

Risk Communication for Action:

Motivating People at Risk to Stay Safe and Protect Their Property

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Introduction

In 2017, the United States suffered 16 weather-related disasters, with monetary losses exceeding \$1 billion each.¹ In 2016, the U.S. recorded 458 weather-related fatalities and another 1,276 injuries.² The immense economic and human costs associated with these disasters — exacerbated by societal factors, such as population increases in coastal cities at risk for storm surge and flooding, the growing wildland/urban interface, etc. — drives a clear and growing urgency for communities and individuals across the nation to take action now to prepare for the natural hazards that occur with increasing frequency, intensity, and duration, while also remaining vigilant against the ever-present danger from potential terrorist acts. Within this broad societal context, this paper will focus on the critical role of risk communication in motivating individuals to take actions that can improve their outcomes in the face of a disaster (mitigate potential damage to property, ensure their household has a plan to support evacuation and reunification in the event of a no-notice event, etc.).

Research shows that too many individuals fail to take even basic steps to get ready for the disasters they may face, including having a family plan, mitigating risk to their property, and knowing evacuation routes. According to the Federal Emergency Management Agency's (FEMA's) 2016 National Household Survey (NHS),³ fewer than half of households in the U.S. have an emergency plan that they have discussed with others. Almost inconceivably, given recent flooding and wildfire events, the NHS reports just 20 percent of individuals living in areas with a history of flooding and 24 percent who live in areas with a history of wildfires have household plans that include evacuation details. FEMA's survey of residents in the New Madrid Seismic Zone, which is at risk of a severe earthquake, found that only 10 percent had strapped down heavy furniture or equipment to keep it in place⁴. This lack of action to prepare for foreseeable disasters can and does result in avoidable, heartbreaking personal losses: destruction of property, injuries, even death. Combined, these losses

¹ National Oceanic and Atmospheric Administration. 2017. *U.S. Billion-dollar Weather and Climate Disasters: a Historic Year in Context*. Retrieved September 25, 2018, from <https://www.climate.gov/news-features/blogs/beyond-data/2017-us-billion-dollar-weather-and-climate-disasters-historic-year>.

² National Weather Service. Undated. *Summary of Natural Hazard Statistics for 2016 in the United States*. Retrieved September 25, 2018, from <http://www.nws.noaa.gov/os/hazstats/sum16.pdf>.

³ Federal Emergency Management Agency. 2014. *FEMA National Household Survey*. Retrieved September 25, 2018, from https://www.fema.gov/media-library-data/1518789034181-3e491ce5f5e659f136660d0ad747cc8a/2016_National_Household_Survey_121817.v21_508v2.pdf.

⁴ Federal Emergency Management Agency. 2011. *2011 FEMA Central States Disaster and Earthquake Preparedness Survey Report*. Retrieved December 1, 2018, from <https://www.fema.gov/media-library/assets/documents/28886>.

amount to an unsustainable national economic burden. Growing threats and an under-prepared population will continue the trend of growing disaster losses.

To achieve a society that is prepared for and resilient to disasters, individuals must become primary actors to increase their own resilience. They must mitigate the risks that threaten their homes, be attentive to alerts and warning messages, practice the protective actions that will improve personal safety, and lay the groundwork for recovery once the danger passes. Risk communication is all about how risk communicators (community leaders and influencers at all levels) can improve messaging and outreach to increase knowledge and influence attitudes to motivate individuals to take action.

The Role of Risk Communication

Using the foundation of risk communication, it is possible to identify messages, messengers, and strategies to interrupt the powerful constraints of inertia. To understand how to move someone forward on a path to making decisions and taking the actions that will protect their health and safeguard their property, it is important to understand where they are on that path, currently.

Understanding where an individual is on the path from risk awareness to risk management⁵ (graphic below) can help ensure that individuals know the real dangers these risks represent, understand the potential personal impacts, and have the confidence to make and sustain the behavior change — thereby increasing their resilience to disaster. While presented in a linear fashion, individuals may skip steps, or may cycle through different phases.

This paper will focus on the role of risk communication, which differs from crisis communication. Crisis communication focuses on providing key facts to the public in an unexpected emergency that requires an immediate response.⁶ Risk communication is often used prior to and

The World Health Organization defines risk communication as the “exchange of information, advice and opinions between experts and people facing threats to their health or economic or social well-being. The ultimate purpose of risk communication is to enable people at risk to take informed decisions to protect themselves and their loved ones. It requires a sound understanding of people’s perceptions, concerns and beliefs as well as their knowledge and practices.”

World Health Organization. 2018. “General information on risk communication.” Retrieved September 25, 2018, from <http://www.who.int/risk-communication/background/en/>.

⁵ World Health Organization. 2017. *Strategic Communications Framework*. Retrieved September 25, 2018, from <http://www.who.int/communicating-for-health/en/>.

⁶ Centers for Disease Control and Prevention. 2018. *Crisis and Emergency Risk Communication*. Retrieved September 25, 2018, from https://emergency.cdc.gov/cerc/ppt/CERC_Introduction.pdf.

during an event, and has traditionally focused on information presentation, persuasion, and strategic messaging to empower decision making.⁷



The risk communication strategies described in the sections that follow are designed to move individuals from risk awareness to risk management through a combination of effective information presentation, persuasion, and strategic messaging. These considerations build on one another from a foundation of risk awareness and personal relevance that will promote lasting behavior change. Through audience research, communicators can identify knowledge, attitudes, and behaviors of a target audience, enabling risk communicators to tailor messages and outreach to specific risk-behavior profiles.

Ensure People are Aware of Their Risks

Awareness can be defined as attentiveness to an issue. Risk communicators must ensure that their constituents are aware of existing and emerging threats. While this is an important step, it acts as a foundation for motivating behavior change -- rather than something that by itself will initiate behavior change. Unless individuals are aware of potential threats that exist or are looming, they cannot be expected to seek information, or take action to protect themselves or others. Individuals who are aware of threats can then assess whether those threats pose a potential problem in their lives and be conscious of factors that make them susceptible to that risk.

Risk communicators should consider factors that affect how individuals assess risk, including whether the risk is natural or manmade.⁸ Less familiar risks, such as chemical or radiological exposure, will require educating individuals on important terminology. Some risks may be latent (the risk exists, but rarely manifests itself), such as living below a dam. While risk communicators must ensure that the community understands their risks, communication strategies must not view

⁷ Sheppard, B., Janoske, M., and Liu, B. 2012. *Understanding Risk Communication Theory: A Guide for Emergency Managers and Communicators*, Report to Human Factors/Behavioral Sciences Division, Science and Technology Directorate, U.S. Department of Homeland Security, College Park, MD.

⁸ Fischhoff, B., Lichtenstein, S., Slovic, P., Derby, S., and Keeney, R. 1981. *Acceptable Risk*. Cambridge University Press, New York, NY.

awareness as a sufficient outcome, but rather as an important precursor to preparedness decision-making and behavior change.⁹

Strategies to Increase Awareness: Increasing awareness of risk requires widespread and repeated dissemination of messages that are simple, attention-grabbing, and memorable. In today's competition for individuals' attention, messages should seek to gain audience curiosity and encourage the search for more information from trusted sources. Repeated exposure to awareness messages will be necessary to ensure the message becomes ingrained.

Make the Risk Personally Relevant

In order to motivate action, individuals must believe the risk could affect them personally.¹⁰ People must not only believe that a risk is real, but that they themselves are vulnerable. Research has shown that individuals often show an optimistic bias, judging their own susceptibility to a hazard to be significantly lower than for others, e.g., "It won't happen to me."¹¹

Researchers have found that individuals consider two aspects related to a threat: their susceptibility ("How at risk am I?") and the potential severity of the threat ("What are the consequences?" and "How severely could I be harmed?"). If the threat is not perceived to be relevant (low susceptibility), an individual will not consider it a priority. Similarly, if a person does not believe the threat will affect them significantly (low severity), they will not invest time or energy in taking steps to reduce the threat.¹²

Prior experience with a risk also has an impact on personal relevance. FEMA's 2016 NHS¹³ found that people who have experienced a disaster are more likely to have household emergency plans (55 percent vs. 38 percent). Risk communicators need to consider the following factors that affect peoples' attitudes about a risk:

- Prior experience(s) with a disaster (including warnings of a disaster that did not materialize, as well as personal exposure to a significant risk),
- Level of ability to exert some level of control relative to the risk (e.g., take protective actions in a timely manner), familiarity with the risk (greater levels of dread are associated with

⁹ U.S. Dept. of Health and Human Services, National Institutes of Health, National Cancer Institute. 2002. *Making Health Communication Programs Work*. Retrieved September 25, 2018, from <https://www.cancer.gov/publications/health-communication/pink-book.pdf>.

¹⁰ Claypool, H.M., Mackie, D.M., Garcia-Marques, T., McIntosh, A., and Udall, A. 2004. "The Effects of Personal Relevance and Repetition on Persuasive Processing." *Social Cognition*, Vol. 22, No. 3, 310-335.

¹⁴ Eiser, R.J., Bostrom, A., Burton, I., and Johnston, D.M. 2012. "Risk Interpretation and Action: A Conceptual Framework for Responses to Natural Hazards," *International Journal of Disaster Risk Reduction*, Vol. 1, 5-16.

¹² Lindell, M.K. and Perry, R.W. 2012. "The Protective Action Decision Model: Theoretical Modifications and Additional Evidence." *Risk Analysis: An International Journal*, Vol. 32, No. 4, 616-632.

¹³ Federal Emergency Management Agency. 2016. *National Household Survey Results*. Retrieved September 25, 2018, from <https://www.fema.gov/media-library/assets/documents/159319>.

unfamiliar risks, such as an explosion of a dirty bomb, compared with a natural hazard, such as a flood or hurricane), and

- Trust in the risk communication source.¹⁴

Strategies to Increase Relevance: Risk communicators can increase the personal relevance of their messages by showing what effect the risk can have on people in similar circumstances or close geographical proximity. Connecting the hazard to consequences that will have personal impacts, such as long-term utility outages, commuting disruptions that affect the ability to pick up children from childcare, etc., can increase an individual's sense of personal relevance. Such a sense of relevance often comes from prior personal experience or awareness of family or friends who have experienced the disaster, which can help make the threat feel "closer to home."

How the risk is explained can also effect perceived relevance. The concept of a 100-year flood is not well understood and can undermine perceptions of actual risk. Besides getting the numbers right, it is important that individuals understand what the numbers mean in terms they can understand. The use of social math, "the practice of translating statistics and other data so they become meaningful to the audience," can be a powerful tool for risk communicators.¹⁵ Social math can help risk information resonate by comparing it to familiar numbers or costs (cost of a cup of coffee) or provide a visual cue (size of a football stadium).

For less familiar risks, especially those that may have catastrophic consequences, it will be important to ensure messages of susceptibility are always matched with messages that describe actions that both the community and individuals can take to mitigate the danger and positively affect personal outcomes.

Increase Knowledge, Skills, and Actions

Audiences need to know that there are steps they can take to help keep themselves and those they love safe. These include the cognitive learning of skills or behaviors required to engage in protective actions for the risks they may face (shutting off gas valves, creating a defensible zone around property from wildfire, knowing evacuation routes), as well as those behaviors that can support recovery after a disaster (having appropriate insurance, safeguarding critical documents). Individuals must be persuaded that taking preparedness actions and learning response skills is worth their time. Such learning may be conveyed through messaging, on-line resources, or taught in interpersonal settings, such as neighbourhood meetings, first aid classes, or at Community Emergency Response Training (CERT) events. Encouraging one preparedness activity can lead to others. For example, according to FEMA's Preparedness in America Report, those who were encouraged or required to

¹⁴ Fischhoff, B., Lichtenstein, S., Slovic P., Derby, S., and Keeney, R. 1981. *Acceptable Risk*. Cambridge University Press, New York, NY: 181.9.

¹⁵ Dorfman, L., Woodruff, K., Herbert, K., 2004, *Making the Case for Early Care and Education: A Message Development Guide for Advocates*, 112-114. Berkeley, CA: Berkeley Media Studies Group.

participate in trainings at work were 76 percent more likely to have a household emergency plan.¹⁶ Encouraging individual participation in neighbourhood events can also support the development of bonding between community members, a critical aspect of social capital which increases community resilience to disasters.¹⁷

Risk communicators should consider how familiar individuals are with the threat, as well as the recommended preparedness actions. For less familiar hazards, education and skill building will need to factor in the use of new technical terms and concepts. For these hazards, it is critical to identify areas of possible confusion and develop plain-language and visual approaches to convey appropriate protective action guidance.

Strategies to Increase Knowledge and Skills: Risk communication messages should describe the desired action and direct individuals to available information and resources (local and online). Messaging will include how to avoid or minimize the risk, as well as how to respond if it does occur. Risk communicators should work with community leaders to provide easy access to in-person opportunities to increase knowledge and practice skills. Learning is enhanced when individuals are actively engaged in the topic, so risk communicators should develop opportunities for message recipients to comment, share stories, and ask questions. For example, the National Weather Service's Safe Place Selfie campaign encourages individuals to post pictures of themselves in the location where they would take shelter in the event of a severe storm or tornado.

Research has found that existing community social networks can significantly enhance risk communication and outreach.^{18,19} Schools, workplaces, neighborhoods, and places of worship can all promote messages about why preparedness for relevant local hazards is important and host meetings, trainings, and community events to deliver the knowledge, skill-building, and opportunities for individuals to take collective action. For example, the National Fire Protection Association encourages communities to hold a Wildfire Community Preparedness Day where communities reduce wildfire risk by removing dead brush from around homes and practicing evacuations.

Training that focuses on building skills creates important muscle memory so that individuals already know — and have practiced — the right protective action to take when every second counts.²⁰ Such

¹⁶ Federal Emergency Management Agency. 2014. *Preparedness in America*. Retrieved October 2, 2018, from https://www.fema.gov/media-library-data/1409000888026-1e8abc820153a6c8cde24ce42c16e857/20140825_Preparedness_in_America_August_2014_Update_508.pdf.

¹⁷ Aldrich, Daniel. 2018. "Social Capital in Disaster Mitigation and Recovery," FEMA PrepTalks. Retrieved December 1, 2018, from <https://www.fema.gov/preptalks/aldrich>.

¹⁸ Bandura, A. 2002. "Social Cognitive Theory in Cultural Context." *Applied Psychology*, Vol. 51, No. 2, 269-290.

¹⁹ Baranowski, T., Perry, C.L., and Parcel, G.S. 2002. "How Individuals, Environments, and Health Behavior Interact: Social Cognitive Theory." *Health Behavior and Health Education: Theory, Research, and Practice*, 165-184, Jossey Bass, San Francisco, CA.

²⁰ Ripley, A. 2008. *The Unthinkable: Who Survives When Disaster Strikes – And Why*, Crown Publishers, New York, NY.

training can also provide opportunities for community leaders to model these skills for others. Risk communication strategies should also consider that people learn information in different ways. Using plain language to introduce new concepts is critical. Visual communications can help speed uptake and adoption, including information delivered through animations, videos, gamification, and infographics.²¹

For less familiar hazards, risk communicators should consider pre-event opportunities to teach the public about the hazards, the potential health impacts, and actions they can take to protect themselves. For example, FEMA recently released a PrepTalk²² describing, in simple terms, how educating the public to find and take adequate shelter for 24 hours in the aftermath of a nuclear detonation can save hundreds of thousands of lives.

Ensure Confidence in Ability to Act and That Action Can Change Outcome

Confidence means that individuals and organizations believe they have the ability to take the appropriate actions (self-efficacy) and that those actions will make a difference in a real event (response efficacy).²³ Audiences must believe they are capable of performing an action and that that action will reduce their loss when something happens.

The FEMA 2016 NHS found that people who are confident in their ability to prepare and believe that those preparations will make a difference are much more likely to have emergency plans (56 percent vs. 37 percent). But the study has also shown that individuals' perception of self-efficacy and response efficacy vary significantly by the type of disaster: from 67 percent and 74 percent, respectively, relative to a weather emergency; to 59 percent and 44 percent for a wildfire; and, finally, 47 percent and 22 percent for a terrorist act.²⁴

That low level of response efficacy for a terrorist act is noteworthy and similar to low levels of response efficacy for other less-familiar hazards: disease outbreak (35 percent) and hazardous materials accident (25 percent). If individuals feel fatalistic about a disaster, they may respond with denial or rationalization of the risk. Alternatively, if they feel there is an opportunity to exert some control over the situation, they will feel more solution oriented and will be open to hearing about

²¹ Bobek, E. and Tversky, B. 2016. "Creating Visual Explanations Improves Learning." *Cognitive Research: Principles and Implications*, Vol. 1, No. 27.

²² Buddemeier, B. 2019. "Saving Lives After a Nuclear Detonation," FEMA PrepTalks. Retrieved February 28, 2019, from <https://www.fema.gov/preptalks/buddemeier>.

²³ Witte, K. 1992. "Message and Conceptual Confounds in Fear Appeals: The Role of Threat, Fear and Efficacy." *Southern Communication Journal*, Vol. 58, 147–155.

²⁴ Federal Emergency Management Agency. 2014. *Preparedness in America*. Retrieved October 2, 2018, from https://www.fema.gov/media-library-data/1409000888026-1e8abc820153a6c8cde24ce42c16e857/20140825_Preparedness_in_America_August_2014_Update_508.pdf.

effective responses. It is very important that risk communicators help individuals feel like they can influence the outcome of an event and move them toward a solution-focused response.²⁵

Strategies to Increase Confidence: Feelings of self-efficacy can be increased by providing opportunities for trial accomplishments, where an individual can “try out” a behavior or, seeing an individual who is similar to themselves, model the behavior.²⁶ Persuasive appeals will require a credible messenger who might face similar barriers to acquiring the behavior and empowerment message appeals that increase motivation and confidence. Complex actions should be broken into separate steps; each step should be attainable for the target audience. Begin with steps where minimal skill or complexity is involved and build to more difficult steps.

Make Preparedness a Social Norm

Social norms are the rules, beliefs, expectations, and behaviors supported by friends and communities. Social norms can influence individuals’ intention to prepare, making it easier for individuals to adopt the desired behavior. Individuals are more likely to adopt preparedness behaviors when they believe their family, friends, and neighbors think they should prepare and they perceive others are preparing.²⁷ If individuals observe others modelling preparedness actions through demonstrations and trainings, they learn more about the types of preparedness actions they can take and feel more confident in their ability to act upon them.^{28,29} In the same vein, at the community level, observability and opportunities to practice preparedness actions can help increase adoption of new preparedness strategies from one community to another.³⁰

Strategies to Make Preparedness a Social Norm: To establish positive social norms around preparing for a disaster, risk communicators should identify and encourage trusted influencers who are relevant to the target audience to act as champions for the desired behavior. Influencers can send a powerful message by describing what convinced them to take specific actions, making the change more relatable to the audience. Consider how to make preparedness actions highly visible within and across communities through peer-to-peer networks, media, and social media. Risk communicators should also ensure that communities and organizations are prepared to respond appropriately to an individual’s questions. For example, if one community wants to establish a social norm that parents

²⁵ Witte, K. 1992. “Message and Conceptual Confounds in Fear appeals: The Role of Threat, Fear and Efficacy.” *Southern Communication Journal*, Vol. 58, 147-155.

²⁶ Rogers, R.W., and Prentice-Dunn, S. 1997. “Protection Motivation Theory.” In Gochman, D.S. (ed.). *Handbook of Health Behavior and Research: Personal and Social Determinants* (pp. 113-13). Plenum Press, New York, NY.

²⁷ Paek, H., Hilyard, K., Freimuth, V., Barge, J.K., and Mindlin, M. 2010. “Theory-based Approaches to Understanding Public Emergency Preparedness: Implications for Effective Health and Risk Communication.” *Journal of Health Communication*, Vol. 15, 428-444.

²⁸ Bandura, A. 2002. “Social Cognitive Theory in Cultural Context.” *Applied Psychology*, Vol. 51, No.2, 269-290.

²⁹ Baranowski, T., Perry, C.L., and Parcel, G.S. 2002. “How Individuals, Environments, and Health Behavior Interact: Social Cognitive Theory.” In Glanz, K., Rimer, B.K., and Lewis, F.M. (Eds.), *Health Behavior and Health Education: Theory, Research, and Practice* (pp. 165–184). Jossey Bass, San Francisco, CA.

³⁰ Rogers, E.M. 2003. *Diffusion of Innovations, 5th Edition*, Simon and Schuster, New York, NY.

are familiar with their children's school emergency plans, school administrators need to be ready to respond to parent requests for school plans for evacuation or active shooter threats.

Parents, neighbors, friends, and colleagues are often trusted sources by which to confirm that a risk is real and that the time to take action is now. Risk communicators can encourage these influencers to step into their roles and model the behavior that will save lives and reduce property loss.

Summary

Risk communicators face many and diverse challenges in ensuring that individuals have sufficient knowledge of preparedness actions to enhance their resilience. However, the growing threats we face as individuals, communities, and a nation mean that we can accept no less than a future in which we are all prepared for disasters. That future requires that we know and appreciate the risks we face; have the knowledge, skills, and confidence to take actions that will protect us and safeguard our property; and encourage everyone around us to do the same. To move audiences toward this future, risk communicators must gauge their constituents' awareness, knowledge, and attitudes toward relevant disasters and use effective risk communication practices to create effective messages and initiatives.

Local emergency managers, elected officials, and federal officials must continue the drumbeat of shared responsibility for safety and preparedness in the face of the growing threats that confront us all.