Combating false information on vaccines

A guide for EPI managers

PAHO

Pan American Health Organization

World Health Organization

Americas Region

Combating false information on vaccines

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Introduction

False information about vaccines and vaccination – whether it is spread intentionally or not – poses a serious threat to vaccine uptake in the Americas and around the world. Multiple studies have shown that exposure to vaccine-related misinformation can shake population trust in the Expanded Program on Immunization (EPI) and negatively impact individuals' attitudes and intentions toward vaccination, even among individuals who have previously been vaccinated. Unsurprisingly, misinformation that implies vaccination causes harm and that sounds scientifically credible has shown to be more likely to deter individuals from intending to get vaccinated.

Fighting back against science deniers and their misinformation is a critical part of maintaining trust in immunization and protecting populations from a variety of vaccine-preventable diseases (VPD). Critical in this fight are understanding how and why misinformation spreads; which approaches can be employed to combat it, both before and after people have been exposed; and rebuilding trust in immunization after it has been shaken.

This work is even more important within the EPI, as health workers have been repeatedly shown to be the most trusted source of information on vaccines and vaccination. Health workers at all levels and in all fields must be strong and vocal advocates for vaccination across the life course in order to have the strongest EPI possible.

It should be noted that addressing misinformation is not a silver bullet for increasing vaccination coverage rates; the Pan American Health Organization (PAHO) encourages countries to explore why vaccination has decreased in specific areas or populations by considering the behavioral and social drivers of vaccination in order to have a more complete understanding of what barriers might be hindering vaccination in different population groups and be able to develop targeted interventions accordingly. Addressing misinformation will support how people think and feel about vaccination, as well as the social norms around it.

Purpose and audience

This guide is intended to support EPI managers in helping their teams understand and combat false information about vaccines, find credible sources of information on vaccination, and respond to concerns regarding vaccination among their fellow health workers. Specifically, this guide looks at:

Spotting false information about vaccines and understanding how and why it spreads;

Strategies to fight back against misinformation in the clinical setting and community;

Communication tips and approaches for peers who express hesitancy about vaccination.

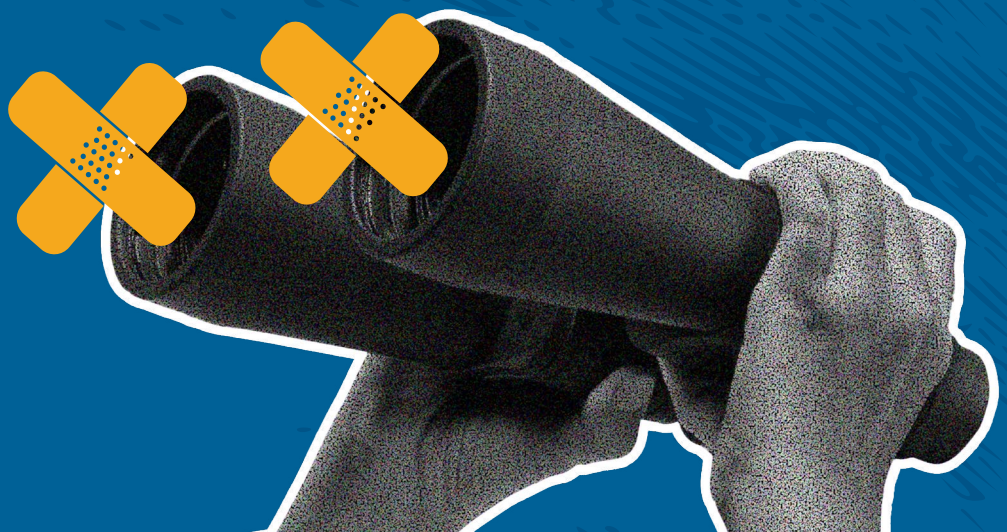
This guide can be used in conjunction with the corresponding booklet for health workers, along with other supporting materials available on the PAHO immunization web page.

Part 1:

What is misinformation? Identifying it and understanding its pull

False information can be spread with malicious intent (disinformation) or unintentionally (misinformation). For the purpose of this guide, misinformation will be used as an umbrella term to refer to any piece of incorrect information.

Misinformation is designed to spread quickly, especially on social media platforms where the main goal is to drive engagement with the content (by liking, sharing, or commenting on it) or bring people to a website, where visits can generate ad revenue or sales. It tends to gain more traction when there are information gaps or during times of crisis (as was seen during the COVID-19 pandemic), when it offers a simple explanation for complex things happening in the world, when it has a strong emotional and persuasive appeal, when it fits an individual's worldview, or when an individual thinks that sharing it will bring them closer to their community. It also tends to spread quicker and farther than the truth, especially when there is some amount of plausibility – that is, when there appears to be some kernel of truth to the misinformation. Evidence shows that misinformation that originates online flows into communities offline as well.



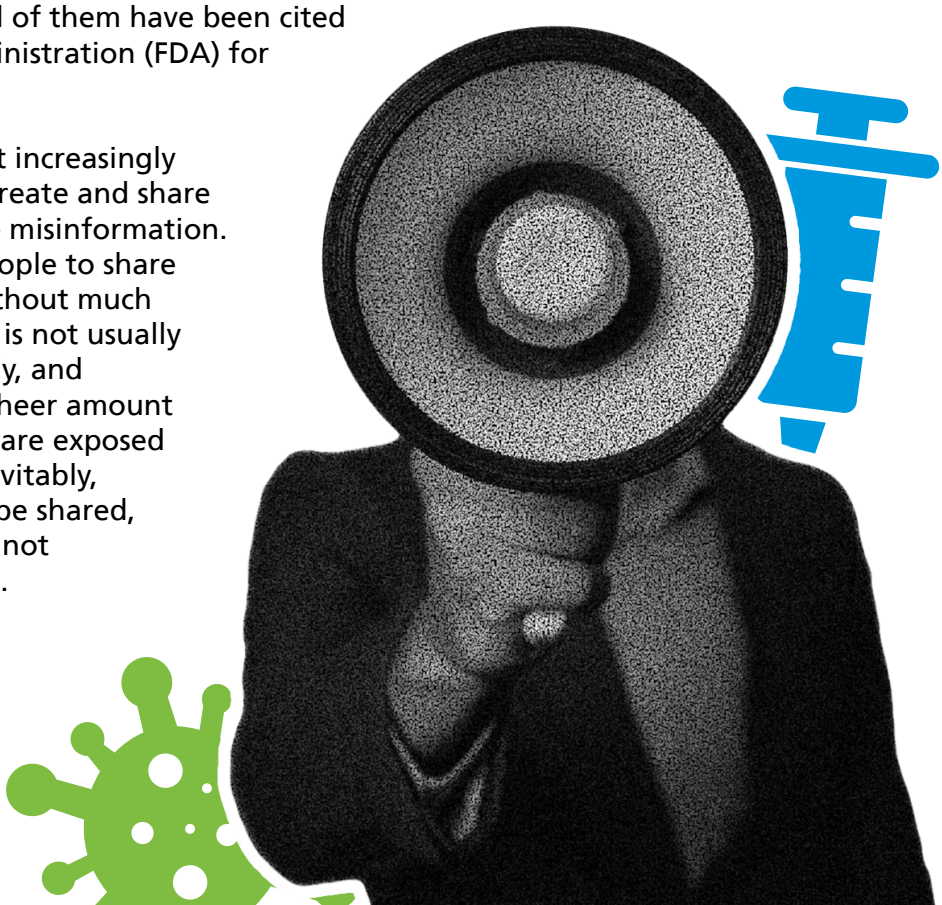
Where does vaccine misinformation come from?

Although it may seem like misinformation is everywhere, most of it originates with just a handful of "superspreading" individuals for whom misinformation is an extremely profitable business: several of these science deniers earn six-figure US dollar salaries annually through selling supplements, food, and "secret cures," as well as books and videos about proclaimed public health hoaxes and conspiracy theories; speaking fees; donations; membership fees to access their content; classes on topics like vaccine-free parenting and activism; "wellness retreats"; and affiliate marketing, where they pay each other to promote their products.

Social media platforms and people in the misinformation business mutually benefit each other, as misinformation drives engagement, which in turn leads to more impressions for advertisers on social media platforms. Social media platforms are also key sources for science deniers to grow their customer bases; the algorithms tend to create echo chambers and do not push content that is likely to challenge users' beliefs, which can isolate users from legitimate sources of information on vaccines. While experts in combating misinformation had called for social media platforms to do more to stop misinformation for years, the situation became even more dire by January 2025, when the main platforms announced they were further scaling back or ending fact-checking efforts.

These science deniers know how to work social media algorithms to their advantage, creating content that preys on the questions vaccine-hesitant people have and subverting scientists and experts who support vaccination. In the United States, several of them have been cited by the Food and Drug Administration (FDA) for making false claims.

Technology has also made it increasingly easy for almost anyone to create and share digital content with vaccine misinformation. Online platforms enable people to share information quickly and without much thought – information that is not usually challenged by friends, family, and community members. The sheer amount of information that people are exposed to each day means that, inevitably, misinformation is going to be shared, even by people who would not intentionally spread rumors.



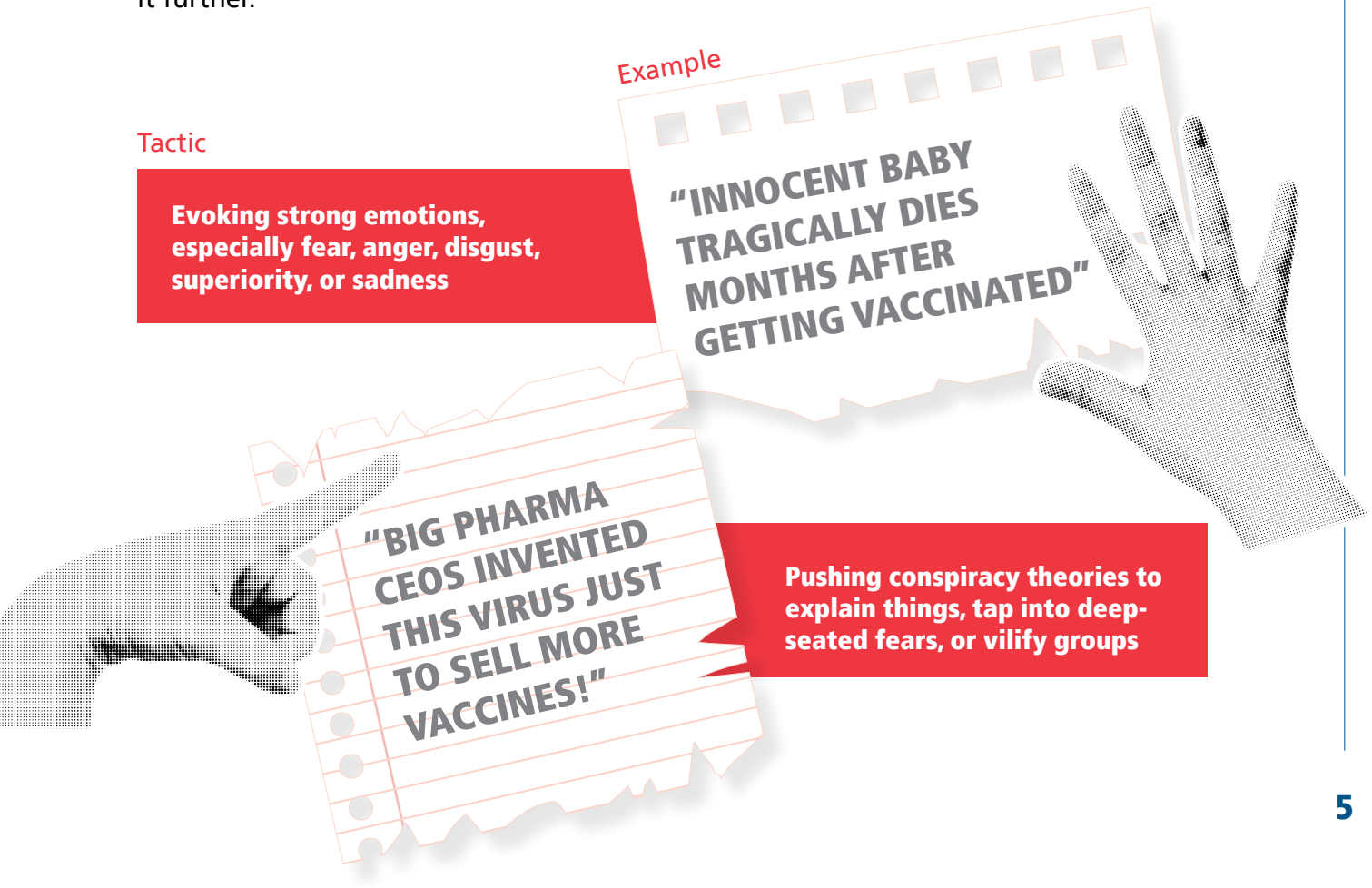
Why does misinformation spread so widely?

In general, people seek out information that confirms what they already believe – human beings love to feel vindicated and love to be right!

The public way in which information is consumed on social media – for example, users can see if any of their friends have engaged with a piece of content – can also serve as a de facto endorsement of that content without people having to say a word. People's desire to belong to a group or a "tribe" can motivate them to share content that would show they belong. Within these social media echo chambers, people can confirm their identities and share their worldviews without much fear of major disagreement.

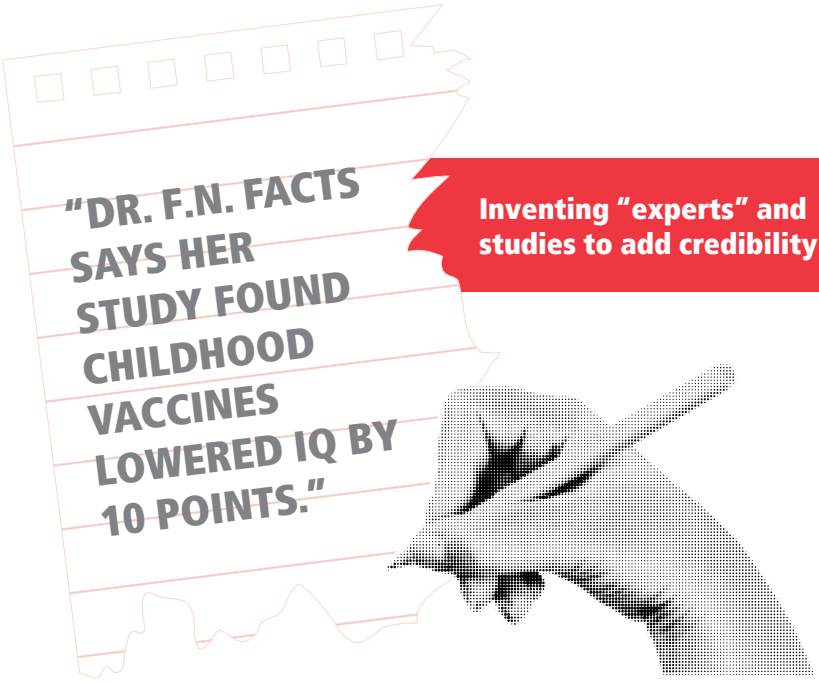
Common tactics used in vaccine misinformation

Misinformation erodes trust in science, which in turn makes people more susceptible to falling for it. However, understanding the tactics used by science deniers to spread misinformation can make it easier for people to spot misinformation and not spread it further.



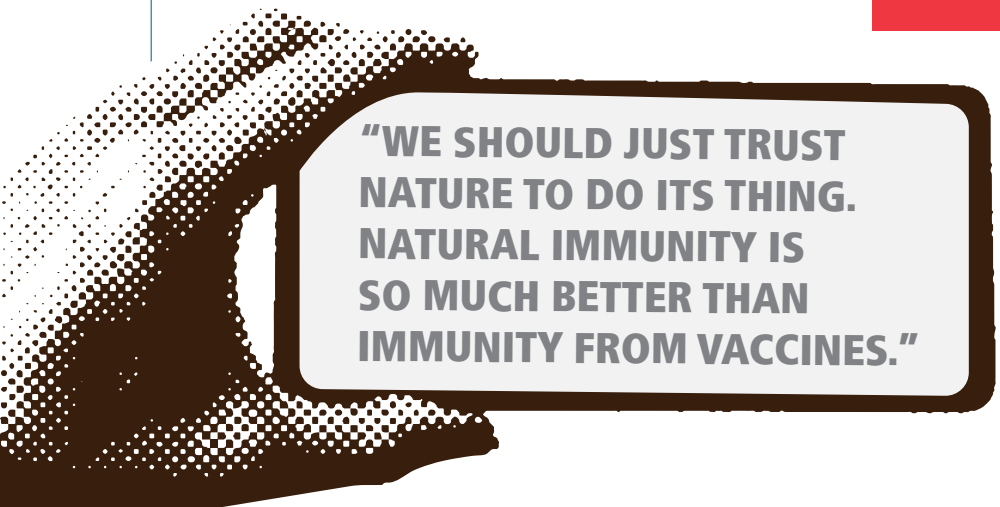
Impersonating experts

CREATING FAKE SOCIAL MEDIA ACCOUNTS USING PICTURES AND SIMILAR NAMES OF WELL-KNOWN GOVERNMENT OFFICIALS, SCIENTISTS, OR MEDICAL AUTHORITIES



Inventing "experts" and studies to add credibility

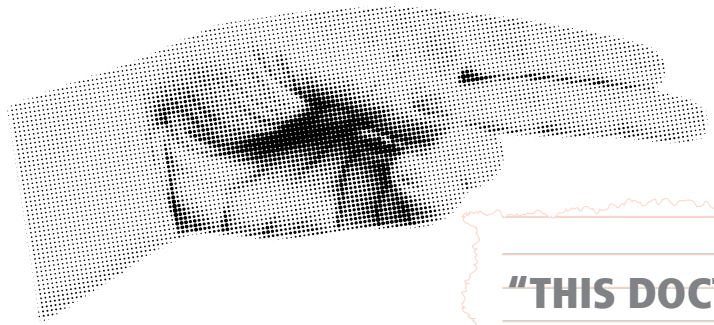
Setting impossible standards for vaccines



Appealing to nature

Trolling (expressing extreme opinions to egg on other users, attack naysayers) / Polarizing or politicizing vaccination to create division

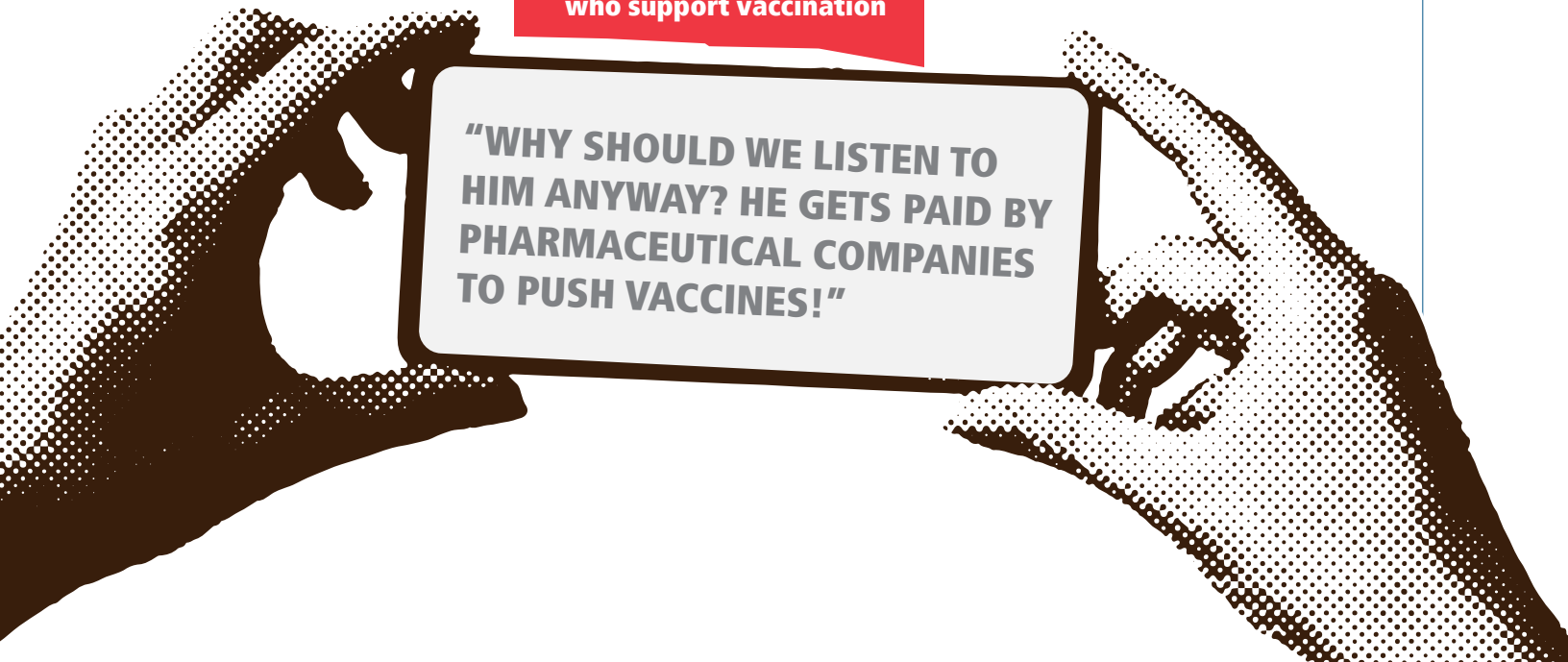
"ANYONE TELLING YOU TO GET YOUR CHILD VACCINATED IS TRYING TO CONTROL YOU! DON'T FALL FOR IT! DON'T BE A SHEEP!"



Selectivity in sources, not disclosing that the majority of experts disagree

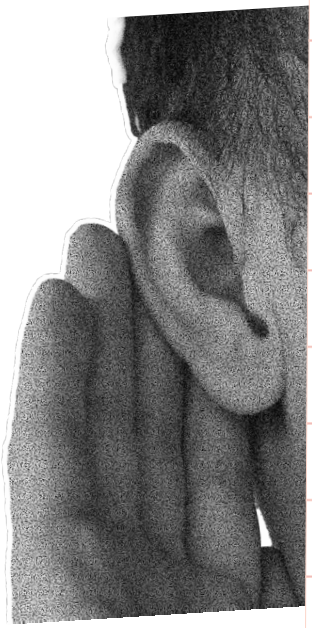
"THIS DOCTOR SAYS THE VACCINE'S RISK OF MYOCARDITIS IS TOO GREAT FOR CHILDREN TO GET THAT SHOT, WHICH PROVES THAT VACCINATION IS UNSAFE."

Discrediting experts who support vaccination



Using false logic

"MY NEIGHBOR GOT THE FLU SHOT AND STILL GOT SICK. THE FLU VACCINE IS WORTHLESS."



"DID YOU HEAR THE STORY ABOUT MY SISTER'S NEIGHBOR? HER SON GOT VACCINATED AND WAS DIAGNOSED WITH AUTISM LATER THAT MONTH."

Relying on anecdotes instead of data to make a point

Distorting factually correct information (Note: These will generally not be flagged as misinformation on social media platforms, as they are technically true)

Tips to spot misinformation online

Because it is impossible to remove every false piece of information from the Internet, the best defense is to teach people to understand and spot it.

Check	Be wary of	Look for
The URL	Endings with .lo, .co (in English-speaking countries), .offer, .infonet	Endings with .com, .org, or government URLs specific to your country Snopes.com has a list of known fake news websites; check this to see if the website you are looking at is on it
"About Us" and "Staff"	Blank or missing text about the mission, location, staff, etc. of the outlet Sites that claim to be alternate news, conspiracy theory sites, hoaxes, satire	Well-known and respected news outlets
The date	Articles that were published in the past that have been resurrected	Recent articles

Check	Be wary of	Look for
The byline	Outrageous author bios (i.e., claims of many prestigious awards for a journalist who does not appear on an Internet search) The same photo used for multiple authors	Legitimate journalists who exist in real life
Grammar	Spelling and grammar errors The use of many exclamation points or question marks in a row!!!??? Text in ALL CAPS	Content that has been copyedited for spelling and grammar mistakes
Content (read beyond the headline!)	Nonsensical or absurd text, like attributing quotes to animals Made-up experts, organizations, and quotes (search names online to determine if they are real) Invented data and figures	Content that makes sense Real-life experts Data that match what official sources (such as government or United Nations agencies) have published
Links within the article	Broken links Links that go to other suspicious websites	Links that go to legitimate, trusted sites

Check	Be wary of	Look for
Images	Images that look edited: blurry, jagged edges, warped Images taken from other websites AI-generated images (often look slightly off; for example, people have too many fingers)	Use Google Reverse Image Search to see where the image originated from
Other content on the site	Other stories that look suspicious or nonsensical	Legitimate stories that have been covered by trusted news outlets
Interactions	Many comments that seem to be from trolls or bots	Engagement from real people (Note: Sometimes real articles will still get attacked by bots or trolls)
Your biases	Content that confirms your suspicions or beliefs Content that evokes strong emotions (especially fear, anger, sadness)	Stories that expand your knowledge or worldview on a topic

Be aware that some people who spread misinformation will put false "fact-checked!" labels or badges on their content. Be wary and research who has claimed to have done the fact-checking.

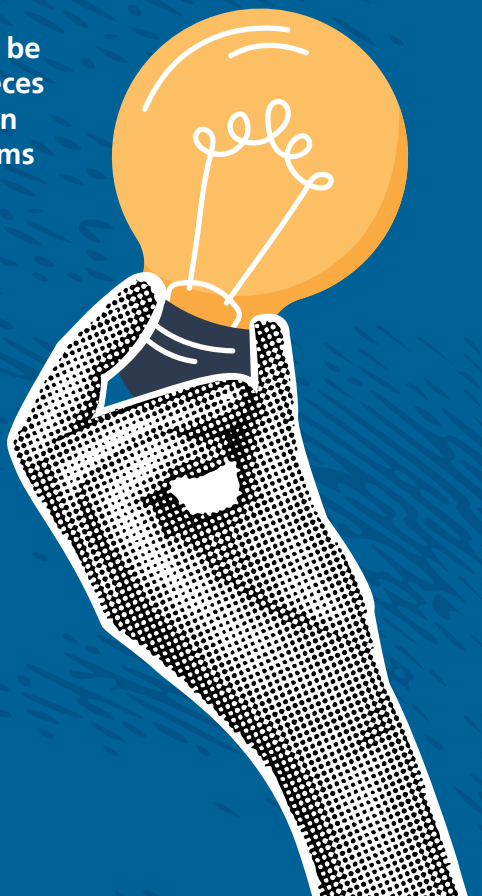
There are fact-checking organizations that you can turn to if you suspect you have encountered a piece of misinformation and would like to confirm if it is true or false; there is a good chance it has already been reported and responded to. Check www.snopes.com, BBC Verify, PolitiFact, or FactCheck.org. You can also email FactCheck if you encounter new misinformation that has not been debunked.

Part 2:

Strategies to fight back against vaccine misinformation in the clinical setting and community

EPI managers and their teams play a critical role in fighting vaccine misinformation, while interacting with people in both the health center and in the community. EPI managers particularly must work within their teams to quell hesitancy among their staff members, as health workers whose confidence in vaccines is faltering can significantly impact the vaccination intentions and behaviors of the users of health services.

EPI teams are uniquely placed to also potentially be among the first to hear about new rumors or pieces of misinformation about vaccination circulating in the communities they serve. Encourage your teams to make note of new questions or rumors about vaccination they hear from their patients, and work with the risk communications or social listening team within your Ministry of Health to determine the best way to report these to them.



EPI managers can encourage their teams to be on the lookout for vaccine misinformation, as discussed in Part 1, as well as use the following strategies to help protect patients from misinformation and keep it from spreading further.

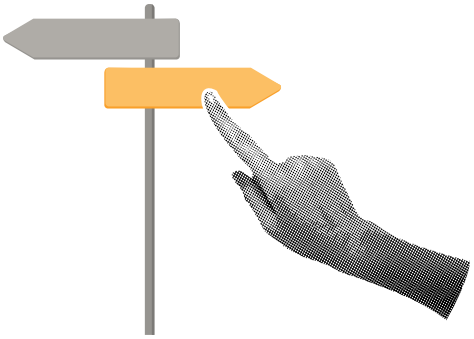
General rules for correcting misinformation in any setting

To maintain trust and be more effective at correcting misinformation, follow these tips:

Be kind and nonjudgmental. Do not mock or make people feel bad for asking about misinformation, no matter how absurd it sounds to you; they should feel comfortable coming to you with their questions. Correcting misinformation is most effective when it is done by a trusted source, and you want you and your team to continue to be that source.

Listen closely to understand what is at the root of what the person is asking. What do they need? Assurance that they are doing the right thing? Medical advice? What can you offer them?

Consider establishing a mechanism where people can submit questions anonymously so they can have their questions answered without fear of judgment – this can be done for health workers, patients, or both.



Remember, correcting misinformation alone does not guarantee that someone will get vaccinated. Some conversations may have to be repeated. Behavior is complex and dependent on many factors.

Approaches to fighting misinformation

Experts recommend a variety of approaches to fighting misinformation. Of these, prebunking and debunking are popular tactics that can be done in a healthcare setting. Prebunking interventions happen before an individual is exposed to misinformation, while debunking seeks to correct misinformation that somebody has already consumed. Neither approach is perfect, and researchers are still studying how to make interventions more effective given specific populations and situations.

Prebunking

Much like a vaccine warns your body about a pathogen by exposing it to an antigen and preparing it to fight disease, prebunking "inoculates" you against misinformation, preparing you to fight it.

A critical part of prebunking is warning individuals that they might encounter misinformation about vaccines; if you are aware of a specific new rumor going around, you can give them a "weakened" version of the misinformation. After you warn them of the misinformation, provide them with the truth that you want them to remember. This might sound like:

"I wanted to let you know that you might hear some rumors about the vaccines your child needs to stay healthy. There is new misinformation spreading about the MMR vaccine specifically right now; you might hear that if your child gets this shot, they'll go blind. That isn't true. The MMR vaccine is very important for keeping your child healthy, and I strongly suggest that your child gets this shot in order to protect her from dangerous diseases like measles."

You can make prebunking efforts stronger by teaching people how to spot misinformation in general, the techniques used to develop and spread it, as well as the motives people have for sharing it (see Part 1 of this guide). Online games like Go Viral!, Bad News, Harmony Square, and Cranky Uncle are a fun, interactive way to learn about these things and strengthen prebunking efforts.

Prebunking can be "therapeutic" in that it can still work for people who have been exposed to misinformation but do not fully believe it yet. And like some vaccines, its effectiveness can lessen with time – "boosters" may be needed. Be ready to remind your team and patients about misinformation multiple times to ensure their defenses stay ready.

Debunking

Debunking seeks to correct misinformation in an individual's mind and replace it with the truth – a tricky task, given how persistently misinformation tends to stay in our minds.

When debunking, lead with simple facts and make it clear that the misinformation you are referring to is false. If you decide to put up a visual (like a poster) in your health center, make sure the misinformation is clearly labeled as a myth or rumor. Follow the myth with further information as to why it is not true, then end by repeating the fact. This might sound like:

"Vaccines are safe for people to receive in the long and short term. There is a common rumor that the MMR vaccine causes autism, but there is no link between any vaccine and autism. A single study, which was poorly designed and already discredited, reported such an association in 1998. Since then, hundreds of well-designed studies have confirmed that this vaccine is safe and effective."

At one point in time, it was thought that debunking could do more harm than good because it exposes people to the very misinformation you want them to avoid. However, recent research has shown that this is not a serious concern and that it is better to consistently debunk.

Remember, misinformation is reliant on others to spread it. Make sure you always report misinformation on social media, and never share content unless you are sure it is true.

Part 3:

Supporting fellow health workers to trust immunization

EPI managers are looked to for guidance on myriad topics; some of those may include a health worker struggling with their own questions about vaccines, or how to help a colleague who seems hesitant.

Health workers, like the general public, use social media and can be exposed to the misinformation that circulates on it. Although health workers tend to have access to higher quality information on vaccines, it does little good if they do not trust it – and where there are hesitant health workers, there are likely to be hesitant patients.

When counseling fellow health workers on vaccination, keep in mind the following:

Make them feel comfortable

- Be kind, nonjudgmental, and open to what questions or doubts your colleague is expressing. Be humble and avoid preaching. Do not make your colleague feel like you are attacking them or their values – studies have found that people who feel judged are less likely to accept vaccination.
- Remember that your team members' risk perceptions for diseases may be different than the general public's if they have survivorship bias; i.e., they do not feel the need to get vaccinated because they have been exposed to diseases like COVID-19 and influenza and have been ok.
- Demonstrate active listening, repeating back what they have said to make sure you understand and that they feel heard ("I understand that you're having doubts about getting the COVID vaccine because you're concerned there might be unknown long-term effects, is that correct?").
- Be transparent about risks and uncertainties, as doing otherwise will break trust and push people to believe more in the misinformation.
- Find common ground and values: everyone wants to do what is best to keep themselves, their family, and their patients safe and healthy.

Highlight the evidence for vaccines

- Emphasize the overwhelming scientific consensus in favor of vaccines' safety and effectiveness.
- Hold expert-led information sessions or dialogues where health workers can get their questions answered.
- Establish peer support in cases where health workers have low levels of trust with leadership.
- Offer continuing education sessions on technical information about vaccines and interpersonal communication about vaccination.

Build pro-vaccine norms on your team

Set vaccination goals as a team. Provide data on the number of health workers who have been vaccinated. Give big updates or celebrate when this number goes up.

Provide public cues for health workers who got vaccinated, like stickers, lanyards, or T-shirts. Dedicate wall space to hang pictures of health workers who have been vaccinated.

Share testimonials from health workers (including leadership) who have been vaccinated. Publish these in a variety of formats and on institutional channels, like email, blogs, videos, and social media.

Publicly vaccinate senior healthcare leadership.

Hold practice counseling sessions where health workers can practice responding to questions and doubts about vaccination. Evidence shows that health workers who feel comfortable communicating about vaccines are more likely to recommend them.

Work with health worker colleagues outside the EPI to ensure that as many health workers as possible are recommending vaccination to their patients. Offer training, resources, and your expertise if needed.

Conclusion

Misinformation poses a serious threat to vaccine uptake, as it can weaken trust in immunization and the EPI in general. EPI managers have a special role to play in combating misinformation by helping their teams understand it, detect it, and stop it from spreading. They also are uniquely able to understand and respond to their fellow health workers who may be struggling with vaccine hesitancy themselves. By fighting vaccine misinformation, EPI managers are taking an important step to help increase vaccine uptake.

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Combating false information on vaccines: A guide for EPI managers is designed to help Expanded Program on Immunization (EPI) managers address vaccine misinformation. It begins by defining misinformation and explaining why it spreads rapidly, often due to its emotional appeal and simplistic explanations. The guide identifies common sources of vaccine misinformation, including influential individuals who profit from spreading false information. It outlines strategies for combating misinformation, emphasizing the importance of EPI managers as trusted sources. It provides tips for identifying misinformation online, such as checking URLs, dates, and author credentials, and recognizing tactics like evoking strong emotions or pushing conspiracy theories. Two main approaches to fighting misinformation are discussed: prebunking and debunking. Prebunking involves warning individuals about potential misinformation before they encounter it, while debunking aims to correct false information after it has been consumed. The guide offers practical examples for both methods. Additionally, the guide highlights the role of EPI managers in supporting health workers to trust immunization. It suggests being kind, nonjudgmental, and transparent when addressing concerns, and using motivational interviewing techniques to understand and respond to health workers' doubts. The guide also emphasizes the importance of creating a supportive environment for health workers, promoting pro-vaccine norms, and providing continuing education on vaccines. Overall, the guide aims to help EPI managers maintain trust in vaccines and provides comprehensive strategies to identify, address, and prevent the spread of vaccine misinformation in clinical and community settings. This guide equips EPI managers with the knowledge and tools to combat vaccine misinformation, support their teams, and promote trust in vaccines, ultimately protecting public health.

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