VACCINE MESSAGING GUIDE

Evidence-based guidance for fostering demand for immunization through social and behavior change communications

Yale Institute for Global Health
unicef for every child
PGP THE PUBLIC GOOD PROJECTS
Meta
Vaccination Demand Observatory

ABOUT THIS GUIDE

This guide was developed by the Yale Institute for Global Health and the UNICEF Demand for Immunization team, based on evidence from the lab of Saad B. Omer, MBBS, MPH, PhD, and others. 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 behaviour-related outcomes.

1. INTRODUCTION

1.1 COVID-19 is impacting immunization

The COVID-19 pandemic has disrupted vaccination services globally in a number of ways. In a 2020 poll by UNICEF, WHO, GAVI and Sabin Vaccine Institute's Boost Community initiative, around 70 countries reported suspension or disruption of routine immunization 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 immunization services and catching up the lost cohort of infants. In 2021, UNICEF estimated 25 million children missed out on life-saving vaccines[1].

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 Organization: "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 rumours, conspiracy theories and other misinformation. Even before the pandemic, one study showed that a new user who'd be searching for information on vaccines on major social platforms using neutral terms was directed to overwhelmingly anti-vaccine content unsupported by science[2]. In the current context of the COVID-19 pandemic, there has been a massive increase in vaccine misinformation, with a two-fold increase in online vaccine-critical content compared to the pre-COVID-19 period[3]. 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 challenges 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 or routine immunization program.

1.2 Acknowledging the complexity of vaccine hesitancy

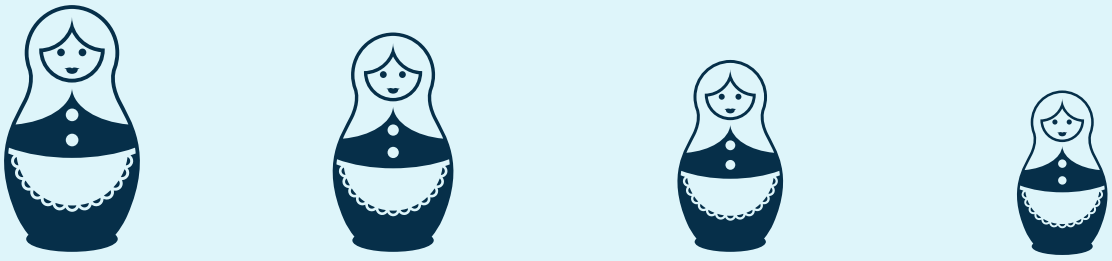
Vaccine decision-making is complex and context-specific. While getting vaccinated may seem like a simple behaviour, there are many barriers and drivers that affect vaccine uptake. These vary from supply and demand challenges, such as ensuring people have access to and are aware of affordable vaccines, to socio-psychological factors, which underpin people's acceptance to be vaccinated[4,5]. A growing body of empirical evidence suggests that vaccine decisions may be influenced by thoughts and feelings and that trust, underlying moral values, beliefs and worldview may also determine people's decisions (Figure 1). Studies have identified common socio-psychological drivers of vaccine decision-making across many different countries and contexts[6].

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[7]. Social platforms like Facebook provide a promising environment in which to develop effective context-specific, culturally appropriate pro-vaccine communications for 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.**

Figure 1. Determinants of vaccination behaviours

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

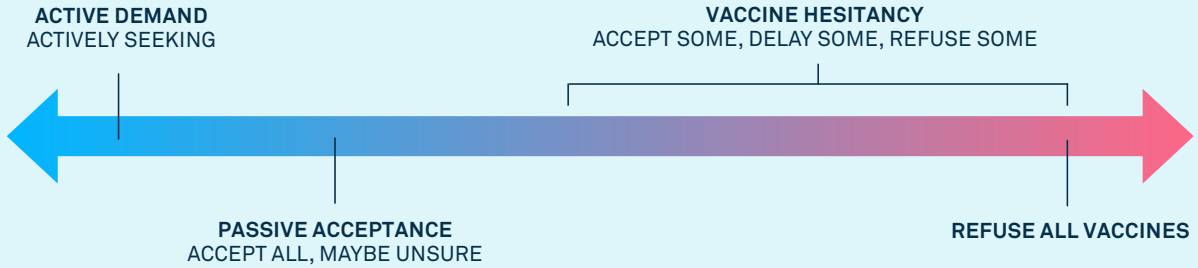


2. KEY CHALLENGES IN VACCINE MESSAGING

2.1 Vaccine hesitancy occurs on a continuum

Vaccine hesitancy manifests as a continuum ranging from demand and acceptance, to hesitancy, to refusal of vaccines (Figure 2). It is driven by a complex array of context-specific factors. As noted above, these factors include the country or community context, such as religion, politics and trust in the government institutions that approve vawccines 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[8]. People who are hesitant about vaccines may vaccinate anyway, may delay vaccination or may refuse one vaccine. People who accept all vaccines may be influenced by disinformation or loss of trust in health services and slide to the hesitancy end of the continuum.

Figure 2. The continuum of vaccine hesitancy and demand[8, 17, 18, 19, 20]



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 have been established)
- Addressing common questions or new concerns
- Countering mis/disinformation

To develop effective messaging and behavioural 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 behavioural outcomes before implementation.

2.2 Pro-vaccine communications may sometimes be 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 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"[9].

A study entitled "Parents' beliefs in misinformation about vaccines are strengthened by pro-vaccine campaigns" showed exactly that[12, 13]. 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 vaccine side effects and increased vaccine hesitancy among those most hesitant.

Refutation of a link between the MMR vaccine and autism reduced misperceptions that vaccines cause autism. However, it *decreased* intent to vaccinate among parents who had the least favourable vaccine attitudes. In addition, images of sick children increased expressed belief in a vaccine/autism link[10].

Correcting misinformation via the US Centers for Disease Control website achieved a basic communications objective: it significantly *reduced* belief in the myth that the flu vaccine can give you the flu, and it reduced stated safety concerns. However, the correction also significantly reduced intent to vaccinate among respondents with high levels of concern about vaccine side effects[11].

Thus, vaccine promotion narratives and their component messages should wherever possible be designed based on behavioural and 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[14].

Together, this evidence suggests that a straightforward global communications campaign, which may work for a less complex behaviour like sharing/not sharing misinformation[15], is unlikely to positively influence people who are already hesitant about vaccines and may actually increase vaccine concerns in those exposed to the content.

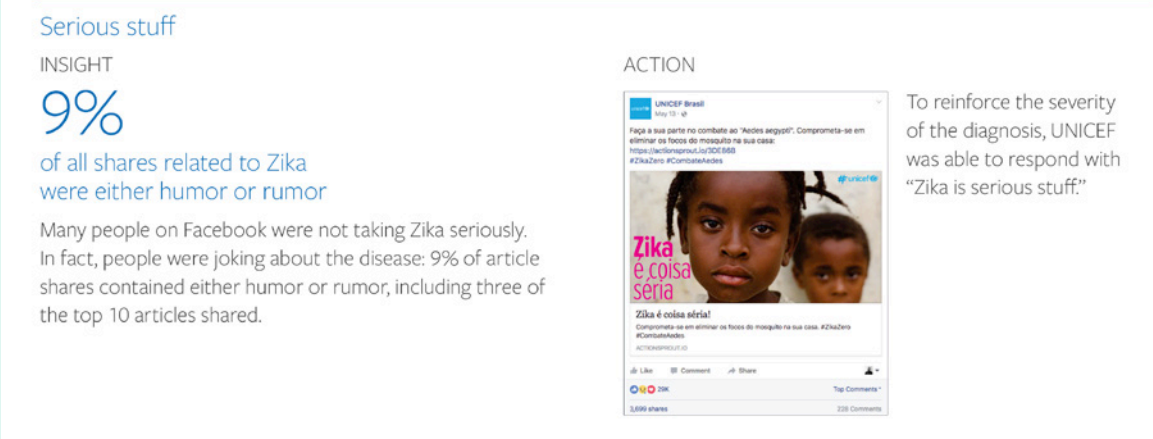
2.3 Pro-vaccine communications should be evidence-based, context-specific and culturally appropriate

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[16].

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 and design communications to fit the needs and motivations of communities and individuals.

GOOD PRACTICE

An Insights for Impact initiative between Facebook and UNICEF Brazil identified that many social media users were not taking Zika seriously, and UNICEF tailored its messages in response.



3. KEY BEHAVIOURAL PRINCIPLES FOR EFFECTIVE VACCINE MESSAGING

3.1 Don't assume vaccine hesitancy

Awareness and acceptance are often not the primary barrier to vaccine uptake[4]. Any audience insights that you gather should also cover possible structural issues, such as people not knowing where to get vaccinated or that the vaccine is free and available for them.

3.2 Anticipate cognitive shortcuts

We prefer to fail by not doing anything than by doing something. Omission bias may impact some vaccine-related decisions[21]. Make the consequences of not vaccinating tangible, salient and unsettling. Remind people that there is a real risk to doing nothing, as vaccine-preventable diseases are still out there. See 3.6.

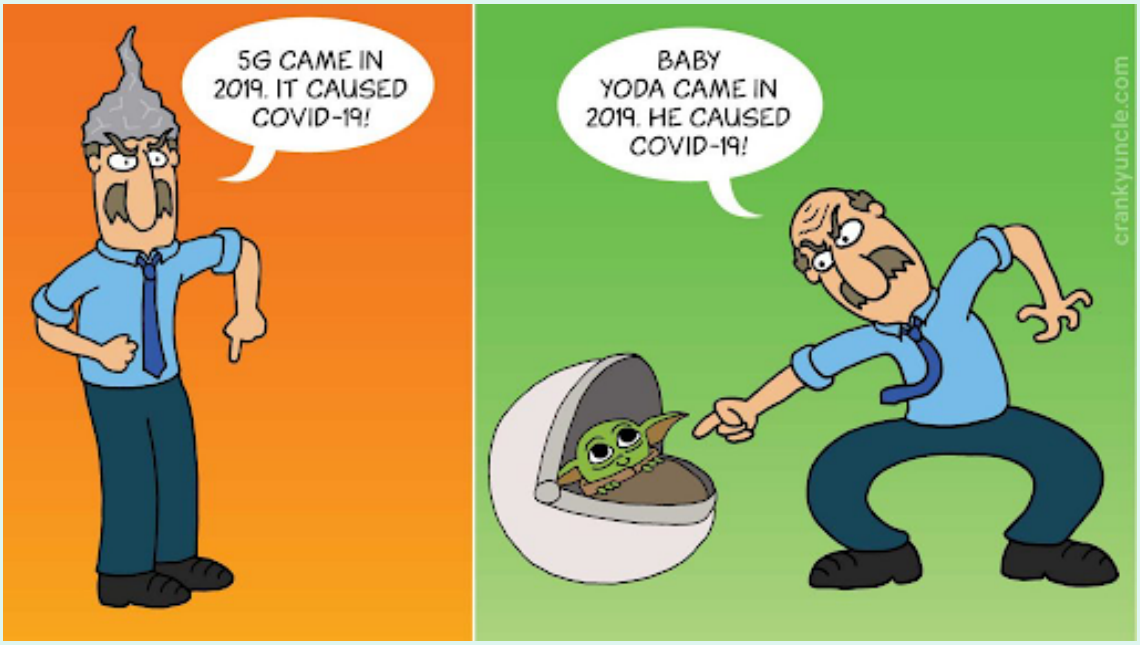
We see what we believe rather than believing what we see. The heuristic confirmation bias describes a shortcut in which people favour information that confirms their beliefs while rejecting facts that contradict them. Information should be framed with the general worldview of the target audience to reduce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

Below is an example of seeing causation in coincidences, created by misinformation expert, scientist and cartoonist John Cook, PhD.



Credit: John Cook, PhD, 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[23].

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[23]. 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[23]. 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[43].**

We understand our world through stories as much as facts. Use narratives to engage your audience.

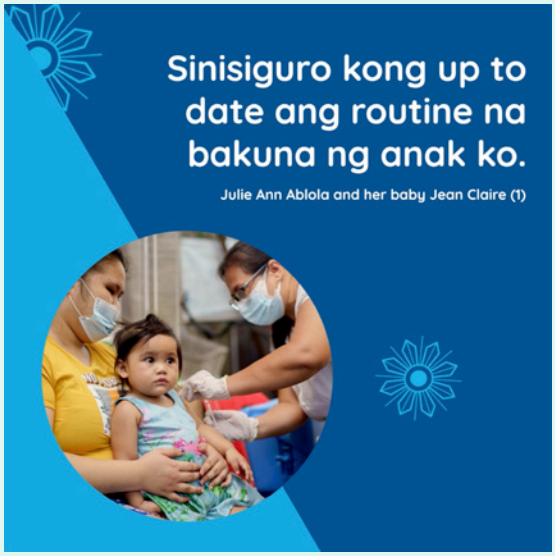
BEST IN CLASS: UNICEF PAKISTAN

In Pakistan, authentic testimonials that showcased community members accessing COVID-19 vaccines were used to emphasise collective responsibility in getting vaccinated and helping others.

Insights from social listening analysis revealed public sentiment that COVID-19 vaccines were not being fairly distributed at the time, so posts emphasised everyday people accessing the COVID-19 vaccines and helping others to do so.

Posts were co-branded by UNICEF and the Ministry of National Health Services, Regulations and Coordination and launched in both Urdu and English. **This personal narrative style was successfully recalled by Facebook users and was also effective at shifting attitudes positively towards COVID-19 vaccines.** These results indicate the powerful potential of human stories, rather than just facts and figures.

GOOD PRACTICE: STORYTELLING



[ENG] "I make sure that my child is up to date with routine immunization."
–Julie Ann and her baby, Jean Claire (1)

For UNICEF Philippines, a GIF tells the story of a child getting vaccinated to encourage other parents to catch up on their children's vaccine schedule. **Authentic testimonials featuring real-life interactions between healthcare workers and caregivers in the field tell a compelling narrative and were highly memorable.**

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[22]. 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 do 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

Metaphors are like a very short story. Eula Biss, acclaimed author of *On Immunity: An Inoculation* 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."[41]

[ENG] Are you forgetting something? Half the protection is not enough – learn more about COVID-19 booster vaccines.

In UNICEF Bangladesh, playful images with brief metaphors relayed messages around COVID-19 vaccine boosters to nudge people towards getting their booster dose.

In UNICEF Cameroon, this ad leverages the metaphor of an umbrella as protection and appeals to parents to emphasise the importance of completing the full course of HPV vaccines.

3.4 Build trust and use credible communicators

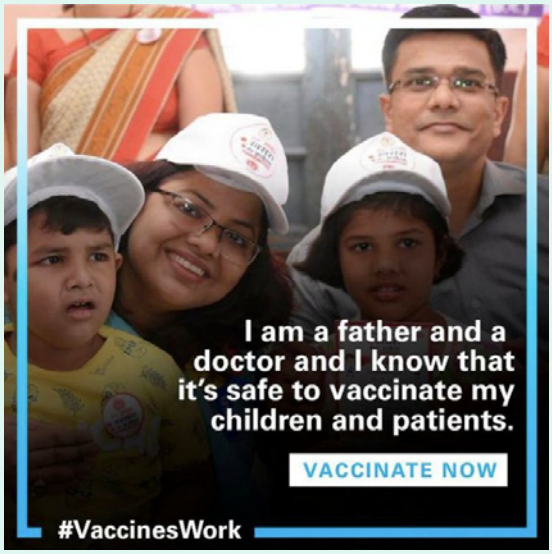
The cornerstone of vaccination acceptance is public trust: trust in vaccines and vaccine producers, in the government and above all in healthcare professionals[24]. While the information provided needs to be credible (e.g., peer-reviewed scientific research), the information source or communicator also 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**[42]. Anything and anyone who 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 increase vaccine uptake[25]. 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.

GOOD PRACTICE: CREDIBLE COMMUNICATORS



In India, various messengers were tested for their ability to shift attitudes positively towards vaccination. Using **images of healthcare worker heroes who face challenging terrains to reach children in need, and of credible fathers who were also doctors, was effective in strengthening the perceived importance of routine immunization and trust in vaccines** among Facebook users exposed to these messages.

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[26, 27]. Emerging research suggests that vaccine decisions may be negatively influenced by two moral values – liberty and purity – and positively influenced by deference to authority[28, 29]. 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.

Example

An example of a purity-based message could be:
"Boost your child's natural defences against diseases! Keep your child pure of infections – vaccinate!"[28]

GOOD PRACTICE: EMPHASISING PURITY

[ENG] Keep your child pure of disease. Vaccinate today! Learn more.

For UNICEF Indonesia, an image of an infant is paired with the message to evoke vaccination as a means for parents and caregivers to keep children pure of disease and safe from harm. This campaign was developed in direct response to comments on previous public posts that endorsed a preference for natural immunity.

Example

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."[28]

BEST IN CLASS: UNICEF UKRAINE

In Ukraine, illustrations featuring diverse characters were paired with a message that highlighted the personal choice of COVID-19 vaccination, emphasising the liberty value.

Insights from social listening analysis revealed a lack of trust in the vaccines made publicly available and sentiment that people should respect others' personal choice to access COVID-19 vaccines, rather than mandates. These messages leveraged the liberty value to centre COVID-19 vaccination as an individual choice.

Posts were co-branded by UNICEF and the local vaccination authority and launched in Ukrainian. These messages were highly recalled by Facebook users and were also effective at shifting attitudes towards endorsing the benefits of vaccines over the risk of the disease. This movement was especially critical, because often those low on the vaccine acceptance continuum would rather risk exposure to disease than take the vaccine (i.e., the fence sitters). These results highlight the importance of emphasising moral values, particularly when available evidence suggests that there is low trust in mandates from public health authorities or in available vaccines.

Example

An example of a 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 (VPDs) should be narrative based (as opposed to statistical) and should **always** end with self-efficacy and response efficacy, meaning you include a solution: 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[10]. In another study, exposure to a photo of a child very ill with mumps increased misperceptions and significantly increased beliefs in vaccine side effects[12].

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 it has been associated with vaccine acceptance and uptake in a multicountry study[5].

Measles. This photograph shows a child with classic day-4 rash with measles. (Source: CDC) Such images should be rarely used in vaccine messaging because of potential backfire effects.

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 a vaccination.
3. They must believe that they are capable of taking that action (self-efficacy), meaning they have access to the vaccine.

GOOD PRACTICE

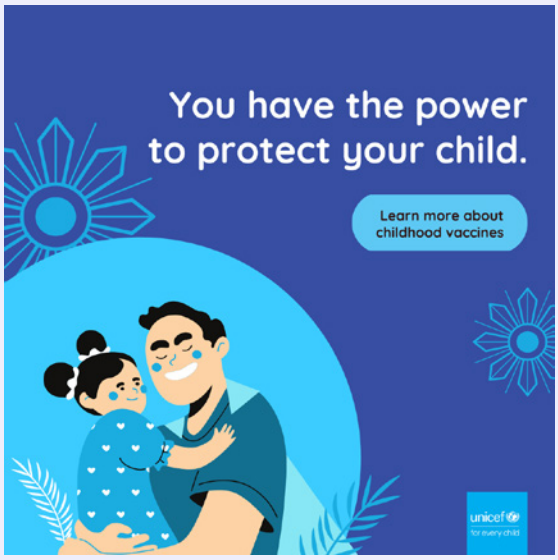
A good message with all three components could be:"Influenza can have severe impacts on your health. The good news is that there are actions you can take to protect yourself. The best way to protect yourself is to get vaccinated. Even though the influenza vaccine is not perfect, it is very effective against severe outcomes such as influenza infection requiring hospitalisation."

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".

BEST IN CLASS: UNICEF PHILIPPINES

Since 2019, measles outbreaks have occurred in the Philippines, providing a teachable moment to raise the alarm on this dangerous disease. As with all communications where the threat level is raised, it is important to remind caregivers that there is an effective response (routine immunization) that they can take (self-efficacy) to address this threat.



In UNICEF Philippines, a campaign was designed to remind parents why we vaccinate. Insights revealed those who were hesitant to vaccinate their children were concerned about safety and side effects. This message conveyed the ability of parents to protect their children from preventable diseases as a superpower, and it was delivered with a female and male character. This message communicated self-efficacy, reminding parents that there was an effective action they could take to protect their children. These messages were accompanied by caption copy, reminding parents that vaccines were safe, effective and freely accessible throughout the Philippines. The campaign was highly effective at strengthening parents' perceived ability in protecting their children through immunization.

3.7 Reinforce social norms

We do what other people do. Social norms offer implicit guides for our behaviour by telling us what others (particularly those who are like us) are doing or what they expect us to do. 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 a doctor was associated with increased vaccine intentions[7, 30].

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 behaviour 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 PRACTICE

HSE Ireland produced the "I got the HPV vaccine" video, which reinforces HPV vaccination as a social norm by showing many young women who received the vaccine.

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[11, 25]. One study found that among those parents with the least favourable 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[11]. Approaches to correcting myths may include 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[31]. The Vaccine Misinformation Management Field 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[12].

MYTH	FACT
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.	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[32, 33, 34]. 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!

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[35]. 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[35, 36]. In correcting disinformation spread by vocal vaccine deniers, it is important to understand their tactics and avoid speaking to the vaccine denier and instead address messages to the target audience[35].

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[37]. 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 relevant content appears when a web user searchers for vaccine information[37].

Behavioural 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 tip 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[12].

Personalise. Show personalised content. People respond strongly to messaging that is customised and relevant based on their behaviours, 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 on (anti-vaccine messages often successfully use negative emotion words!)[38].

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[39]. Provide clear, straightforward content that is easy to understand and easy to remember. Eliminate jargon, keep language simple, present the key message early and 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[40].

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