Communicating Health Risk Uncertainty: Busting the myths

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“Then we’ve agreed that all the evidence isn’t in, and that even if all the evidence were in, it still wouldn’t be definitive.”

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Study Objectives

- To evaluate empirical studies of communicating uncertainty to the public in environmental health risk

- To produce evidence-based recommendations that can be used by health practitioners
Methods

- English language articles
- Published between January 1985 and Sept. 2008
- Input from collaborators representing regional, provincial and national health agencies
Search Techniques

- **Database search**
  - 38 databases in range of disciplines
  - 38 related terms and synonyms

- **Key journal search**
  - e.g. *Risk Analysis, Journal of Risk Research, Health Risk and Society*

- **Key author search**
  - 109 key risk communication authors
38 DATABASES SEARCHED

- Health Sciences (6) e.g. Medline
- Business/Commun. (3) e.g. Business Source Complete
- Psych/Soc/Ed (3) e.g. ERIC, PsycINFO
- Agric/Env (4) e.g. Agricola, Environment Complete
- Science/Technology (5) e.g. BioOne Abstracts
- Interdisc (10) e.g. Academic Source Complete
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Environmental Health

Environment, health, pandemic, genetic, etc.

Risk, hazard, crisis, etc.
Communication, disclose, inform, etc.

Uncertainty, probability, chance, credibility, etc.

Risk Communication

Uncertainty
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<thead>
<tr>
<th>Screening Level</th>
<th>Total</th>
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Methods – Data Extraction

■ Inclusion:
  ■ Explicit focus on the public and uncertainty

■ Exclusion:
  ■ where uncertainty is only mentioned in passing
  ■ no empirical evidence; and
  ■ studies about occupational health or economic risk
Results – Overview of research

- 28 articles from 1985 to 2008 (Sept.)
  - 22 articles from 2000 to 2008
  - 6 articles from 1985-1999
- Most studies from the US (14) and the UK (5)
- Quantitative, qualitative and mixed methods
- Disciplinary perspectives: Public Health, Health Policy, Communication studies, Risk Management, Medicine, Social Sciences, Nutritional Sciences
Myth #1: All uncertainty is the same
One size (doesn’t) fit all

Cartoon by Bradford Veley/bradveley.com
Variability vs. Uncertainty

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Conflicting knowledge vs not knowing

"Hey, I thought we were working with the same data..."
Source of uncertainty

“What have I got?”
Consequences of uncertainty
"Fewer than one in ten thousand—something like one in fourteen thousand—gets these side effects. Hardly anybody gets these side effects. They're extremely rare. You should be very proud."
Interpretations of uncertainty

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Interpretations of uncertainty

"IT'S AN EXCELLENT PROOF, BUT IT LACKS WARMTH AND FEELING."

ScienceCartoonsPlus.com
Policy default assumptions
Myth #2: People will not accept uncertain information
People need some information

"'BE CAREFUL! All you can tell me is 'BE CAREFUL'?"
Importance of plain language

But this *is* the simplified version for the general public.
Unambiguous information

H1N1 FLU
REGULAR FLU
NASAL FLU MIST
HIGH Dose
HIGH RISK
OVER AGE 65
AGE 2-49
PREGNANT
LOW RISK
UNDER AGE 2
PRIORITY JOBS
HEALTH STAFF

ANY QUESTIONS?
Know your audience
Myth #3: Admitting uncertainty undermines credibility
Different demands for certainty

Our customers just aren’t getting the message, folks. We need to communicate louder?

Why don’t we try listening to them for a change?

What does that have to do with communication?

Cartoon by Bradford Veley/bradveley.com
Withholding information

“Yes, I agree. But what really caught my attention is what the boss ISN’T saying!”

Cartoon by Bradford Veley/bradveley.com
Not saying doesn’t mean people don’t know
Myth #4: Information should be withheld until there is reasonable certainty
Timing matters

Well, Somebody leaked the Frog incident to the press!
10 day hypothesis re: timing
10 days to full year - Walkerton

**Story Reference Categories**

- Inquiry: 35%, 46%
- Blame: 37%, 31%
- Descriptions & control actions: 40%, 36%
- Health: 80%, 77%
- Govt. response: 23%, 34%
- General (mis)trust stories: 8%, 16%
- Other: 27%, 19%
10 Days to full year - BSE

**Story Reference Categories**

- Economy: 81% (10 Days), 80% (Full Year)
- Blame: 27% (10 Days), 26% (Full Year)
- Descriptions & control actions: 64% (10 Days), 66% (Full Year)
- Health: 31% (10 Days), 14% (Full Year)
- Govt. response: 22% (10 Days), 37% (Full Year)
- General (mis)trust stories: 3% (10 Days), 2% (Full Year)
- Other: 27% (10 Days), 20% (Full Year)
Myth #5: The media never get it right
The media ‘bad dog’

Cartoon by Bradford Veley/bradveley.com
"This just in. All the things previously thought to be good for us are in fact harmful to our health."
Filling the information void
Time spent dispelling rumours…

…means less time effectively communicating
The spokesperson matters

Tell us, in layman's terms, what your breakthrough means.

Certainly.\[ K - \frac{4n^3}{7}\sqrt{P_4} + \frac{4n^3}{57} \]

ScienceCartoonsPlus.com
The spokesperson matters
Take home messages

THE SCIENTIFIC COMMUNITY IS DIVIDED. SOME SAY THIS STUFF IS DANGEROUS, SOME SAY IT ISN'T.

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Questions?

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