

Treating the COVID-19 'infodemic' as an epidemic

May 13 2021

Examples from a Taxonomy of Misinformation about Masks, with Preemptive Infodemiologist Responses.*		
Categories of Preemptive Knowledge	Examples	
Scientific consensus	Multilayer cloth masks block the release of exhaled respiratory particles and the microorganisms these particles carry into the environment.	
Seeing is believing	Images showing expelled air with and without masks highlight the effectiveness of masks.	
How we know that masks work	Before testing confirmed that they had Covid-19, two hair stylists in Missouri who had symptoms saw 139 customers. Both stylists and all clients wore masks. A CDC investigation found that no clients became ill and that the 67 who agreed to testing showed no signs of infection.	
Masking as a social norm	Polling data indicate that most Americans are wearing masks, including health care workers, teachers, politicians, star athletes, and musicians.	
Regrets of unmasked Covid-19 survivors	Former New Jersey Governor Chris Christie, who was hospitalized with Covid-19, wrote a <i>Wall Street Journal</i> op-ed, "I Should Have Worn a Mask." Rapper and actor Ice-T's father-in-law, after having Covid-19 and being on supplemental oxygen, is no longer an "anti-masker."	
Masking protects others	Masking protects elderly loved ones and others most at risk for severe outcomes from Covid-19.	
Misinformation about Masking	Examples	Infodemiologist Response
Distortions of scientific findings	A randomized, controlled trial in Denmark testing a face-mask intervention concluded that masks are ineffective against coronavirus A CDC study found that most mask wearers caught Covid-19	Depending on the context of each engagement, infodemiologists decide on the authoritative sources and narrative examples to use from the preemptive-knowledge categories above, as well as their order and framing (e.g., CDC or FDA links are avoided if a commenter expresses distrust in government). After deploying these forms of background knowledge, infodemiologists offer specific fact-check-based counter information or explanations (e.g., citing evidence that face masks are safe, since surgeons wear them for hours without health-related complications). When appropriate, infodemiologists leverage Covid-19-specific fact-based resources, including SciCheck's Covid-19 vaccination page, PolitiFact, Dear Pandemic, and the International Fact-Checking Network, as well as Q&A pages from reputable medical sources such as the CDC, FDA, and Mayo Clinic.
Efficacy of mask wearing not established	There is no clear scientific evidence that masks (surgical or cloth) work to mitigate risk to the wearer or to people coming into contact with the wearer	
Mask wearing is ineffective	Wisconsin went from mask wearing to no mask wearing without an increase in cases Masks can't stop viruses; the virus is so small that it slips through masks	
Mask wearing increases health risks	Masks concentrate Covid-19, thereby making it more infectious Wearing a face mask can cause oxygen deprivation or carbon dioxide toxicity or weaken the immune system	
Conspiracy theories	Masks contain tracking devices used for surveillance Masks contain or herald the "mark of the beast"	

* CDC denotes Centers for Disease Control and Prevention, and FDA Food and Drug Administration.

Credit: Annenberg Public Policy Center of the University of Pennsylvania

Writing in the *New England Journal of Medicine*, a trio of science communication researchers proposes to treat the COVID-19

misinformation "infodemic" with the same methods used to halt epidemics.

"We believe the intertwining spreads of the virus and of misinformation and disinformation require an approach to counteracting deceptions and misconceptions that parallels epidemiologic models by focusing on three elements: real-time surveillance, accurate diagnosis, and rapid response," the authors write in a Perspective article.

"The word 'communicable' comes from the Latin *communicare*, to share, to make common," said David Scales, M.D., Ph.D., of Weill Cornell Medical College and chief medical officer of the science-promoting nonprofit organization Critica. "What are the similarities between all the information shared on social media and [communicable diseases](#)? It's a helpful analogy in thinking through both of them."

Scales co-authored the article with Jack Gorman, M.D., president and chair of Critica, and Kathleen Hall Jamieson, Ph.D., director of the Annenberg Public Policy Center (APPC) of the University of Pennsylvania.

The publication comes as APPC has released national survey data finding that while some 75% of the American public views the approved COVID-19 vaccines as effective and safer than getting COVID-19, about 15% is not sure whether this is true and 10% to 12% thinks this is false.

A misinformation 'superspreader' event

Better infodemic-surveillance methods and a rapid response, the authors write, could have prevented the "superspreader" event that began on October 12, 2020, when the conservative website The Federalist misread a report by the Centers for Disease Control and Prevention (CDC) and

reported that "masks and face coverings are not effective in preventing the spread of COVID-19." The following night, Fox News' Tucker Carlson mistakenly told his over 4 million viewers that 85% of the people infected by COVID-19 in July 2020 had been wearing a mask.

"The superspreading escalated," the researchers wrote, "when President Donald Trump echoed the same mischaracterization to more than 13 million viewers of a nationally televised October 15 town hall." Had The Federalist article been immediately and widely countered, the town hall moderator, NBC journalist Savannah Guthrie, might have been better equipped to counter the inaccurate claim than to say that Trump's characterization of the study was incorrect.

Detecting and halting misinformation

In their article, the authors recommend a series of steps to "halt such misinformation cascades":

- **Surveillance.** Since "an overwhelming amount of misinformation and disinformation circulates on social media," sensitive surveillance systems need to be triggered before information goes viral. Companies such as Facebook should provide researchers with de-identified data on the spread of misinformation. "Lack of access to such data is the equivalent of a near-complete blackout of epidemiologic data from disease epicenters," the researchers said. If one were to conduct syndromic disease surveillance using Google, Scales said, "you could see if doctors are searching for Tamiflu, which would be highly correlated with a flu outbreak. You don't have to wait for CDC influenza data but can search for things that are correlated with the disease that show up sooner."
- **Diagnosis.** "Just as scientists need to be able to distinguish one disease from another, infodemiologists need to distinguish

different types of misinformation," said Jamieson, APPC's director. The Annenberg Public Policy Center has introduced a taxonomy featured in the NEJM article of categories of mis- and disinformation related to COVID-19 and vaccination. The part of the taxonomy regarding masking, for example, covers five types of misinformation: distortions of scientific findings; assertions that masks' effectiveness has not been proven; claims that masks are ineffective; suggestions that masks increase health risks; and conspiracy theories about masks. "Knowing the type of misinformation that is circulating allows us to develop strategies for buffering audiences from deceptions or misconceptions and, when necessary, to deploy a rapid-response system to rebut and displace inaccurate claims before they take hold," the authors wrote.

- **Response.** Rapid epidemiological response consists of containment and treatment by medical personnel. So-called infodemiologists, modeled after the CDC's Epidemic Intelligence Service officers, can counteract misinformation in traditional media sources and online, the researchers say. Just as few people were trained in CPR a few decades ago but many are today, Scales said many people could be trained in evidence-based ways to counter misinformation. "The goal is to have people ready and trained so they can spring into action when a communication emergency comes up," he said. Critica, a nonprofit organization seeking to center the role of science in making rational health decisions, is among numerous organizations, such as New York State's Citizen Public Health Training Program, training infodemiologists to do this work. Critica's focus is not on those who are staunchly opposed to the vaccines but those who are susceptible to misinformation and vaccine-hesitant.

About 15% of Americans unsure about vaccines

A national probability APPC survey released this week of 1,941 people finds that 74% of the U.S. public says that the authorized COVID-19 vaccines are effective and 75% says the vaccines are safer than getting COVID-19. About 15% is unsure whether these statements are true, a potentially persuadable group that is larger than those deniers who incorrectly say that the statements are false. Read the survey.

Identifying the various kinds of mistaken beliefs is critical to halting their proliferation.

"To make it possible to effectively interdict viral deception we not only need reliable means of finding it but also the wherewithal to predict when, where, and how it will spread," Jamieson noted. "Just as scientists need to be able to distinguish one disease from another, infodemiologists need to distinguish different types of misinformation."

In the NEJM article, the authors argue for a broad approach to combat misinformation.

"Our model will be more effective for people intrigued by misinformation but not yet under its thrall than for committed acolytes sequestered in echo chambers. But the model's strength, like that of epidemiology, is in recognizing that effective prevention and response requires mutually reinforcing interventions at all levels of society, including enhancing [social-media](#) algorithmic transparency, bolstering community-level norms, and establishing incentives for healthier media diets."

"The COVID-19 Infodemic—Applying the Epidemiologic Model to Counter Misinformation," was published in *The New England Journal of Medicine* on May 12, 2021.

Critica is a [nonprofit organization](#) whose mission is to promote the

public's acceptance of scientific consensus, counteract [misinformation](#) about science and health, and increase the use of scientific evidence in public policymaking. Visit us at www.criticascience.org.

The Annenberg Public Policy Center was established in 1993 to educate the public and policy makers about communication's role in advancing public understanding of political, science, and health issues at the local, state, and federal levels.

More information: David Scales et al, The Covid-19 Infodemic—Applying the Epidemiologic Model to Counter Misinformation, *New England Journal of Medicine* (2021). [DOI: 10.1056/NEJMp2103798](#)

Provided by University of Pennsylvania

Citation: Treating the COVID-19 'infodemic' as an epidemic (2021, May 13) retrieved 29 April 2024 from <https://medicalxpress.com/news/2021-05-covid-infodemic-epidemic.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--