

Pre-/Post-test Module 3: Communicating Environmental and Health Risk

Instructor Copy, with Answer Key

Pre/Post-test

NOTE: Post-test contains Self-assessment questionnaire

Self-assessment:

In reference to the Communicating Environmental and Health Risks module, please choose all that apply:

- a. Specifically useful for my work. If so, you can describe how here (optional):

- b. Quick refresher
- c. Offers me knowledge about a topic I am less familiar with
- d. Gives me confidence to increase my skills in and understanding of communicating risk related to land reuse sites
- e. Motivates me to learn more about land reuse sites and ways I can be engaged
- f. Not needed for my work
- g. None of the above

Other (please specify) _____

Minimum Passing Score: 70% (7 out of 10)

Allow multiple retakes? (Y/N) Yes

1. **Risk communication is (select all that apply):**
 - a. **How we talk to the public about substances or behaviors that can be harmful**
 - b. **The process of informing people about potential hazards to their person, property, or community**

- c. **A science-based approach for communicating effectively in situations that are of high concern, high stress, emotionally charged, or controversial**
- d. **How we communicate with communities about the nature and level of risks, such as from environmental exposures**

Answer: a. – d., all of the above

Rational: Risk communication is how we talk to the public about harm, potential hazards, a science-based approach, and how we communicate about risks (a. – d.). Risk communication involves more than explaining a health risk to the public. It includes a solid understanding of community concerns and a well-planned, multi-component communication plan to help gain feedback, address concerns, establish trust, alleviate fear or anger, and explain information

2. The way you always communicate is the best way for effective crisis communication.

- a. True
- b. **False**

Answer: b., False

Rationale: As a leader in a crisis, you can have a real and measurable effect on your community through the words you use, the speed with which you deliver messages, and the sincerity that you convey. What you say, when you say it, how you say it, and who says it are critical elements in the emergency response. A crisis affects the way people take in information, process that information, and act on information. That means the way you typically communicate in an everyday fashion may not always be effective or the most meaningful in a crisis.

3. Select what components are needed in risk communication: (Select all that apply)

- a. **Understanding of community concerns**
- b. Special expertise in toxicology
- c. **Communication plan**
- d. **Communication in a sympathetic manner**
- e. **Partnerships with community members and other stakeholders**
- f. Coursework in psychology

Answer: a., c., d., and e.

Rationale: While expertise in toxicology (b.) may be useful in understanding and conveying risks, it is not necessary for effective risk communication. Education in psychology is not required for effective risk communication (f.). Understanding community concerns (a.), developing a communication plan (c.), being sympathetic to community members (d.), and partnerships with the community and stakeholders (e.g. other environmental or health professionals) (e.) are all factors for effective risk communication.

4. **Identify principles that are NOT part of Vincent Covello's Seven Cardinal Rules of Risk Communication: (Select all that apply)**

- a. Accept and involve the public as a legitimate partner
- b. **Expect to be trusted by the audience**
- c. Speak clearly and with compassion
- d. **Always bring in outside experts to issue communications**
- e. Be honest, frank and open
- f. **Take a top-down approach to help tell the community what to do**

Answer: b., d., or f.

Rationale: When communicating environmental and health risks, as an outsider, you may not be immediately trusted by the audience. Once you have established a comfort level and an open dialogue with the audience, you may be more trusted (b.). Work with partner organizations that are within or already helping the community before automatically bringing in outside experts to issue communications (d.). By working with existing community partners, you can issue joint communications from already-trusted sources, such as a local university or citizen advisory group. Work from the "grass roots" or "bottom" up as opposed to "top" (e.g. government officials) down to learn about the community and to put the community needs firsts (f.). You can use surveys, focus discussions, and meetings with advisory groups to get to know the community. Learn about local customs, including speech and dress.

5. **Key messages that are written, spoken, or visual can be used to educate a community about environmental and health risks.**

- a. **True**
- b. False

Answer: True

Rationale: An important aspect of Risk Communication is messaging: how we get the message to our community about environmental risks. To communicate risks, written, spoken, or visual statements can be used to create the "message" for the target audience.

6. **Several families attend a parent-teacher night health fair at a 50-year anniversary for a local pre-school that was built in 1968. You are an environmental health scientist who is part of a blood lead screening team using a quick-read blood lead testing system. Of 40 children who are screened, you note that 10 children have blood lead levels that range from 6 to 10 micrograms per deciliter ($\mu\text{g}/\text{dL}$) of lead. All 10 children are in the same classroom, which has 20 students in total. At the end of the health fair, you take wipe samples of window sills and floor dust and confirm that there is lead dust on both surfaces in the classroom. Subsequently, the director of the pre-school closed the classroom, had additional lead sampling conducted by a professional, and scheduled a meeting with you and the parents of all 20 children in the classroom 5 days after the health fair. Select all of the most appropriate key messages:**

- a. **The director of the pre-school immediately closed the classroom**
- b. **The source of lead is old paint on the window sills**
- c. **All 20 children from the classroom will be screened for blood lead over the next 5 days, and all other students have an option to be screened as well**
- d. All 20 children likely have elevated blood lead levels
- e. All 20 children are likely to have health problems from lead exposure

Answer: a., b., c.

Rationale: Key message a. reassures parents that by closing the classroom their children will be removed from exposure. Key message b. further reassures parents by identifying the source of the lead (old paint on the window sills). Key message c. ensures that all 20 children will be screened within a short time period. Key messages d. and e. assume that all children were exposed and are at risk for health problems. This is incorrect. Not all children may have come into contact with lead dust, thereby not having a completed exposure pathway. Not all children may have health problems from lead exposures, particularly if they were not exposed.

7. **How many key messages are typically included in a message map?**

- a. 1-2
- b. **3-4**
- c. 5-8
- d. 9-12

Answer: b., 3-4

Rationale: Key messages should be simple, one-sentence messages to reassure the audience about risks of exposure to chemicals/contaminants. Three or four key messages can convey needed information effectively. More than three or four messages may overwhelm the audience and lose sight of key points.

8. **Community members attend an information session about intrusion of vapor from an old dry cleaning plant that closed 25 years ago. Vapor has intruded into a day care center, basements of several homes, and some local businesses. You and a team of other environmental health professionals are on hand to answer questions. To prepare, you think of questions and provide answers to them in advance of the meeting. Which questions are NOT included in your list? Select all that apply**

- a. What is the effect of these chemicals on my health?
- b. **What levels of asbestos are safe?**
- c. Are my children at any special risk?
- d. **What can be done to stop the lead from intruding into our homes?**
- e. We've lived here for 20 years. Are we more likely to get cancer than people who have been here for only 5 years?
- f. Why has it taken so long for the government to take action?
- g. **Will the arsenic hurt my health?**

Answer: b., d., and g.

Rationale: Asbestos (b.), lead vapor (d.), and arsenic (g.) are contaminants that would not be expected in dry cleaning vapor. In this scenario, vapor intrusion is associated with volatile forms of chemicals, such as old dry cleaning liquids.

9. **You are a new environmental health professional working in a local health department in a rural community. You have no risk communication experience. Your community has just been hit by a hurricane, which has destroyed a hazardous waste confinement facility that contains petroleum coke residue and lead smelter ash. Area surveillance cameras show that the chemical waste has been released into air and also has entered into the local river, which is a source of drinking water and recreation. There has been heavy rain every day since the hurricane subsided, which is expected to cause further damage to the confinement structures. Your supervisor tells you to respond to the crisis. You (select the best answers that apply):**
- a. **Contact your state health agency for assistance**
 - b. **Contact your state environmental agency for assistance**
 - c. Wait until the weather improves and then tour the impacted area to see how bad the release is
 - d. Order the City Administrator to issue messages about the released contaminants

Answer: a. and b.

Rationale: In cases when you may not have a local risk communication expert available, especially if you are in the middle of a crisis situation, addressing an angry community, or have to work with the media, you may want to contact your state health or environmental agency for assistance (a. and b.). These agencies typically have professionals trained in risk communication, such as public affairs specialists or public information officers who may be able to assist you. Waiting until the weather improves and touring the impacted area to see how bad the release is (c.) may cause a delay, and you have already been told to respond to the crisis. In addition, you do not have the authority to order the City Administrator to issue messages about the released contaminants, who may not have the skills or expertise to communicate about the contamination (d.).

10. **What are some points to consider about your audience in land reuse meetings? Select all that apply.**
- a. **Education**
 - b. Number of unwed mothers
 - c. **Income level**
 - d. **Age**
 - e. **Cultural background norms and values**
 - f. Incarceration rates
 - g. **Knowledge about environmental contamination**

Answer: a., c., d., e., and g.

Rationale: Number of unwed mothers (b.), and incarceration rates (f.) may not have a connection to land reuse issues. Education and income level (a. and c.), age (d.), and cultural background norms and values (e.) are all factors that can characterize the community.