

US EPA ARCHIVE DOCUMENT



Challenges in Risk Communication: Microbial Pathogens

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Introduction

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 - Lessons Learned
- Strategic Risk Communication
 - What it means
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- Recommendations

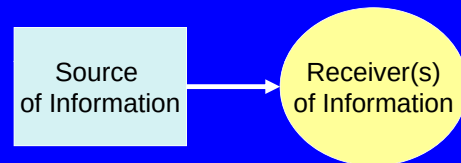
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Approaches

- Risk communication (RC)
 - Began as an add-on
 - Evolved into a broader concept
 - Interactive exchange of information and opinions among individuals, groups and organizations (NRC, 1989)
 - Analytic-deliberative process (NRC, 1996)
 - Infused throughout the risk management paradigm

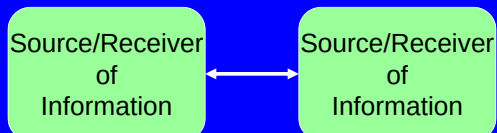
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"Tell" (One-way) Method



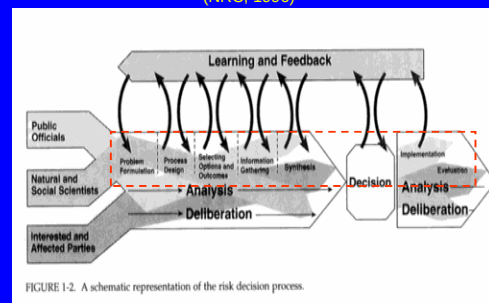
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"Dialogue" (Two-Way) Method

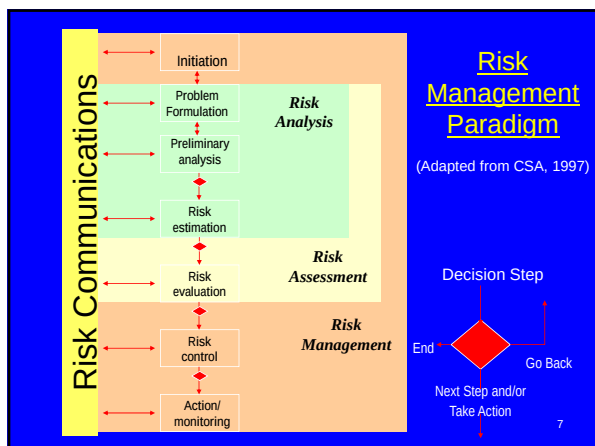


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Analytic-Deliberative Process (NRC, 1996)



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Microbial Risk Communication Goals

- Increase awareness and understanding
- Provide meaningful, relevant, accurate, clear information
- Meet stakeholders' needs for information, sharing and inclusion
- Foster meaningful interactions

Embrey and Parkin, 2002

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Types and Examples

Types of Risk Communication Microbial RC Examples

- | | |
|---|----------------------------------|
| Information & education | 1. Bill inserts |
| Behavior change & protective action | 2. Boil water notices |
| Disaster warning & emergency notification | 3. Evacuation alerts |
| Joint problem-solving & conflict resolution | 4. Regulatory decision processes |

Types from Covello et al, 1986

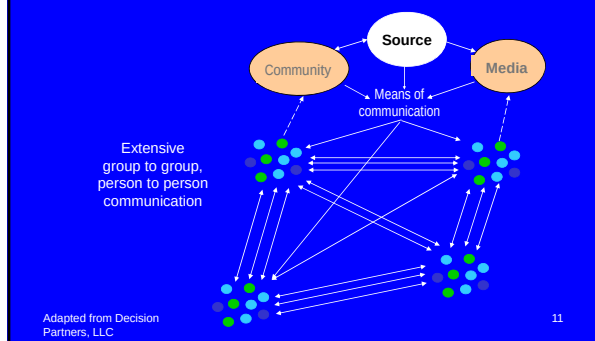
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What has Changed?

- 1993 Milwaukee outbreak
 - Increased public awareness
 - Raised stakeholders' expectations for more participation in decision-making
- More microbial pathogens of concern identified
 - CCL and ICR processes (SDWA, 1996)
- Internet access to information and communications
 - Increased complexity & rapid, dynamic nature of communication pathways
 - Increased expectations of finding "the answer" out there somewhere; e.g., somebody knows

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"Network" (Multi-way) Method



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Issue Paper Methods

- Examined 6 microbial pathogen risk cases
- Selected diverse set of conditions
 - Acute and chronic risks
 - Different sources and exposure pathways
 - Drinking, recreational, and waste water
 - Airborne pathogens
 - Point source and non-point source
 - Short and long-term scenarios
 - Various geographic scales and at-risk populations
- Co authors: Covello and Hunter

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Cases Studied

1. Milwaukee – 1993 *Cryptosporidium* outbreak
2. Delmarva Peninsula – 1997 *Pfiesteria* outbreak
3. Glasgow – 2002 *Cryptosporidium* incident
4. Hong Kong – 2003 SARS epidemic
5. Stockton, California – Decades of pathogens in recreational water
6. Wastewater treatment plants – Compilation of several sites

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Analyzed for...

- Traditional communication components
 - Source, message, channel, receiver
- Contexts
 - Organizational features
 - History of the problem, relationships
 - Legal mandates, authorities
- Results
 - Public health impacts (including subpopulations)
 - Lessons learned

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Themes: Similarities

Factors which adversely affected RC success

- Complex contexts, not fully known or understood
- Limited or no advance knowledge of stakeholders' needs
- No standardized RC strategies or methods in place
- Lack of clarity about RC lead
- Unclear & conflicting RC messages
- Reliance on limited set of familiar relationships & channels
 - e.g., 1-way, mass media in all cases
- Insufficient, not timely attention to subgroups' needs

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Themes: Differences (1 of 2)

- Only 1 case (Glasgow) had
 - A clear RC lead
 - Planned in advance for a microbial pathogen scenario
 - Systematic approach with interagency team & formal agreement
- 3 cases revealed reluctance to share information and cooperate among agencies
 - Hong Kong, Delmarva, and Milwaukee
- Wide variety of RC methods were used
 - 2-way or combined methods in 3 cases (key in Hong Kong)
 - Scope and reach varied (subgroups)
 - Legal authority limited RC methods (Stockton)

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Themes: Differences (2 of 2)

- At-risk group needs met differently
 - Conflicts between proscribed methods & needs (Stockton)
 - Conflicts between methods & expectations (Delmarva)
- Results
 - Great public concern as deaths occurred (Hong Kong, Milwaukee)
 - Public distress increased due to linked economic and other concerns (Delmarva, wastewater treatment plants)
 - Loss of trust in government due to slow, non-credible RC (Delmarva, Milwaukee, Stockton)
 - Apathy for problems extended over time (Stockton)

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Public Health Impacts

- Raised awareness
 - Reduced exposures (Delmarva)
 - Prevented potential illnesses (Glasgow)
 - Importance of lab results
 - Increased symptom & clinical reporting (Delmarva)
 - Declined over time and exposures returned (Stockton)
- Reduced deaths (Milwaukee, Hong Kong)

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Other Impacts

- Lost school and work time (Milwaukee, Hong Kong)
- Damaged community relationships (wastewater treatment plants, Delmarva, others)
- Legal actions, lawsuits (Milwaukee)
- Corrective actions – including improved RC strategies – by authorities (Milwaukee, Glasgow)
- Political fallout – e.g., questioning cost/value of boil water notices (Glasgow)

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Lessons Learned

1. Planning
 - Plan in advance to maximize RC performance
 - Describe when, how a microbial “outbreak” will be declared
2. Roles and responsibilities
 - Define in advance to improve RC efforts
 - Address legal, cross-boundary limitations in advance
3. Existing communication networks
 - Engage community organizations proactively
 - Involve respected, public opinion formers

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Lessons Learned

4. Risk perception
 - Anticipate and acknowledge perceived microbial pathogen and related risks
 - Provide information, not premature reassurance
5. Communicating with the media
 - Establish positive relationships in advance
6. Transparency
 - Share information openly, truthfully and in a timely manner among partners

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Strategic Risk Communication

- Refers to the **strategic management of risk communications**
- It is an integral part of risk management processes & organizational infrastructure
- It is a purposeful process of skillful interaction with stakeholders supported by appropriate information
- It helps **both** stakeholders and decision makers make well-informed, effective decisions

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Risk Managers Need to Know...

- Who is concerned about microbial pathogen risks
- How people think about microbial pathogen risks & the options to address them
- How stakeholders respond or accept these risks & tradeoffs
- The contexts in which people make risk-related decisions
- How people want to get relevant information

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Challenges

- Infusing a strategic RC approach throughout an organization
- Developing the structure and support needed for effective RC
- Learning continuously who stakeholders are & what they need and want to make microbial pathogen risk-related decisions
- Sustaining a systems-oriented RC approach based on continuous improvement methods

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Recommendations (1 of 2)

1. Plan
 - Identify key actors, roles, resources
2. Prepare, train, practice well in advance
 - Know microbial RC principles, best practices, & skills
3. Identify & assess real and perceived pathogen risks & mitigation options
 - Do this early, with stakeholders
4. Decide about communicating
 - Write protocols in advance
 - Address what, who & cross-jurisdiction issues

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Recommendations (2 of 2)

5. Define & tier the RC objectives clearly
 - Assure agreement among key actors
6. Communicate
 - Consider context, content, clarity, timeliness, methods
 - Address different stakeholder needs
 - Acknowledge uncertainty (e.g., preliminary data)
 - State what know & how will find out and share more
7. Assess the RC effectiveness
 - Were objectives defined mutually? Achieved?
 - From whose perspective?
8. Apply lessons for better performance next time

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Thank You!

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