Supporting pharmacists in vaccination communication

A toolkit for pharmacists

2026

FIP Development Goals

International Pharmaceutical Federation

Colophon

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1 Introduction

1.1 Background

Vaccination remains one of the most effective public health interventions for preventing infectious diseases and reducing morbidity and mortality rates throughout all stages of life across all populations. Yet, despite its proven effectiveness, adult vaccination coverage varies considerably across vaccines and countries, often remaining below recommended public health targets.[1]

Existing literature demonstrates that recommendations from healthcare providers are among the strongest predictors of vaccine acceptance and uptake.[2, 3] A systematic review and meta-analysis examining 59 studies involving over 265,000 participants found that individuals who received a healthcare provider recommendation were significantly more likely to initiate vaccination compared to those who did not, with initiation rates increasing from approximately 24% without provider recommendation to around 60% when a recommendation was given.[2] Provider recommendations were also linked to higher vaccine completion and follow-through.[2] Similarly, other studies have identified provider recommendation as a key behavioural intervention that increases vaccine uptake.[3-5] Interventions that directly facilitate behaviour, such as reminders, default appointments, standing orders, provider recommendations, and vaccination mandates, are the most effective at increasing vaccination coverage.[5] Healthcare providers therefore play a critical role not only in delivering vaccines but also in shaping public attitudes and confidence in vaccination programmes.

Among healthcare providers, pharmacists play an increasingly important role in vaccination programmes and public health communication. Community pharmacists are highly accessible healthcare providers who contribute to improved vaccine accessibility, particularly in community settings where pharmacies often offer extended hours, convenient locations, and direct patient contact. A systematic review has shown that vaccination coverage increases when pharmacists participate in immunisation programmes, whether acting as vaccine educators, facilitators, or administrators.[6] As pharmacy-based vaccination continues to expand globally, pharmacists are becoming key contributors to national immunisation strategies and public health initiatives.

Effective communication is therefore central to pharmacists' capacity to support vaccination uptake. Conversations about vaccines may involve addressing concerns, correcting misinformation, providing clear and evidence-based recommendations, and collaborating with other healthcare professionals. Structured communication approaches and practical guidance can help pharmacists navigate these conversations more effectively while maintaining trust and promoting informed decision-making.

This toolkit has been developed to support pharmacists in their communication role within vaccination programmes. Building on evidence that healthcare provider recommendation is a key driver of vaccination uptake, it focuses on strengthening pharmacists' capacity to communicate effectively about vaccines with different audiences, including patients, the public, and other healthcare professionals with whom they collaborate. The key areas of vaccination communication pathways are summarised in Figure 1.

The toolkit also aligns with FIP Development Goal 16 on Communicable Diseases, which emphasises expanding the role of the pharmacy workforce in the prevention, surveillance, and management of communicable diseases. By offering structured communication guidance for conversations about vaccination, pharmacists can support broader public health efforts to reduce the burden of communicable diseases.

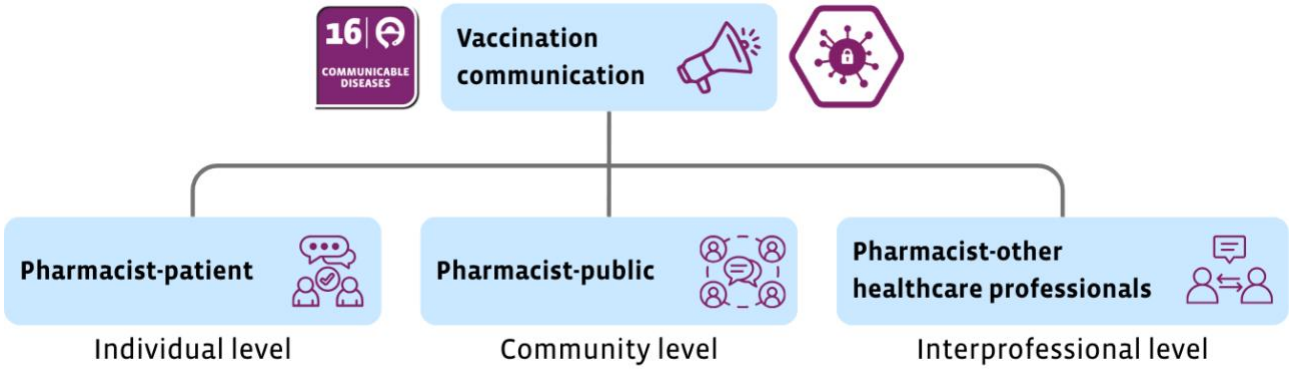

Figure 1: Key areas of vaccination communication pathways

1.2 Purpose of the toolkit

This toolkit aims to support pharmacists in effectively communicating about vaccination with patients, the public, and other healthcare professionals. Recognising that recommendations from healthcare providers are among the strongest predictors of vaccine uptake, the toolkit aims to provide structured communication guidance to promote vaccine confidence and uptake through clear, evidence-based recommendations.

An infographic has been developed to highlight the key communication pathways and strategies. It can be accessed via the following link: https://www.fip.org/file/6514.

2 Population groups eligible for vaccination

2.1 Population eligibility worldwide

FIP has monitored pharmacists' involvement in vaccination services through its multinational needs assessment and surveillance programme (MNAP). Global surveys have been carried out in 2016, 2019, and 2024, with data provided by FIP member organisations. The results were published in the 'Leveraging pharmacy to deliver life-course vaccination: An FIP global intelligence report', with a publicly available executive summary.[7]

Pharmacy-based vaccination (PBV) services are currently established in 56 countries.[7] Of these, 44 countries report the authorisation to administer vaccines to multiple population groups, as illustrated in Figure 2. These include babies and children (0-11 years), adolescents (12-18 years), adults (above 18 years), older adults (above 65 years), and other specific population groups such as pregnant women.[7] However, the eligibility of these groups varies considerably depending on national policies, regulatory frameworks, and scope of practice.[8]

Figure 2: Population groups that can be vaccinated at pharmacies[7, 8]

Across countries, PBV services most commonly target adult and older adult populations, with pharmacists widely authorised to administer vaccines such as influenza and COVID-19 to these groups. Vaccination services for older adults also include vaccines specifically targeting ageing populations, such as shingles or respiratory syncytial virus (RSV).[7]

In several countries, specifically 21 of the 56 countries with PBV services included in the survey, pharmacists are authorised to vaccinate adolescents, and the eligibility may begin at a minimum age defined by national regulations, commonly between 10 and 16 years.[7]

By contrast, the vaccination of babies and younger children in pharmacies remains less common, with only 16 countries among those surveyed authorising pharmacists to vaccinate this population group. In these settings, pharmacists may administer a broader range of vaccines across the life course, including influenza, COVID-19, pneumococcal, Tdap, HPV, hepatitis B and meningococcal vaccines, among others.[7]

The findings further suggest that PBV services often begin by targeting adult populations and progressively expand to include adolescents and younger children as regulatory frameworks, scope of practice, and health system integration evolve.[7]

2.2 Age-based population groups

Age is one of the criteria used to determine eligibility for vaccination across the life course. National immunisation programmes therefore commonly organise vaccination strategies according to age-based population groups, including infants and children, adolescents, adults, and older adults.
To support national immunisation programme planning, the World Health Organization (WHO) provides guidance on recommended routine vaccines across the life course.[9] These recommendations assist countries with vaccination

schedules that protect individuals from early childhood through older age.[9] While national schedules may vary depending on local epidemiology and health system priorities, the following overview from WHO summarises commonly recommended vaccines for each age group.

2.2.1 Infants and children

Routine childhood immunisation programmes typically include birth doses, primary series, and booster doses to establish and maintain immunity. Table 1 outlines WHO's recommendations for vaccines administered during childhood:[9]

Table 1: Vaccines administered during childhood

Vaccine	Schedule/key information
RSV (respiratory syncytial virus)	A single dose maternal vaccination in the third trimester and/or one dose of long-acting monoclonal antibody to the newborn at birth.
BCG (Bacille Calmette–Guérin)	A single dose at birth; also recommended for older children, adolescents, and adults from settings with high incidence of TB and/or high leprosy burden. For HIV-infected individuals, including children and women, additional considerations apply.
Hepatitis B	Three or four doses starting at birth. The birth dose should be followed by 2 or 3 additional doses to complete the primary series.
Polio	Between 2–6 doses depending on vaccine type and schedule (at least two doses of IPV and three doses of bOPV); local epidemiology must be considered.
DTP-containing vaccines (diphtheria, tetanus, pertussis)	A primary series of three doses of DTP-containing vaccine and two childhood boosters at 12–23 months and 4–7 years.
Haemophilus influenzae type b (Hib)	Three primary doses without a booster (3p); two primary doses plus a booster (2p+1); and three primary doses with a booster (3p+1). Local epidemiology must be considered.
Pneumococcal conjugate vaccine (PCV)	A three-dose schedule administered either as 2p+1 or as 3p+0, starting as early as six weeks of age.
Rotavirus	Two or three doses depending on vaccine product; not recommended for children >24 months of age.
Measles, mumps, rubella (MMR)	Two doses. The minimum interval between the first and second dose is four weeks.
Varicella	Two doses; can be administered concomitantly with other vaccines. Unless given together with other live viral vaccines (measles, MR, MMR), it should be administered at a minimum interval of 28 days.
Seasonal influenza (inactivated vaccine)	Children aged 6 months to 8 years should receive two doses at least four weeks apart, followed by one dose annually for revaccination.

2.2.2 Adolescents

Table 2 outlines WHO's recommendations for vaccines administered during adolescence:[9]

Table 2: Vaccines administered during adolescence

Vaccine	Schedule/key information
Hepatitis B	Three doses for adolescents at highest risk of acquiring hepatitis B virus (HBV).
DTP booster (Td or DT)	One booster recommended at 9–15 years to maintain immunity to diphtheria and tetanus.

Vaccine	Schedule/key information
Rubella	One dose for adolescent girls and women of reproductive age if not previously vaccinated.
Human Papillomavirus (HPV)	One or two doses, primarily for girls 9–14 years before they become sexually active. For pregnant women and immunocompromised or HIV-infected individuals, additional considerations apply.
Varicella	For catch-up vaccination in adolescents, a two-dose schedule of varicella vaccine should be considered.
Seasonal influenza	One dose from age ≥9 years, followed by one dose annually for revaccination.

2.2.3 Adults and older adults

Vaccination in adulthood and older age plays a key role in preventing severe disease, complications, and mortality, particularly among individuals with underlying health conditions or weakened immune systems. Table 3 outlines WHO's recommendations for vaccines administered to adults and older adults:[9]

Table 3: Vaccines administered to adults and older adults

Vaccine	Schedule/key information
Hepatitis B	Three doses for adults at highest risk of acquiring hepatitis B virus (HBV).
Rubella	One dose for adolescent girls and women of reproductive age if not previously vaccinated.
Pneumococcal	Recommended in older adults or risk groups, depending on vaccination programmes at the national level.
Shingles	Recommended for older adults to prevent herpes zoster and related complications.
Varicella	For catch-up vaccination in adults, a two-dose schedule of varicella vaccine should be considered.
Seasonal influenza	One dose annually for revaccination.

2.2.4 Regional or risk-based vaccines

Some vaccines are recommended for these age groups depending on geographic region, travel, occupational exposure, or specific health risks. These may include vaccines against:[9]

- Japanese encephalitis
- Yellow fever
- Tick-borne encephalitis
- Typhoid
- Cholera
- Meningococcal
- Hepatitis A
- Rabies
- Dengue
- Malaria

Building on these regional or risk-based vaccines, Muhib and colleagues highlight subnational vaccination strategies, which are a form of risk-based approach that focus on differences in disease risk within a country by targeting vaccination only in areas where populations are at higher risk, rather than implementing nationwide programmes.[10] They are particularly relevant when disease distribution is uneven and varies across regions. These strategies require consideration of factors such as local disease burden, outbreak risk, access to treatment, and cost-effectiveness.[10] By

aligning vaccine delivery more closely with localised patterns of risk, subnational strategies can improve vaccine equity by prioritising populations that are most vulnerable.

2.3 Special-risk population groups

Certain population groups are more vulnerable to vaccine-preventable diseases due to underlying health conditions, physiological factors, or increased exposure to infectious agents. These individuals may experience higher risks of complications, hospitalisation, or disease progression, making vaccination an important preventive measure. Identifying these individuals may help ensure that appropriate vaccinations are recommended in a timely manner.

The population groups highlighted in this section are informed by FIP's resource Vaccination of special-risk groups: A toolkit for pharmacists.[11] The publication identifies several groups that may benefit from targeted vaccination efforts and provides practical guidance to support pharmacists in improving vaccination uptake among these populations.[11]

2.3.1 Individuals living with chronic respiratory diseases

Chronic respiratory diseases (CRDs), including asthma, chronic obstructive pulmonary disease (COPD), pulmonary hypertension, and occupational lung diseases,[12] are characterised by airway narrowing and increased mucus production that impair normal respiratory function.[11] Individuals with CRDs are particularly vulnerable to respiratory infections because viral pathogens such as influenza, rhinovirus, respiratory syncytial virus, and SARS-CoV-2 can trigger disease exacerbations and accelerate disease progression.[12]

Lung function is already compromised in these individuals. Recovery from respiratory infections may be more difficult and severe complications may occur, including hospitalisation or death.[13] In addition, severe infections may cause permanent lung damage, which can further worsen long-term respiratory health and increase susceptibility to future illnesses.[14]

Vaccination is therefore a critical preventive strategy for individuals with CRDs, helping to reduce the risk and severity of infections, minimise disease exacerbations, and help maintain lung function and quality of life.[12]

2.3.2 Individuals living with cardiovascular diseases

Cardiovascular diseases (CVDs), including conditions such as myocardial infarction, stroke, heart failure, atrial fibrillation, and peripheral arterial disease, are the leading cause of mortality worldwide.[15] Individuals with CVDs are particularly susceptible to complications arising from infectious diseases, as infections can trigger systemic inflammation and increased cardiovascular stress.[15]

These physiological responses may precipitate acute cardiovascular events such as myocardial infarction, arrhythmias, heart failure exacerbations, or stroke.[16] Respiratory infections, including influenza and COVID-19, have been associated with increased risks of cardiovascular complications and hospitalisation, particularly among individuals with pre-existing heart conditions.[17, 18]

Many individuals with CVDs already have reduced cardiac function.[19] Therefore, prevention is essential to avoid further strain on the cardiovascular system. Vaccination may help reduce infection-related complications, hospitalisations, and disease progression while supporting improved clinical outcomes and quality of life.[20, 21]

2.3.3 Individuals living with diabetes

Diabetes is a prevalent chronic metabolic condition associated with significant morbidity, mortality, and healthcare costs worldwide.[22] Individuals living with diabetes are more vulnerable to infections and severe illness due to metabolic and physiological factors that may impair immune responses and complicate disease management.

Acute infections can disrupt glycaemic control, leading to episodes of hyperglycaemia or hypoglycaemia and increasing the risk of serious complications such as diabetic ketoacidosis.[23, 24] Even when diabetes is well managed, underlying inflammation and other physiological changes may reduce the body's ability to effectively respond to infectious agents. Furthermore, some infections may directly influence blood glucose levels,[25] potentially worsening disease control.

Vaccination is therefore an important preventive measure for individuals with diabetes, as it can reduce the likelihood of infection, prevent complications related to poor glycaemic control, and contribute to improved overall disease management and health outcomes.[26, 27]

2.3.4 Pregnant women

Pregnancy is associated with physiological and immunological changes that can increase susceptibility to infectious diseases and the risk of severe illness. Infections during pregnancy may lead to adverse outcomes such as premature birth,[28] restricted foetal growth, and increased morbidity and mortality for both the pregnant individual and the neonate.[11] Newborns have immature immune systems and depend on maternal antibodies transferred during pregnancy for early protection against infectious diseases.[29]

Maternal vaccination provides a dual benefit: protecting the pregnant individual from infection and conferring passive immunity to the infant during the first months of life, before the child becomes eligible for routine immunisation.[29] Vaccination during pregnancy has been shown to reduce the risk of severe infection and associated complications, thereby supporting the health of both mother and infant.[29]

2.3.5 Healthcare professionals and workers

Healthcare professionals and workers, including physicians, nurses, pharmacists, emergency personnel, and other healthcare staff, are at increased risk of exposure to infectious diseases due to frequent and close contact with patients.[11] Occupational activities such as handling biological samples or exposure to bodily fluids further increase the likelihood of infection.[11] Infected healthcare workers may also contribute to the transmission of infectious diseases to vulnerable patients, colleagues, and family members, posing risks to patient safety and healthcare system functioning.[11]

Vaccination is essential to protect healthcare personnel and reduce the risk of healthcare-associated transmission of vaccine-preventable diseases.[11] Maintaining high vaccination coverage among healthcare workers also helps minimise workforce disruptions caused by illness and strengthen public confidence in vaccination, as healthcare professionals play a key role in recommending and administering vaccines.[11]

The recommended vaccines for these special-risk population groups are summarised in Table 4 below: [11]

Table 4: Vaccine recommendations for special-risk groups*

Population group	Influenza	Pneumo-coccal	COVID-19	Tdap	HepB	Shingles	MMR	Varicella	Meningo-coccal
Chronic respiratory disease (e.g., asthma, COPD)	✓	✓	✓	✓		✓			
Cardiovascular disease	✓	✓	✓	✓		✓			
Diabetes	✓	✓	✓	✓	✓	✓			
Pregnant women	✓		✓	✓					
Healthcare professionals and workers	✓		✓	✓	✓		✓	✓	✓

* Recommended vaccines may vary depending on national immunisation schedules, patient risk factors, and local guidelines.

3 Pharmacist-patient communication

3.1 Vaccination counselling and screening

Beyond clinical considerations, effective patient counselling is fundamental to successful vaccination services. From the moment an individual enters the pharmacy, pharmacists should demonstrate professionalism, warmth, and attentiveness.[30] Clear and friendly communication, appropriate tone of speech, and welcoming behaviours help build trust and ease patient anxiety.[30] Pharmacists should avoid behaviours that may signal unavailability or indifference, such as multitasking, using the computer while the patient is speaking, continuing unrelated activities, or engaging in side conversations.[30]

During the consultation, pharmacists should ensure that patients receive appropriate information about vaccination and that eligibility is assessed through a structured screening process. This includes reviewing the patient's medical and vaccination history, identifying potential contraindications or precautions, and considering individual risk factors such as age, occupational exposure, or pregnancy.[30]

To support consistent assessment, structured vaccination screening tools can be used to collect relevant patient information and identify potential contraindications prior to vaccine administration.[31] The Immunization Action Coalition (IAC) and the Centers for Disease Control and Prevention (CDC) recommend a set of standardised screening questions to identify contraindications and precautions prior to vaccination.[32, 33] An adapted version of these screening questions is presented in Table 5.[33]

Table 5: Adapted vaccination screening form

Vaccination screening form	
Contact information	
First name:	Last name:
Date of birth:	Age:
Gender:	Phone:
Email:	Emergency contact:
Home address: City: State: Zip:	
I want to receive the following: ☐ Inactive influenza (flu) ☐ Pneumonia ☐ Shingles ☐ Tdap (whooping cough) ☐ COVID-19 ☐ Others, please specify:	

Screening for vaccine contraindications and precautions					
No	**Question**	**Yes**	**No**	**Don't know**	**Notes**
1	Are you currently sick?	☐	☐	☐	
2	Do you have allergies to medications, food, a vaccine component, or latex? (e.g., eggs, bovine protein, gelatine, yeast, certain antibiotics, or preservatives)	☐	☐	☐	If yes, please list:
3	Have you ever had a serious reaction after receiving a vaccination?	☐	☐	☐	
4	Do you have a long-term health condition, such as heart, lung, kidney or metabolic disease (e.g., diabetes), asthma, a blood disorder, absence of a spleen, a cochlear implant, or a spinal fluid leak?	☐	☐	☐	If yes, please list:
5	Do you have cancer, leukaemia, HIV/AIDS, or any other immune system problem?	☐	☐	☐	
6	Do you have a parent, brother, or sister with an immune system problem?	☐	☐	☐	
7	In the past 6 months, have you taken medications that affect your immune system, such as prednisone, other steroids, or anticancer drugs; drugs for the treatment of rheumatoid arthritis, Crohn's disease, or psoriasis; or have you had radiation treatment?	☐	☐	☐	
8	Have you had a seizure or a brain or other nervous system problem?	☐	☐	☐	
9	Have you ever been diagnosed with a heart condition (myocarditis or pericarditis) or have you had Multisystem Inflammatory Syndrome (MIS-A or MIS-C) after an infection with the virus that causes COVID-19?	☐	☐	☐	
10	During the past year, have you received a transfusion of blood or blood products, or been given immune (gamma) globulin or an antiviral drug?	☐	☐	☐	
11	Have you received any vaccinations in the past 4 weeks?	☐	☐	☐	
12	For women: Are you pregnant or is there a chance you could be pregnant during the next month?	☐	☐	☐	
13	Do you have any questions for the pharmacist?				

☐ I confirm that the information provided is accurate to the best of my knowledge. I have had the opportunity to ask questions about the vaccine(s) and understand the potential benefits and risks. I consent to receiving the vaccine(s) indicated above.

Signature of patient or legal representative	Date

3.2 Addressing vaccine hesitancy

Vaccine hesitancy refers to concerns related to vaccination or outright refusal to receive vaccines despite their availability.[34] These concerns are related to safety, doubts about efficacy, moral or philosophical beliefs, and misinformation. It is recognised as a major threat to global health and individual health, hence pharmacists are required to address vaccine hesitancy through effective communication with patients.[34]

Strategies to address vaccine hesitancy include adjusting communication styles and content to meet patient needs, and addressing and preventing the spread of misinformation.[34] Communicating for change is key to influencing vaccination decisions.[35] After identifying the factors influencing a patient's views, pharmacists should share targeted messages that directly address misconceptions, build confidence, and support informed decision-making about vaccination.

3.2.1 Communication style - How

To increase the effectiveness of vaccination messages, the following communication principles should be considered:[35]

1. **Capture attention**

Use visuals, strategies that evoke emotions, or personalised messages to appeal to people. Information that can attract attention can help information retention and simplify information processing. Likewise, information that is linked with strong emotions such as urgency or surprise can support recall, although messages that invoke fear alone may backfire.

2. **Easy to remember**

Keep information clear. Information that is familiar and easy to remember will help individuals recall it more easily and also increase their trust in the information. Consistent repetition of information further reinforces familiarity and supports uptake.

3. **Be credible**

Information provided must be credible to build rapport and trust between the provider and the individual. Ensuring relevance is equally important. Information that is credible but not relevant to the local context (e.g., vaccination advice from the USA for a strain not present locally) may contribute to confusion and mistrust.

4. **Motivate**

Avoid negative framing of messages (e.g., linking vaccines to pain and needles). If producing content to support vaccination, consider positive images. Social norms are powerful mechanisms for supporting intentions to act. Explaining that most people within the community that the individual lives in have taken the vaccine, and that others in the community will expect the same action from them, can increase the likelihood of vaccination. Lastly, helping people to cope with concerns and the threat at hand by empowering them and making vaccination the easy choice, can support vaccination.

5. **Stories**

Using narratives can help engage your audience (e.g., stories from others who have received the vaccine before, or from parents of children to support vaccination).

The following section presents several case examples illustrating common vaccination-related conversations, drawn from FIP's Building vaccine confidence and communicating vaccine value: A toolkit for pharmacists.[36]

These examples demonstrate how the communication principles described above may be applied in practice. The conversation guides are presented as dialogues between a customer (C) and a pharmacist (P).

1. Conversation example 1: A parent with teenage children - HPV vaccine

C: Hello. This pandemic has made me realise that we haven't really been keeping up with regular vaccines for our teenagers. I want to keep them protected and I was wondering what vaccines I should be getting them. I have teenage kids and I want to keep them protected. Could I find out some more information?

P: Absolutely, how do you currently feel about vaccines? *(use of open questions)*

C: Well, I have heard about the human papillomavirus (HPV) vaccine. I remember receiving a brochure from their school when they were around 11 or 12, but we decided against it at the time because we didn't think they were at risk yet.

P: Okay, would it be alright with you if we discussed a little more about the HPV vaccine and how you feel about this? *(asking for permission, open-questioning)*

C: That's fine. I'd like to know more.

P: I've had a lot of people ask me about the vaccine so it's completely normal to have questions about it. I wasn't so sure of it myself initially but learnt that the human papillomavirus causes several cancers that can affect anyone. These include cancers of different reproductive organs in women and in men, and possibly throat cancers for both men and women. The good news is that this vaccine can help protect against the virus and protect your children from getting these cancers *(normalisation, social norms, factual information)* and this vaccine should provide lifelong protection, even preventing genital warts. Now it's easy to think that this isn't relevant now if your children aren't having sex. The important thing is that the vaccine will protect them in the future if they do decide to.

C: Okay, yeah that makes sense. But what are their benefits of getting it now rather than waiting?

P: Many parents find that the earlier their children are protected the better, as it gives both you and them peace of mind and you don't have to worry about it as they grow up. Also, the age you are when you get the vaccine determines how many shots you need. If you are 9–14 for example, then you only need to get two doses, if you are 15–16 then you should receive three.

I used to think of this vaccine as something to prevent a sexually transmitted disease and be a bit uncertain, but then realised it's really about preventing cancer. Almost everyone can get this virus, so I think it's important for everyone. Almost all of my patients are now getting this vaccine, which is great. That said, this is a decision only you can make. What do you think? *(social norms, addressing concerns, personal experience, open-questioning)*

2. Conversation example 2: Older person - Tdap (diphtheria, tetanus and pertussis vaccine)

C: Hi there. I'm here today because I'm about to turn 65 and my daughter keeps pestering me about getting vaccinated. I am aware that I'm not as fighting fit as I once was, but do I really need these vaccines? And if so, what vaccines should I be getting?

P: It's great that you have come in here today, I am more than happy to talk to you about the recommended vaccines. You're actually pretty fit and the thing is, these vaccines don't have anything to do with whether you're fit or not. In fact, many healthy people get vaccinated everyday—and people find being vaccinated actually keeps them fit and healthy. Also, while she may be pestering you, your daughter is on the right track. Now is a good time to be thinking about what vaccines can give you extra protection as you get a little bit older. *(positive reinforcement, addressing concerns, social norms)*

C: Oh that's good to know. I was starting to think it was just because I was getting old!

P: Not at all—people get vaccines at all ages. Though I'm sure it can be hard sometimes with the reminders, while your daughter may be pestering you, I'm sure she's making sure you get extra protection so you can continue to do the things you enjoy. *(identifying motivators, validation, social norms, normalisation)*

C: Yeah, I know she's just trying to look out for me.

P: Yeah, It's really nice to have someone looking out for us—and how lucky are you to have someone who sounds like she really cares about you. Would I be able to give you some information about the vaccines? *(positive framing, permission to provide information)*

C: Okay, right and so what other vaccines should I be getting?

P: An important vaccine often forgotten at your age is the DTaP vaccine which provides protection for diphtheria, tetanus and pertussis (whooping cough). Have you heard of this? We've had many people come in for this vaccine. *(tailoring, personalisation, personal experience, social norms)*

C: I've had a tetanus shot after stepping on a rusty nail. Why should I get it again?

P: It's easy to think that you don't need to have the vaccine again after the tetanus shot. The bad news is that tetanus, also known as lockjaw, is more likely to cause deaths in older people. It is a serious disease caused by bacteria found in dust, dirt, soil and manure that enters the body through a cut or wound. This infection causes muscle stiffness, painful spasms, fever and difficulty chewing or swallowing, and the risk of harm is higher in older people.

The good news is that vaccination is the best protection from this illness. People receive three immunisation doses as a baby, two booster doses as children, and two more booster doses at 45 and 65. Getting your booster dose once you turn 65 is important, even though you have had a shot in the past, as these immunisations wear off over time. If you have had chickenpox in the past, the virus will stay dormant in your body until you are older. *(normalisation, bad news/good news, personal relevance, rationale)*

C: So do you think I should get the vaccine?

P: I believe routine immunisation is important and everyone should have the vaccines they need for their age. What do you think? Perhaps you can discuss it with your daughter and make an appointment? All you have to do is call us or drop in and we can arrange that for you. *(making it easy, increasing convenience, personal relevance)*

C: Yes, I think that's it, I think I've got it pretty sorted.

3. Conversation example 3: A vegan person - Flu vaccine

C: I have some concerns about the eggs in flu vaccines, as I am vegan and do not want to take any products that have animal components.

P: That's a very important concern that we can discuss. We are entering flu season so this protection can be an asset for your health and also to protect your loved ones that are close to you. Should we discuss the options available that might suit you? *(validation, permission seeking, motivational interviewing)*

C: Yes please. But why do they use eggs in the first place?

P: Some vaccines might need a living organism with functional cells to be produced and that is why some use this method instead of cell lines or another. The important thing is that all the different methods are approved and result in vaccines that are safe to use. *(addressing concerns, personalisation)*

C: So, you say there are some vaccines that are egg free?

P: There are some vaccines available in the market, such as the quadrivalent cell-based influenza vaccine and a recombinant quadrivalent influenza vaccine, that are egg free. How does this make you feel about getting a vaccine? *(open questions, non-judgemental, factual advice)*

C: Are you sure no animal is involved in the process?

P: There are no animal products in those vaccines. Most of the vaccines are also well tested and do not require further animal testing. The important thing is that you have an option available and can be protected during the flu season. *(addressing concerns, factual information)*

C: I will think about it. I am not sure yet.

P: It can be hard to decide without knowing enough information. The good news is that many vegan people are getting vaccines as there are a lot of alternatives already available in the market. The more people who get flu vaccines, the bigger the group immunity, which will help protect yourself and your loved ones too. Would you like some information to take away to read and think about? It's important you decide for yourself but I will be available anytime if you need any help. *(validation, social norms, community and personal relevance, open-questioning, respecting autonomy)*

C: Thank you for that. Yes, that would be great. I'll have a read through and think about it.

4. Conversation example 4: A person living with HIV - COVID-19 vaccine

C: Hello, I am feeling a bit unwell in the last couple of days. No fever, just feeling like I've got a cold.

P: Sorry to hear that. Tell me a bit more about how you feel. What self-care measures have you taken? *(open question)*

C: I am taking some over-the-counter medicines and it is improving a little.

P: Great to hear that your symptoms are getting better. If you need any further advice to manage your symptoms you can let me know. What about any other medicines? How about the COVID-19 vaccine?

C: I am not vaccinated, but because I am HIV-positive, I thought it would not be a good idea to get vaccinated.

P: What are some of your thoughts about the vaccine?

C: Will I get sick if I take the vaccine? I'm worried it will make me sick, especially with my HIV.

P: It is understandable that you are worried. The vaccine, though, is really important for you as it reduces the risk of severe disease and death and is believed to be safe for most people, including people living with HIV.

The vaccine might cause some common side effects such as soreness, redness, and/or swelling where the shot was given, headache (low grade), fever, nausea, muscle aches, and fatigue but these are generally very mild and the benefit of being protected against the disease is huge. In fact, protection is even more important if you have HIV. *(normalisation, validation, personalised information)*

C: So, if I take the vaccine I will never get the COVID virus?

P: The vaccine reduces the probability of getting infected, but no vaccine is 100% effective. You should continue to take preventive measures against the virus (physical distancing, regular hand washing, wearing face coverings), even after vaccination, but the vaccine reduces your risk of severe illness by a very large amount. *(personalisation, factual information)*

C: Well, I might consider it then.

P: People living with HIV who take their medicines have the disease under control and will benefit from their vaccines just like everyone else. Do you think you have enough information to decide on what you want to do? I think it will be good for you and I will be here to support you whenever needed. *(open invitation for more information)*

5. Conversation example 5: Pregnant woman - Flu and COVID-19

C: I've heard that I'm meant to get some vaccines because I'm pregnant, but I'm not sure, I really don't want to harm the baby.

P: That's a fair concern, and it is a concern we hear from a lot of pregnant women. Pregnancy can be a really confusing time as everyone offers up opinions and there is a lot of misinformation—all of a sudden you are responsible for someone else and that can be really scary. Getting advice is a great step and I am glad you reached out. I am happy to talk through the different vaccines that would be beneficial for you, if you would like? *(validation, normalisation, positive reinforcement, open-questioning)*

C: Sure, that would be helpful.

P: I hear that you want to do what is the best for the baby. What we know is that there are certain illnesses such as the flu, pertussis and COVID-19 that can be harmful to you and your baby. Thankfully we have vaccines against these illnesses and getting vaccinated is the best way to help protect you and your baby.

The vaccines that we would advise you to get during your pregnancy are the flu vaccine, Tdap vaccine (against tetanus, diphtheria and pertussis, or whooping cough) and COVID-19 vaccine. Would you like me to tell you more about them? *(validation, factual advice, clear path to action, personalised advice, permission seeking)*

C: Yes, please.

P: Firstly, let's talk about the influenza vaccine—or flu shot. Flu vaccines have been given to millions of pregnant women over the years, and scientific evidence shows that they are safe. Getting the flu vaccine during pregnancy is one of the best ways to protect yourself and your baby for up to 6 months after birth from flu and related complications.

The second vaccine that I would recommend, especially now, is the COVID-19 vaccine. Pregnant women are more likely to get severely ill with COVID-19 compared with non-pregnant women. This means they are more likely to be hospitalised, need intensive care, a ventilator, special equipment to breathe or have had illness that has resulted in death. There are also negative impacts on the baby. *(social norms, scientific facts, personalisation of advice to concerns/motivators)*

C: Will the vaccines harm the baby?

P: No, flu and COVID-19 vaccines do not cause an infection, including in pregnant people or their babies. None of the vaccines contain the live virus that causes the disease. By getting the vaccines you are protecting both yourself and your baby, both during your pregnancy and after your baby is born. *(clarification, clear advice)*

C: So, everything will be fine if I get those vaccines?

P: Most pregnant women are having these vaccines with positive effects on their own health and also on their infants' health. I believe this is important for you and your baby. Please let me know if you need any more information and I will be happy to provide it. *(social norms, personal relevance of motivators, open communication)*

3.2.2 Communication content - What

The Hertfordshire Behaviour Change Unit has produced examples of messages that can be used to address vaccine uptake barriers depending on which of the "3 Cs" the barrier falls under,[37] as shown in Figure 3. The examples and recommendations below are adapted from the unit's document "COVID-19 vaccination: Increasing uptake (2021)" with the permission of Hertfordshire County Council:[38]

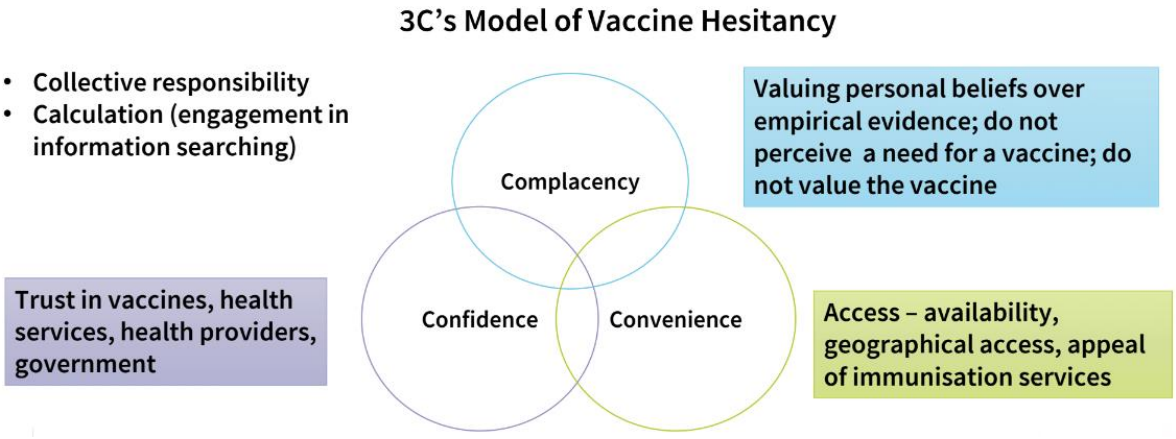

Figure 3: WHO model of the 3 Cs in relation to vaccine hesitancy[39]

1. Complacency

When an individual makes a decision about whether to get vaccinated against an infectious disease, a key factor they consider is their personal risk of contracting it and the health consequences if it is contracted. This perception of personal risk is central to their decision making, and is supported by research into the uptake of vaccinations such as the H1N1 influenza vaccine.[40] Perception of the severity of a pandemic or disease is also related to intentions to be vaccinated.[38] Globally, data show that people are more likely to express willingness to be vaccinated based on their perceived degree of threat experienced, and whether they perceive vaccination as an effective coping strategy to reduce that threat (i.e., how effective they perceive the vaccine to be).[41] As illustrated in Table 6, when designing a strategy to improve vaccine uptake, relating the vaccine to the perceived threat is likely to be an effective approach.

Table 6: Strategies to improve vaccine uptake focusing on complacency

Strategy	Recommendation	Example
Increase perceptions of personal risk of contracting the disease. If people perceive there is a personal risk of contracting the disease, they are more likely to be vaccinated to protect themselves.	Increase knowledge of the risks of contracting the disease for the general population and specific groups where uptake is likely to be lower. Personalising this information to the individual and their personal circumstances can increase message effectiveness.	To identify key groups to focus on and their unique needs and specific risks, you may wish to use audience segmentation data. This can be achieved through working with communities to understand any gaps in knowledge and to develop messages that speak directly to the target population. For example, for the general population: "Even if you are fit and healthy, you are still at risk of getting sick [with influenza, COVID-19, etc]", or for a specific group such as: "Members of the [indigenous] community are at a greater risk of

Strategy	Recommendation	Example
		getting sick with [influenza /COVID-19/etc]".
Increase perceptions of the severity of the disease. If people perceive that there are potentially significant implications to their health from contracting the disease, they are more likely to be vaccinated to protect themselves and others.	Increase knowledge of the severity of the disease for the general population and for specific groups where uptake is likely to be lower. Focus on risk-reducing messages over health benefit messages.	Develop messaging that includes some of the health consequences of contracting the infection and that being vaccinated reduces their risk. This applies to influenza, COVID-19 and other vaccine-preventable diseases. For the general population, for example, for COVID-19: "Getting COVID-19 can affect your heart health, breathing and cause long-term fatigue; protect yourself, get vaccinated". For people with long-term conditions: "People with diabetes are at increased risk of developing complications from coronavirus". For young people: "Young people are twice as likely to suffer from long-COVID". Accompany this with calls to action such as "Get vaccinated and reduce your risk".
Increase understanding of the importance of the vaccine. If people perceive that the vaccine is important for ending the pandemic and returning to a sense of normality, they are more likely to be vaccinated. It is important to cover a range of motivations as different things will motivate different people. For influenza or COVID-19, motivations may include the possibility of being with family and friends, travelling, attending events, etc.	Emphasise the importance of individual vaccination in achieving herd immunity for protecting the most vulnerable, protecting the health system, strengthening the economy and relaxing public health restrictions.	Consider messaging such as: "Get vaccinated to show your loved ones you care"; "Get vaccinated and let's get back to normal"; "Play your part and get vaccinated!"; and "Play your part in protecting your community and get vaccinated!".
	Build a social norm within the community that vaccination uptake is widespread, and the majority of people are doing their part for the benefit of the community/society.	Focus on the positives. Consider presenting the number of people being vaccinated within specific groups (age/community) in terms of percentage changes (e.g., percentage increases from the previous week or month). Present information in a visual form, including statistics in a graph, to illustrate increased uptake, and support with case studies, stories or testimonials from community members who have been vaccinated to reinforce this. Making people aware of low uptake can reinforce the belief that not many people are getting vaccinated, thus decreasing the likelihood of people coming forward to receive the vaccine so this should be avoided where uptake is low. Use national data to communicate intentions, for example "XX% of people intend to have the vaccination".

2. Confidence

Confidence is a key part of vaccine uptake. As described above under "complacency", vaccine effectiveness is integral to vaccination decisions. Vaccines need to be seen as effective for addressing the disease threat for individuals to take up the vaccine. Conversely, individuals with concerns about the safety of the vaccine, for example, whether it has been tested properly, can reduce intentions to be vaccinated.[38, 42] This has been seen with vaccines such as H1N1 influenza vaccines.[43] A key factor in how safe and effective a vaccine is perceived was the development and testing it had been subjected to prior to market launch. Strategies and recommendations focusing on increasing vaccine confidence can be found in Table 7.

Table 7: Strategies to improve vaccine uptake focusing on confidence

Strategy	Recommendation	Example
Increase trust and confidence in the safety and effectiveness of the vaccine. If people believe that the vaccine is safe and effective, then they are more likely to be vaccinated. It is important to address these concerns throughout the roll-out of the vaccine as concerns may change over time.	Highlight that the vaccine has undergone rigorous development and testing.	Provide details of how vaccines are developed and tested, highlighting the way in which rigour has been applied, similar to any drug development. Present the information in an accessible form, such as an infographic, using formal language (e.g., using vaccine, rather than jab), while avoiding complex technical terms.
	Acknowledge the uncertainties and fears held by the general public and by specific groups—do not dismiss or ignore them. Provide information to address these concerns and make it easy to understand.	Identify any broadly held uncertainties and address these within population-wide communications. For groups where uptake is likely to be lower, engage with that community to understand and address specific safety and effectiveness concerns by co-producing messaging. Use trusted channels and messengers within the different communities to promote communications (e.g., church or religious leaders, elders and community champions).
	Ensure transparency regarding vaccine effectiveness and potential side effects, taking care to avoid drawing attention to side effects that are classified as rare.	Acknowledge that some people may experience side effects and build links to safety and effectiveness information in messaging promoting the vaccine. This could be by guiding people to a list of frequently asked questions on a trusted website such as a local authority or government health website. Be clear about what we do and do not know about the vaccine, rather than hiding gaps in knowledge. Where there are gaps in current understanding, be honest about this (e.g., whether the vaccine will protect against different virus strains, the length of time the vaccine will protect people for).

Strategy	Recommendation	Example
Increase trust in the local authority and medical/scientific institutions. The more trust an individual has in their local authority, and the more trust they have in the medical and scientific institutions that have been involved in the development and deployment of the vaccine, the more likely they are to be vaccinated. A lack of trust is an even greater barrier to vaccination where concerns around the safety and effectiveness of the vaccine are also held.[44]	Local authorities can increase public trust in them by co-creating open and transparent communications that acknowledge their concerns and don't attempt to invalidate or ignore them.	Engagement is key to building trust and is a principle that runs throughout the development of any vaccine communications. Working with established networks and community groups to understand the barriers to vaccination uptake is important and to identify local trusted sources of information. Engage with a range of people across the community, including those who hold differing views regarding vaccination. Collaborate in producing materials and resources to ensure that any information provided is relevant and culturally sensitive.
	Engage with thought leaders and respected voices within communities to build trust and support.	Use the influence of thought leaders and respected voices to promote messaging through sources of information trusted by the community (e.g., interviews on a local radio station or posts on a community Facebook group). Avoid excluding people who are not digitally connected by providing information through other sources (e.g., in the local paper or through leaflet drops).
	Link being vaccinated to the personal (e.g., people's values, such as being a caring or responsible member of society) and social identities (e.g., linked to the behaviours expected of people according to their roles as members of professional, faith or community groups) of the target group.	Provide case studies and testimonials of people who are being vaccinated (locally and nationally), particularly with examples of thought leaders within the target community (e.g., faith leaders).
	Take all reasonable steps to ensure that people being vaccinated have a positive experience, particularly for their first dose, as this will have an influence on the likelihood that they will return for their second dose or other vaccines in the future. People talk to others about their experience, so providing a positive experience may increase the likelihood of their friends and family having theirs. It is important that proper safety measures are followed at vaccination sites to alleviate any fears held by visitors.	Discuss and establish agreed ways of working among staff at vaccination sites, including how visitors will be greeted, how different factors (e.g., religious beliefs) will be addressed sensitively, and how individuals who express concerns over the safety and effectiveness of vaccines can be reassured. Staff should be seen to be visibly following safety measures such as maintaining physical distancing (between themselves and patients), wearing face masks and facilitating hand hygiene.

3. Convenience and access

People are more likely to engage with a behaviour if it is perceived to be easy to achieve. This applies to vaccination. Ensuring that getting a vaccine is as easy as possible will improve uptake, for example, by locating vaccination sites near public transport routes, providing free public transport for people getting their vaccination, extending clinic operating hours and making vaccination available through community pharmacies. For children, school-based programmes where

children receive the vaccine at school can help with uptake. Table 8 provides strategies and recommendations to improve vaccine uptake focusing on improving convenience.

Table 8: Strategies to improve vaccine uptake focusing on convenience

Strategy	Recommendation	Example
Increase the convenience of being vaccinated. The easier it is for people to be vaccinated, the more likely they are to be so. Practical and logistical aspects will influence the degree of uptake (e.g., time, place, cost).	Ensure that vaccine invitations provide clear and specific information, so people know where to go, when to go, and how to get there.	Work with partners to ensure that any correspondence includes a clear call to action, provides relevant information on the venue (including a map), what to bring to the appointment (e.g., face coverings) and links to directions and public transport information to reduce barriers to attendance.
	Provide support with planning to increase the likelihood of people attending their second or future vaccination appointments.	Planning increases the likelihood that someone will attend the appointment for their second dose of the vaccine or future vaccinations (e.g., the following year's influenza vaccination). Examples of support could include: booking the second appointment at the same time as the first; providing an appointment card and asking them to note the date and time of the second dose or future vaccinations; entering the appointment date/time into their diary. Sending reminders via email/text message/post a couple of days before the following appointment, and where possible on the morning of the appointment, increases likelihood of attendance. Emphasise on the appointment card and in signage that the second dose is essential for the most effective protection.
	Ensure that vaccination sites are located in areas which are accessible by various modes of transportation and inform the public of this in communications such as invitation letters.	For those who are taking private transport, provide clear directions on how to reach the venue and details of parking arrangements. For people travelling by public transport, signpost to personal travelling plans/public transport sites so that they can plan their journey to vaccination sites.
	Where possible, use vaccination locations that are already part of people's routines and are therefore familiar to them and convenient to visit.	Ensure that the vaccine is accessible at multiple locations (e.g., GP surgeries, pharmacies, schools, places of work and community halls) and offer a variety of convenient opening times such as lunchtime and after work. Avoid long commuting times to vaccination centres and build on existing infrastructures which have been proven to work already (e.g., childhood or emergency vaccination programmes). Create outreach services for hard-to-reach groups (e.g., care home residents).

Strategy	Recommendation	Example
	Minimise barriers which may act as deterrents for receiving the vaccination (e.g., needing to take unpaid time off work). Ensure that available support and resources are communicated clearly to the public and in a timely manner.	Employers should be encouraged to reassure staff that they will be compensated for any time they need to take out of work in order to receive the vaccine and that there will be no additional time or financial implications for them as a result. Consideration should be given to support staff who may need to take time off work if they experience side effects so that no penalties are incurred, as this will reduce the likelihood of employees attending their second or future vaccination appointments.

Considering the 3Cs as applied to vaccine uptake, the strategy that is used should focus on what the underlying reasons are for vaccine hesitancy and non-vaccination. For some individuals, the key driver for hesitancy may be related to issues of ability, such as lack of awareness of how to get the vaccine or accessibility issues related to vaccination (e.g., transport issues). In these cases, automated strategies that help increase convenience are likely to be most effective. Having posters within the pharmacy providing information on how to access the vaccine or sending automated text messages or reminders about vaccination can be helpful.

Conversely, other individuals may have no issues with ability, but rather have issues with motivation, such as concerns about safety or lack of perceived need for vaccination. For example, if there is a low number of cases in the community, an individual may not see a reason for vaccination. In this case, personalised strategies that are tailored according to their concerns and personal needs are likely to be most effective to improve both confidence and complacency. Personalised strategies are likely to require more one-on-one time with the individual as part of a personalised consultation, using the principles of behaviour change outlined above. Together, all three factors are important to consider as part of a toolkit to engage and communicate clearly about the need for and importance of getting vaccinated and making the decision to be vaccinated as easy as possible. Figure 4 illustrates how these two factors of motivation and ability might interplay.

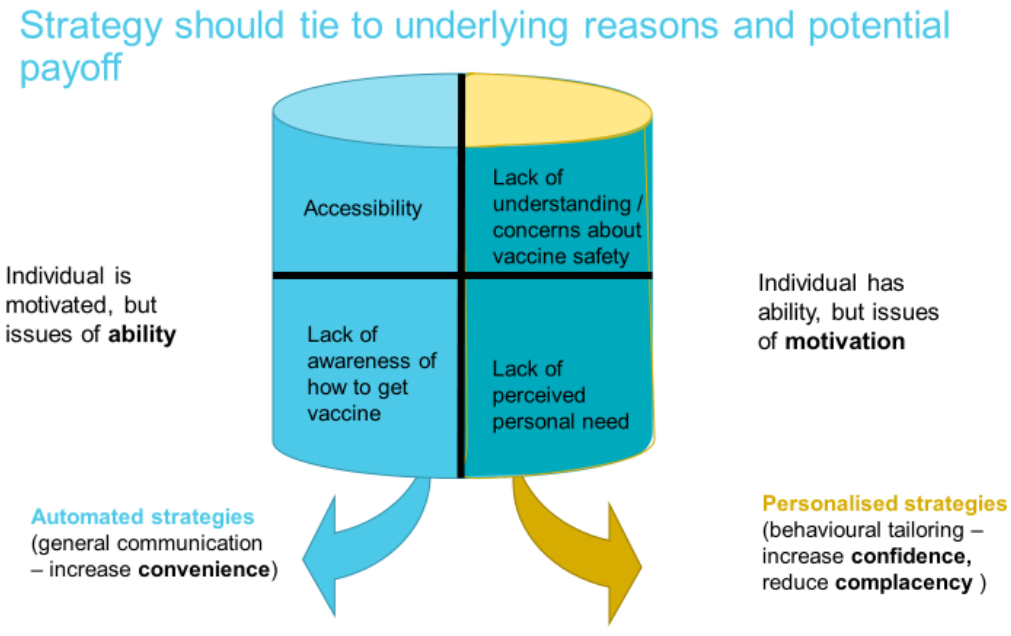

Figure 4. Importance of tailoring communication according to an individual's reasons for vaccine hesitancy using the 3 C's model

4 Pharmacist-public communication

The elimination and/or eradication of communicable diseases through vaccination depends on two fundamental elements: the availability of effective vaccines, and achieving high uptake among susceptible individuals.[45] From an epidemiological perspective, individual actions alone are insufficient. Effective communication about vaccination within communities is therefore essential.[45] In addition to providing personal protection, vaccination benefits the entire community. When a high proportion of the population is immunised, disease transmission is interrupted, contributing to herd immunity.[45] This is particularly important for individuals who cannot be vaccinated due to health reasons (e.g., allergies or immunocompromised conditions) or those who do not mount an adequate immune response.[45]

Pharmacists play a critical role in promoting community-wide protection. To translate this responsibility into practice, pharmacists must adopt a structured approach: first identifying target populations, then designing advocacy strategies, and finally delivering clear and effective messaging that builds vaccine confidence and promotes vaccine uptake and coverage rates.

4.1 Community needs assessment

Vaccination acceptance exists along a perception continuum, ranging from individuals who absolutely refuse vaccines to those who are hesitant or concerned, and finally to those who fully accept and support immunisation.[30] Understanding where individuals or communities stand on this continuum is essential for tailoring appropriate communication strategies.

Effective engagement requires understanding the broader community context in which vaccination decisions are made. Pharmacists should assess community needs based on the available information below:[30]

1. Local vaccination gaps
2. Health and vaccine literacy levels
3. Cultural or religious considerations
4. Access barriers (transport, time, cost)
5. Language differences
6. Visibility and awareness of pharmacy-based vaccination services.

Recognising differences in literacy levels is critical to ensuring that vaccine information is accessible and comprehensible. Lower health literacy may increase vulnerability to misinformation and reduce confidence in vaccination.[46] A structured assessment process using a community assessment tool in Table 9 can help translate these considerations into practical planning decisions.

Table 9: Community assessment tool

Question	Yes	No	Action required
Do you know the under-vaccinated groups?	☐	☐	
Do you understand local vaccine concerns?	☐	☐	
What are the existing health and vaccine literacy levels?	☐	☐	
Are advocacy materials culturally and religiously appropriate?	☐	☐	
Are there access barriers?	☐	☐	
Are there language barriers?	☐	☐	
Are pharmacy-based vaccination services visible and clearly advertised?	☐	☐	

With the increasing availability of online health information, communities are frequently exposed to misinformation and myths about vaccines, particularly following the recent pandemic.[30] Common myths include claims that vaccines cause autism, contain toxic doses of mercury, or that childhood vaccines should not be administered according to recommended schedules.[30]

Because the main benefit of vaccination is the absence of disease, individuals may underestimate the value of immunisation.[30] Choosing not to vaccinate and not experiencing disease may reinforce future hesitancy. Understanding these behavioural dynamics is essential when identifying and engaging target populations.[30]

4.2 Community outreach and engagement

Once community needs have been identified, a structured advocacy plan for outreach should be developed. Advocacy should align with national or regional vaccination programmes and include clear objectives that are specific, measurable, achievable, relevant and time-bound. This planning stage transforms community assessments into coordinated actions during health promotion activities.

Experiences across Argentina, Australia, Belgium, France, Ireland, Portugal, South Africa, Switzerland, the UK, and the USA, demonstrate advocacy strategies to increase awareness of PBV services. Effective engagement strategies may include:[45, 47]

- Posters displayed in pharmacy windows and countertop notices
- Leaflets and flyers in pharmacies and public spaces
- Social media campaigns
- Radio and television advertisements
- Participation in health fairs
- School and patient association presentations
- Engagement activities in malls and shopping centres
- Collaboration with other healthcare professionals
- Collaboration with health ministers, health authorities and other government representatives
- Media interviews and participation in broadcast news or podcasts.

A multi-modal approach, harnessing state and regional networks and coordinated through national policy structures, has proven effective.[47] Continuous communication remains crucial. Messaging should consistently remind individuals of the severity of vaccine-preventable diseases and ensure awareness of vaccine availability.[48]

While structural advocacy activities increase visibility and outreach, their success ultimately depends on how clear and effectively vaccination messages are communicated at the community level. Effective communication begins with clear, simple, and accessible information.[46] Clinical evidence should be communicated in straightforward language to enhance understanding, confidence and involvement in decision-making.[46] Clear communication empowers individuals and strengthens community health outcomes.[46] Several evidence-based strategies can enhance vaccine communication:[30]

1. **Priming**
   Priming involves presenting vaccine information in advance to influence subsequent behaviour. Sharing a vaccine information statement prior to vaccination has been shown to increase uptake, regardless of format.

2. **Positive framing and reinforcement**
   Communication focusing on the positive and emotional benefits of immunisation, while acknowledging contextual differences across regions. Reinforcement of official public health recommendations by healthcare professionals significantly increased adolescent vaccination initiation.

3. **Recalls and reminders**
   Recall and reminder systems are also effective. These may include e-mail, postcards, letters, text messages, or phone calls. Phone calls are particularly effective because they allow immediate appointment scheduling. However, allowing recipients to choose their preferred contact method increases coverage.

Beyond proactive messaging, pharmacists must also be prepared to respond to misinformation and vaccine myths that may undermine confidence.

4.3 Addressing misinformation and myths

Vaccine misinformation and disinformation are major barriers to vaccine uptake and contribute to vaccine hesitancy. Addressing these challenges requires more than providing general education. It involves understanding the types of inaccurate information circulating within communities and developing targeted strategies to respond effectively.[36]

Efforts to address misinformation should involve healthcare professionals, media platforms, and communication channels working together to ensure that reliable vaccine information is accessible to the public.[49]

To address misinformation, pharmacists should demonstrate knowledge and understanding of:[50]

- Common vaccine-related myths and misconceptions spread within communities or through social media.
- Credible sources of accurate vaccine information such as the World Health Organization (WHO).
- The preferred information sources or platforms for different age groups.
- The impact of social media on health literacy and vaccine confidence.

In addition, pharmacists should develop the following associated skills:[50]

- To identify inaccurate vaccine information and correct it with evidence-based data.
- To understand how to use different social media platforms to identify sources of misinformation and counter them effectively.
- To use appropriate communication methods to correct misinformation while minimising patient resistance and fostering a collaborative dialogue.
- To guide patients to credible sources of information to retrieve accurate health information.

The following steps described below can help provide guidance on how to assess misinformation, and address and manage it at an individual level as part of an effective consultation.[36]

4.3.1 Assessing the information

The first step to addressing misinformation, similar to addressing vaccine hesitancy, is to identify it. Not every rumour is entirely false. Many originate from a factual basis that has been distorted over time. Determining whether a piece of information is accurate can often be challenging. The Five Pillars of Verification have been suggested as an approach to determine the accuracy of a claim:[51]

1. Origin: Are you looking at the original account, article or piece of content?
2. Source: Who created the account or article, or captured the original piece of content?
3. Date: When was it created?
4. Location: Where was the account established, the website created, or the piece of content captured?
5. Motivation: Why was the account established, the website created, or the piece of content captured?

4.3.2 Addressing misinformation

Once misinformation has been identified, the next step is to limit its impact. Misinformation spreads most rapidly when individuals are exposed primarily to information that reinforces existing cognitive biases.

Breaking this cycle requires guiding individuals seeking information towards accessible, credible, accurate, up-to-date and relevant sources in their own language. Information should ideally be presented in formats that resonate with the intended audience, such as podcasts, videos or testimonials from individuals in similar situations.

To help limit the spread of misinformation, trusted sources (e.g., from the UNICEF, the World Health Organization and national public health agencies) should be highlighted and shared. Content from these sources may be disseminated or

referenced within pharmacies or clinics. Collaboration with other health professionals, community leaders or youth organisations can further support the dissemination of credible and reliable vaccine information.

4.3.3 Preventing misinformation

Preventing misinformation from influencing people's decisions in the first place is an effective strategy to limit its impact on vaccine hesitancy. There are different ways to achieve this:

1. Warnings

Warning labels that flag sources of misinformation can help individuals recognise when they have been exposed to potentially inaccurate information. Simply providing a warning or alert may help get people thinking about or questioning the information. This approach, supported by cues or processes that can help redirect people to credible sources, and approaches which make it harder for the misinformation to be shared, can limit the consequences of the misinformation.[52, 53]

2. Empowering individuals

Empowering people to be able to critically evaluate information sources and accuracy can reduce and stop the spread of misinformation. Mass media and journalists, for example, can help with educating the public as well as their colleagues so they can recognise misinformation before it is shared. There are short courses online that can support health and media literacy. Approaches such as innovative text-message systems or other online messaging platforms (e.g., the UNICEF RapidPro based U-Report system) can be used to respond in real time to questions from the public, as well as analysing rumours and perceptions. For example, the United Nations Verified initiative has developed the "Pause. Take care before you share" campaign, which encourages people to stop and verify sources before deciding whether to share any content online and is available in multiple languages. Another free course called "Protection from Deception" is a two-week text message course from First Draft that teaches people how to protect themselves and their communities from misinformation, currently available in English and Spanish. A second course, "Too much information," is available online.

3. Inoculation

There is a phenomenon called "inoculation" that the social sciences have increasingly used as an approach to preventing the effects of misinformation and disinformation. This approach involves pre-emptively debunking misinformation and disinformation before it takes hold.[54] People can be "inoculated" against misinformation and disinformation by being exposed to weakened versions of the misinformation and disinformation, highlighting the hidden motives of the authors, then providing the "truth".[55]

Using this inoculation approach can equip people with counter-arguments that they can access themselves so that when they are exposed to the misinformation or disinformation again, they have "resistance" to it, even if the misinformation or disinformation claims may align with their pre-existing beliefs. This may also provide some protection against other misinformation or disinformation about other health topics, beyond vaccination.

4. Debunking

Careful debunking may help highlight the falseness of information, as well as provide an explanation of why it is false, and what may have led people to believe or share the false information in the first place. It is important to focus on the facts and on why the misinformation is wrong, rather than repeating the misinformation, as continuously exposing individuals to the misinformation may help the spread and retention of the false information and worsen vaccine hesitancy.

With the increasing availability and ease of access to online health information, there are increasing opportunities for the public to be exposed to misinformation and myths.[30] This is especially true for vaccination and vaccine-related topics, particularly considering the recent pandemic. Healthcare professionals play an essential part in supporting dissemination of valid information and evidence-based recommendations, resolving doubts and increasing confidence in vaccines.[30] Pharmacists must be prepared to face this challenge of dispelling myths and provide a supporting role in avoiding the spread of false information.[30]

The following practical guidance in Table 10 on suggested actions for dealing with vaccination-related myths can support pharmacists during patient interactions.

Table 10: Suggested actions for dealing with vaccine myths[30]

Do:	Don't:
• Emphasise facts and use visuals whenever possible • Provide alternative correct explanations, with up-to-date resources • Present only core facts and keep the message simple • Explain the known side effects of vaccination and acknowledge the risks, which are real but rare • Emphasise that it may be a legal requirement for all side effects to be reported (in applicable jurisdictions) • Acknowledge concerns raised by patients (do not dismiss them) • Provide a balanced overview supported by scientific evidence of the facts behind vaccine benefits • Build on existing positive vaccine perceptions	• Repeat myths • Give lengthy explanations • Make explicit warnings • Use strong language that can increase risk perception • Rely only on web-based resources, as they do not allow face-to-face discussion • Emphasise the benefits and withhold information about the risks

Another useful tool for communicating effectively around vaccine misinformation is the "Acknowledge, Bridge, Communicate" framework, as shown in Table 11. Using this framework, pharmacists can provide the correct information regarding vaccinations, while maintaining a positive attitude towards the individual and maximising the impact of the information content.

Table 11: "Acknowledge, Bridge, Communicate" framework

Reasons not to vaccinate	Acknowledge	Bridge	Communicate
"Vaccines contain mercury"	That is not fully correct	More accurately	The mercury-based preservative thimerosal, once used to prevent bacterial and fungal contamination, is no longer used in children's vaccines, except for some types of flu shots. The WHO has also concluded that the amount and form of mercury in thiomersal-containing vaccines does not pose a cumulative risk of toxicity.[56]
"Vaccines cause disease"	That's not quite right	Let me explain	Most vaccines cannot cause disease because they do not contain any living virus or bacteria. There are some vaccines that contain weakened live bacteria or viruses, but even these have not been described as causing the full onset of a disease, but on very rare occasions, a weaker form of disease with mild symptoms.[57]
"Polio is no longer an issue in this country"	That is not what I know	What I do know is	That reductions in vaccination rates can lead to infectious diseases returning; maintaining high vaccination rates prevents infectious diseases from spreading and protects those still susceptible through herd immunity.[58]
"Vaccines cause autism"	There is no evidence for that	What data show is	That there is extensive evidence that vaccines are not linked to increased incidence of autism.[58]
"No one in my son's school had this disease"	That's true	But the real point is	That it likely happened because most children were vaccinated, and the few who could not be immunised were therefore protected through herd immunity.[58]

Taken together, community needs assessment, outreach and engagement strategies, and effective management of misinformation and myths about vaccines form an integrated approach to public engagement on vaccination. When these components are aligned, pharmacists are positioned not only to strengthen vaccine confidence and increase vaccination uptake and coverage rates, but also to serve as trusted healthcare professionals in advancing community-wide protection against vaccine-preventable diseases.

5 Pharmacist-other healthcare professionals communication

Communication between healthcare professionals plays a critical role in patient safety and in maintaining continuity of care. Evidence from a systematic review examining the impact of communication on patient safety incidents found that across 46 studies, poor communication was the sole contributor in 13% of safety incidents and a contributing factor in 24% of cases overall.[59] Sentinel and adverse events frequently involve communication problems, especially in hospitals and surgery.[60-62]

Communication challenges within healthcare teams are multifactorial. Factors such as hierarchical reporting structure, as well as differences in training, gender, cultural dynamics, stress, fatigue, ethnic and social background, can all influence how healthcare professionals exchange information.[63] These factors highlight the need for structured communication practices that support effective collaboration across professions.

Recognising its importance, interprofessional communication is identified as one of four core competencies under the interprofessional collaboration domain, developed by the Interprofessional Education Collaborative.[64] Effective handover of information between professions is the key factor in maintaining continuity of care and ensuring patient safety.[63] As vaccination services increasingly expand beyond traditional clinical settings into community pharmacies, structured communication between pharmacists and other healthcare professionals becomes essential. Clear channels of communication help ensure that vaccine recommendations are consistent, referrals are made when necessary, and vaccination records are accurately documented across different points of care.

5.1 Pharmacist-physician collaboration models

Collaboration between pharmacists and physicians can facilitate more coordinated vaccination services. Teeter and colleagues explored this topic in a study examining potential collaborative arrangements to improve HPV vaccination among adolescents.[65] The study emphasised that coordination between pharmacists and physicians is important for ensuring accurate documentation, appropriate follow-up, and completion of multi-dose vaccine schedules.[65] The authors outlined three collaboration models through which pharmacists and physicians may collaborate in delivering vaccines.

1. **Shared-responsibility model**
   Vaccination activities are divided between the physician's clinic and the pharmacy. For instance, the physician may provide the initial consultation or administer the first vaccine dose, while subsequent doses are delivered at a pharmacy. This arrangement allows both providers to contribute to the vaccination process.[66]

2. **Pharmacy-based model**
   In this model, physicians continue to recommend vaccines during clinical consultations, while the administration of the vaccines is carried out in a pharmacy.[65]

3. **Insourced model**
   The insourced model involves pharmacists providing vaccination services within the physician's clinic during designated times. In this approach, pharmacy expertise is directly integrated into the clinic environment.[65]

The study reported that pharmacy staff most frequently preferred the shared-responsibility model.[65] Physicians and parents also expressed a preference for maintaining physician involvement in at least one stage of the vaccination process, such as providing the initial recommendation or administering the first dose.[65] As a result, the shared-responsibility model was viewed as the most acceptable approach, as it maintains physician engagement while offering a convenient alternative location for vaccination.

5.2 The SBAR (Situation, Background, Assessment, Recommendation) framework

Beyond organisational models of collaboration, structured communication tools can also support effective information exchange between healthcare professionals. One widely used example is the Situation–Background–Assessment–Recommendation (SBAR) framework.[67]

The SBAR framework was first introduced at Kaiser Permanente in 2003 as a method to structure communication between doctors and nurses in situations requiring immediate clinical attention.[68] Since then, SBAR has been widely adopted in healthcare settings as a method for structuring information exchange and ensuring that critical information is communicated clearly.

The framework organises communication into four sequential components: Situation, Background, Assessment, and Recommendation. The framework is endorsed by the Institute for Healthcare Improvement and Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS) as a structured model of communication to improve patient safety.[69, 70] SBAR can be used in both verbal communication, such as telephone consultations between healthcare professionals, and written documentation.[67] The overview of this framework is shown in Table 12 below.

Table 12: Adapted SBAR communication framework

SBAR framework		Question	Content
S	Situation	What is happening with the patient? What situation are you contacting the other healthcare professional about?	• Briefly introduce the patient. • Provide a short overview of the current issue(s) that requires attention.
B	Background	What background or relevant clinical information should be known about this patient?	• Describe the pertinent history of the present illness. • Summarise the relevant events leading up to the current issue(s)
A	Assessment	What is your evaluation of the situation?	• Provide your interpretation of the issue(s), including an analysis of the problem and possible consideration of options.
R	Recommendation	What action should be taken to manage the patient?	• Propose a clear plan or suggested intervention. • Indicate the next steps required to manage the identified issue(s)

Research has also examined the use of SBAR in healthcare communication. For instance, Brust-Sisti and colleagues evaluated the impact of SBAR training on pharmacy students' ability to communicate pharmacotherapy recommendations during a simulated telephone consultation with a prescriber.[71] The majority of students reported that the training improves their ability to structure clinical conversations and deliver pharmacotherapy recommendations more effectively.[71]

Other studies integrating SBAR into pharmacotherapy skills laboratories have reported similar findings.[72] The study reported that the framework was generally well received by pharmacy students and was perceived to enhance their preparedness for interprofessional communication, particularly in simulated clinical settings.[72] Overall, the findings suggest that incorporating SBAR-based simulations and assessments into pharmacy training can improve students' perceived readiness for interprofessional communication, provide a realistic and fair evaluation of communication skills, and introduce a documentation approach that students view as practical and aligned with real-world clinical collaboration.[72]

Although SBAR is widely regarded as a practical communication tool, successful implementation requires training and organisational support.[63] Healthcare professionals must share a common understanding of the framework to ensure consistent use.[63] In addition, the structured format may be less adaptable in situations involving highly complex clinical histories or multifaceted care plans.[63] Nevertheless, SBAR remains a well-established approach for supporting clear and structured communication between healthcare professionals.

5.3 Interprofessional education (IPE) readiness tool

While collaboration models and structured communication tools can support effective interaction between healthcare professionals in practice, healthcare providers must first be trained to work collaboratively. Developing the competencies required for interprofessional collaborative practice (IPCP) therefore requires targeted education and training. Interprofessional education (IPE) is an educational approach that prepares healthcare professionals to work collaboratively by enabling students from different professions to learn together. Interprofessional education (IPE) has been defined by the World Health Organization (WHO) as "when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes."[73]

Recognising the importance of preparing healthcare professionals for collaborative practice, FIP developed a 'Global Interprofessional Education Readiness and Self-Assessment Tool' to support universities, administrators, professors and policymakers in assessing their preparedness to offer IPE, as illustrated in Table 13 below.[74] The tool, developed by Leite and colleagues, involved international consultation across multiple professions and regions to ensure global relevance and applicability.[74]

The tool is based on the Interprofessional Education for Collaborative Patient-Centred Practice (IECPCP) framework, which conceptualises interprofessional education across three interconnected levels: micro, meso and macro.[75]

- Micro level: Educational programme and curriculum
- Meso level: Institutional structures and organisational support
- Macro level: National policies and regulatory frameworks

Assessing readiness across these levels helps identify barriers and opportunities for implementing interprofessional education within institutions.

Table 13: FIP IPE Readiness Tool

IPE level	Assessment
A. Micro level *39 items to assess readiness within the educational programme/curriculum*	1. Designated IPE leadership (individual/team) 2. Volunteer interprofessional opportunities 3. Interprofessional continuing education activities 4. Participation in interprofessional research 5. Common scheduling across programmes 6. Cross-professional teaching (other professions teaching your students) 7. Cross-professional teaching (our professions teaching other students) 8. Programme autonomy to implement IPE 9. Interprofessional committees 10. Required extracurricular IPE activities 11. Financial support for IPE 12. Faculty development (available and/or required) 13. Faculty credit for IPE participation 14. Defined faculty workload allocation for IPE 15. IPCP-model clinical sites 16. Formal partnership agreements 17. Adequate placements for all students 18. Primary care (outpatient) sites 19. Hospital (inpatient) sites 20. Specialty care sites 21. Sites conducting IPCP quality assessments 22. Sites receiving students from multiple professions 23. Exposure to at least two different IPCP settings 24. Alignment with national IPE/IPCP competencies 25. IPE required in curriculum 26. IPE electives 27. Single-event IPE activities 28. Classroom-based IPE 29. Simulation-based IPE

IPE level	Assessment
	30. Standardised patients (retained) 31. Online interprofessional interaction 32. Practice-based interprofessional learning 33. Longitudinal competency-adapted modules 34. IPE competency required for graduation 35. Standardised outcomes 36. Structured assessment for each IPE activity 37. Standardised evaluation processes for IPE programme 38. Required practical assessment (simulation or clinical site) 39. Please add any form of IPC competency assessment used in your professional programme
B. Meso level *18 items to assess readiness on institutional/university structures*	1. Explicit IPE-supportive policies 2. Leadership commitment to IPE 3. Faculty interaction opportunities across professions 4. Promotion/tenure policies supporting IPE 5. Integrated institutional evaluation processes 6. Dedicated IPE personnel 7. Adequate coordination, scheduling, and technology resources 8. Financial sustainability model 9. Multiple professional programmes within institution 10. Faculty interest in collaboration 11. At least two programmes participating in IPE 12. Online multi-professional opportunities 13. IPE embedded in undergraduate curricula across programmes 14. Faculty development available 15. Faculty development required 16. Centralised IPE coordination centre 17. Simulation lab supporting IPCP 18. Please add comments regarding meso-level (Institutional/University level) of IPE
C. Macro level *14 items to assess readiness on national/regional systems and policies*	1. Government support for IPCP 2. National policies promoting IPCP 3. IPCP recognised to address workforce shortages 4. Practice laws supporting IPCP 5. Laws acting as barriers 6. Employer preference for interprofessional training 7. Accreditation bodies requiring IPE 8. IPE required by law in undergraduate education 9. IPE required by law in postgraduate/residency education 10. Remuneration for integrated care models 11. Access to software/e-health/technology supporting IPCP 12. Barriers to change in the country/institution/programme 13. What is missing in the country/institution/programme 14. Successes to share in the country/institution/programme

Strengthening communication and collaboration between pharmacists and other healthcare professionals is a critical enabler of safe, effective, and coordinated vaccination services. Structured collaboration models, such as shared-responsibility approaches, provide practical pathways for pharmacists and physicians to work together. Structured communication tools such as the SBAR framework ensures that clinical information is exchanged clearly and consistently. Preparing healthcare professionals for these collaborative roles requires targeted interprofessional education, supported by institutional and system-level readiness, as outlined in the FIP Global IPE Readiness and Self-Assessment Tool. By combining well-defined communication practices, health systems can enable healthcare professionals to deliver integrated, patient-centred vaccination services.

6 Conclusions

In conclusions, recommendations from healthcare providers are among the strongest predictors of vaccine acceptance and uptake, with evidence showing that individuals who receive a provider recommendation are significantly more likely to initiate and complete vaccination. Pharmacists play an increasingly important role in vaccination programmes, contributing as vaccine educators, facilitators, and administrators. Effective communication is therefore central to pharmacists' ability to address concerns, correct misinformation, and provide clear, evidence-based recommendations. This toolkit highlights three key areas of pharmacist communication: communication with patients, the public, and other healthcare professionals, using structured guidance to promote vaccine confidence and uptake.

1. Pharmacist–patient: Pharmacists support patients through structured vaccination counselling and screening, addressing hesitancy by providing clear and credible information tailored to individual concerns. Effective communication includes building trust, correcting misconceptions, and using strategies such as storytelling, positive framing, and behaviour-focused messaging to improve confidence and facilitate informed vaccination decisions.

2. Pharmacist–public: Pharmacists engage communities by assessing local needs, delivering targeted advocacy, and countering misinformation using strategies such as inoculation, debunking, and the "Acknowledge, Bridge, Communicate" framework. Structured, accessible communication strengthens vaccine confidence, encourages uptake, and promotes community-wide protection against vaccine-preventable diseases.

3. Pharmacist–other healthcare professionals: Effective communication between pharmacists and other healthcare professionals is essential for coordinated vaccination services. Structured collaboration models, communication tools such as SBAR, and interprofessional education, help support clear information exchange and strengthen collaborative healthcare practice.

By fostering clear, credible, and collaborative communication with patients, the public, and other healthcare professionals, pharmacists are essential in promoting vaccine confidence, increasing uptake, and supporting broader public health outcomes.

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