

at the Centre for Health Promotion  
University of Toronto

I have long been interested in the many forms of health communication, particularly how the persuasion messages of behavioral communication (such as exercise, don't drink and drive, use condoms) have dominated over media advocacy and other approaches. So I was delighted to have this issue dedicated to risk communication which is sometimes, but not often discussed in THCU public health circles.

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## Introduction

Overview of risk communication... 2

## Planning

Anticipating future challenges... 3

## Health

### Communication

Risk communication: An essential skill for public health practitioners... 5

Risk communication: It's not just how—but when... 7

## Evaluation

Choosing the right person for the job... 9

## Resources

Books... 10

Journal articles... 11

Other print items... 12


Web resources... 12

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My original plan for this address was based on the great Yogi Berra's aphorism "You can observe a lot just by watching." More precisely, I was going to do an informal kitchen table content analysis by opening a newspaper and using a marker to circle all the instances of risk communication, noting their sources, etc.. In fact, I do recommend this for everyone. It can be interesting to check out the range and type of health communications, look at who the advocates are and see whether 'your' issue is on the public agenda or not. And kids, you can do it at home.

But then the nasty world out there, once again showed it's power to override even the best laid plans. Let me share two ways it has. The first can be described in one word. Walkerton. For now, the media is full tilt boogie on risk communication. News, features, columns, op-eds, letters to the editor, you name it. And just like the theories say – along with the media goes a public debate about the competing risks and benefits of factory farming, antibiotics, chlorination, downloading, downsizing, testing, surveillance and a corresponding consideration of personal risk. Boil water? Travel to, eat in, converse with or play sports with residents of Walkerton? Or not? For the next while as the inquiry evolves, we will have a living laboratory of risk communication.

Certainly not one word, or even thousands, could fully describe the second. In a quieter, shorter, and for me more intensely personal flurry of activity, the pros and cons of airbags—how a device that saves lives also puts shorter people (women and children) at risk—was furiously reported and debated following the tragic death of Karol Steinhouse in a "minor fender bender." Karol taught in Social Sciences at Ryerson and made huge contributions in the areas of interdisciplinary studies, as well as anti-oppression, sexuality and diversity issues, and was among my closest friends. For years, I discussed communications with her and was inspired by her incredible ability to communicate one to one, in groups, classes, and in the public forum of meetings and media. I never dreamed that I would be using the inspiration I've received from her devotion to her ideals in the form of dedicating this issue to her memory, but I have. Thank you.



Larry Hershfield, THCU

# Introduction

## Overview of risk communication

Jodi Thesenvitz

The process of risk communication begins with a hazard or danger (actual or potential), and an assessment of that hazard. “Usually by law, but sometimes by commitment”<sup>1</sup>, some organization or group is responsible for managing the communication related to the hazard—a process designed to avoid or minimize panic, engage the public in the risk management decision making process and enable the public to reduce their personal risk. One well accepted way of defining risk communication is “an interactive process of exchange of information and opinions among individuals, groups, and institutions concerning a risk to human health or the environment.”<sup>2</sup>

### Key Definitions

*hazard* – danger; peril; exposure to a situation that could cause loss or injury.<sup>3</sup>

*risk* – probability of a hazard causing an adverse outcome.<sup>4</sup>

*probability* – an expression of uncertainty that ranges from zero through one, and is sometimes expressed as a percentage.

*risk management* – the evaluation, selection and implementation of options based on science, political and socio-cultural considerations.<sup>5</sup>

*risk assessment* – the characterization of hazards including the estimates of risk and their uncertainties.<sup>6</sup>

The risk communication process may involve many types of messages and processes. It might include, for example, newspaper articles discussing the chance of falling victim to a violent crime, a doctor explaining the chance of birth defects to prospective parents, emergency response workers trying to evacuate an area as a severe storm approaches or posters warning smokers about lung cancer. It may also be applied to topics such as automobile safety, HIV/AIDS, hazardous chemical waste sites, use of cell phones, medical procedures, restaurant food safety, etc.

Though it sounds like a straight forward concept, it is in fact filled with challenges. Even when the risk or danger is well understood (which is often not the case), many complex factors affect how audiences react when

presented with risk information. The public’s response to risk communication efforts depends not solely on facts and technical information, but also on their existing knowledge, values, beliefs, emotions and whether they feel the people communicating about and/or managing the risk are trustworthy and credible.

Other risk communication hurdles include translating technical terms into meaningful language and choosing the best communication methods to reach the intended audience (considering factors such as literacy level, suitable graphics, appropriate tone, etc.).

Even with a thorough understanding of the audience and how to most effectively present information, risk communication is complex. For example, knowing that values and emotions affect not only the audience receiving the communication, but also those sending it – how can the public be certain of the accuracy or objectivity of the message? There are other questions too, such as what amount of information release or persuasion is ethical?

As you can see, the risk communication process requires many types of expertise - most of which are at least touched upon in this issue of *The Update*. Though we do not have sufficient space to address all topics in detail, we have included an extensive list of resources, should you be interested in exploring one or more facets of risk communication in detail. §

1. Lundren, R & McMakin, A., eds. 1998. Risk Communication: A Handbook for Communicating Environmental, Safety, and Health Risks. Columbus, Ohio: Battell Press. 2nd ed.
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6. *ibid*

# Planning

## Anticipating future challenges

Nancy Dubois and Jodi Thesenvitz

Whether you are reacting to an urgent risk situation, preparing (to the degree possible) for a possible crisis or working to address a less dramatic but ongoing hazard (cigarette smoking, air pollution, use of certain pesticides, etc.), a good plan is essential. A formal, written plan can help set priorities, is more likely to get management and other stakeholder support, and can back you up if your approach is challenged. Risk communication planning is similar in many ways to planning for any other kind of health communication, however the focus of this article, is on elements specific to risk communication planning.

### A risk communication plan should include:

- A situational assessment (with information on the nature of the hazard, who or what will be harmed and how, alternatives, data gaps, benefits and information about the laws or mandates guiding the risk communication effort).
- The purpose and objectives of the risk communication effort (e.g., to change a behaviour, reduce fear, raise awareness, etc.).
- A profile of the audience/s (e.g., previous experience with the risk, concerns or feelings, education level, regular sources of information, etc.).
- An outline of the risk communication strategies and messages to be used.
- A description of the evaluation plan, with appropriate indicators.
- A detailed time-line that identifies tasks and people responsible for completing them, and a budget.
- Formal sign-off from all relevant staff and management.

A number of organizational and audience constraints can jeopardize the effectiveness of risk communication efforts. During the planning stage, these should be

identified, and plans to deal with them should be put in place.

Organizational constraints may include:<sup>7</sup>

- Inadequate resources.
- Management hostility or apathy.
- Difficult review and approval procedures.
- Conflicting organizational requirements.
- Insufficient information to adequately plan and set schedules.
- Management unwillingness to see the public as an equal partner.
- Management unwillingness to acknowledge the feelings and values of the public.
- Management belief that the public cannot understand science.

Audience constraints may include:<sup>8</sup>

- Hostility and/or outrage.
- Apathy.
- Mistrust of risk assessment.
- Expert disagreements on acceptable magnitude of risk.
- Mistrust in responsible organization.

Approaches to dealing with these constraints vary, but many of them can be addressed simply by fully communicating all available information including uncertainties (to both management and the audience); focusing on past successes; and being willing to accept input and adjust processes wherever possible (while maintaining effectiveness and ethics).

When developing a time-line, make sure you coordinate your plans with other communication activities that are going on across the organization and community. You should also build in time to ensure the information being presented about the risk;

- is correct and the most current available;
- will be understood by the audience;
- is what the organization wants to present;
- does not compromise security or business interests;
- does not compromise the organization relative to a law with which the organization must comply;
- does not give away intellectual property and make it difficult for the organization to patent a certain idea or device;
- will not embarrass the organization.<sup>9</sup>

Most importantly, remember that “if you have the responsibility for risk communication, you have the responsibility to **plan** for risk communication.”<sup>10</sup> §

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7. Lundren, R & McMakin, A., eds. 1998. Risk Communication: A Handbook for Communicating Environmental, Safety, and Health Risks. Columbus, Ohio: Battell Press. 2nd ed.

8. *ibid*

9. *ibid*

10. *ibid*

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**“if you have the responsibility for risk communication, you have the responsibility to plan for risk communication.”**

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# Health Communication

## Risk communication:

### *An essential skill for public health practitioners*

Jennifer Yessis

Increasingly, public health officials are being called upon to effectively communicate with the general public and specific target populations about health risks, usually through print, radio or television media. This year public health issues have frequently been headlined in our provincial media. Topics have included one of the largest waterborne outbreaks of E.coli 0157:H7 in North America (Walkerton, Ontario) and the many smoking by-laws that reduce or eliminate smoking in restaurants, bars and bingo halls. There have been many other public health issues that have drawn media attention over the years, including health concerns associated with poor air quality, mould found in local high school portables, the Plastimet Fire in Hamilton in 1997, the Meningitis outbreak in Waterloo Region in 1998 and the waterborne cryptosporidiosis outbreak in Waterloo Region in 1992, to name a few. When the health issues have a high profile and appear to jeopardize personal safety, the public demand more from those in charge (often public health officials) – specifically clear and understandable communications.

Unfortunately, many health promotion professionals do not have adequate communication training to deal with these relatively common demands. This is at least partially due to the fact that communication is not emphasized in health promotion graduate programs. A recent Internet survey, for example, indicated

that formal course work in health communication is extremely limited in Canada. Out of 56 health promotion graduate programs (at English language universities), only 14 courses had the word ‘communication’ in the title.<sup>11</sup>

Lydia Dotto, a science writer for 30 years and author of *Storm Warning: Gambling with the Climate of our Planet*, emphasized the importance of risk communication

training in a recent interview, stating that “people who are trained in the sciences, generally are not given any formal communication training throughout their career. I think this is a serious deficiency in this day and age when scientists are frequently called on to respond to health issues... Often, the media and interest groups want to speak directly to the scientist who has done the work. In fact, polls show that scientists have the greatest credibility among the general

public—far more than politicians or the media. Whether they like it or not, scientists are often pushed out into the front-lines and they need the training to communicate with the public.”<sup>12</sup>

One difficulty public health officials often encounter relates to the language used to communicate risk. Experts tend to use jargon when speaking to the public about uncertainties – referring to things such as exposure over a lifetime, morbidity, mortality and excess cancer risk. The public, however, is usually more con-



*“Then we’ve agreed that all the evidence isn’t in, and that even if all the evidence were in, it still wouldn’t be definitive.”*

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cerned about personal consequences and actions they can take to reduce their risk. These differences in focus and language can cause a great deal of conflict. Changing the language used by experts/public health officials can prevent and/or reduce this conflict. Good risk communicators translate scientific findings, including uncertainties, into understandable language; acknowledge the public's concerns; and give the public information to reduce their risk or improve their health.

Another risk communication challenge involves gaining the trust of the public. Trust is often more important than the risk message itself, since people do not act on information unless they trust the source of the information. In fact, in a study comparing risk messages<sup>13</sup>, trust was *the most* important factor for determining the acceptability of risk. Other studies have also examined trust as a factor in effective communication. Medical sources, radio and consumer organizations were viewed as trusted sources of information by survey respondents in the United Kingdom.<sup>14</sup> Physicians have also been reported to be the most trusted sources of information in the United States, and this finding is consistent across different studies.<sup>15,16</sup> In yet another study, government and industry officials were viewed as knowledgeable about risks, but industry was viewed as the least trusted source and government not commonly used as an information source, was neither trusted nor distrusted.<sup>17</sup>

Communicating with journalists and reporters is another essential element of effectively reaching the public with a risk message. Lydia Dotto indicates that it is important for public health officials to understand the media culture, stating that "if public health officials want to be effective communicators they have to understand the media's approach to covering an issue. They have to realize that journalists often only have seconds to convince a reader that their story is worth reading/watching/listening to, so they want the bottom line – what the risk means to individuals. The public health representatives need to prepare in advance for these types of questions, they need to tailor their messages to fit with the needs of journalists and the media."

These are only some of the important elements of risk communication that health promotion professionals need to be aware of, and skilled in. Training and experience are needed in the health promotion field to help practitioners facilitate better risk management decisions and the reductions of risks for the public. §

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**Lydia Dotto**, science writer with an honours degree in journalism, has thirty years of experience in print, radio and television media. She has written numerous books including her most recent, *Storm Warning: Gambling with the Climate of Our Planet* (Doubleday, 1999). She offers lectures and workshops to students, writers, scientists and engineers in government, industry and universities.

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# Health Communication

## Risk communication:

*It's not just how—but when*

Timothy Sly

Despite our incredible advances in communications systems and information technology, we have a rather poor record in the communication of risk. To examine this we first need to consider how people *perceive* risks.

To paraphrase Dickens: *these are the safest of times; these are the riskiest of times*. Despite the longest life expectancy, and lowest overall rates of almost every category of life-threatening disease in history, people have never been so worried about their health and well-being. Even more curious is *what* they are concerned about. It has been well established that “non-experts” consistently and predictably differ from “experts” in the way that they identify and assess risks. Technical people and regulators often have difficulty understanding why citizens react with hostility to facilities where projections of risk are relatively small, yet disregard threats to health or safety such as smoking, drinking, or dangerous sports, demonstrated to be hundreds or thousands of times more dangerous.

Why the discrepancy? We know for instance that people have difficulty understanding probabilistic data, and very small and very large numbers,<sup>18,19</sup> but there is a large and growing body of evidence that the layperson's construction of risk is more complex than that of the usual technical expert, *not* less.<sup>20-23</sup> What makes it *more* complex is that the basis for the layperson's judgement about risk is based primarily on their personal ‘rules of thumb’ such as whether risk is imposed, memorable, controllable, known to science, etc.,<sup>24,25</sup> and surprisingly little on actual mortality rates.

Although these factors seldom appear in formal risk assessments, they form the basis for the layperson's judgement of risk, whereas conventional mortality rates play a surprisingly small role. Any communication about risk, therefore, is doomed unless it takes into account these factors, and arguably the most important

of these is the credibility of the agency communicating and/or managing the risk. Sandman et al.,<sup>26</sup> have concluded:

*“... agency behaviour, and the agency–community relationship – have a substantial impact on the public's perception of risk ... more impact than the objective seriousness of the risk, and far more impact than any technical explanation of the risk”*

Though there are other factors that may affect public perception of agency credibility, let us here consider as an example the crucial issue of *when* the agency should tell the public about a risk.

As soon as the responsible agency knows, and before a local television station breaks the story on the evening news, the public should be told about a possible risk. If the agency is not first with the information, and is not seen to take the initiative in dealing with the problem, much time may be wasted in damage control: correcting errors, half-truths, misunderstandings, and especially in explaining *why* they delayed telling the public. The principle is simple, yet we keep repeating the errors. In the 1999 Belgian poultry products recall, the government allegedly knew of the dioxin contamination in these foods approximately one month before the press discovered and released the news. This created the biggest health scandal in the EU since the BSE–vCJD (mad cow disease) link was admitted by the UK Ministry of Agriculture Fisheries and Food in March 1996 (itself another example of unforgivably delayed communication).

In May of this year, the media coverage of a large outbreak of illness from *E coli* O157:H7 in rural Ontario focussed overwhelmingly not on the pathogenesis and

prognosis of the infection, but on the alleged delay in notification and withholding of the lab results.

Just as important is to tell the public what *is not yet known*. This means clearly explaining the extent to which the information may be uncertain, unreliable, or incomplete. When no information is released (“*no comment at this time*”), or the response is obscured by unnecessary technical language, a *risk information vacuum*<sup>28</sup> is created, into which will rush imagination, rumour, falsehood, and exaggeration to disrupt decision-making over the longer term.

If a risk is suspected, but not completely certain, the temptation is to delay warning the public until the evidence is irrefutable: “*What if it turns out to be false?*” the agency reasons, “*we do not want to scare them unnecessarily*”. But to the community, information withheld pending confirmation usually appears to be a cover-up. Analysis of numerous case studies shows that reversing a false alarm is much easier than trying to explain why the people were not warned when the threat could have been real.<sup>29,30</sup> In 1993, more than 400,000 people in Milwaukee, Wisconsin were affected by cryptosporidiosis, 4,000 were hospitalized, and 100 deaths were attributed to the organism.<sup>31</sup> The health department had delayed the release of information (including a “boil-water” order), despite evidence that the outbreak was water-borne. By the time the order was given, five weeks after the outbreak began, many of the victims would clearly have employed effective preventive measures *had they been informed*. As a result, the health agency has suffered long-term damage to its credibility and public trust.

The implications for risk communication are clear: Increasing the volume of the message, or even the detail or precision of the probabilistic risk assessment will not effectively satisfy the community needs. The communities’ concerns—especially the outrage factors—must be addressed at every stage. §

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# Evaluation

## Choosing the right person for the job

**Brian Hyndman**

Having worked my way through a pile of articles in an effort to become an ‘instant expert’ in the evaluation of risk communication, my first impression is that assessing the impact of risk communication initiatives is not terribly different from evaluating other types of health communication campaigns. You still need to clarify your communication goals and objectives, determine your information needs, identify the resources available for evaluation, determine appropriate methods of measurement, yadda yadda yadda...

One issue that does take on a greater degree of importance in risk communication efforts is who conducts the evaluation. As an evaluation consultant, I spend a

good deal of time responding to questions about the “what, why, how and when” of evaluation. Who you select to carry out an evaluation warrants equal, if not greater, consideration.

Determining who should conduct the evaluation is especially important for risk communication campaigns, given the degree of concern and political sensitivity surrounding the issues addressed by these initiatives such as environmental hazards or communicable disease risks. Any type of evaluation provokes a certain level of anxiety to the extent that evaluation results convey connotations of judgment about individual competencies: it’s hard to separate the ‘success’ or ‘failure’ of a campaign

**Table I. Advantages and disadvantages of using various evaluators**

<b>Evaluator</b>	<b>Advantages</b>	<b>Disadvantages</b>
Campaign Staff	<ul style="list-style-type: none"> <li>familiar with risk communication practices;</li> <li>trusted by organization;</li> <li>understand organizational environment and constraints;</li> <li>less costly than outside evaluators</li> </ul>	<ul style="list-style-type: none"> <li>may lack credibility with regulating agencies;</li> <li>may have difficulty being objective in evaluation;</li> <li>may lack expertise in evaluation methods</li> </ul>
Management	<ul style="list-style-type: none"> <li>positive interactions with staff around evaluation may increase support/cohesion;</li> <li>less costly than outside evaluators;</li> <li>understand organizational environment and constraints</li> </ul>	<ul style="list-style-type: none"> <li>negative interactions with staff around evaluation may decrease support/cohesion;</li> <li>may have difficulty being objective in evaluation;</li> <li>may lack credibility with regulating agencies and audience</li> </ul>
Outside Consultants	<ul style="list-style-type: none"> <li>may have more credibility as a 'neutral' outside evaluator;</li> <li>may be more objective;</li> <li>familiar with evaluation methods</li> </ul>	<ul style="list-style-type: none"> <li>may not be familiar with risk communication issues and practices;</li> <li>may lack appreciation of organizational environment and constraints;</li> <li>may be more costly than 'in-house' evaluations</li> </ul>
Audience	<ul style="list-style-type: none"> <li>positive interactions around evaluation may increase community support for organization;</li> <li>may increase credibility of evaluation</li> </ul>	<ul style="list-style-type: none"> <li>may lack objectivity;</li> <li>may not be familiar with risk communication issues or evaluation methods;</li> <li>may lack appreciation of organizational environment and constraints</li> </ul>

# Resources

from the persons responsible for its design and implementation. The degree of apprehension around evaluation can be even greater when the lives of the audience may be at stake.

Possible evaluators for risk communication campaigns include the program staff involved in risk communication efforts, upper management, and outside consultants. In some cases, the audience members themselves may also be involved in evaluation through participation in an advisory committee or focus group. Table 1 (*previous page*)<sup>32</sup> lists the advantages and drawbacks of involving different types of evaluators in risk communication campaigns.

Regardless of who you select to evaluate your risk communication campaign, training needs to be considered. Do the evaluators know what to look for, and are they capable of collecting the type of information you need? If you are using inexperienced evaluators, have someone experienced in risk communication initiatives work with them to identify what to look for. Even if you are using experienced evaluators, you will still need to spend some time acquainting them with the nature of the health risk and your response.

You will also need to monitor the work of the evaluators to ensure that they are collecting the necessary information without hindering your efforts to respond to the risk, and that you receive their input in time to use it. This is particularly important in 'crisis response' situations where the timely receipt of information is critical.

The best case scenario, of course, is the absence of any reason to mount and evaluate a risk communication campaign. If, however, you do need to respond to a health risk in your community, just remember that a thorough evaluation, done by the right person, will help to ensure that your response is/was effective and on-track. §

32. Adapted from Lundren, R & McMakin, A., eds. 1998. *Risk Communication: A Handbook for Communicating Environmental, Safety, and Health Risks*. Columbus, Ohio: Battell Press. 2nd ed.

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## Web resources

### Health Risk Communicator

[www.atsdr.cdc.gov/HEC/HRC/hrchome.html](http://www.atsdr.cdc.gov/HEC/HRC/hrchome.html)

### Priorities for Health: Volume 12, Number 1: The Sky is Not Falling

[www.acsh.org/publications/priorities/1201/sky.html](http://www.acsh.org/publications/priorities/1201/sky.html)

### Risk World

[www.riskworld.com/](http://www.riskworld.com/)

### Risk Analysis

[www.wkap.nl/journalhome.htm](http://www.wkap.nl/journalhome.htm)

### Society for Risk Analysis

<http://www.sra.org>

*The Health Communication Unit has many of these resources. If you are interested, please call Jodi Thesenvitz at 416-978-1188.*

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