Risk Communication:
Warren K. Sinclair Keynote Lecture
March 8, 2010, Bethesda, Maryland
NCRP Annual Meeting

Dr. Vincent T. Covello
Director
Center for Risk Communication
New York, New York
Tel. (917) 270-5280
Email: vincentcovello@ix.netcom.com
vcovello@centerforriskcommunication.org
Presentation Objective

To review:

the

research and practitioner literature

on

best practice

in

risk communication.
Definition

Risk: “a threat of loss, real or perceived, to that which we value.”

Risk Communication: “the exchange of information about risks.”
Risk Communication: Definition

• Is an interactive process of exchange of information and opinion among individuals, groups, and institutions

• Involves multiple messages about the nature of risk

• Involves messages not strictly about risk, such as legal and institutional arrangements for risk management

Mental Noise

- Threats (risks) produce stress
- Stress produces emotion (e.g., anxiety, worry, fear, anger, outrage)
- Stress and emotion produce mental noise, which changes in the way people process information
Risk Communication Goals

- enhance knowledge and understanding
- build trust and credibility
- encourage appropriate attitudes, behaviors and beliefs
Risk Communication Theories

• Trust Determination Theory
• Mental Noise Theory
• Negative Dominance Theory
• Risk Perception/Outrage Theory
“Perception equals reality.”

“That which is perceived as real is real in its consequences.”

“When people are stressed and upset, the gap between perceptions and reality often becomes wider.”
Risk Perception Theory

“When people are stressed and upset, the gap between perceptions and reality often becomes wider.”
## Risk Perception (Fear) Factors

<table>
<thead>
<tr>
<th>Lower Concern/Fear</th>
<th>Higher Concern/Fear</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Trustworthy sources</td>
<td>Untrustworthy sources</td>
</tr>
<tr>
<td>2. Large benefits</td>
<td>Few or unclear benefits</td>
</tr>
<tr>
<td>3. Under one’s control</td>
<td>Controlled by others</td>
</tr>
<tr>
<td>4. Voluntary</td>
<td>Involuntary</td>
</tr>
<tr>
<td>5. Fair</td>
<td>Unfair</td>
</tr>
<tr>
<td>6. Natural origin</td>
<td>Human origin</td>
</tr>
<tr>
<td>7. Children not victims</td>
<td>Children as victims</td>
</tr>
</tbody>
</table>

---

Copyright, Dr. V Covello, Center for Change/Risk Communication
Risk Perception (Fear) Factors

Lower Concern/Fear
1. Trustworthy sources
2. Large benefits
3. Under one’s control

Higher Concern/Fear
1. Untrustworthy sources
2. Few or unclear benefits
3. Controlled by others
Risk Perception (Fear) Factors

- **Trust**
  - Listening/Caring
  - Competence/Expertise
  - Honesty/Transparency
- **Benefits/Fairness**
  - Societal
  - Community
  - Personal
- **Control/Voluntariness**
  - Choice
  - Voice
  - Knowledge
<table>
<thead>
<tr>
<th>Cause of death</th>
<th>Annual risk</th>
<th>Lifetime risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor vehicle accident</td>
<td>1 in 6700</td>
<td>1 in 88</td>
</tr>
<tr>
<td>Lightning</td>
<td>1 in 3,000,000</td>
<td>1 in 39,000</td>
</tr>
<tr>
<td>Shark Attack</td>
<td>1 in 280,000,000</td>
<td>1 in 3,700,000</td>
</tr>
</tbody>
</table>
Risk Communication: Key Messages

• Risk communication is a science-based discipline

• High concern situations change the rules of communication

• The key to risk communication success is anticipation, preparation, and practice
Risk Communication Literature

- Over 8000 Articles in Peer Reviewed Scientific Journals
- 2000 Books
- Over 20 Percent Deal with Radiation Issues
Risk Communication Literature: Example

Dr. R. Hyer and Dr. V. Covello


(www.amazon.com or www.who.int/bookorders)
Risk Communications Literature

“Communicating Radiation Risks”

- Sample scenarios
- Pre-approved messages
- Lessons learned
Risk Communication Literature: Example

Authors: Steven Hobfoll et. al.

Conclusion of Research
Provide people a sense of:

- Hope
- Self- and community efficacy
- Safety
- Calm
- Connectedness
Risk Communication: Resources

- M. Gladwell, “Blink”
- J. Lehrer, “How We Decide”
- S. Bok, “Lying”
- R. Fisher, “Getting to Yes”
- P. Ekman, “Telling Lies: Clues to Deception” (see also P. Ekman, “Emotions Revealed”)
- E. Tufte, “Visual Explanations”
Risk Communication:

Key Messages

- Risk communication is a science-based discipline
- High concern situations change the rules of communication
- The key to risk communication success is anticipation, preparation, and practice
Risk Communication: Core Concepts

When people are stressed or concerned, they typically:

• ...have difficulty, hearing, understanding, and remembering information
• ...want to know that you care before they care what you know.
• ...focus most on what they hear first and last.
When people are stressed or concerned:

• ...the gap between reason and emotion (risk perceptions) often becomes wider.
• ...they typically focus much more on negative information than positive information.
• ...they typically process information at four grades below their education level.
• ...they typically seek out additional third party sources of credible information.
Risk Communication: Key Messages

- Risk communication is a science-based discipline
- High concern situations change the rules of communication
- The key to risk communication success is anticipation, preparation, and practice
Seven Step Risk Communication Strategy

1. Identify a risk communication issue or scenario
2. Identify the primary stakeholders/target audience
3. Identify potential questions or concerns
4. Develop key messages using message mapping
5. Develop supporting information for key messages
6. Test and practice messages
7. Deliver messages through appropriate communication channels
“Most of the concerns and questions of upset or concerned people can be predicted and prepared for in advance.”
“It takes me an average of two weeks to prepare an impromptu speech.”

Mark Twain
Stakeholder Predictability

“50 Most Frequently Asked Questions by Terminally Ill Patients”
Stakeholder Predictability

- “77 Most Frequently Asked Questions by Journalists in a Disaster” (handout)
Stakeholder Predictability

“65 Most Frequently Asked Questions about Pandemic Influenza”
(www.pandemicflu.gov)

“205 Most Frequently Asked Questions Following a Water Security or Water Contamination Event”
(USEPA, Effective Risk Communication during Water Security Emergencies”
EPA/600/R-07/027)
Radiological Emergency Research
Finding:
(NUREG) Radiological Events

• Over 450 questions anticipated from the media and the public

• 14 categories of questions
(for example, questions about evacuation, sheltering in place, health and safety, KI, and economic impacts)
Risk Communication: Key Messages

• Risk communication is a science-based discipline

• High concern situations change the rules of communication

• The key to risk communication success is anticipation, preparation, and practice
“The Magic Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information”

George A. Miller (Department of Psychology, Princeton University)

*The Psychological Review, 1956, vol. 63, pp. 81-97*
<table>
<thead>
<tr>
<th>Stakeholder Question or Concern:</th>
<th>Key Message</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9 words on average</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supporting Info.</th>
<th>Key Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>9 words on average</td>
</tr>
<tr>
<td>1.2</td>
<td>9 words on average</td>
</tr>
<tr>
<td>1.3</td>
<td>9 words on average</td>
</tr>
<tr>
<td>2.1</td>
<td>9 words on average</td>
</tr>
<tr>
<td>2.2</td>
<td>9 words on average</td>
</tr>
<tr>
<td>2.3</td>
<td>9 words on average</td>
</tr>
<tr>
<td>3.1</td>
<td>9 words on average</td>
</tr>
<tr>
<td>3.2</td>
<td>9 words on average</td>
</tr>
<tr>
<td>3.3</td>
<td>9 words on average</td>
</tr>
</tbody>
</table>
Risk Communication
Templates (see handout)

- CCO
- Rule of 3
- 27/9/3
- Primacy/Recency
- AGL-4
- 1N=3P
- IDK
Risk Communication/Message Mapping Templates

• CCO
"When people are stressed and upset, they want to know that you care before they care what you know."
The CCO Template

- Compassion
- Conviction
- Optimism
Trust Factors in High Stress Situations

- Listening/Caring/Empathy/Compassion: 50%
- Competence/Expertise: 15-20%
- Honesty/Openness: 15-20%
- All Other Factors: 15-20%

Assessed in first 9-30 seconds
Templates

- CCO
- Rule of 3
- 27/9/3
- Primacy/Recency
Mental Noise
(Attention Span)

Mental noise can reduce the ability to process communication up to 80%.
Templates

- Rule of 3
- 27/9/3
- Primacy/Recency
Mental Noise: The Rule of 3

Everything in Threes

- Three Key Messages
- Repeat Messages Three Times (e.g., Triple T Model)
- Key Messages Supported by Three Supporting Messages or Three Credible Sources
Templates

- CCO
- Rule of 3
- 27/9/3
- Primacy/Recency
The 27/9/3 Template

• 27 words
• 9 seconds
• 3 messages
Templates

- CCO
- Rule of 3
- 27/9/3
- Primacy/Recency
“When people are stressed and upset, they typically focus most on that which is said first (primacy) and last (recency).”
Primacy/Recency Template

• **Low Stress Situations:**
  Brain processes information based on **linear order** (e.g., 1, 2, 3)

• **High Stress Situations:**
  Brain processes information based on **primacy/recency** (e.g., 1, 3, 2)
TBC Template
(Trust, Benefits, Control)

Key Message 1: Trust Message

Key Message 2: Benefits/Fairness Message

Key Message 3: Control Message
Risk Communication: Key Messages

• Risk communication is a science-based discipline

• High concern situations change the rules of communication

• The key to risk communication success is anticipation, preparation, and practice