HOW TO INCREASE RESILIENCE AGAINST DISINFORMATION

SUMMARY

Amid the growing concern over the spread of false and misleading information and adversary use of disinformation[1] in an ever-widening array of scenarios, the need to harness research to reduce the spread is increasingly pressing.[2] The spread of disinformation can be tackled through either preventative (sometimes referred to as "prophylactic") or reactive (sometimes referred to as "therapeutic") measures. This paper focuses on the former, whereas future papers in this series will focus on the latter. The interventions discussed in this paper, inoculation and media literacy, are useful tools for emergency managers and responders when deployed *before* disaster strikes and disinformation circulates. Effective use of these interventions to prevent the spread of disinformation will reduce the burden on emergency managers and responders during response, minimize confusion, and potentially increase public trust in government services.

INTRODUCTION

In the wake of Hurricane Helene, disinformation has been so prevalent that the Federal Emergency Management Agency (FEMA) set up a webpage dedicated to debunking false claims about FEMA grants, confiscation of land, property and donations, and diversion of disaster relief funds for illegal immigrants, as well as other false claims and conspiracy theories.[3] Both FEMA officials and local government officials have been compelled to hold press conferences and issue press releases debunking false information, and some federal responders even had to be withdrawn from areas of North Carolina after National Guard troops encountered trucks of armed militias—angered by false stories about FEMA activities—claiming to be hunting FEMA representatives.[4] This disinformation is having a serious effect on the progress of recovery,

[1] Disinformation is distinguished from misinformation and malinformation by the nature of the content and intent of the content's creator. However, from the viewer's perspective, there is no practical distinction among the types of information because most viewers are not aware of the content creator's intent. Therefore, for the purposes of accessibility and practical application, we use the term *disinformation* to refer to both disinformation and misinformation.

[2] Unless otherwise cited, the information in this report is condensed from a longer discussion available in Megan K. McBride et al., *Evidence-Based Techniques for Countering Mis-/Dis-/Mal-information*, CNA, DIM-2023-U-035081-Final, 2024.

[3] FEMA, "Hurricane Helene: Rumor Response," accessed Oct. 8, 2024, https://www.fema.gov/disaster/current/hurricane-helene/rumor-response.

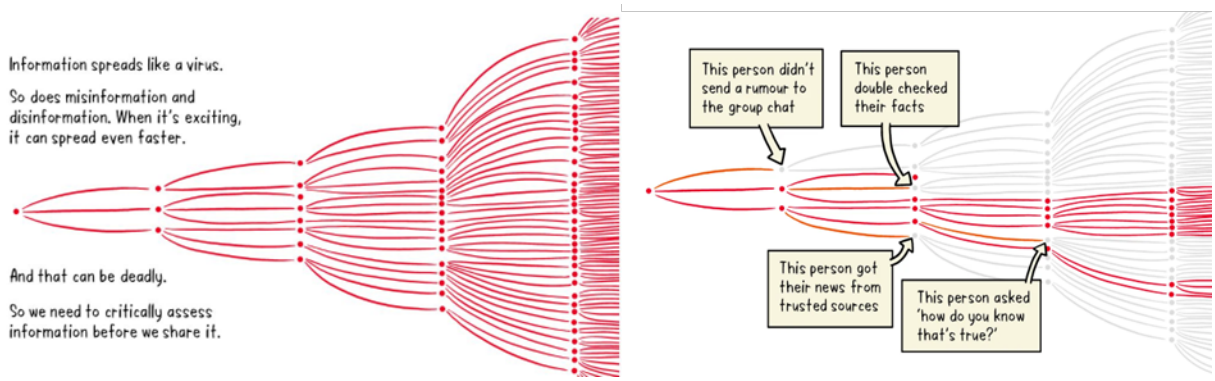
[4] Brianna Sacks, "Hurricane Recovery Officials in N.C. Relocated Amid Report of 'Armed Militia,'" *Washington Post*, Oct. 13, 2024, https://www.washingtonpost.com/weather/2024/10/13/federal-officials-nc-temporarily-relocated-amid-report-armed-militia-email-shows/.

actively disrupting efforts to provide critical services to those most desperately in need. As a result, it is increasingly urgent that we improve our ability to protect against the spread of disinformation.

It is important to note that the interventions discussed in this paper are not designed to change opinions, attitudes, views, or voting preferences. Nor is the goal to eradicate disinformation completely, as this is impractical and potentially impossible. The goal of these interventions is narrow, yet effective: to decrease the likelihood that people will believe and share false content when they see it.

Increasing the ability of just a few people to recognize inaccurate content can have a major effect. Information spreads like a virus, as does disinformation. As illustrated in Figure 1, one person shares a piece of information with two people, who in turn each share that information with two more people, spreading the (dis)information exponentially. The result is that stopping even just four people from sharing disinformation can have a massive effect.

Figure 1. Importance of reducing the sharing of false and misleading information



Source: Siouxsie Wiles and Toby Morris, "Now Let's Flatten the Infodemic Curve," Spinoff, Sept. 8, 2020.

EVIDENCE-BASED INTERVENTIONS TO COUNTER FALSE AND MISLEADING INFORMATION

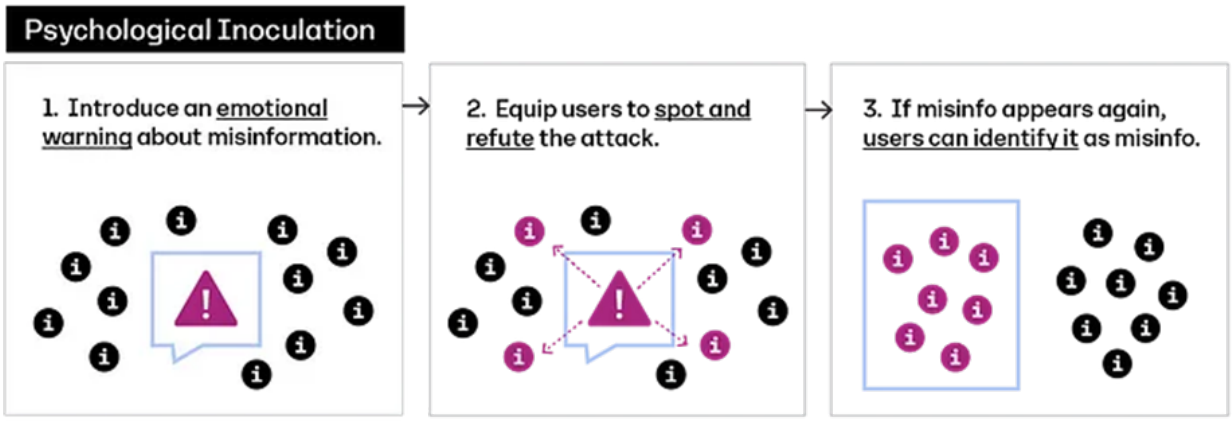
There are two types of evidence-based interventions for preventing the spread of disinformation before it circulates: inoculation and media literacy. These interventions are designed to reduce both the likelihood that someone will believe false information and the likelihood that they will share false information.

Inoculation

Inoculation is the practice of teaching people about the techniques or narratives that creators of disinformation use in order to inoculate them against such content. Inoculation builds resilience to disinformation by alerting individuals that they are likely to encounter misleading messages and providing

individuals with the skills or information needed to refute disinformation.[5] When inoculated individuals encounter disinformation in the future, they will be less likely to believe and share it (see Figure 2).

Figure 2. How inoculation builds up resistance to false and misleading information



Source: Beth Goldberg, "Psychological Inoculation: New Techniques for Fighting Online Extremism," Jigsaw.

There are two approaches to inoculation: issue-focused and technique-based. Issue-focused inoculation provides people the skills to refute future disinformation about a specific issue. For example, an inoculation message about an anticipated disaster might warn people to be skeptical of messages focused on pets. The goal is not to suggest that all information shared about pets is inaccurate but to alert people to the fact that false content about pets will often spread widely and rapidly because it is so emotionally charged. Thus, people should hesitate before believing what they see and hear.[6] This approach can be controversial because it requires labeling some information as true and some information as false, which can be polarizing on topics such as climate change and election security. It is, however, well-suited to disaster response when it is possible to predict that certain types of disinformation might circulate.

The other approach is technique-based, which builds resilience against the rhetorical techniques used to mislead people. Such techniques include ad hominem attacks (attacking the person instead of the argument), using emotional language to evoke fear or outrage, false dichotomies (presenting two oppositions as if they are the only possibilities), incoherence (using two or more arguments to make a point that cannot all be logically true at once), and scapegoating (blaming a group for a problem without cause).[7] This approach is far less controversial because it does not aim to counter specific ideas; instead, it focuses on helping people to recognize when they are being manipulated (see Table 1).

[5] Trisha Harjani et al., *A Practical Guide to Prebunking Misinformation*, University of Cambridge, BBC Media Action, and Google Jigsaw, 2022, https://prebunking.withgoogle.com/docs/A_Practical_Guide_to_Prebunking_Misinformation.pdf.
[6] Harjani et al., *A Practical Guide to Prebunking Misinformation*.
[7] Jon Roozenbeek et al., "Psychological Inoculation Improves Resilience Against Misinformation on Social Media," *Science Advances* 8, no. 34 (2022).

Table 1. Rhetorical techniques

Rhetorical Technique	Example
Ad hominem attacks	"You keep saying that the earth is the center of the universe, but didn't you get a D in math?"
Emotional language	"News alert! Baby formula linked to horrific outbreak of new, terrifying disease among helpless infants!"
False dichotomies	"If you're not with us, you're against us."
Incoherence	"One thing that we know for sure is that nothing is ever true or false."
Scapegoating	"The reason unemployment is high is because the economy is controlled by [ethnic group]."

Source: Inoculation Science.

Inoculation works best as a preventative measure before disinformation has been circulated and people have already come to firm opinions about its accuracy.[8] It is unlikely to make a difference for people who already have hardened views.[9] In addition, inoculation is a fairly scalable tool. Google teamed up with researchers at the University of Cambridge and the University of Bristol to show 90-second inoculation videos teaching the five manipulation techniques in Table 1 as ads on YouTube. More than one million people watched at least thirty seconds of one of the videos, and the team found a 5 percent increase in participants' ability to recognize manipulation techniques within 24 hours of seeing one of the ads.[10] Five percent may seem like a small amount, but it becomes meaningful when we remember that the goal is not to eliminate false and misleading information but to reduce the likelihood that people will share false content. Technique-based inoculation (like the manipulation technique videos) is the more scalable of the two inoculation approaches, but issue-based inoculation may provide deeper protection on specific topics and narratives (e.g., specific FEMA policies).[11] In addition, the effect of inoculation fades over time, so individuals need occasional boosters to keep their defenses up.

Media literacy

Media literacy describes how well an individual can critically assess a piece of media content. Individuals with high media literacy possess the skills required to evaluate a piece of content and an understanding of how that content was produced. Media literacy interventions can help counter the spread of false and misleading information by teaching the skills needed to critically assess the accuracy of news stories. Such interventions have been found to be effective across a range of topics, behaviors, and outcomes by increasing trust in media, increasing people's ability to differentiate real from fake headlines, and lowering people's belief that false and misleading information is accurate. Media literacy training is distinct from

[8] Harjani et al., *A Practical Guide to Prebunking Misinformation*.
[9] Roozenbeek et al., "Psychological Inoculation Improves Resilience Against Misinformation on Social Media."
[10] Nico Grant and Tiffany Hsu, "Google Finds 'Inoculating' People Against Misinformation Helps Blunt Its Power," *New York Times*, Aug. 24, 2022, https://www.nytimes.com/2022/08/24/technology/google-search-misinformation.html.
[11] Harjani et al., *A Practical Guide to Prebunking Misinformation*.

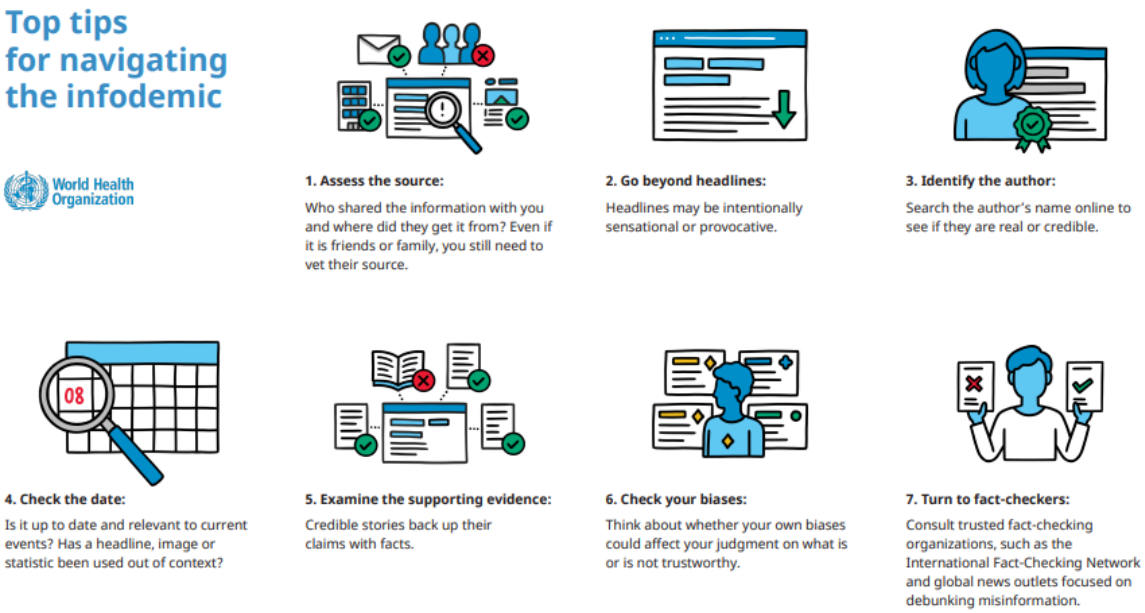
inoculation in that it is more broadly focused on teaching how to research, critically analyze, and responsibly create media rather than just how to recognize manipulative content.[12] There are two categories of media literacy trainings: in-person programs and remote messages.

In-person media literacy interventions include classroom education programs, adult trainings, and presentations. One example of an in-person training is the Learn to Discern (L2D) program from the International Research and Exchanges Board (IREX). L2D consists of three units—understanding media, recognizing misinformation and manipulation, and fighting misinformation—designed to build on traditional media literacy education in order to help individuals and communities understand how to identify and use media, recognize manipulative information, and curb the spread of disinformation.[13] IREX found that 16 months after participating in their pilot L2D program in Ukraine, individuals were 13 percent better at identifying a fake news story.[14]

Remote interventions include tweets, videos, and online presentations. For example, Facebook, in collaboration with First Draft, developed 10 tips for spotting fake news and promoted them at the top of Facebook news feeds in 14 countries in 2017.[15] Similarly, the World Health Organization (WHO) used Twitter during the COVID-19 pandemic to combat health-related disinformation by promoting accurate information sharing media literacy tips (see Figure 3).[16] Such remote interventions have been found to be effective, and they represent an easily scalable and accessible option for combatting disinformation in a broad audience.

[12] Martina Agnoletti et al., *Media Literacy*, Erasmus+, 2021, https://all-digital.org/wp-content/uploads/2021/03/Media-Literacy-Booklet-Emedia-Project-Final-ENG-1.pdf.
[13] "Learn to Discern," IREX, accessed Oct. 9, 2024, https://www.irex.org/project/learn-discern.
[14] Erin Murrock et al., "Winning the War on State-Sponsored Propaganda: Results from an Impact Study of a Ukrainian News Media and Information Literacy Program," *Journal of Media Literacy Education* 10, no 2 (2018).
[15] Josh Constine, "Facebook Puts Link to 10 Tips for Spotting 'False News' Atop Feed," Tech Crunch, Apr. 6, 2017, https://techcrunch.com/2017/04/06/facebook-puts-link-to-10-tips-for-spotting-false-news-atop-feed/.
[16] Daniel Muñoz-Sastre, Luis Rodrigo-Martín, and Isabel Rodrigo-Martín, "The Role of Twitter in the WHO's Fight Against the Infodemic," *International Journal of Environmental Research and Public Health* 18, no. 22 (2021).

Figure 3. WHO's media literacy tips



Source: WHO, https://who.canto.global/v/coronavirus/album/HJ2N0?viewIndex=1&display=fitView&referenceTo=.

WHY DOES THIS MATTER FOR EMERGENCY MANAGEMENT?

Disinformation is a clear and present threat that is actively undermining natural disaster response efforts. Inaccurate information drains resources by forcing emergency responders to expend time and resources correcting accurate data (e.g., holding press conferences to respond to rumors). Even more alarming is that false claims about FEMA's response to Hurricane Helene led individuals on X (formerly known as "Twitter") to call for militias to fight FEMA over the perceived denial of disaster relief funds and to harm FEMA officials and emergency responders.[17] A proactive plan for combatting the spread of disinformation is consequently a critical element of disaster and emergency response planning.

Inoculation theory and media literacy education offer emergency managers several options for reducing the spread of disinformation:

[17] Institute for Strategic Dialogue, "Hurricane Helene Brews Up Storm of Online Falsehoods and Threats," Oct. 8, 2024, https://www.isdglobal.org/digital_dispatches/hurricane-helene-brews-up-storm-of-online-falsehoods-and-threats/.

1. **Anticipate disinformation:** Planners should be aware that disinformation is a threat that poses serious risks to disaster response.[18] Expect the spread of false information and create a plan to combat it. Think about what *types* of false narratives are most likely to occur (e.g., false stories suggesting that citizenship status is being checked at shelters are common in the wake of disasters).
2. **Use preemptive messaging:** By informing the public about common myths and providing refutations in advance, planners can inoculate their community against future disinformation.[19]
3. **Offer workshops:** Offer workshops and online resources to teach community members about evaluating sources, fact-checking information, and finding reliable information.
4. **Use social media:** Engage with the community through social media before, during, and after a disaster or emergency to share tips on recognizing disinformation and provide a reliable source of up-to-date information during a crisis.

Using any combination of these interventions can help emergency managers strengthen community resilience against disinformation and reduce the flow of disinformation during disasters and emergencies.

[18] DHS Social Media Working Group for Emergency Services and Disaster Management, *Countering False Information on Social Media in Disasters and Emergencies*, 2018, https://www.dhs.gov/sites/default/files/publications/SMWG_Countering-False-Info-Social-Media-Disasters-Emergencies_Mar2018-508.pdf.

[19] Laure Fallou, Remy Bossu, and Jean-Marc Cheny, "Prebunking Earthquake Predictions on Social Media," *Frontiers in Communication* 9 (2024), https://doi.org/10.3389/fcomm.2024.1391480.

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