

VIEWPOINT

Social Media and Emergency Preparedness in Response to Novel Coronavirus

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The 1918 influenza pandemic affected one-third of the world's population and resulted in 50 million deaths. One hundred years ago, medical therapies and countermeasures were significantly limited, and information exchange that could facilitate any public health intervention primarily occurred by telephone, mail, or person-to-person interaction.

Now, more than a century later, a novel coronavirus is the cause of a new global pandemic threatening millions of lives.¹ Today, many methods of sharing information have been subsumed by giant social media platforms that have incredible speed, reach, and penetration. More than 2.9 billion individuals use social media regularly, and many for long stretches of time.²

Current understanding of how these platforms can be harnessed to optimally support emergency response, resilience, and preparedness is not well understood. In this Viewpoint, we outline a framework for integrating social media as a critical tool in managing the current evolving pandemic as well as transforming aspects of preparedness and response for the future.

Directing People to Trusted Sources

To date, social media platforms have been important for disseminating information during the outbreak of coronavirus 2019 (COVID-19). The Centers for Disease Control and Prevention, the World Health Organization (WHO), numerous journals, and other health care organizations are regularly posting guidance across a host of

news, pop-ups, and other tools to directly message users about hand washing and social distancing. This approach increases the likelihood of millions of people seeing the same messages whenever they access the platform, even if they forgo accessing the WHO website or other trusted sites.

Counteracting Misinformation

Social media has also become a conduit for spreading both rumors and deliberate misinformation, and many perpetrators are deploying sites such as Facebook, Twitter, YouTube, and WhatsApp to create a sense of panic and confusion. Unlike any prior event, WHO has identified that the "the 2019-nCoV outbreak and response has been accompanied by a massive 'infodemic'—an overabundance of information—some accurate and some not—that makes it hard for people to find trustworthy sources and reliable guidance."⁵ Research is needed to better understand the origins and spread of misinformation as well as coordinated efforts to disrupt its sources and identify, remove, and reduce its dissemination.

Social Media as a Diagnostic Tool and Referral System

Social media should be used to disseminate reliable information about when to get tested, what to do with the results, and where to receive care. If a vaccine becomes available, the same platforms could be used to encourage uptake and address challenges associated with vaccine hesitancy. These targeted efforts can occur in response to what people search for or in a more personalized approach based on an individual's online profile, posts, and underlying risk. Health systems may become overwhelmed as testing becomes more available and as more mildly ill yet concerned individuals seek care; yet, social media platforms are well poised to enable users to remotely assess symptoms and determine their most appropriate course of action.⁶ The Facebook Preventive Health tool provides individuals with vetted guidelines about preventive health recommendations (eg, heart disease, cancer screening) and then directs users to geotargeted locations (eg, federally qualified health centers, retail clinics) where these services are available. Users also have the option to share the tool and their scheduled testing with their network.⁷ This could be modified to direct individuals (when relevant) to resources for COVID-19 testing. For those whose test results are positive for COVID-19, the platform could enable users to inform their contacts about the potential exposure and how to follow up for testing.

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platforms. Teams employed by larger social media platforms have also been involved in the response as searches for information about coronavirus are escalating and, at times, dominating conversations online.^{3,4} Facebook is using the news feed function to direct users to the WHO website and websites of local health authorities.³ Google Scholar has highlighted leading medical journals and other sites. Twitter and other social media sites are similarly pointing individuals who search (accounting for misspellings) for coronavirus-related content to reliable resources.⁴ Health care organizations, clinicians, and social media influencers should also actively direct online traffic to trusted sources.

It may also be time for social media platforms to take on an active public health role and in parallel use ban-

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Enabling Connectivity and Psychological First Aid

As individuals start to self-quarantine and telecommute, new forms of social isolation are occurring. In some places in the US, funerals, weddings, religious services, in-restaurant dining, and other places of traditional socialization have already been severely limited or completely restricted. The long-term effects of social distancing and isolation will likely affect populations differently, necessitating comprehensive strategies for addressing the downstream sequelae. Navigating social isolation will be particularly challenging for already disadvantaged populations, such as older individuals, individuals with low socioeconomic status or housing insecurity, individuals managing chronic illnesses or disabilities, and individuals who are undocumented. Social media should be used to raise awareness about the needs of these groups in disasters and for development of new methods for communities to mobilize resources and support in the absence of physical contact. The "crisis response," "safety check," and related functions available on some social media platforms could enable more frequent status updates and sharing.⁸ Psychological first aid could be delivered through chatbots that use artificial intelligence to learn from the millions of interactions that are occurring in response to the pandemic and better understand critical needs. While social media cannot replace in-person contact, there may be ways to better use it to support recovery and resilience.

Advancing Remote Learning

New approaches to enhance the education of health care professionals is needed. Social distancing will affect clinical training (eg, emergency department rotation) and didactic education (eg, anatomy laboratory). Stand-alone video conferencing services may be overwhelmed as many institutions move entirely online. Social media can be a useful tool for facilitating contact among students and supporting active learning. Front-line health care cli-

nicians and other health care workers who provide care for critically ill patients with COVID-19 would also benefit from being able to share their experiences broadly in a deidentified way to advance education and teaching in an evolving crisis.

Accelerating Research

Social media data about symptoms, interactions, photos at events, travel routes, and other digital footprints about human behavior should be analyzed in real time to understand and model the transmission and trajectory of COVID-19. At present, Facebook is providing aggregated and anonymized data to researchers about how people move from location to location and associated population density maps to better inform how the virus is spreading. Merged social media data and electronic medical record data from consenting patients could also provide insights about individual-level risk.⁹ Basic and translational science can also be advanced through social media channels. Foundations have funded researchers to sequence the complete genome of COVID-19 in a short period of time. The output of these efforts included a research tool to further analyze the genome and a cell atlas that can be used to study how COVID-19 affects different organ functions. This infrastructure can be strengthened to facilitate communication among scientists working to address critical priorities related to animal and environmental research and candidate therapeutics and vaccines.

Enabling a Culture of Preparedness

More than 100 years ago, a global pandemic affected more than 500 million people worldwide. Today, in the midst of another public health emergency, some lessons from history demonstrate the importance of understanding how information spreads and individuals interact. Integrating social media as an essential tool in preparedness, response, and recovery can influence the response to COVID-19 and future public health threats.

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