

## Letter to the Editor

# The Case for Effective Risk Communication: Lessons from a Global Pandemic

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### DEAR EDITOR:

At the time of this writing, more than 18 million people worldwide are known to have contracted COVID-19, the medical condition caused by the novel SARS-CoV-2 coronavirus (Johns Hopkins 2020). The World Health Organization confirmed the COVID-19 outbreak as a global pandemic in March 2020, as the virus spread rapidly worldwide. The end of this global health emergency is not yet in sight. Responses to the crisis from politicians and public health officials in different countries have adapted, with a few notable exceptions, to rapidly evolving medical and epidemiological information. The public's response to recommendations from public health officials, however, has varied widely. In some communities, variable public interpretation of public health recommendations has inhibited efforts to contain the outbreak.

The COVID-19 pandemic is a stark reminder of the need to elevate the role of science in public and political decision making. The health sciences community must seize this opportunity as a call to action to more forcefully and effectively convey science and health risk information to the world, especially during this and future times of crisis. Now is the time for health and science professionals to sharpen communication strategies to guide decision makers to protect the health of individuals, families, communities, and nations. We believe the global pandemic offers important lessons and opportunities for improvements critical to effective risk communication.

### THE PANDEMIC CHALLENGE TO RISK COMMUNICATION

When the first pneumonia-like cases were reported in China in late 2019, international and national public health agencies reporting on the spread and severity of COVID-19 almost immediately conveyed urgency and alarm. From this beginning of what would quickly become a global pandemic, differing and sometimes conflicting scientific and medical information emerged from health officials, journalists, scientists, and politicians. These different perspectives magnified uncertainties in the public eye about the etiology of the disease. As the volume of data from hospitals and

research laboratories exploded, the uncertainties only became more pronounced and inferences about vulnerable populations, transmission, and treatment regimens more confusing.

In the face of a rapidly evolving global pandemic, the need for transparent and accurate risk communication became incredibly clear in many parts of the world. Poorly communicated information about transmission rates had fatal consequences in some communities that did not act with a sense of urgency. Early medical observations prompted by political and public pressures for explanations proved premature or false. Early reporting claimed the virus did not affect persons under the age of 30 and children were immune to COVID-19. Various experimental regimens were touted as effective treatments for symptoms caused by the novel coronavirus. None of these observations have been proven to be correct.

The pandemic requires people from all walks of life and educational backgrounds to understand rapidly changing scientific information and to use that information to make decisions in their daily lives. Members of the public are confronted daily by evolving statistical, epidemiological, and health information about COVID-19. In the United States and other countries, communities have been left with insufficient explanation of the barrage of health-related information describing testing methods, positive versus negative test results, recommended precautions, symptoms, virus transmission, and contact tracing. And yet, they must use that information to make real-time decisions that affect their health and the health of their families and communities.

The challenge to scientists and medical professionals made evident by the COVID-19 global health emergency is 2-fold. First is the need to disseminate meaningful information to politicians, public health professionals, and the public. Second is the need to communicate that information in formats that are readily understandable. It is not the time, in the midst of a pandemic, to devise a scientific risk and public health communication strategy. Experts at the front line of a health emergency must be prepared in advance to translate medical observations, health statistics, and viral research into terms that are meaningful to a wide variety of audiences.

### BARRIERS AND SOLUTIONS FOR EFFECTIVE RISK COMMUNICATION

The COVID-19 pandemic has revealed several barriers to effective health and risk communication. To achieve the best

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outcomes from risk communication, especially in a crisis that affects public health, technical information must be compiled and presented with careful attention to comprehension by different audiences (Glik 2007). Doing this effectively requires identifying key stakeholders, understanding who these stakeholders are, identifying competing ideas related to the topic, and strategically presenting the information with the stakeholders' perspectives in mind. The following observations could improve the world's ability to react to a future crisis.

#### *Tailor message to account for foundational belief systems*

Facts can become lost or misconstrued when they conflict with an individual's underlying belief system. In the case of politicians wishing for rapid recovery from the economic consequences of social disruptions, the rush to solutions can influence the interpretation of technical information. For people losing their jobs or businesses, the need for economic stability can be an overriding factor in interpreting risks related to health. The positions among experts and national public health agencies regarding interpretation of medical data and early-stage clinical vaccine trials aimed at the COVID-19 outbreak can be polarizing.

Communicators must be aware of their own biases and try to understand the belief systems of the people with whom they are communicating. They cannot assume everyone will internalize their technical messages in the same way. Differing life experiences and points of view affect peoples' perceptions of every message they receive. These differing perceptions must proactively be taken into account when crafting risk communication messages.

#### *Acknowledge uncertainty*

The world's collective perception of the COVID-19 pandemic is clouded by uncertainty. Under normal circumstances, researchers, scientists, and medical professionals rely on the protections built into the scientific method, the peer review process, and regulatory frameworks to review data and use inferences based on those data to make decisions affecting public health. The pace of the COVID-19 pandemic has not afforded the scientific or medical communities the luxury of time for thoughtful deliberation. Instead, the fast pace brings the uncertainty associated with technical information into greater public focus. The COVID-19 pandemic is a clear example of a common risk communication challenge—explaining to an anxious and worried audience that uncertainty is intrinsic to the practice of environmental and public health science.

#### *Aim to earn the public's trust*

In risk communication, trust carries more weight than technical credentials. This fact is not often acknowledged by the scientific community. Trust and confidence in the Prime Minister of New Zealand, Jacinda Ardern, have been credited as key factors leading the nation's citizens to embrace the strict restrictions imposed by the government in early March 2020, which led to the nearly complete eradication of

the COVID-19 outbreak in the country by June 2020 (Friedman 2020). In contrast, the ongoing health crisis in the United States continues seemingly unabated because of a highly polarized political atmosphere, thereby affecting trust and confidence in recommendations from public health and governmental authorities.

Consistency and transparency are 2 major factors that aid in developing trust between technical professionals and stakeholders. Engaging regularly with stakeholders can help establish consistency. Providing stakeholders with background information about underlying technical information can help establish transparency. When information related to an evolving crisis comes from multiple potentially conflicting sources, people are more likely to believe the information from the one they consider to be most trustworthy. Kahan et al. (2011) demonstrated this in surveys to gauge the public's perceived risk of climate change relative to the amount of climate change risk information provided by the study organizers. Survey participants were unwilling to accept information from technical experts they did not trust.

People may be especially hesitant to internalize information from untrusted technical experts if that information is at odds with their preconceived notions, if it has negative implications for their health or the health of environments they live in, or if they have negative perceptions of the individual technical expert or technical experts in general. A lack of trust in technical experts can lead the public to obtain information from sources not rooted in science. This has potentially negative implications for public health and the environment, with the severity and magnitude depending on the issue at hand.

#### *Prioritize communicating risk well—seek training and collaboration*

Developing an effective risk communication plan takes time. Doing it well requires thought and communication-specific experience and expertise. Too often scientists and engineers assume the need for elaborate attention is limited to preparing more detailed technical documents.

Furthermore, developing effective risk communication materials aimed at nontechnical stakeholders is never a simple task. Tailoring a technical message to a nontechnical audience with the appropriate level of nuance and detail is a challenging task that is often undervalued (Cook and Lewandowsky 2011). Including people with communications training on technical teams and providing technical staff with opportunities for communications training are keys to successfully communicating risk. In nearly all risk communication activities, the role of the risk communicator should be elevated in project leadership and direction.

## CLOSING THOUGHTS

We are living in a time that is unprecedented in the modern era. The COVID-19 pandemic has made it clear that society would greatly benefit from improvements in the relationship between science and politics and the practices used by technical professionals to communicate with the

public about risk. Putting science-based information in the hands of public officials, as well as providing tools for effectively communicating that information to others, will contribute to better-informed decisions for protecting public health and the environment. As technical professionals, we see the need to build teams that establish more transparent and effective risk communication strategies. We hope doing so will enable us all to be better prepared for the next crisis.

In the time of a pandemic, public accessibility to the most recent and reliable public health recommendations is a matter of life and death. Beyond the pandemic, easily accessible information about scientific risks can help people get access to novel therapeutics, accurate information about the water they drink or the air they breathe, tools to help them mitigate the effects of a changing climate, and more. The COVID-19 pandemic should serve as a rousing wakeup call that the status quo for risk communication is not sufficient. Funding priorities must include developing better health and risk communication strategies and improving approaches to disseminate information to those who need it most. For many agencies that fund environmental or health science work, this may require a shift in some priorities and how resources are allocated. Providing adequate resources and stature for risk communicators might bolster or restore

public confidence in environmental and public health experts. Such a shift would help connect people with lifesaving information in a future crisis.

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