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**The R. Samuel McLaughlin Centre for
Population Health Risk Assessment**

and

**PAHO/WHO Collaborating Centre in
Population Health Risk Assessment**

Workshop Summary Report:

**Workshop on Improving the Public Communication of
Chemical-Related Health Risks**

This workshop summary is based on presentations and discussions held at the workshop on “Improving the Public Communication of Chemical-Related Health Risks” on September 30 and October 1, 2009. The workshop was initiated by the Environmental Health Industry Coordinating Group, funded by governmental and industrial sponsors, organized by a workshop steering committee and hosted by the McLaughlin Centre for Population Health Risk Assessment at the University of Ottawa. The workshop summary was prepared by the McLaughlin Centre and was revised and approved by the workshop steering committee.

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Additional information including a background document on “Current Practices and Challenges of Risk Communication in Canada”, all PowerPoint slides presented at the workshop and a list of workshop attendees is available for reference at http://www.mclaughlincentre.ca/events/chem_risk2/index.shtml.



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Background Information

The communication of risk related information is a critical part of the risk assessment process. In particular, it is important that risk data be expressed in understandable terms, that uncertainties surrounding estimates of risk be understood, and that effective channels of communication be established among individual and corporate players involved in the assessment of risk.

The term risk communication has come into use in recent years, and has been formally defined by Covello et al. (1987)^a as “any purposeful exchange of information about health or environmental risks between interested parties”. More specifically, they state that

“...risk communication is the act of conveying or transmitting information between interested parties about (a) levels of health or environmental risks; (b) the significance or meaning of health or environmental risks; or (c) decisions, actions, or policies aimed at aging or controlling health or environmental risks. Interested parties include governmental agencies, corporations and industry groups, unions, the media, scientists, professional organizations, public interest groups, and individual citizens.”

Risk communication includes the communicative processes through which individuals and institutional actors negotiate their interests and concerns about the assessment and management of risks in contemporary society. Thus, risk communication is what all participants in the risk assessment process engage in by virtue of their public involvement: their attempts to inform, persuade, or warn others, to analyze problems and circulate findings on new knowledge, to change attitudes or behaviours, to set charges or rates for costs, or to carry out legally-dated responsibilities.

Multiple stakeholders must interact to discuss, promote, manage or increase public awareness of a risk issue (**Table 1**), which makes the communication process challenging since it involves individuals that have varying degrees of knowledge and perceptions of chemical risks. Risk perception can be directly related to the feelings that an individual is experiencing with regards to a hazard. For example, the familiarity, severity and controllability of a hazard are factors that can have an immense effect on risk perception and on how acceptable a person will consider the risk. It is therefore important that stakeholders understand how the risk issue is perceived by the public before commencing the risk communication process, and that they recognize that different perceptions can lead to differing levels of risk tolerance that can ultimately influence risk management decisions.

The workshop on “Improving the Public Communication of Chemical-Related Health Risks” was organized to bring together various stakeholders involved in communicating chemical-related risks to the public, to discuss the unique challenges they face, and to discuss the different strategies and tools that could be developed to improve the process of risk communication in Canada. Participants of the workshop included senior level professionals representing industry, government, NGO, academia, and the media. The workshop included keynote presentations, case studies, break-out groups, a panel discussion, and a general discussion on how to enhance the communication of risk. Presentations and panel discussion provided diverse perspectives that added a non technical dimension to discussions. A plenary discussion at the end of the workshop provided a forum for attendees to suggest ways in which risk communication can be strengthened in Canada. The following pages describe ideas presented by speakers or brought forth by the group during plenary discussions, on the challenges behind the communication of chemical-related risks as well as priority issues or actions on how to improve risk communication.

^a Covello et al. 1987. Communicating Risk Information to the Public. *In*: Davies JC, Covello V, Allen F, (eds.) Risk Communication. Washington, D.C.: The Conservation Foundation.

Table 1: A brief description of the roles and responsibilities of stakeholders frequently involved in risk communication.*

| Stakeholders | Description |
|------------------------------------|--|
| Governments | Governments manage public health risks and have the responsibility of communicating information about risks to all interested parties. Decision-makers within governments are required to ensure effective communication with stakeholders on the development of scientific and technical analyses, and to involve the public and other interested parties in the risk analysis and risk communication processes. In addition, it is the government's responsibility to provide risk information to the public in a consistent and transparent manner. |
| Industry | Industry is responsible for the production of safe and quality products for its consumers. It is a corporate responsibility for industry leaders to communicate information regarding risks to the affected consumers. Industry can be a major source of information for risk assessment and risk management, and the participation of this stakeholder in all aspects of risk analysis is critical for successful decision-making. |
| Public | Public participation in the analysis of risk is viewed by the public as an essential element of successful public health protection. Early participation can help ensure the risk analysis process addresses public concerns and typically results in improved public understanding of the risk assessment process and of how risk-based decisions are made. The public and consumer organizations have a responsibility to raise their concerns and opinions to risk managers, so that these issues are considered in the decision-making process. |
| Academia and research institutions | Members of the academic and research community may play an important role in risk analysis by contributing their technical and scientific expertise. Scientific or technical experts often have a high level of credibility with the public and media, and may be asked to comment on government decisions and may serve as independent sources of information in the risk communication process. |
| Media | The media plays a critical role in risk communication because they transmit messages on health risks to the public. The media can transmit, create, or interpret a message and are not limited to official sources of information. Their messages therefore often reflect concerns of the public and of other members of society. |
| NGOs | Public interest groups or non-governmental organizations (NGOs) play an important role in raising public awareness of potential sources of health and environmental risk, and in providing practical information to parents/families – directly and/or via key intermediaries such as service providers and the media – about how to reduce or avoid potentially harmful chemical exposures. Many NGOs aim to promote public health and well-being by increasing awareness of potential sources of risk, fostering citizen action, and advocating for protective policies and regulations. |

*The information provided in this table is adapted from information found in the following report: "FAO (Food and Agriculture Administration). 1998. The application of risk communication to food standards and safety matters. Report of a joint FAO/WHO expert consultation. Rome, Italy. M-82, ISBN 92-5-104260-8". The section on NGOs was written by members of the workshop steering committee.

Workshop Objective

The objective of this workshop was to identify best practices and other considerations that would assist policy makers, and diverse public professionals, to improve the practice of risk communication in Canada so as to build public understanding of: (i) chemical-related health risks; and (ii) the ways in which these risks can be appropriately addressed.

Challenges of Communicating Chemical-Related Health Risks

The presentations and panel discussion highlighted various issues with the current risk communication process and challenges that stakeholders face when communicating risk to the public (**Table 2**). The numerous challenges involved in communicating risk to the public were examined and discussed by stakeholders during the workshop with the intention of identifying ways to improve the communication of chemical-related health risks to the Canadian public. Some principles that might help guide stakeholders who choose to work together towards such improvements were presented during the panel discussion:

- All stakeholders have a stake in public health and a healthy environment;
- We all have a role to play and a voice that must be heard in communicating risk – to “do nothing” is not acceptable;
- We have an obligation to cultivate good judgment by the public through open, consistent, and informed communication, and by fostering scientific and ethical 'literacy' and critical thinking skills through educational curricula and other means;
- We can work constructively to promote these principles.

Table 2. What are some of the unique challenges of communicating chemical-related health risks?

- The precautionary principle found in relevant Canadian legislation is well accepted internationally and enables risk management actions to be taken when there is uncertainty relating to the science, but serious concerns regarding the potential risk have been established. Situations in which precaution should be exercised remain a subject of debate among stakeholders. The challenge for stakeholders in risk communication is to address legitimate public perceptions of risk, recognizing that differences in risk acceptability among individuals may require them to better explain the facts and uncertainties surrounding the chemical risk issues, and that management decisions based on a precautionary approach may be required.
- Risk communication originate from diverse parties with differing interests, roles and familiarity with risk communication approaches and strategies. Taken together, such communication may not, therefore, present the public with a unified or consistent risk message, possibly giving rise to public confusion and alarm. The challenge for stakeholders in risk communication is to recognize that there exist divergent tolerances to chemical risks in society, and to acknowledge the degree of complexity and uncertainty surrounding the risk issue to help the information communicated to the public by various sources be more cohesive.
- Risk messages are not always time appropriate. It is not always possible to transmit formal risk information between experts, policy-makers, the public and other stakeholders in a timely fashion. However, informal risk communication do nevertheless reach individuals electronically at an astonishing rate. This suggests a need for greater foresight and planning on the part of risk communicators so as to predict and address risk issues before they arise.
- The 24-hour news cycle has changed journalism such that few journalists are on the science beat and general assignment reporters now have to develop stories on chemical risks. The lack of the scientific background needed to effectively report on such issues can result in the publication of inaccurate information or stories that are sensationalized.
- Scientists and academics often do not want to engage the media either out of concern that their views may be misunderstood, or inadequately conveyed to the public, or due to their lack of experience and training in communicating with the media. Further, media time lines are often highly compressed, which may also discourage experts from commenting on a risk issue.
- Spokespersons do not always have the appropriate expertise, training or communication research tools that would enable them to effectively convey technical concepts in clear and understandable language to lay audiences and to the media.
- Intermediates such as healthcare workers are often in direct contact with the public, but they may not have the knowledge or know where to find relevant and up-to-date information on risk issues. It is difficult to find information on specific risks on some government websites, and there is no one source of risk information available for public consultation.

Ways to Enhance the Communication of Chemical-Related Health Risks

Past experience has indicated that the public is not adequately informed about chemical and other health risk issues and that there is a clear need to enhance the practice of risk communication in Canada. The workshop was developed as a response to this issue, and at the end of Day 2, workshop attendees were asked to give suggestions on how to improve the communication of chemical-related health risks. The intention was to capture a broad range of ideas and not to reflect a consensus view that would typically only express the ‘lowest common denominator’ among participants. In a plenary discussion, the following 13 items were identified by one or more participant groups as priority issues that should be addressed to enhance risk communication. These items can be divided into three groups: **1)** use of existing practices to transfer risk information, **2)** research and development to improve the transfer of risk information, and **3)** capacity building (**Table 3**). For a list of other important issues raised by workshop participants during the plenary group discussion, please refer to the McLaughlin Centre website (http://www.mclaughlincentre.ca/events/chem_risk2/DKrewski%20Workshop%20UOttawa%20Oct%201%202009%20Key%20Issues.pdf).

1. Use of existing practices

Several approaches on how to effectively communicate risk information have been previously developed, and generally require that individuals chosen to communicate risk on behalf of stakeholder groups possess the appropriate skills and expertise to do so. However, developing this capability remains a practical challenge for many, in part because of a lack of adequate training in risk communication or familiarity with best practices that include ensuring that risk messages are presented in plain language and that the information needs of the audience are taken into account when designing risk messages.

Some workshop participants indicated that risk messages communicated to the public would be more successful if scientific uncertainties and complexities surrounding the chemical hazard or risk were more fully acknowledged, which is an approach that is highly recommended by experts in risk communication. Risk information presented to the public on a specific chemical risk may not always address wider concerns such as everyday exposure to multiple chemicals simultaneously. Engaging a wider range of experts in risk communication may assist decision-makers in managing specific risks and can better inform the public on the facts, complexities and uncertainties about a risk issue.

Other participants suggested that criteria for evaluating the success of risk communication programs should be developed and should include a determination of whether the program actually results in a reduction of risk (e.g., if risk communication causes the public to substitute one product for another, does the change in public behaviours actually reduce risk or simply replace one kind of risk for another?). Many approaches to evaluate risk messages already exist and workshop attendees put forward that focus groups and surveys may be useful in evaluating the effectiveness of risk communication programs.

2. Research and development

More research is needed to develop ways to enhance the transfer of risk information. Some participants suggested that an overarching risk communication framework including fundamental risk communication principles be developed to improve the overall effectiveness of risk communication. Since stakeholders often have widely divergent interests regarding risk issues, it would therefore be important that the framework and principles meet the needs of all stakeholders. However, the interests and roles of various stakeholders involved in risk communication are not always aligned or clear, making it difficult to produce

a broadly accepted framework to improve the communication process. Case studies in risk communication could help us learn from our past successes and failures and help better define the areas in which stakeholders could work together to strengthen risk communication practices and public understanding of risks.

Risk information also needs to be readily accessible to the public. Websites that include chemical risk information are often not publicized or the relevant information that is available is difficult to find for the general public. Physicians often receive environmental health questions from patients, and have mentioned that if there were a single resource for this information and a summary of information for their patients, that they would use these resources. Some participants suggested that a ‘clearinghouse’ or ‘portal’ be developed to make use of multiple communication channels for informing people about risk issues (e.g., government, media, health professionals, etc...) and that a broad web-based risk communication program be established to improve the transfer of risk information.

3. Capacity building

Participants suggested ways of building capacity to improve the communication of risk. One of the issues raised included the need for experts to increase their visibility to the public and speak out more often on risk issues when they have the knowledge to give appropriate opinions or recommendations regarding the severity of the risk to public health. Scientists are frequently asked by the media to speak on a complex issue in lay terms. It is very difficult for researchers to do this in the short time frame in which reporters work. Moreover, researchers are often reluctant to speak to reporters out of concern that they will misinterpret the results of scientific research. Recognizing this and other systemic issues, a [Science Media Centre \(SMCC\) has been initiated in Canada](#) that builds on the experience of countries such as the [United Kingdom](#), [Australia](#) and [New Zealand](#). In the view of some participants the SMCC has the potential to improve both the quality and frequency of the interactions on risk issues between scientists and journalists, and may help to ensure that public decisions with regard to risks are based on good scientific information. The UK SMC, for example, has developed strategies to help position itself as the first place the media calls for information on a breaking story. The SMC has created ‘rapid reaction’ tools – such as lists of experts on specific topics, issue summaries, etc. that are readily available for reporters when a story breaks. It has also created tools and activities with a longer timeframe, such as media briefings by experts on risk issues before the story breaks.

Another suggestion was to develop training programs for journalists that are not trained in science; the SMC or universities could play a role in this regard. ‘Churnalism’ (i.e., churning out more stories than there is time to write) has reportedly increased due to the advent of the 24-hour news cycle and the economic downturn, which has resulted in fewer reporters on the science beat. Consequently, journalists may experience pressure to “churn” out stories without always having the right information or context to do so. The development of scientific workshops and courses tailored for journalists would improve the quality of reporting of risk information, thus enhancing the transfer of risk information to the public.

Similarly, some participants suggested that the incorporation of risk communication training in graduate programs in Canadian universities as well as the development of risk communication training programs for government staff would enhance the practice of risk communication in Canada. For example, one of the challenges governments currently face is the development and communication of risk messages in a timely fashion. Their ability to do so would be enhanced by government training programs that include strategic approaches to anticipate and address risk issues that are expected to emerge and be rapidly communicated to the public by the media. Workshop attendees suggested that Canadian infrastructure and expertise in risk communication should be utilized to establish these priorities whenever possible.

Table 3. How should we improve risk communication?

1) Use of existing practices to transfer risk information

- Ensure that spokespersons have appropriate expertise (competency in risk communication).
- Present messages in plain language.
- Understand information needs of the message recipients.
- Engage the broadest possible community of experts.
- Develop criteria for evaluating success of risk communication programs that have been implemented (has risk been reduced as a consequence of the program?).

2) Research and development to improve the transfer of risk information

- Develop an overarching framework for effective risk communication, along with fundamental principles of effective risk communication (the framework and principles should meet the needs of all stakeholders).
- Conduct case studies of past successes and failures in risk communication in order to better understand the roles of various stakeholders.
- Take advantage of multiple communications channels – a ‘clearinghouse’ or ‘portal’ could be useful in this regard.
- Establish a broad risk communication website.

3) Capacity building

- Establish a Science Media Centre in Canada.
- Develop training programs for journalists that are not trained in science.
- Incorporate training in risk communication in graduate programs in Canadian universities.
- Develop risk communication training programs for government staff (governments have a major responsibility for risk management decision making in Canada).