Corps Risk Analysis Gateway Training Module

Communication

Series:
Corps Risk Analysis Online Training Modules

Prepared by:

Institute for Water Resources
US Army Corps of Engineers

Contents

Introduction

This module was originally developed as a web-based training on the Corps Risk Analysis Gateway. The content has been modified to fit this format. Additional modules are available for download on the IWR website.

The purpose of this training module is to acquaint you with the concepts of risk communication, one of three essential tasks of risk analysis. (The other two essentials are risk assessment and risk management.)

After completing this module you will be able to:

- Define risk communication.
- Determine what should be considered when tailoring messages about risk for different audiences.
- Distinguish the characteristics that affect risk perception.
- Understand the challenges associated with communicating quantitative data to the general public.
- Identify the 3 M's of risk communication.
- Identify several different risk communication strategies.

Acknowledgement: We would like to acknowledge the National Center for Food Protection and Defense/International Food Information Council's Risk Communication Project (http://www.foodinsight.org/National_Center_for_Food_Protection_and_Defense_International_Food_Information_Council_Risk_Communication) as the source for many of the materials used in this module.[1]

You are encouraged to read through all of the examples provided in this module, which look at specific concepts in more depth.

This training is approximately one hour.

This course includes a self-assessment; it's recommended that you be able to achieve 70% for successful course completion.

CHECK YOUR KNOWLEDGE

Let's begin with a quick survey. Read each statement and think about how much you agree or disagree with it before you view the answers below.

Q. Risk communication only occurs during a crisis event.

Q. The primary purpose of risk communication is to reduce fear and panic.

Q. The key to successful pre-event planning is to develop risk communication messages prior to a crisis.

Q. An individual's perception of risk is based on an understanding of possible negative consequences.

Q. During a crisis, risk communication should be limited to the organization's official spokesperson.

Q. During a high stress situation, a spokesperson who is technically competent in the subject matter has more credibility.

Q. The role of media during a crisis is to help the communicator deliver their message effectively.

CHECK YOUR KNOWLEDGE - ANSWERS

Q. Risk communication only occurs during a crisis event.

A. Risk communication includes communication strategies before, during and after the event or as preparedness, response and recovery.

Q. The primary purpose of risk communication is to reduce fear and panic.

A. This is true only in certain situations. Sometimes the purpose of effective risk communication is to increase fear when the consequences of the hazard are high and concern for the hazard is low.

Q. The key to successful pre-event planning is to develop risk communication messages prior to a crisis.

A. Pre-scripted messages may be useful, but they are only one element of pre-event planning.

Q. An individual's perception of risk is based on an understanding of possible negative consequences.

A. Risk perception is a combination of outrage (or emotion) and hazard (the likelihood of negative consequences).

Q. During a crisis, risk communication should be limited to the organization's official spokesperson.

A. Although a risk communication effort will usually have an official appointed spokesperson, every employee of the organization is a representative and, therefore, can affect the outcome of a communication effort. Communication must occur internally in time of crisis in order to effectively respond.

Q. During a high stress situation, a spokesperson who is technically competent in the subject matter has more credibility.

A. *During high stress situations, representatives who demonstrate empathy and caring are best able to build trust and credibility. Demonstrating human qualities has a greater impact on establishing trust than expertise and credentials.*

Q. The role of media during a crisis is to help the communicator deliver their message effectively.

A. The media should not be seen as responsible for delivering your message. Their agenda may differ from the message you wish to deliver. It's important to be proactive in delivering your message to ensure the right risk communication takes place.

NOTE: These questions and answers are adapted from the National Center for Food Protection &Defense.[2]

---

[1]National Center for Food Protection and Defense/International Food Information Council. (2009). *Risk Communication Modules and Resources Materials*. Retrieved 19 November 2012 from: http://www.foodinsight.org/National_Center_for_Food_Protection_and_Defense_International_Food_Information_Council_Risk_Communication

[2] National Center for Food Protection and Defense/International Food Information Council Risk Communication. (2009). *Risk communicator training, Module 1: Introduction to risk communication.* Retrieved November 19, 2012 from: http://www.foodinsight.org/Content/6/M1%20Intro%20to%20Risk%20Comm%20GUIDE%201%2020%2007.doc

Chapter 1 - Risk Communication Defined

1.0 Risk Communication Defined

Risk communication is an open, two-way exchange of information about risk that leads to better understanding and improved risk management. This process includes communication among communicators, the public and stakeholders. It includes activities before, during and after an event, considers human perceptions of risk, and empowers people to make informed decisions.

Risk communication is critical to all levels of U.S. Army Corps of Engineers (USACE) activities and teams. Whether it is internal team communication or large watershed study communication with extensive stakeholder involvement, risk communication is essential for understanding and strategy. Risk communication is defined differently among federal agencies, but USACE defines risk communication in a white paper called *Transforming the Corps into a Risk Managing Organization* (Series: White_Paper_Transforming_the_Corps_into_a_Risk_Managing_Organization_Moser_et_al_Nov2007.pdf) as the following:

> *Risk communication is the open, two-way exchange of information and opinion about hazards and risks leading to a better understanding of the risks and better risk management decisions. Risk communication is integrated into the assessment and management processes. It is not a task that occurs only after decisions have been made. Risk communication ensures that the decision makers, other stakeholders and affected parties understand and appreciate the process of risk assessment and in so doing can be fully engaged in and responsible for risk management.*

USACE strives to meet **Five Communication Principles**:[3]

- Communicate the USACE vision, mission, capabilities and current work to stakeholders, partners and audiences in a consistent, USACE – wide way – speaking with one voice.
- Enable effective two-way communication with USACE partners and customers – reinforcing the agency's commitment to working with partners to find innovative and effective solutions.
- Establish a unifying corporate identity to help USACE customers and partners see this agency as "One Team," highlighting its ability to be ready and responsive.
- Build a culture of commitment to public openness and transparency in all actions USACE staff takes, strengthening relationships and demonstrating the agency's reliability and dedication to making the best possible decisions and recommendations for the Nation.
- Make every USACE employee a well-informed, involved and empowered communicator of our work, principles, values, strategic visions and campaign goals.

The Office of Management and Budget also published a memo titled *Updated Principles for Risk Analysis*, M-07-24 in 2007 that expands on this topic.[4]

---

[3] U.S. Army Corps of Engineers. (2012). *Strategic communication planning: online worksheet tool*. Retrieved July 21, 2012 from http://ulc.usace.army.mil/StratComm/StratDemo/stratcom_nonPAO.html

[4] Executive Office of the President, Office of Management and Budget. (September 19, 2007). M-07-24, Memorandum for the Heads of Executive Departments and Agencies: *Updated principles for risk analysis*. Retrieved August 13, 2012 from http://www.whitehouse.gov/sites/default/files/omb/assets/regulatory_matters_pdf/m07-24.pdf

1.1 More about Risk Communication: What It Is and Is Not

Check your knowledge of what is and is not risk communication. Read each item and decide whether or not it describes risk communication. When you are finished, you can check your answers on the next page.

- A proactive process requiring ongoing commitment to practice.
- Multidirectional communication among communicators, public and stakeholders.
- Always intended to make people feel better or reduce fear.
- Spinning messages or public speaking.
- Inclusive of activities before, during and after an event.
- Able to empower people to make their own informed decisions.
- Damage control or crisis management.
- An integral part of an emergency response plan.
- Considerate of human perceptions of risk.

MORE ABOUT RISK COMMUNICATION: WHAT IT IS AND IS NOT - ANSWERS[5]

From a general perspective, risk communication **is**:

- A proactive process requiring ongoing commitment to practice.
- Considerate of human perceptions of risk.
- Multidirectional communication among communicators, public and stakeholders.
- Inclusive of activities before, during and after an event.
- An integral part of an emergency response plan.
- Able to empower people to make their own informed decisions.

However, risk communication **is not**:

- Spinning messages or public speaking.
- Damage control or crisis management.
- Always intended to make people feel better or reduce fear.

---

[5] National Center for Food Protection and Defense/International Food Information Council Risk Communication. (2009). *Risk communicator training, Module 1: Introduction to risk communication.* Retrieved November 19, 2012 from: http://www.foodinsight.org/Content/6/M1%20Intro%20to%20Risk%20Comm%20GUIDE%201%2020%2007.doc

Chapter 2 - The Three M's of Risk Communication

2.0 The Three M's of Risk Communication

There are three important elements for USACE to consider in any risk communication setting: (1) successful risk communication depends on careful message strategy and development (2) every member of an organization is both a communicator and a messenger, and (3) the public receives information from a range of media sources. Each element is discussed more thoroughly on the following pages:

2.1 Message

2.2 Messenger and Mode of Delivery

2.3 Media

2.1 The Message

Message development is a critical element in risk communication. Without an appropriate concept of what your message is, it will be difficult to execute a message roll out. Developing the message requires internal communication with the communication team itself and the organization it is representing. Conducting effective internal communication will aid in developing an effective message for the public. One technique for creating and assessing the strength of a message is to base each risk communication message on the following questions:[6]

- What are the three most important things the audience should know?
- What are the three things the audience would most like to know?
- What three points will the audience most likely get wrong, unless they are emphasized and explained?

Focusing on these message components will ensure that communicators keep in mind what is necessary to communicate and what is not necessary. This will come into play when you consider how much and what type of data to use in your risk communication message that will be most conducive to the understanding of your target audience.

Dr. Vincent Covello, risk communication expert and founder of the Center for Risk Communication (http://centerforriskcommunication.org/), suggests using the following "27/9/3" method as a good rule of thumb to apply when creating your message plan:[7]

> *The 27/9/3 challenge is to develop a message that uses a total of 27 words, in 9 seconds, and contains 3 key messages.*

This strategy helps you to determine what the necessary components of your message are that will help you to better express the necessary information to the public. The message should be tailored with risk communication outcome goals in mind.

For those interested in learning more about message development, the Environmental Protection Agency (EPA) has developed a useful guide for developing a message map.[8] Module three of the Risk Communicator Training for Food Defense Preparedness, Response & Recovery (http://www.foodinsight.org/Risk_Communicator_Training_for_Food_Defense_Preparedness_Response_Recovery) provides some very helpful tools for message development.

---

[6] Eisenberg, Norman A., and Beverly Silverberg. (2001). *Food safety communication primer: A guide for conveying controversial or sensitive food safety information to concerned audiences*. College Park, MD. Joint Institute for Food Safety and Applied Nutrition.

[7] National Center for Food Protection and Defense/International Food Information Council Risk Communication. (2009). *Risk communicator training, Module 3: Message development and delivery.* Retrieved November 19, 2012 from: http://www.foodinsight.org/Risk_Communicator_Training_for_Food_Defense_Preparedness_Response_Recovery
Adapted from: Dr. Vincent Covello, Center for Change/Risk Communication, New York, NY. http://centerforriskcommunication.org/

[8] U.S. Environmental Protection Agency/ Office of Research and Development/ National Risk Management Research Laboratory. (August 2007). *Risk communication in action: the tools of message mapping*. EPA/625/R-06/012. Retrieved February 20, 2013 from: http://www.epa.gov/nrmrl/pubs/625r06012.html. (For a video on message mapping, see: http://www.epa.gov/nhsrc/video/rcom.html)

EXPLORE

With these concepts in mind, imagine it is your task to develop a key message for one of the following:

- The effect of the presence of woody vegetation on levees
- The introduction of Asian Carp into Lake Michigan
- Opening Morganza floodway (LA) or blowing up the Bird's Point levee (MO) to prevent downstream flooding

Can you present a message in response to these scenarios that only uses 27 words, can be presented in nine seconds, and that contains three key messages? You can use this template

Problem A: The effect of the presence of woody vegetation on levees

Key Messages:

1.
2.
3.

Final Message (27 words)

Problem B: The introduction of Asian Carp into Lake Michigan

Key Messages:

1.
2.
3.

Final Message (27 words)

Problem C: Opening Morganza floodway (LA) or blowing up the Bird's Point levee (MO) to prevent downstream flooding

Key Messages:

1.
2.
3.

Final Message (27 words)

2.2 The Messenger and Mode of Delivery

The second "M" in risk communication is the messenger. While the messenger bears the larger burden of public communication, it is important to remember that every member of an organization is in fact a communicator and messenger as a representative part of his or her organization.

The messengers should be prepared to deliver the defined message to the specified audiences. In order to do so, the messenger can use various means to communicate information, including verbal presentations, reports, press releases, websites and social media, among others. Regardless of the means (or channel) used to communicate, the message delivery system remains important.

The public's trust of the expert is highly dependent on the stress level of the event. A high stress situation may be a crisis event such as Hurricane/Superstorm Sandy in 2012, while a low stress situation may be an event such as a flooded creek. What type of delivery systems do you use in low versus high stress situations? What are the qualities you want in a messenger or delivery system? The answers often depend on the level of urgency present in your situation. Would it surprise you to learn that in some cases caring and empathy may be more important than experience and competence?

According to Dr. Covello's research, audience stress level is an important element to consider because people who are stressed often have difficulty processing information, want to know that you care, focus on the negative information more than the positive and often seek out additional sources of credible information. People tend to process information based on a linear order in low stress situations, but on primacy or recency in high stress situations. The latter means that audiences are concerned with the first and last parts of your message, not each piece of information linearly.

Low Stress Situations

When stress is low, expertise is important and the delivery system becomes less important. As demonstrated in the chart in Figure 1, competence and expertise play a much larger role in communication during low stress situations.

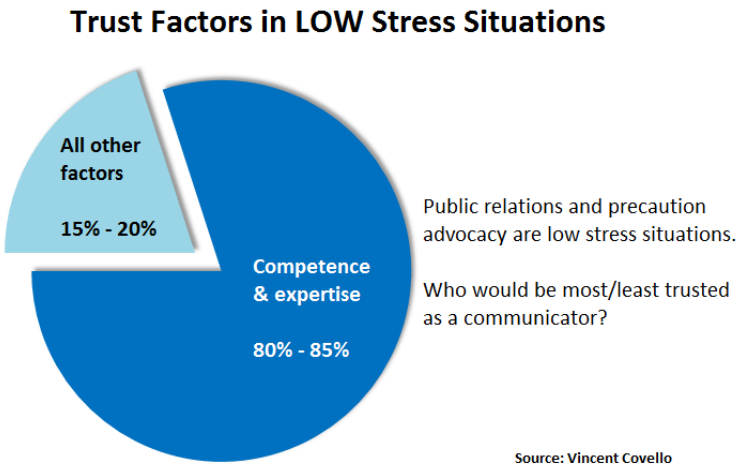

Figure 1: Trust factors in low stress situations.

High Stress Situations

However, when stress is high, face-to-face communication may be more necessary. In these situations, the messenger's competence and expertise are not nearly as important as the messenger's caring and openness. So, in a high stress situation, it may be better to select a messenger with a real connection to the audience (e.g., "My family lives behind the Bird's Point levee") over a subject matter expert to deliver a written public statement. Once a messenger is selected, it is important for that messenger to use opening remarks that indicate active listening to the public's concerns (e.g., "I have heard some concerns and would like to hear directly from you"). This is likely to be more effective than being the world's foremost authority on the hazard.

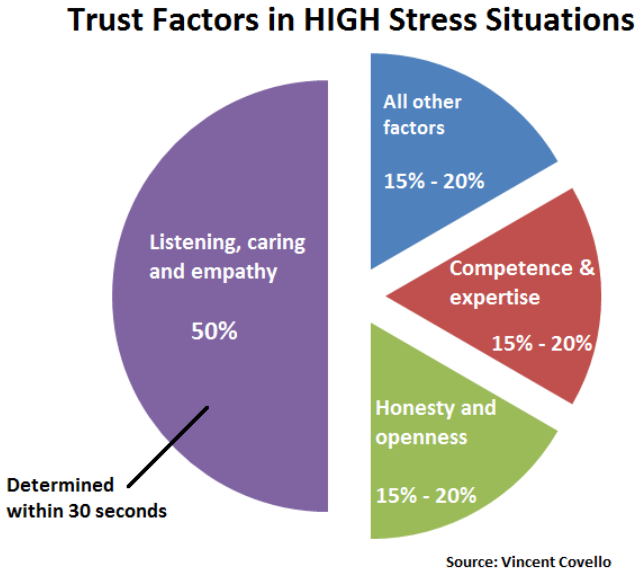

Figure 2: Trust factors in high stress situations.

Comparing Low and High Stress Situations

Additionally, it is important to recognize that stress changes the way people process information. As shown in the chart above, people determine whether the speaker is empathetic or listening within 30 seconds of the start of the message. Notice that competence and expertise, which was a factor that made up nearly the entirety of the low stress chart, only comprise 15 to 20 percent of the chart representing high stress situations; people process information differently when under stress, and have a different focal point from low stress situations. The message and the messenger/delivery system must be selected while taking into account the public's stress level. High stress situations are not the time to deliver lengthy reports, which may have been perfectly acceptable in a low stress situation. High stress situations are a time to deliver more empathetic and concise messages.

The chart below shows the differences in the ways people process information during low and high stress situations. Note that the focal points differ. The way information is processed and the amount of information that can be processed overall is lower when stress levels are high. On the left side of the chart, where stress is low, the audience typically processes information in a linear order (1, 2, 3). On the right side, we see that an audience will not necessarily process information in a linear way. In these cases, the audience will focus on what is heard first, primacy, or what is heard last, recency. In high stress situations, on the right side of the chart, people are more likely to process less information. In these cases, the communicator should focus on listening to the audience and showing empathy and compassion. In low stress situations, on the left side of the chart, expertise and knowledge will be more valued by the audience.

Communication Shifts in LOW to HIGH Stress Situations

LOW STRESS	HIGH STRESS
Process an average of **seven** messages	Process an average of **three** messages
Information processed in linear order (1, 2, 3)	Information processed in primacy (1,3,2) or recency order (3,2,1)
Information processed at average grade level	Information processed at minus **four** grade levels
Focus on competence, expertise and knowledge	Focus on listening, caring, empathy and compassion
	Source: Vincent Covello

Figure 3: Communication shifts in low to high stress situations.

2.3 THE MEDIA

The public gets information from varied sources, some of which may include the established mass communication media (i.e., historically viewed as television, radio or newspapers). It should be noted that that a mass media outlet may often have its own agenda. For this reason, be aware that it is the job of the communicator – and not the media – to effectively construct the message.

A strategy that relies only on traditional media sources will miss those who Tweet, text or use online sources for their information instead of traditional media sources. There is a clear trend that the public is turning to online media sources (e.g., YouTube (http://www.youtube.com/), CNN (http://www.cnn.com/) or similar) to stay informed.

A guide to using social medial for pre-disaster planning can be found at DigitalGOV (http://www.digitalgov.gov/). Many emergency preparedness plans are including text messaging (Wireless Emergency Alerts) as a mechanism to alert and warn (for examples, see: Ready.gov (https://www.fema.gov/node/117026) and Purdue University (http://www.purdue.edu/ehps/emergency_preparedness/warning-system.html).) So, when you are announcing a public meeting or delivering a response to a crisis, it is important to become familiar with varied means of communicating in order to effectively reach your audience.

The Department of the Army has also prepared a *Social Media Handbook* to help guide the establishment of a social media presence (including guidance for using social media for risk communication).[9] Also provided is guidance on Social Media Planning: Research, Plan and Measure (http://www.slideshare.net/USArmySocialMedia/social-media-roundup-social-media-planning).[10]

Social media tools have also been used for post-disaster communications. (For examples, see: Joplin Tornado Info (https://www.facebook.com/joplintornadoinfo), Occupy Sandy Relief NYC (https://www.facebook.com/OccupySandyReliefNyc?ref=ts&fref=ts), and Japan Earthquake (http://www.slideshare.net/USArmySocialMedia/social-media-roundupsocial-media-response-to-march-11-earthquake#btnPrevious)). Based upon the Joplin (MO) tornado experience, Williams et al. (2012) published The Use of Social Media for Disaster Recovery (http://extension.missouri.edu/greene/documents/PlansReports/using%20social%20media%20in%20disasters.pdf).[11]

Figure 4: Various media and social media methods of delivery

[9] U.S. Department of the Army/Online and Social Media Division. (2012). *The United States Army social media handbook*. Retrieved December 3, 2012 from: http://www.slideshare.net/USArmySocialMedia/army-social-media-handbook-2012

[10] U.S. Department of the Army/Online and Social Media Division. (2011). *Social media roundup—social media planning: research, plan, and measure*. Retrieved December 3, 2012 from: http://www.slideshare.net/USArmySocialMedia/social-media-roundup-social-media-planning

[11] Williams, R., Williams, G. & D. Burton. (2012). *The use of social media for disaster recovery*. Joplin Tornado Info. University of Missouri Extension. Retrieved November 20, 2012 from: http://extension.missouri.edu/greene/documents/PlansReports/using%20social%20media%20in%20disasters.pdf

Chapter 3 - Communication Models

3.0 Communication Models

Two basic communication models exist: unidirectional and multi-directional. These models include verbal, non-verbal (body language) and written communication.

Unidirectional communication is useful for getting information out quickly, such as through a media brief, and is appropriate for response during a crisis. Other forms of unidirectional communication include a report of findings and news articles. Unidirectional communication is typically a top-down approach that focuses on who says what, at what time, to what audience, through what channel and with what purpose. The unidirectional model components are depicted below.[12]

Unidirectional Communication Model

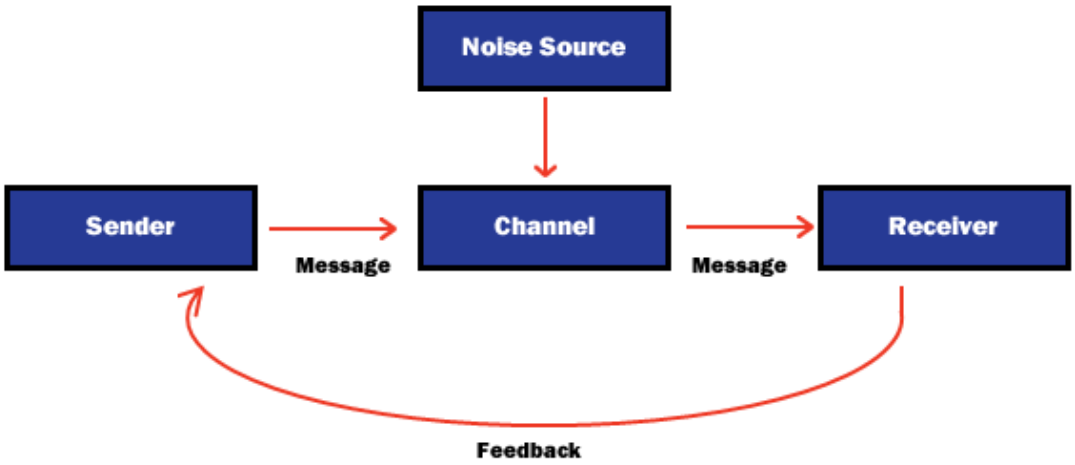

Figure 5: A communication model showing unidirectional flow

Communication occurs from the *Sender* to the *Receiver* using a communication *Channel*. A *Channel* refers to both the choice of language (oral, written, non-verbal) as well as the mechanism (face-to-face interaction, phone, email, newsletter, television interview or text message). The *Noise Source* includes all of the things that affect the transfer and interpretation of the message from the sender to the receiver. Environmental distractions or challenges with the medium can distort the message. At the same time, internal factors such as culture, gender, knowledge and values all affect how the receiver interprets the message. *Feedback* that occurs in unidirectional communication is after the fact, a response to the process, and does not play a role in developing the original message. It is mostly a response to the message as opposed to a factor taken into consideration when delivering the message.

For most risk communication situations, including recovery, mitigation and preparation phases, multi-directional communication is more effective. The multi-directional model components are depicted below.

Multi-directional Communication Model

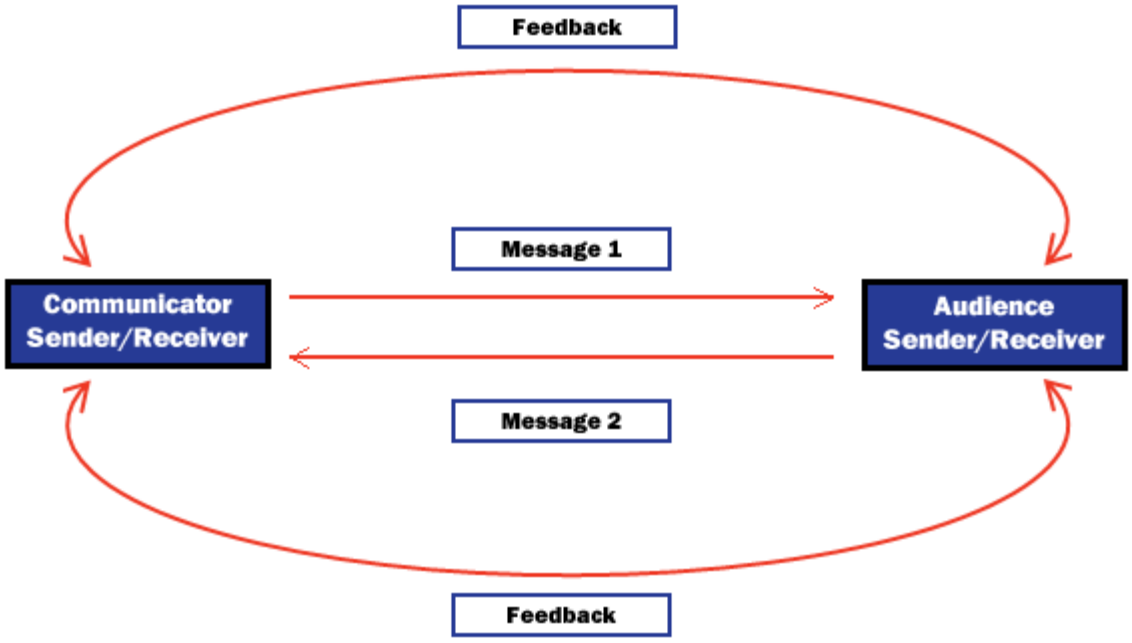

Figure 6: A communication model showing multi-directional flow

Multi-directional communication actively involves the audience as an information source, allowing information to flow in both directions. In this model, both the communicator and the audience act as senders and receivers of messages. The communicator delivers and reshapes his messages based on feedback from the audience. This is an interactive process where information flows in both directions. Noise source and channel act in similar ways in this model as they did in the unidirectional model, but there are more channels through which communication takes place. The multi-directional model considers some of the following elements:[13]

- **Audience assessment** – considering and understanding the public. Audience assessment should be a part of all communication, but plays a larger role in multi-directional communication.
- **Audience involvement** – involving the public as partners.

- **Message** – considering information content, which is critical, in great detail. Message content should be a part of all communication and plays a large role when communicating during a crisis.
- **Logistics** – the means to deliver the content to the audience and receive a response.
- **Listening** – actively paying attention to audience response.
- **Self-assessment** – constantly re-assessing the message, delivery strategy, audience response, and other steps in the communication process.
- **Evaluation** – applying self-assessment lessons learned from each experience to improve future efforts.

USACE has many stakeholders and can have many different audiences for a single issue. Audiences the USACE must consider include:

- Nonfederal partners
- Natural resource agencies
- Federal, state and local government officials
- Nongovernmental organizations
- Affected community residents
- Interested citizens
- Industries
- Media

Understanding these communication models, as well as the role of the communicator, stakeholder and audience, within the model will be important to help execute risk and crisis communication efforts.

---

[12] National Center for Food Protection and Defense/International Food Information Council Risk Communication. (2009). *Risk communicator training, Module 1: Introduction to risk communication.* Retrieved November 19, 2012 from: http://www.foodinsight.org/Content/6/M1%20Intro%20to%20Risk%20Comm%20GUIDE%201%2020%2007.doc

[13] Adapted from: Solomon, M.R., Marshall, G.W. and Stewart, E.W. (2008). *Marketing: real people, real choices* (p. 378). *(*5th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Chapter 4 - Strategic Communication Plans

4.0 Strategic Communication Plans

The development of strategic communication plans supports preparation for effective risk communication. Such plans help to identify the stakeholders, communicators, communication models, objectives and outcomes, among other factors. Several experts within USACE can assist in providing templates or expertise in this area, including the USACE Public Affairs offices and the Corps Collaboration and Public Participation Center of Expertise.

USACE Public Affairs offices have also developed a *Strategic Communication Planning Online Worksheet Generator*. The following figure is a screen shot of this tool. It also demonstrates some commonly used sections in a strategic communication plan.

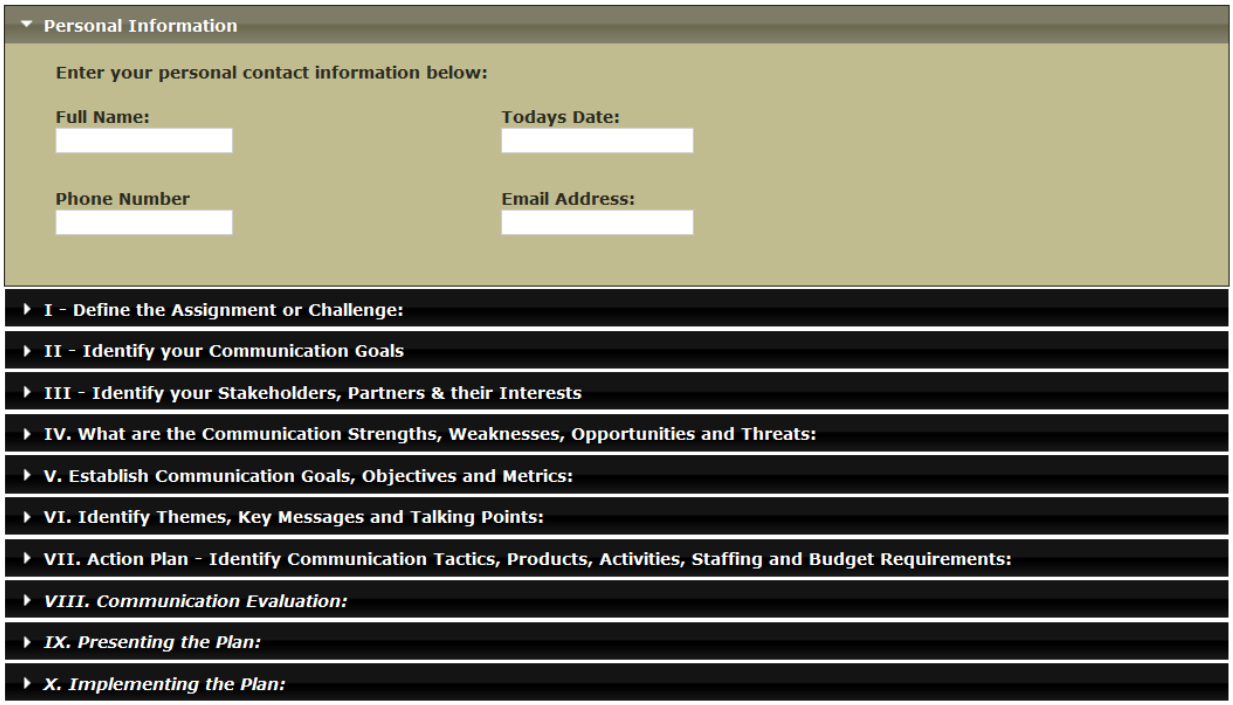

Figure 7: Screen shot of the USACE Strategic Communication Planning Online Worksheet Generator

Below are examples of strategic communication plans:

- Department of the Army/U.S. Army Corps of Engineers. (September 26, 2002). *Corps strategy to communicate service to the nation and the Army.* Retrieved August 3, 2012 from https://corpslakes.erdc.dren.mil/employees/pdfs/02sep26-complan.pdf.
- USACE Environmental Program. (June 2010). *USACE environmental communications plan, draft final.* Retrieved August 3, 2012 from https://corpslakes.erdc.dren.mil/employees/cecwon/pdfs/10sep17-envstratcomplan.pdf.

- Federal Emergency Management Agency. (2004*). Developing and promoting mitigation best practices and case studies: communications strategy*. Retrieved December 3, 2012 from http://www.fema.gov/library/viewRecord.do?id=1774

Chapter 5 - Risk Communication Goals

5.0 Risk Communication Goals

> "Risk management goals should be stated clearly, and risk assessments and risk management decisions should be communicated accurately and objectively in a meaningful manner."[14]

Experts in the field of risk communication have identified three risk communication goals that come up time and again. These goals are (1) Tailoring risk communication, (2) Empowering the audience to make informed decisions and (3) preventing negative behavior, as seen in the figure below.

Figure 8: Risk management communication goals

These goals are important in risk communication because they focus on promoting positive actions by taking into account not only what we know about the technical details of the hazard, but also the public's responses to the hazard.

Tailoring risk communication efforts to account for any potential emotionally based responses is important. For example, a tailored message may be required in an instance where a person is told to evacuate their long-time home and may not do so out of fear of losing their. By demonstrating empathy and tailoring your communication, you will be more able to empower this person to make an informed decision about their safety.

Empowering the public to act requires making the necessary information available. In the event of a flood, USACE should communicate what areas are expected to flood, when the flooding will peak, and when and where evacuations should occur.

There will be times when people's lack of concern about a potentially harmful situation can increase the consequences of a bad event. It is the risk communicator's duty to align the public's concern with the severity of the event at hand. Tailoring communication, empowering the public and preventing negative behavior are all related goals. It is important that we help people to take proper actions in times of both high and low risk.

---

[14] Executive Office of the President, Office of Management and Budget. (September 19, 2007). M-07-24, Memorandum for the Heads of Executive Departments and Agencies: *Updated principles for risk analysis*. Retrieved August 13, 2012 from http://www.whitehouse.gov/sites/default/files/omb/assets/regulatory_matters_pdf/m07-24.pdf

5.1 EXPLORE: RISK COMMUNICATION DURING HURRICANE IKE

Description: On September 12, 2008, Hurricane Ike approached the Texas Coast.

Analysis: As Hurricane Ike approached the Texas Coast on the 12th of September just a few years after Hurricane Katrina and Hurricane Rita had devastated the Gulf Coast, risk communicators were faced with the dilemma on how to convey the seriousness of the situation to the public.

EXPLORE: NATIONAL WEATHER SERVICE ISSUES WARNING

Description: The National Weather Service issued a warning for Galveston, Texas in September 2008, stating the following:

Action/Communication:

> *Persons not heeding evacuation orders in single family, one or two story homes will face certain death.*

Analysis: The National Weather Service practiced good risk communication when issuing this message. They gave people the necessary information to make informed decisions, and avoid negative behavior, which in this case would have been staying in the area despite the imminent danger.

Response: The image below is a screen capture about the response to this messaging. The warning was widely reported. Although many people left the island, a shocking number decided to stay and try to ride out the storm.

CNN U.S.

SEARCH

POWERED BY Google

ics Justice Entertainment Tech Health Living Travel Opinion iReport Money › Sports ›

NATIONAL HURRICANE CENTER

Weather service warns of 'certain death' in face of Ike

September 11, 2008

Share Twitter Email

Residents living in single-family homes in some parts of coastal Texas face "certain death" if they do not heed orders to evacuate ahead of Hurricane Ike's arrival, the National Weather Service said Thursday night.

The unusually strong wording came in a weather advisory regarding storm surge along the shoreline of Galveston Bay, which could see maximum water levels of 15 to 22 feet, the agency said.

"All neighborhoods ... and possibly entire coastal communities ... will be inundated during the period of peak storm tide," the advisory said. "Persons not heeding evacuation orders in single-family one- or two-story homes will face certain death."

Texans sit in bumper-to-bumper traffic Thursday on a highway from Galveston County into Houston.

Figure 10: CNN story reporting the National Weather Service warning

EXPLORE: AFTER THE HURRICANE

The following image depicts images before and after the hurricane. These photographs of Texas' Peninsula Coast show the reality of the risks people faced during this storm. Good risk communication played an essential role in ensuring many people were not subjected to this life endangering event. It is clear from the widespread property damage that many people were at risk.

Figure 11: Photos of Texas Coast before and after Hurricane Ike

Chapter 6 - Risk and Crisis Communication

6.0 Risk and Crisis Communication

Risk is something that is encountered every day. Individuals may drive a car or live behind a levee. These are risks that individuals consider to be tolerable. However, the risk that is involved in the event of a crisis is often less tolerable for various reasons. Crisis communication is a type of risk communication that takes place in response to an immediate and imminent danger. A crisis often affects a large group of people and requires immediate response. The communication response that takes place in a crisis differs from risk communication in certain ways. Risk communication occurs under a less strenuous and more regular schedule.

It may be helpful to think of crisis and risk communication in terms of the images below. The first image shown below (Figure 12) illustrates the unidirectional communication that is often used in times of a crisis. The second image shown below (Figure 13) follows a more circular, multidirectional communication process in which the audience plays an active role in defining and redefining the risk message. The risk communication chart shows the way in which risk communication is not always as time sensitive, which allows for the communicators to take more of the audience's risk perceptions into consideration when crafting messages. Crisis communication is much more time sensitive, which requires messages to be issued with the public's safety in mind but without their direct input on the messages issued. Although these images are not exact depictions of the communication processes in both instances, they demonstrate the differences well.

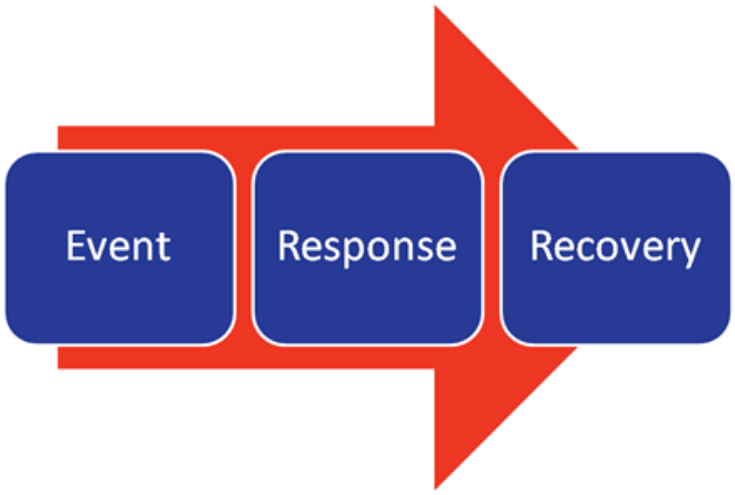

Figure 12: Crisis communication using unidirectional

Figure 13: Risk communication using multidirectional

Communication plans can be developed for both risk and crisis communication. The communication models may differ. The crisis communication plan will likely have to be altered in the event of the actual crisis to account for the unique elements of the event that have not been foreseen.

Risk communication can differ from crisis communication in that it can be strategically planned and tested throughout the process because there is not an immediate emergency situation. The risks may be immediate, but there is not an immediate need to evacuate, for example.

Communication for risk and crisis should include a step where communication toolkits are developed as well as a list of stakeholders and points of contacts. Both crisis and risk communication should have a plan of action for getting the message out, but crisis communication will likely occur more rapidly since it is in response to an immediate situation.

USACE has opportunities to develop preparedness messages for each of its projects. These messages can include information on the following:

- What to do during a flood event
- How to evacuate a flood plain
- How to prepare for a drought

- How flood emergency dam releases will affect people downstream
- What to do during emergency dam releases
- What happens if there is a navigation accident

Recovery messages that would be delivered after a crisis event can likewise be prepared for each of these readily anticipated events. Each affected stakeholder group could receive separate messages. Therefore, it is important to understand those affected and how they can best be reached.

Risk communication can function as a warning and informative measure to communicate with the public or target audience about the potential events that could occur, how to respond, potential projects to reduce risks, as well as additional topics. See an example about Communicating about Flood Risk and Flood Insurance from the National Flood Insurance Program. [15]

Crisis communication occurs prior to, during and after an emergency-like event. Unidirectional communication is typically used in such crisis situations. While all instances for a crisis cannot be accounted for ahead of time, it is still necessary to develop communication toolkits, a list of stakeholders and points of contacts, and a plan of action for when the event does occur. See an example Crisis Communication Plan (http://www.ready.gov/business/implementation/crisis) from the Federal Emergency Management Agency (FEMA) and National Emergency Communications Plan (https://www.dhs.gov/national-emergency-communications-plan) from the Department of Homeland Security.

---

[15] National Flood Insurance Program. (2012). FloodSmart: communicating about flood risk and flood insurance. Presentation at the 2012 USACE Flood Risk Management and Silver Jackets Workshop. Retrieved December 3, 2012 from http://www.nfrmp.us/frmpw/docs/WORKSHOP/Allegheny/1%20-%20Monday/3_-_SILVER_JAX_PRESENTATION_0819kd.pdf

Chapter 7 - Perceptions of Risk

7.0 Perceptions of Risk

It is inevitable that all people will perceive risk differently. The difference in perceptions is a result of multiple factors, including people's educational background and interest in any given event. An engineer, for example, will see floods differently than the person who owns a house in the flooded area. The homeowner may be upset or scared, while the engineer will more likely focus on the technical elements of the event, such as mapping inundation or when a flood will peak. This difference of perceptions in any given event occurs across disciplines and fields.

Differences in perceptions and backgrounds can likewise affect how much a person pays attention to a given message or event. An engineer during a flood event may be considering how high the water will rise, at what time and how big of an area will be affected. However, a stakeholder in the area that will flood may be more concerned with how a home or sentimental belongings can be saved. This is an example of the empirical and non-empirical aspects associated with risk. Empirically considering risk will lead to a different perception than thinking about risk in a less empirical, more emotional way.

This relationship is in part due to the nature of risk. A risk of loss involves a hazard (something that can go wrong) and its probability (the likelihood of it happening). These are aspects of a risk that require thinking or empirical consideration.

Risks also involve consequences; that is, the personal or social implications of the hazard. These consequences affect people's values, meaning the subjective evaluation of the relative importance of what might be lost. This feeling, or non-empirical, dimension of risk gives rise to the notion of outrage. Outrage greatly colors the public's perception of risk. It is, therefore, important to understand that risk is made up not only by the technical hazard at hand but also by the public's emotional response to the hazard.

Risk can be broken down into an equation of sorts that allows one to think of it more as a whole of its parts, or more quantifiably. There are two equations that experts in risk typically think about when considering risk. Risk is typically considered in regard to the equation below:

$$\text{Risk} = \text{Probability} \times \text{Consequence}$$

However, the following equation should be considered in addition to the previous:

$$\text{Risk} = \text{Hazard} + \text{Outrage}$$

This latter equation is attributed to Peter Sandman, a recognized expert in risk communication. His website (http://www.psandman.com/) is a good source of information for risk communicators, whether a beginner or expert.

The second equation stresses that communicators should consider the actual hazard related in a risk event, as well as the outrage that will result from that hazard.

7.1 HAZARD + OUTRAGE

There are a broad range of factors that affect the outrage or value-based dimensions of risk. These factors can also affect the acceptability or tolerability of a risk. The tolerability of risk is often subjective. Driving a car is a risky activity, but since it is a task that is largely familiar, many consider this a tolerable risk. In opposition, a disaster that largely affects children in a negative way is typically not tolerated by people and will lead to greater outrage. There is also a difference between self-subjected risk and risk that is imposed upon a person.

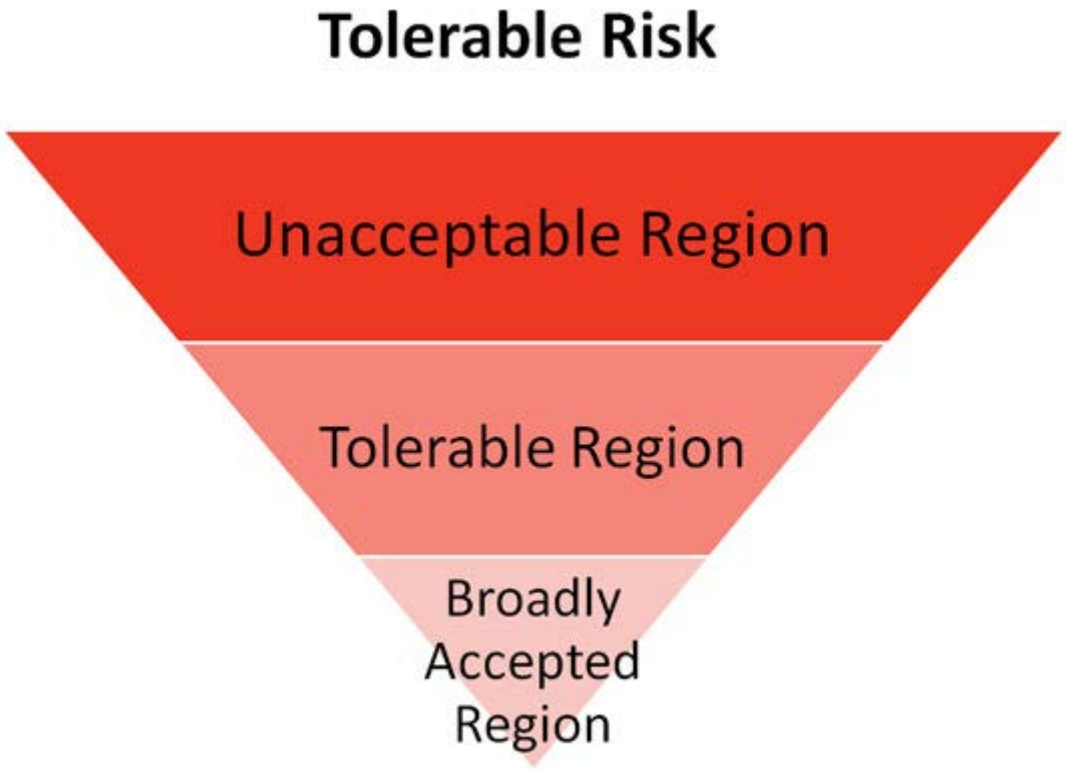

Figure 14: Levels of tolerable risk

Figure 14 above depicts the level of tolerable risk, increasing from the bottom up. Things that would fall under the broadly accepted region include driving a car. An example of a tolerable risk would be skydiving or smoking. These are risk elements that are subjective; some are considered more risky than others, but that is dependent on individual perceptions. Larger disasters such as a spill of a toxin, the death of a young child at a USACE owned lake, or other similar events would be considered unacceptable because the public views those events more negatively.

In general, risks are less acceptable the more they include the following factors:

- Catastrophic potential
- Effects on children
- Disturbing manifestation of effects
- Specific identity of victims
- Dread
- Mistrust of institutions
- Previous accident history
- Inequitable distribution of effects
- Low levels of offsetting benefits
- Reversibility
- Manmade origin

Certain risks can become more acceptable if they are voluntary and familiar.

USACE has been involved in a number of situations that involve one or more of these outrage-increasing factors. How high do you think the outrage potential was for these?

Blowing up the levee at Bird's Point (MO)? (CBS, St. Louis (http://stlouis.cbslocal.com/2011/05/03/watch-blowing-up-birds-point-levee/))

Opening the Morganza floodway (LA) (http://www.nola.com/environment/index.ssf/2011/05/morganza_floodway_opens_to_div.html)?

What do you think the outrage would be like for these hypothetical situations? And does it depend on audience viewpoint? And are there multiple audiences?

- Building a new levee?
- Channel deepening?
- A drowning at a USACE lake?
- Improving fish habitat on a waterway?
- Asian carp in Lake Michigan?
- Building a project that require impacts to endangered species?

Consider the factors from the list above that would or would not determine the public's reaction to these situations.

7.2 Disconnects in Perceptions: Experts and the Public

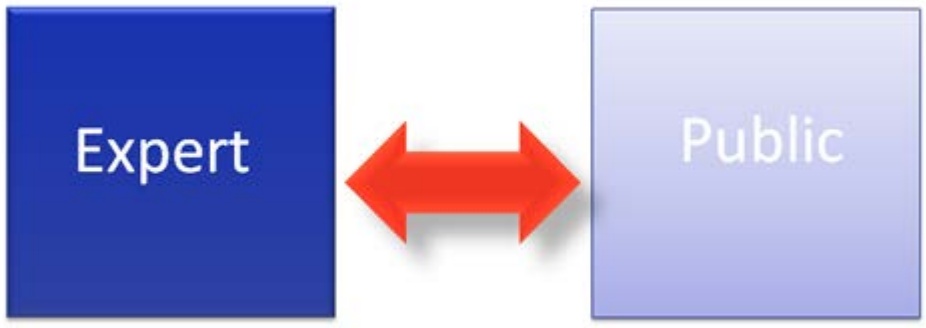

Figure 15: Expert vs public perception

It can be challenging for experts to effectively communicate risk to the public. Risk perceptions are often very different between the general public and technical experts. Experts often struggle to communicate risks to the public in a meaningful way. For example, telling the public there is a risk of flood that will cover 20 miles and expand at a given velocity will not mean as much to the public as saying that specific neighborhoods will be affected and should be ready to evacuate. The second instance is more straightforward and uses actionable language. Using the term "1% annual exceedance flood" or "100-year flood" is also an instance where the expert will understand but the public may not. Likewise, the "100-year flood" often implies that a specific flood event only happens once in 100 years, which is not statistically correct. Further clarification and explanations are necessary. A lack of understanding may lead to inaction. You must consider the goals of your risk communication effort because at times you may not want to encourage specific actions. But if you are encouraging an action, the message and message delivery becomes exceedingly important.

Likewise, experts must listen to the public to understand the perceived risk and learn what contributes to the risk. In order to mend the communication disconnect between technical experts and the public, it is necessary to assess how the message is being received by the audience and what can be done to better communicate with the audience. You should keep in mind the value-based responses you may receive from the public and how you can appeal to that type of perception to risk. A multidirectional communication model is necessary in this situation.

When communicating technical information to the public, it is important to keep the three following things in mind: **motivation, simplification and orientation**. Motivate your audience to

want to understand the information being presented, keep the message simple and orient your audience to where you are going with the information and data being presented.

Using graphics is typically a beneficial way to present data and information to various audiences. When doing so, ensure that graphics are straightforward and clear. One point per graphic is typically a good rule of thumb. It is also important that information is presented in a way most conducive to ensure the audience understands the material.

You should also keep in mind what information the audience may have already been exposed to so that the message does not contradict that information. The audience may also benefit from a storytelling message delivery more so than a list of data sets that are not grounded in their everyday lives. Pictures and anecdotal stories also aid in making content simpler and relatable. Gauging audience response will aid in determining how the content can be better directed so that the audience effectively receives the necessary message in later efforts.

Orient the audience to the message, particularly when dealing with technical information. The communicator should ensure the audience knows what purpose each piece of information serves. When presenting information on a project being completed, the communicator should clearly indicate the progress of that project. The communicator should make sure he is not telling the audience more than he knows. There is always some degree of uncertainty that the audience needs to understand as well; this component of risk communication is addressed in the uncertainty learning module.

7.3 Perception Driven Communication Strategies

The different ways we perceive risk lead to some very different risk communication strategies. The outrage and actual danger do not always align accurately (see the figure below). The four communication model system depicted below is taken from Peter Sandman's research. Each quadrant warrants a different strategic approach to risk communication. The level of hazard and outrage determines the communication approach, which include public relations, precaution advocacy, outrage management and crisis/emergency risk communication.

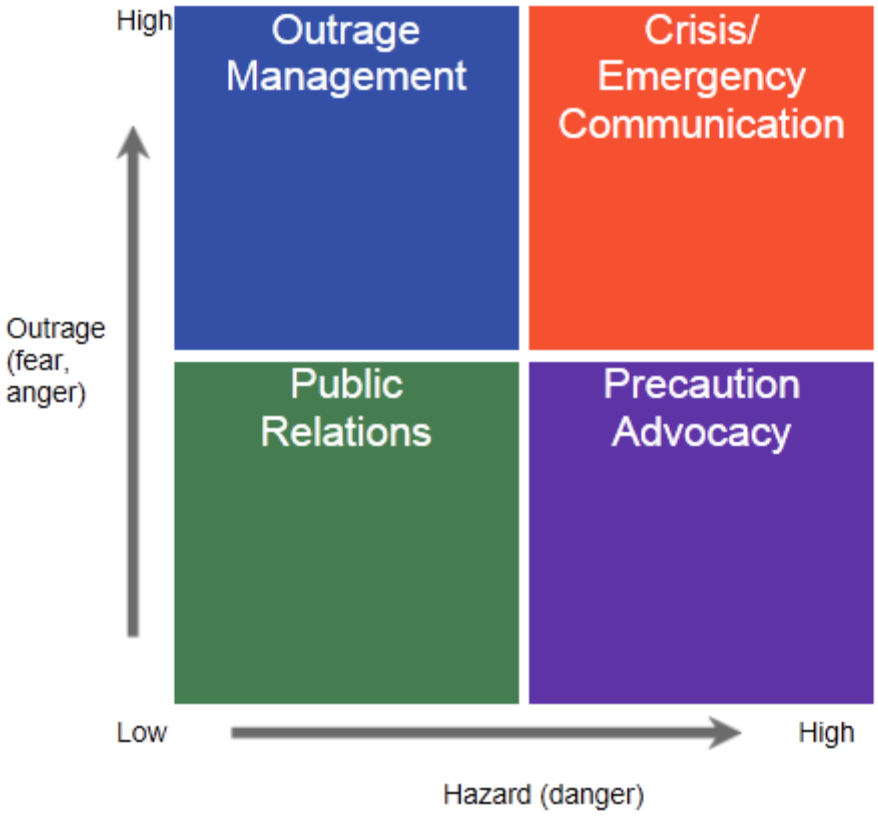

Figure 16: Peter Sandman's four risk communication approaches. [16]

Crisis/Emergency Communication

This quadrant depicts the crisis/emergency risk communication strategy in the four part communication model. In these instances, both the hazard and outrage present are high. The goal in these instances is to acknowledge the hazard, and validate concerns. In doing so, your goal is to give people ways in which they can act and respond to the event. A bioterrorism

event or a devastating disaster would be examples of events that would lead to crisis and emergency communication.

Outrage Management

This quadrant explores the outrage management approach of the communication model. In outrage management communication, hazard is low, but outrage is high. The goal in these circumstances is to reduce outrage so that people do not take unnecessary precautions. People being outraged with and fearful of genetically modified foods is a good example of a situation requiring outrage management. The perceived risk has led to high outrage, when the actual hazard is low.

Precaution Advocacy

The precaution advocacy quadrant expresses an event where hazard is actually high, but the outrage present is low. The goal in this instance is to increase fear to motivate preventative action: increasing fear to be aligned with the actual hazard present. Mercury in fish would be an example for precaution advocacy, since the actual hazard is higher than the level of outrage or awareness of the danger.

Public Relations

Situations of low hazard and low outrage are best served by standard public relations communications, which may be brief messages that reinforce your goals.

---

[16] *Sources:* National Center for Food Protection and Defense/International Food Information Council Risk Communication. (2009). *Risk communicator training, Module 1: Introduction to risk communication.* Retrieved November 19, 2012 from: http://www.foodinsight.org/Content/6/M1%20Intro%20to%20Risk%20Comm%20GUIDE%201%2020%2007.doc Sandman, P. (2003). *Four kinds of risk communication.* Retrieved November 19, 2012 from: http://www.psandman.com/handouts/sand17.pdf

Chapter 8 - Risk Communication Outcomes

8.0 Risk Communication Outcomes

The desired outcome of risk communication will vary depending on the circumstances involved. Communication efforts should be designed with the eventual outcome in mind. Some, but not all, desired outcomes to consider include: [17]

- A more informed public
- Decreasing the number of cases of illness, injury and deaths
- Reducing the amount of property and economic losses
- Gaining support for the plan of action
- Keeping decision-makers well informed
- Countering or correcting rumors
- Fostering informed decision-making concerning risk

These outcomes will vary with each of the USACE Civil Works mission areas. Additional desired USACE outcomes include:

- Maximizing the public's understanding and participation in risk-related decisions
- Collecting information about how various communities currently handle flood risks
- Informing the public of their flood risks
- Soliciting input about species of interest within a project area
- Encouraging the responsible use of water supply
- Describing the mission of a project

---

[17] Adapted from: National Center for Food Protection and Defense/International Food Information Council Risk Communication. (2009). *Risk communicator training, Module 1: Introduction to risk communication.* Retrieved November 19, 2012 from: http://www.foodinsight.org/Content/6/M1%20Intro%20to%20Risk%20Comm%20GUIDE%201%2020%2007.doc

Chapter 9 - Communicating Complexities

9.0 COMMUNICATING COMPLEXITIES

The Advisory Committee on Water Information's (http://acwi.gov/hydrology/Frequency/B17bFAQ.html) webpage poses these two questions:

- **Question 1: What is the 100-year flood?** Twice in the past 10 years, government officials have said that our river has had a 100-year flood. How can this be?

- **Question 2: What is a recurrence interval?** My house was damaged by a flood last year, and I'm using my flood-insurance payment to make some improvements as well as repairs. A government report said that the recurrence interval was 100 years, and my friend who's doing the work says that it's safe to make the improvements because another flood won't occur for 99 more years. Is that right?

These are good examples of some of the kinds of communication issues USACE has faced in non-crisis communication situations. Addressing quantitative information and uncertainty are ongoing challenges for USACE analysts. This is why it is important for USACE to ensure it is motivating and orienting the audience to pay attention to the message, and that it is presenting information in a way that is simple and straightforward.

There are several things to keep in mind when considering how to ensure the audience is taking away the right things from a given message:

1. Motivate the audience to be interested in and respond to the message you are delivering. If numbers will be used, they need to be relatable figures that a person can see the relationship between the data and their lives.
2. Keep graphics and messaging simple and straightforward.
3. Orient the audience to the direction of your message and uncertainty. It is best to let the audience know how much uncertainty is involved so they can be oriented with those factors of risk.
4. Give the audience the freedom to think and process for themselves. It is best to present all the necessary information in the most accessible way, but be careful of directing the audience as to how they should think or feel about the information, as it is not your place to tell the public what to think.

The OMB Memo, M-07-13, *Updated Principles for Risk Analysis* (https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/regulatory_matters_pdf/m07-24.pdf), offers some important advice to keep in mind when communicating complex information, including the following[18]:

- ***Explain the basis for significant assumptions, data, models and inferences used or relied upon in the assessment or decision.***

  More information:

  > "A high degree of transparency with respect to data, assumptions, and methods will increase the credibility of the risk analysis, and will allow interested individuals, internal and external to the agency, to better understand the technical basis of the analysis."

- ***Describe the sources, extent and magnitude of significant uncertainties associated with the assessment or decision.***

  More Information:

  > "Deliberative and consistent methods of treating and communicating uncertainties add credibility and salience. Regardless of method (statistics, sensitivity analysis, scenario development, or expert judgment), each measure must be defined and communicated in a consistent manner."
  >
  > "The agency also should identify the sources of the underlying information (consistent with sensitive information and confidentiality protections) and the supporting data and models, so that the public can evaluate whether there may be some reason to question objectivity. Data should be accurately documented, and error sources affecting data quality should be identified and disclosed."

- ***Make appropriate risk comparisons, taking into account, for example, public attitudes with respect to voluntary versus involuntary risk.***

  More Information:

  > "When making risk comparisons, agencies should be careful to consider the perspectives, assumptions, attitudes and context that the public associates with each risk... Although the risk assessor has considerable latitude in making risk comparisons, the fundamental point is that risk should be placed in a context that is useful and relevant for the intended audience. Furthermore, effective communication of risk information can assist the public in balancing benefits and risks. As our understanding regarding the presentation of risk information to policy makers and the public continues to develop, so too will agencies' presentation and discussion of risk comparison information."

- **Provide timely, public access to relevant supporting documents and a reasonable opportunity for public comment.**

  More Information:

  > "Agencies should refer to OMB's Final Bulletin for Agency Good Guidance Practices, as well as the Peer Review Bulletin, for updated guidance regarding best practices for increasing public access and public comment concerning guidance documents and influential scientific information. In addition, as noted in the OMB Information Quality Guidelines, influential risk analyses should be reproducible. For guidance on how to provide the public with timely access to government information, Agencies should refer to OMB's Circular A-130, which addresses the management of Federal information resources, and OMB Memorandum 06-02, which addresses improving public access to Federal information."

---

[18] Executive Office of the President, Office of Management and Budget. (September 19, 2007). M-07-24, Memorandum for the Heads of Executive Departments and Agencies: *Updated principles for risk analysis*. Retrieved August 13, 2012 from http://www.whitehouse.gov/sites/default/files/omb/assets/regulatory_matters_pdf/m07-24.pdf

Chapter 10 - Visualizing Data

10.0 VISUALIZING DATA

Motivating the public to be interested in your data is often the most important task associated with risk communication. How do you get people to care about your hydrologic and hydraulic data? How can they use your habitat suitability information? Are there other uses for what you learned in your geotechnical explorations or your seismic analyses?

Finding innovative ways to make the masses of data available to people is a looming challenge. The visualization of data is getting more attention in a wide variety of fields. A few websites that introduce this subject matter are found below. Now is a good time to begin considering new ways of presenting your information.

Many Eyes (http://www.research.ibm.com/social/projects_manyeyes.shtml): This is an experiment by IBM Research that enables you to explore data using your eyes. The site allows the entire Internet community to upload data, visualize it and talk about their discoveries with others.

Gapminder (http://www.gapminder.org/): Figure 17 is an innovative project to bring a fact-based view of the world to the desktop. For example, multivariate, time-series cross-sectional data displays can be used to develop rich understanding of data.

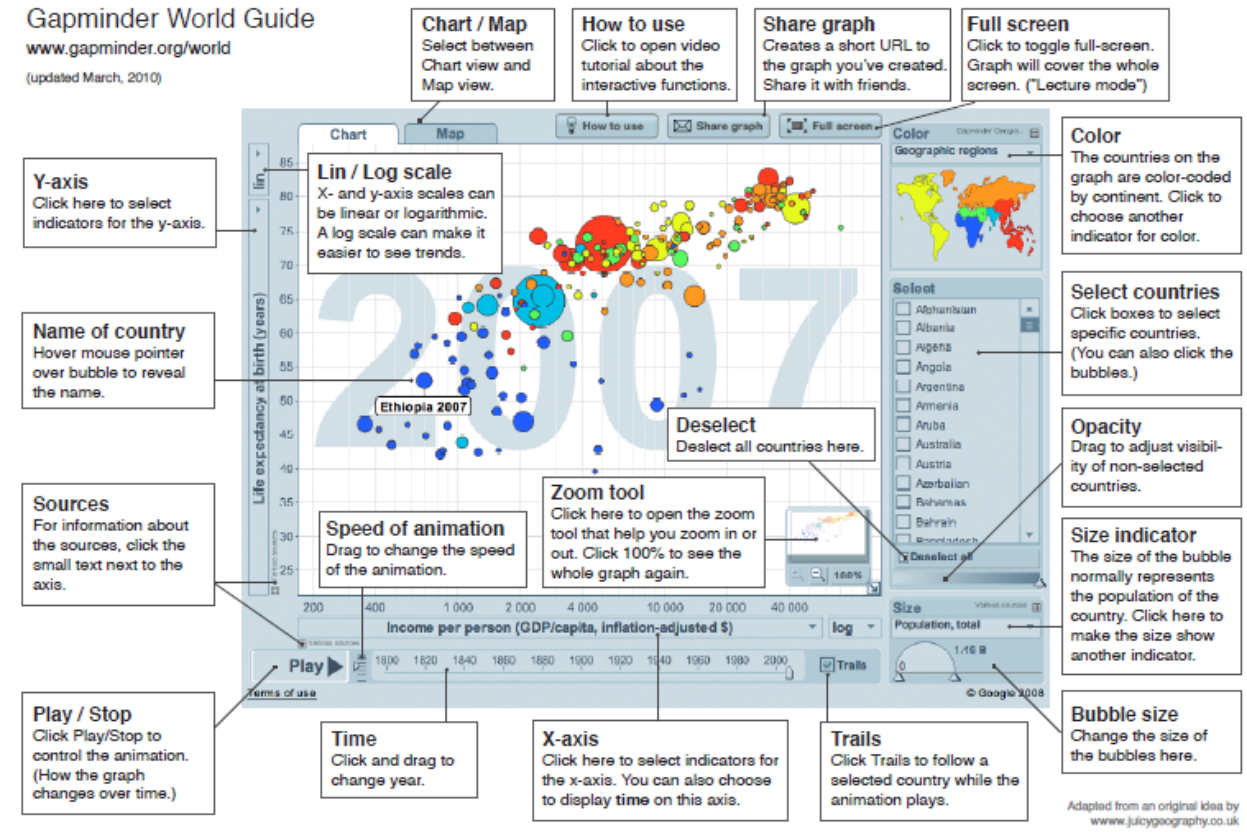

Figure 17: Visualization of Data from Gapminder World Guide

International Shark Attack File (http://www.flmnh.ufl.edu/fish/sharks/statistics/statistics.htm): This Florida Museum of Natural History site provides effective examples of some very traditional data presentations. This page with multiple (http://www.flmnh.ufl.edu/fish/sharks/statistics/pop2.htm) thumbnails provides a good example of multivariate data used to present a great deal of information in a small space.

Riskometer.Org (http://riskometer.org/): This American Council on Science and Health site enables the user to access information in ways that are of most interest to the user.

The work of Edward Tufte (http://www.edwardtufte.com/tufte/), a data visualization expert, is another good source of ideas.

Chapter 11 - Summary and Conclusions

11.0 Summary and Conclusions

Risk communication is one of three essential tasks of risk analysis. It is the open, multidirectional flow of information and opinion about risks and their management. In the past, the value of risk communication has often been overlooked by new practitioners of risk analysis.

Key things to keep in mind with risk communication include the following:

- Maintain a multidirectional flow of information, taking the audience's feedback into account.
- Orient the public to uncertainty.
- Keep the target audience in mind when creating a message.
- Continually assess the effectiveness of risk communication to improve and re-direct messaging and communication.
- Remember to consider the differing perceptions of risk and account for them in your effort.
- Create toolkits and stakeholder lists in order to proactively conduct risk communication.
- Empathy is often more important than technical expertise.
- Overwhelming an audience with technical information may be counterproductive.
- USACE has a responsibility to communicate risk and should do so responsibly and strategically.

Chapter 12 - USACE Resources and Expertise

12.0 USACE Resources and Expertise

There is expertise within USACE that can assist in risk communication, providing strategic communication plan templates or additional expertise in this area:

- USACE Public Affairs offices
- USACE Collaboration and Public Participation Center of Expertise (https://www.iwr.usace.army.mil/About/Technical-Centers/CPCX-Conflict-Resolution-Public-Participation/)
- USACE Public Affairs also developed an online Strategic Communication Planning Online Worksheet Generator.

There are several courses on risk communication and similar topics available to USACE employees and other federal agencies through PROSPECT training. See also *Risk Communication Training* resources from presentations given at the 2011 (agenda day three) and 2012 (Monday) USACE Flood Risk Management and Silver Jackets Workshops.

Additionally, please check the websites, learning center, and additional self-training modules available on this Risk Analysis Gateway website.

The Institute for Water Resources online library (https://iwrlibrary.planusace.us) also has a number of references to the research of risk communication within USACE:

- Guidebook for Risk Perception and Communication in Water Resources Planning, Part I - Underpinnings and Planning Applications, Report 93-R-13 (http://www.iwr.usace.army.mil/Portals/70/docs/iwrreports/93-R-13.pdf)
- Guidebook for Risk Perception and Communication in Water Resources Planning, Part II - An Annotated Bibliography, Report 93-R-14 (http://www.iwr.usace.army.mil/Portals/70/docs/iwrreports/93-R-14.pdf)
- Applied Risk Communication Within the Corps of Engineers, Report 96-R-14 (http://www.iwr.usace.army.mil/Portals/70/docs/iwrreports/96-R-14.pdf)

Chapter 13 - Self Assessment

13.0 Self Assessment

1. Risk communication is always a unidirectional flow of information.

   - True
   - False

2. Which of the following is not a goal of risk communication?

   - a. Tailor communication so it takes into account the potential emotional responses to an event.
   - b. Empowers stakeholders and the public to make informed decisions.
   - c. Enables risk managers to influence those at risk to take the right action.
   - d. Prevent negative behavior and/or encourage constructive responses to crisis or danger.

3. Internal communication is critical to external communication strategies.

   - True
   - False

4. Which is not one of the five USACE communication principles?

   - a. Communicate the USACE vision, mission, capabilities and current work to stakeholders, partners and audiences in a consistent, USACE-wide way—speaking with one voice.
   - b. Announce the USACE intentions to stakeholders and then assist them in implementing USACE strategies.
   - c. Establish a unifying corporate identity to help USACE customers and partners see this agency as "One Team," highlighting its ability to be ready and responsive.
   - d. Build a culture of commitment to public openness and transparency in all actions USACE staff takes, strengthening relationships and demonstrating the agency's reliability and dedication to making the best possible decisions and recommendations for the Nation.
   - e. Make every USACE employee a well-informed, involved and empowered communicator of our work, principles, values, strategic visions and campaign goals.

5. Crisis communication is usually a unidirectional flow of information.

   - True
   - False

6. Competence and expertise are always the most important attributes of a risk communicator.

   - True
   - False

7. In high stress situations, what are the most important attributes of a risk communicator?

   - a. Listening, caring, and empathy
   - b. Honesty and openness
   - c. Competence and expertise

8. The three M's of risk communication are:

   - a. Message, message, message
   - b. Motivation, message, media
   - c. Motivation, message, messenger
   - d. Message, media, messenger

9. The risk communication message challenge may be summarized as:

   - a. 24/7
   - b. 3/3/3
   - c. 27/9/3
   - d. 6/3/1

10. What is the proper strategy when outrage is low and hazard is high?

    - a. Outrage management
    - b. Precaution advocacy
    - c. Crisis/emergency management
    - d. Public relations

11. What is the proper strategy when outrage is low and hazard is low?

    a. Outrage management

    b. Precaution advocacy

    c. Crisis/emergency management

    d. Public relations

12. When communicating complex information, what is not one of the Updated Principles for Risk Analysis (OMB Memo, M-07-13):

    a. Explain the basis for significant assumptions, data, models and inferences used or relied upon in the assessment or decision.

    b. Describe the sources, extent and magnitude of significant uncertainties associated with the assessment or decision.

    c. Limit the technical information that is available to the general public.

    d. Make appropriate risk comparisons, taking into account, for example, public attitudes with respect to voluntary versus involuntary risk.

    e. Provide timely, public access to relevant supporting documents and a reasonable opportunity for public comment.

SELF ASSESSMENT – ANSWERS

1. Risk communication is always a unidirectional flow of information.

   - True INCORRECT
   - False **CORRECT**

2. Which of the following is not a goal of risk communication?

   - a. Tailor communication so it takes into account the potential emotional responses to an event. INCORRECT
   - b. Empowers stakeholders and the public to make informed decisions. INCORRECT
   - c. Enables risk managers to influence those at risk to take the right action. **CORRECT**
   - d. Prevent negative behavior and/or encourage constructive responses to crisis or danger. INCORRECT

3. Internal communication is critical to external communication strategies.

   - True **CORRECT**
   - False INCORRECT

4. Which is not one of the five USACE communication principles?

   - a. Communicate the USACE vision, mission, capabilities and current work to stakeholders, partners and audiences in a consistent, USACE-wide way—speaking with one voice. INCORRECT
   - b. Announce the USACE intentions to stakeholders and then assist them in implementing USACE strategies. **CORRECT**
   - c. Establish a unifying corporate identity to help USACE customers and partners see this agency as "One Team," highlighting its ability to be ready and responsive. INCORRECT
   - d. Build a culture of commitment to public openness and transparency in all actions USACE staff takes, strengthening relationships and demonstrating the agency's reliability and dedication to making the best possible decisions and recommendations for the Nation. INCORRECT
   - e. Make every USACE employee a well-informed, involved and empowered communicator of our work, principles, values, strategic visions and campaign goals. INCORRECT

5. Crisis communication is usually a unidirectional flow of information.

   - True **CORRECT**
   - False INCORRECT

6. Competence and expertise are always the most important attributes of a risk communicator.

   - True INCORRECT
   - False **CORRECT**

7. In high stress situations, what are the most important attributes of a risk communicator?

   - a. Listening, caring, and empathy **CORRECT**
   - b. Honesty and openness INCORRECT
   - c. Competence and expertise INCORRECT

8. The three M's of risk communication are:

   - a. Message, message, message INCORRECT
   - b. Motivation, message, media INCORRECT
   - c. Motivation, message, messenger INCORRECT
   - d. Message, media, messenger **CORRECT**

9. The risk communication message challenge may be summarized as:

   - a. 24/7 INCORRECT
   - b. 3/3/3 INCORRECT
   - c. 27/9/3 **CORRECT**
   - d. 6/3/1 INCORRECT

10. What is the proper strategy when outrage is low and hazard is high?

    - a. Outrage management INCORRECT
    - b. Precaution advocacy **CORRECT**
    - c. Crisis/emergency management INCORRECT
    - d. Public relations INCORRECT

11. What is the proper strategy when outrage is low and hazard is low?

    a. Outrage management INCORRECT

    b. Precaution advocacy INCORRECT

    c. Crisis/emergency management INCORRECT

    d. Public relations **CORRECT**

12. When communicating complex information, what is not one of the Updated Principles for Risk Analysis (OMB Memo, M-07-13):

    a. Explain the basis for significant assumptions, data, models and inferences used or relied upon in the assessment or decision. INCORRECT

    b. Describe the sources, extent and magnitude of significant uncertainties associated with the assessment or decision. INCORRECT

    c. Limit the technical information that is available to the general public. **CORRECT**

    d. Make appropriate risk comparisons, taking into account, for example, public attitudes with respect to voluntary versus involuntary risk. INCORRECT

    e. Provide timely, public access to relevant supporting documents and a reasonable opportunity for public comment. INCORRECT