

How pharmacists and pharmacy teams can address vaccine hesitancy

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After reading this learning article you should be able to:

- Define vaccine hesitancy and understand factors that influence it;
- Understand the importance of addressing vaccine hesitancy in the context of the COVID-19 pandemic;
- Understand how to approach conversations about vaccine hesitancy with patients;
- Understand cultural concerns relating to the COVID-19 vaccine and how these concerns can be addressed.

Vaccination prevents around 2-3 million deaths worldwide every year from infectious diseases such as diphtheria, tetanus, pertussis, influenza and measles¹. Despite the efficacy of vaccines, vaccine hesitancy – the belief that a vaccine may be unnecessary, ineffective or unsafe² – is common (reported in more than 90 countries, at all income levels) and growing³⁻⁴ to such an extent that in 2019, the World Health Organization listed vaccine hesitancy as one of the top ten threats to global health⁵.

A recent UK study, involving 32,361 adults, demonstrated that 16% of respondents were distrustful of vaccines in general, while 14% were unwilling to accept a vaccine against COVID-19 and 23% were unsure about doing so⁶. These figures were higher in women, people with lower levels of education and income and among ethnic minority populations⁶.

This article aims to provide an overview of vaccine hesitancy and its determinants to help pharmacists and pharmacy teams understand why some individuals are vaccine-hesitant, particularly in the context of COVID-19 vaccines, and how addressing the concerns of patients will increase confidence in, and uptake of, vaccines.

Definition

Vaccine hesitancy refers to delaying or refusing vaccines despite the availability of vaccine services; it is complex and context-specific, varying across time, location and vaccine type, and includes factors such as complacency, convenience and confidence⁷. It is a continuum between acceptance of all vaccines and complete refusal of all vaccines, with individuals refusing certain vaccines, delaying others, accepting some vaccines but remaining concerned, or even refusing vaccines for themselves while remaining supportive of vaccinations more broadly^{8,9}. Individuals can move both forwards and backwards along this spectrum over time (e.g. with emerging news or following consultation with healthcare professionals)^{8,9}.

Importance of addressing vaccine hesitancy

Vaccine hesitancy reduces vaccine uptake and compromises herd immunity (i.e. where a high proportion of a population is vaccinated against an infection and thereby protected and consequently, it is less likely that an infectious individual will have contact with a susceptible individual and transmit the infection)¹⁰. When herd immunity is compromised, disease outbreaks among the unvaccinated population are likely¹⁰. For example, in 2017, measles was eliminated in the UK¹¹; however, the elimination status was lost in 2019¹², as a marked increase in measles cases

occurred due to sub-optimal uptake of the MMR vaccine in the population¹¹. Vaccine hesitancy thus undermines the effectiveness and success of immunisation programmes.

The current COVID-19 pandemic, and subsequent development of several COVID-19 vaccines, has highlighted the urgent need to address vaccine hesitancy. While it has not been established what proportion of a population will need to be vaccinated against COVID-19 to achieve herd immunity, addressing COVID-19 related vaccine hesitancy is expected to lead to greater numbers of vaccinated individuals, in turn resulting in fewer COVID-19 cases, reduced infection transmission and fewer deaths.

Factors involved in vaccine hesitancy

The '3 Cs' model can be used to conceptualise vaccine hesitancy and include the following factors⁷⁻¹³:

- **Confidence** refers to lack of trust in the safety and effectiveness of vaccines and the system through which they are delivered, this includes reliability and competence of healthcare professionals, health services and/or the motivation of policy makers who make decisions about vaccines;
- **Complacency** refers to the low perceived risk of vaccine-preventable diseases, leading to an assumption that vaccines are not needed;
- **Convenience** refers to the degree that physical availability, affordability, willingness-to-pay, geographical accessibility and ability to understand (language and health literacy) influence uptake of the vaccine.

These factors are context-specific and multidimensional, they overlap and interact, as shown in Figure 1. Some specific examples of reasons given by vaccine-hesitant individuals are shown in Box 1¹⁴⁻²⁵

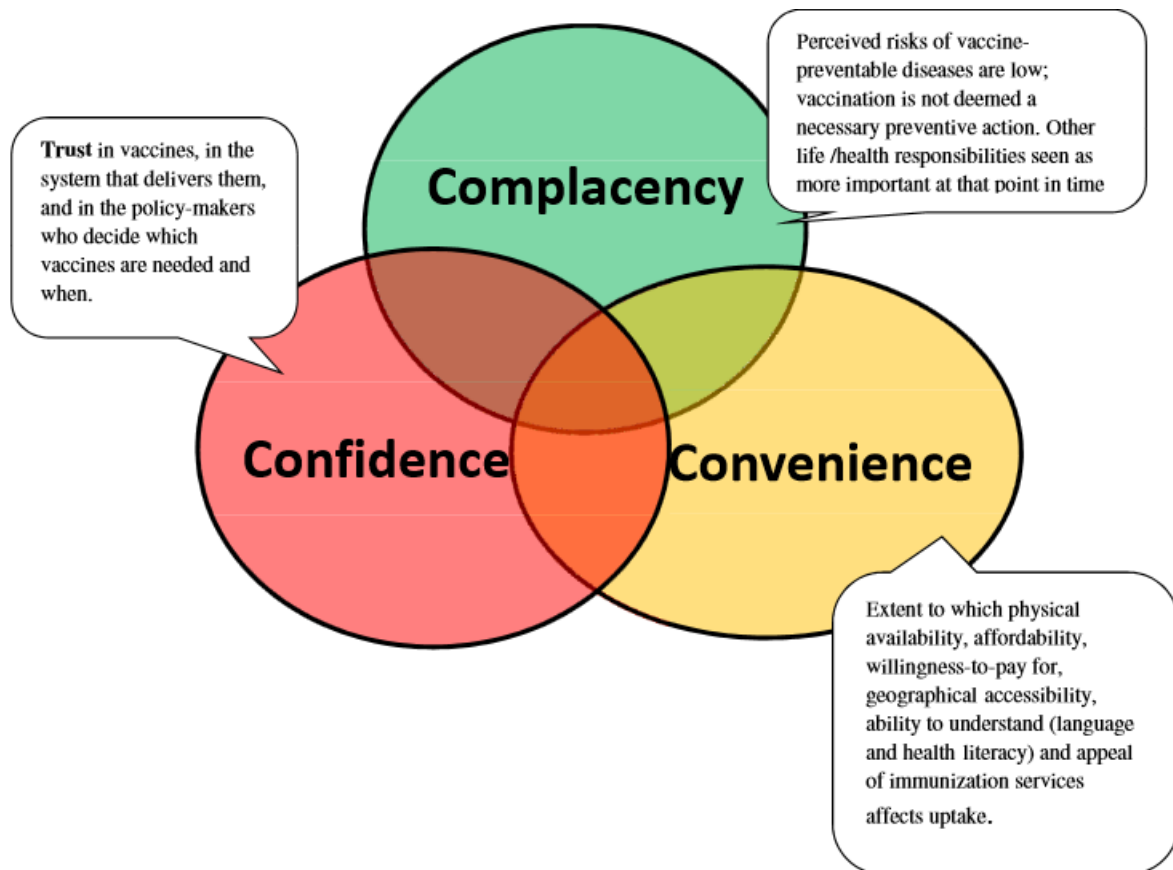


Figure 1: The Three Cs Model of vaccine hesitancy. Reproduced with permission from the World Health Organisation²⁶

More recently, other researchers have replaced convenience with constraints, added calculation (engagement in extensive information searching) and collective responsibility (willingness to protect others) and developed a 5C model²⁷.

Some healthcare professionals are themselves hesitant about vaccination personally and for their patients, citing reasons such as vaccine safety and adverse effects as well as their own lack of knowledge, confidence and time²¹. For example, in a survey of around 1500 nurses in France, self-reported vaccine coverage ranged from 27% (for seasonal influenza) to 96% (for BCG), and the prevalence of vaccine hesitancy was 44%²⁸.

Box 1: Reasons for vaccine hesitancy¹⁴⁻²⁵:

- Concerns about vaccine safety, adverse effects, toxicity, or poor quality of vaccine components;
- Previous experiences with vaccines and interactions with healthcare providers;
- Mistrust of doctors, health authorities, government sources, pharmaceutical companies and of scientific research and doubts about the technology used to produce the vaccine;
- Perceptions of low risk of contracting illness, low illness severity, and low vaccine efficacy;
- Lack of information, information sources, influence of antivaccine proponents;
- Religious beliefs;
- 'Natural' and 'organic' living, peer group, a person's right to choose;

- Fear of needles;
- Inconvenience;
- Vaccine cost.

Additional concerns relating to COVID 19-vaccines ²³⁻²⁵:

- The novelty of the vaccines; mRNA and adenovirus- based vaccines are relatively new types of vaccines, compared to most vaccines that are currently available.
- Mistrust of vaccine benefit;
- Speed of vaccine development;
- Worry about unforeseen future negative effects;
- Concerns about commercial profiteering by pharmaceutical companies;
- Preference for natural immunity;
- Location of vaccine development.

[Discussing vaccines and addressing vaccine hesitancy](#)

Advice and recommendations from healthcare professionals is the most common reason for vaccine-hesitant parents changing their minds¹⁵ and is one of the strongest predictors of vaccination acceptance²⁹⁻³⁰. Conversely, people have cited a lack of GP recommendation as the cause for being vaccine-hesitant²¹.

To adequately address vaccine hesitancy, it is important for pharmacists and pharmacy teams to understand the factors that contribute to vaccine hesitancy (see Box 1) and how to support patients in their decision-making process to guide them towards vaccine acceptance and confidence as outlined below.

[Listen and communicate effectively](#)

Given that vaccine hesitancy is highly variable and context-specific, the concerns of the patient must be established so that relevant reliable information and advice can be provided. While a lack of information does not correlate with vaccine hesitancy³¹, many patients will seek information and reassurance from pharmacy staff³². Pharmacists should inform, educate and correct vaccine-related misinformation raised by a patient; however, care must be taken to not overload patients with detailed technical information, which is likely to be forgotten, while the simple misinformation narrative is remembered/reinforced³². Strong risk negation can also increase perceived vaccination risks³³. Pharmacists must take care not to repeat vaccine myths; a randomised trial evaluating the efficacy of messages in vaccine promotion paradoxically found that corrective information about the disproven vaccine-autism link reduced intention to vaccinate among the most vaccine-hesitant parents³⁴.

Box 2: Do's and don'ts regarding communication³³

Do	Don't
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Listen to the patient and acknowledge their concerns without judgement.	Question an individual's sacred values or group identity; Criticise a particular group such as vaccine-hesitant parents.
Engage the patient in a dialogue. Frame the conversation beyond a binary yes/no vaccination decision. Tailor your response to the patient's concerns; Keep messages clear and easy to understand; Avoid jargon; Avoid using statements such as 'no risk' as people mistrust strong statements and may conversely believe the opposite.	Get into an argument/debate back and forth or repeat vaccine myths (as the person will not remember a detailed explanation of why the vaccine myth is incorrect but will remember the simple narrative of the myth).
Help patients to weigh up the risks versus benefits; Remind patients of the benefits of vaccinations, the mildness of vaccine adverse effects and the very low risk of serious adverse effects; Highlight the risks of not immunising.	Use fear as this can backfire.
Correct misinformation, accept questions and explain.	Overload the patient with information as this can backfire.
Provide personal examples, e.g. own vaccination, fact sheets and other resources.	
Communicate the high level of endorsement of vaccines by various communities.	
Refer patient to other providers or schedule another appointment to discuss remaining vaccination concerns.	
Guide patient along the vaccine hesitancy continuum towards acceptance and recognise the value of the conversation, even if patient does not get vaccinated at that appointment.	

Be proactive

Addressing vaccine hesitancy needs to be an ongoing dialogue. The pharmacy team can proactively bring up vaccination when opportunities arise, for example, when selling face masks and hand gels, handing medicines to patients, conducting medicines use reviews, taking a drug history, counselling a patient on a new medication or responding to queries about medicines or minor ailments. If a

patient does not take up a vaccine at the first invitation, it is important to not be discouraged, but to 'leave the door open' and indicate that they can come back to take the vaccine or to receive more information. Continual action will also mean that patients are exposed to positive messages about vaccination, which could help them recognise misinformation.

Be prepared

Pharmacists and pharmacy teams must be prepared for conversations and keep up-to-date information regarding vaccine efficacy, components, severity, and frequencies of adverse effects at hand. Providing information about vaccine safety and efficacy and educating patients about the benefits of vaccination and the risks of non-vaccination have been shown as effective strategies for addressing vaccine hesitancy by community pharmacists³⁵. Pharmacists can answer patients' queries about vaccines and vaccination and offer advice on how to relieve common adverse effects, such as fever.

The Royal Pharmaceutical Society has compiled a comprehensive guide on COVID-19 vaccines, including information on the excipients, ingredients and side effects, to help pharmacists and their teams assure the public about the safety and efficacy of approved vaccines³⁶.

Table 1 shows how pharmacists and pharmacy teams can start a conversation or respond to general queries on vaccines or vaccination.

Table 1 example conversation between pharmacist and patient regarding COVID-19 vaccines^{29,31,34,37}.

Patient to pharmacist	Pharmacist response	Practical point
"I received a text message from my GP to book a COVID-19 vaccine appointment. I'm not sure if I'll book an appointment"	"What have you heard about the COVID-19 vaccines? I might be able to answer some of your questions"	Listen and communicate effectively
"Thanks for answering my questions, I'm still not 100% sure the vaccines are safe"	"That's okay. If you have any more questions, I'm happy to help. You can also discuss vaccination with your GP"	Be proactive, and leave the door open
"I heard that the COVID-19 vaccines cause infertility as a side effect. Is that true?"	"No. Infertility is not a side effect of any of the approved COVID-19 vaccines in the UK. So far, millions of people have been given a COVID-19 vaccine and reports of serious side effects, such as allergic reactions, have been very rare. No long-term complications have been reported. Most side effects are mild such as fever and a sore arm where the needle went in. These go away in a few days. You can take painkillers, such as paracetamol, if you need to.	Be prepared

Box 3 further outlines some important messages pharmacists and pharmacy teams should provide patients regarding COVID-19 vaccines.

Box 3: Important messages regarding COVID-19 vaccines^{38,39}

- The COVID-19 vaccines available in the UK are safe and effective, have undergone a strict approval process and are our best defence against the virus. The vaccine development and approval processes are the same as in a non-pandemic situation; the only difference is the high speed;
- Priority groups have been set to receive the vaccine based on their heightened risk of exposure to the virus;
- Getting vaccinated means protection from the virus. The vaccines cannot give an individual COVID-19 infection as they do not contain the virus and they will reduce the chance of individuals becoming seriously ill. Getting vaccinated protects individuals and those around them from the virus;
- Infection prevention and control and testing measures need to be continued at work, at home and when out and about:
 - Practice social distancing;
 - Wear a face mask;
 - Wash your hands carefully and frequently;
 - Follow the current government guidance.
- The vaccine is free in the UK;
- People with history of a severe allergy to the ingredients of the vaccines should not be vaccinated. The MHRA have updated their guidance to say that pregnant women and those who are breastfeeding can have the vaccine but should discuss it with a clinician to ensure that the benefits outweigh any potential risks. The vaccines do not contain living organisms, and so are safe for people with disorders of the immune system.

Cultural concerns

Vaccine hesitancy relating to COVID-19 is greater among ethnic minorities, especially among Black African and Black Caribbean groups, followed by Pakistani/Bangladeshi⁴⁰⁻⁴¹. Barriers to vaccine uptake among minority ethnic groups include perception of risk, low confidence in vaccines, distrust/mistrust of public services such as healthcare due to historical issues and contemporary perceptions of institutional racism, access barriers, inconvenience, socio-demographic context, language, religious and cultural factors and lack of endorsement, lack of vaccine availability or lack of communication from trusted providers and community leaders^{40, 42}.

A recent podcast exploring why some black people are hesitant about COVID-19 vaccines highlighted that the vaccine clinical trials included few black participants, and the fact that many black people work in frontline jobs, or in the entertainment industry, where they cannot work from home and/or have no paid leave⁴³. This may make taking an older parent to a vaccination centre far from home impractical, and the possibility of having to take unpaid time off work if they are unwell with vaccination side effects may be a real deterrent to getting the vaccine. Further barriers include language, mistrust and fear of authority⁴³.

Pro-vaccination messages are known to lead to greater levels of acceptance if heard from community leaders/members and others trusted within their communities⁷, and some faith groups have produced resources related to the concerns of their communities about COVID-19 vaccines (see Table 2).

The tailoring of health messages and advice to reflect local realities such as the people, services, resources, and social and cultural norms of the target community, which can differ among ethnic minorities and white British communities, is therefore important. The availability of information in various languages will also make health messages more accessible⁴², although it must be remembered that many people who speak a cultural language do not necessarily read it as well, therefore spoken resources such as a YouTube clip may be more accessible than printed leaflets⁴². A range of spoken resources has been produced by NHS staff⁴⁴.

Table 2: Religious concerns about the COVID-19 vaccines currently licensed in the UK^{37,44-53}

Religion	Concern	Addressing the concern/s
Christianity	<ul style="list-style-type: none"> The use of cell lines from aborted fetuses in the development of Oxford/AstraZeneca vaccine, due to the Christian belief in the sanctity of life. 	<ul style="list-style-type: none"> The House of Bishops Recovery Group issued an update on the COVID-19 vaccines on 8 December 2020 that addresses the use of foetal cell lines. This update states that there is not an association between the morality of voluntary abortion and the morality of using aborted foetal material, such that “all clinically recommended vaccinations can be used with a clear conscience” and that the use of such vaccines does not “signify

		<p>some sort of cooperation with voluntary abortion”.</p>
<p>Islam</p>	<ul style="list-style-type: none"> • Whether the vaccines are Halal (permissible or lawful). • Whether the vaccines contain any components of animal origin or alcohol. • The use of cell lines from aborted fetuses in the development of the Oxford/AstraZeneca vaccine, due to the Islamic belief in the sanctity of life. 	<ul style="list-style-type: none"> • The Medicines & Healthcare products Regulatory Agency has confirmed that there are no components of animal origin in the COVID-19 vaccines currently licensed in the UK. • The British Islamic Medical Association (BIMA) released a position statement on the Oxford/AstraZeneca COVID-19 vaccine on 10 January 2021, stating that due to the very small amount of ethanol within the vaccine, Muslim scholars have described the alcohol content of the vaccine as “negligible”, concluding that the vaccine is halal. • The BIMA position statement also states that fetuses were not aborted for the purpose of producing the vaccine and cells from fetuses

		<p>have not directly been used in the Oxford/Astrazeneca vaccine, therefore the use of cell lines in vaccine development has been “deemed permissible by a number of renowned scholars”.</p>
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<p>Judaism</p>	<ul style="list-style-type: none"> • Whether the vaccines are Kosher. The main concern is whether the vaccines contain pork, which is non-Kosher. • There has also been speculation in the Jewish community around the Pfizer/BioNTech vaccine and infertility. 	<ul style="list-style-type: none"> • The MHRA has confirmed that there are no components of animal origin in the COVID-19 vaccines currently licensed in the UK. • More than 80 British Jewish doctors signed an open letter dated 30 December 2020 stating: “A rumour that the vaccine causes infertility is particularly prevalent in Jewish circles. There is absolutely no evidence behind this rumour” and that “there is no logical reason to assume that the mRNA vaccine would affect fertility.”
<p>Hinduism</p>	<p>Whether the vaccines contain animal products.</p>	<ul style="list-style-type: none"> • The MHRA has confirmed that there are no components of animal origin in the COVID-19 vaccines currently licensed in the UK • The Hindu Council UK fully supports the COVID-19 vaccines and urges members to dispel rumours that the vaccine contains animal fat.

Best practice

Pharmacists and pharmacy teams can help address vaccine hesitancy by proactively starting conversations about vaccines, listening to patients, answering their questions, providing resources

that patients can take away with them, and reinforcing vaccine and vaccination facts when interacting with patients, as outlined above.

They can also advertise the fact that they have been vaccinated (e.g. by sticking an 'I've had my COVID-19 vaccination' sticker on their clothing) which can start conversations and demonstrate their trust in the vaccine.

Useful resources

COVID-19 vaccine resources <https://coronavirusresources.phe.gov.uk/covid-19-vaccine/resources/>

Public Health Wales COVID-19 vaccination information <https://phw.nhs.wales/topics/immunisation-and-vaccines/covid-19-vaccination-information/>

NHS Scotland Coronavirus (COVID-19): vaccine deployment plan 2021

<https://www.gov.scot/publications/coronavirus-covid-19-vaccine-deployment-plan-2021/>

Northern Ireland Get Vaccinated - <https://covid-19.hscni.net/get-vaccinated/>

ECDC—Let's talk about protection - <https://www.ecdc.europa.eu/en/publications-data/lets-talk-about-protection-enhancing-childhood-vaccination-uptake>

WHO—Vaccination and trust -

https://www.euro.who.int/__data/assets/pdf_file/0004/329647/Vaccines-and-trust.PDF

How have COVID-19 vaccines been developed so fast? - <https://covid.joinzoe.com/post/how-covid-vaccine-so-fast>

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