One-slide Agenda - OVERVIEW

Know what you know.

Know about what you don’t know.

Know HOW you know; Embrace and understand your very self as an “expert”

Use your expertise daily to share how you define “safe”, build trust and how you prevent “losses”
What experts think vs. everyone else: agree about 20% of the time.
Organizationally speaking...

How do they find agreement? Share understandings? Do “business”? Make decisions? Compete?

Should they?
What is Risk?

From Merriam-Webster:

Etymology: French *risque*, from Italian *risco*

1: possibility of loss or injury: **PERIL**
2: someone or something that creates or suggests a hazard
3 **a**: the chance of loss or the perils to the subject matter of an insurance contract; *also*: the degree of probability of such loss **b**: a person or thing that is a specified hazard to an insurer <a poor *risk* for insurance> **c**: an insurance hazard from a specified cause or source <war *risk*>
A Good Risk Definition

“The Probability of loss of that which we value.”

- Dr. Vincent Covello
“Technical” Losses?

- Physical Life (or time lessened)/Health

Q: What else “of value” could persons lose?
Range of One’s Own “Risk” definition

**Technical**

- Health Statistics, PRA,
- Mortality Studies, Hazard and
- Scientific Assessments

**Personal**

- Anecdotes, Observational
- Evidence, Experiences,
- Systems of trust and belief
Risk of Radiation Exposure?

At “low levels” of ionizing radiation – diagnostic, environmental, occupational:

Cancer

What else do people fear?
<table>
<thead>
<tr>
<th>Rank</th>
<th>Cause of Death</th>
<th>No. of deaths</th>
<th>% of all deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Heart Diseases</td>
<td>696,947</td>
<td>28.5</td>
</tr>
<tr>
<td>2.</td>
<td>Cancer</td>
<td><strong>557,271</strong></td>
<td><strong>22.8</strong></td>
</tr>
<tr>
<td>3.</td>
<td>Cerebrovascular diseases</td>
<td>162,672</td>
<td>6.7</td>
</tr>
<tr>
<td>4.</td>
<td>Chronic lower respiratory diseases</td>
<td>124,816</td>
<td>5.1</td>
</tr>
<tr>
<td>5.</td>
<td>Accidents (Unintentional injuries)</td>
<td>106,742</td>
<td>4.4</td>
</tr>
<tr>
<td>6.</td>
<td>Diabetes mellitus</td>
<td>73,249</td>
<td>3.0</td>
</tr>
<tr>
<td>7.</td>
<td>Influenza and pneumonia</td>
<td>65,681</td>
<td>2.7</td>
</tr>
<tr>
<td>8.</td>
<td>Alzheimer disease</td>
<td>58,866</td>
<td>2.4</td>
</tr>
<tr>
<td>9.</td>
<td>Nephritis</td>
<td>40,974</td>
<td>1.7</td>
</tr>
<tr>
<td>10.</td>
<td>Septicemia</td>
<td>33,865</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Change in the US Death Rates* by Cause, 1950 & 2002


Risk Communication

The study and practice of collectively and effectively understanding risks.
How Effective are we Now?

Q: Your experience in helping others understand risks as you understand them?

What experts think vs. everyone else: agree about 20% of the time.

— Dr. Peter Sandman, 1988.
Risk General Perception Factors
(Covello, Sandman)

Less Risk
- Trustworthy Info Sources
- Substantial Benefits
- Voluntary
- Controllable
- Fair/Equitable

Higher Risk
- Untrustworthy Info Sources
- No/little Benefit
- Involuntary
- Uncontrollable
- Unfair/Inequitable
## Risk General Perception Factors, II

<table>
<thead>
<tr>
<th>Less Risk</th>
<th>More Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Natural”</td>
<td>Un-“Natural” (man-made)</td>
</tr>
<tr>
<td>Familiar</td>
<td>Unfamiliar/exotic</td>
</tr>
<tr>
<td>Not dreaded</td>
<td>Dreaded</td>
</tr>
<tr>
<td>Certain</td>
<td>Uncertain</td>
</tr>
<tr>
<td>Special populations not affected</td>
<td>Special populations affected (children victims, etc)</td>
</tr>
</tbody>
</table>
Risk General Perception
Factors, III

Less Risk
- Unremarkable
- Moral/ethical
- Clear non-verbal message
- Responsive
- Random/scattered event

More Risk
- Memorable
- Immoral/Unethical
- Mixed non-verbal message
- Unresponsive
- Catastrophic
## Risk General Perception Factors, IV

<table>
<thead>
<tr>
<th>Less Risk</th>
<th>More Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Media Attention</td>
<td>Media Attention</td>
</tr>
<tr>
<td>Statistical victims</td>
<td>Identifiable victims</td>
</tr>
<tr>
<td>Immediate effects</td>
<td>Delayed effects</td>
</tr>
<tr>
<td>Effect reversible</td>
<td>Unreversible</td>
</tr>
<tr>
<td>Well-understood</td>
<td>Not well-understood</td>
</tr>
</tbody>
</table>
Risk Communication Benefits

- Engender agreement
- Reduce mistrust/fear/stress
- Resolve conflict
- Improve knowledge/control
- Business becomes easier and cheaper
Risk Communication Challenges

- How is Risk Communication different than “PR” (aka spin)?
- Understanding your own role as an expert.
- An modern expectation of total safety
- It is an ongoing piece of work…. 
- Others?
Needs for Risk Communication are not new....

“EPA should consider involving risk communication experts in the development...of plans...we should also continue to develop staff expertise in risk communication.”

-EPA Memo to Administrator 7/12/87 (one year after Chernobyl)
WHAT I BELIEVE

Risk Communication is not a solution unto itself. It is a process to engage, and a skill to develop personally.

At best, it can help us make our jobs easier in the short term, and

make the atmosphere for our work and decisions regarding technology and public policy more accommodating in the long-term.