

Scientifically Sound Pandemic Risk Communication

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Social Science Planning and Response

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Thank you very much for the opportunity to address you about this important problem. I am Baruch Fischhoff, Howard Heinz University Professor at Carnegie Mellon University. I am a cognitive psychologist by training. My research focuses on helping people to deal with health, safety, and environmental risks. I am Past-President of the Society for Risk Analysis, a member of the Institute of Medicine of the National Academy of Sciences, a member of the Department of Homeland Security's Science and Technology Advisory Committee, and a member of the Environmental Protection Agency's Science Advisory Board, where I chair the Homeland Security Advisory Committee.

Social scientists have been studying people's responses to risks intensively since World War II. Research conducted both in the armed forces and on the home front has identified patterns of behavior that can be expected to occur with pandemic flu, or any other risk. A focus of the research has been providing the information that people need, in the form that they need it, in order to make effective decisions.

I will briefly describe some relevant results, then recommend how our research base, the strongest in the world, should be mobilized to deal with pandemic flu.

Result 1: People want the truth, even if it is worrisome. They want to know what they are up against, in order to have the best chance of figuring out what to do. As a result, candor is critical in risk communications. (It has been fundamental to Israel's social resilience, during its long struggle with terror.)

Result 2: People can absorb only a limited amount of new information at a time. As a result, communicators must identify the most critical facts, then organize them according to their audience's natural way of thinking.

Result 3: People have difficulty understanding some kinds of information, such as how small risks mount up through repeated exposure and how vivid instances can unduly dominate thinking. As a result, any communication must accommodate the known strengths and weaknesses of its audience's thought processes.

Result 4: Emotions can cloud people's judgment, in predictable ways. For example, when angry, people are more likely to blame other people for their problems and more optimistic about solving them. Although these effects are generally small, they interfere with decision making. As a result, communicators must treat their audience respectfully, in order to encourage reasoned decision making.

Result 5: Even the most experienced communicators cannot accurately predict how their messages will be interpreted, especially with novel topics (like pandemic flu) and unfamiliar audiences. As a result, messages must be systematically evaluated, before they are disseminated – just the way that drugs must be. With dynamic events (like pandemic flu), that means pre-testing prototype message in advance.

Result 6: People exaggerate their ability to predict other people's behavior. That includes experts when they predict how emergency plans will work. As a result, social scientists need to be part of the planning team, so that plans are based on science, not intuition. Otherwise, citizens will receive advice that does not make sense to them, breeding distrust (like some of the hurricane evacuation messages).

Result 7: People generally make sensible decisions, if they are judged in terms of how they see their circumstances and what their goals are. Sensible decisions will not be effective decisions, though, if people don't have the right information. As a result, communicators must assume responsibility for providing relevant information in a timely fashion.

Although these behavioral processes are quite general, their expression depends on the specific context. As a result, pandemic flu, like any other risk, requires dedicated research. However, it requires much less than research than would be necessary without such a strong base of theory, method, and applications. This is research that we know how to do.

Our scientific knowledge will be of little use without a proper organizational process for designing and evaluating communications. That process requires an explicit division of labor among four kinds of expert:

1. Subject matter specialists (e.g., in public health, social services, law, distance work and education).
2. Risk and decision analysts, who can identify the information critical to the decisions of different audiences. Those needs could be different for young and old people, those with dependent children or elderly, those with chronic health problems, those away from home, and so on.
3. Psychologists, who can identify the audiences' audience beliefs, design comprehensible messages, and evaluate their success.
4. Communication system specialists, who can ensure that tested messages get into properly trained hands, and are coordinated with the rest of the emergency response system.

Many organizations design communications by committee. That is often a recipe for failure. Although anyone might have an insight, ultimate authority should lie with the experts in each area. Psychologists should not pretend to be physicians or vice versa.

Senator Frist recently called for a communications structure that update the public "every 6-8 hours about symptoms, cases, deaths and outbreak locations," arguing that, in order "to allay irrational fear, communication must be the bedrock of every public policy response." We have the science base for delivering such communications. However, it

must be deployed now, in order to be ready for a pandemic, and to convince the public that we are on top of the problem. Without that research we will lose the battle for public trust well before a pandemic.

Thank you for your attention.

BARUCH FISCHHOFF, Ph.D., is Howard Heinz University Professor, in the Department of Social and Decision Sciences and Department of Engineering and Public Policy at Carnegie Mellon University, where he is head of the Decision Sciences major and the Center for Integrated Study of Human Dimensions of Global Change. He holds a B.S. in mathematics and psychology from Wayne State University and an MA and Ph.D. in psychology from the Hebrew University of Jerusalem. He is a member of the Institute of Medicine of the National Academy of Sciences, and has served on some two dozen NAS/NRC/IOM committees. He is a Fellow of the American Psychological Association and recipient of its Early Career Awards for Distinguished Scientific Contribution to Psychology and for Contributions to Psychology in the Public Interest. He is Past-President of the Society for Risk Analysis and recipient of its Distinguished Achievement Award. He has been President of the Society for Judgment and Decision Making. He is a member of the Department of Homeland Security's Science and Technology Advisory Committee and of the Environmental Protection Agency's Scientific Advisory Board, where he chairs the subcommittee on homeland security. He is a member of the World Federation of Scientists Permanent Monitoring Panel on Terrorism. Dr. Fischhoff's research includes risk perception and communication, risk analysis and management, adolescent decision making, medical informed consent, and environmental protection. He has co-authored or edited four books, Acceptable Risk (1981), A Two-State Solution in the Middle East: Prospects and Possibilities (1993), Preference Elicitation (1999), and Risk Communication: The Mental Models Approach (2001).

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Appendix: A Strategy for the Content of Risk Communications

[Explanation in italics]

Acknowledge the gravity of the events and tragedy of those who have suffered.

Recognize the public's concerns, emotions, and efforts to manage the risk.

Everyone is needed to keep society functioning in time of stress, and should be rewarded for doing the best that they can. Emotions are an important and legitimate part of responding to extreme events. Recognizing their existence creates a human bond with the audience. Recognizing the legitimacy of emotions can help people to take the steps needed to manage them. Individuals needing special attention should be afforded ready access. However, the tenor of the communication should be adult to adult, assuming the ability to cope.

Assure the audience that the relevant officials are doing all that they can.

The communicator cannot vouch for the competence of all officials or for the adequacy of the resources at their disposal. However, it should be possible to attest to their commitment.

Express a coherent, consistent communication philosophy (for all risks)

- We will do all we can to help you to make responsible decisions for yourself and your loved ones.
- To that end, we will provide you the best, relevant information that we can, along with an idea of how good that information is.
- We will not engage in speculation.
- We may need to withhold information that may aid or comfort the enemy. Recognizing our duty to inform, we are following a socially acceptable procedure, for deciding what to withhold.

The commitment is to a partnership, with officials attempting to empower citizens to master difficult, and potentially protracted challenges. The communicator will leave speculation to others (e.g., news media, ordinary citizens), knowing that many ideas will be discussed in a democratic society, preserving the role of being the definitive source for vetted information.

We currently lack mechanisms for the withholding information in a socially acceptable way. Although the social acceptability of mechanisms is an empirical question, we anticipate that it will include the involvement of ordinary citizens, serving in an advisory role.

We did not advise withholding information that might cause panic. The disaster research literature does not predict panic, unless officials behave in ways that

erode trust in them. Withholding vital information might be construed as such behavior. People do not want to learn that they have exposed themselves and their loved ones to risks because they were not trusted to act like adults.

Provide quantitative risk estimates, including the attendant uncertainties.

People need to know how big risks are, in order to decide what to do about them. Often, those numbers are missing, because the experts have not produced them or have not disseminated them. Sometimes, the numbers are incomplete, as when people see the death toll, but not the total number of people exposed. An intuitively appealing message is “the risk of X is smaller than being struck by lightning.” However, it often offends people, by trivializing their concerns, and misrepresents the risk, by ignoring the ways in which X differs from lightning (e.g., the associated uncertainty). It often appears manipulative, undermining the credibility of the source. It is safer just to give the numbers, and uncertainties. Doing so requires the staff work needed to produce those estimates.

Provide analyses of possible protective actions, considering their expected effects.

People may ignore the fact that actions reducing one risk may increase other risks. They may not recognize the psychological costs and benefits of risk-reduction actions. They may not see the things that they are losing (i.e., “opportunity costs”) when they forgo activities, in order to reduce risks. They may not be able to estimate the effects of their actions, exaggerating some, underestimating others. Presenting the best available understanding of these issues, in a standard format, should help people to develop coherent decision-making strategies. It respects individuals’ right to make different choices, reflecting their personal values.

Lead by example, showing possible models for responsible bravery.

People expect leaders to conduct themselves professionally, including their own exposure to risk. Such behavior can have a calming effect and model the sort of quiet “soldiering on” that many people want to show, in their own way, appropriate to their own circumstances.

Commit to earning and keeping the public trust

We want to achieve market share as the source of unbiased information. Having such a source is essential for social coordination, in both the long and short run. Communication processes should be evaluated to ensure their continued success. They should solicit continuing input from the public to ensure their relevance.

From: Fischhoff, B. (2005). Risk perception and communication. In D. Kamien (ed.), McGraw-Hill Handbook of Terrorism and Counter-terrorism (p. 463-492). New York: McGraw-Hill.