ The relation between COVID-19 and influenza was highlighted in the past couple of years, including the protective effects vaccination can have in the expected symptoms and outcomes for those diseases.²⁹ Advancements in the area of coadministration were initially received with caution due to the unknown reactivity of the newly developed COVID-19 vaccines against the existing flu vaccines. As such, the WHO initially recommended an interval of 14 days between the administration of COVID-19 vaccines and any other vaccine.¹⁰

However, evidence now suggests¹⁰ that coadministration of COVID-19 vaccines with inactivated vaccines is acceptable in terms of safety and reactogenicity, as well as efficacy and immunogenicity. Albeit that evidence was limited, the WHO SAGE (Strategic Advisory Group of Experts) considered that the available evidence as of October 2021 was robust enough to issue recommendations and guidelines on coadministration of the two vaccines in the same session, highlighting its several benefits.¹⁰

Governments and experts have issued their own recommendations on the coadministration of a booster dose. On 26 August 2022, the United States Advisory Committee on Immunization Practices reinforced its previous recommendation to continue coadministration of flu and COVID-19 vaccines as needed.³⁰

Scientific evidence and WHO guidelines support that coadministration of influenza and COVID-19 vaccines with inactivated vaccines is acceptable in terms of safety and reactogenicity, as well as efficacy and immunogenicity.

According to the WHO SAGE, coadministration reduces the number of health care visits needed and provides timely protection against both diseases, thus potentially leading to greater uptake of both vaccines. Also, the benefits for health systems are clear, with coadministration facilitating the implementation of both vaccine programmes and decreasing the overall burden on health services.¹⁰

Coadministration is convenient, saves time, avoids missed opportunities and provides a safe and effective win-win for people and healthcare professionals.

Coadministration of COVID-19 and influenza vaccines can provide a critical opportunity to increase protection of patients and their communities from the impacts of the respiratory illness caused by these two viruses, as highlighted in this guidance. Coadministration is convenient, saves time, avoids missed opportunities and provides a safe and effective win-win for people and healthcare professionals. Chapters 2 and 3 will focus on COVID-19 and flu separately and Chapter 4 will look at the relationship between these two conditions. Chapter 5 will focus on opportunities for coadministration of the two vaccines and on how pharmacists can further contribute to global health by supporting this. Finally, Chapter 6 provides guidance on the injection technique for vaccine coadministration.

2 COVID-19

COVID-19 is caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and is an infection that in some cases can lead to a serious respiratory illness requiring intensive medical treatment. When an infected person engages in activities that may propagate the virus (such as talking or sneezing), the virus spreads via small liquid droplets.³¹ As of 7 July 2022, there were over 550 million confirmed cases and over 6.3 million confirmed deaths. The total number of vaccine doses administered at that time was over 12 billion doses.⁴ A [WHO animated video](#) provides a short overview of this condition.

Vaccination for COVID-19 was one of the main contributors to the decrease in disease transmission. Having access to the vaccine is therefore an important step to prevent disease and alleviate pressure on health systems.³ Vaccines and vaccination protocols vary across countries and change according to the development of new vaccines and collection of new data. As these changes happen, it is important that pharmacists understand the different vaccines because they will often be a source of information for patients and may also be involved in administering the vaccines where regulations allow.³² Likewise, pharmacists need to be informed because they are a valuable resource in encouraging individuals to get vaccinated and in managing misinformation.³³

At the onset and throughout the pandemic, pharmacists played a crucial role in ensuring continuity of care, patient education, disease testing and screening, providing critical care to COVID-19 patients as part of interprofessional healthcare teams, and leading or participating in clinical trials for COVID-19 vaccines.⁵ Pharmacists' clinical and medicines expertise and their wide acceptance by the population places them in a unique position to facilitate mass vaccinations thus easing pressure on health systems while attaining vaccination targets.⁵ To support pharmacists in their practice with adequate information on COVID-19, FIP has developed its [FIP COVID-19 Information Hub](#), where more information regarding the management of COVID-19 is available.

Common side effects from COVID-19 vaccines are usually mild and temporary, and include soreness, redness or swelling at the site of injection, headache (low grade), fever, nausea, muscle aches and fatigue.^{34, 35} Further details about vaccine administration, vaccine handling and management of adverse reactions can be found in the [FIP Vaccination handbook for pharmacists](#).

The development of COVID-19 vaccination programmes was a challenge for many countries, leading to unprecedented changes in vaccine manufacturing, regulatory frameworks and mechanisms to improve access to vaccines.³⁶ The 40 approved vaccines in at least 197 countries, containing the 11 WHO approved COVID-19 vaccines³⁷ as of 1 July 2022, can be found at the WHO's [COVID-19 tracker website](#). This is the confirmed list of vaccines approved by the WHO at the time of publication. However, it may continue to grow as different vaccines are developed. Further information on COVID-19 vaccines can be found at the [Centres for Disease Control and Prevention](#), the [UNICEF dashboard](#) and the [Organisation for Economic Co-operation and Development \(OECD\)](#).

Vaccine boosters should be offered based on the impact they might have in reducing severe forms of disease and the burden on healthcare systems. Some countries have recommendations for boosters or additional doses included in the primary vaccination series for the general population or individuals of certain ages or with certain medical conditions.³⁸

The frequency of additional boosters is still not clearly established, but the initial recommendations for different vaccines and countries was established at around four to six months after completing the recommended primary series of vaccinations. There are still uncertainties about the evolution of the virus and how this can impact the development of future vaccines and recommended booster doses.³⁸

COVID-19 data evolve at a rapid pace. Visualisation tools, such as the [Our world in data website](#), can be a good source of information for understanding the evolution of a wide range of epidemiological and vaccination indicators around the world.

Pharmacists were involved from the beginning of the COVID-19 pandemic in a variety of roles, including vaccine administration, which paved the way for their involvement in vaccination-related roles in several countries.

3 Influenza

Influenza, commonly known as flu, is an infectious respiratory disease caused by the influenza virus. There are an estimated one billion cases of influenza per year of which three to five million are severe, and between 290,000 and 650,000 lead to influenza-related death (0.1 to 0.2% fatality rates).^{39, 40} Hospitalisation and deaths occur mainly among high-risk groups. Influenza virus types A and B are generally responsible for pandemics and outbreaks.⁴¹ Major influenza pandemics in history include the 1918 pandemic caused by the H1N1 virus that led to 20 to 40 million deaths, the 1957 pandemic caused by A(H2N2), the 1968 pandemic caused by A(H3N2), and the recent 2009 pandemic, where outbreaks were caused by a novel A(H1N1) strain, designated as A(H1N1)pdm09.⁴² The WHO Global Influenza Strategy 2019–2030 encourages the development of stronger country capacity for influenza prevention, control and preparedness.⁴³ Annual seasonal outbreaks and epidemics occur in the winter in the temperate regions, whereas in the tropical and sub-tropical regions irregular outbreaks are reported throughout the year.⁴²

The constant mutations of the influenza virus warrant annual recomposing of the vaccine for the northern and southern hemisphere outbreaks after biannual consultations between the WHO and experts from WHO Collaborating Centres, essential regulatory laboratories, and other partners to review data generated by the WHO Global Influenza Surveillance and Response System.⁴⁴ This process involves virological surveillance at the national level, characterisation of representative specimens and virus isolates, and serological studies to determine vaccine efficacy against circulating influenza viruses. Flu vaccines can contain three or four different strains of influenza for the upcoming season, named trivalent or quadrivalent vaccines, respectively, and vaccines tailored to elicit a better immune response in the elderly are available in certain countries (higher-dose and adjuvanted vaccines).^{40, 45}

In addition to pharmacological and non-pharmacological supportive care, flu vaccines are the mainstay intervention to prevent the morbidity associated with influenza A and B, with vaccine effectiveness varying from season to season, but with an average of above 42% in the past 12 seasons^{6, 46} (noting that in 2020–2021 flu vaccine effectiveness was not estimated due to low flu virus circulation during that flu season). Flu vaccines trigger the development of antibodies against the virus, with immunity being attained two weeks after vaccination.⁴⁷ Most people recuperate from influenza in less than two weeks, but some individuals may develop complications such as bacterial pneumonia, ear or sinus infections, and worsening of chronic medical conditions such as diabetes and cardiovascular disease.⁴⁸ For example, influenza increases the risk of a heart attack by more than 10 times within the week following a flu infection.^{49, 50} Signs and symptoms of influenza include fever and chills, marked muscle or body aches, a sore throat, a runny or stuffy nose, cough (usually dry) and fatigue.²⁴ While the vaccine efficacy varies each season due to strain match and other factors, the benefit of influenza vaccination results from decreased hospitalisations and deaths, reduced secondary disease consequences and shortened illness duration. Influenza vaccination can reduce the risk of flu-triggered heart attacks by up to 45%.⁵¹

Besides being involved in vaccination, pharmacists can support the symptomatic management of influenza, tackling the disease as early as possible through testing, providing antiviral medication where applicable and preventing the progression of the disease to more severe states. Early treatment may reduce the duration of flu as well as the risk of complications that can impact special risk groups.⁵²

The influenza vaccine is one of the most common vaccines that are allowed to be dispensed and administered in community pharmacies around the world.⁷ For that reason it is important for pharmacists to understand the different vaccines that are available and how to provide information about them to their populations. The influenza vaccine is recommended seasonally and is particularly important for special risk groups that can develop serious flu complications.⁵³ These include pregnant persons at any stage of pregnancy, children aged between six months and five years, the elderly, individuals with chronic medical conditions and healthcare workers.⁴⁴

Pharmacists should understand the need to start conversations about vaccination and can use different tools to engage in such conversations. Examples include the use of empathy to understand a patient's situation and the use of questions to differentiate between various respiratory illnesses that might be circulating, whether it be COVID-19, flu, respiratory syncytial virus, a cold or allergies. Pharmacists can also clarify that some people

may still get influenza even if they are vaccinated, but it will be less severe than if they had not been vaccinated. This is an important clarification, as this could lead to vaccine hesitancy in the future.⁵⁴

Common side effects from a flu vaccine are no different from those for other vaccines and include soreness, redness or swelling at the injection site, headache (low grade), fever, nausea, muscle aches and fatigue. It is important to note that patients will not get flu from the vaccine. Influenza vaccines should be stored away from direct sunlight, at temperatures between 2 and 8°C without freezing. Further details about vaccine administration, vaccine handling and management of adverse reactions can be found in the [FIP Vaccination handbook for pharmacists](#).

Pharmacy-based interventions are successful in supporting the uptake of influenza vaccines. An overview of interventions highlighted that vaccination programmes for influenza yielded a 27% increase in vaccination acceptance compared with standard care.⁵³ As an example, in Wales, community pharmacists' involvement in influenza vaccination had a positive increase in vaccination numbers (1,568 doses to 36,238 doses between 2012–13 and 2017–18).⁵⁵ In Europe, more examples of pharmacy-based vaccination are available.⁵⁶

Information on the different types of available of vaccines can be found in the resources from the [World Health Organization](#), the [Centres for Disease Control and Prevention](#), the [European Centre for Disease Prevention and Control](#), the [Vaccine Knowledge Project](#), and [Precision Vaccinations](#).

Influenza vaccines will probably remain a constant conversation topic in pharmacies around the world, as influenza is constantly changing and adapting. Vaccination for seasonal influenza can be a great opportunity for community pharmacists to support national health systems' prevention strategies and contribute to increased vaccine uptake.⁸

4 COVID-19 and influenza compared

COVID-19 and influenza share some common features and characteristics since both affect the respiratory system and have similar transmission patterns. Respiratory viruses are transmitted via different routes, including direct and indirect contact, droplets and airborne transmission.⁵⁷ Despite these similarities, there are some characteristics that pharmacists can use for advising on the best treatment options, if available in the community pharmacy, or the best referral pathways to other healthcare professionals. As described in Table 1, some examples of differences between the two diseases include the incubation period (which is generally lower for influenza) and the onset of symptoms (which is more gradual for COVID-19).

Table 1. Comparison of the main characteristics and symptoms of flu and COVID-19^{58,59}

Note that there may be an overlap in clinical features between these infections, and patients may present with variations of these symptoms.

Characteristics of respiratory diseases	Influenza	COVID-19
Cause	Mostly caused by influenza viruses types A and B	SARS-CoV-2
Mode of transmission	Airborne respiratory droplets, skin-skin contact, saliva, touching contaminated surfaces	Respiratory droplets, skin-skin contact, saliva, touching contaminated surfaces
Affected organs	Upper respiratory tree and trachea	Lungs, kidney, brain, heart
Duration of symptoms	7 to 14 days (cough and fatigue may continue)	7 to 25 days
Onset of symptoms	Abrupt	Gradual
Incubation period	1 to 4 days	2 to 14 days
Sneezing	Sometimes	Rare
Runny or stuffy nose	Sometimes	Sometimes
Coughing	Common (may be severe; usually dry cough)	Common (usually dry cough)
Sore throat	Common	Sometimes
Fever	Common	Common
Headache	Common	Sometimes
Aches and pains	Very common (marked myalgia)	Sometimes
Chills	Common	Sometimes
Fatigue and weakness	Common	Common
Shortness of breath	No	Sometimes
Sense of smell and taste	Reduced senses	Loss of senses
Malaise, nausea and vomiting	Rare in adults, common in children	Sometimes
Diarrhoea	Rare in adults, sometimes occurs in children	Rare
Main testing options	Viral culture, serology, rapid antigen testing, reverse transcription polymerase chain reaction (RT-PCR), immunofluorescence assays and rapid molecular assays	RT-PCR test and antigen tests

The interaction between the two viruses was of special concern during the winter seasons in the southern and northern hemispheres, leading to a variety of initial studies focusing on coinfection.⁶⁰ Concern about coinfection focused on the impact it could have on healthcare systems and which treatment options would

be available. The combined condition was sometimes referred to as “flurona” or “flucovid”.⁹ To understand the prevalence of this combination, testing for both conditions was and still is common across countries. The different mechanisms that can promote the severity of infection include increased SARS-CoV-2 viral load and increased infectivity as people become more sensitive to the virus.⁶¹

With many preventive measures in place, such as the use of masks, hand washing and social distancing, the number of cases of influenza during the COVID-19 pandemic was much lower than usual.⁶² In the UK, there was a reduction of 95% in flu cases during the 2021 winter season.⁶³ Due to this reduction, the probability of an increase in flu cases in the next flu seasons is higher than in a normal season.⁶⁴ Influenza circulation remains unpredictable in terms of timing and scale of circulation. In the southern hemisphere 2021–2022 season, some countries saw an early, rapid increase in influenza circulation and others saw initial out-of-season circulation. The Australian epidemic surpassed the past five-year average influenza case detection from April to July.⁶⁵ In the northern hemisphere, an unusual pattern of flu circulation has also been observed.⁶⁶ For this reason, the WHO has advised member states to prepare for the co-circulation of influenza and SARS-CoV-2 viruses and to step-up influenza vaccination campaigns to prevent severe disease and hospitalisations associated with influenza.⁶⁷

The reduction of perception of the severity of a pandemic or disease is also related to intentions to be vaccinated and therefore it is important to transmit the message that, even if the flu had a reduced prevalence during the pandemic, the virus is still present and can cause severe diseases, especially in high-risk groups.⁶⁸ High-risk groups include people living with cardiac disease, chronic respiratory conditions, chronic neurological conditions, immunocompromising conditions or treatments, diabetes and other metabolic disorders, renal disease or haematological disorders.⁶⁹

The total number of vaccine doses administered was over 12 billion by 7 July 2022,⁴ with vaccination being the mainstay approach to prophylaxis and management of COVID-19. With increased global sensitisation efforts and campaigns aimed at increasing the uptake of the vaccine as well as initiation of booster campaigns due to outbreaks of new variants, there is an overlap in the timing of administration of the COVID-19 vaccine and the influenza season.⁷⁰

Previously, the WHO recommended a 14-day interval between COVID-19 and any other vaccine.¹⁰ However, with further research, the WHO considers that “coadministration of an inactivated seasonal influenza vaccine and any dose of a COVID-19 vaccine is acceptable, given that the known risk of serious illness for adults infected with influenza virus or SARS-CoV-2 is substantial”.¹⁰ Many countries are now encouraging coadministration to optimise protection from vaccine-preventable diseases, maintain vaccination rates, decrease hospital and medical visits and improve health services by the concurrent implementation of both programmes. This change was also based on positive outcomes from quality use of medicines and public health outcomes.¹¹

Evidence has shown that concomitant administration of influenza and COVID-19 vaccines is acceptable in terms of reactogenicity and tolerability. There was no evidence of negative immune interference for either COVID-19 or influenza vaccine.¹⁰ The COVID-19 vaccine should be coadministered with the influenza vaccine without regard to timing. However, it should be administered at a different injection site, or at least 2.5cm (1 inch) apart. The WHO recommends the contralateral limb (i.e., one vaccine injected into each arm) for coadministration to help minimise adverse events such as tenderness (70.1% on the coadministration group vs 57.6% for the placebo group) or pain (39.7% vs 29.3%) at the injection site, fatigue (27.7% vs 19.4%), and muscle pain (28.3% vs 21.4%).¹⁰

The WHO considers that “coadministration of an inactivated seasonal influenza vaccine and any dose of a COVID-19 vaccine is acceptable, given that the known risk of serious illness for adults infected with influenza virus or SARS-CoV-2 is substantial”

To date, there are four completed studies assessing the coadministration of COVID-19 and influenza vaccines. All these studies provide reassurance for the immunogenicity and safety of concomitant use and support coadministration.

Highlighting the safety of coadministration studies, Table 2 compares three different clinical trials on the concomitant administration of COVID-19 and influenza vaccines.^{70,71}

Table 2. Description of three clinical trials focusing on COVID-19 and flu coadministration

	Clinical trial 1	Clinical trial 2	Clinical trial 3
Title	Safety and immunogenicity of a high-dose quadrivalent influenza vaccine administered concomitantly with a third dose of the mRNA-1273 SARS-CoV-2 vaccine in adults aged ≥65 years: a phase 2, randomised, open-label study ⁷²	Safety and immunogenicity of concomitant administration of COVID-19 vaccines (ChAdOx1 or BNT162b2) with seasonal influenza vaccines in adults in the UK (ComFluCOV): a multicentre, randomised, controlled, phase 4 trial ⁷¹	Safety, immunogenicity, and efficacy of a COVID-19 vaccine (NVX-CoV2373) co-administered with seasonal influenza vaccines: an exploratory substudy of a randomised, observer-blinded, placebo-controlled, phase 3 trial ⁷⁰
Type of vaccines involved	High-dose quadrivalent influenza vaccine (QIV-HD) and a mRNA-1273 vaccine booster dose in older adults (Fluzone High-Dose Quadrivalent; Sanofi Pasteur; Lyon, France with a booster [third] dose of the mRNA-1273 vaccine [Moderna])	COVID-19 vaccine — ChAdOx1 or BNT162b2 Influenza vaccine — inactivated vaccines (trivalent, MF59C adjuvanted [aTIV], or a cellular-based vaccine or a recombinant quadrivalent vaccine [QIVc or QIVr]). (aTIV Seqirus QIVc Seqirus QIVr Sanofi Pasteur) Combinations administered — 129 ChAdOx1/QIVc; 139 BNT162b2/QIVc; 146 ChAdOx1/aTIV; 79 BNT162b2/aTIV; 128 ChAdOx1/QIVr; 58 BNT162b2/QIVr	COVID-19 vaccine — NVX-CoV2373 Influenza vaccine — 18–64 years: quadrivalent influenza cell-based vaccine (Flucelvax Quadrivalent; Seqirus UK, Maidenhead) ≥65 years: adjuvanted trivalent influenza vaccine (Fluad; Seqirus UK, Maidenhead)
Interval of vaccine administration	Concomitant administration of QIV-HD and mRNA-1273 vaccine, QIV-HD alone, or mRNA-1273 vaccine alone.	First dose on day 0 and second dose on day 21–28. Safety assessments on day 42–56	First dose on day 0 and second dose on day 21–28.
Age of participants	65 year or over	Over 18 years	Group 1— 18 to 64 years; group 2 — 65 years or over
Number of participants	306 participants were enrolled and randomly assigned, of whom 296 received at least one vaccine dose (100 in the coadministration group, 92 in the QIV-HD, and 104 in the mRNA-1273 group)	340 participants were randomised to concomitant administration of influenza and COVID-19 vaccine. 339 were randomised to placebo and COVID-19 vaccine.	431 participants were randomised to concomitant administration of influenza and COVID-19 vaccine. 214 were randomised to placebo and COVID-19 vaccine.
Immunological markers	Haemagglutination inhibition antibody responses to influenza A/H1N1, A/H3N2, B/Yamagata, and B/Victoria strains and SARS CoV-2 binding	SARS-CoV-2 anti-spike protein IgG assays.	Haemagglutination inhibition and SARS-CoV-2 anti-spike protein IgG assays.

	Clinical trial 1	Clinical trial 2	Clinical trial 3
	antibody responses (SARS-CoV-2 pre-spike IgG ELISA)		
Main outcomes	No safety concerns or immune interference were observed for concomitant administration of QIV-HD with mRNA-1273 booster in adults aged 65 years and older, supporting coadministration recommendations.	There were no safety concerns raised over administering BNT162b2 and ChAdOx1 in adults alongside standard dose inactivated influenza vaccines, including those with MF59C adjuvant.	The incidences of adverse events, serious adverse events, and adverse events of special interest were low and balanced between those given NVX-CoV2373, influenza vaccine, or both

Following the positive results shown after coadministration of vaccines, pharmacists should advocate and have an opportunity to be engaged in vaccine coadministration against both conditions. Over time, and as immunity builds, it is likely that COVID-19 will become endemic in different countries around the world.⁷³ This will have implications in terms of patient access to care when testing positive for COVID-19 and how COVID-19 becoming endemic will affect the influenza virus behaviour.

5 Opportunities for vaccines coadministration

The importance of coadministration of influenza and COVID-19 vaccines is linked to the influenza season coinciding with the ongoing circulation of the SARS-CoV-2 virus. Coadministration in persons aged over six months will help reduce the prevalence of influenza symptoms that might be mistaken for symptoms of COVID-19 or other respiratory illnesses.¹² In doing so, it could potentially alleviate any additional strain placed on healthcare systems.¹²

Examples from Italy⁷⁴ and Australia⁷⁵ have noted the increased uptake of the coadministered vaccines compared with that for the COVID-19 vaccine on its own. It was also observed that the decision on getting a COVID-19 vaccine might positively influence the uptake of the otherwise widely accepted influenza vaccine, especially in high-risk groups who are at risk of poor prognoses in cases of coinfection. Acceptance rates of the vaccine varied largely across the globe and depended on the demographic of the target group. Another example from the UK, using a randomised controlled trial method, concluded that the coadministration of COVID-19 and influenza vaccines can be a valuable strategy for increasing vaccination uptake against both diseases.⁷⁰

Pharmacists can highlight the importance of vaccination to high-risk groups, as these frequently visit community pharmacies to access medicines and services.

Pharmacists can highlight the importance of vaccination to high-risk groups, as these frequently visit community pharmacies to access medicines and services. The main groups at high risk and who would benefit from the coadministration of the influenza and COVID-19 vaccines are patients who are originally in the high-risk groups for influenza and COVID-19. In general, the following groups should be prioritised for vaccine coadministration:⁷⁶

- All persons aged 50 years or over;
- Adults and children who have chronic pulmonary (including asthma), cardiovascular (excluding isolated hypertension), renal, hepatic, neurologic, hematologic, or metabolic disorders (including diabetes mellitus);
- All children aged between six months and five years;
- Persons who are immunocompromised due to any cause (including but not limited to immunosuppression caused by medicines or HIV infection);
- Persons who are or will be pregnant during the influenza season;
- Children and adolescents (aged six months to 18 years) who are receiving aspirin- or salicylate-containing medicines and who might be at risk for experiencing Reye's syndrome after influenza virus infection;
- Residents of nursing homes and other long-term care facilities;
- Persons who are extremely obese (body mass index ≥ 40 for adults); and
- Healthcare personnel.

High-risk groups for flu and COVID-19 vaccination include older adults and people with co-morbidities, among other groups that pharmacists may target — in addition to getting vaccinated themselves.

This approach is data driven with the aim of reducing hospitalisations and deaths with administration of the COVID-19 primary dose while the booster dose yields greater reductions in severe disease and deaths.⁷⁷ For influenza, it is important to have the right vaccine for the right person. For both vaccines, it is important to vaccinate at the right time and dose, administer at the right site with the right technique, and ensure that this is correctly documented.⁷⁸ See Chapter 6 for details on the injection technique for vaccine coadministration.

The basic practices for coadministration, depending upon each community's COVID-19 case rates and each country's requirements, include vaccination in well ventilated and disinfected rooms, hand hygiene, use of personal protective equipment by healthcare providers, COVID-19 pretesting, use of face mask within the healthcare facilities, and proper vaccine storage, preparation, labelling and documentation. Further infection control practices during COVID-19 can include:³¹

- Scheduled appointments for the high-risk groups described above;
- Vaccination being done after testing in suspected or confirmed COVID-19 cases;
- Use of non-conventional models of vaccination such as temporary outdoor vaccination sites; and
- Combination of different vaccination schedules.

Since many countries still do not have pharmacy-based vaccine administration, it is important to reflect on the main aspects that can facilitate implementation of such a programme in the future. Pharmacies were used in several countries as places to deliver COVID-19 vaccines and provide another extensive access point to these vaccines. Many countries also provide influenza vaccination in pharmacies.¹³

The WHO considers different essential “building blocks” for the administration and co-administration of vaccines:⁷⁷

- Highest-level advocacy, policy dialogue, partner engagement and resource mobilisation;
- Evidence-informed and ethical values-based national vaccination strategies;
- Legal and regulatory frameworks facilitating vaccine deployment;
- Immunisation service delivery modalities;
- Vaccine and supply chain management;
- Human resources and security;
- Vaccination data and information management;
- Vaccine safety monitoring;
- Injection safety and waste management; and
- Demand generation, community engagement and communication.

To ensure pharmacists can be part of vaccine coadministration, the above “building blocks” need to be considered from a political and regulatory perspective. They are important considerations that national pharmacy associations should strive to include in their pharmacy-based vaccination plans to demonstrate pharmacists' value to stakeholders and political decision makers.

Each time a person walks into a pharmacy is an opportunity to engage in conversations about vaccination. Pharmacists can serve as powerful reminders for vaccine uptake and as important allies in solving questions related to vaccine hesitancy. A detailed set of strategies for engaging with patients and tackling hesitancy can be found in the FIP publication [Building vaccine confidence and communicating vaccine value — A toolkit for pharmacists](#).

Each time a person walks into a pharmacy is an opportunity to engage in conversations about vaccination.

Questions about the influenza vaccine might lead to asking about COVID-19 vaccination status and vice versa. These questions are powerful triggers to unlock a possible dialogue about flu and COVID-19 vaccine coadministration.

Ensuring that the moment a patient enters a pharmacy becomes a moment to discuss and possibly administer both vaccines might avoid future doses being missed. The convenience and safety provided by pharmacy facilities, and the well trusted pharmacists within them, provide considerable appeal for people who are thinking about receiving vaccines.

6 Vaccine coadministration technique

With regard to the technique for vaccine coadministration in the same session, Immunize.org has developed a helpful practical guide that is reproduced below by kind permission.

Acquired from <https://www.immunize.org/catg.d/p2030.pdf> on 02 September 2022. FIP thanks Immunize.org.

How to Administer Multiple Intramuscular Vaccines to Adults During One Visit

It is not unusual for adults to need more than one vaccination at an office visit. When that occurs, CDC recommends giving all needed vaccines at the same visit to reduce missed opportunities.

These vaccines commonly administered to adults* are administered via the intramuscular route:

COVID-19	Influenza
Hepatitis A (HepA)	Pneumococcal
Hepatitis B (HepB)	Tdap and Td
Human papillomavirus (HPV)	Zoster

Determine vaccines to be administered.

- ▶ Review each patient's vaccine history and determine needed vaccines (see CDC's recommended schedule of immunizations for adults at www.cdc.gov/vaccines/schedules/downloads/adult/adult-combined-schedule.pdf).

Determine which vaccines to give in separate limbs.

- ▶ Administer vaccines more likely to cause a local reaction in separate limbs, if possible. Vaccines that cause injection site pain in at least half of recipients include COVID-19, zoster, HepA, HPV, pneumococcal (PCV, PPSV), and tetanus-containing vaccines (Tdap, Td).[†]
- ▶ If administration in separate limbs is not feasible or desired, administration in the same limb, separated by at least 1" (inch), is appropriate.

Select the injection site(s) for intramuscular injections.

- ▶ Determine which vaccine(s) will be administered in each limb (see options in diagrams at right). You can administer 1, 2, or 3 injections per deltoid, spaced at least 1" apart.
- ▶ **Deltoid muscle:** Locate the central and thickest portion of the deltoid muscle – above the level of the armpit and approximately 2" below the acromion process (see diagram at right).
- ▶ **Anterolateral thigh muscle:** Locate the outer portion of the middle third of the thigh (see diagram at right).

Prepare to administer IM injections.

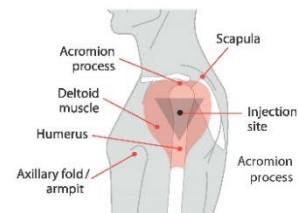
- ▶ Choose the needle gauge and length needed for the patient's age and weight (see "Administering Vaccines to Adults: Dose, Route, Site, and Needle Size" at www.immunize.org/catg.d/p3084.pdf).
- ▶ Draw up each vaccine using a separate, new needle and syringe.
- ▶ Label each vaccine syringe and clearly indicate on the label or tray the planned injection site (e.g., right arm [RA], left arm [LA], right thigh [RT], left thigh [LT]).
- ▶ Administer injection at a 90° angle (see "How to Administer Intramuscular and Subcutaneous Vaccine Injections to Adults" at www.immunize.org/catg.d/p2020a.pdf). If more than one injection is given in a single limb (arm or leg), separate the injections by a minimum of 1".

* Additional vaccines may be indicated for an adult due to missed childhood vaccinations, medical conditions, exposure risk, travel plans, or occupational risk.
[†] According to clinical trial data provided in prescribing information.

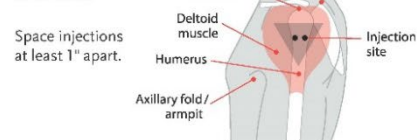
The diagrams below illustrate options for administering one, two, or three vaccinations in a single arm, spaced at least 1" apart. Additional injections can also be administered in the opposite arm.

Use anatomical landmarks to determine the injection site in the deltoid muscle (a large, rounded, triangular shape). Find the acromion process, which is the bony point at the end of the shoulder. Then, locate the injection site which will be approximately 2" below the bone and above the axillary fold/armpit.

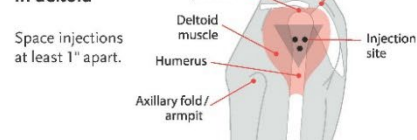
Single IM injection in deltoid



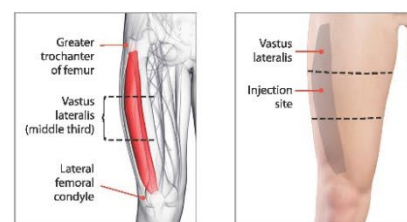
Two IM injections in deltoid



Three IM injections in deltoid



A single IM injection may also be administered in the anterolateral thigh muscle as shown below.



7 Conclusion

Both COVID-19 and influenza will continue to place a significant burden on communities and health systems around the world. Due to their presence in all communities, pharmacists can play an important role in supporting vaccination against both conditions.

COVID-19 is a recent pandemic that might eventually transform into an endemic disease. In this state it will still need to be considered an important disease and will require the use of preventive measures to mitigate its impact on communities. Pharmacists are key healthcare professionals who can reinforce the use of preventive measures and be more involved in vaccination processes, whether these are inside or outside their community pharmacies.

Influenza vaccination through community pharmacists has been delivering positive outcomes in some countries as pharmacists have got more involved with vaccination-related roles. The annual demand for influenza vaccination can be an opportunity for delivery of these vaccines from pharmacies and better outcomes regarding coverage rate. Consequent improved uptake rates can have a major impact for patients in high-risk categories, who visit pharmacies regularly.

Coadministration of vaccines can have a big impact on increasing vaccination coverage rates, as it is convenient, saves patients' time and increases the probability that people will be fully vaccinated, as they might not return for a second vaccine in situations where they are given separately. It is important that pharmacies have clear guidelines and infrastructures so that they can minimise possible errors and provide the best service they can. Further research on the coadministration of COVID-19 and influenza vaccines would only bring benefits, as there is still a need for more data on the safety and effectiveness of different combinations and different COVID-19 vaccines. However, currently available evidence supports the WHO's recommendations and guidelines for coadministration of influenza and COVID-19 vaccines because this delivers clear benefits for individuals and for healthcare systems. FIP fully supports these recommendations and encourages pharmacists all around the world to contribute to their implementation.

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