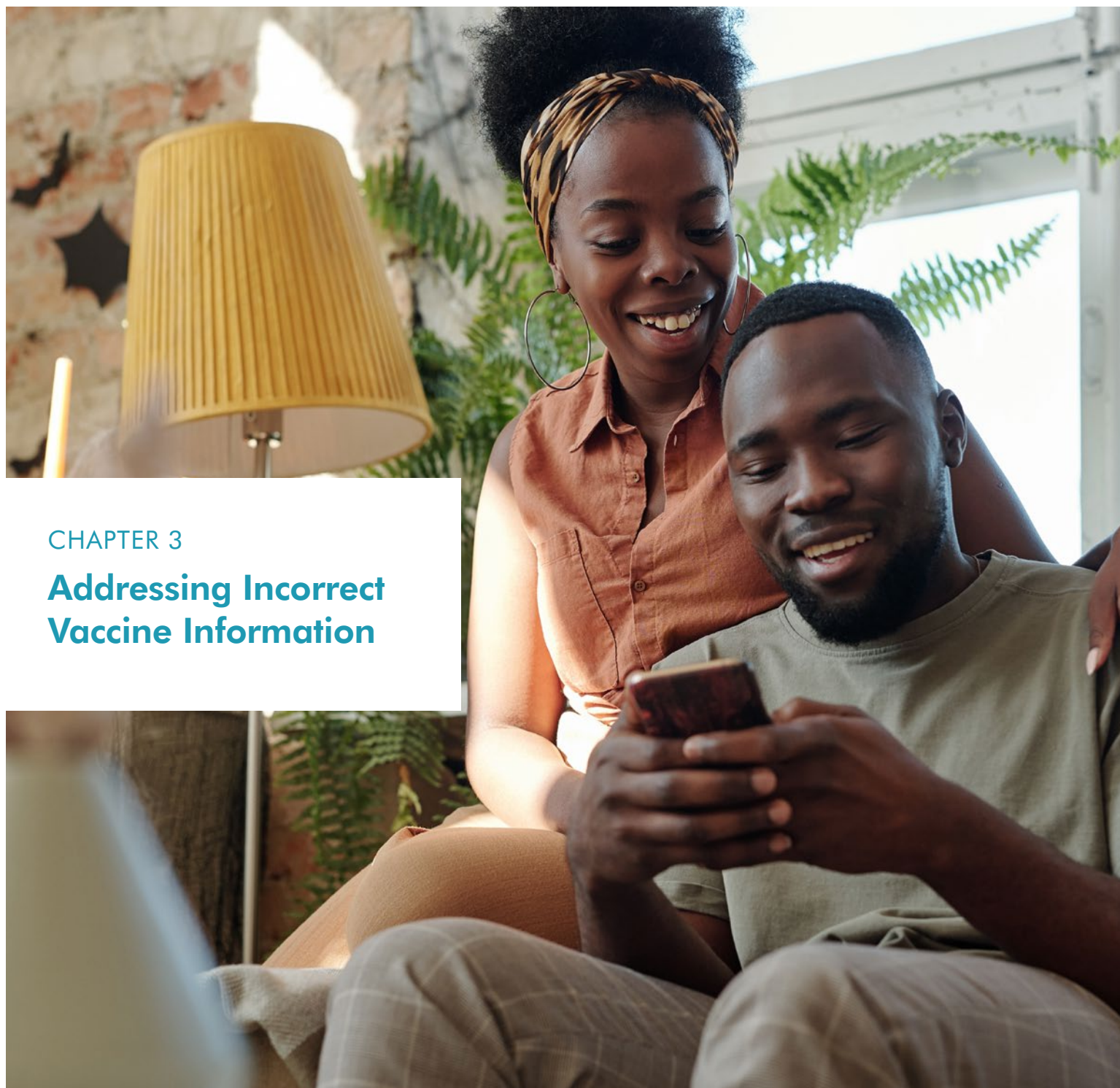


Lessons from the Field:

PROMOTING VACCINE CONFIDENCE



CHAPTER 3

Addressing Incorrect Vaccine Information

Vaccine Confidence Toolkit

Access a collection of resources for promoting vaccine confidence! This toolkit is designed to equip public health immunization programs with the tools and information needed to educate providers and consumers on vaccination and build vaccine confidence.



RESOURCE GUIDE

Outlines key lessons learned from select immunization programs and stakeholders



WEBINAR SERIES

Features strategies and resources for addressing vaccine hesitancy and promoting vaccine confidence



MEDIA MATERIALS

Download templates for conducting postcard reminder recall and posting on social media



TRAININGS

Access workshops focused on building skills to promote vaccine confidence



RESOURCE LIBRARIES

Browse this collection of resources and tools for promoting vaccine confidence

immunizationmanagers.org/vaccineconfidencetoolkit



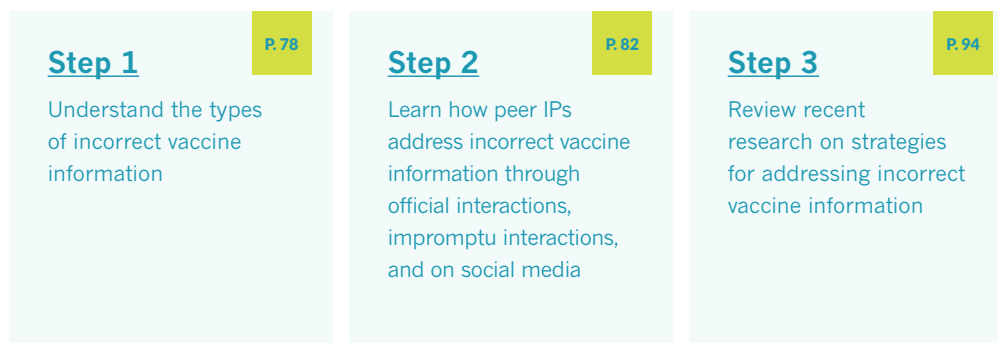
Introduction

Incorrect information about COVID-19 that has spread throughout the pandemic has made it clear: the United States is facing an “infodemic.” As recognized by the World Health Organization (WHO) early in the pandemic’s progression, “fake news spreads faster and more easily than this virus and is just as dangerous.”¹ The infodemic has impacted all areas of the COVID-19 pandemic, spreading falsehoods about everything from the origin of the disease to vaccine development. This COVID-19 infodemic has emphasized the importance of ongoing research on mitigating the spread of incorrect information.

“Using medical terms, one might say misinformation is widely prevalent, incredibly infectious, and highly resistant to currently available treatment.”²

The 64 state, local, and territorial immunization programs (IPs), the Centers for Disease Control and Prevention (CDC), and other public health agencies are our country’s best resources for understanding and providing correct vaccine information. The extent to which an IP is involved in addressing incorrect vaccine information will vary depending on the health department’s communication structure and policies. However, it is valuable for all IPs to understand the different types of incorrect information and develop strategies for addressing them.

This chapter describes important steps for understanding and addressing incorrect vaccine information:



Step 1 summarizes the different types of incorrect information. Step 2 provides key considerations, experiences from the field, IP insight, lessons learned, and resources to help IPs (and their partners) address incorrect vaccine information. Step 3 summarizes recent research on strategies for addressing incorrect vaccine information. The checklist on page 77 can be used to quickly review the most important things to consider when addressing incorrect vaccine information.

¹ Munich Security Conference. (2020, February 15). The World Health Organization. <https://www.who.int/dg/speeches/detail/munich-security-conference>.

² Zucker, H.A. (2020, October). Tackling Online Misinformation: A Critical Component of Effective Public Health Response in the 21st Century. *Am J Public Health*, 110(S3), S269. doi: 10.2105/AJPH.2020.305942.

Language That Works to Improve Vaccine Acceptance: Communications Cheat Sheet (2021)

In 2021, the de Beaumont Foundation released findings from a national poll (<https://debeaumont.org/changing-the-covid-conversation/vaccineacceptance>) which identified effective language for improving COVID-19 vaccine acceptance among all Americans, public including those who were less likely to get the COVID-19 vaccine.

Tailor your message for your audience. Americans' perceptions about vaccines and their safety differ by political party, race, age, and geography.

Explain the benefits of getting vaccinated, not just the consequences of not doing it. Say, "Getting the vaccine will keep you and your family safe," rather than calling it "the right thing to do." Focus on the need to return to normal and reopen the economy.

Talk about the people behind the vaccine rather than the organizations. Refer to the scientists, the health and medical experts, and the researchers—not the science, health, and pharmaceutical companies.

Avoid judgmental language when talking about or to people who are concerned. Acknowledge their concern or skepticism and offer to answer their questions.

Use (and repeat) the word "every" to explain the vaccine development process. For example: "Every study, every phase, and every trial was reviewed by the FDA and a safety board."

Check out the de Beaumont Communications Cheat Sheet (https://debeaumont.org/wp-content/uploads/2021/01/VaccineToolkit_1pger.pdf) to see which words to use more often and which to use less often, as well as the best way to talk about the benefits of the COVID-19 vaccine.

changingthecovidconversation.org

Checklist for Addressing Incorrect Vaccine Information:

✓ Understand the types of incorrect vaccine information and how it can impact your jurisdiction.

- Ensure relevant IP staff have the awareness, knowledge, and skills to classify incorrect information as misinformation, disinformation, or mal-information.
- Go to the AIM Project VCTR portal (immunizationmanagers.projectvctr.com) to identify the type of incorrect information circulating in your region/state.
- Regularly visit the Public Health Communication Collaborative (<https://publichealthcollaborative.org>) website for messaging support, materials, and communications counsel for increasing confidence in COVID-19 vaccination.

✓ Use the most appropriate approach to address incorrect vaccine information in different situations: during official interactions (e.g., legislative hearings), in “impromptu” settings (e.g., news interviews, public meetings), and via social media.

- Prepare in advance. During official interactions, such as legislative hearings, incorrect information presented by others generally cannot be rebutted in the moment. IPs should prepare partners, department leadership, and legislators with accurate information before the hearing or other event.
- Cultivate a strong working relationship with your communications/public affairs office. When possible, rely on them to manage media inquiries and interview requests. Ask for their help to develop a documented strategy for handling public meetings, interviews, and phone calls.
- Ensure IP staff know the do’s and don’ts of communicating with vocal vaccine deniers in public.
- Work with your communications/public affairs office to develop a social media strategy outlining when and how to respond to incorrect vaccine information. In determining the best approach, consider the speed of social media communication, your intended audience, and the extent to which the information is inaccurate.

✓ Recognize that best practices for addressing incorrect vaccine information are consistently evolving. Stay up to date on the newest research.

- Become familiar with organizations that monitor and study information, like the Public Good Projects, MediaWell, First Draft, and the Shorenstein Center on Media, Politics, and Public Policy.
- Follow reliable sources—like AIM—that compile new research findings in brief and understandable formats. Read Step 3 for current findings.

STEP 1

Understand the types of incorrect vaccine information



STEP 1

Understand the types of incorrect vaccine information

Though the spread of incorrect information is an age-old problem,³ its rampant spread coupled with the increase in social media use in recent years has made addressing this problem more critical than ever. Incorrect information affects public discourse on everything from elections⁴ to immigration⁵ to climate change⁶ to COVID-19.⁷

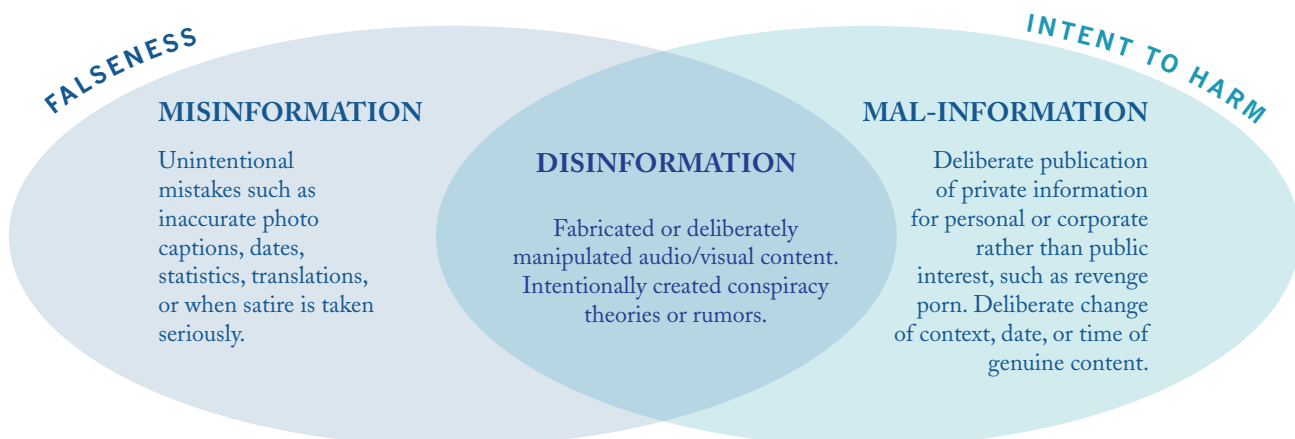
Public health has long been a target of incorrect information. Vaccine-related incorrect information campaigns began with the very first vaccine, which was developed in the 19th century to fight smallpox.⁸ Arguments against smallpox vaccination will sound familiar, such as a focus on harm from or ineffectiveness of the vaccine. These arguments minimize the seriousness of the disease and represent an assault on personal freedoms and oppression by medical or governmental authorities.^{9,10}

To better understand how to address incorrect information, researchers have called for moving beyond politicized terms, such as “fake news,” to more nuanced definitions of incorrect information.^{11,12} A recently proposed framework for studying and addressing the spread of incorrect information, or what the authors call “information disorder,” defines three categories.¹³



The intersection of these three terms, using the concepts of falseness and intent to harm, is shown in Figure 1.

FIGURE 1: TYPES OF INFORMATION DISORDERS¹³



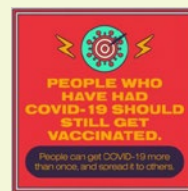
Another perspective is that misinformation comes from inadvertently drawing conclusions from wrong or incomplete facts, while disinformation is the deliberate spread of falsehoods to promote an agenda.¹⁴ Note that misinformation is often used as an umbrella term for incorrect information, incorporating both misinformation and disinformation as defined above.

Another component of the conceptual framework defines three elements of incorrect information and suggests questions to ask about each element to better understand the nature of the incorrect information:

- + Agent (i.e., who created/distributed the information):
 - What are the characteristics of the actor (official versus unofficial)?
 - What was their motivation (e.g., financial, political, social, psychological)? Was there intent to harm or mislead?
 - To what extent was the agent organized and did they use automation (e.g., human versus bot)?
 - Who was the intended audience?
- + Message:
 - In what format was the information delivered (e.g., in person, print, audio/visual material)?
 - How durable was the information (e.g., long-term, short-term, event-based)?
 - What was the level of inaccuracy (e.g., misleading, manipulated, fabricated)?
- + Interpreter (i.e., those consuming the information):
 - How was the information received (e.g., accepted, partially accepted, rejected)?
 - What actions did they take (e.g., ignored, supported, opposed)?

Strategies to address incorrect information—focusing mainly on misinformation and disinformation—may vary and have varying degrees of success depending on the type and nature of the incorrect information. Generally, while misinformation could be addressed by providing factual information, addressing disinformation is more complicated.

Public Health Communications COLLABORATIVE



Per its website, the Public Health Communications Collaborative was formed in 2020 “to coordinate and amplify public health messaging on COVID-19 and increase Americans’ confidence in guidance from CDC and state and local public health officials.”

The website contains resources developed with The Public Good Projects, such as:

- ★ Downloadable resources (graphics and videos) related to COVID-19 for posting online or using in presentations
- ★ A summary of media monitoring for misinformation trends
- ★ A summary of news stories trending on social media

publichealthcollaborative.org





³ Darnton, R. (2017, February 13). The True History of Fake News. The New York Review. <https://www.nybooks.com/daily/2017/02/13/the-true-history-of-fake-news/>

⁴ Fessler, P. (2020, October 24). Robocalls, rumors and emails: last-minute election disinformation floods voters. NPR Morning Edition. <https://www.npr.org/2020/10/24/927300432/robocalls-rumors-and-emails-last-minute-election-disinformation-floods-voters>

⁵ Wright, C., Brinklow-Vaughn, R., Johannes, K., Rodriguez, F. (2020) Media portrayals of immigration and refugees in hard and fake news and their impact on consumer attitudes. Howard Journal of Communications. DOI: 10.1080/10646175.2020.1810180

⁶ Dunlap, R.E., McCright, A.M. (2010). Climate change denial: sources, actors and strategies. In Lever-Tracy C (ed), Routledge Handbook of Climate Change and Society. Abingdon, UK: Routledge 2010. <https://www.cssn.org/wp-content/uploads/2020/12/DunlapMcCrightRoutledgeHB2010.pdf>

⁷ Bagherpour, A., Nouri, A. (2020, October 11). COVID misinformation is killing people. Scientific American. <https://www.scientificamerican.com/article/covid-misinformation-is-killing-people1/>

⁸ Wolfe R.M., Sharp L.K. (2002). Anti-vaccinationists past and present. BMJ 2002; 325:430

⁹ Larsson, P. (2020, October 4). COVID-19 anti-vaxxers use the same arguments from 135 years ago. <https://theconversation.com/covid-19-anti-vaxxers-use-the-same-arguments-from-135-years-ago-145592>

¹⁰ Iannelli, V. (2020, June 11). History of the Anti-Vaccine Movement. <https://www.verywellhealth.com/history-anti-vaccine-movement-4054321>

¹¹ Wardle, C., Derakhshan, H. (2018, August). Information Disorder: Toward an interdisciplinary framework for research and policy making. Council of Europe, August 2018, 2nd revised edition. <https://rm.coe.int/information-disorder-report-version-august-2018/16808c9c77>

¹² Jack, C. (2017). Lexicon of Lies: Terms for Problematic Information. Data & Society. https://datasociety.net/pubs/oh/DataAndSociety_LexiconofLies.pdf

¹³ Wardle, C., Derakhshan, H. (2018, August). Thinking about information disorder: the seven formats of mis- and dis-information. Slide deck. Journalism, Fake News, and Misinformation, a UNESCO Model Course for Journalism Teachers Worldwide. CI/FEM/IPDC/JE-2018/1. https://en.unesco.org/sites/default/files/fake_news_syllabus_-_model_course_1_-_slide_deck.pdf

¹⁴ Igoc, K.J. (2019, July). Establishing the truth: Vaccines, social media, and the spread of misinformation. <https://www.hsph.harvard.edu/ecpe/vaccines-social-media-spread-misinformation/>

STEP 2

**Learn how peer IPs
address incorrect
vaccine information**



STEP 2

Learn how peer IPs address incorrect vaccine information

The spread of incorrect vaccine information exacerbates vaccine hesitancy; therefore IPs should aim to address incorrect vaccine information wherever possible. As IPs may be confronted with incorrect vaccine information in various settings, this section describes considerations and lessons learned within three common settings: during official interactions (e.g., legislative hearings), in “impromptu” settings (e.g., news interviews, public meetings), and via social media.

Addressing incorrect vaccine information via official interactions

Chapter 1 provided guidance on promoting vaccine confidence during legislative sessions and other official public forums. This section provides complementary information on how incorrect vaccine information is handled by IPs in the context of official interactions, such as legislative hearings or direct questions from legislators.

Key Considerations

- + As noted in chapter 1, states and local jurisdictions typically have a government relations or legislative affairs office or liaison that deals directly with the legislature and/or executive office. The IP is not in direct control of this information flow.
- + During legislative sessions, IPs may need to field questions from legislators or their staffers (via the legislative affairs office or liaison), depending on the legislative issues being considered and constituent feedback.
- + IPs may not be directly involved in testifying at legislative hearings on immunization-related issues, though they may be involved in preparing others (e.g., health department director) to testify.
- + The allowable time for an individual’s testimony varies by jurisdiction but is usually brief.
- + Incorrect information presented in testimony by others during legislative hearings generally cannot be rebutted in the moment. Many IPs prepare follow-up written responses or otherwise try to provide feedback to legislators in advance to counter the incorrect information.
- + As with testimony, health department and IP responses to legislators’ questions focus on facts (e.g., data, science) and do not provide opinions or appeal to emotions.
- + Vaccine opposition groups may be well-funded, well-organized, and include influences from outside of the state or jurisdiction. Additionally, some legislators are increasingly discounting information from government officials and medical providers, taking what constituents say at face value.



PROGRAM MANAGER INSIGHT

“We may go listen in [on relevant hearings]. We’ll give any feedback on what we hear to the government relations liaison so they can respond as needed.”

Lessons Learned

- * Work with partners (e.g., immunization coalitions, parent-led nonprofit organizations) to present testimony in ways that the IP and health department cannot, such as providing personal stories, complementary perspectives, and more aggressive messaging.
- * Since testimony often must be short, try to provide information to legislators before (e.g., fact sheet) and after (e.g., rebuttals to incorrect vaccine information) legislative hearings.
- * Regularly educate and prepare health department leaders (e.g., health officer) who are often called on to be the “voice” of the department or IP, particularly those who are new to the department or do not have an immunization background.
- * Don't forget about the constituents—prepare and release public messaging to coincide with legislative sessions that will be addressing immunization issues.
- * The arguments from vaccine opponents are generally the same regardless of the specific immunization issue. Review issues that have been raised in past hearings, arguments being made in the media, experiences from other IPs, etc., to develop testimony or materials for legislators that preempts some of the incorrect information that is likely to be raised. (Utilize AIM's library of questions and answers (<https://www.immunizationmanagers.org/resources/incorrect-vaccine-information>) about vaccines to inform responses to opponents - available in the Full Environmental Scan Report.)
- * Keep publicly-released responses succinct to minimize “ammunition” for vaccine opponents.



EXPERIENCE FROM THE FIELD

Responding to Comments

For an administrative rulemaking, the IP was not required to respond to each comment individually. It compiled all feedback into categories and wrote responses to address these categories. This allowed them to be responsive to concerns but not repeat/reinforce specific misinformation.



PROGRAM MANAGER INSIGHT

“Within the policy landscape, we are expected to respond in more detail to misinformation than we would in our normal day-to-day world. I think in the normal day-to-day world, you can mostly ignore a lot of misinformation and keep talking about the benefits and what we know of the science behind vaccines. In some ways, we weren't quite as prepared because [to address legislator questions], we needed more detailed responses to things that really were [based on] wacky misinformation.”

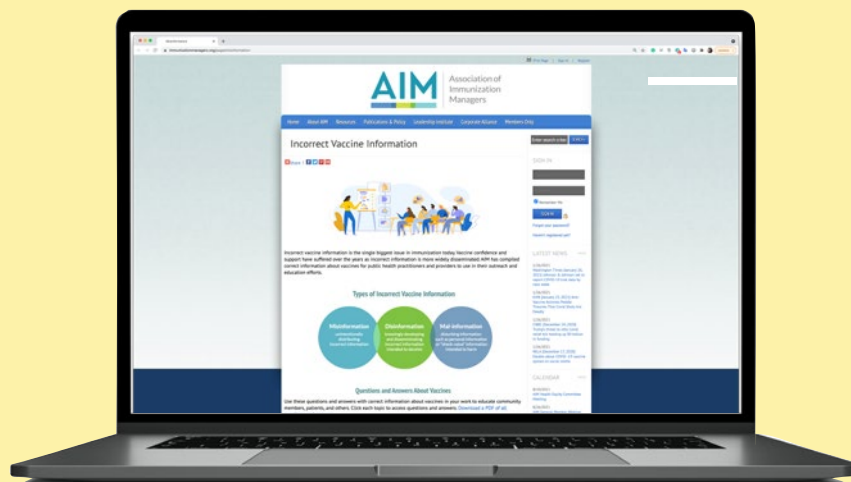
Immunization Program Policy Toolkit

RESOURCE LIBRARY



Find examples of Q&A documents in the members only – **GENERAL TOOLS** section of the Immunization Program Policy Library.

www.immunizationmanagers.org/Policytoolkit



Incorrect Vaccine Information Repository

Vaccine confidence and support have suffered over the years as incorrect information is more widely disseminated. AIM has compiled resources and correct information about vaccines for public health practitioners and providers to use in their outreach and education efforts.

- Q&A about vaccines to help educate community members, patients, and others
- 2020 Environmental Scan: Vaccine Disinformation, Misinformation, and Mal-information. The summary also includes suggested activities for IPs.

<https://www.immunizationmanagers.org/resources/incorrect-vaccine-information>

RESOURCES

- Legislative Communications Toolkit (n.d.). Iowa Department of Public Health.
<https://idph.iowa.gov/do/Legislative-Communications-and-Engagement/Toolkit>

Addressing incorrect vaccine misinformation in impromptu situations

Another setting in which IPs may be confronted with incorrect vaccine information is during impromptu situations, such as public meetings, media interviews, and speaking engagements.

Key Considerations

- + Health departments generally have a public affairs office that manages all media inquiries and interview requests.
- + Many IPs do not have official guidelines for dealing with impromptu situations, and some have shared that they typically avoid these situations.
- + There has been a shift in the tone of some media questioning, from more broad and neutral questions (e.g., “Why are people concerned?”) to asking specifically about (and therefore giving exposure to) more fringe vaccine rumors and incorrect vaccine information.
- + It is difficult to directly counter emotional personal stories with the types of scientific, fact-based responses that health departments generally provide—which can come across as cold and uncaring.
- + There is a need for more people who are able to convey empathy while giving an appropriate public health response.



PROGRAM MANAGER INSIGHT

“I had a team to support me through the press office and with talking points, vetting the different requests we would get, deciding whether we would do a full interview, whether we would just send a statement. We decided not to directly engage with a request by [vaccine opposers]. We didn't know how it could be a positive outcome, so we did not engage on that level.”

Lessons Learned

- * Be prepared! Have a few main points on which to focus or redirect attention to and anticipate/topics that are likely to be addressed.
- * Don't say or do anything that you wouldn't want to be on the front page of a newspaper (or trending on Twitter).
- * Address the issue (e.g., make a correction or make an affirmative statement) with data or evidence-based information; otherwise, defer and direct it to the public affairs office.
- * Assume that public or telephone interactions are being recorded.
- * Have a strategy for handling phone calls. Do you have scripts? Who's taking those calls? That person should have communications experience and be able to control their emotions during potentially volatile conversations.
- * Cultivate a strong working relationship with your jurisdiction's public affairs office.

RESOURCES

- Media Training Guide (n.d.). Vaccinate Your Family. <https://www.immunizationmanagers.org/content/uploads/2021/10/Vaccinate-Your-Family-Media-Training-Guide.pdf>
- Draft a Successful Pitch to a Reporter (n.d.). Vaccinate Your Family. https://www.immunizationmanagers.org/content/uploads/2021/10/Draft_a_Successful_Pitch_to_a_Reporter.pdf

Communicating in a Crisis: Risk Communication Guidelines for Public Officials

These guidelines, developed by the Substance Abuse and Mental Health Services Administration (SAMSHA), provide public officials and others involved in disaster and emergency communications with information about effective communication, working with the media, using social media, and addressing errors and controlling rumors.

For example, in the section on presenting information at public meetings, they address the importance of setting the tone with the introduction.

Remember that perceived empathy is a vital factor in establishing trust and building credibility, and it is assessed by your audience in the first 30 seconds. Include the following in your introduction:

Statement of personal concern:

“I can see by the number of people here tonight that you are as concerned about this issue as I am.”

Statement of organizational intent:

“I am committed to protecting the health and safety of the public. The Mayor and his staff have been involved with this community for a long time and want to work with the community on this issue.”

Citation:

Communicating in a Crisis: Risk Communication Guidelines for Public Officials (2019, October). SAMHSA. Publication No. PEP19-01-01-005. <https://store.samhsa.gov/product/communicating-crisis-risk-communication-guidelines-public-officials/pep19-01-01-005>

Risk Communication (n.d.). CDC. <https://www.cdc.gov/healthcommunication/risks/index.html>

Addressing incorrect vaccine information on social media

Social media use has had a tremendous impact on the spread of incorrect vaccine information. According to Project VCTR's data, messages in opposition to vaccines have more than doubled during the COVID-19 pandemic. Since March 2020, these messages have been viewed more than 4.5 billion times. In 2020, Project VCTR identified 3.1 million mentions of vaccine opposition across social and digital media, including online forums and Q&A websites. That's an average of 9,300 mentions per day. According to a Public Good Projects study, vaccine opposition on Twitter increased by 80% in the four months after COVID-19 spread began in the U.S., compared to the four months prior.

The high volume and consistency of vaccine opposition messaging demonstrates the need for IPs to develop a plan for how and when to address incorrect vaccine information on social media.

RESOURCES

- Social Media Fact Sheet (2019, June 12). Pew Research Center. <https://www.pewresearch.org/internet/fact-sheet/social-media>
- Year in Vaccine Opposition 2020 (2021). Project VCTR. https://projectvctr.cdn.prismic.io/projectvctr/60c417e6-591c-447a-a7e8-30ab510b4bac_2020_vctr_year_in_review_1.pdf. Accessed March 5, 2021

Key Considerations

- + Health departments often have a public affairs office that manages the departments' social media accounts. IPs may have very limited direct engagement with that team.
- + The extent to which incorrect information is inaccurate should be considered when deciding whether it's worth it to respond to it, as responding could cause more damage than good.
- + A key feature of social media communication is speed—the speed at which information is posted and how fast information becomes out of date—which is counter to how health department communications typically work. Health department social media accounts are unlikely to be monitored 24/7, and posts and responses often go through many drafts and approvals to ensure consistency and accuracy before they can be posted.
- + One of the challenges is that vaccine opponents are picking out things to post that are actually based on science, but are taking them completely out of context.



PROGRAM MANAGER INSIGHT

“We do not respond directly to any comments or posts from vaccine-hesitant parents or anti-vaccine groups. Those posts are actually removed by the agency's communication team. We don't even monitor social media at the IP level; it's all done through our agency's communication department. We're allowed to give them input, and if we have things we wanted to post, they would do that for us, but all of it is done by that department on our behalf.”



MONITORING VACCINE OPPOSITION ON SOCIAL MEDIA

Project VCTR (Vaccine Communication Tracking and Response) monitors vaccine-related media conversations 24 hours a day. Project VCTR is designed like a disease surveillance system: public health analysts constantly monitor traditional and digital media to determine real-time knowledge, attitudes, and behaviors of the public related to vaccines. Initiated in 2019 by The Public Good Projects (PGP), the platform provides data and insights to public health practitioners, researchers, communicators, and members of the press. To apply for access visit **projectvctr.com**.

AIM members have a custom VCTR portal that can be accessed by visiting **immunizationmanagers.projectvctr.com**.



PROGRAM MANAGER INSIGHT

“I think the best way is having communication from peer-to-peer versus from a parent to a government entity. So that's why programs like [ours] work pretty well because it's parent-based, providing information to other parents.”

Lessons Learned

- * If you are unsure about whether or how to respond, run it through your public affairs office.
- * If responding to inaccurate information, respond with facts—not opinions—and do not argue.
- * Remember that the intended audience for posts and responses are people who are vaccine hesitant and have questions and concerns, not the small percentage of true deniers.
- * For countering general vaccine opposition, continue relaying the message that most people are getting vaccinated.
- * Where relevant, acknowledge that it is normal to have questions and concerns about vaccines.
- * Work with partners who can post information more quickly and may be able to provide a catchier or more emotional appeal.
- * As outlined in the U.S. Department of Health and Human Services social media policies, consider the value in liking/following a specific entity and what it may convey to your audience. In many cases, following an organization may convey endorsement of the entire entity, while retweeting or reposting content from another entity may only imply endorsement of the content that is being reposted.



PROGRAM MANAGER INSIGHT

“Straightforward things like incorrect data, that's one thing, but if it's statements about safety of vaccines or benefits of vaccines, those can get a little political at times. This is a very conservative state, so on some topics, we have to weigh the political fallout.”



EXPERIENCE FROM THE FIELD

Responding to Comments

One state IP that only uses Facebook doesn't allow comments to be visible to the public and will respond privately if there are specific questions that can be answered.

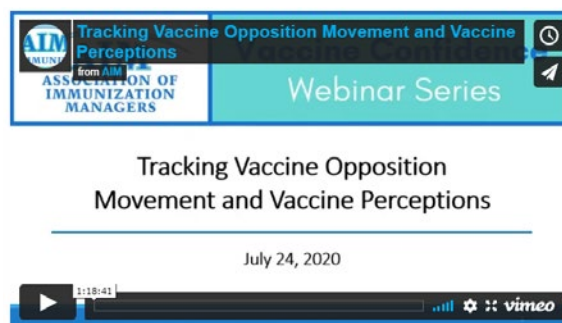
RESOURCES

- Social Media Tools, Guidelines & Best Practices (n.d.). CDC. <https://www.cdc.gov/socialmedia/tools/guidelines/index.html>
- Social Media Policies (n.d.). U.S. Department of Health and Human Services. <https://www.hhs.gov/web/social-media/policies/index.html>
- Media and Communications Policy (n.d.). Indiana Department of Health. <https://www.medialab.com/dv/dl.aspx?d=1156811&dh=2cfd&u=95194&uh=670d6>
- Social Media Standard (2021, January 12). State of Michigan Technical Standard. https://www.michigan.gov/documents/dtmb/1340.00.130.03_Social_Media_Standard_604897_7.pdf
- Pittman, E (2017, March 28). How to manage the 3 types of negative comments on social media. Government Technology. <https://www.govtech.com/govgirl/How-to-Manage-the-3-Types-of-Negative-Comments-on-Social-Media.html>
- Municipal Research and Services Center (MRSC) is a nonprofit organization that helps local governments across Washington State better serve their communities by providing legal and policy guidance:
 - Social Media Use by Public Agencies - some tips for consideration (2017). MRSC. <http://mrsc.org/getmedia/6b62aac2-9802-42e2-a594-67d13c557f2e/pubagsocmediapol.aspx>
 - Social Media Policies (n.d.). MRSC. <http://mrsc.org/Home/Explore-Topics/Management/Information-Technology/Social-Media.aspx#Wash>
 - Establishing Effective Social Media Policies for your Agency (2015, February 24). MRSC. <http://mrsc.org/Home/Stay-Informed/MRSC-Insight/February-2015/How-to-Write-a-Good-Social-Media-Policy.aspx>
- Social Media Guidelines & Sample Policies. (n.d.). The Office of The Governor. <https://www.governor.wa.gov/news-media/social-media/guidelines-sample-policies>
- Social Media Links and Commenting Policy. (n.d.). Washington State Department of Health. <https://www.doh.wa.gov/Newsroom/SocialMedia>
- Social Media Toolkit: a primer for local health department PIOs and communications professionals. (2019, July). NACCHO. <https://www.naccho.org/uploads/downloadable-resources/Social-Media-Toolkit-for-LHDs-2019.pdf>
- Dalton, K. (2017, December 27). The case for the Social Media Coordinator. Government Technology. <https://www.govtech.com/social/The-Case-for-the-Social-Media-Coordinator.html>

AIM Project VCTR Webinar Archive

AIM Webinar: Tracking Vaccine Opposition Movement and Vaccine Perceptions

On July 24, 2020, Dr. Joe Smyser, CEO of the Public Good Projects, presented information on their Vaccine Communication Tracking and Response tool, which monitors social media content to track anti-vaccine activities and vaccine perceptions. Dr. Smyser provided an overview of the tool, reviewed vaccine opposition messaging trends that have emerged during the COVID-19 pandemic, and provided insight into evidence-based communication strategies to improve vaccine confidence.



WATCH THE WEBINAR *(only accessible to AIM members)*

<https://www.immunizationmanagers.org/resources/vaccine-confidence-toolkit-webinar-series/>

What the Research Says About Online Vaccine Misinformation

For *Meeting the Challenge of Vaccination Hesitancy*, a report published in June 2020 by the Sabin-Aspen Vaccine Science & Policy Group, researchers Renée DiResta and Claire Wardle authored a background paper on online misinformation about vaccines. Based on their own research and relevant references, they:

- Demonstrate how online vaccine misinformation is a global issue.
- Describe the challenges of studying online misinformation, such as:
 - Limited access to the data from individual social media platforms that would help determine the prevalence and flow of vaccine misinformation.
 - The multiple forms in which this misinformation is shared, including websites, Facebook posts, Instagram memes, tweets, and videos.
- Observe that professional health experts are generally not experts in generating compelling social media content. “Emotion is the currency of social media networks because facts are rarely as engaging, unless they are packaged in incredibly appealing ways.”
- Note that although the basic anti-vaccine arguments have not really changed, features of social media platforms enhance the spread of their message due to:
 - The reach of relatively few platforms to a global audience.
 - Their ad-based business model, which allows targeting of ads and content based on individual profiles.
 - Recommendation algorithms and content sharing, which amplify and quickly spread emotionally engaging content.
- Discuss policies of specific social media platforms (Facebook, Instagram, Google, YouTube, and Pinterest) on addressing vaccine misinformation and the recent positive (though insufficient) response of these platforms to COVID-19 misinformation.

They conclude by observing that peer-to-peer communication is the core of social media, which has been more conducive to spreading vaccine misinformation, and that the “pro-vaccine” community will need to adapt to accordingly.

Citation:

DiResta, R., Wardle, C. (2020, June). Meeting the Challenge of Vaccine Hesitancy. Sabin-Aspen Vaccine Science & Policy Group. <https://www.sabin.org/updates/resources/meeting-challenge-vaccination-hesitancy>



AJPH October 2020 Supplement 3: Health Misinformation on Social Media

A supplement to the October 2020 issue of the American Journal of Public Health is devoted to health misinformation on social media. The issue features research and perspectives on the dangers (and opportunities) posed by a shift in how modern populations consume health information via social media. Just as the spread of misinformation by malicious and unwitting parties poses a threat to public health and the credibility of institutional knowledge, so too do these platforms offer new approaches to counteract rumors and intentional deception in real time and with targeted strategies. Specific themes covered include misinformation related to cancer prevention and treatment, vaccines, and infectious disease outbreaks.

Table of Contents:
www.ajph.aphapublications.org/toc/ajph/110/S3

STEP 3

**Review recent research
on strategies for
addressing incorrect
vaccine information**



STEP 3

Review recent research on strategies for addressing incorrect vaccine information

The COVID-19 pandemic has been accompanied by an unprecedented amount and spread of misinformation and disinformation in the public sphere. For public health professionals, the pandemic has illustrated the particular challenge of dealing with a crisis situation, and the difficulty in addressing incorrect information about a potential vaccine when there is such a high level of uncertainty and no real facts with which to combat the inaccurate information. Heightened efforts to address vaccine confidence predate the pandemic, but since then, there has been wider recognition of the challenges of incorrect information and expanded research on characterizing and addressing incorrect information.

Recent findings on strategies for addressing incorrect information generally, and vaccines specifically, are briefly summarized in this section. Because this information is being updated rapidly, having a reliable source—like AIM—that can compile new research findings in brief and understandable formats will be critical going forward.

Stemming the spread and impact of incorrect vaccine information requires a multidisciplinary, multisector effort^{14,15} including all levels of government (federal, state, local), social media and mass media companies, advocacy organizations, and the medical community.

Social media and other online platforms have taken some actions to moderate content to help stem the spread of misinformation.^{16,17} These “front of the pipeline” efforts are helpful but not sufficient, and may introduce unintended secondary problems.¹⁷⁻²⁰ In addition, these companies have to walk a fine line between censorship and accurately identifying incorrect information. Research continues to refine the tools that help platforms identify misinformation.²¹

Research findings on addressing incorrect information that are most relevant to IPs, and public health agencies more broadly, as well as their partners, are discussed below.

Key Considerations and Lessons Learned

The information is presented below as if addressing incorrect vaccine information is under the direct purview of IPs, though it is understood that that is not necessarily the case and that public health agencies and external partners will also be critical to their success.

- + Once inaccurate beliefs are formed, they are more difficult to counteract.²² Even after learning information is false, people tend to still at least partially believe it, as it is difficult to remove once it’s encoded in memory.^{2,23}
- Proactively increasing pro-vaccination content in social and traditional media is important, though not sufficient.^{24,25}
- Strategies for proactively disseminating pro-vaccine content include:
 - Establishing relationships with and disseminating information through verified local media outlets.^{26,27}
 - Investing in staff that are trained and capable of understanding how to build and maintain a social media presence.²⁴
 - Building a presence on social media by regularly engaging audiences on social and digital channels by frequently posting timely, reliable, and transparent information.^{26,28}
 - Using facts and evidence, humanizing the threat of disease, creating safe spaces for asking questions, and being responsive to audience concerns.²⁸

- Going beyond the unidirectional provision of information.²⁹
 - Contacting social media platforms for free public service advertising.²⁷
- + When IPs do not acknowledge or address incorrect vaccine information, it leaves an information gap that could inadvertently imply IP agreement or be further filled by spreaders of incorrect information.^{29,30}
- To inform a response, it is important to understand what types of incorrect vaccine information are circulating. Public health officials should be monitoring multiple types of media to understand the current questions and knowledge gaps and have a strategy to respond and counter incorrect information.^{27,31,32}
 - Develop a monitoring protocol to decide which misinformation is gaining traction and define a tipping point for responding, such as if/when it moves across platforms or someone newsworthy distributes it.²⁷
 - Track comments that the organization receives via social media, telephone, and email.²⁸
 - No one should respond to misinformation unless there is a good reason to do so and there is a plan for communicating it publicly.²⁷
- + There is no one-size-fits-all approach to messaging “consumers” of incorrect information. Their susceptibility to incorrect information varies.
- People who believe misinformation may not have sufficient health literacy, or the misinformation may be consistent with pre-existing beliefs and worldviews.³³
 - Vaccine acceptors, vaccine rejecters, and fence-sitters exhibit different moral preferences (e.g., liberty, authority, concern for others), which influence their vaccine beliefs.³⁴
 - Corrective information that runs counter to a person’s worldview can ironically strengthen the misinformation, particularly for contentious issues.²²
 - To help people better evaluate incorrect vaccine information, especially on social media, IPs can partner with or support coalitions and advocacy groups in educating the public on increasing health/media literacy.^{22,26,35-38}
 - To be most effective, information corrections should be tailored by audience subgroups, such as age, risk, world view, and values.^{22,23,31,36,39,40}
 - There are two audiences for corrective information on social media, the “agent” who posted the misinformation and the “interpreter” who saw the misinformation. The “agent” is typically more resistant to change.⁴¹ IPs should be mindful of the “silent audience” or those not engaging but observing.²⁸
 - Do not forget about vaccine acceptors. They need to have their vaccine decisions valued and reinforced.²⁹
- + The content of messages to counter incorrect information should be evidence-based.
- Efforts to address incorrect information need to be cautious to avoid backfiring.³⁸
 - The spread of misinformation is driven by emotions. It is very difficult to combat emotions with facts, which is the typical public health approach.²
 - Using a myth versus fact format is not effective, as it brings attention to the myths.⁴²
 - Although corrections can prove to be ineffective or even counterproductive, most often, they work.⁴³
 - Harness the power of narratives by replacing the incorrect information with alternative narratives and not just facts where possible.^{36,44}

Organizations doing misinformation research

Public Good Projects (PGP) is a public health nonprofit composed of experts in public health, media, and marketing. PGP's mission is to revolutionize public health communication so that business and public sector programs have greater impact and communities are healthier. Approaches include long-form documentaries, long-term campaigns, media monitoring and bots, grassroots social media organizing, and thought leadership. publicgoodprojects.org

- Their December 2020 research quantifying the rise of vaccine opposition messaging on Twitter provides a useful window into the scope of messages designed to erode vaccine confidence.
- Project VCTR's publication on vaccine opposition messaging in 2020 demonstrates the scope of opposition messages and provides insight into top health issues, themes, hashtags, and news used by vaccine opposition groups.

MediaWell compiles news and scholarship on digital disinformation and misinformation. Their literature reviews and news collections curate the latest knowledge on networked democracy, media, and technology. mediawell.ssrc.org

- This group is currently compiling a report on mitigating misinformation: mediawell.ssrc.org/research-topics/mitigating-misinformation

First Draft's mission is to protect communities from harmful misinformation. They work to empower society with the knowledge, understanding, and tools needed to outsmart false and misleading information. firstdraftnews.org

- In 2020, First Draft launched a 3-part series on the psychology of misinformation, focusing on: (1) why we're vulnerable, (2) why corrections are so hard, and (3) how to prevent it firstdraftnews.org/long-form-article/the-psychology-of-misinformation/

The Shorenstein Center on Media, Politics, and Public Policy is the Harvard Kennedy School's research center dedicated to exploring and illuminating the intersection of press, politics, and public policy in theory and practice. The Center strives to bridge the gap between journalists and scholars, and between them and the public. One of its programs focuses on misinformation, including *The Harvard Kennedy School Misinformation Review*, which is a new format of scholarly publication with a fast approach to peer review. shorensteincenter.org
misinforeview.hks.harvard.edu

Citation:

Bonnevie, E., Gallegos-Jeffrey, A., Goldbarg, J., Byrd, B., Smyser, J. (2020, December). Quantifying the rise of vaccine opposition on Twitter during the COVID-19 pandemic. *J Commun Healthc*. doi:10.1080/17538068.2020.1858222

Year in Vaccine Opposition 2020. (2021). https://projectvctr.cdn.prismic.io/projectvctr/60c417e6-591c-447a-a7e8-30ab510b4bac_2020_vctr_year_in_review_1.pdf.

Starbird K., Spiro, E.S., Koltai, K. (2020, June 25). Misinformation, Crisis, and Public Health—Reviewing the Literature, Social Science Research Council, MediaWell. <http://doi.org/10.35650/MD.2063.d.2020>

Research on Managing Misinformation on Social Media Platforms

Findings from some social media platform-specific research are summarized below. Government involvement on some common platforms (e.g., Twitter, Pinterest) is uncommon, and communication is typically one way rather than a dialogue.^{19,30} Just removing misinformation from these platforms is not sufficient. Public health officials and their partners must ensure that accurate information is widely accessible on these platforms.¹⁸

Twitter

- + Twitter bots and trolls have a significant impact on online communications about vaccines. Trolls and bots post vaccine-related content at higher rates and promote both pro-and anti-vaccination messages, to promote discord.⁴⁶
- + However, other research showed that bots are responsible for only a small proportion of the vaccine-related content that active Twitter users see, and engagement is negligible.³⁷
- + Well-intentioned pro-vaccine posts may have the unintended effect of “feeding” the trolls, especially if content directly engages with anti-vaccine content.⁴⁶
- + Major talking points used by vaccine opponents originate from just a handful of accounts. Identifying and countering a small set of arguments and highly influential accounts could be an effective way to address misinformation.^{18,20,37,47}
- + With character limits, tweets do not allow for contextualization, making it easier to mislead by using sensational falsehoods or manipulations of real data.⁴⁸
- + Source credibility may be more important for users to gauge validity.⁴⁸
- + Rather than address rumors directly and risk amplifying them further, it may be more beneficial for vaccine advocates to continue to emphasize the safety and efficacy of vaccines in general terms. Engaging bot-driven narrative only further amplifies the message.⁴⁸
- + Pro-vaccine Twitter users that use humor to criticize anti-vaccine and anti-science tweets may inadvertently mislead and further provoke anti-vaccine content.⁴⁸

Facebook

- + Based on analysis of Facebook content, vaccine opponents increasingly oppose vaccination as a matter of political principle (using a civil liberties’ argument) rather than because of vaccine safety concerns.⁴⁹
- + A civil liberties frame implies a legitimate debate about vaccination and takes attention away from the social rationales for vaccination. IPs need to be able to communicate the appropriate and compelling social context for vaccine decisions.⁴⁹
- + Challenges for public health include limited resources, which keeps the program from devoting the attention necessary to maintain a constant media presence, and a wish (or requirement) to avoid the appearance of partisan or political views.⁴⁹
- + Anti-vaccine pages seemed to reflect homogenization of content, suggesting coordinated action to drive content.⁴⁹

- Provide an alternate explanation—ideally, one that is more plausible and easier to understand—to “switch out” the inaccurate information and fill the gap.^{22,35,43}
- Minimize unnecessary explicit repetition of misinformation, but do explain why the misconception was disseminated and provide ample information on why it is wrong.^{22,35}
- Inoculation (explaining the technique underlying the misinformation) can be effective⁴⁵ but much more so as a post-warning than a forewarning.⁴³
- Repetition of corrections helps to reduce the “continued influence” effect.³⁵ Programs should promote the same information across as many channels as possible.²⁷
- Use high credibility sources. Trust and perceived honesty and integrity seem to matter more than expertise.²² People are more likely to trust information from an unknown source shared by a trusted sharer than the same information from a reputable source shared by someone they do not trust.²⁶ Develop tools to help the public identify credible information sources.²³

RESOURCES / OTHER POTENTIAL ITEMS OF INTEREST

Vaccine Misinformation Management Field Guide: Guidance for Addressing a Global Infodemic and Fostering Demand for Immunization, published December 2020, helps organizations address the global infodemic through strategic and well-coordinated action plans to build vaccine confidence and counter misinformation. vaccinemisinformation.guide

CDC Vaccinate with Confidence Initiative

Vaccinate with Confidence is CDC’s strategic framework to strengthen vaccine confidence and prevent outbreaks of vaccine-preventable diseases in the United States, through three key priorities:

- **Protect Communities:** CDC will support states, cities, and counties to find pockets of under-vaccination and take steps to protect their communities.
- **Empower Families:** CDC will expand resources for health care professionals to support effective vaccine conversations.
- **Stop Myths:** To stop misinformation from eroding public trust in vaccines, CDC will work with local partners and trusted messengers to:
 - improve confidence in vaccines among at-risk groups;
 - establish partnerships to contain the spread of misinformation; and
 - reach critical stakeholders to provide clear information about vaccination and the critical role it plays in protecting the public.

www.cdc.gov/vaccines/partners/vaccinate-with-confidence.html

www.cdc.gov/vaccines/partners/downloads/Vaccinate-Confidently-2019.pdf

Office of Disease Prevention and Health Promotion, U.S. Department of Health and Human Services.

Health Literacy website: health.gov/our-work/health-literacy

- Featured initiative: Health Literacy Online health.gov/healthliteracyonline

National Prevention Information Network (NPIN), CDC. **Health Communication Strategies and Resources** website: npin.cdc.gov/pages/health-communication-strategies-methods

- New Methods For Health Strategy Communication: npin.cdc.gov/pages/health-communication-strategies-methods, including:
 - CDC’s “Designing and Implementing an Effective Tobacco Counter-Marketing Campaign” offers information on using media literacy strategies relevant for any public health campaign www.cdc.gov/tobacco/stateandcommunity/counter-marketing.
 - CDC’s the Health Communicator’s Social Media Toolkit: www.cdc.gov/socialmedia/tools/guidelines/pdf/socialmediatoolkit_bm.pdf

Project VCTR: Vaccine Communication Tracking and Response

Website: projectvctr.com/

- 13 Best Practices in Vaccine Communication
drive.google.com/file/d/1IVEgTUVYr6UfGUD01IKqEDNGE460Extn/view?usp=sharing
- Using Social Media Influencers to Deliver Positive Information About the Flu Vaccine: Findings from a Multi-Year Qualitative Study papers.ssrn.com/sol3/papers.cfm?abstract_id=3697432
- Using social media influencers to increase knowledge and positive attitudes toward the flu vaccine
journals.plos.org/plosone/article?id=10.1371/journal.pone.0240828
- Content Themes and Influential Voices Within Vaccine Opposition on Twitter, 2019
ajph.aphapublications.org/doi/full/10.2105/AJPH.2020.305901

-
- ¹⁵ Wardle, C., Derakhshan, H. (2018, August). Information Disorder: Toward an interdisciplinary framework for research and policy making. Council of Europe, 2nd revised edition. <https://rm.coe.int/information-disorder-report-version-august-2018/16808c9c77>
- ¹⁶ Shu C., Schieber, J. (2020). Facebook, Reddit, Google, LinkedIn, Microsoft, Twitter and YouTube issue joint statement on misinformation. TechCrunch. <https://techcrunch.com/2020/03/16/facebook-reddit-google-linkedin-microsoft-twitter-and-youtube-issue-joint-statement-on-misinformation/>
- ¹⁷ Brodwin, E. (2020, September 21). How Pinterest beat back vaccine misinformation — and what Facebook could learn from its approach. STAT. <https://www.statnews.com/2020/09/21/pinterest-facebook-vaccine-misinformation/>
- ¹⁸ Chou, W.S., Gaysynsky, A. (2020). A Prologue to the Special Issue: Health Misinformation on Social Media. American Journal of Public Health, 110, S270-S272, <https://doi.org/10.2105/AJPH.2020.305943>
- ¹⁹ Guidry, J.P.D., Vraga, E.K., Laestadius, L.I., Miller, C.A., Occa, A., Nan, X., Ming, H.M., Qin, Y., Fuemmeler, B.F., Carlyle, K.E. (2020, October). HPV Vaccine Searches on Pinterest: Before and After Pinterest's Actions to Moderate Content. Am J Public Health, 110(S3), S305-S311. doi: 10.2105/AJPH.2020.305827
- ²⁰ Chou, W.S., Gaysynsky, A., Cappella, J.N. (2020). Where We Go From Here: Health Misinformation on Social Media. American Journal of Public Health, 110, S273-S275, <https://doi.org/10.2105/AJPH.2020.305905>.
- ²¹ Limaye, R.J., Sauer, M., Ali, J., Bernstein, J., Wahl, B., Barnhill, A., Labrique, A. (2020). Building trust while influencing online COVID-19 content in the social media world. The Lancet Digital Health, 2(6), 277-278. [https://www.thelancet.com/journals/landig/article/PIIS2589-7500\(20\)30084-4/fulltext](https://www.thelancet.com/journals/landig/article/PIIS2589-7500(20)30084-4/fulltext)
- ²² Swire-Thompson, B., Eckle, U. (2018). Misinformation and its Correction: Cognitive Mechanisms and Recommendations for Mass Communication.
- ²³ Vanderpool, R.C., Gaysynsky, A., Sylvia, Chou, W.Y. (2020, October). Using a Global Pandemic as a Teachable Moment to Promote Vaccine Literacy and Build Resilience to Misinformation. Am J Public Health, 110(S3), S284-S285. doi: 10.2105/AJPH.2020.305906.
- ²⁴ French, J., Deshpande, S., Evans, W., Obregon, R. (2020). Key Guidelines in Developing a Pre-Emptive COVID-19 Vaccination Uptake Promotion Strategy. Int. J. Environ. Res. Public Health, 17, 5893. <https://www.mdpi.com/1660-4601/17/16/5893/htm>
- ²⁵ Stecula, D.A., Kuru, O., Jamieson, K.H. (2020, January 1). How Trust in Experts and Media Use Affect Acceptance of Common Anti-Vaccination Claims. The Harvard Kennedy School Misinformation Review, Volume 1, Issue 1, Attribution 4.0 International (CC BY 4.0) DOI: <https://misinforeview.hks.harvard.edu/article/users-of-social-media-more-likely-to-be-misinformed-about-vaccines>
- ²⁶ Rodgers, K. Massac, N. (2020, May/June). Misinformation: A Threat to the Public's Health and the Public Health System, Journal of Public Health Management and Practice, Volume 26, Issue 3, 294-296. doi: 10.1097/PHH.0000000000001163
- ²⁷ Donovan, J. (2020, October). Concrete Recommendations for Cutting Through Misinformation During the COVID-19 Pandemic. Am J Public Health, 110(S3), S286-S287. doi: 10.2105/AJPH.2020.305922.
- ²⁸ Steffens, M.S., Dunn, A.G., Wiley, K.E., Leask, J. (2019). How organizations promoting vaccination respond to misinformation on social media: a qualitative investigation. BMC Public Health, 19, 1348. <https://doi.org/10.1186/s12889-019-7659-3>. <https://bmcpubhealth.biomedcentral.com/articles/10.1186/s12889-019-7659-3>
- ²⁹ MacDonald, N., Butler, R., & Dubé, E. (2018). Addressing barriers to vaccine acceptance: an overview, Human Vaccines & Immunotherapeutics, 14:1, 218-224, DOI: 10.1080/21645515.2017.1394533. <https://www.tandfonline.com/doi/full/10.1080/21645515.2017.1394533>
- ³⁰ Oren, E., Martinez, L., Hensley, R.E., Jain, P., Ahmed, T., Purnajo, I., Nara, A., Tsou, M.H. (2020, October). Twitter Communication During an Outbreak of Hepatitis A in San Diego, 2016-2018. Am J Public Health, 110(S3), S348-S355. doi: 10.2105/AJPH.2020.305900.
- ³¹ Igwe, K. (2020, April 3). Developing Public Health Communication Strategies—And Combating Misinformation—During COVID-19. <https://www.hsph.harvard.edu/ecpe/public-health-communication-strategies-covid-19/>
- ³² Pazzanese, C. (2020, May 8). Battling the 'pandemic of misinformation'. Harvard Gazette. <https://news.harvard.edu/gazette/story/2020/05/social-media-used-to-spread-create-covid-19-falsehoods/>
- ³³ Scherer, L.D., Pennycook, G. (2020, October). Who Is Susceptible to Online Health Misinformation? Am J Public Health, 110(S3), S276-S277. doi: 10.2105/AJPH.2020.305908.
- ³⁴ Rossen, et al. (2019). Accepters, Fence Sitters, or Rejectors: Moral profiles of vaccination attitudes. Social Science & Med, 224: 23-27.
- ³⁵ Swire-Thompson, B., DeGutis, J., Lazer, D. (2020, September). Searching for the Backfire Effect: Measurement and Design Considerations. Journal of Applied Research in Memory and Cognition, 9(3), 286-299. doi.org/10.1016/j.jarmac.2020.06.006.

- ³⁶ Hoffman, B.L., Felter, E.M., Chu, K.H., Shensa, A., Hermann, C., Wolynn, T., Williams, D., Primack, B.A. (2019). It's not all about autism: The emerging landscape of anti-vaccination sentiment on Facebook. *Vaccine*, 37(16) ,2216–2223. <https://doi.org/10.1016/j.vaccine.2019.03.003>. <https://www.sciencedirect.com/science/article/pii/S0264410X19303032?via%3Dihub>
- ³⁷ Dunn, A.G., Surian, D., Dalmazzo, J., Rezazadegan, D., Steffens, M., Dyda, A., Leask, J., Coiera, E., Dey, A., Mandl, K.D. (2020, October). Limited Role of Bots in Spreading Vaccine-Critical Information Among Active Twitter Users in the United States: 2017–2019. *Am J Public Health*, 110(S3), S319–S325. doi: 10.2105/AJPH.2020.305902.
- ³⁸ Wang, Y., McKee, M., Torbica, A., Stuckler, D. (2019, September 18). Systematic Literature Review on the Spread of Health-related Misinformation on Social Media. *Soc Sci Med*, 240:112552. doi: 10.1016/j.socscimed.2019.112552.
- ³⁹ Mendel-Van Alstyne, J., Nowak, GJ., Aikin, A.L. (2018). What is "confidence" and what could affect it?: A qualitative study of mothers who are hesitant about vaccines. *Vaccine*, 36 (44), 6464–6472.
- ⁴⁰ Dubé E., et al. (2020). Optimizing Communication Material to Address Vaccine Hesitancy. *Canada Communicable Disease Report*, 46 (2-3), 48–52.
- ⁴¹ Vraga, E.K., Bode, L. (2020,October). Correction as a Solution for Health Misinformation on Social Media. *Am J Public Health*, 110(S3), S278–S280. doi: 10.2105/AJPH.2020.305916.
- ⁴² Pluviano, S., Watt, C., Della, Sala, S. (2017). Misinformation lingers in memory: Failure of three provaccination strategies. *PloS one*, 12(7).
- ⁴³ Walter, N., Murphy, ST. (2018). How to unring the bell: A meta-analytic approach to correction of misinformation. *Communication Monographs*,85(3), 423–441.
- ⁴⁴ Wardle, C., Derakhshan, H. (2018,August). Information Disorder: Toward an interdisciplinary framework for research and policy making. Council of Europe, 2nd revised edition. <https://rm.coe.int/information-disorder-report-version-august-2018/16808c9c77>
- ⁴⁵ Cook, J., Lewandowsky, S., Ecker, U.K.H. (2017). Neutralizing misinformation through inoculation: Exposing misleading argumentation techniques reduces their influence. *PLOS ONE*, 12(5). <https://doi.org/10.1371/journal.pone.0175799>
- ⁴⁶ Broniatowski DA, Jamison AM, Qi S, et al. (2018). Weaponized Health Communication: Twitter Bots and Russian Trolls Amplify the Vaccine Debate. *Am J Public Health*, 108(10) ,1378–1384. doi:10.2105/AJPH.2018.304567. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6137759/pdf/AJPH.2018.304567.pdf>
- ⁴⁷ Bonnevie, E., Goldbarg, J., Gallegos-Jeffrey, A.K., Rosenberg, S.D., Wartella, E., Smyser J. (2020, October). Content Themes and Influential Voices Within Vaccine Opposition on Twitter, 2019. *Am J Public Health*, 110(S3), S326–S330. doi: 10.2105/AJPH.2020.305901.
- ⁴⁸ Jamison, A., Broniatowski, D.A., Smith, M.C., Parikh, K.S., Malik, A., Dredze, M., Quinn, S.C. (2020, October). Adapting and Extending a Typology to Identify Vaccine Misinformation on Twitter. *Am J Public Health*, 110(S3), S331–S339. doi: 10.2105/AJPH.2020.305940.
- ⁴⁹ Broniatowski, D.A., Jamison, A.M., Johnson, N.F., Velasquez, N., Leahy, R., Restrepo, N.J., Dredze, M., Quinn, S.C. (2020, October). Facebook Pages, the "Disneyland" Measles Outbreak, and Promotion of Vaccine Refusal as a Civil Right, 2009–2019. *Am J Public Health*. 110(S3):S312–S318. doi: 10.2105/AJPH.2020.305869.





Association of
Immunization
Managers

Tel: (301) 424-6080 | Fax: (301) 424-6081
info@immunizationmanagers.org

www.immunizationmanagers.org