Influenza vaccination during the COVID-19 pandemic

Planning and delivering vaccination programs to protect the most vulnerable people

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IFPMA represents research-based pharmaceutical companies and associations across the globe. The research-based pharmaceutical industry's 2 million employees discover, develop, and deliver medicines and vaccines that improve the lives of patients worldwide. Based in Geneva, IFPMA has official relations with the United Nations and contributes industry expertise to help the global health community find solutions that improve global health. HPP is an independent research consultancy, working with partners across the health spectrum to drive the policy and system changes that will improve people's health.

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A related infographic is available at https://www.ifpma.org/resource-centre/why-is-flu-vaccination-so-important-during-the-covid-19-pandemic/

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Key messages

- **Given the continued impact of the COVID-19 pandemic and the unpredictability of the influenza (flu) virus, flu vaccination could be more important than ever in the 2021/22 flu season. It can protect the most vulnerable people and prevent health systems from becoming overburdened.**
- **The COVID-19 pandemic will introduce challenges that could hamper delivery and uptake of flu vaccines among priority groups.**
- **To protect the most vulnerable people during the 2021/22 flu season, when they are also at risk of contracting COVID-19, policymakers and health service planners must:**
  - **Enable convenient access to vaccines in both community and healthcare settings, with appropriate COVID-19 protection measures in place.**
  - **Use the latest evidence to ensure all priority groups, including those at risk of spreading flu to vulnerable people, are eligible for reimbursed vaccination.**
  - **Coordinate flu and COVID-19 vaccination programs to ensure flu vaccines are given in a timely manner, but not before September in the northern hemisphere.**
  - **Work with communities and advocacy and patient groups to develop clear, targeted information campaigns aimed at priority groups, which focus on overcoming complacency and clarifying the challenges associated with flu and COVID-19.**

Introduction

Effective vaccination programs are critical for protecting the most vulnerable people from the devastating impact of seasonal influenza (flu); this could be even more important in 2021/22 due to the ongoing COVID-19 pandemic. In a typical year, there are an estimated 1 billion cases of flu and up to 650,000 flu-related deaths globally.[1,2] Flu is most serious for older people, pregnant women, young children, and people with underlying health conditions;[2] many of these groups are also the most vulnerable to COVID-19.[3] Flu transmission was low during the 2020/21 flu season, with few people being infected thanks to behavioral changes intended to prevent the spread of COVID-19.[4,5] Because of this, the 2021/22 flu season may be more severe as most people have not been exposed to the flu for over a year, thereby lowering the population's natural immunity.[6]

> **There is the possibility that population-level immunity will be lower, and I think that does drive home the point that vaccinations are one way to bring population immunity back up.[6]**
>
> Dr Richard Webby, St. Jude's Children's Research Hospital, US

While flu is unpredictable and vaccine effectiveness varies each year, vaccination is always the best defense. In the US, the Centers for Disease Control and Prevention (CDC) estimates that the annual flu vaccine has averted between 39,000 and 105,000 hospitalizations, and between 3,500 and 12,000 deaths each year since 2010.[7] Population immunity will be lower in years where the vaccine is not well matched to the dominant circulating strains, but the vaccine still offers some protection that results in less severe illness among those who were vaccinated but still got the flu.[8,9]

For the 2021/22 flu season, vaccination programs and policies must be adapted to address the challenges presented by the ongoing COVID-19 pandemic. The continued threat of COVID-19, in conjunction with rolling out the COVID-19 vaccine, will challenge the effective delivery of flu vaccination programs. It will therefore be even more important to ensure that the flu vaccine is available and accessible for all priority groups – and that it is given in the autumn. This may require careful planning and coordination with COVID-19 vaccination programs, especially in countries where official guidance recommends a gap between delivering the two vaccines.

This report aims to support policymakers, health service planners and other key stakeholders in the planning and delivery of the 2021/22 flu vaccination program. We first describe the unique challenges to preventing flu during the COVID-19 pandemic and define priority groups for vaccination. Based on our review of peer-reviewed and gray literature, we then present four policy priorities for addressing those challenges so that the most vulnerable people in our society are protected from flu during the 2021/22 season.

What COVID-related challenges could affect the 2021/22 flu season?

The concurrent circulation of both the flu and COVID-19 could be far deadlier and more damaging to healthcare systems than a typical flu season. The potential impact of two serious respiratory viruses circulating at once on already strained healthcare systems is of significant concern; a severe flu season alone can overburden healthcare systems, resulting in excess deaths.[10 11] While co-infection is rare, data from the UK suggest that people with both diseases are more than twice as likely to die as those who only have COVID-19.[12 13]

> **There should be measures to ensure that the impact of flu and coronavirus is limited. If they both come up at the same time, health systems could be saturated again.**[14]
>
> Dr John McCauley,
> Francis Crick Institute, UK

The COVID-19 control measures that helped to prevent flu from circulating in 2020/21 may mean lower population immunity this year, leaving many more at risk of serious illness or even death. During the 2020/21 flu season, COVID-19 control measures such as social distancing and national lockdowns were in place around the world, limiting contact between people and slowing the spread of flu. In addition, flu vaccination rates were higher than ever in some countries, with COVID-19 dominated headlines ramping up people's fear of contracting a disease .[15-17] These measures resulted in a historically mild flu season. In the northern hemisphere, levels of flu dropped quickly in March 2020, soon after social distancing measures were introduced, and the flu season ended approximately six weeks earlier than in a typical year.[18] Low levels were maintained through the subsequent flu seasons in both the northern and southern hemispheres.[4 5] While part of the population usually have their immunity to flu boosted through exposure to the virus, experts are concerned that this has not happened since early 2020. This may mean that a larger proportion of the population will be susceptible to flu as COVID-19 restrictions are removed and the 2021/22 flu season begins in winter.[5 6]

Low levels of flu may lead to complacency about getting the vaccine. As the number of flu cases remains low and public attention is focused on COVID-19, experts warn that the public must not become complacent about flu.[20-22] Data from the southern hemisphere suggest that demand for the flu vaccine in 2021 could be lower than it was during the 2020/21

season. In May 2021, Australia saw a significant decline in flu vaccinations compared with the previous year; less than 50% of frontline workers received the vaccine (down from 89% in 2020) and only 66% of people over 65 were vaccinated against flu, compared with 89% in 2020.[23 24] Public awareness efforts were needed to increase uptake, which eventually reached levels similar to 2020, with 90% of people over 65 receiving the flu vaccine by August 2021.[25] However, this decline does not reflect expected demand everywhere – a UK-based pharmacy chain has seen a record number of people sign up to receive notifications when flu vaccination appointments become available. As of mid-June 2021, the pharmacy received 85,000 sign-ups, compared with 54,000 in 2020[26] (although it should be noted that the UK consistently achieves higher flu vaccine uptake than most countries,[27] and may not be representative of international attitudes).

> **With low-level population immunity, that could bring about more cases. We could see more pediatric deaths and (…) a rise in cases within the whole community.**[19]
>
> Professor Scott Hensley,
> University of Pennsylvania, US

COVID-19 vaccination programs may present a challenge to delivering the flu vaccine at the right time to protect the most vulnerable people. The flu vaccine is most effective when it is given in the autumn – early enough to induce immunity before the virus begins to circulate widely, but not so early that immunity will diminish before the end of the flu season.[28 29] In 2021, with many countries recommending a gap between delivery of COVID-19 vaccines and other vaccinations, it may be difficult to achieve optimal timing for delivering flu vaccines.[30-34] In New Zealand, the Ministry of Health recommends that people who have received both COVID-19 vaccine doses – at least three weeks apart – wait two weeks before getting the flu vaccine.[35] Without careful planning, this type of schedule could prevent some people from getting the flu vaccine within the preferred time frame. Providing the two vaccines through separate programs, and often in different locations, also requires more effort from people to get the vaccines. In addition, some countries' guidelines highlight the possibility that requiring a gap between vaccines could result in delayed or missed vaccinations, particularly among vulnerable or hard-to-reach groups.[30 31]

Box 1. Priority groups for flu vaccination

Five groups are prioritized for flu vaccinations and in 2021 many of them are also at high risk of contracting COVID-19.

- **People over 65.** Older people are at particularly high risk of becoming critically ill and dying from both flu[36 37] and COVID-19.[38] The timing of vaccination is especially important for older people as their immunity has been shown to decline over the course of the flu season because of age-related changes in immune system function.[39] If older people have the flu vaccine too early, they could get the disease later in the same season.[28 29]

- **People with underlying conditions.** Most people who require hospital treatment for flu have at least one underlying condition, which also puts them at greater risk from COVID-19. In the US, 93% of adults and 55.5% of children hospitalized for flu in 2018/19 had an underlying condition, most commonly diabetes or asthma.[40] Similarly, certain chronic conditions put people at increased risk of hospital admission with COVID-19.[41] As both flu and COVID-19 are respiratory viruses, the groups at risk are almost identical and include people with lung disease, heart disease, diabetes, obesity and a weakened immune system.[42-44] Importantly, risk factors for the severe effects of flu are far more prevalent in people aged 65 and over than in younger people.[45]

- **Health and care workers.** It has been estimated that as many as one in four healthcare workers is infected with flu during a mild season[46] – and the impact on services can be severe.[47] This is particularly concerning for the 2021/22 season. The World Health Organization's Strategic Advisory Group of Experts on Immunization suggests that health workers should be the highest priority group for flu vaccinations to prevent workforce absenteeism during the ongoing COVID-19 pandemic.[47]

- **Pregnant women.** Both pregnant women and their babies are at increased risk of severe complications from flu.[48] Multiple studies have shown that rates of morbidity, mortality, and hospitalizations are significantly higher in pregnant women with flu than in non-pregnant women. While it is rare that the virus is transmitted from mother to fetus, flu infection during pregnancy has been linked to miscarriage, stillbirth and a range of adverse birth outcomes.[48]

- **Babies and young children.** Their risk of catching flu is heightened, primarily because they have never been exposed to the virus.[19] With low levels of flu circulating since early 2020, there will be more children than ever without natural immunity, making them more likely to catch and spread the virus.[49] Babies and children under five years of age are also at risk of severe complications (e.g. pneumonia) and even death from flu.[50]

What should policymakers do to protect the most vulnerable people from flu in 2021/22?

To ensure the best protection for priority groups during the COVID-19 pandemic, flu vaccination programs should be planned using strategies that address four key policy areas: access, reimbursement, timing, and communication.

Convenient access

Enable convenient access to the flu vaccine in both community and healthcare settings that are also COVID-19 safe.

Opportunistic flu vaccination during routine healthcare appointments can increase uptake among priority groups, including people who are most vulnerable to COVID-19. Many individuals who fall into the priority groups for flu vaccination are likely to access healthcare through a primary healthcare facility, hospital, or pharmacy. For them, being offered the vaccine during an existing appointment is convenient and carries the additional benefit of personal recommendation from a trusted health professional. Multiple studies have found that pregnant women are more likely to accept the flu vaccine if it is recommended by their healthcare provider,[51-53] and there have been similar findings in people with chronic conditions.[54-56] Opportunistic flu vaccination could be incorporated into a range of existing healthcare services for priority groups, such as routine check-ups or vaccination appointments for children, and antenatal appointments, or routine examinations in primary or secondary care for people with chronic conditions. This could be especially valuable for older people or people with chronic conditions, who are also at increased risk from COVID-19. Personal communication in advance of these appointments could further bolster vaccination rates, as was done using text messaging in the US (*Case study 1*).[57]

Delivery of flu vaccines in community settings makes vaccination convenient and likely increases uptake. Many countries have made flu vaccinations available in pharmacies, which has improved uptake during normal flu seasons.[59-61] When pharmacy-based flu vaccinations were being introduced in parts of Canada, uptake was consistently higher in provinces that offered the service than in those that did not.[61] Along with other healthcare professionals, pharmacists are among the most trusted sources of health information in Europe,[62] making them ideally placed to raise awareness and administer vaccinations.[63] In addition to pharmacies, both an in-home

Case study 1. Opportunistic vaccination in primary care with pre-appointment text messaging

A study of 48,688 people in Pennsylvania, US, tested the impact of sending text messages to increase flu vaccine uptake during routine primary care visits.[58] The study team developed 19 different messaging strategies, which involved one or two messages sent at varying intervals and with different styles of message.[57] One strategy involved a single text message reminding the recipient to ask for the 'flu shot' at their appointment while another involved two messages – sent two days apart – asking the recipient to watch a short video and answer questions about the vaccine.[58]

In the usual care group, which received usual appointment reminders but did not receive any vaccine-specific messages, 42% of people got the vaccine during their routine appointment.[57] Six of the trial messaging strategies yielded significantly higher uptake than the usual care group, and none of the messaging strategies led to reduced uptake. The most effective strategy, which resulted in an increase of approximately 11% in uptake, sent one message 72 hours before the appointment stating that a vaccine was available, and another message 24 hours ahead stating that a vaccine had been reserved for the appointment.[57] Overall, messages that said the vaccine was already reserved as well as messages that matched the tone and style that people would expect to receive from their healthcare provider had the greatest impact on uptake.[57]

program in Australia[64] and a school-based program in England[65] have also been effective at improving flu vaccination uptake in children. During the COVID-19 pandemic, vaccinations given in community settings may be easier to access than, for example, a primary care appointment and can also take pressure off other health services.[63]

Whether vaccines are delivered in healthcare or community settings, it is important that all recommended COVID-19 control measures are observed. Precautions such as wearing face coverings and social distancing may be appropriate for preventing the spread of the virus. People with suspected or confirmed COVID-19 should not attend an immunization appointment, but should wait until after their isolation period ends, adhering to rules set out in local guidelines.[66 67]

> **COVID-19 made it more difficult for many people to access healthcare and people have found it easier to reach the pharmacy than their GP practice or hospital. Especially during lockdowns, pharmacists have played a key role in increasing vaccine coverage.[63]**
>
> Ilaria Passarani, Pharmaceutical Group of the European Union

Reimbursement for all priority groups

Use the latest evidence to ensure all priority groups, including those at risk of spreading flu to the most vulnerable people, are eligible for reimbursed vaccination.

The flu vaccine is often reimbursed for priority groups, and this has been shown to improve uptake. In many countries around the world, including France,[68] the UK,[69] Italy,[70] Chile,[71] and Australia,[72] seasonal flu vaccinations are fully reimbursed for vulnerable people. There is evidence that reimbursement policy has a meaningful impact on vaccine uptake among priority groups. In the Republic of Ireland, for example, the flu vaccine is only reimbursed as part of a means-tested healthcare scheme. One study found that people who were enrolled in the scheme were nearly twice as likely to have the vaccine as those who were not, independent of age and chronic disease.[73] In Australia, expanding reimbursement for the flu vaccine to include children resulted in increased coverage among children and other groups (*Case study 2*).[74]

It may be appropriate to expand reimbursement for flu vaccines more widely to better protect those at risk from both flu and COVID-19, and to support the continued functioning of key services. With the onset of COVID-19, flu vaccination programs in some countries were expanded to additional groups for the 2020/21 season.[75] Scotland extended its program to include: general practitioners; dental and optometry staff; community pharmacists; laboratory staff working on COVID-19 testing; teachers; prison populations and officers; secondary school pupils; and all 50- to 64-year-olds. This was done to maintain key services, reduce the transmission of flu and protect more people who were vulnerable to both flu and COVID-19.[76] The same groups will be eligible for the flu vaccine in the 2021/22 season.[76]

Case study 2. Reimbursing flu vaccines for children

Although children under five years of age are at increased risk of becoming severely ill from flu, vaccine coverage of this group has historically been low in Australia.[74] In 2018, most jurisdictions began fully reimbursing the flu vaccine for children under five.[74]

An analysis of data collected between 2014 and 2019 showed that, in 2018, the average rate of children who received the flu vaccine significantly increased in jurisdictions that had introduced the new reimbursement policy. In comparison with the average rate of vaccinations from the previous four years,[74] the increase was between 2.7- and 4.2-fold.[74] There was also a significant increase in uptake among older children (aged 5 to 17) and among adults under 65 who had a child in their household,[74] suggesting that taking young children to get the vaccine encouraged carers and other household members to do the same.

Optimal timing

Plan vaccination programs to achieve optimal timing of flu vaccines while taking COVID-19 vaccine schedules into account.

Given the additional threat posed by COVID-19 in 2021, it is particularly important that flu vaccines are given in the autumn to maximize protection. It takes around two weeks to build up immunity to flu following vaccination, making it all the more important for people to be vaccinated before the virus begins to spread widely.[28] Ideally, the vaccine should be given in the autumn months.[28 77] However, as immunity can wane over time, especially in older people, vaccines should not be given too early.[78] In mid-2021, the US CDC updated its flu policy to state that the vaccine should not be given during July and August, unless this is the only option.[78] There are a few exceptions, such as women in the third trimester of pregnancy and children, who may receive the vaccine as soon as it becomes available.[78] For the general population, however, policymakers and health service planners should ensure that flu vaccines are not made available for the general public before September (in the northern hemisphere). Particularly for the 2021/22 season, the flu vaccine should be available throughout the winter months to maximize uptake. [78]

As COVID-19 vaccines are rolled out across the world, service planners must ensure that they are compatible with flu vaccinations. Australia, Brazil, and New Zealand are among countries that have published guidance outlining a recommended time gap between receiving vaccines for COVID-19 and flu (or any other vaccinations).[30-34] Recommended gaps range between 7 and 14 days so any side effects can be clearly attributed to the correct vaccine. Some countries state that the gap may be shorter, or that a flu vaccine may be administered at the same time as a COVID-19 vaccine, to avoid delayed or missed vaccinations.[30 31] Guidance in the US was updated in May 2021 to state that no time gap is necessary between the COVID-19 vaccines and any other vaccine.[79] Policymakers and health service planners should use the latest available evidence to determine the appropriate timing of the two vaccines, and ensure that services are organized so the most vulnerable people can receive both COVID-19 and flu vaccines in a timely manner.

Tailored communication

Support the development and delivery of targeted communication campaigns that address the unique challenges associated with COVID-19.

Population-wide communication campaigns do not always resonate with the needs and attitudes of specific groups, including people at increased risk from flu and COVID-19. There is a wide range of factors that influence vaccine uptake and more targeted messaging could help to address some of these. Low perceived risk from flu seems to be a common reason for not getting the vaccine among priority groups, including healthcare workers, older people, and those with chronic conditions.[80-84] Among ethnic minorities – who are less likely to get the flu vaccine,[85 86] and are also at higher risk of becoming seriously ill from both flu[86 87] and COVID-19[88] – trust appears to be a key factor affecting uptake[89] and is an issue that is not usually addressed through general messaging. A range of attitudes and beliefs, which vary by context, may be affecting vaccine uptake and must be taken into consideration when developing promotional materials.

Dissemination strategies should target priority groups by using relevant communication channels and addressing specific needs. While mass information campaigns that use the internet, leaflets or posters have a broad reach, these channels may not be accessible to certain groups, such as older people, those without a reliable internet connection, or those who speak different languages.[90 91] In addition, some people may value the opportunity to ask questions or get advice from somebody they trust, such as a healthcare professional or a member of their own community.[91] Therefore, it may be necessary to find new ways of communicating critical information about flu vaccination and tailor it to priority groups.[63] It is also important to ensure that messaging is clear and appropriate for the target audience's level of health literacy.[90]

> **It is important to adapt information to different target groups, and to find new channels to reach the most difficult to reach.[63]**
>
> Ilaria Passarani, Pharmaceutical Group of the European Union

Policymakers should work alongside community leaders and patient groups to develop and deliver tailored messaging that explains why flu vaccination is so important this year. Extensive research has found that strategies that are tailored to the specific concerns of target groups are most effective at increasing both knowledge and vaccine uptake.[92]

Experts agree that vaccine communication strategies should:

- address community-specific concerns
- tailor messaging to the intended audience
- use a range of dissemination channels.[90 93]

This may be best achieved by engaging with members or leaders of specific communities to co-develop and deliver messaging that promotes the uptake of the flu vaccine. During the 2020/21 flu season, this approach was embraced by the International Vaccine Access Center in its work with the Black community in Baltimore, US (*Case study 3*).

Case study 3. Community-led vaccine promotion

Vaccine uptake tends to be disproportionately low among ethnic minority groups in the US.[85 86] One strategy used to communicate health-promoting messages with Black Americans is to engage with trusted community institutions, such as barber shops and churches.[94 95] For example, Reverend Dr. Terris A. King, Pastor of Liberty Grace Church of God in Baltimore, has incorporated health messaging into his sermons for years. Since the beginning of the COVID-19 pandemic, Rev. King has used his position to inform and educate members of his congregation on virus control guidelines, and build vaccine confidence among the community.[95]

During the 2020/21 flu season, Rev. King collaborated with the International Vaccine Access Center to run sessions where community members could ask questions about vaccines in a safe and comfortable environment.[96] The centre also partnered with other organizations trusted by the Black community in Baltimore to deliver vaccination clinics and conduct "active listening sessions". The sessions enabled community members to ask questions about vaccines and co-create a broad range of educational materials, such as video clips and "journey maps", to explain the process from signing up to getting a vaccine.[96]

Conclusion

An effective vaccination campaign for the 2021/22 flu season is essential for avoiding the potentially devastating double burden of flu and COVID-19 on communities and healthcare systems. COVID-19 presents a number of unique challenges to policymakers and those planning flu vaccination programs, which require us to look at traditional, evidence-based strategies for vaccine delivery through a new lens. By doing so, we can respond quickly and effectively as we approach an unpredictable and unprecedented flu season. To maximize flu vaccine uptake during the COVID-19 pandemic, policymakers must ensure that flu vaccines are:

- conveniently accessible in COVID-safe settings
- fully reimbursed for priority groups
- given during the autumn
- promoted using approaches tailored for specific populations.

By focusing on these priorities, policymakers and those planning flu vaccination services can work with other stakeholders to minimize the potentially devastating result of seasonal flu on individuals and healthcare systems which are already struggling with the impact of COVID-19.

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