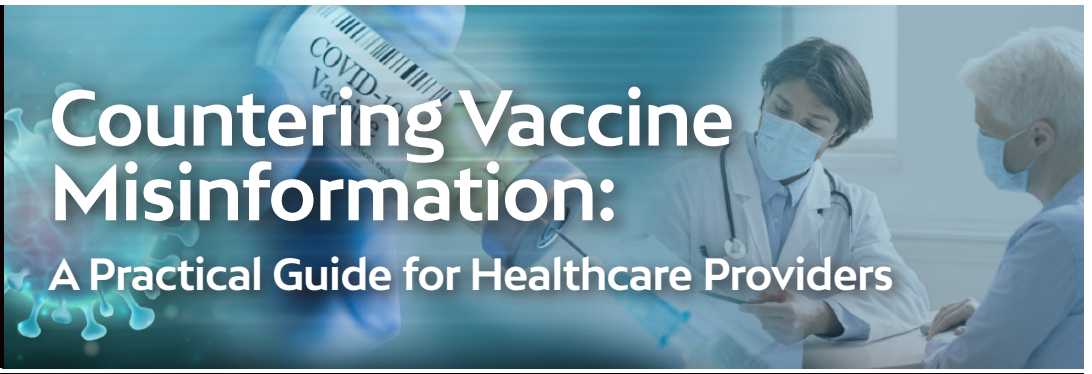




A RESEARCH REVIEW™
EDUCATIONAL SERIES

Countering Vaccine Misinformation: A Practical Guide for Healthcare Providers



Making Education Easy

2021

About the Experts



**Associate Professor
Helen Petousis-Harris**

Helen is an Associate Professor in the Department of General Practice and Primary Health Care at the University of Auckland and the Director of the Vaccine Datalink and Research Group. She has a PhD in Vaccinology and is particularly interested in factors associated with vaccine safety and reactogenicity, and the performance and safety of vaccines. Helen has a blog primarily devoted to vaccines and vaccination where she often discusses vaccine myths and matters of current interest in vaccinology.



Dr Amy Chan

Dr Amy Chan is a senior clinical research fellow at the School of Pharmacy, University of Auckland, New Zealand, and holds an honorary post at the Centre of Behavioural Medicine, University College London. She is a clinical pharmacist academic and holds a joint-appointment between the University of Auckland and Auckland District Health Board, the largest health board in NZ. Amy has specific research expertise in behavioural medicine – understanding factors that influence medicines-related behaviours – and in using big data to explore relationships between factors and health outcomes. Amy completed her PhD in medicines adherence and digital health, where she investigated the effect of a digital intervention on treatment adherence in asthma. Amy has nearly 15 years' experience in the public health service, where she led the clinical pharmacy service in mental health, and was the co-convenor for the New Zealand Hospital Pharmacists' Association Mental Health Special Interest Group. Amy is currently the global lead for workforce transformation with the International Pharmaceutical Federation (FIP), and the Commonwealth Pharmacists' Association (CPA) Professional Development and Research Lead. Amy also sits on the steering committee for ESPACOMP – the international organisation on adherence research and is a member of the global Neurological and Mental Health Global Epidemiology Network (NEUROGEN).

This article discusses vaccine misinformation and how it can undermine vaccine confidence and lead to vaccine hesitancy. Evidence-based strategies for countering vaccine hesitancy and misinformation are summarised. Techniques to support healthcare providers when engaging with individuals whose vaccine hesitancy has resulted from exposure to vaccine misinformation are provided.

The COVID-19 pandemic has been accompanied by an 'infodemic', a flood of information (both factual and false) enabled by digital technology and social media that is undermining efforts to control the pandemic.¹ The WHO has recognised that controlling the COVID-19 pandemic requires managing the associated infodemic:

“ We call on Member States to develop and implement action plans to manage the infodemic by promoting the timely dissemination of accurate information, based on science and evidence, to all communities, and in particular high-risk groups; and preventing the spread, and combating, mis- and disinformation while respecting freedom of expression. ”

The infodemic includes the dissemination of false information of which there are two types:^{2,3}

- **Misinformation:** unintentionally drawing conclusions based on wrong or incomplete information, which is disseminated by people who do not intend to mislead others.
- **Disinformation:** the deliberate creation and dissemination of false information with malicious intent to mislead and cause harm.

Both types of false information can undermine vaccine confidence and fuel vaccine hesitancy.³ However, different approaches are required to counter the two types of false information. While it is possible to correct misinformation with well-placed factual information, a complex institutional response (often needed to be undertaken on an ongoing basis with repeated iterative attempts) is required to counter disinformation.^{3,4}

Vaccine misinformation and its association with vaccine hesitancy and suggested ways to address misinformation at a healthcare provider (HCP) level will be the main focus of this educational resource, as HCPs are well-placed to address misinformation.

Vaccine misinformation

Rumours, testimonials, urban myths, and conspiracy theories are the primary sources of misinformation.⁵ There is a tendency for people to spread information that evokes an emotional response, regardless of whether the information is true or not.

According to a NZ Ministry of Health opinion survey (August 2021), a significant 51% of respondents had encountered what they believed to be COVID-19 vaccine-related misinformation.⁶ Social media (70%) was the main source of misinformation, followed by friends or family (40%) and brochures/leaflets (23%).

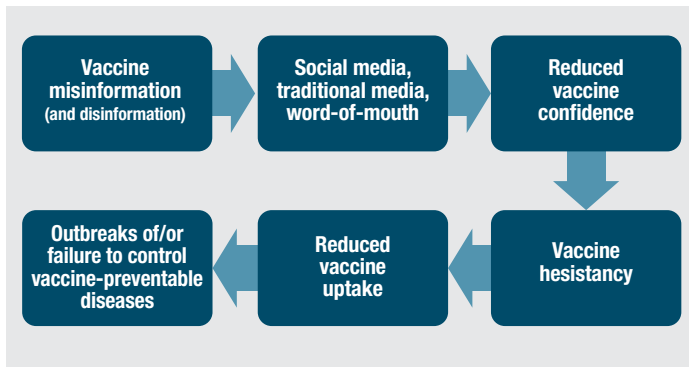
Māori, Pasifika, migrants, and ethnic minorities, as well as women, gender minorities, LGBTQIA+ people, people with disabilities, health workers, and government employees, have been identified by the Te Pūnaha Matatini Disinformation Project as key groups and individuals being targeted with vaccine misinformation on social media platforms.⁷

Widespread prevalence and persistence of vaccine-related misinformation poses a threat to the public health response to a pandemic.^{5,8,9} Misinformation contributes to underutilisation of diagnostic testing, vaccine campaigns failing to meet targets, and also polarisation of public debate related to COVID-19.¹

Impacts of vaccine misinformation

There is a clear link between susceptibility to misinformation and vaccine hesitancy,¹⁰ and high levels of hesitancy lead to low vaccine acceptance and lower intent to accept a COVID-19 vaccine.^{11,12} Misinformation has the potential to polarise people, erode trust, and undermine confidence in vaccines and increase vaccine hesitancy risking outbreaks of vaccine-preventable disease.^{13,14} Clusters of vaccine refusal have been associated with outbreaks of vaccine-preventable disease.¹⁵

Misinformation being spread about COVID-19 has been shown to evoke confusion and mistrust during the pandemic, which are factors related to a reduced tendency towards COVID-19 vaccine uptake.¹⁶

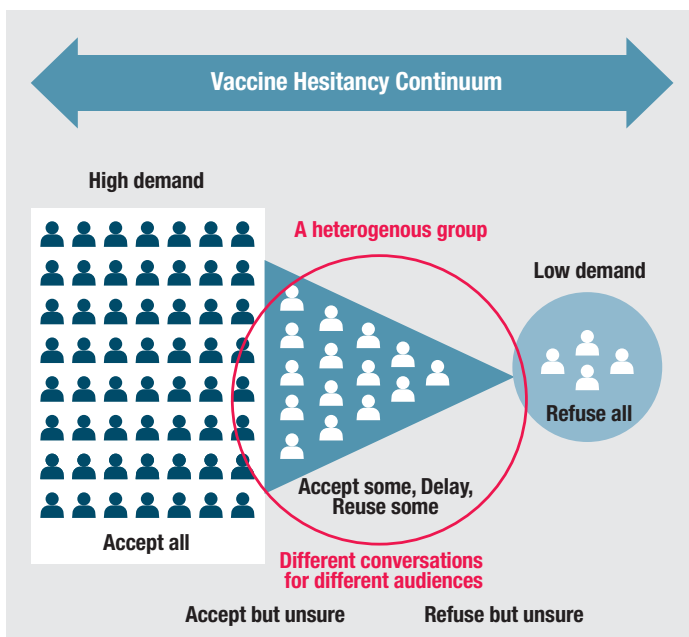


Process of how vaccine misinformation leads to vaccine hesitancy and increased risk of outbreaks of vaccine-preventable disease.

Vaccine hesitancy

Vaccine hesitancy is formally defined as a delay in acceptance or refusal of vaccination despite access to vaccination services.¹¹ However, vaccine hesitancy exists along a complex continuum from acceptance to refusal. Between those extremes are individuals who are concerned but willing to accept (cautious acceptors) to those who wish to delay (many concerns) to those who choose some vaccines but not others (selective acceptors).^{11,17}

The good news is that vaccine hesitancy is dynamic (anyone can be hesitant at any point in time) and can be influenced by simple and brief interventions that HCPs can deliver opportunistically during patient consultations and via social media. Individuals may move between categories over time due to influences such as exposure to information or perceived need for vaccination.¹⁷



Vaccine hesitancy occurs on the continuum between acceptance and refusal, resulting in a heterogeneous group of individuals requiring different misinformation countering conversations.^{11,17}

According to a 2021 nationally-representative online survey, a significant minority of New Zealanders, who were more likely to be young, female, and less educated, were unsure (15%) or unlikely (14%) to get a COVID-19 vaccine.¹⁸ Although ethnicity was not significantly associated with COVID-19 vaccine hesitancy, prior surveys have indicated higher levels of hesitancy among ethnic minorities,¹⁹ who may be at higher risk of infection and complications of disease.

Reasons for vaccine hesitancy

Reasons for vaccine hesitancy are complex and multifactorial.^{17,20}

Drivers of hesitancy include general mistrust of vaccination and healthcare systems, low perceived the risk of contracting a vaccine-preventable disease and/or underestimating its severity, and preference for natural immunity.^{14,17,20}

Vaccine-specific drivers of hesitancy include doubts related to vaccine country of origin, development process, effectiveness, duration of protection, and safety.^{14,17,20} Misinformation circulating about COVID-19 vaccines primarily relates to their development, safety, and effectiveness.³

The main specific reasons for New Zealanders being unsure or unlikely to get a COVID-19 vaccine have been reported to be concerns about:⁶

- Potential for long-term effects.
- Safety and potential for serious adverse reactions.
- Ineffectiveness against new coronavirus variants.
- Potential for health to be affected in other ways.

Vaccine acceptance is also context-specific (including people's personal experience with vaccination and trust in the healthcare system), with social, cultural, ethnic, religious, historical, and political factors influencing how people feel and decide about vaccination.^{14,17,20} This observation emphasises the potential for vaccine hesitancy to be influenced by involving community healthcare providers, community leaders, and religious leaders in countering vaccine misinformation to reduce vaccine hesitancy.

In successive longitudinal online nationally-representative surveys, Māori and Asians became more enthusiastic about COVID-19 vaccination over time compared with European New Zealanders,¹⁹ which implies the success of community-led interventions to increase vaccine acceptance. An example is SuperSaturday, which achieved high rates of vaccination nationally via community-led events.²¹

Countering vaccine hesitancy

Because vaccine hesitancy undermines vaccine demand, implementation of evidence-based approaches to counter hesitancy and increase vaccine uptake are needed.^{11,14}

HCPs have an essential role to play in addressing vaccine hesitancy, with trust in HCPs being a strong predictor of vaccine uptake.²² Studies have consistently shown that confidence in vaccines is strengthened by recommendations from HCPs,^{13,14,23} who are cited as the most frequent source of vaccine information by parents.^{15,24} HCP recommendations have been reported to be a key reason for acceptance of vaccines for human papilloma virus (HPV) and influenza as well as acceptance of vaccines during pregnancy.¹⁷

Where trust in HCPs is lacking, community leaders, community healthcare advocates, and religious leaders have an important role to play in countering vaccine hesitancy.^{17,25,26}

In general, only once a person's concerns have been identified and acknowledged can a response be constructed (avoid adopting an information-giving role!).

When addressing the vaccine hesitant individual, communication should be honest, culturally appropriate, and consistent.

The following process can be used to identify reasons for hesitancy:

1. Be aware of the **common reasons** for hesitancy so that the HCP is prepared to look out for reasons that may be driving hesitancy.
2. **Normalise and invite open conversation** about vaccination in a non-judgemental manner.
3. **Seek to listen** and understand the individual's views to encourage engagement and elicit issues and concerns about vaccination.



Two approaches for countering COVID-19 vaccine hesitancy are:

1. Confidence-strengthening approach

Make recommendations, strong recommendations, and use presumptive, announcement-style language rather than conversational, participatory style language for a higher vaccine uptake.^{14,23} For example, phrases such as “The nurse will return with the vaccines due” shows a clear plan of action rather than “What are you planning to do about the vaccines?”. Note that these strong recommendations should occur after open questions about an individual’s potential vaccine concerns have occurred.

Confidence-strengthening approach		Examples
Make recommendations	YES	“Your doctor recommends that you get the COVID-19 vaccine.”
Strong recommendations	YES	“COVID-19 vaccination is very safe and effective and I strongly recommended that you get your COVID-19 vaccine today.”
Presumptive-style language	YES	“The nurse will be giving you your COVID-19 vaccine.”
Participatory-style language	NO†	“What are you planning to do to get a vaccine?”

†Participatory-style language can be used to start a conversation and elicit concerns.

2. Messaging approach

The positive-framing of messages can improve vaccination rates.¹⁴ A positive frame involves emphasising the benefit gained by participating in vaccination while a negative frame emphasises the risks of not getting vaccinated. Appeals to altruism have also been found to be effective communication strategies to promote vaccine uptake. This can occur prior to addressing the concerns.

Messaging approach		Examples
Positive-framing (benefit gain)	YES	“Getting the COVID-19 vaccine will help protect you and your family.”
Negative-framing	NO	“Not getting the COVID-19 vaccine means you are putting yourself and your family at risk.”
Appeals to altruism/pro-social behaviour	YES	“Getting the COVID-19 vaccine will help protect vulnerable members of the community.”

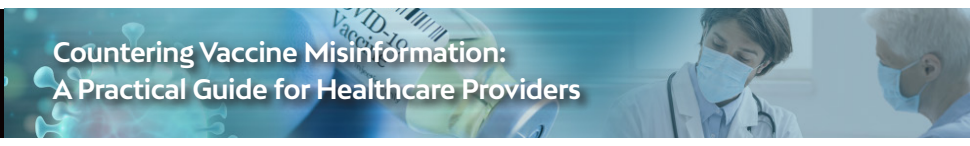
Countering vaccine misinformation

Countering misinformation is an essential component of communication approaches geared toward building trust and confidence in vaccines.

Source credibility matters for countering of misinformation, with perceived trustworthiness of the person providing the information potentially being more relevant than their perceived expertise.²⁷ HCPs are generally perceived to have high credibility for both trustworthiness and expertise, though this may depend on the relationship that the HCP has with the individual. Community-stakeholders also play an important role in countering vaccine information circulating in groups with low levels of engagement or confidence in healthcare systems.²⁸⁻³⁰

The following general points should be considered when countering misinformation:

- Pick your battles. If a myth is not spreading extensively, or has limited potential to cause harm, there may be no point spending time and effort in countering it.²⁷
- Present the narrative in a socially and culturally normative manner, so that it is consistent with the expectations of the target group.⁸ Focus on opportunities that the vaccine opens up for activities valued by their group.⁸
- Corrective explanations should be straightforward and succinct.^{5,9} Although factual information is necessary to communicate about vaccination, overloading audiences with complexity may reinforce misperceptions. Messages that are ‘easy’ to interpret and remember are more likely to be perceived as true. However, it is important to offer an explanation not just a fact.
- Explanations involving science-supporting messages are effective in countering vaccine misinformation.³¹ For example, parents of young children have reported high levels of support for pro-vaccine messaging that emphasises the science of vaccine safety and effectiveness and highlights the consequences of vaccine-preventable disease.³²
- Pair scientific evidence with story-telling.⁹ Positive first-person accounts, or the position shift of someone previously holding anti-vaccine views, can reinforce vaccination as a social norm. Anecdotes from people personally affected by vaccine-preventable diseases are perceived as particularly credible and not scare mongering. Also consider use of people’s positive vaccination experiences (as most of them are), e.g. stories supporting the ease and safety of getting a vaccine.
- Because corrections must refer to the misinformation they may raise its familiarity; hence, countering should be carefully done to avoid giving undue repeated exposure to conspiracy claims.²⁷ This is where explanation helps – an explanation that makes sense helps make the new information ‘stick’.
- Correcting a myth unavoidably reinforces a rhetorical frame (talking points) created by someone else.²⁷ Use your own talking points (i.e. an explanation not just facts!) when countering, especially positive talking points, e.g. vaccine benefits.
- Use of the myths versus facts format may have limited effectiveness as it can lead to people misremembering the presented evidence, favouring the myths (see **Beware backfire effects**).³³ This is where the structure of your response and explanations that make sense come into play.
- Avoid hostile interactions.⁹ An argumentative interaction may suggest that the benefit of vaccination is in dispute. Keep interactions brief, factual, and polite. An open participatory manner at the start of a conversation can assist.



Misinformation countering is more likely to be successful if the following four-component guidance – **Fact, Warning, Fallacy, Fact** – is used:²⁷

“ On the Medsafe website it says that there have been many deaths after the vaccine. ”

	Process	Example
FACT	<p>State the truth first</p> <ul style="list-style-type: none"> Lead with the fact Make it clear, relevant, and memorable Frame the message using your own talking points, not those of someone else The best corrections are as prominent as the misinformation 	<p><i>“Vaccine safety is taken very seriously. Serious adverse events are assessed carefully to determine the cause using many approaches.”</i></p>
WARNING	<p>Point to misinformation</p> <ul style="list-style-type: none"> Pre-warn that the myth is coming Mention the myth only once, directly prior to the correction 	<p><i>“There is a common misunderstanding about reports of adverse events.”</i></p>
FALLACY	<p>Explain why misinformation is wrong</p> <ul style="list-style-type: none"> Compare the correction with mistaken information Ensure the rebuttal is clearly paired with the misinformation: <ol style="list-style-type: none"> 1. Explain why the myth was thought to be correct originally; and 2. Explain why it is now clear that the myth is false; and 3. Explain why the alternative is correct If possible, also point out logical fallacies underlying the misinformation 	<p><i>“Some people claim these reports as evidence that the vaccine is causing serious harm but this is quite misleading.”</i></p> <p><i>“Reporting serious adverse events after immunisation is very important. While this does not immediately tell us what caused the events it can help us determine any patterns of concern that need further investigation.”</i></p> <p><i>“We know there is no increased risk of these events after vaccination because we can compare the risk in vaccinated people with unvaccinated people. This is how we know the vaccine does not increase the risk.”</i></p> <p><i>“This is a common fallacy whereby if something follows an event it is seen to be caused by that event.”</i></p>
FACT	<p>State the truth again</p> <ul style="list-style-type: none"> Restate the fact again – multiple times if possible – it should be the last thing people process mentally Avoid repeating the misinformation Effect of refutations will wear off with time – be prepared to counter repeatedly 	<p><i>“The vaccine is very effective at preventing death from COVID-19. There is no evidence that the vaccine increases a person’s risk of dying, after hundreds of millions of doses the risks of serious harm are very low.”</i></p>

Beware of backfire effects

There is the potential for misinformation countering efforts to backfire:^{13,27}

- A backfire effect occurs when a correction inadvertently increases rather than reduces belief in misinformation.
- A familiarity backfire effect is where a correction makes a myth more familiar because a myth is necessarily repeated when it is countered.
- Evidence shows that backfire effects are less common than previously thought and can be largely mitigated.

Focussing on the facts with explanations rather than the myth to be corrected has been found to be effective in many circumstances, i.e. countering overwhelms the familiarity increase and results in a significant net benefit effect.²⁷



Countering vaccine misinformation on social media

Vaccine misinformation is highly prevalent on social media^{2,34} where it contributes to vaccine hesitancy,^{13,20,35} including erosion of confidence in the COVID-19 vaccine.³⁵

Social media lacks filtering or fact checking of much of the posted information and facilitates the rapid spread of misinformation by allowing instantaneous communication and amplification of posted information by followers of influential people within networks.^{2,34} The amplifying effect of social media is illustrated by the finding that most of the COVID-19-related vaccine misinformation across multiple social media platforms was originated by just twelve individuals (who generate disinformation).³⁶

However, just as social media can be used to spread misinformation so can it be used to counter vaccine misinformation and reduce vaccine hesitancy.^{9,35} Social media platforms should be viewed by HCPs as essential vehicles for promoting science-based evidence and countering vaccine misinformation.^{9,37} A lack of COVID-19 vaccine outreach on social media platforms may be partly responsible for COVID-19 hesitancy among younger people who are frequent users of social media.²⁰

Social media allow HCPs to address vaccine misinformation by:

1. Directly countering misinformation posted on social media.
2. Sharing vaccine-positive information on social media.

1. Direct countering

As users of social media, individual HCPs can make a difference in efforts to counter vaccine misinformation.²⁷ Other users seeing someone on social media being corrected can be effective in reducing misperceptions.^{9,27} For example, a social media campaign to correct HPV vaccine misinformation found that comments promoting misinformation about the HPV vaccine were frequently countered via peer-to-peer dialogue.³⁸

Exposing flawed anti-vaccine arguments and the incorrect or selective use of evidence, and highlighting a different perspective based on science and fact, empowers users to independently recognise and resist misinformation.⁹ It can also help observers to have constructive conversations about the topic with others – in other words, amplify the factual messages. The consequence of not speaking is that a silent majority (i.e. those observing but not openly commenting, liking, or sharing posts) surrenders an incorrect narrative to a vocal but misinformed minority.

2. Information sharing

In addition to direct interactions with social media users, HCPs can boost vaccine confidence and indirectly address misinformation by sharing science-based information across their social media platforms, e.g. posting the latest vaccine research, starting a fact-based Twitter campaign, posting vaccination rates. Increased posting of factually-correct vaccine information will help to “dilute” vaccine misinformation on social media.

There are three ways – Create, Post, Re-share – for HCPs to share information on social media:

1 CREATE

Create your own posts (video or images).

Share simple and accurate posts that communicate key vaccine facts and science with your online communities. Apply the following principles when creating your own post:³⁹

- Know your audience.
- Research your message.
- Be accurate (i.e. rigorously fact check).
- Be yourself – use your own voice.
- Speak to your experiences.

There are many excellent infographics, animations, and other assets developed by various science-based entities that can be shared. Some sources are provided on page 7. Also, following people on social media who are prolific in the tweeting and sharing of good information can make your job easier!

For those who do not have time to create, it may be easier to use templates others have created or frames (e.g. Facebook profile picture frames).

2 POST

Use the following process to post images and videos with captions to clearly communicate key messages:³⁹



3 RE-SHARE

Re-share vaccine information already disseminated by trusted sources to your networks, e.g. the Tok-tok campaign used for SuperSaturday.

Many trusted local and international health organisations (e.g., NZ Ministry of Health, US Centres for Disease Control and Prevention, WHO, and Global Alliance for Vaccines and Immunisation) already post important vaccine information that can be easily re-shared.

Posts from these sources can be shared by:³⁹

- Retweeting on Twitter.
- Sharing on Facebook or LinkedIn.
- Sharing Instagram feed posts to your Instagram Stories.



Examples of countering misinformation

The first step in countering vaccine misinformation is to listen and determine where the person is positioned. The following examples describe interactions in three scenarios: vaccine misinformation influenced; vaccine sceptical; and vaccine refusal.

1 Having a conversation with someone who has been influenced by misinformation

Engagement principles:

- Ask about their concerns
- Be empathetic and listen
- Acknowledge their concerns
- Correct a myth or misunderstanding using an evidence-based framework
- Consider using a personal anecdote to both connect and to illustrate the risks of the disease or the value of vaccines
- Use inclusive terms to emphasise shared identity
- Keep key messages simple and repeat them often

HCP

“Can you tell me what you are most worried about?”

“Well, for example, I have heard that there have been a lot of deaths after the vaccine.”

PERSON

HCP

“That is a really concerning prospect. This is what I know about the reports of deaths after the vaccine and how vaccine scientists go about working out if the vaccine increases a person’s risk of serious adverse events. First, most countries all over the world have a safety reporting system whereby any event that is unexpected or serious is encouraged to be reported. These systems cannot tell us if the vaccine caused the event but they are very good at identifying possible safety concerns.”

HCP

“The next step is to check if this signal is real, in other words, are we seeing more deaths than we would normally expect to see. If we do, then we have a safety signal and this is investigated more thoroughly. Essentially, this will involve comparing (in this case deaths) vaccinated people with unvaccinated people. Using all these approaches, all over the world, we know, even after hundreds of millions of doses of vaccine, that the vaccine does not increase a person’s risk of death.”

...Here we have provided the essence of vaccine safety monitoring and highlighted that just because something happens after the vaccine, does not mean it has been caused by the vaccine.... Avoid getting into a discussion about individual cases you have no clinical details about and stay with general principles....

HCP

“It may be helpful to note that every year X number of people in NZ die, some of them are not old. We expect to see deaths every day and some of these will occur by chance after the vaccine.”

2 Having a conversation with someone who is highly sceptical about vaccines

Engagement principles:

- Frame messages in terms of gain/benefit
- Offer novel information about the disease being targeted with vaccination
- Appeal to altruism and pro-social behaviour
- Address individual’s barriers to vaccination and misperceptions:
 - Affirm values
 - Explain motivation for misinformation
 - Repeat factual information

“The vaccine does not prevent infection so why should it be mandated? It should be a personal choice and why should a vaccinated person be worried about an unvaccinated person?”

PERSON

...Here there are several fallacies in the premises underpinning the conclusion...

HCP

“While the vaccine is not being mandated in general, there are many occupations and businesses that are requiring staff to be vaccinated to continue their duties. The vaccine is highly effective at preventing symptomatic infection, particularly serious disease but not everyone who gets it will be fully protected, particularly people who are very old or who have impaired immune systems. Because the vaccine reduces infection and onward transmission of the virus, we can help to protect these members of our community who remain vulnerable.”

HCP

“The effectiveness of the vaccine at preventing the virus from colonising our respiratory tracts declines over time, as does that immunity from natural infection. Evidence shows that a booster dose several months later reinvigorates this immunity and also expands it. So, while vaccinated people can still get infected, they are less likely to infect others. This becomes important in the workplace and community where some people have suppressed immune systems and may not have responded to their vaccinations.”

...Here we have acknowledged the limitations of the vaccine...



3 Managing a conversation with someone who is vehemently opposed to vaccines

Engagement principles:

- Acknowledge they have concerns; ascertain they are immovable
- Do not tackle head on; it will back-fire and the person will double down
- Do not feed the trolls (people who want to provoke emotional response)
- There must be trust before any conversation
- Are there common values, what can you agree on?
- Limiting the effect of their comments on others is important
- Accept this may not be an effective use of your time and energy

"I don't need to get vaccinated – I am fit and healthy and have never had a sick day in my life. Plus I have heard of people dying from the vaccine or having long-term side effects. I don't want that."

PERSON

...Here engagement principals are the way forward. Moving a person from this position to vaccine acceptance is unlikely in a single discussion, and if possible likely to take the best part of an hour of intense conversation. Focus on what you can do, which could include acknowledging that vaccines are not perfectly safe nor perfectly effective or the importance of keeping children healthy. Keep the door open for future conversations...

HCP

"Getting the vaccine is a big decision and I can see you understandably have concerns. The thing with the virus is that it can affect many people – even people who have not been sick before. While vaccines may cause some side effects, the risk of harm and dying is many times greater if you get the virus and are not vaccinated compared to the chances of getting side effects from the vaccine."

HCP

"Importantly, because you are fit and healthy, you are likely to make a really good immune response to the vaccine. And most people only have mild side effects that last a very short time."

"I have seen videos online from people that have long-term effects after the vaccine. I heard someone even died after."

PERSON

HCP

"Can you tell me more about what happened after the person got vaccinated?"

"I don't really know. Heard lots about bad stuff happening after the vaccine. I'm not keen to have that."

PERSON

HCP

"That's fair enough. You don't need to make any decisions today – after all, it is an important decision to make. Often people post things online that are their own opinions and as you say, it's hard to know the details when it's a post that's just been shared many times online. Have a look at some of these sites and see what you think. I'm here to chat more after you've had some time to digest or want any other information."

EXPERT'S CONCLUDING COMMENTS – HELEN PETOUSIS-HARRIS

In the more than twenty years that I have been engaged in addressing disinformation and misinformation the themes have remained unchanged. However, the tools used to spread it have taken on a new form and the sophistication in packaging fallacies has metamorphosed into a very new set of challenges. Public health was not prepared for the rise in social media platforms as weapons of mass destruction. Still now it remains impotent against the tsunami of well-funded, well-orchestrated programmes of disinformation.

Equipping healthcare professionals to tackle the deluge of misinformation should be a public health priority. After all, the spread of health misinformation has been identified by the WHO as one of the biggest threats to public health we face, and as such deserves appropriate resourcing. This will require a multi-pronged strategy along with the local political will, leadership, and courage to turn the tide. Without genuine intervention the problem will continue to march in the dark direction in which it is headed, dragging millions down the proverbial rabbit hole as it goes. The ultimate result, indicated by modelling, is that within a decade more people will exist in anti-vaccine echo-chambers than in neutral or pro-vaccine groups. Vaccine confidence will not improve on its own and reversing the damage is much harder than creating it.

Healthcare professionals are a potentially powerful antidote to misinformation and images of Eomer leading the riders of Rohan into Helms Deep to turn the battle spring to mind. Removing the barriers that prevent this trusted and knowledgeable force include lack of appropriately funded, accessible education on how to talk with those who have vaccine concerns, lack of employer support, the potential to be bullied and harassed by vaccine opponents, uncertainty about some of the myths and responses to these, and uncertainty of how to engage as safely and effectively as possible on social media platforms. Addressing these barriers requires a paradigm shift that will encourage, equip, and facilitate healthcare professionals to help reverse the tide on misinformation and convert vaccine hesitancy into vaccine confidence.

EXPERT'S CONCLUDING COMMENTS – AMY CHAN

Vaccines are one of the most effective tools we have in our fight against infectious diseases. However, vaccine misinformation is one of the biggest public health threats facing us this century and fuels vaccine hesitancy. Healthcare professionals are well placed to make the most of every interaction with their patients to deliver effective conversations to address misinformation and hesitancy.

ADDITIONAL INFORMATION AND EDUCATIONAL RESOURCES

- [COVID-19: Vaccine Research Insights \(NZ MOH\)](#)
- [Coronavirus disease \(COVID-19\): Vaccines \(WHO\)](#)
- [Debunking Handbook 2020](#)
- [Get the facts on Covid-19 \(Independent Fact Checker\)](#)
- [Global Alliance for Vaccines and Immunizations \(GAVI\)](#)
- [Go Viral! Game \(Learn how COVID-19 Misinformation goes Viral\)](#)
- [How to Spot Vaccine Misinformation](#)
- [PAUSE: Take Care Before You Share](#)
- [Pharmacist Toolkit \(Building Vaccine Confidence\)](#)
- [Tackling Covid Misinformation: A Social Media Toolkit for HCPs](#)



REFERENCES

1. WHO. Managing the COVID-19 infodemic: Promoting healthy behaviours and mitigating the harm from misinformation and disinformation. Joint statement by WHO, UN, UNICEF, UNDP, UNESCO, UNAIDS, ITU, UN Global Pulse, and IFRC. Geneva: World Health Organization. Last update date: 23 September 2020. Available from: <https://www.who.int/news/item/23-09-2020-managing-the-covid-19-infodemic-promoting-healthy-behaviours-and-mitigating-the-harm-from-misinformation-and-disinformation>. [Date accessed: 14/10/21].
2. Wang Y, et al. Systematic Literature Review on the Spread of Health-related Misinformation on Social Media. *Soc Sci Med*. 2019;240:112552.
3. US CDC. How to address COVID-19 vaccine misinformation. Washington, D.C.: Centers for Disease Control and Prevention. U.S. Department of Health & Human Services. Last update date: 04/09/21. Available from: <https://www.cdc.gov/vaccines/covid-19/health-departments/addressing-vaccine-misinformation.html>. [Date accessed: 16.09/21].
4. Burki T. Vaccine misinformation and social media. *Lancet Digital Health*. 2019;1(6):E258-E9.
5. Lewandowsky S, et al. Misinformation and Its Correction: Continued Influence and Successful Debiasing. *Psychological Science in the Public Interest*. 2012;13(3):106-31.
6. MOH NZ. COVID-19: Vaccine research insights. At a glance - August 2021. Wellington: Ministry of Health New Zealand. Last update date: 22/09/21. Available from: <https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-vaccines/covid-19-vaccine-strategy-planning-insights/covid-19-vaccine-research-insights>. [Date accessed: 29/09/21].
7. Hannah K, et al. The Disinformation Project. Working Paper: Mis- and disinformation in Aotearoa New Zealand from 17 August to 5 November. 2021: 1-10. Auckland: Te Pūnaha Matatini; Department of Physics, University of Auckland. Available from: <https://www.tepunahamatatini.ac.nz/2021/11/09/mis-and-disinformation/>
8. Lazić A, et al. A systematic review of narrative interventions: Lessons for countering anti-vaccination conspiracy theories and misinformation. *Public Underst Sci*. 2021;30(6):644-70.
9. Steffens MS, et al. How organisations promoting vaccination respond to misinformation on social media: a qualitative investigation. *BMC Public Health*. 2019;19(1):1348.
10. Roozenbeek J, et al. Susceptibility to misinformation about COVID-19 round the world. *R Soc Open Sci*. 2020;7(10):201199.
11. MacDonald NE. Vaccine hesitancy: Definition, scope and determinants. *Vaccine*. 2015;33(34):4161-4.
12. Loomba S, et al. Measuring the impact of COVID-19 vaccine misinformation on vaccination intent in the UK and USA. *Nat Hum Behav*. 2021;5(3):337-48.
13. Al-Amer R, et al. COVID-19 vaccination intention in the first year of the pandemic: A systematic review. *J Clin Nurs*. 2021, Jul 6 [Online ahead of print].
14. Finney Rutten LJ, et al. Evidence-Based Strategies for Clinical Organizations to Address COVID-19 Vaccine Hesitancy. *Mayo Clin Proc*. 2021;96(3):699-707.
15. Omer SB, et al. Vaccine refusal, mandatory immunization, and the risks of vaccine-preventable diseases. *N Engl J Med*. 2009;360(19):1981-8.
16. Lockyer B, et al. Understanding COVID-19 misinformation and vaccine hesitancy in context: Findings from a qualitative study involving citizens in Bradford, UK. *Health Expect*. 2021;24(4):1158-67.
17. Turner PJ, et al. Vaccine Hesitancy: Drivers and How the Allergy Community Can Help. *J Allergy Clin Immunol Pract*. 2021;9(10):3568-3574.
18. Prickett KC, et al. COVID-19 Vaccine Hesitancy and Acceptance in a Cohort of Diverse New Zealanders. *Lancet Reg Health West Pac*. 2021;14:100241.
19. Thaker J, et al. Shifting COVID-19 Vaccine Intentions in New Zealand: Next Steps in the Vaccination Campaign. *Lancet Reg Health West Pac*. 2021;15:100278.
20. Aw J, et al. COVID-19 Vaccine Hesitancy-A Scoping Review of Literature in High-Income Countries. *Vaccines (Basel)*. 2021;9(8).
21. NZ Herald. Covid 19 Delta outbreak: Super Saturday vaccination best of Vaxathon - memorable moments and TikTok winners. Auckland: NZME. Last update date: 17 October 2021. Available from: <https://www.nzherald.co.nz/entertainment/covid-19-delta-outbreak-super-saturday-vaccination-best-of-vaxathon-memorable-moments-and-tiktok-winners/F25BE717KY4H5FHSNJNZISBA>. [Date accessed: 05/11/21].
22. de Figueiredo A, et al. Mapping global trends in vaccine confidence and investigating barriers to vaccine uptake: a large-scale retrospective temporal modelling study. *Lancet*. 2020;396(10255):898-908.
23. Jacobson RM, et al. How health care providers should address vaccine hesitancy in the clinical setting: Evidence for presumptive language in making a strong recommendation. *Hum Vaccin Immunother*. 2020;16(9):2131-5.
24. Ames HM, et al. Parents' and informal caregivers' views and experiences of communication about routine childhood vaccination: a synthesis of qualitative evidence. *Cochrane Database Syst Rev*. 2017;2(2):Cd011787.
25. Ratzan S, et al. Missing the Point - How Primary Care Can Overcome Covid-19 Vaccine "Hesitancy". *N Engl J Med*. 2021;384(25):e100.
26. Privor-Dumm L, et al. Community-based Strategies to Engage Pastors Can Help Address Vaccine Hesitancy and Health Disparities in Black Communities. *J Health Commun*. 2020;25(10):827-30.
27. Lewandowsky, S, et al. The Debunking Handbook 2020. Available from: <https://sks.to/db2020>.
28. Wahlquist C. Aboriginal health service asks Kimberley churches to counter Covid vaccine misinformation. *The Guardian*. 2013. Issue date: 26 May 2013. Sydney: Guardian Australia. Available from: <https://www.theguardian.com/info/2013/may/26/contact-guardian-australia>. [Date accessed: 19/09/21].
29. Igoe KJ. Establishing the Truth: Vaccines, Social Media, and the Spread of Misinformation. 20 July, 2019. Boston, MA: Harvard T.H. Chan School of Public Health. Available from: <https://www.hsph.harvard.edu/ecpe/vaccines-social-media-spread-misinformation/>. [Date accessed: 13/09/21].
30. Martin R. Misinformation, social media could play role in low Māori vaccination rate. RNZ. 2021. Issue date: 19 August 2021. Wellington: Radio New Zealand. Available from: <https://www.rnz.co.nz/news/te-manu-korihī/449488/misinformation-social-media-could-play-role-in-low-maori-vaccination-rate>. [Date accessed: 19/10/21].
31. Kuru O, et al. The effects of scientific messages and narratives about vaccination. *PLoS One*. 2021;16(3):e0248328.
32. Greenberg J, et al. Vaccine Hesitancy: In Search of the Risk Communication Comfort Zone. *PLoS Curr*. 2017;9.
33. Pluviano S, et al. Parents' beliefs in misinformation about vaccines are strengthened by pro-vaccine campaigns. *Cogn Process*. 2019;20(3):325-31.
34. Larson HJ, et al. Addressing the vaccine confidence gap. *Lancet*. 2011;378(9790):526-35.
35. Reno C, et al. Vaccine Hesitancy towards COVID-19 Vaccination: Investigating the Role of Information Sources through a Mediation Analysis. *Infect Dis Rep*. 2021;13(3):712-23.
36. Salam E. Majority of Covid misinformation came from 12 people, report finds. 17 July, 2021. *Guardian*. London, UK: Guardian News & Media Limited. Available from: <https://www.theguardian.com/world/2021/jul/17/covid-misinformation-conspiracy-theories-cdhd-report>. [Date accessed: 19/10/21].
37. Hernandez RG, et al. The COVID-19 vaccine social media infodemic: healthcare providers' missed dose in addressing misinformation and vaccine hesitancy. *Hum Vaccin Immunother*. 2021;17(9):2962-4.
38. Sundstrom B, et al. Correcting HPV Vaccination Misinformation Online: Evaluating the HPV Vaccination NOW Social Media Campaign. *Vaccines (Basel)*. 2021;9(4).
39. UK Government (via the WHO). Tackling COVID-19 misinformation. A social medical toolkit for healthcare practitioners. 4th August 2021. Available from: <https://www.who.int/publications/m/item/a-social-media-toolkit-for-healthcare-practitioners---desktop>.

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