Chapter 3

Identifying Who Needs to Know What and When

It's Not a Surprise What Your Audiences Need to Know

Chapter Objectives

- Describe the differences between partners and stakeholders.
- Identify audience segments during a health emergency.
- Compare and contrast stakeholder types of advocates, ambivalents, and adversaries.
- List different information needs for audience segments.
- Recall how public health law impacts emergency risk communication.
- List at least three laws or statues that impact emergency risk communication.
- Describe public health legal powers.

Emergency Risk Communication Messaging Starts with Precrisis Planning

During precrisis planning, emergency risk communicators have the opportunity to consider the unique information needs of the general public audience, stakeholders, and partners, and what each of these groups will want to know during a health emergency. With strategic planning, emergency risk communicators can identify and prepare content during the precrisis phase that can be adapted and tailored for audiences, stakeholders, and partners during a health emergency. Discerning between audiences, stakeholders, and partners is necessary for emergency risk communicators to ensure the right message gets to the right audience at the right time.[1]

Identifying audiences starts with understanding who needs to receive information from the health agency about the health emergency. Any person or group receiving information during a health emergency makes up an audience. Audiences can also be identified as internal or external. *Internal audiences* include those people and groups who are considered within the health agency. For example, employees of a health department make up an internal audience. Sometimes, state health departments will consider county health departments to be an internal audience as they are found within the public health system for the entire state. *External audiences* are those people and groups who are outside the health agency or the public health system. For example, elected officials, community-based organizations, private companies, or educational systems can be external audiences as they are outside the health agency.

To further differentiate audiences, it is important to understand the audiences' relationships or network affiliations to the health agency. An audience's relationship or network affiliation can give it a unique label of a stakeholder or a partner. *Stakeholders* are individuals or groups that have a special connection to the health agency or are

involved in the health emergency and are very interested in how the incident will impact them.[1] Stakeholders can include cases or ill individuals, family members of cases or ill individuals, elected officials, or businesses. In contrast, *partners* have a working relationship with the health agency. Partners collaborate in an official capacity during the health emergency response. They play an official role within the incident management team or incident command structure; often partners have a legal responsibility to be involved in the health emergency response. Partners include other government agencies such as emergency management, environmental health, or transportation. Depending on how state and local government manages emergencies, some nonprofit organizations, like the local Red Cross chapter or the nonprofit 2-1-1, may be official partners and have a designated role in the health emergency response.

As outlined in Chapter 2, multiple public health emergency preparedness (PHEP) capabilities specifically identify stakeholders and partners who are essential to supporting a health emergency response. Although there are 15 PHEP capabilities, emergency risk communicators need to take particular note of the following capabilities that impact emergency risk communication messaging and activities:

- Capability 1: Community Preparedness
- Capability 3: Emergency Operations Coordination
- Capability 4: Emergency Public Information and Warning
- Capability 6: Information Sharing
- Capability 11: Nonpharmaceutical Interventions

Table 3.1 is based upon the Centers for Disease Control and Prevention (CDC) Office of Readiness and Response's PHEP capabilities and identifies partners and stakeholders by PHEP capability.[2]

Including the identification of stakeholders and partners in the PHEP capabilities demonstrates the importance of understanding audiences and discerning whether the audience is a stakeholder or partner. Audiences, stakeholders, and partners will have unique information needs, and emergency risk communicators need to be prepared to respond to inquiries and provide these groups with the right message at the right time.

Identifying Audience Segments and How They Are Different from Each Other

Internal Audiences

Internal audiences include those people and groups who are considered within the health agency or public health system. Internal audiences for health emergencies include employees of the health agency responding to the incident. Depending on the organization of the public health system within the state and location, county health agencies could also be considered an internal audience. For smaller health departments, many employees will be involved with the emergency response, so internal communication will be easier since most of the health department staff will be involved in the response. But for larger health departments that provide many health programs and services, public health services will continue even during a health emergency. When this occurs, it is important that staff who are not working on the emergency response are aware of what is happening. This is crucial because even though they are not working on the response or

Table 3.1 Identification of partners and stakeholders that would support activities related to Public Health Emergency Preparedness capabilities

Capability	Partners	Stakeholders
Capability 1: Community Preparedness	Emergency management, emergency medical services (EMS), environmental health agencies	Media organizations, volunteer organizations, childcare organizations, health care systems and providers*
Capability 3: Emergency Operations Coordination	Emergency management, public health agencies, public health laboratories, tribes and native-serving organizations	Volunteer organizations, advisory councils
Capability 4: Emergency Public Information and Warning	Emergency management, EMS, 911 authority, poison control centers*	Media organizations, community and faith-based organizations
Capability 6: Information Sharing	Emergency management, EMS, environmental health agencies, tribes and native-serving organizations, hazardous material regulators and responders	Pharmacies, private-sector organizations, health care coalitions*
Capability 11: Nonpharmaceutical Interventions	Environmental health agency, law enforcement, legal authorities, mental/behavioral health agencies	Businesses, community and faith-based organizations, school districts, travel and transportation agencies, groups representing and serving populations with access and functional needs

* Depends on how state and local governments manage health emergencies through the incident command structure.

serving as spokespeople, they are likely to be asked questions by friends, neighbors, their family, and other people in their personal networks.

External Audiences

External audiences are people and groups who are outside the health agency or the public health system. External audiences will be made up of stakeholders and partners who will have information needs. Audience segmentation can help emergency risk communicators differentiate among segments of external audiences, identify their information needs, and create messaging that resonates with each audience segment.

Audience Segmentation

The general public constitutes several different types and groups of people with their own ways of relating, communicating, and sharing information. To ensure messages reach and resonate with an audience, it is important to identify different audience segments and create messages designed for that audience. During an emergency, early

Table 3.2 Variables that need to be considered for audience segmentation

Variable	Consideration
Risk level	Determine who is most at risk based on current health threat
Location or proximity	Determine who is closest to the risk or health threat
Health condition	Determine who has current health conditions that may put them at a heightened risk (e.g., age, underlying medical conditions, pregnancy)
Mobility	Depending on socioeconomic status, age, and/or health status, some people may not be able to leave an impacted area as easily as others
Visual/auditory/English proficiency	Determine who may need to receive the information in multiple media formats or languages
Employment	Determine whether there are particular industries that are affected by the health crisis
Education level and health literacy	When dealing with health emergencies it is important to use plain language for nonmedical audiences
Values	Determine what the audience segment values, believes in, and supports
Organizational affiliations	Determine what organizations individuals in this segment belong to or associate with
Media and technology access	Determine in what ways this group communicates and how can they be reached

messages will often focus on those most at risk based on health risk, the location of the health emergency, and underlying or chronic medical conditions. The development of emergency messages is discussed in detail in Chapters 6–9.

Audience segmentation has its roots in social sciences and social philosophy, with modern influences from psychology and marketing.[3] Public relations scholar James E. Grunig offers a basic definition of audience segmentation: "divide a population, market, or audience into groups whose members are more like each other than members of other segments."[4] The rationale for is that audience segments are more definable, accessible, reachable, and large enough to communicate with in an efficient way.[4]

To apply this thinking to emergency risk communication, "segments should be homogeneous with respect to patterns of variables (and values on those variables) determining the attitude and behaviors targeted by a communication effort."[3] The idea is that if audience segments can be identified, messages can be tailored for those groups.

Basic audience segmentation can begin with variables such as demographics, including age, race, gender, education, socioeconomic status, and geographic location.[5] Additionally, you should identify channels and ways to reach these individuals as well as determine how likely or able they are to take an action.[3,5] When identifying and grouping segments, it is key to ensure that the segments are distinct from each other, are related to the communication strategy, and are large enough to justify the time and effort required to target them.[5]

Understanding who is receiving your information is a critical factor in emergency risk communication planning and in strategic communications planning in general. Identifying audience segments during a health emergency draws upon basic audience segmentation variables as well as other variables unique to a health emergency (see Table 3.2).

Mini-Case Study: Audience Segmentation for Outbreaks

Applying audience segmentation is necessary in order for emergency risk communicators to get the right message to the right people at the right time. The following examples are of actual public health outbreak investigations, and they provide an opportunity to consider audience segmentation in small and large emergencies. These examples are real public health investigations that have been shared through the International Outbreak Museum (www.outbreakmuseum.com).

Case Study 1 (Reprinted through the International Outbreak Museum licensed under a Creative Commons Attribution-Noncommercial 4.0 International License)

On May 16, 2012, a local auto dealership called the Washington County (Oregon) Health Department to report a potential foodborne illness outbreak among employees who had attended a staff meeting on May 13. The meeting was held in an open space off the showroom floor. Submarine sandwiches, chips, and condiments from a nearby fast-food restaurant had been provided to attendees.

Environmental health staff conducted an onsite environmental inspection of the restaurant and its operations. Food handlers and restaurant managers reported no recent gastrointestinal illness (within the previous 2 weeks). No other patrons had complained of illness. The restaurant was cited for two violations defined by environmental health staff as critical: presence of potentially hazardous food not maintained at proper hot or cold holding temperatures; and presence of open beverages on the food preparation table. During interviews with dealership employees, one recalled that a customer with a sick child had used the diaper-changing station in the women's restroom before the lunch. When the woman and toddler left, the restroom was a mess. The employee cleaned it up as best she could with dry paper towels. She didn't wear gloves or use bleach but did wash her hands. She left the restroom, opened the dealership's front door for another employee carrying the food, and was the first to take a sandwich from the platter.

Applying Audience Segmentation

To identify audience segments in this outbreak, let's narrow in on three variables: risk level, location, and organizational affiliation (see Table 3.3). Using these three variables, we want to look at who is at risk of getting ill, what is their physical location with regard to the health threat, and what organization affiliations are present. First, those at risk include anyone who ate at the auto dealership. Second, anyone who was located within the auto dealership is also a potential audience segment – so here, we would include the mother who used the restroom. Next, in addition to the auto dealership, the other organization involved is the Washington County Health Department. For this small outbreak we have three potential audience segments: those who made the food, those who were physically located at the auto dealership, and those in the health department handling the investigation. Although this is a small outbreak, each audience segment will have its own information needs for this outbreak investigation.

Table 3.3 Risk by audience segment in Case Study 1

Variable	Audience segment
Risk level	Anyone who ate at the auto dealership
Location or proximity	Anyone who was at the auto dealership (including woman and toddler)
Organizational affiliation	Restaurant who supplied food, auto dealership employees, and Washington County Health Department employees

Mini-Case Study 2 (Reprinted through the International Outbreak Museum is licensed under a Creative Commons Attribution-Noncommercial 4.0 International License)

On May 27, 2007, Lane County Health and Human Services (LCHHS) received a report of a possible measles case admitted to a local hospital. The index case was in his 20s, unimmunized, and had been in Japan during his putative incubation period. A second case was identified later. The cases lived in a midsized urban community (population: 200,000) and, as was determined later, had active social lives. On May 31, Lane County officials confirmed the diagnosis of measles in the index case by polymerase chain reaction testing. His prodrome began on May 20. He flew on May 21 from Tokyo to San Francisco, and thence on May 22 to Eugene. His rash was first noted on May 25. He spent time at a local hospital emergency department (ED) and visited a health food store, naturopath, and Japanese restaurant during his communicable period.

The patient was not given a mask while in the ED waiting for his initial evaluation; rather, he was placed in a regular-airflow room and then wheeled through the hospital without wearing a mask and ultimately put in a taxi for the ride home. A review of the hospital's airflow system revealed that air from the emergency room (where the case had been housed but not isolated) was shared with the coronary care unit and mother and baby unit. The circulated air had a mixture of about 20% outside air and 80% recycled indoor air with 90–95% effective filtration and no high-efficiency particulate air (HEPA) filter.

During the investigation, the index patient refused to identify household contacts and did not respond to LCHHS phone calls, making contact investigation difficult. An unannounced home visit helped to clarify the situation and obtain new information.

Information regarding four persons exposed on airline flights was not received until 2 weeks after the likely exposure. A week later, health officials were informed of two additional persons considered to have been exposed, having sat next to or in front of the case, but phone numbers were not provided, and they had common last names. It also transpired that the case provided an incorrect seat number, and the model of the airplane was different from that listed on the airline's website, further confusing attempts to identify exposed persons.

A second, unimmunized case, who had socialized with the index patient on the night he arrived home from Japan, developed a febrile prodrome on May 30 and a rash consistent with measles on June 1. Koplik spots were visible. He declined lab testing.

Although nurses advised Case 2 to stay home to avoid spreading the disease, he went to public places. On May 29, Case 2 went to a hip-hop show at a local concert hall and then to a downtown bar. On the next night, he went out for sushi.

Table 3.4 Risk by audience segment in Case Study 2

Variable	Audience segment
Risk level	Ill individuals and individuals exposed to index case
Location or proximity	Local hospital, natural foods store, naturopath office, Japanese restaurant, concert venue, and airport
Organizational affiliation	Local hospital, natural foods store, naturopath office, Japanese restaurant, concert producers/venue organizers, and airport and airlines

Three bands that played at the hip-hop concert were on a national tour. During these shows, attendees typically stand, dance, and mingle, the band is on a stage just above the floor, and the band members often venture into the audience. The band members were in Utah when they were notified about their possible exposure, and specimens to verify immunity were collected in Colorado. The testing was performed at CDC in Georgia, and after the tests proved negative, the band members were vaccinated while performing in Iowa.

Applying Audience Segmentation

To identify audience segments in this outbreak, let's narrow in on three variables: risk level, location, and organizational affiliation (see Table 3.4). Looking at risk level, the first audience segment would include those who were ill (i.e., cases) and those who were exposed. For location, the second audience segment would include people at the local hospital, health foods store, naturopath office, Japanese restaurant, concert, and airport. For organizational affiliation, the third audience segment would include employees at the hospital, health foods store, naturopath office, airport and airlines, and the concert producers. This outbreak, although small, is complex because of the multiple locations the person with measles went and traveled to. There are multiple audience segmentation variables present in this case, but for ease we chose three to focus on for this activity.

Audience Segmentation: Stakeholders, Partners, and the Media

External audience segmentation can be further refined through differentiating stakeholders and partners. When emergency risk communicators identify audience segments that are stakeholders and partners, more clarity is achieved regarding message needs. As described earlier in this chapter, *stakeholders* are individuals or groups that have a special connection to the health agency or are involved in the health emergency and are very interested in how the incident will impact them.[1] Stakeholders can include cases or ill individuals, family members of cases or ill individuals, elected officials, or businesses.

The origins of understanding stakeholders are found in the field of business, emphasizing the interconnectedness of relationships between a business and its customers, suppliers, employees, investors, and communities and arguing that a business should create value for all stakeholders, not just formal shareholders.[6] Stakeholder theory provides a framework for management to consider regarding how to work with groups that are interested in and impacted by an organization even if they are not formal members of an organization.[7,8]

There are three important reasons why engaging with and tailoring messaging to communication stakeholders are important during health emergencies. First,

stakeholders have information that you don't know because they are outside your organization and can provide you with a point of view or information that you may not have access to. Second, stakeholders may have resources they could provide to aid the health agency's response. For example, a retailer might have access to bottled water and could provide this during an emergency response. Third, and finally, stakeholders can help communicate a health agency's message. They can help amplify the key emergency risk messages from the health agency through their own internal and external communication channels.

When engaging with stakeholders, it is important to identify the stakeholder type. The Crisis and Emergency Risk Communication (CERC) manual outlines three types of stakeholders:

- Advocates
- Ambivalents
- Adversaries

Advocates are stakeholders that are aligned with the health agency's mission, purpose, and overall messaging. Advocates will freely amplify the health agency's messages as they agree with and see mutual benefits to be gained from aligning with the health agency. Advocates are those who are already supporting your agency's mission and are on board with your agency's emergency response. When a health agency engages with advocate stakeholders, the key communication objectives are: (1) Maintain their trust; (2) follow through on any commitments the agency has made to the stakeholders; and (3) provide an opportunity to receive feedback from the stakeholders.

Ambivalent stakeholders are neutral stakeholders that do not fall on either side of an issue. Stakeholders in this realm generally neither agree nor disagree with the health agency; essentially, they are neutral. Ambivalent stakeholders observe, monitor, and watch the situation unfold. They will not be likely to take a public position on, amplify, or negate the health agency's messaging. When the health agency engages with ambivalent stakeholders, the key communication objectives are: (1) Maintain their neutral position and (2) engage with ambivalents when there is an opportunity to move them toward changing into the advocate stakeholder type. Ambivalents are often called the "moveable middle" by political strategists.

Adversary stakeholders do not agree with the health agency's mission, vision, or purpose and often actively work against the health agency's public messaging. When a health agency engages with adversary stakeholders, the key communication objective is to discourage any negative action they could take against the health agency. Table 3.5 provides a comparison of advocates, ambivalents, and adversaries.

Understanding stakeholder types and the relationships stakeholders have with a health agency is important for strategic communication planning and emergency risk communication. By understanding what stakeholders will help amplify the health agency's emergency risk communication, emergency risk communicators can work to ensure advocates receive the latest communication materials and products that can be shared with multiple audiences. In contrast, by identifying adversary stakeholders, emergency risk communicators can strategically prepare for when adversaries may troll public online social media posts and provide negative comments, or for what additional resources may be needed for an upcoming in-person public event that may be protested by adversary stakeholders. Finally, emergency risk communicators can also determine

Table 3.5 Comparison of stakeholder types

Type	Definition	Communication objectives
Advocate	Stakeholders that are aligned with the health agency's mission, purpose, and overall messaging	Maintain trust, follow through on commitments, and provide opportunities for feedback
Ambivalent	Stakeholders that do not fall on either side of an issue	Maintain their neutral position or engage when there is an opportunity to move them toward changing into the advocate stakeholder type (i.e., "movable middle")
Adversary	Stakeholders that do not agree with the health agency's mission	Discourage any negative action they could take against the health agency

what energy and resources to expend on ambivalent stakeholders and whether there truly is a moveable middle that could be persuaded to support the health emergency's operations. See also Chapter 8 on using health communication campaigns to promote action during long-term health emergencies.

As outlined earlier in this chapter, *partners* have a working relationship with a health agency. Partners collaborate in an official capacity during a health emergency response. They play an official role within the incident management team or incident command structure; often partners have a legal responsibility to be involved in a health emergency response. Partners include other government agencies such emergency management, environmental health, or transportation.

Partners have unique information needs during health emergencies because they play an official role in the emergency response. The information needs of partners often fall under PHEP Capability 3: Emergency Operations Coordination and Capability 6: Information Sharing. First, partners need to understand their response role based on the incident type and what they need to do to support the health emergency. This information is based on the emergency support functions located within the health agency's emergency operations plan. Examples of partners include but are not limited to emergency management, emergency medical services, environmental health agencies, tribes and native-serving organizations, and hazardous material regulators and responders. Second, partners need to be able to receive and send epidemiological data, resources and supplies, and other operational information about the health emergency response. Partners need to know meeting frequency, be given organization charts for response staff, approved talking points, schedules of media briefings, and reporting templates, and be told which internal systems and processes will be used to share data.

The media has a unique relationship with health emergencies as they constitute stakeholders with interests in the health emergency, but they can also be unofficial partners during the initial stages of a health emergency to help amplify emergency risk communication messaging, including on what people can do to protect their health. Over time, the media will shift from being unofficial partners to being more like vested stakeholders and watchdogs. For example, while initially the media will freely report what the public needs to do to stay safe from a health threat, over time the media will shift their focus to determining who is responsible, why the health emergency occurred,

what are the long-term impacts to the community, what are the solutions, and who is ultimately going to cover the costs and expenses to ensure this type of health emergency does not occur again in the future.[9] The media will use particular frames, or editorial lenses, to present the story. Common media frames used to report on disasters and emergencies include attribution of responsibility, human interest, conflict, morality, and economics.[10] Media frames will change over time throughout the life cycle and phases of a health emergency (see Chapters 6, 7, and 9). For example, during the initial and maintenance phases of the health emergency, media stories using the human interest frame will focus on who is impacted by the health emergency, such as highlighting fatalities and survivors. Human interest frames will also include stories about heroes and those who are going above and beyond to help those affected by the emergency. Over time, as the health emergency moves from the initial phase into the maintenance and then recovery phases, media frames of attribution of responsibility and economic impact will emerge.

Information Needs during a Health Emergency

This chapter so far has used audience segmentation to define and identify internal and external audiences through a set of variables including but not limited to health risk, location, and organizational affiliation. To further differentiate external audience segments, we identified whether the audience segment is classified as a stakeholder or partner. The media was discussed as a unique stakeholder. The current section outlines the information needs of internal audiences and external stakeholders and partners with consideration of their relationship to the health emergency.

Common Information Needs for Internal Public Health Audiences

- General information about the health emergency, approved talking points, and hotline numbers.
- If they are asked questions by stakeholders, where should they direct them? What are the key points of contact for the emergency response?
- What is the likelihood they may be pulled in as surge staff?
- How often will information be updated? Where can they find this information?
- Are there any upcoming media briefings?
- Media and social media policies.
- Human resources and staffing policy changes for health emergency work.

Common Information Needs for Stakeholders

- Best sources of official information about the health emergency.
- Health risk information (what is it, what signs and symptoms to look for).
- What to do to protect health – specific action steps.
- Where to find more information and contact information (website URLs, social media, and hotline/call centers).
- Upcoming media briefings and schedules.
- Upcoming town hall or public input sessions.
- How to provide feedback.

Common Information Needs for Official Partners

- Organizational chart of emergency staff with key contact information.
- Incident command structure meeting frequency.
- Reporting templates.
- Situational awareness information.
- How to report data.
- Approved talking points.
- Joint Information Center contact information.

Common Information Needs for the Media

- Latest information on health emergency (what happened, who is affected, what is the health risk).
- Statistics (fatalities, cases, hospitalizations).
- Costs and expenses related to emergency response activities.
- Attribution of responsibility.
- What the health department is doing to find the source of the outbreak.
- Name and title of spokesperson.
- Upcoming media briefings.
- Opportunities for interviews.
- B-roll related to the health emergency.
- Stock images of the virus (if applicable).

Five Common Mistakes Made with Stakeholders and Partners

Through strategic planning and open engagement, health agencies can develop empowered and mutually beneficial relationships with stakeholders and partners. However, there are five common mistakes that health agencies make with stakeholders and partners during health emergencies. By identifying and understanding these common mistakes, emergency risk communicators can work to prevent these actions from occurring and to effectively communicate with stakeholders and partners.

The five common mistakes that are made with stakeholders and partners are[1]:

- Inadequate access
- Lack of plain language
- Lack of empathy
- Timeliness
- Lack of input

Inadequate access means that the health agency has not provided access to key stakeholders and partners about the health emergency or emergency operations. A key function of PHEP planning is to identify stakeholders and partners, understand how the organizations will work together during a health emergency, and assign specific roles and responsibilities based upon emergency support functions. However, during fast-moving emergency responses and with novice emergency response staff, providing access to stakeholders and partners early in the response is often overlooked. It is important for emergency risk communicators and incident command staff to ensure stakeholders and

partners have access to health emergency information and emergency response operations and activities.

Lack of plain language means the health agency responding to the health emergency is using jargon and terminology that are unfamiliar and unknown to the audiences receiving the health messaging. The National Assessment of Adult Literacy revealed the following findings[11]:

- 53% of American adults have intermediate health literacy, meaning they can find the age range for a particular vaccine from a childhood vaccination chart.
- 22% of American adults have basic health literacy, meaning they can identify two reasons why a person should be tested for a disease based on an information pamphlet.
- 14% of American adults have below basic health literacy, meaning they can read instructions and take an action based on short instructions.

In short, 89% of the American adults are not proficient in health literacy. In this study, health literacy is determined by familiarity with everyday health-related words, having experience of the type of written material, and having knowledge of how the health care system works. This study revealed that only 11% of the American public is proficient in health literacy, meaning they are able to define a medical term.

For emergency risk communicators, it is important to remember health literacy when engaging with nonmedical audiences, including the general public, stakeholders, and even response partners. Using medical terms and government jargon with the majority of audiences during a health emergency will not effectively communicate important health and risk information. Instead, leverage plain-language techniques such as organizing information to serve the audience, choosing words carefully, and making information easy to find.[12] The US federal government has multiple resources to assist health communicators in using plain language.[12]

Lack of empathy means the health agency is unable to identify with, understand, or acknowledge the emotions experienced by stakeholders and partners. Often, working in organizations and businesses can feel impersonal and mechanical, as if the individual is a cog in a machine. This lack of personalization and connection to the human experience negatively impacts interactions and dialogue between health agencies and stakeholders and partners. The CERC principles outlined in Chapter 1 include the use of empathy during health emergency responses. Using empathy is not restricted to health leaders or spokespeople. Instead, any person working for a health agency or within the health emergency response can use empathy to humanize the experience, engage in active listening with stakeholders and partners, and acknowledge what the other person or group is experiencing. Empathy is a key ingredient to building and maintaining trust during health emergencies.

Timeliness is often tied to withholding information until more certainty is available. The CERC principles outlined in Chapter 1 include Being First with emergency risk communication. Being First means the health agency claims responsibility and authority for releasing official health emergency information as soon as possible. Often, agencies will want to wait to release information until they have complete certainty regarding its validity; unfortunately, this is often an unaffordable luxury during emergencies. Addressing uncertainty is a key component of emergency risk communication, and this is explicitly addressed in Chapter 6. Even if a health agency is not yet certain about a health emergency, by communicating early and addressing the uncertainty of a health

emergency, a health agency can build credibility, authority, and trust with stakeholders and partners.

Lack of input means that the health agency is not engaging with stakeholders and partners and is primarily internally focused. This includes making decisions about the health emergency without input from key stakeholders or response partners. By not providing adequate access for stakeholders and partners regarding decision-making, the health agency will be perceived at best as inaccessible and at worst as arrogant and paternalistic. Inadequate access can impact trust and damage relationships between a health agency and its stakeholders and partners. While some decisions will need to be made specifically by the lead responding agency, allowing opportunities for stakeholders and partners to provide input and feedback will ultimately serve the health agency in the long run. Empower stakeholders and partners to engage in decision-making and support their agency to provide input and feedback. By working together, the whole is often greater than the sum of its parts.

Mini-Case Study: Odwalla Juice Outbreak

On October 30, 1996, Odwalla, Inc. – a fresh juice company – was notified by the Seattle King County Health Department, based in Washington state, of a link between its unpasteurized apple juice and an outbreak of *E. coli* O157:H7.[13] The company immediately issued a voluntary recall and included 12 other juices in its recall. Although the company's product distribution was limited to six states in the United States (California, Colorado, New Mexico, Texas, Oregon, and Washington) and one province in Canada (British Columbia), the rise of online media and newswire services heightened global media attention. Odwalla issued refunds to customers and offered to pay for medical expenses associated with the outbreak.[13] Unfortunately, the outbreak led to the death of a 16-month-old and sickened 60 other children. Odwalla ultimately included a flash pasteurization process in its production procedures. This process kills bacteria within the juice but retains the flavor and freshness of the product.

Applying Audience Segmentation

To identify audience segments in this outbreak, let's narrow in on three variables: risk level, location, and organizational affiliation. Using these three variables, we want to look at who is at risk of getting ill, what is their physical location or proximity to the health threat, and what organization affiliations are present.

First, those at risk include anyone who drank the implicated juice. Second, location or proximity includes anyone who produced or sold the juice, anyone who bought the juice, and the government authorities who regulated food products. Next, the other organizations involved include consumers, grocery stores, suppliers, juice manufacturers, and the Odwalla company.

Understanding Information Needs

To identify information needs, emergency risk communicators need to understand the health risks and the audience segments. Using these two variables, emergency risk communications can identify what information these groups will need and provide each audience segment with the appropriate emergency risk communication messages. Table 3.6 shows the risk variables by audience segment and information needs.

Table 3.6 Risk variable by audience segment and information needs

Variable	Audience segment	Information needs
Risk level	Anyone who drank the implicated juice	Product lot numbers, how to dispose of product, obtaining a refund, and signs and symptoms of illness
Location or proximity	Anyone who produced the juice, anyone who sold the juice, anyone who bought the juice, and food regulators	Product lot numbers, location where juice was produced, source of fruit, how to dispose of product, obtaining a refund, and signs and symptoms of illness
Organizational affiliation	Consumers, grocery stores, suppliers, juice manufacturers, Odwalla, and the media	Product lot numbers, how to dispose of product, obtaining a refund, source of fruit, location where juice was produced, ongoing investigation: new processes to ensure bacteria are killed, when product can be sold again, situation overview, who is responsible, what is being done to stop the health threat, and signs and symptoms of illness

Understanding How Public Health Law Impacts Emergency Risk Information

Public health law is a field that focuses on legal practice, scholarship, and advocacy on issues involving the government's legal authorities and duties to protect the health and safety of individuals while balancing individual rights of autonomy and privacy. Public health law issues range from narrow questions of legal interpretation to complex matters involving public health policy, social justice, and ethics.[14] Public health law impacts emergency risk communication in two key ways:

1 Ensuring transparent communication and information sharing about risks to the communication
2 Protecting the autonomy and privacy of individuals impacted by the health threat

There are six key areas where public health and emergency risk communication intersect. These areas include defamation, the Privacy Act of 1974, the public's right to know, the Freedom of Information Act, 508 compliance, and public health legal powers. The following paragraphs highlight each of these key areas and its relevance for emergency risk communicators.

Defamation is exposing an individual or an organization to hatred or contempt. Defamation can lower the esteem of an individual in the eyes of others, and it causes an individual to be shunned and injures an individual in their business. There are two different forms of defamation: slander and libel. The spoken form is referred to as "slander," and the written form is called "libel." The key takeaway for emergency risk communication is the interplay between defamation and the right to privacy.

For example, statements warning the public about a specific individual who is spreading an infectious disease or a business location that has been contaminated by a toxic substance can give rise to libel allegations. Warning statements about someone who

is sick or statements about a business that might be contaminated by a toxic substance need to be discussed with the health agency's attorney before releasing any public information. Due to the Privacy Act of 1974, health agencies should never give out a patient's private information, including their name or personal address. Instead, aggregate the data and deidentify the person; simply provide information on the *case*, or ill individual. Reporters will always ask for information about the cases and will want the health agency to give as much information as possible.

The Privacy Act of 1974 prevents disclosure by government agencies of personal data about employees and others. These data include age, race, sex, and medical information. Additionally, the Health Insurance Portability and Accountability Act of 1996 (HIPAA) ensures personal medical records and individually identifiable health information cannot be released by a medical institution without the consent of the patient or the patient's legal guardian. For example, when a person visits the doctor, they will sign a HIPAA form to provide consent for a sample of their blood to be used in a research study, but the patient's personal identity will not be revealed in that study.

For emergency risk communicators providing information about an evolving outbreak, the media will ask about ill individuals affected by the health emergency. The health agency can provide general information such as their sex, age, and general location, but the health agency cannot release that their name, what their status is, or what hospital they are receiving treatment at unless the hospital has approved that information to be released publicly.

In contrast to private health information, there are some public health records that can be given to anyone. This means that everyone has a right to access such public records, including journalists. Examples of public records include birth and death certificates, accident reports, and complaints filed with the police. In Oregon, the state releases birth data on an aggregate basis. No individual birth data are provided that would allow someone to be identified as a particular individual, but rather the data are aggregated and deidentified.

Each state has enacted its own public records and public release laws. It is important for emergency risk communicators to be aware of public records laws in the state where they are working. These laws will dictate what types of information and data can and cannot be released during health emergencies.

The public's right to know is based on legislation related to hazards involving chemicals, transporting chemicals across state lines, and locations where chemicals are being stored. The legislation outlines that people have a right to know where these chemicals are being stored in their communities. For emergency risk communicators, it is important to keep this legislation in mind regarding potential environmental hazards and health emergencies. Additionally, while not specifically related to communicable or infectious diseases, emergency risk communicators can consider what the public wants to know about what the health agency is doing to respond to and mitigate health emergencies. Further, any documents produced after a health emergency to outline what the health agency learned ought to be released and posted to the health agency's website.

The Freedom of Information Act and state public records laws constitute federal and local legislation that gives the public the ability to request government files and government information.[15,16] Since the Freedom of Information Act is focused on the US federal government, each state in the United States will have its own public records laws.[16] The terminology at the state level includes but is not limited to Open Records

Laws, Public Records Laws, Public Record Disclosures, Freedom of Information, and the Public Information Act.

There are limitations on what can be accessed, but generally these acts and laws are established to ensure transparency in government decisions and use of resources. For government workers, this means that any emergency responses, emails, meeting minutes, and certain kinds of documents could be requested and released to the public.

508 compliance (Section 508 of the Rehabilitation Act of 1973) requires US federal agencies to provide accessible information to people with disabilities when using electronic and information technology.[17] Many state governments have passed local legislation requiring information and technology accessibility.[18] Government employees who create, review, or revise content need to ensure that such content is accessible to those with disabilities. Content includes documents, electronic signatures, PDFs, presentations, software and websites, spreadsheets, videos, audio files, and social media. For emergency risk communicators, accessibility not only includes those with disabilities but also those with limited English proficiency. Ensuring audiences can receive and understand emergency risk communications is critical to successfully sharing this information.

Public health legal powers relate to the authority that state and local health agencies have to manage health emergencies, communicable disease outbreaks, and other states that threaten public health. There are two ways in which public health authorities have power. First, power comes through the state health department via what are called *police powers*. Police powers are granted by the 10th Amendment to the Constitution. Under these police powers, states have the authority to enact and enforce public health law, and this is often delegated to the state health department. This means that the health department must undertake reasonable attempts to protect and promote the public's health, safety, and general welfare. This is the basic mission and legal authority of a state health department. In a health emergency, the authority of a public health agency can be more broad, such as through the enactment of the Model State Emergency Health Powers Act.[19] Within this Act, during a public health emergency, the state government and often specifically the Health Officer has the authority and power to enact certain activities to protect the public's health. For example, in Oregon, if a public health emergency is officially declared by the governor, the state health director becomes the lead person in responding to the emergency, has the lead authority in responding to the event, and gets to decide on how restrictive public health intervention measures can be with regard to isolation and quarantine.

The second way in which health authorities have power is through delegation of authority to local health departments. This occurs via how the state government manages the administrative functions of the public health code. For example, state creates legal codes and statues to establish a local government's authority, which is called *home rule*. Most states have given local health departments the right of local self-governance, which means that the local health departments have the right to make decisions concerning their own welfare.[20] This means that local health departments can make decisions without requiring approval from the state government.

It is important for emergency risk communicators to understand the scope of the authority and independence of state and local health departments when planning for and responding to public health emergencies. If local authorities are able to act without approval from other health authorities, then county Health Officers can make decisions in one county that may differ from a Health Officer's decisions in a neighboring county.

This can cause complications when counties share news media markets or counties include high numbers of commuters who live in one county and work in another. Risk communicators need to ensure coordinated and consistent emergency risk communication messages are produced. This often occurs during precrisis planning when health departments come together to discuss how they will manage a health emergency. Additionally, depending on the scope and scale of the health emergency, the state health department may be able to step in and manage a heath emergency that spans multiple jurisdictions (i.e., a multicounty outbreak) requiring the coordination of resources and communications in order to effectively respond.

A major challenge in the United States regarding public health authorities is the friction between the benefit to the community and individual liberties. As outlined earlier, during large-scale health emergencies, public health may be given to the health authority to restrict activities in order to protect the public's health. During COVID-19, health authorities implemented strict isolation and quarantine activities advising no travel and requiring telework and online education for children.[21,22] However, the longer the COVID-19 outbreak went on, the less willing some of the American public was to continue with such strict public health interventions, including the wearing of masks and receiving multiple vaccinations.[22] In response to the COVID-19 outbreak, some state legislatures are working to restrict the power of health authorities to protect the public's health.[22,23]

Theory Callout: Stakeholder Management Theory

Stakeholder management theory developed out of the business and management field by discerning the differences between shareholders and other individuals or businesses that might have nonmonetary interests in a company.[6] When this theory was developed, it was novel for a company to consider the interests of people or businesses that were not directly monetarily benefiting by the company.[7,8]

Using stakeholder management theory, emergency risk communicators can consider the level of influence each stakeholder has with the health agency. The amount of influence and the prominence of the stakeholder within the public health system (i.e., their networks and presence) can affect what and how the health agency manages the health emergency. As described earlier in this chapter, *stakeholders* are individuals or groups that have a special connection to the health agency or are involved in the health emergency and are very interested in how the incident will impact them.[1] Stakeholders can include cases or ill individuals, family members of cases or ill individuals, elected officials, or businesses. Emergency risk communicators need to consider the unique information needs of each stakeholder and to develop messaging that resonates with each stakeholder.

Case Study: The Water Crisis in Jackson, Mississippi

Jaime Jimenez, MPH

Overview of the Water Crisis in Jackson, Mississippi

Ensuring people have access to clean water for drinking, domestic use, food production, or recreational purposes is critical to maintaining public health.[24] When water is not properly treated or poor sanitation develops, preventable diseases can occur, such as cholera,

diarrhea, dysentery, hepatitis A, typhoid, and polio.[24] When there is inadequate management of urban, industrial, and agricultural wastewater, the drinking water of hundreds of millions of people potentially becomes dangerous.[24]

Jackson, Mississippi, experienced intense rain in late August 2022. This led to the compromising of the city's primary water treatment facility: the O.B. Curtis Water Plant.[25] The city declared a water crisis between August 30 and September 15, impacting 150,000 residents. In Jackson, one in four people live in poverty, making conditions even worse for the number of these individuals who rely on tap water.[25] Jackson's Mayor, Chokwe Antar Lumumba, was pivotal in communicating with residents. The mayor leveraged the City of Jackson's communication resources and social media account to reach the city.

Timeline of Key Events

- August 26: Residents are updated on the recent flooding; the City of Jackson advises those that were impacted by the 2020 flooding to make evacuation plans in the next 48 hours.
- August 29: Flooding affects the O.B. Curtis Water Plant; water is not being treated.
- August 29: Mayor Lumumba declares a water system emergency in Jackson.
- August 30: Boil water notice is still in effect; water distribution sites are opened in partnership with the Jackson Municipal Airport Authority.
- August 31: A water system update was provided and noted that the overall water pressure had decreased to 40 PSI.
- September 1: A water system update is provided, and the O.B. Curtis Water plant makes progress but still experiences problems.
- September 2: A water system update is provided, and the plant output increases to 80 pounds per square inch (PSI). The ideal pressure is 87 PSI to adequately supply the entire system.
- September 3: A water system update is provided, and the plant output increases to 86 PSI; challenges are still present.
- September 4: A water system update is provided, and the plant output increases to 90 PSI; challenges are still present. All of Jackson should have some pressure and most resident should have normal pressure. A tool was provided to report discolored water and pressure issues at https://arcg.is/0LDmjb.
- September 5: A water system update is provided, and all of the residents in Jackson should have some pressure and experience normal pressure. The plant output is meeting the goal of 87 PSI.
- September 6: A water system update is provided, and the plant remains at a steady pressure; water distribution sites are updated.
- September 7: A water system update is provided, and all storage tanks have stable water levels.
- September 8: A water system update is provided, and the plant remained at a steady pressure over the past 24 hours and overhead storage tanks were maintained overnight.
- September 9: A water system update is provided, the plant remains at steady pressure, and pressure should be stable throughout the city; water production continues to improve.
- September 10: A water system update is provided, and the plant is working at 88 PSI, pressure should be stable throughout the city, and the water production continues to improve.

- September 12: A water system update is provided, and the plant is working at 88 PSI, pressure should be stable throughout the city, and the water production continues to improve.
- September 13: A water system update is provided, and the plant is working at 89 PSI, pressure should be stable throughout the city, and water production continues to improve; discolored water and reduced pressure have been reported – these issues were related to routine water leaks or meter issues.
- September 14: A water system update is provided and the plant is working at 89 PSI.
- September 15: The boil water notice for all City of Jackson water customers is lifted; per the Mississippi State Department of Health, residents are advised to run their faucets to clear any old water.

Note: This timeline was compiled based on announcements made from the City of Jackson media news website using the keyword "water."[26]

Overview of CERC Framework

The CDC's CERC principles provide a framework for communicating on behalf of an organization responding to a public health emergency.[1,27,28]

Phase-Based Messaging

The CDC has broken messaging in public health crises into a series of five phases: the precrisis, initial, maintenance, resolution, and evaluation phases. During the precrisis phase, also called the "preparation phase," background information may be developed, draft messages are designed, partnerships can be established, plans can be documented, and approval processes can be developed.

The initial phase marks the beginning of an official situation of a public health emergency. This time is crucial for acknowledging the event with empathy and providing messages that explain the situation using common language. Providing messages with action items will help reduce feelings of anxiety and stress.

The maintenance phase increases the public's knowledge of the risks associated with the crisis, as well as that of the stakeholders involved, and involves adjusting messages to improve their utility.

The resolution phase involves reinforcing positive behaviors that the public can implement to prevent future events and encourages the public to support those who are most vulnerable.

The evaluation phase allows time to document the challenges and successes and the strategies for communicating more effectively using the CERC principles. Throughout all phases, CERC encourages communicators to engage with communities and empower them to make decisions that will improve or maintain positive health.

CERC Principles

The CERC principles form a guide for creating messaging in a time of disaster. Following each principle will allow you to create a message that will result in the public making the best decisions while acknowledging the ever-changing situation that a disaster creates. According to the CDC's CERC 2018 Introduction,[27] the six principles are:

- *Be First:* Time is an important variable in a public health emergency. Ensuring that information is communicated as fast as possible is critical. Once the information reaches a public audience, the first source becomes the preferred source.
- *Be Right*: Correct information builds credibility. Communicating what is known, what is unknown, and what actions are being done all contribute to an accurate communication message.

- *Be Credible:* During public health crises, the pillars of honesty and truthfulness should be prioritized. Ensuring messages contain these components is important.
- *Express Empathy:* Public health crises create mixed emotions. Messages that acknowledge the spectrum of emotions and the challenges that are being combatted build trust and rapport with the public.
- *Promote Action:* Messages that describe actions that people can take will calm anxiety, restore order, and promote a sense of control, which can be beneficial to members of the public.
- *Show Respect:* Crises can exacerbate feelings of vulnerability as well as highlight instances that create trauma. Respectful communication promotes cooperation and rapport.

CERC Analysis of the Messaging in the City of Jackson, Mississippi

To identify how the City of Jackson effectively or ineffectively used the CERC principles, example messages are critiqued on how well they aligned with the noted principle. Overall, the City of Jackson produced updates on the status of the O.B. Water Treatment Plant daily and ensured that residents were aware of where to find water distribution sites. These two types of information drove much of their messaging. The City of Jackson's website and Twitter (now X) profile were pivotal in communicating with the public on updates.

Be First

The pre-initial phase included a boil water advisory that was issued a month before this water crisis.[29] Boil water advisories and other media releases were key communication channels for notifying residents regarding water updates. During the last week of August, the city communicated the impacts that flooding could have on the area before the declaration, which highlighted that close monitoring and open channels of communication were being displayed.[30] The initial phase was instigated on August 29 with the official announcement of the water crisis via Twitter and the official webpage data.[31] The city was the first to declare the situation as an emergency, ahead of Governor Tate Reeves by 72 hours.[32] This provided the city with a strong point in its messaging. The rollout of this information was timely and followed the first CERC principle of being first.

Be Right

The City of Jackson communicated every day for 2 weeks. Any information that may have been of concern was brought up the next day. This was consistent through every phase of the disaster cycle. In the report that declared the official water system emergency, there was the following clarification:

> **Contrary to some reports, the City is NOT cutting off water to residents.** The City remains in contact with the state Department of Health and the EPA [Environmental Protection Agency] over continued issues with the system. Residents are advised to call the City's **311 line** for additional information. The City will resume water distribution and update the media on times and locations. A PDF copy of the emergency order can be found under the "Mayoral Executive Order" tab on the City website.[33]

This message did an excellent job of correcting misinformation early in the process. By addressing incorrect information on the same day when the incident was declared a disaster, the city showed a commitment to being right. There was a reference to the City's

311 number and coordination with the state Department of Health and the EPA. These two organizations were used throughout the process, ensuring information was fact-checked by two credible sources. A recommendation to improve this messaging would be to include information about the health impacts of consuming contaminated water.

Be Credible

The corrections that Mayor Lumumba was willing to make to the media regarding his provision of accurate information about the city's condition demonstrated credibility. He criticized television stations for continuously using clips of dark, muddy water coming from faucets. The mayor corrected these portrayals, stating that "the dark water was likely a localized problem and not representative of water being treated at Jackson's two primary water plants."[34] By confronting this misinformation and in being willing to bring in testimonials from the US Department of Justice and the EPA, he was able to create credible messages. The delivery of these messages when on camera facilitated to the mayor's – and thus the overall City of Jackson's – communication.

Express Empathy

The CERC principle of expressing empathy was not explicitly achieved in the messages produced. Many statements were curt and lacked emotive language. For example, the following is the whole message released on September 10:

> (Jackson, Miss.) – The O.B. Curtis Water Plant remained at a steady pressure over the past 24 hours and is currently working at 88 PSI. All tanks are currently maintaining good margins for overhead storage and made gains overnight. Pressure should still be stable throughout the city.
>
> Overall water production continues to improve. Yesterday, the membrane plant production remained steady and the conventional side increased significantly. The team continues to work to increase production capacity.
>
> The repaired raw water pump #4 has arrived at the plant. It has been placed back on the pump platform by crane this morning. Work is ongoing to place the raw water pump back in service.
>
> Investigative sampling will continue to monitor water quality. At this time the distribution system is not ready for full sampling to clear the boil water notice. We will continue to evaluate when full sampling can begin. This is contingent upon sustained pressure. We will need two rounds of clear samples to be able to remove the boil water notice.
>
> If you are experiencing discolored water or no pressure please report using this tool https://arcg.is/0LDmjb. This will allow us to track any remaining issues and address them. We are currently monitoring this information to respond as needed.[35]

The benefit of this style of message is that it is straight to the point. It addresses the water treatment plant. It addresses the precautions and the type of sampling being completed to ensure safety. The end of the message concludes with an action a person can take to report water issues. The last sentence details that this information is being monitored. However, there is a lack of emotional language or signs of sympathy for the public who are living in these conditions. If the message had included acknowledgments of living through a hard or stressful time, a more complete message would have been delivered. These types of messages were consistently deployed through the initial, maintenance, and resolution phases.

Promote Action

A clear example of messaging that promoted action was given on September 4, when concerns regarding discolored water and low pressure were noted. The City communicated via its website and Twitter account how to report those concerns. Those messages included a link to an online reporting tool that mapped out areas of concern.[36] This link was active through the entire crisis and now takes visitors to a webpage for all Jackson water concerns. An additional example is a community meeting invitation that was disseminated on the City's Twitter account.[37] This invitation was grounded in a discussion with the mayor and welcomed the participation of local, state, and federal officials. This event occurred between 6:00 and 7:30 p.m. at the College Hill Baptist Church. Holding the event after business hours allowed people to participate after work. Hosting the event at a faith-based institution in a city that is close to 55% religious was a strategic way to increase attendance.[38] This represented an important way of allowing residents to act on the experiences they were having and of allowing them to be heard.

Show Respect

The final phase of this crisis can be marked by the lifting of the boil water notice and the reassurance by the Mississippi Emergency Management Agency on September 15 that the situation was safe and residents no longer needed to be concerned.[39] This message could have been delivered with more empathy, but it was timely and brought a sense of relief to the public. The message was respectful because it provided relief to the public while not promising too much. As the goal was to fix the O.B. Water Treatment Plant and lift the boil water advisory, this message did not go beyond this promise, which is important.

Implications for Organizations

In using the City's website and Twitter account, there was a limit to the length and type of messages being sent out to the public. Both communication channels require internet access, which is limited to certain populations. The City also has an Instagram account and a YouTube account that were not active during this process. Those two resources would have provided methods for capturing and disseminating press briefings. This disaster impacted the daily lives of 150,000 people, yet the emphasis was on the water treatment plants. Instead of including photos of individuals who were directly affected by the water crisis, the city focused on images of buildings. This suggests the City prioritized getting the water treatment plants up and running without considering the personal nature of the water crisis and how people were directly affected by it. Another implication of the use of these media is the lack of personal interaction that they allow. Many tweets provoked questions and comments but lacked responses. Or in the case of the webpage that posted updates, there were few methods for interacting further with the actual information being stated. There was a phone number and a link for addressing water needs but not for addressing the needs of day-to-day survival. This research found many published news articles bringing up concepts of disinvestment and environmental racism. The City's webpage and Twitter account never addressed those sentiments. The consequences of this communication style might be seen in the future if another such water crisis occurs. There are long-term solutions that were not discussed during this period, which has left many questions unanswered in the evaluation and recovery stages of this event. Going forward, Jackson has a lot of work to do to follow CERC principles more effectively.

Recommendations

At the city level, partnerships between the Mississippi Emergency Management Agency and the Mississippi Department of Health need to be strengthened. If more messages had

contained quotes from high-level officials, the credibility of messages sent out by the City of Jackson would have been increased. Messages across organizations at the state and city level lacked empathy. In the future, during times of crises, this CERC principle needs to be followed to a greater extent. The approach taken might also have been considered disrespectful because the incident and the individuals were not fully acknowledged. Few to no messages expressed understanding of people's situations, vulnerable populations, or ensuring equity in more marginalized neighborhoods. This created a barrier between City officials and residents, who may have been experiencing a worse situation than the City realized.

Communication at the state and city level entailed different messages with various levels of empathy. In a conference 1 day after the official ending of the water crisis in Jackson, Governor Reeves commented, "I've got to tell you; it is a great day to be in Hattiesburg. It's also, as always, a great day to not be in Jackson."[40] This type of messaging highlights the reality that the failure of the O.B. Water Treatment Plant was due to decades of disinvestment in the water infrastructure in the city. The city of Jackson has repeatedly sought funding from the state to address water system issues, but the Governor continues to deny the city additional funds.

It was interesting that this crisis occurred when Jackson had been operating under a boil water advisory weeks before the official water crisis was declared. Boil water advisory notices provide residents with succinct messages that certain neighborhoods need to boil their water before consuming it, and they include lists of "dos" and "don'ts" to ensure people do not become sick from contaminated water. Due to the perfunctory nature of these notices, empathetic messages are not included. This might also have contributed to why some of this messaging lacked empathy, due to a reliance on maintaining the same structure to these messages.

Going forward, if Jackson includes more empathetic messages within its current approach, this could generate trust from those communities that are impacted. Encouraging partnerships and clearer lines of communication at the city level is crucial for empowering the community. Additionally, Mayor Lumumba was used as a spokesperson for this crisis, but incorporating a larger team at the city level would have allowed him to draw on greater information resources instead of deferring to communications from the state level.

End-of-Chapter Reflection Questions

1 **What are your agency's policies regarding community-sensitive public health information during outbreaks? For example, does your agency have a policy about naming businesses during foodborne illness outbreaks?**

2 **Think back to a recent disease outbreak. Name some of the audience segments that needed information. Were you able to meet their communication needs?**

3 **Identify stakeholders and partners in a disease outbreak. What are their information needs? What would be the best way to share information with them?**

4 **Review your agency emergency response plans with a focus on how epidemiologists and public health preparedness staff work together. What are the strengths of the plan? What gaps need to be addressed?**

5 **Field trip: Relationships are vital before and during health emergencies. Set up an in-person meeting with a community-based organization you haven't met yet or haven't seen in a while to discuss the current status of emergency risk communication in your agency.**

References

1 CDC. *Crisis and Emergency Risk Communication October 2014*. Atlanta, GA, CDC, 2014.

2 Public Health Emergency Preparedness and Response Capabilities: National Standards for State, Local, Tribal, and Territorial Public Health. *Centers for Disease Control and Prevention*. 2021. www.cdc.gov/orr/readiness/capabilities/index.htm (Accessed January 11, 2024).

3 Slater MD. Theory and Method in Health Audience Segmentation. *J Health Commun* 1996;**1**(3):267–83.

4 Grunig JE. Publics, Audiences and Market Segments: Segmentation Principles for Campaigns. In: Salmon CT, editor. *Information Campaigns: Balancing Social Values and Social Change*. Thousand Oaks, CA, Sage Publications, 1989; 199–228.

5 Smith RA. *Audience Segmentation Techniques*. Oxford, Oxford Research Encyclopedias, 2017.

6 Freeman RE. About Stakeholder Theory. 2018. http://stakeholdertheory.org/about (Accessed March 24, 2024).

7 Freeman RE, Harrison JS, Wicks AC, Parmar BL, De Colle S. *Stakeholder Theory: State of the Art*. Cambridge, Cambridge University Press, 2010.

8 Freeman RE, Harrison JS, Zyglidopoulos S. *Stakeholder Theory*. Cambridge, Cambridge University Press, 2018.

9 Covello VT. Risk Communication. In: Frumkin H, editor. *Environmental Health: From Local to Global*. New York, Jossey Bass/John Wiley and Sons, Inc., 2005; 988–1009.

10 An S-K, Gower KK. How Do the News Media Frame Crises? A Content Analysis of Crisis News Coverage. *Public Relat Rev* 2008;**35**:107–12.

11 Whitehurst R. *The National Assessment of Adult Literacy: Health Literacy Results*. Bethesda, MD, National Institutes of Health, Office of the US Surgeon General, 2006.

12 Plain Language Materials and Resources. *Centers for Disease Control and Prevention*. 2023. www.cdc.gov/healthliteracy/developmaterials/plainlanguage.html (Accessed March 4, 2024).

13 Martinelli KA, Briggs W. Integrating Public Relations and Legal Responses During a Crisis: The Case of Odwalla, Inc. *Public Relat Rev* 1998;**24**(4):443–60.

14 Hoke K. *What Is Public Health Law?* Washington, DC, American Public Health Association: Network for Public Health Law, n.d.

15 Freedom of Information Act (FOIA) webpage. *Office of Information Policy*. n.d. www.foia.gov/about.html#:~:text=Since%201967%2C%20the%20Freedom%20of,the%20know%20about%20their%20government (Accessed March 4, 2024).

16 Public Records Laws and State Legislatures. *National Conference of State Legislatures*. 2023. www.ncsl.org/cls/public-records-law-and-state-legislatures (Accessed March 4, 2024).

17 Section 508 of the Rehabilitation Act of 1973. *General Services Administration*. n.d. www.section508.gov/manage/laws-and-policies (Accessed March 4, 2024).

18 State-level accessibility law and policy. *General Services Administration*. n.d. www.section508>.gov/manage/laws-and-policies/state/#:~:text=Government%20Code%20Section%207405%20directs,of%20electronic%20and%20information%20technology (Accessed March 4, 2024).

19 Gostin L. *The Model State Emergency Health Powers Act*. Washington, DC, Center for Law and Public's Health at Georgetown and Johns Hopkins Universities, 2001.

20 McCarty KL, Nelson GD, Hodge Jr. JG, Gebbie KM. Major Components and Themes of Local Public Health Laws in Select U.S. Jurisdictions. *Public Health Rep* 2009;**124**(3):458–62.

21 Impact of opening and closing decisions by state. *Johns Hopkins University*. 2022. https://coronavirus.jhu.edu/data/state-timeline (Accessed March 4, 2024).

22 Nair S, Davis M. Isolation, Quarantine, and Public Health Authority Beyond the

Pandemic. *ASTHO*. 2022. www.astho.org/communications/blog/isolation-quarantine-and-public-health-authority-beyond-the-pandemic (Accessed March 4, 2024).

23 Zhang X, Warner ME, Meredith G. Factors Limiting US Public Health Emergency Authority COVID-19. *Int J Health Plan Manage* 2023;**38**(5):1569–82.

24 Drinking water. *World Health Organization*. 2022. www.who.int/news-room/fact-sheets/detail/drinking-water#:~:text=Safe%20and%20sufficient%20water%20facilitates,and%20numerous%20neglected%20tropical%20diseases (Accessed March 4, 2024).

25 Berlow J. The water crisis in Jackson follows year of failure to fix an aging water system. *NPR*. 2022. www.npr.org/2022/08/31/1120166328/jackson-mississippi-water-crisis (Accessed August 31, 2022).

26 News. *The City of Jackson, Mississippi*. n.d. www.jacksonms.gov/news?filter_keyword=water (Accessed August 31, 2022).

27 CDC. *Crisis and Emergency Risk Communication October 2018*. Atlanta, GA, CDC, 2018.

28 Veil F, Reynolds B, Sellnow T, Seeger M. CERC as a Theoretical Framework for Research and Practice. *Health Promot Pract* 2008;**9**(4):26S–34S.

29 Boil water notice remains in effect. *The City of Jackson, Mississippi*. 2022. www.jacksonms.gov/boil-water-notice-remains-in-effect (Accessed August 31, 2022).

30 Flood Update: Friday August 26. *The City of Jackson, Mississippi*. 2022. www.jacksonms.gov/flood-update-friday-august-27 (Accessed August 31, 2022).

31 @CityOfJxnMS. The City of Jackson is NOT cutting off water to residents due to complications from the Pearl River flooding. X/Twitter. 2022, August 29.

32 Jackson, Mississippi Water Crisis. *Center for Disaster Philanthropy*. 2022. https://disasterphilanthropy.org/disasters/jackson-mississippi-water-crisis/ (Accessed November 11, 2024).

33 Mayor Lumumba declares system emergency. *The City of Jackson, Mississippi*. 2022. www.jacksonms.gov/mayor-lumumba-declares-water-system-emergency (Accessed August 31, 2022).

34 Inman E. Lumumba tells residents at town hall meeting not to trust the state on water system issues. *Clarion Ledger*. 2022, September 28.

35 Water system update: Saturday, September 10. *The City of Jackson, Mississippi*. 2022. www.jacksonms.gov/water-system-update-saturday-september-10 (Accessed September 10, 2022).

36 @CityOfJxnMS. If you are experiencing discolored water or no pressure, please alert us using this online reporting tool. X/Twitter. 2022, September 4.

37 @CityOfJxnMS. Mayor Chokwe Antar Lumumba will hold a community meeting Tuesday night to provide updates on the status of the water. X/Twitter. 2022, September 19.

38 Popular religions in Jackson, MS. *Facts by City*. 2018. www.factsbycity.com/popular-religions/Jackson-MS/statistics.html (Accessed August 31, 2022).

39 @CityOfJxnMS. The boil water notice for ALL City of Jackson water customers HAS BEEN LIFTED, per the Mississippi State Department. X/Twitter. 2022, September 15.

40 Williams A. "A great day to not be in Jackson," governor says during Hattiesburg event. *WAPT*. 2022. www.wapt.com/article/a-great-day-to-not-be-in-jackson-mississippi-governor-says-during-hattiesburg-event/41252344 (Accessed September 16, 2024).