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**RISK COMMUNICATION: REDUCING THE RISK OF
FOODBORNE ILLNESS**

Scott C. Ratzan, MD, MPA, MA

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Human risk from eating beef: Risk communication gone mad

It has been nearly five years since a UK scientific advisory committee linked mad cow disease to a human killer. In 1996, stories of Mad Cow Disease and its supposed link to a human disease heralded it to be the AIDS epidemic the UK never had. In December 2000, the Frankfurter Allgemeine newspaper, compared it to the threat to the Black Death that wiped out three-quarters of the population of Europe in the Middle Ages.

The theory that has caused the crisis is that mad cow disease or bovine spongiform encephalopathy (BSE)—a disease that effects cows – has been spread to humans by eating tainted beef. This leads to an incurable, deadly brain wasting disease called vCJD (variant Creutzfeldt-Jakob disease). In 1996, this scientific announcement and political furor became largest crisis since the Falkland War, according to then Prime Minister John Major.

What is the reality of BSE and vCJD? The purported infectious agent -- a prion – that is smaller than a virus has been identified. The molecular structure of the disease is similar in cows and people. Mad Cow disease and vCJD were principally thought to be confined to the UK. To date there are 83 attributable deaths to vCJD, principally in Europe (80 in UK, 3 in France)

Now five years later, with the sequel replaying with diseased cattle throughout Europe, people fear getting this brain wasting disease by eating beef. Yet, we still do not know how people got vCJD in the first place. The infectious agent has never been found in the meat of cattle. The mode of transmission also has not been replicated in the laboratory.

Additionally, a recent House of Lords report states: There is **no scientific proof** that BSE can be transmitted to man by beef, but this is seen by SEAC (Spongiform Encephalopathy Advisory Committee) as the most likely explanation, and all our control measures are based on the assumption that it is. [*Official Report*, 9 March 1999; Vol. 327, c. 86W.]

Nonetheless, the financial losses in the billions of dollars are evident: thousands of cattle have been culled, farmers livelihoods sacrificed, and the future food supply threatened.

While much has been learned from BSE in the 90s, Mad Cow Crisis 2001, presents a similar panic. The crisis has gone global -- beef boycotts have spread beyond Europe, blood supplies have been threatened by policies that suggest there is a risk in blood donations from people who resided in Europe, and the “outbreak” threatens other products that are made from or contain bovine sources – gelatin, tallow and even pharmaceuticals.

Voila—four years after what the Guardian termed the case that demonstrates the “perils of imperfect policymaking,” history again repeats. Politics, policy and leadership are blurred in protectionist and political dogma. Scientific fact has been overtaken by fear.

This has ramifications for policymakers everywhere who often say they are basing their decisions on science, while politics and public opinion are in charge. Qualifiers of theoretical, hypothetical, negligible and incalculably small mean little to politicians who become more fearful of the fearful public. The answer: policymakers make poor decisions with short-term (read I want to keep my job and cover my you know what) rather than long term (read I want to serve the public good).

Why is the Mad Cow Crisis something to be concerned about in the USA? The parallels for our policymakers are paramount. We can point to the facts --There are no known deaths due to vCJD or any mad cow disease in America. Yet, in the globalized world with goods and services that know no boundaries, facts and fears are universally blurred. The recent recall of genetically modified corn -- despite any known evidence that it could be harmful to human health -- threatens progress. Vaccines, drug products and food supplements have had recent safety challenges

In Summer 2000, the U.S. FDA convened an advisory on bovine sources in vaccines and concluded the risk of BSE transmission to humans was negligible and theoretical with a one in twenty billion probability. Yes, that means there are not enough people on the planet for one case to be present. Rest assured, there are no worries about vaccine safety in America. [My 18 month son has had all over 15 doses of vaccines to date.]

What we should fear the most is not Mad Cows in Europe, but the policymaker’s response. We do not need a new hypothetical threshold redefining a precautionary principle for vaccines, drugs and food products.

The World Health Organization was built on a premise embodied in the preamble to their constitution: “Informed opinion and active cooperation of the public are keys to advancing health.” We must demand such informed opinion of our policymakers to cooperate with the experts and the public to develop ideal decisions.

While many people would like to make their own informed decision about the food they eat, many questions remain - how much of the what we supposedly know is “right” (read factual or even truthful) is the right amount to communicate? How well-informed are the politicians and policymakers to be able to make decisions that ultimately serve the public good? And where can professional organizations and so-called consumer advocacy groups rely upon to get impartial information and the facts?

With such dilemmas, there is no surprise that a media feeding frenzy can easily ensue. Data, information, facts, and knowledge become slanted to the conflict and context. While it may be a right for opinion leaders, policymakers and those responsible for communication with the public to disseminate the latest information, it must be done in the right way with high ethical standards involving various stakeholders in the decision. We must beware of communicating risk in a way that can cause havoc leading to regulations that stifle science, with politics superceding public health. The stakes are high - the confidence in the food supply, scientific progress, and the health and well being of the public.

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Risk Communication: Reducing the Risk of Foodborne Illness

February 22, 2001

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Where are we in risk communication?

Usage of Existentially Validated Information

Verified data (knowledge)

Processed Data (information)

Mere Data





Health for the public good

Informed opinion and active cooperation on the part of the public are of the utmost importance in the improvement of health of the people.

World Health Organization
Preamble to the Constitution

OUR public

- The mouse is a little human
- If it is not natural it must be bad
- The plural form of the word anecdote is evidence

How do we diffuse risk scientifically?

- **Public health usual ideas:**
 - **The data speak for themselves**
 - **Surveillance sets the agenda**
 - **Indicators set policy objectives**

General Stereotypes of Health and Risk Communication

- Health communicators try to figure out how to warn people about serious hazards (e.g. cigarette smoking)
- Risk communicators try to figure out how to reassure people about modest hazards (e.g. vaccine safety, electromagnetic fields, etc.)

What is a science based approach to risk communication?



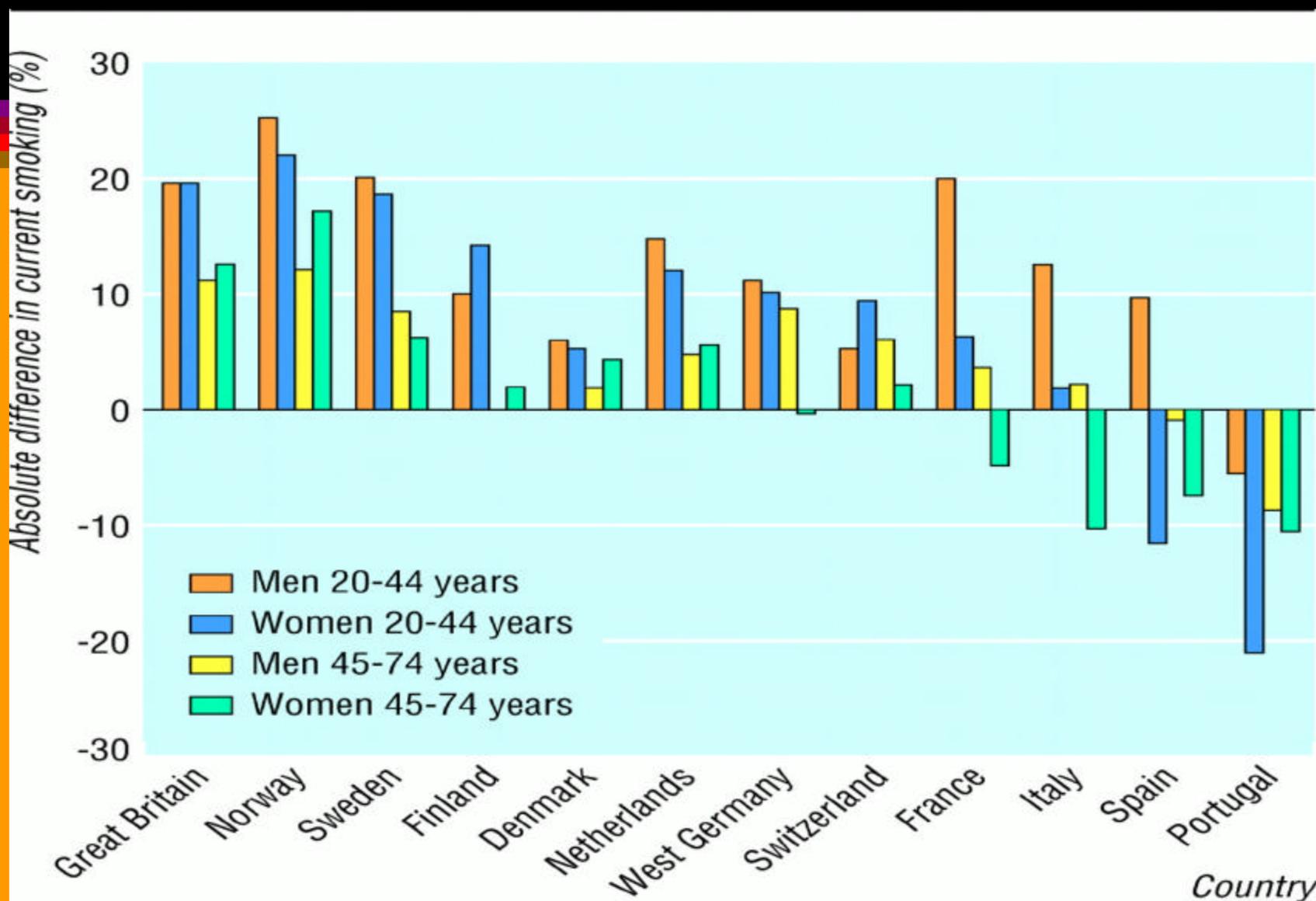
- Adds **VALUE** from the intervention
- Bases decisions on **SOUND SCIENCE** and **EVIDENCE**
- Develops opportune **OPINION LEADERSHIP**
- Involves Policymakers, Physicians, Patients and the Public in **PARTNERSHIP**

Challenges of health and risk communication

- GM foods
- Biotechnology
- New pills
- Natural vs. synthetic
- Tobacco cessation
- Theoretical/hypothetical/negligible risk

Are we looking at the right variables for our audience?

Educational Level and Smoking -- Europe



Lessons from tobacco: Health reasons alone are not motivational

- Health arguments have not made people stop
- Socio-cultural vs. *personal* - the guilt comes from 'not doing the right thing', social determinants help develop true personal desire
 - Resentment towards personal freedom continues
- 'It will not happen to me' syndrome, invincible nature: *'How is it possible that non-smokers also get cancer? So smoking does not cause cancer?'*
- Serious medical problems and saliency changes behavior

Emotions are the loudest in health and risk communication

- Slogans and programs do not motivate in isolation
- The psychology of giving up (*urge* and *willpower*) must be exceeded by the near term benefit of stopping smoking (*control, feeling good, beating disease, etc.*)
- It is more difficult to motivate with long-term benefits
- Health and risk communication are about FRAMING issues

Risk Communication Kakistocracy: Lessons from Bovine Spongiform Encephalopathy (BSE)

"The biggest crisis the European Union ever had"
Franz Fischler, European Commissioner for
Agriculture

"The worst crisis the British Government has
faced since the Falklands" John Major

"If one wanted to study the perils of imperfect
policy-making, this case provides them all."
The Guardian

Back cover of *The Mad Cow Crisis: Health and the Public Good*
(S. Ratzan, Editor) University College London Press; NYU Press, 1998)

BSE in the UK; a Background Lessons from News Coverage

- November 1986 - newly recognized form of neurological disease appears in cattle - BSE
- June, 1988 known to public - Mad cow disease
- March 20, 1996 cluster of 15 cases of new variant CJD released by SEAC .. "in the absence of any credible alternative, the most likely explanation at present is that these cases are linked to exposure to BSE"
- March 24, 1996 McDonalds bans beef
- EU ban...British boycott EU.....
- 2001 - Global concerns and ad hoc policies

BSE- Bovine Spongiform Encephalopathy

Key scientific question:

- How widely was the agent transmitted before and during the crisis? Have hundreds, thousands, or even millions of mostly British victims going to emerge in the years to come as vCJD's?

BSE- Bovine Spongiform Encephalopathy

A public health tragedy in reverse

Key policy question:

- Are the precautions taken so far in the UK, the EU, the USA, and elsewhere sufficient to ensure that no or virtually no additional transmissions are even now occurring?

BSE-

The response

- Killing of herds
- More studies without any confirmed vector identified
- Erosion of governmental trust
- Public uncertainty questioning of decisions on health (vaccines, GMOs, pill, etc.)

In the UK:

**The Science:
How did the original 16
or now 80+ people get vCJD?**

There is **no scientific proof** that BSE can be transmitted to man by beef, but this is seen by SEAC as the most likely explanation, and all our control measures are based on the assumption that it is.

[*Official Report*, 9 March 1999; Vol. 327, c. 86W.]

CONFIDENCE in UK -- 1996

IF THEY MADE A STATEMENT ABOUT BSE

In whom would you have

most confidence? next most confidence? least confidence?

	<i>%</i>	<i>%</i>	<i>%</i>
A scientist in a government department	4.6	11.3	26.4
A scientist in a consumer organization	18.0	35.4	1.5
A scientist in a university	42.0	23.0	0.5
A scientist in the meat industry	26.7	8.8	13.5
A scientist writing in a newspaper	0.9	10.1	2.4
A journalist writing in a newspaper	0.4	1.1	52.0
(None of these)	4.5	2.0	1.0
(Don't Know)	2.3	3.0	2.1
(Refusal/NA)	0.6	5.2	0.6

Consequence of 1996: TRUST 1999

For each, do you generally trust them to tell the truth or not?

	Tell Truth	Not tell truth	Don't know
	%	%	%
Doctors	89	8	3
Teachers	88	7	5
Clergymen or priests	86	9	5
Television news readers	75	17	8
The Police	70	23	7
Ordinary wo/man in the street	58	26	16
Civil servants	52	35	13
Trade Union Officials	40	39	21
<i>Government Scientists</i>	38	46	16
<i>Business leaders</i>	35	49	16
<i>Politicians generally</i>	19	73	8
<i>Government Ministers</i>	17	71	12
<i>Journalists</i>	10	82	8

Source: Better Regulation Task Force/MORI 9-19 January 1999. Base: 1,015 adults aged 16+.

Consequence of 1996: Who to believe 1999

“Now thinking about BSE, which two or three of these sources would you trust most to advise you on the risks posed by BSE?”

Independent Scientists (e.g. university professors)	57
Farmers	22
National Farmers Union	21
Civil Servants at the Ministry of Agriculture, Fisheries and Food	18
Government Scientists	17
Television	16
Newspapers	12
Food Manufacturers	11
Friends/family	9
Supermarkets	6
Government Ministers	4
Politicians generally	2
Other	1
None of these	4
Don't know	3

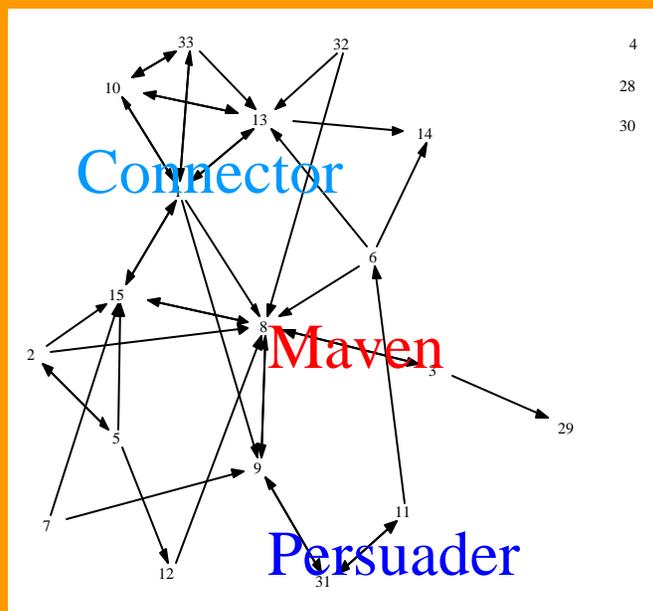
Source: Better Regulation Task Force/MORI 9-19 January 1999. Base: 1,015 adults aged 16+.

Effective Communication

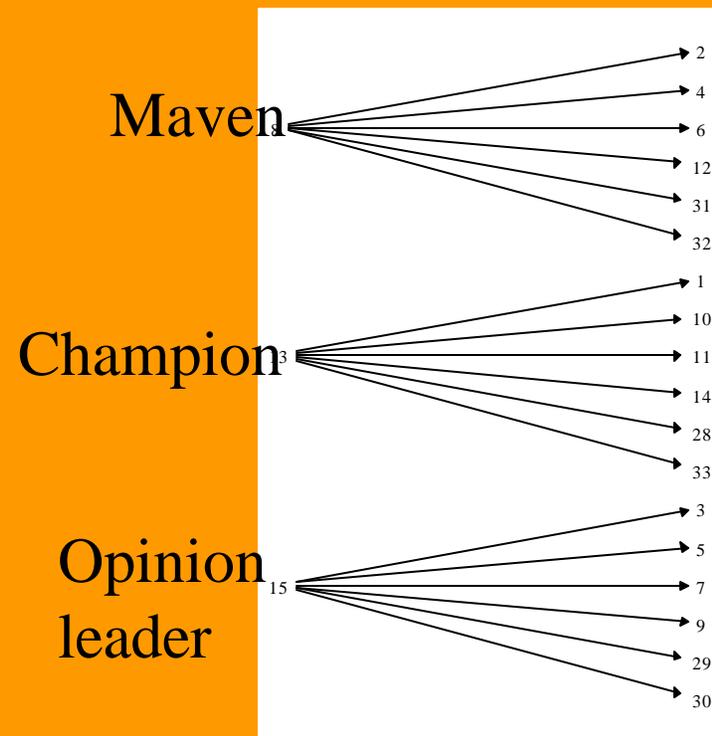
The right
information/message
to the right people
(targeting)
at the right time
for the intended effect

Proactive Dissemination Communication with Sociometric science

Usual community with mavens,
persuaders and connectors

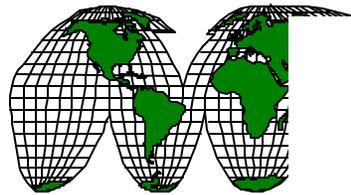


The Maven/Champion/Opinion leader
has his/her own networks



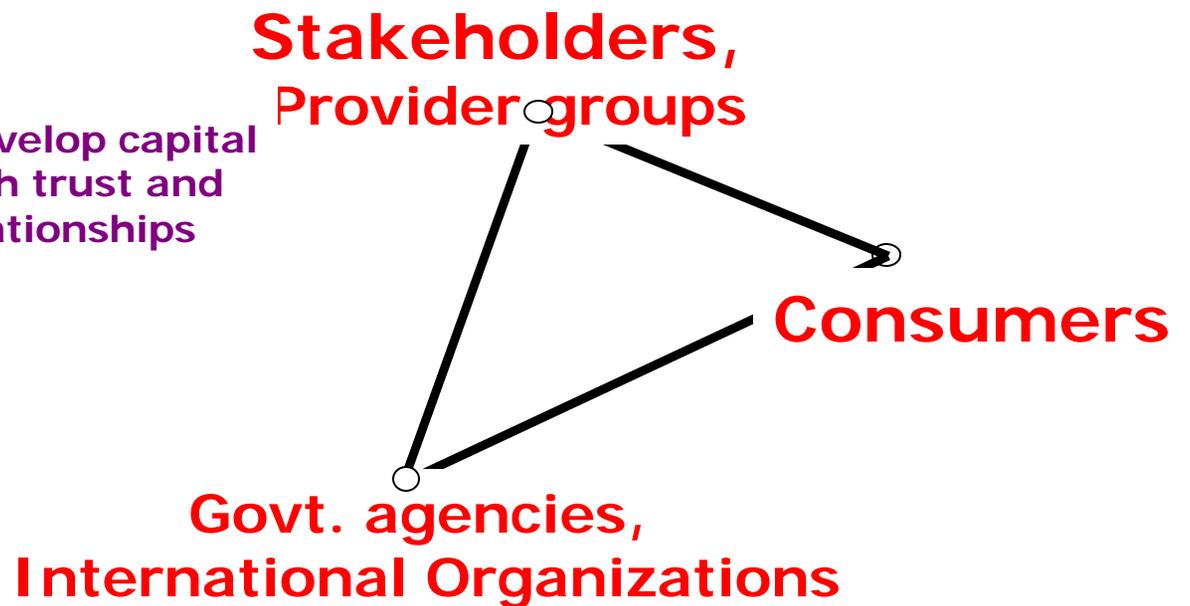
Ideal Risk Communication

- Identify partners with and develop a relationship activating groups to reach the best decision (devolution of decisions)



Strategic Partnerships

Develop capital with trust and relationships



Behavior vs. Social Change: Where does communication influence?



Final Points

- Arguing that we must offer aggressive scientific reassurance related to risk issues is not reassuring. Hence, suggesting such a strategy is not scientific.
- Do we need to look at new ways of adding a literacy related to risk? A risk competence?
- How well trained are we in communicating risk related to food safety?