

Core Slides

Risk Communication Course

EPA

National Assoc of Remedial Project Managers

July 2008

Definitions

Risks: Definition

“Threats to (loss of) that which we value.”

Risk Communication: Definition

“The exchange of information about risks (bad news).”

Risk Communication Goals

- **enhance knowledge and understanding**
- **build trust and credibility**
- **encourage appropriate behaviors and levels of concern**

CDC's Risk Communication Goals

- **Be first, be right, be credible**
- **Inform, not inflame**
- **Address rumors, inaccuracies, and misperceptions quickly**

Rule of 3

Everything in Threes

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

Risk Communication Hypotheses

“Most of the concerns and questions of upset people can be predicted in advance.”

“When people are stressed and upset, they want to know that you care before they care what you know.”

“Upset people often have difficulty hearing, understanding, and remembering information.”

Stakeholder Predictability

**“50 Most Frequently Asked Questions
by Terminally Ill Patients”**

Stakeholder Predictability

- **“50 Most Frequently Asked Questions by Terminally Ill Patients”**
- **“77 Most Frequently Asked Questions by Journalists in a Disaster”**

Stakeholder Predictability

- “50 Most Frequently Asked Questions by Terminally Ill Patients”
- “77 Most Frequently Asked Questions by Journalists in a Disaster”
- “65 Most Frequently Asked Questions about Bird Flu and Pandemic Influenza”
(pandemicflu.gov)

Stakeholder Predictability

- **“50 Most Frequently Asked Questions by Terminally Ill Patients”**
- **“77 Most Frequently Asked Questions by Journalists in a Disaster”**
- **“65 Most Frequently Asked Questions about Bird Flu and Pandemic Influenza” (pandemicflu.gov)**
- **“45 Common Stakeholder Questions Related to Environmental Cleanup Sites”**

Risk Communication

Class Exercise

Scenario Overview

- **5 Scenarios**
 - 1 per group
 - multiple issues
 - **same format** – situation, action taken, community background, health effects
- **Group activity**
 - **identify stakeholders and concerns**
 - prepare message maps
 - practice delivery of message maps

Scenario Overview

Scenario 1: (Waste Disposal Pond Site)

- **Summary:**
 - soil, GW and sediment contamination
 - threat to drinking water (State ban on fishing in river)
- **Source:**
 - mercury from local mfg plant (now closed)
- **EPA Action:**
 - non-time-critical removal of river sediments
 - expedited RI/FS
- **Local Setting:**
 - Site borders two rural towns
 - high community concern
 - frequent inquiries from congressional reps.

Scenario Overview

Scenario 2: (Wood Preserving Facility)

- **Summary:**
 - contaminated soil, GW, and river sediments
- **Source:**
 - dioxin and metals
- **EPA Action:**
 - soil excavation & removal
 - GW extraction
 - long-term GW treatment
- **Local Setting:**
 - low-income community (EJ) in small town

Scenario Overview

Scenario 3: (Former Mining Site)

- **Summary:**
 - soil and water contamination
 - threat to endangered species (fish in the river)
- **Source:**
 - zinc, arsenic and lead from zinc mining operations
- **EPA Action:**
 - removal action to excavate soil
 - pump & treat GW
 - collect air samples (to i.d. dust levels from mine tailings)
- **Local Setting:**
 - mid-sized town, high concern among residents and tribal community (TAG application)

Scenario Overview

Scenario 4: (Closed Landfill Site)

- **Summary:**
 - air quality problem
 - excessive levels of vinyl chloride in homes
- **Source:**
 - landfill gas migration
- **EPA Action:**
 - landfill gas extraction and air monitoring
 - temporary evacuation of 20 homes
 - installation of methane monitors in the homes
- **Local Setting:**
 - upper income, high concern area
 - residents threatening to sue developer who “tricked” them and said landfill would be turned into a golf course

Scenario Overview

Scenario 5: (Metals Foundry Site)

- **Summary:**
 - High levels of lead on site and in nearby residential yards
- **Source:**
 - operations at former metals processing facility
 - heavily industrialized area, possible cumulative health effects
- **EPA Action:**
 - soil sampling, excavation and removal
 - temporary relocation of 10 residences
- **Local Setting:**
 - minority, low-income community (EJ)
 - high community concern w/ heavy media attention
 - TAG application

Class Exercise - Overview

Part I – Stakeholders & Concerns

Part II – Create Message Maps

**Part III – Deliver Message Maps
(Role play)**

Class Exercise: Stakeholders & Concerns

1. Select a group reporter to:

- Take notes on flipchart
- Summarize the group discussion
- Keep the group on schedule

2. Carefully read assigned scenario

3. Prepare list of stakeholders

- Those interested
- Those influenced
- Those affected

4. Prioritize list and I.D. concerns of primary stakeholder group

“77 Most Frequently Asked Questions by Journalists and the Public in a Disaster”

Types of Questions:

- **Factual Questions**
- **Emotionally Charged Questions**
- **Challenge, Trap, and Pitfall Questions**

Challenges/Traps/Pitfalls

- **False Negative Questions**
- **Guarantee Questions**
- **What If (Worst Case Scenario) Questions**

Risk Communication:

Key Messages

- **Risk communication is a science-based discipline**
- **High stress situations change the rules of communication**
- **The key to critical communication success is anticipation, preparation, and practice**

Risk Communication:

Key Messages

- **Risk communication is a science-based discipline**
- **High stress situations change the rules of communication**
- **The key to communication success is anticipation, preparation, and practice**

Risk Communication Literature

- **8000 Articles in Peer Reviewed Scientific Journals**
- **2000 Books**
- **Reviews of the Literature by Major Scientific Organizations (e.g., National Academy of Sciences)**

Risk Communication Literature: Research Based Resources

Dr. R. Hyer and Dr. V. Covello

*Effective Media Communication During
Public Health Emergencies:*

A World Health Organization Handbook

World Health Organization, United
Nations: Geneva, April 2007

www.who.int/bookorders

Resources

Effective Media Communication During Public Health Emergencies

- **A Comprehensive Bibliography of Peer Reviewed Articles**
- **Over 1000 Do's and Don'ts (With Explanations)**
- **A Section on Message Mapping**

Resources

Effective Media Communication During Public Health Emergencies

- A Comprehensive Bibliography of Peer Reviewed Articles
- Over 1000 Do's and Don'ts (With Explanations)
- **A Section on Message Mapping and Message Mapping Templates**

Message Map

Stakeholder
Question or
Concern:

Key Message

9 words on
average

Key Message

9 words on
average

Key Message

9 words on
average

Support-
ing Info.
1.1

Support-
ing
Info. 2.1

Support-
ing Info.
3.1

Support-
ing Info..
1.2

Support-
ing Info.
2.2

Support-
ing Info.
3.2

Support-
ing Info.
1.3

Support-
ing Info.
2.3

Support-
ing Info.
3.3

Key Word Message Map

West Nile Virus Map

Key Message

“Remove
Standing Water”

1.1

Unattended
swimming
pools

1.2

Flower
Pots/Bird
Baths

1.3

Cup of
Water

Key Message

“Wear Protective
Clothing”

2.1

Long Sleeves

2.2

Long Pants

2.3

Dusk and
Dawn

Key Message

“Use Insect
Repellent”

3.1

DEET

3.2

23%

3.3

Medical
Research

Message Mapping

1. Department of Health and Human Services/CDC: *Pre-Event Maps for Avian Flu/Pandemic Influenza* (pandemicflu.gov)
2. Multi-State Partnership for Agricultural Security: *Message Maps for 30 Agricultural Scenarios*
3. Environmental Protection Agency: *Message Maps for 6 Water/Groundwater Contamination Scenarios* (www.epa.gov/nhsrc)

Risk Communication Templates

- **KDG**
- **APP**
- **CCO**
- **27/9/3**
- **TBC**
- **Primacy/Recency**
- **AGL-4**
- **1N=3P**

Risk Communication Templates

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KDG Template (Overarching Message Map)

(Know, Do, Go)

Key Message 1: What is most important for people to know

Key Message 2: What is most important for people to do

Key Message 3: Where can people go to get credible information

Message Mapping Exercise

- **KDG Template**

Class Exercise: Message Maps

Prepare an Overarching Message Map

- Use **KDG Template** (know, do, go)
- Target msgs to primary stakeholder group

Present Message Map

- Choose group spokesperson
- Provide 60-sec. overview of scenario
- Describe your KDG message map

Risk Communication Literature

- **8000 Articles in Peer Reviewed Scientific Journals**
- **2000 Books**
- **Reviews of the Literature by Major Scientific Organizations (e.g., National Academy of Sciences)**

Risk Communication: Best Practice

- **Stakeholder Predictability (APP Template)**
- **Caring/Empathy (CCO Template)**
- **Attention Span (27/9/3 Template)**

Risk Communication Templates

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Risk Communication: Best Practice

- **Stakeholder Predictability (APP Template)**
- **Caring/Empathy (CCO Template)**
- **Attention Span (27/9/3 Template)**

Stakeholder Predictability

“For most high stress situations, over 95 percent of stakeholder concerns and questions can be predicted in advance.”

The APP Template

- 1. Anticipate**
- 2. Prepare**
- 3. Practice**

The APP Template **Planning and Preparation**

“If I had all day to cut down a large tree, I would use most of the day sharpening my axe.”

Abraham Lincoln

Communication Regret

Anticipate

- 1. Scenarios**
- 2. Stakeholders/Partners**
- 3. Questions and Concerns**

Types of Questions:

- **Factual Questions**
- **Emotionally Charged Questions**
- **Challenge, Trap, and Pitfall Questions**

Types of Media Questions

- **Factual Questions**
- **Emotionally Charged Questions**
- **Challenge, Trap, and Pitfall Questions**

Challenges/Traps/Pitfalls

- **False Negative Questions**
- **Guarantee Questions**
- **What If (Worst Case Scenario) Questions**

Challenge Questions: Do's and Don'ts

Don't repeat a false negative

Do repeat the opposite of the false
negative

Best Practices in Risk Communication

- **Prepare messages for important scenarios**
- **Meet the needs of the media**
- **Provide training for the those who will deliver messages**

APP Template

- **Anticipate**
- **Prepare**
- **Practice**

Message Mapping Steps

- 1. Identify a complete list of specific concerns for each stakeholder group**
- 2. Develop key messages**
- 3. Conduct systematic message testing**

Risk Communication: Best Practice

- **Stakeholder Predictability (APP Template)**
- **Caring/Empathy (CCO Template)**
- **Attention Span (27/9/3 Template)**

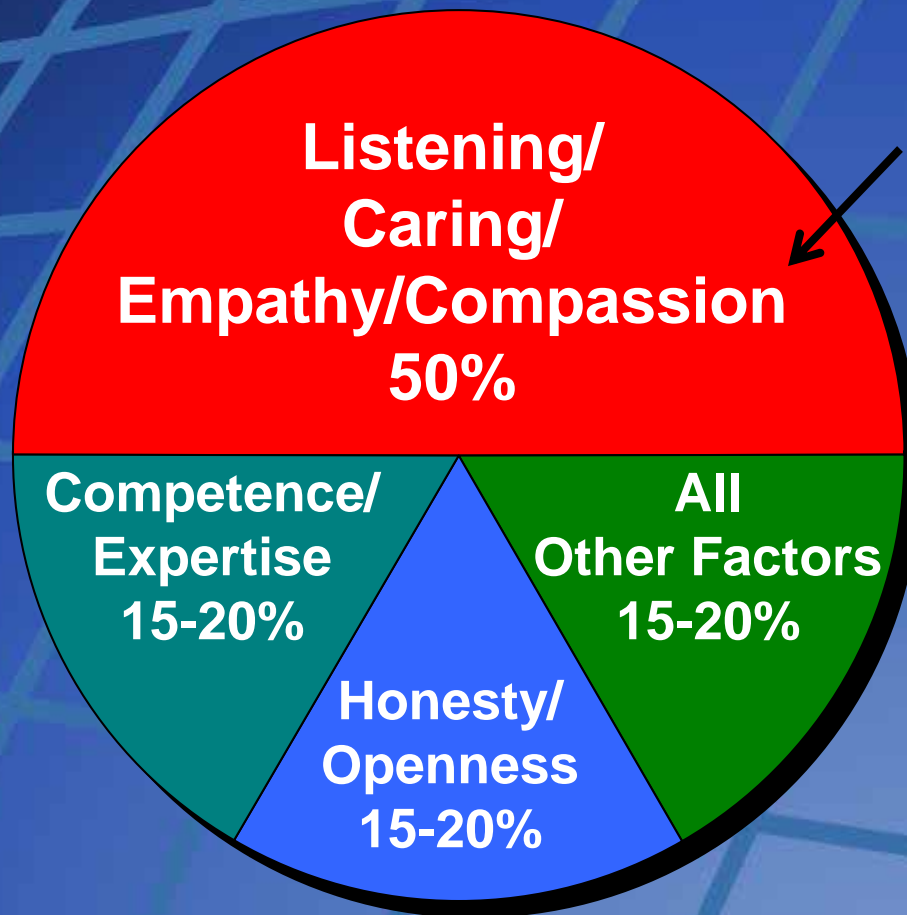
Caring/Empathy

“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



**Assessed
in first 9-30
seconds**

Risk Communication Models

- **The Trust Determination Model**
- **The Attention Span/Mental Noise Model**
- **The Negative Dominance Model**

The CCO Template

- **Compassion**
- **Conviction**
- **Optimism**

Mayor Giuliani, 9/11

“The number of casualties is more than any of us can bear ultimately.”

Message Mapping Exercise

- CCO Template

Class Exercise: Message Maps

Prepare an Overarching Message Map

- Use **CCO Template** (compassion, conviction, optimism)
- Target msgs to the primary stakeholder group

Present Message Map

- Choose group spokesperson
- Provide 60-sec. overview of scenario
- Describe your CCO message map

Risk Communication: Best Practice

- **Stakeholder Predictability (APP Template)**
- **Caring/Empathy (CCO Template)**
- **Attention Span (27/9/3 Template)**

Attention Span/Mental Noise

“When people are stressed and upset, they often have great difficulty hearing, understanding, and remembering information”

Risk Communication Models

- **The Trust Determination Model**
- **The Attention Span/Mental Noise Model**
- **The Negative Dominance Model**

The 27/9/3 Template

- 27 words
- 9 seconds
- 3 messages

Risk Communication: Attention Span Research

**“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**

Risk Communication: Attention Span Research

“The Magic Number Three, Plus or Minus Two:

Some Limits on Our Capacity for Receiving, Processing, and Remembering Information in High Stress Situations”

High Stress Situations: Rule of 3 Shift

- Low Stress Situations:
Brain can hold on average
7 messages
- High Stress Situations:
Brain can hold on average
3 messages

The 27/9/3 Template

- 27 words
- 9 seconds
- 3 messages

27/9/3 Template

- **27 words**
(total of 27 words for all three key messages, with each key message averaging 9 words in length)
- **9 seconds**
- **3 messages**

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Risk Perceptions

**TBC Template (Trust, Benefits,
Control)**

Key Message 1: Trust Message

**Key Message 2: Benefits/Fairness
Message**

Key Message 3: Control Message

Attention Span Literature

Risk Perceptions

Risk Perceptions

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

“Facts about risk appear to play little or no role in determining public fears, perceptions, and concerns about risks.”

Risk Perception/Fear Factors

Risks are feared more if they are perceived as:

- **Unfair**
- **Involuntary or imposed**
- **Inescapable/catastrophic**
- **Unfamiliar/dreaded**
- **Man made**
- **Threaten children**
- **Under the control of untrustworthy others**

Risk Perceptions (Fear Factors)

Lower Concern/Fear

- 1. Trustworthy sources**
- 2. Large benefits**
- 3. Under one's control**
- 4. Voluntary**
- 5. Fair**
- 6. Natural origin**
- 7. Children not victims**

Higher Concern/Fear

- Untrustworthy sources**
- Few or unclear benefits**
- Controlled by others**
- Involuntary**
- Unfair**
- Human origin**
- Children as victims**

Risk Perception/Fear Factors

- **Trust**
 - **Listening/Caring**
 - **Competence/Expertise**
 - **Honesty/Transparency**
- **Benefits/Fairness**
 - **Societal**
 - **Community**
 - **Personal**
- **Control**
 - **Choice**
 - **Voice**
 - **Knowledge (e.g. things for people to do)**

Risk Perceptions

“The more you can do to **increase perceived trust**, the less the concern, worry, and anxiety.”

Risk Perceptions

“The more you can do to **increase perceived benefits and fairness**, the less the concern, worry, and anxiety.”

Risk Perceptions

“The more you can do to **increase perceived control**, the less the concern, worry, and anxiety.”

Risk Perceptions

**TBC Template (Trust, Benefits,
Control)**

Key Message 1: Trust Message

**Key Message 2: Benefits/Fairness
Message**

Key Message 3: Control Message

Message Mapping Exercise

- TBC Template

Class Exercise: Message Maps

Prepare an Overarching Message Map

- Use **TBC Template** (trust, benefits, control)
- Target msgs to primary stakeholder group

Present Message Map

- Choose group spokesperson
- Provide 60-sec. overview of scenario
- Describe your TBC message map

Risk Perception/Fear Factors

- **Trust**
 - **Listening/Caring**
 - **Competence/Expertise**
 - **Honesty/Transparency**
- **Benefits/Fairness**
 - **Societal**
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Risk Communication Templates

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Risk Communication Templates

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- **Primacy/Recency**
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Risk Communication Templates

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- **Primacy/Recency**
- AGL-4
- 1N=3P

Primacy/Recency Template

“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)

Risk Communication Templates

- APP
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===

- Primacy/Recency
- **AGL-4**
- 1N=3P

AGL-4 Template



AGL (Average Grade Level) Minus 4 (Four Grade Levels) Template

“When people are stressed and upset, they typically process information at four grade levels below their average grade level.”

AGL-4 Shift

- Low Stress Situations:
Brain processes information at **AGL** (average grade level)
- High Stress Situations:
Brain processes information at **AGL-4** (average grade level minus 4 grade levels)

Risk Communication Templates

- APP
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===

- Primacy/Recency
- AGL-4
- **1N=3P**

Risk Communication Models

- **The Mental Noise Model**
- **The Trust Determination Model**
- **The Negative Dominance Model**

1N=3P Template



1N (Negative) Equals

3 P (Positives) Template

“When people are stressed and upset, they typically focus more on the negative than on the positive.”

(Negative Dominance Principle)

Negative Dominance

- High Stress Situations:
1N=3P
(one negative on average equals three positives)
- Bad News Template:
It takes on average 3 positives to balance one negative.

1N=3P

(Negative Dominance)

- **Avoid absolutes**
 - (e.g., never, always)
- **Avoid Unnecessary negatives**
 - (e.g., no, not, never, nothing, none)
- **7 Part “Bad News” Template**

Bad News (1N = 3P) Template

- 1. Positive message (e.g., listening, caring, empathy, compassion)**
- 2. State Negative**
- 3. Positive message (1)**
- 4. Positive message (2)**
- 5. Positive message (3)**
- 6. Positive message (4)**
- 7. Follow up**

Special Topics

- **Non-Verbal Communication**
- **Bridging**
- **Credibility Ladders**

Special Topics

- **Non-Verbal Communication**

Non-Verbal Communication

- **People judge the messenger before they judge the message**
- **People judge the messenger primarily in terms of trust**
- **Trust is judged primarily through actions, body language, and verbal communication.**

Non-Verbal Communication

- **75% Rule**
- **Negative Dominance Rule**
- **Cultural Meaning Rule**

Non-Verbal Communication

- **Eyes**
- **Hands**
- **Posture**

**Dress,
appearance,
voice, etc.**

Special Topics

- **Non-Verbal Communication**
- **Bridging**

Bridging Statements

- **Example Statements**
 1. ***The most important thing for people to know is. . .***
 2. ***What this all boils down to is. . .***
 3. ***What needs to be emphasized is. . .***

Special Topics

- **Non-Verbal Communication**
- **Bridging**
- **Credibility Ladders**

Credibility Ladder

**Most
Credible**

High Credibility

Medium Credibility

**Least
Credible**

Low Credibility



Shift

- **From**
 - One credible source
- **To:**
 - 3 plus credible sources

Credibility Transference

“A lower credible source takes on the credibility of the highest credible source that agrees with its position on an issue.”


Credibility Reversal

“When a lower source attacks the credibility of a higher source, the lower source loses further credibility.

The only information source that can effectively attack the credibility of another source is one of equal or higher credibility.”

Credibility Ladder: Environment

**Most
Credible**



**Respected local citizens
Non-management employees
Educators
Healthcare workers
Media
Activist groups
Industry officials
Government officials
Paid consultants**

**Least
Credible**

Special Topics

- **Non-Verbal Communication**
- **Bridging**
- **Credibility Ladders**
- **Visuals**

Key Messages

- **Risk communication is a science-based discipline**
- **High stress situations change the rules of communication**
- **The key to communication success is anticipation, preparation, and practice**

Role Play Exercise

Class Exercise: Role Play

Instructions

- All class members participate
- One team will provide information re: scenario and setting
- Class members play role of primary stakeholder – asking Qs, voicing concerns

Role of Group Spokesperson

- Give 60 second overview of scenario
- Explain the setting (who, what, when, why, how, where)
- Deliver opening statement using 1 of maps developed earlier
- Facilitate - answer questions from the audience or delegate to other group members

Class Exercise: Role Play

Group Preparation

- **Develop opening statement**
- **Decide roles each person will play**
(spokesperson, RPM, state agency rep, EPA CIC, etc.)

Class Role Play

(5-minute class critique following role play)

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