

# Vaccine Messaging Guide

DECEMBER 2020

## About this guide

This Guide was developed by the Yale Institute of Global Health and the UNICEF Demand for Immunization team. It is intended for public health professionals, communicators, advocates and anyone else who wishes to create pro-vaccine content to motivate people to vaccinate themselves and their entourage.

An increasing body of formative research has identified a complex mix of determinants of people's vaccine decisions, however there remains a paucity of implementation research that has applied these insights to the design and testing of messaging interventions.

Every recommendation herein is based on the current evidence, but the authors encourage users to test all content for behavior-related outcomes.

## 1 INTRODUCTION

### 1.1 COVID-19 is impacting immunization

The COVID-19 pandemic is disrupting vaccination services globally in a number of ways. In a recent poll by UNICEF, WHO, GAVI and Sabin Vaccine Institute's Boost initiative, around 70 countries reported suspension or disruption of routine programmes. This was largely due to concerns by authorities, providers and parents about the risk of COVID-19 exposure during the vaccination consultation. A primary challenge will be communicating to the public about the resumption of immunisation services and catching up the lost cohort of infants.

The pandemic has also been accompanied by an 'infodemic', an epidemic of misinformation. To quote Dr. Tedros Adhanom Ghebreyesus, Director General of the World Health Organisation: *"We're not just fighting an epidemic; we're fighting an infodemic. Fake news spreads faster and more easily than this virus, and is just as dangerous."*

Vaccines have been drawn into this maelstrom of rumors, conspiracy theories and other misinformation. Even before the pandemic, one study showed that a new user with no friends or likes searching for information on vaccines on major social platforms using neutral terms was directed to overwhelmingly antivaccine content unsupported by science on major social platforms [1]. In the current context of the COVID-19 pandemic there has been a massive increase in vaccine misinformation, with a 2-fold increase in online vaccine-critical content compared to the pre-COVID19 period [2]. A second challenge will be to counter misinformation in effective ways and to ensure people can find reliable, trusted information. A third challenge is that a pandemic with a new pathogen is a period of inherent uncertainty and fear. In addition, in many communities public health responses have been politicised. Together these may be undermining public trust in vaccination.

The disruption to services, disinformation storm, and eroded trust in vaccines will have important implications for the success of any COVID-19 vaccination program.

### 1.2 Acknowledging the complexity of vaccine hesitancy

Vaccine decision-making is complex and context-specific. While getting vaccinated may seem like a simple behaviour, there are many barriers and drivers which affect vaccine uptake. These vary from supply and demand challenges, such as ensuring people have access to and are aware of affordable vaccines, to socio-psychological factors which underpin people's acceptance to be vaccinated [3,4]. A growing body of empirical evidence suggests that vaccine decisions may be influenced by thoughts and feelings but that trust, underlying moral values, beliefs and worldview may also determine people's decisions. (Figure 2). Studies have identified common socio-psychological drivers of vaccine decision across many different countries and contexts [5].

### 1.3 From understanding to action

There is emerging research in which various communications and interventions strategies have been developed and tested for intentional and behavioural impact. Unfortunately, to date few have demonstrated efficacy [6]. Social platforms like Facebook provide a promising environment in which to develop effective context-specific, culturally-appropriate pro-vaccine communications in different online communities. This guide aims to provide an overview of the current social and behavioural insights and guidance on how these might be applied to develop more effective pro-vaccine communications.

## 2 KEY CHALLENGES IN VACCINE MESSAGING

### 2.1 Vaccine hesitancy continuum

Vaccine hesitancy manifests as a continuum ranging from demand and acceptance, to hesitancy, to refusal of vaccines (Figure 1). It is driven by a complex array of context-specific factors. These factors include the country or community context, such as religion, politics, trust in the government institutions that approve vaccines and monitor their safety. Meanwhile, individual level factors, like education level, knowledge of vaccines, experiences with vaccination, and community norms around vaccination also explain one's position on the vaccine hesitancy spectrum [7]. People who are hesitant about vaccines may vaccinate anyway, they may delay vaccination or refuse one vaccine. People who accept all vaccines may be influenced by disinformation or loss of trust in health services and slide back along the continuum.

Thus, increasing vaccine coverage is not as simple as educating people about the benefits of vaccination. Communications objectives may therefore include:

- Providing information or reminders on eligibility, access to and affordability of vaccines;
- Reminding people why we vaccinate;
- Increasing the salience of a disease, paired with messages that increase self efficacy and response efficacy;
- Using “verbal defaults” to frame immunization as a routine act (once efficacy and safety of the vaccine has been established);
- Addressing common questions or new concerns; and
- Countering mis/disinformation.

To develop effective messaging and behavioral campaigns, we must first understand the underlying causes of under-vaccination and levels of vaccine hesitancy in context, then design content based on these insights and test that content for efficacy. It is increasingly evident that pro-vaccine content should also be tested to ensure that the message does not produce unintended negative behavioral outcomes before implementation.

Figure 1. The continuum of vaccine hesitancy and demand [7,15,16, 17, 18]

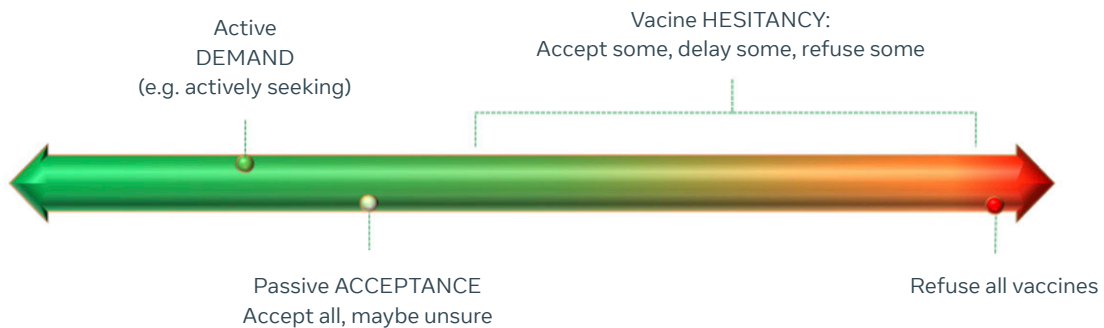


Figure 2. Determinants of vaccination behaviours

Vaccination behaviours may be affected by multiple or psychological factors, and may run quite deep.



Thoughts,  
feelings



Attitudes,  
cognitive biases



Trust, social norms,  
beliefs, experiences, fears



Moral values, ideology,  
identity, worldview

## 2.2 Pro-vaccine communications are often ineffective and may backfire

A growing body of evidence suggests that well-intentioned vaccine promotion content is often ineffective, and that some can actually backfire, decreasing intentions to vaccinate, particularly in people who are already hesitant.

Here are some examples:

A review of reviews of interventions to increase vaccine hesitancy, which included many studies of pro-vaccine communications approaches found “no strong evidence to recommend any specific intervention to address vaccine hesitancy/refusal” [8].

Refutation of a putative link between MMR vaccine and autism reduced misperceptions that vaccines cause autism. However, it decreased intent to vaccinate among parents who had the least favorable vaccine attitudes. In addition, images of sick children increased expressed belief in a vaccine/autism link [9]. Newer research suggests that the so called backfire effect may be limited to a few specific situations.

Correcting information from the US CDC website achieved a basic communications objective: it significantly reduced belief in the myth that the flu vaccine can give you the flu, and reduced stated safety concerns. However, the correction also significantly reduced intent to vaccinate among respondents with high levels of concern about vaccine side effects [10].

A study entitled “Parents’ beliefs in misinformation about vaccines are strengthened by pro-vaccine campaigns” showed exactly that [11,12]. Exposure to a myths vs. facts format actually increased beliefs that the MMR vaccine caused autism, and this effect significantly increased with time after exposure. A second study confirmed this finding. Exposure to a fear appeal (an image of a child very sick with mumps, and description of symptoms) increased misperceptions about vaccines causing autism, increased beliefs in vaccines side effects, and increased vaccine hesitancy.

Thus, vaccine promotion narratives and their component messages should wherever possible be designed based on behavioural & social evidence, and tested for both efficacy and safety before implementation. Vaccine hesitancy is complex, with a broad mix of possible determinants, and when it is pre-existing in people exposed to pro-vaccine messaging, there is a strong risk of backfire.

Together, this evidence suggests that a straightforward global communications campaign, which may work for a less complex behavior like sharing/not sharing misinformation [13], is unlikely to positively influence people who are already hesitant about vaccines, and may actually increase vaccine concerns in those exposed to the content.

## 2.3 Pro-vaccine communications should be evidence-based, context-specific, and culturally-appropriate



**Know your target audience.** Broadcasting the same one-size-fits-all information to everyone in a diverse public is likely to be ineffective and may backfire. The development of effective vaccine communications strategies requires an understanding of the particular social and psychological factors that determine the vaccination decisions of different populations with different vaccines [14].



**Saying it is not enough.** Target your communications to the needs of your audience. Understand their questions and concerns, know where the conversations are taking place, design communications to fit the needs and motivations of communities and individuals.

### 3 KEY BEHAVIORAL PRINCIPLES FOR EFFECTIVE VACCINE MESSAGING

#### 3.1 Don't assume vaccine hesitancy

Awareness and acceptance are often not the primary barrier to vaccine uptake [3]. Any audience insights that you gather should also cover possible structural issues such as people not knowing where to get vaccinated or knowing that the vaccine is free and available for them.

## 3.2 Anticipate cognitive shortcuts

We prefer to fail by not doing anything, than doing something. Omission bias may impact some vaccine-related decisions [19]. Make the consequences of not vaccinating tangible, salient, unsettling. Remind people that there is a real risk to doing nothing, as all the vaccine-preventable diseases are still out there. See 3.5.

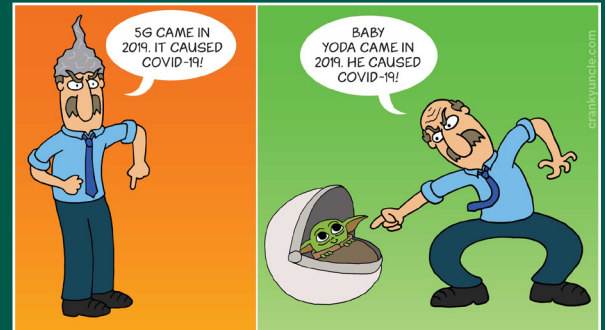
We see what we believe rather than believing what we see. The *heuristic confirmation bias* describes a shortcut in which people favour information that confirms their beliefs while rejecting facts that contradict them. Information should be framed with the general worldview of the target audience to reduce the initial dissonance that can trigger confirmation bias. See 3.4.

We see causation in coincidences. Some people believe that vaccines can cause unrelated diseases that usually appear around the same time that we give children vaccines. But this is most likely just coincidence. This [video](#) explains this effect.



### GOOD PRACTICE

*“If children who receive a teddy bear and children who receive a vaccine both have their teeth fall out, it doesn’t mean that either receiving a teddy bear or receiving a vaccine caused this to happen – it’s just a coincidence!”*



crankyuncle.com/cartoons-debunking-covid-misinformation  
Credit: Dr. John Cook, George Mason University

## 3.3 Tell stories

Overwhelming scientific evidence supports the safety and efficacy of vaccines, however, vaccine advocates largely rely on statistics and facts which are not as effective as the narrative tactics employed by their anti-vaccination counterparts [21].

Evidence suggests that humans are not good at understanding statistical probabilities. Indeed, when women were presented with facts that the probability of their child getting a vaccine preventable disease was much greater than the risks of a vaccine-related event, this had no significant effect on demand for vaccination [21]. Rather, women weighed the perceived severity of disease and the perceived risk of adverse events from a vaccine in deciding whether to vaccinate their child [21]. This suggests that messages employing narrative techniques highlighting disease severity are more effective than statistical facts. A qualitative analysis of a European pro-vaccine online hub found parental stories were consistently the most accessed content [41]

We understand our world through stories as much as facts. Use narratives to engage your audience. For example, a story with firsthand information about the hardships of vaccine preventable diseases ending with the fact that the disease could have been prevented with a vaccine is one way of using stories to promote vaccine uptake [20]. Avoid messages that include statistics as these often fail to convey a message effectively.

In addition, it is important that narrative based messages highlighting the disease not shock the reader as this can induce response paralysis. In delivering a message about vaccine preventable diseases, one must follow the description of the disease with an action they can take to prevent the disease, namely vaccination.



### GOOD PRACTICE

*An Insights for Impact initiative between Facebook and UNICEF in Brazil identified that many social media posts were not taking Zika seriously.*

#### Serious stuff

INSIGHT

9%

of all shares related to Zika were either humor or rumor

Many people on Facebook were not taking Zika seriously. In fact, people were joking about the disease: 9% of article shares contained either humor or rumor, including three of the top 10 articles shared.

ACTION



To reinforce the severity of the diagnosis, UNICEF was able to respond with “Zika is serious stuff.”



## GOOD PRACTICE

Metaphors are like a very short story. Eula Biss illustrates this when she notes that vaccines produce natural immunity because they “*invite the immune system to produce its own protection.*” The antibodies that protect us are “*manufactured in the human body, not in factories.*” [39].

### 3.4 Build trust and use credible communicators

The cornerstone of vaccination acceptance is public trust; trust in vaccines and vaccine producers, in the government and above all healthcare professionals [22]. While the information provided needs to be credible (eg peer-reviewed scientific research), the information source or communicator also needs to be credible. Persuasion researchers have long known that the most effective messengers have three key attributes: expertise, trustworthiness, and similarity. A recent study showed that trustworthiness was actually more important than expertise when addressing vaccine misinformation [40]. Anything and anyone that helps to build trust with the audience will help unstick misinformation, especially with vaccines. Evidence shows that doctors are among the most trusted sources of health information and that provider recommendations of vaccination significantly increases vaccine uptake [23]. This makes them excellent messengers about vaccination, especially if they vaccinate themselves and their children.

#### EXAMPLE

A message from a doctor saying, “*I vaccinated my children and you should too*” can be an effective message.

### 3.5 Connect with people’s values

Vaccine decisions are value based decisions, guided by a person’s own innate morals. Each person has different combinations of six moral foundations: care/harm, authority/subversion, loyalty/betrayal, liberty/oppression, purity/ degradation, and fairness/cheating [24, 25]. Emerging research suggests that vaccine decisions may be negatively influenced by two moral values: liberty and purity and positively influenced by deference to authority [26, 27]. Parents who were more vaccine hesitant placed a higher emphasis on purity or liberty. As such, messaging campaigns that focus on purity and liberty in promoting vaccination among vaccine hesitant parents may be more effective at increasing vaccination.

#### EXAMPLES

An example of a purity-based message could be: “*Boost your child’s natural defences against diseases! Keep your child pure of infections – Vaccinate!*”[26]

An example of a liberty-based message could be: “*‘Take personal control of your child’s health! Vaccinations can help your child and others be free to live a happy and healthy life’*” [26]

An example of an authority-based message could be: “*Public health authorities and well qualified doctors endorse vaccines*”

### 3.6 Remind people why we vaccinate

Vaccines are a victim of their own success. They have been so successful in eradicating deadly diseases that the diseases are no longer visible, and people may become complacent.

However, messages about vaccine preventable diseases (VPD) should be narrative based (as opposed to statistical) and should ALWAYS end with self and response efficacy, meaning you include a solution which is getting the vaccine that they are able to get.

Fear is a double-edged sword. It is important to avoid shocking the reader as this can induce response paralysis. A scary photo made hesitant parents aware of the dangers of measles but increased belief in vaccine side effects [9]. In another study, exposure to a photo of a child very ill with mumps increased misperceptions significantly increased beliefs in vaccines side effects [11].

Rather than frightening people, try to make them feel susceptible to the threat of infection. Susceptibility is a combination of perceived vulnerability and perceived likelihood of the threat, and has been associated with vaccine acceptance and uptake in a multicountry study [4].

## Steps for effective communication about the risks of VPDs to encourage vaccination:

- 1 An individual must perceive that they are at risk for a disease (risk perception), so a message that raises the salience of the disease and makes them feel susceptible to that infection is key.
- 2 They must believe that there is an effective action (response-efficacy), which is to get vaccination.
- 3 They must believe that they are capable of taking that action (self-efficacy), meaning they have access to the vaccine.



### GOOD PRACTICE

A good message with all three components could be something like this: *“Influenza can have severe impacts on your health. The good news is that there are actions you can take to protect yourself. The best way to protect yourself is to get vaccinated. Even though influenza vaccine is not perfect, it is very effective against severe outcomes such as influenza that requires hospitalization”*



### NOT EFFECTIVE

A message or visual that includes details about the disease without presenting vaccination as a solution is also potentially ineffective. For example, *“Measles is a highly infectious and dangerous disease, responsible for the deaths of many children under 5 worldwide”*

## 3.7 Reinforce social norms

We do what other people do. Social norms offer implicit guides for our behaviour, by telling us what others are doing or what they expect us to do. In particular others who are like us. There is evidence that social norms are associated with vaccination decisions, and one study found that perceiving greater support for HPV vaccination from friends, parents, or doctor was associated with increased vaccine intentions [6, 28].

### There are two points to consider in a messaging campaign using social norms:

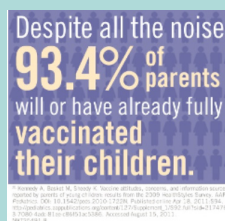
- 1 The social norm must be true, in other words, messaging that 90% of children in your village are vaccinated when that is not true is not a credible message.
- 2 The social norm should be a common practice that you want to encourage. For example, a message that “90% of parents in your village don’t vaccinate their children against polio, leading to disease outbreaks” is unlikely to encourage parents to vaccinate. If a message that the majority of parents in the area do vaccinate their children is not true, then a message on the behavior you would like to encourage is the next best alternative [6]. An effective message in this case might be “vaccinate your child against polio to prevent them from getting polio”.

## GOOD EXAMPLES



[youtube.com/watch?v=CwReNjXp-CQ](https://www.youtube.com/watch?v=CwReNjXp-CQ)

HSE Ireland produced the “I got the HPV vaccine” video that reinforces that HPV vaccination is a social norm, by showing many young women who received the vaccine.



Immyoung.com infographic that communicates the social norm of vaccination.

### 3.8 Busting myths can backfire

In addition, combating myths around vaccination must be approached carefully, as myth correction can in some cases backfire and increase the salience of the myth [23, 10]. One study found that among those parents with least favorable attitudes towards vaccines, messages to correct the myth that vaccines cause autism resulted in a decrease in parents reported likelihood of vaccinating their next child [10]. Correcting myths requires repeating the myth, which can make it more familiar and believable. However, emerging evidence suggests that people can be inoculated against misinformation by either debunking or prebunking [29]. The [Vaccine Misinformation Management Guide](#) provides detailed guidance on debunking vaccine-related myths.



#### NOT EFFECTIVE

The text for this intervention was taken nearly verbatim from the WHO website. Exposure to this myths vs. facts format increased beliefs that the MMR vaccine caused autism, and this effect significantly increased with time after exposure.

#### MYTH

A 1998 study showed that the MMR vaccine causes autism, because some signs of autism appear around the same age that children receive the MMR vaccine against measles, mumps, and rubella.

#### FACT

There is no evidence of a link between the MMR vaccine and autism. The 1998 study which first suggested this link was later found to be seriously flawed and the paper was retracted.

### 3.9 Consider communicating vaccination as an aspiration, not an act

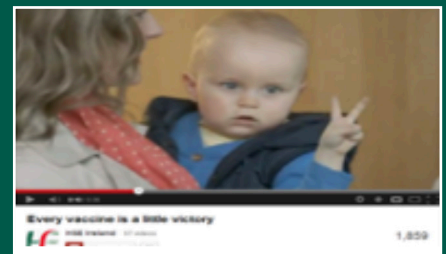
If you are communicating to increase vaccine acceptance, then using pictures of distressed, crying children receiving vaccines may make viewers more reactive - and less receptive - to any new information [30,31,32]. Studies suggest that up to 25% of adults have a fear of needles, with most fears developing in childhood. About 10% of people may actually avoid vaccination because of needle fears. Vaccines help ensure people grow up and grow old in good health, safe from many infectious diseases. Consider putting vaccination in a 'gain frame'. Show happy, healthy, productive people in graphics, and if you must show the act of vaccination try to avoid needles and tears.



#### GOOD PRACTICE

HSE Ireland produced a video that just shows a happy, cool kid who goes for a vaccine, in which you do not see the needle, and after which...nothing happens!

[youtube.com/watch?v=ePQOIeeTZlg](https://www.youtube.com/watch?v=ePQOIeeTZlg)



### 3.10 Recognize vocal vaccine deniers

Among those promoting vaccine disinformation are what are termed vocal vaccine deniers, who are on the extreme end of the vaccine hesitancy spectrum and very active in their advocacy against vaccines [33]. Evidence shows that vocal vaccine deniers generally adopt four basic techniques to support their claims: they misrepresent scientific evidence, they shift hypotheses when their argument is not winning, they censor opposing viewpoints, and they personally attack the opposition [33,34]. In correcting dis-information spread by vocal vaccine deniers, it is important to understand their tactics and avoid speaking to the vaccine denier, rather address messages to the target audience [33].



## 4 DEVELOP EFFECTIVE CAMPAIGN MESSAGING

### Understand what resonates with your audience.

The most highly accessed content on the pro-vaccine information hub Vaccines Today was stories, in particular first-person narratives and answers to questions that readers pose [35]. In terms of format, videos are popular and often shared: the most popular was an animation on herd immunity.

### Optimise your content for searches.

Tools such as Google AdWords or Facebook advertising can be used to ensure that your content that is relevant appears when a web user searches for vaccine information [35].

## BEHAVIORAL DESIGN TIPS

### 1. Capture attention

When our attention is strongly drawn to something, we are more likely to do whatever it suggests.



#### VISUALS

A picture is worth a thousand words. Visuals can attract attention, facilitate information processing and retention, and help people understand numbers and risks. Plus, they can simplify information processing (see 2!).



#### EMOTION

Elicit an emotional reaction. Create designs that stand out and remain memorable by appealing to our emotions—with surprise, curiosity, or urgency. Beware however of fear appeals, which may backfire [11].



#### PERSONALISE

Show personalized content. People respond strongly to messaging that is customized and relevant based on their behaviors, interests, and values.



#### HEADLINES

Use positive sentiment words in the headline to get people's attention. In one study, pro-vaccine articles with headlines that used positive emotion words were more likely to be shared and commented upon (anti-vaccine messages often successfully use negative emotion words!) [36].

### 2. Easy = true

**Keep it clear.** Information is more likely to stick the more easily it can be processed and the more familiar it feels. Or, when a communication is easy to read and understand, it seems more familiar, and familiar feels true [37]. Provide clear, straightforward content, that is easy to understand and easy to remember. Eliminate jargon, keep language simple, present the key message early, use simple fonts and high contrast colours. Remove all unnecessary information.

**Repeat.** Repeating (positive!) messages increases cognitive fluency. Words seen before become easier to see again. In contrast, if someone strains to understand they are more likely to be vigilant and suspicious[38].

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