



## Small Drinking Water Systems Project

## Communication about Environmental Health Risks: A Systematic Review

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### Background

This fact sheet is intended to provide health professionals with information about effective methods and techniques for communicating risk to the public. The Effective Public Health Practice Project (EPHPP) prepared this review for the National Collaborating Centre for Methods and Tools (NCCMT) as part of the joint *Small Drinking Water Systems Project*. Given that very few studies have involved boiled water advisories, the search was broadened to include communication of environmental health risks.

### Question

1. Which strategies are most effective for communicating environmental health risks?
2. Which factors related to environmental health risks impact risk communication uptake?

### Methods

A systematic review of English articles was conducted using multiple databases (e.g., MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials, PsycINFO, Applied Social Sciences Index, CSA Worldwide Political Science Abstracts, Web of Science and Science Direct). Data sources also included grey literature. Key organization websites and key journals were hand-searched for relevant articles. Experts were consulted to locate any additional references.

Articles had to meet relevance criteria for study design, participants, interventions and outcomes. Relevant articles were assessed for quality and two independent reviewers used standardized tools to extract data. Articles were given an overall quality assessment of strong, moderate or weak.

### Findings

No studies were given a quality rating of strong or moderate. Data for 24 articles were analyzed and reported in a narrative format. All statistically significant and non-significant outcomes considered to be relevant to the review questions were reported. The quantitative articles considering the effectiveness of risk communication strategies suggest that a multi-media approach is more effective than any single media approach.

Similarly, printed material that offers a combination of information types (e.g., text and diagrams) is a more effective communication tool than material with just a single type, such as all text. Findings also suggest that the factors influencing response to risk communications are affected by personal risk perception, previous personal experience with risk, sources of information and trust in those sources.

## Conclusion

This body of literature was judged to be weak in quality. There is a need for comparative trials to test the effectiveness of different strategies. However, from the existing literature, no single method of message delivery is best. Instead, risk communication strategies that incorporate the needs of the target audience(s) with a multi-faceted delivery method are most effective.

## Recommendations

The following is a summary of recommendations to maximize the effectiveness of risk communications:

- Ensure communication comes from a trusted source.
- Tailor communication for the audience.
- Build the content of messages with the strongest scientific evidence available.
- Incorporate text with visuals (pictures, diagrams) with qualitative and quantitative data for print materials.
- Disseminate information in the media through multiple sources.
- Deliver warning system notices for rare events on a regular and on-going basis.
- Develop communication strategies with the awareness that people make choices based on personal past experience with disasters.
- Ensure communication strategies are multi-modal and incorporate an opportunity for the public to have their questions and concerns addressed.
- Do not use automated phone call-in systems as a proxy for human interaction; if used, ensure they are easily accessible.

## Reference

Fitzpatrick-Lewis, D., Yost, J., Ciliska, D., & Krishnaratne, S. Communication about Environmental Health Risks: A Systematic Review; *Environmental Health*, November 2010, 9 (1) doi:10.1186/1476-069X-9-67/ available at <http://www.ehjournal.net/content/9/1/67>, last retrieved on February 8, 2011.

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