Health Risk Communication

CAPCOA Engineering and Toxics Symposium

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Bay Area AQMD
Risk Communication at Air Districts

- Authority to Construct permitting decisions
  - H&S Code Section 42301.6 ("Waters Bill")
  - Prevention of Significant Deterioration (PSD)
- Regulation of existing facilities
  - Air Toxics Hot Spots Program
  - Other modeling / monitoring studies
- Environmental Justice initiatives
- Air quality plans
- Rule development
- CEQA responsible agency duties
- "Spare-the-Air" and other public outreach campaigns
- Incident response communications
- Hearing Board proceedings
History of Environmental Risk Communication

- Risk communication was largely ignored in the 1970s
- Modern principles of risk communication were established in the 1980s
  - Mounting public concern over toxic wastes, nuclear power plants, and hazardous materials (e.g., Love Canal, Times Beach, Three Mile Island, Bhopal, Seveso)
  - EPA Administrator Ruckelhaus’ position on public involvement in managing environmental risks
    - Example: 1983 proposed NESHAP for ASARCO smelter – inorganic arsenic
  - First national conference on risk communication held in 1986
  - 1988 EPA policy guidance document: *Seven Cardinal Rules of Risk Communication* (Covello and Allen)
  - 1989 National Research Council report: *Improving Risk Communication*
Risk communication is an interactive process of exchange of information and opinion among individuals, groups, and institutions. It involves multiple messages about the nature of risk and other messages, not strictly about risk, that express concerns, opinions, or reactions to risk messages or to legal and institutional arrangements for risk management. Risk communication is successful to the extent that it raises the level of understanding of relevant issues or actions and satisfies those involved that they are adequately informed within the scope of available knowledge. Risk communication is a component of risk management.
Leading Determinants of Health

- Determinants of premature mortality in the U.S.
  - Genetics #2: 30%
  - Social circumstances #3: 15%
  - Environmental conditions #5: 5%
  - Behavioral choices #1: 40%
  - Medical care #4: 10%

(Source: J. Michael McGinnis, Pamela Williams-Russo and James R. Knickman, The Case For More Active Policy Attention To Health Promotion, Health Affairs, 21, No. 2, 78-93, 2002).
Risk Perception

- Risk perception is complex, subjective, and value-laden
- (Perceived) Risk = Hazard + Outrage (from P. Sandman)
- People tend to underestimate the most serious health hazards in their lives (react with apathy)
  - Precaution advocacy (health education): Provoke more outrage
- People tend to overestimate lesser health hazards where “outrage factors” are high
  - Perception of hazard is unlikely to change regardless of messaging
  - Risk communication strategy should include “outrage management”
Factors Affecting Risk Perception

<table>
<thead>
<tr>
<th>Lower Perceived Risk</th>
<th>Higher Perceived Risk</th>
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<tbody>
<tr>
<td>Voluntary</td>
<td>Imposed</td>
</tr>
<tr>
<td>Clear benefits</td>
<td>Little or no benefit</td>
</tr>
<tr>
<td>Not dreaded</td>
<td>Dreaded</td>
</tr>
<tr>
<td>Natural</td>
<td>Manmade</td>
</tr>
<tr>
<td>Immediate health effect</td>
<td>Delayed health effect</td>
</tr>
<tr>
<td>Familiar</td>
<td>Exotic</td>
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<tr>
<td>Affecting adults</td>
<td>Affecting children</td>
</tr>
<tr>
<td>Fairly distributed</td>
<td>Unfairly distributed</td>
</tr>
<tr>
<td>Little media attention</td>
<td>Much media attention</td>
</tr>
<tr>
<td>Under an individual’s control</td>
<td>Controlled by others</td>
</tr>
<tr>
<td>Generated by a trusted source</td>
<td>Generated by an untrusted source</td>
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Determinants of Trust and Credibility

1. Knowledge and expertise

2. Openness and honesty
   - Being truthful about what you know and what you don’t know. Lean toward providing more information rather than less.

3. Concern and care
   - Empathy: A sincere effort to understand how it would feel to be in the stakeholder’s position.
   - Commitment: Dedication to ensuring public health and to openly communicating with stakeholders to understand their perspectives and to help them understand yours.

How to Build Trust

- Carefully check technical analyses and other documents before going public
- Make sure you have planned carefully before interacting with stakeholders
- Use language, terms, and concepts that make sense to your stakeholders, and avoid technical jargon
- You must be willing to acknowledge uncertainties in health risk assessment
- If needed, collaborate with other experts with credibility equal to or better than yours (e.g., university professors and OEHHA staff)
- Be sincere. Don’t pretend that the public can influence a risk management decision if that is not the case.
How to Build Trust (cont.)

- Hold community meetings with open house style format
- In meetings, establish your personal credibility, and then your agency’s
- Take the time to listen to people and try to understand their perspective
- Don’t become defensive
- Acknowledge that you have heard what stakeholders are saying, whether or not you agree with it
- Follow through on commitments. If you say you’ll get back to someone with an answer, do it.
Crafting Effective Messages

- Don’t try to go it alone. Subject matter experts and communications staff need to work together in preparing information and responding to issues raised by stakeholders.

- Understand your specific objective for communicating with the public

- Develop three or four messages in support of your objective when calling, writing, or meeting with the public

- Messages should be brief, accurate, straightforward, and easy to understand
Crafting Effective Messages (cont.)

- Frame the message to fit the audience. Consider the understanding of science, level of interest, and the underlying perceptions of risks.

- Messages should start with a conclusion, and then follow with two or three facts to support the conclusion.

- Keep each key message and its supporting facts to a 15 to 45 second statement.

- Include messages that concisely address the “Is it safe?” question.

- Where possible, get out the message that the District takes the public’s thoughts seriously and has the expertise and the dedication to carry out its mission.
Communicating Complex Technical Information

- Keep presentations to no more than 15 minutes
- Make technical data understandable with plain English, and avoid jargon and acronyms
- Use familiar units of measure and don’t use scientific notation
- Simple charts and graphs, relevant photographs, and straightforward graphic illustrations can help you get your message across
- Help the public understand a specific risk in terms of plant features and regulatory controls that address the risk
- Be aware of the benefits and pitfalls of using risk comparisons
- Body language can override verbal messages. Avoid crossed arms, poor eye contact, turning your back to the audience, and angry visual reactions (e.g., rolling eyes).
Don’t use specific health risk numbers in messages if they aren’t needed

If risk numbers are used make sure the particular risk metric can be understood

- Individual risk is a probability (e.g., a 1 in a million chance)
  - Some will interpret a 1 in a million cancer risk to mean that one person will get cancer (out of a million people that will be exposed)

- Don’t ignore cancer burden as a metric. If the analysis were to be done, almost all HRAs would show that no cancer cases would be expected to occur due to exposure to a facility’s air emissions (accurate statement if cancer burden is < 0.5)

- Anticipate common questions and develop responses up front (e.g., Why doesn’t the HRA consider “cumulative impacts”?)

- Don’t blame anything on “the system” or say “that’s just the way it is”
New Source Review Approaches for Regulating Criteria Pollutants and Toxic Air Contaminants

<table>
<thead>
<tr>
<th>Criteria Pollutants</th>
<th>Toxic Air Contaminants</th>
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<tbody>
<tr>
<td>Ambient Air Quality Standard</td>
<td>Not Defined</td>
</tr>
<tr>
<td>Significant Impact Level (SIL)</td>
<td>Project</td>
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<tr>
<td>Risk Limit</td>
<td></td>
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<tr>
<td>Air Concentration</td>
<td>Toxic Risk</td>
</tr>
<tr>
<td>Screening Analysis</td>
<td>Cumulative Analysis</td>
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Acceptable level for cumulative impacts

- Project Increment
- Project Increment + Existing Background

Significant Impact Level (SIL): Not Defined

Ambient Air Quality Standard: Not Defined

Toxic Risk: Not Defined
Trends in Carcinogenic Health Risks

Measurement-based Trends

Based on network average ambient toxic air contaminant concentrations and Oct. 2003 OEHHA Health Risk Assessment guideline methodology
EPA’s Seven Cardinal Rules of Risk Communication

1. Accept and involve the public as a partner
   - The ultimate goal of the communication strategy is to produce an informed public, not to defuse public concerns or replace actions.

2. Plan carefully and evaluate the outcome of the communication efforts
   - Different goals, audiences and media require different actions.

3. Listen to the public’s concerns
   - People often care more about trust, credibility, competence, fairness and empathy than about statistics and details.

4. Be honest, frank and open
   - Trust and credibility are difficult to obtain; once lost, they are almost impossible to regain.

5. Work with other credible sources
   - Conflicts and disagreements among organizations make communication with the public much more difficult.

6. Meet the needs of the media
   - The media are usually more interested in politics than in risk, in simplicity than in complexity, and in danger than in safety.

7. Speak clearly and with compassion
   - People can understand risk information, but they may still not agree. Some people will not be satisfied.


Center for Risk Communication, organization founded and directed by risk communication luminary Dr. Vincent Covello, [http://centerforriskcommunication.org](http://centerforriskcommunication.org).

Dr. Peter Sandman, one of the forefathers of the field of risk communication, [http://www.psandman.com](http://www.psandman.com).

Society for Risk Analysis (Risk Communication Specialty Group), the premier professional association for those communicating risks, [http://www.sra.org/rcsg](http://www.sra.org/rcsg).
