Non-Persuasive Communication

Baruch Fischhoff
FDA
Risk Communication Advisory Committee
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Non-Persuasive Communication: Addressing Decision-Making Needs

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Analysis: determining what people need to know, in order to make sound choices

Design: creating communications effectively bridging critical gaps

Evaluation: assessing how well we have done and how well they are prepared

Four Examples

Medical informed consent
Warning labels
Emergency alerts
Health education

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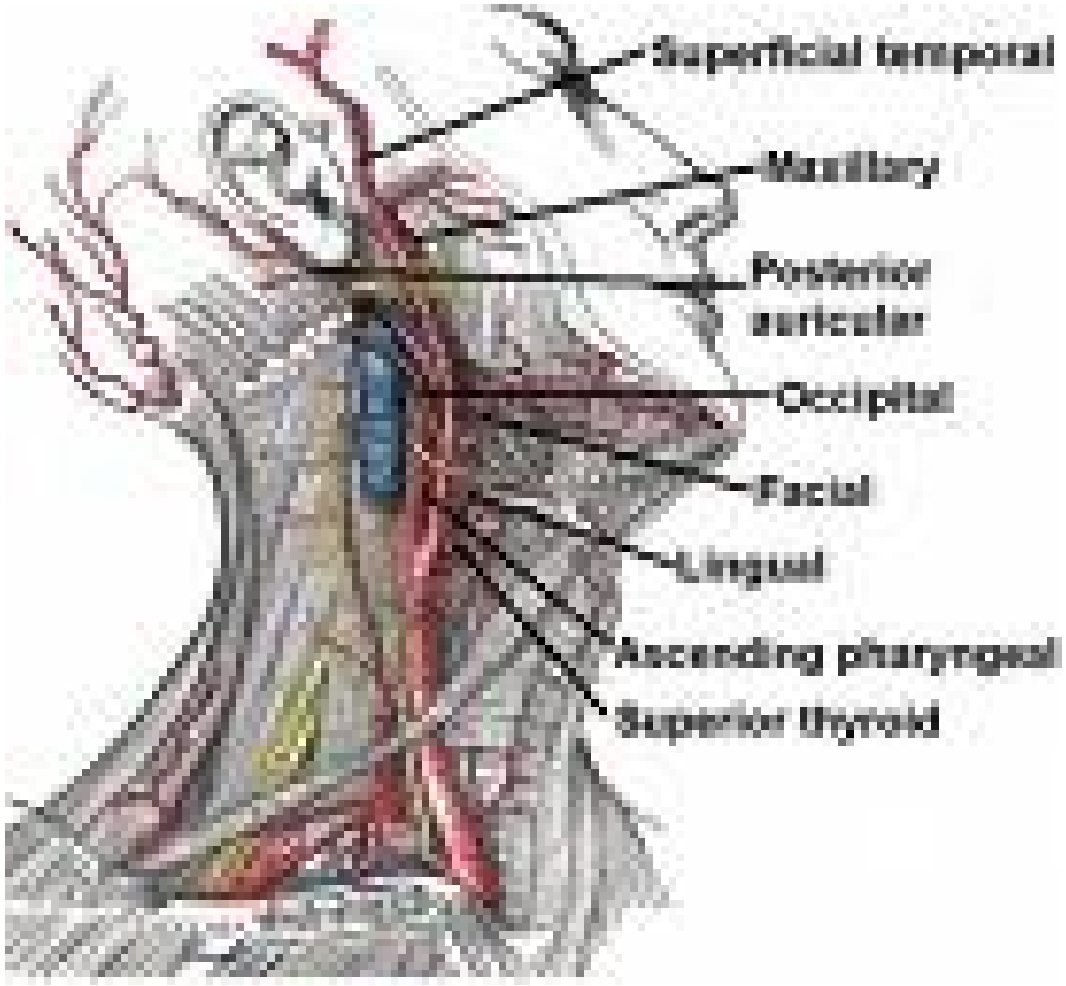
Medical Informed Consent

Example: carotid endarterechtomy

Merz, J., Fischhoff, B., Mazur, D.J., & Fischbeck, P.S. (1993). Decision-analytic approach to developing standards of disclosure for medical informed consent. *Journal of Toxics and Liability, 15*, 191-215


Superficial temporal
Maxillary
Posterior auricular
Occipital
Facial
Lingual
Ascending pharyngeal
Superior thyroid

Analysis

Determine the sensitivity of patients' choices to risk information, identifying facts most likely to change decisions

Many Possible Side Effects

death
stroke
facial paralysis
myocardial infarction
lung damage
headache
resurgery
tracheostomy
gastrointestinal upset
broken teeth

But knowledge of only a few would affect many patients' choices

death	15.0%
stroke	5.0
facial paralysis	3.0
myocardial infarction	1.1
lung damage	0.9
headache	0.8
resurgery	0.4
tracheostomy	0.2
gastrointestinal upset	0.09
broken teeth	0.01

(% that would decline, if they knew of each risk)

Design

Assume no prior knowledge

Focus on the few, most critical facts

- probabilities of death, stroke, facial paralysis
- meaning of paralysis

Legitimate value uncertainty

Evaluation

None …

Four Examples

Medical informed consent
Warning labels
Emergency alerts
Health education

Warning Labels

Example: court-mandated disclaimer for dietary supplements (saw palmetto)

Eggers, S.L., & Fischhoff, B. (2004). A defensible claim? Behaviorally realistic evaluation standards. *Journal of Public Policy and Marketing*,.23, 14-27

Court-Mandated Disclaimer

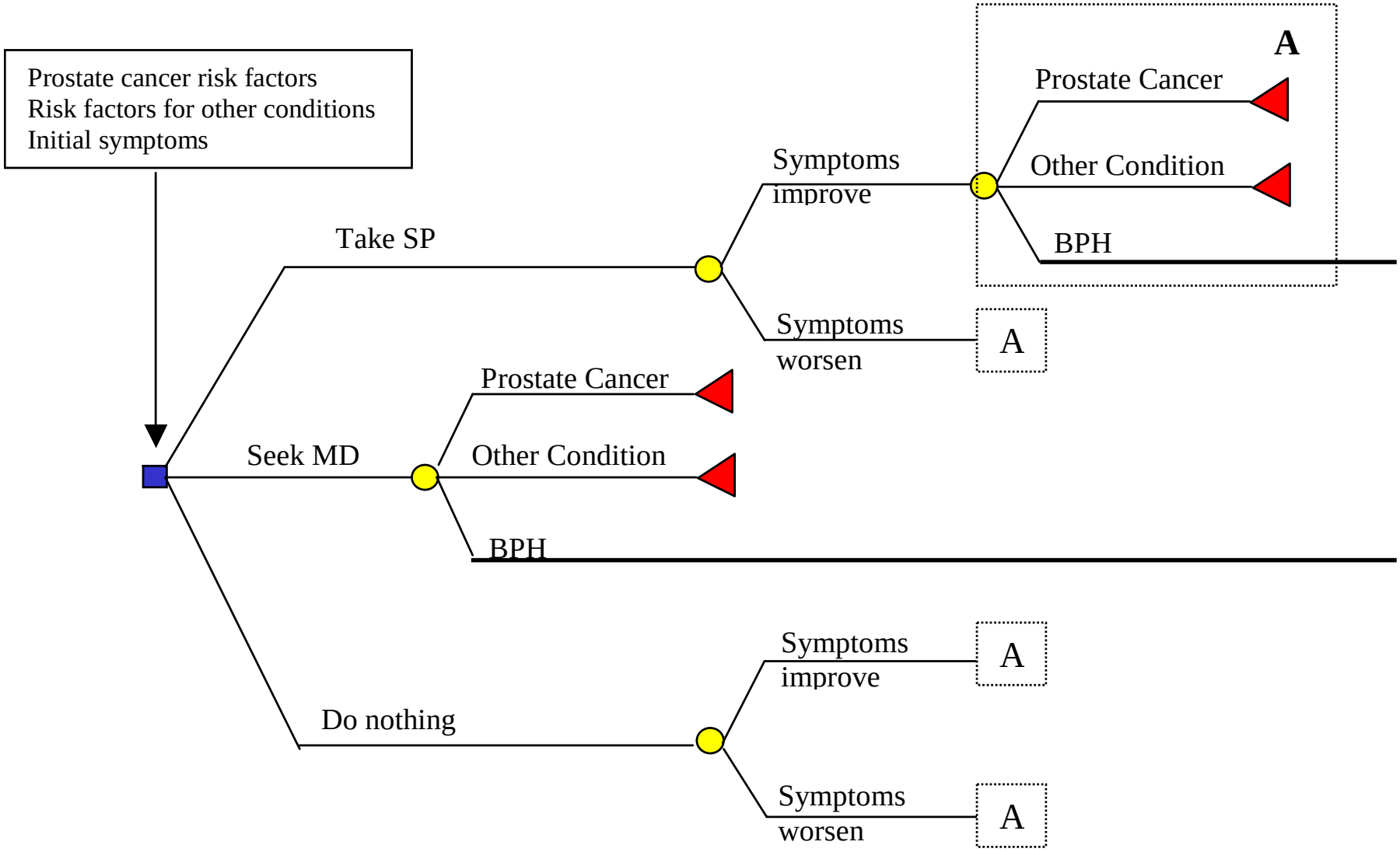
Recently, a review of the efficacy and safety of saw palmetto supplementation in men treated with saw palmetto in 18 randomized clinical studies showed a positive correlation between saw palmetto and prostate health.*

*This statement has not been evaluated by the Food and Drug Administration.

This product is not intended to diagnose, treat, cure or prevent any disease.

Analysis

Determine the sensitivity of consumer choices to how well decision-relevant information is understood


Prostate cancer risk factors
Risk factors for other conditions
Initial symptoms
Take SP
Symptoms improve
A
Prostate Cancer
Other Condition
BPH
Symptoms worsen
A
Seek MD
Prostate Cancer
Other Condition
BPH
Do nothing
Symptoms improve
A
Symptoms worsen
A

Design

Present both risk and benefit information
Provide quantitative estimates
Indicate data quantity
Present alternative options

Saw Palmetto Review Facts	
Who was studied?	A total of 2939 men between the ages of 40 and 90 participated in the 18 studies. On average, participants experienced moderate urinary tract symptoms associated with BPH

	Summary of Review		**Studies of treatments***		
	Men who took placebo	**Men who took Saw Palmetto**	**Alpha Blocker** (drug)**	**Finasteride (drug)**	**TURP (surgery)**
How drug might help					
Number of men out of 100 who report relief	51	74	74	67	88
Average degree of relief	29%	37%	48%	32%	85%
Percentage of men who stopped treatment	7%	9%	15%	11%	N/A
Side effects due to treatment					
Death	0%	0%	?	?	Less than1%
Infection	0%	0%	?	?	16%
Incontinence	0%	0%	?	?	3%
Erectile Dysfunction	0.7	1.1	0%	3%	14%
Other sexual problems	?	?	6%	?	73%
Other side effects***	?	?	?	?	?

†This review was published in the Journal of the American Medical Association, Vol 280. No. 18, 1604-9.
* Information from the Foundation of Informed Medical Decision Making and Health Dialog, Inc. (http://www.healthdialog.com/)
**Alpha blockers include Tamsulosin, Doxazosin, Terazosin

Evaluation

Ask potential users to interpret potential labels.

Predict distributions of good and bad choices.

Expected Optimality of Choices

No Claim	Should Consume	Should Not Consume
Does Consume	**3%**	2%
Does Not Consume	30%	**65%**

Health Claim	Should Consume	Should Not Consume
Does Consume	**20%**	45%
Does Not Consume	`13%	**22%**

Health Claim 1 + Disclaimer	Should Consume	Should Not Consume
Does Consume	**19%**	40%
Does Not Consume	14%	**27%**

Health Claim 2 + Disclaimer	Should Consume	Should Not Consume
Does Consume	**32%**	2%
Does Not Consume	1%	**65%**

Four Examples

Medical informed consent
Warning labels
Emergency alerts
Health education

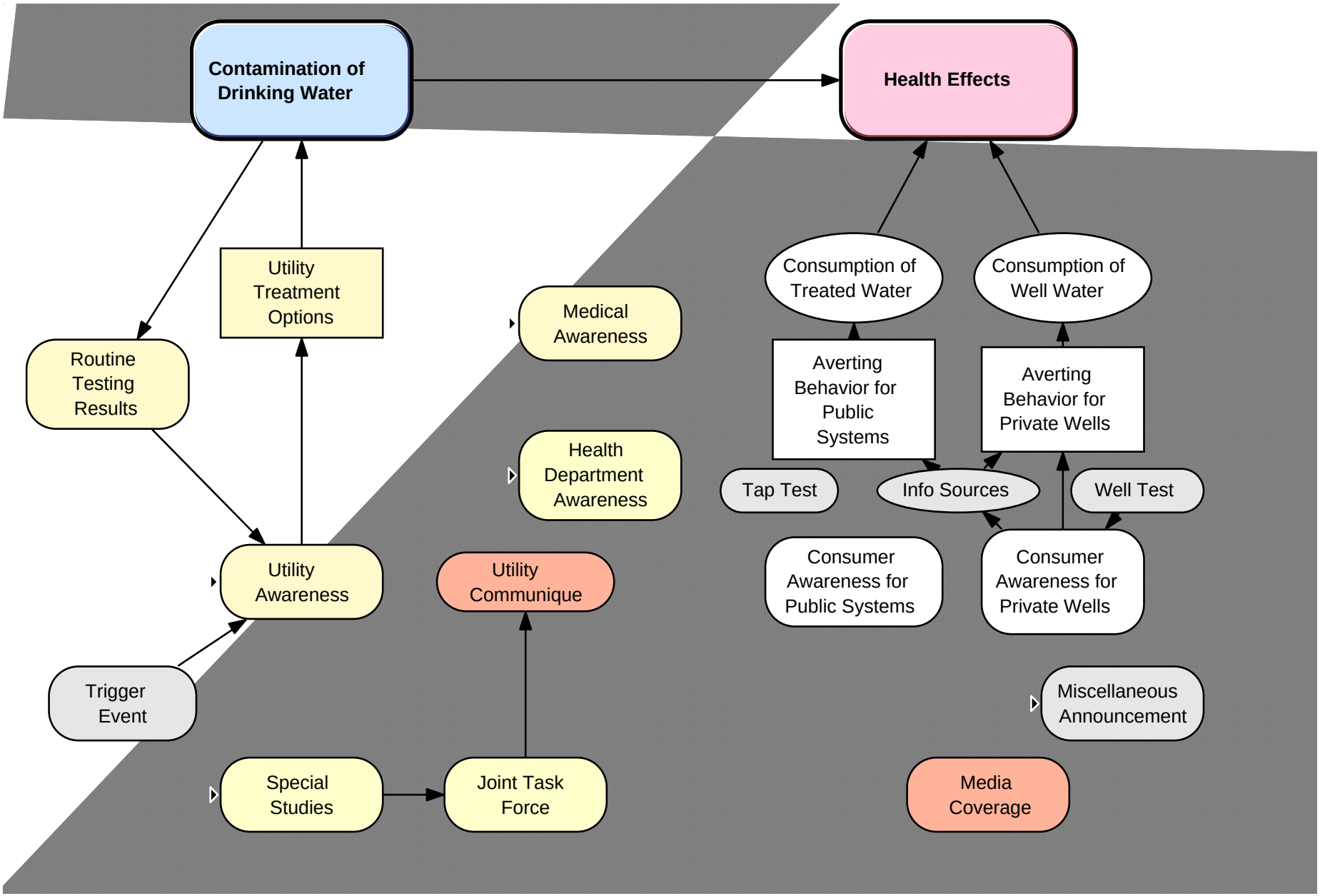
Emergency Alerts

Example: cryptosporidium intrusions in domestic water supplies

Casman, E., Fischhoff, B., Palmgren, C., Small, M., & Wu, F. (2000). Integrated risk model of a drinking waterborne Cryptosporidiosis outbreak. *Risk Analysis, 20*, 493-509

Analysis

Determine sensitivity of choices to risk information, as a function of their time of receipt and comprehensibility


Contamination of Drinking Water
Health Effects
Utility Treatment Options
Routine Testing Results
Medical Awareness
Health Department Awareness
Utility Awareness
Utility Communique
Trigger Event
Special Studies
Joint Task Force
Consumption of Treated Water
Consumption of Well Water
Averting Behavior for Public Systems
Averting Behavior for Private Wells
Tap Test
Info Sources
Well Test
Consumer Awareness for Public Systems
Consumer Awareness for Private Wells
Miscellaneous Announcement
Media Coverage

Decision Averting_behavior **Units:**

Title: Averting Behavior for Public Systems

Description: Do consumers do something to avoid any possible risk of cryptosporidial infection?

Correct averting behavior includes boiling drinking water and switching to safe water sources. Washing dishes, tooth brushing, and rinsing vegetables are not presently considered high risk behaviors for immunocompetent people in developed countries. Showering is not risky. Only filters with an absolute (not nominal) pore size Š 1 micron can effectively remove oocysts. (MMWR, 1995) Use of other types of filters do not constitute correct averting behavior.

reference:
MMWR 1995. Assessing the public health threat associated with waterborne cryptosporidiosis: report of a workshop. Rep. 44(RR-6):1-19.

0 = no action or inappropriate action (eg charcoal filter)
1 = avoid most tap water
2 = boil drinking water or use clean bottled water

expr

Definition:
```
if consumer_awareness =0 then 0
else
if consumer_awareness =1 then 1
else if   info_sources > 0 then 2
else 2
```

Inputs:

Consumer_a…	Consumer Awareness for Public Systems
Info_sources	Info Sources

Outputs:

Consumptio…	Consumption of Treated Water

Design

Establish communicator credibility

Explain

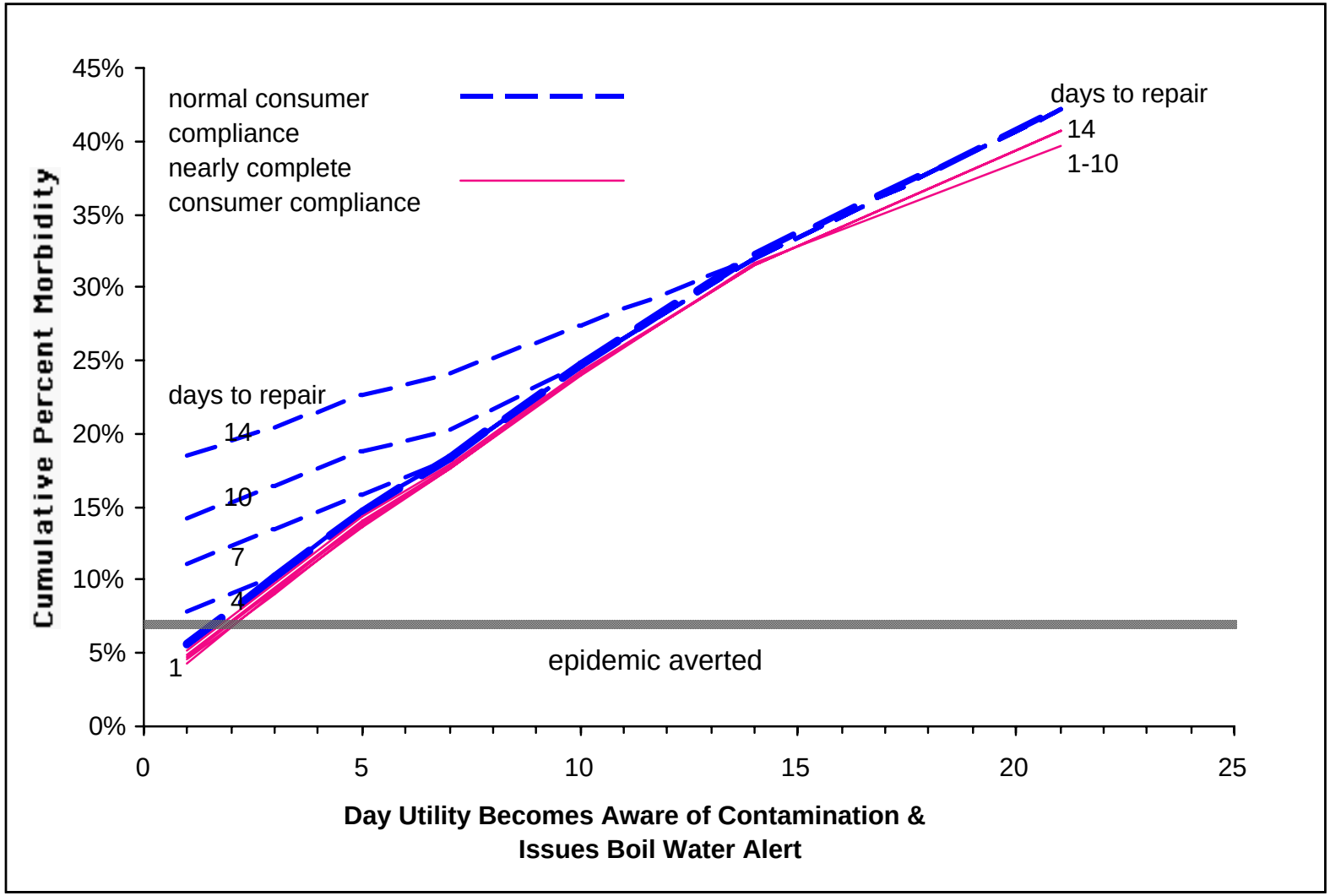
- the source of problem
- the uselessness of testing
- the methods of decontamination

Assume that knowledge is

- unaffected by community history
- affected by immunocompromised status

Evaluation

Best available information has no practical value, however clearly it is presented -- because it could not reach consumers quickly enough.


45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
Cumulative Percent Morbidity
normal consumer compliance
nearly complete consumer compliance
days to repair
14
1-10
days to repair
14
10
7
4
1
epidemic averted
0
5
10
15
20
25
Day Utility Becomes Aware of Contamination & Issues Boil Water Alert

Four Examples

Medical informed consent
Warning labels
Emergency alerts
Health education

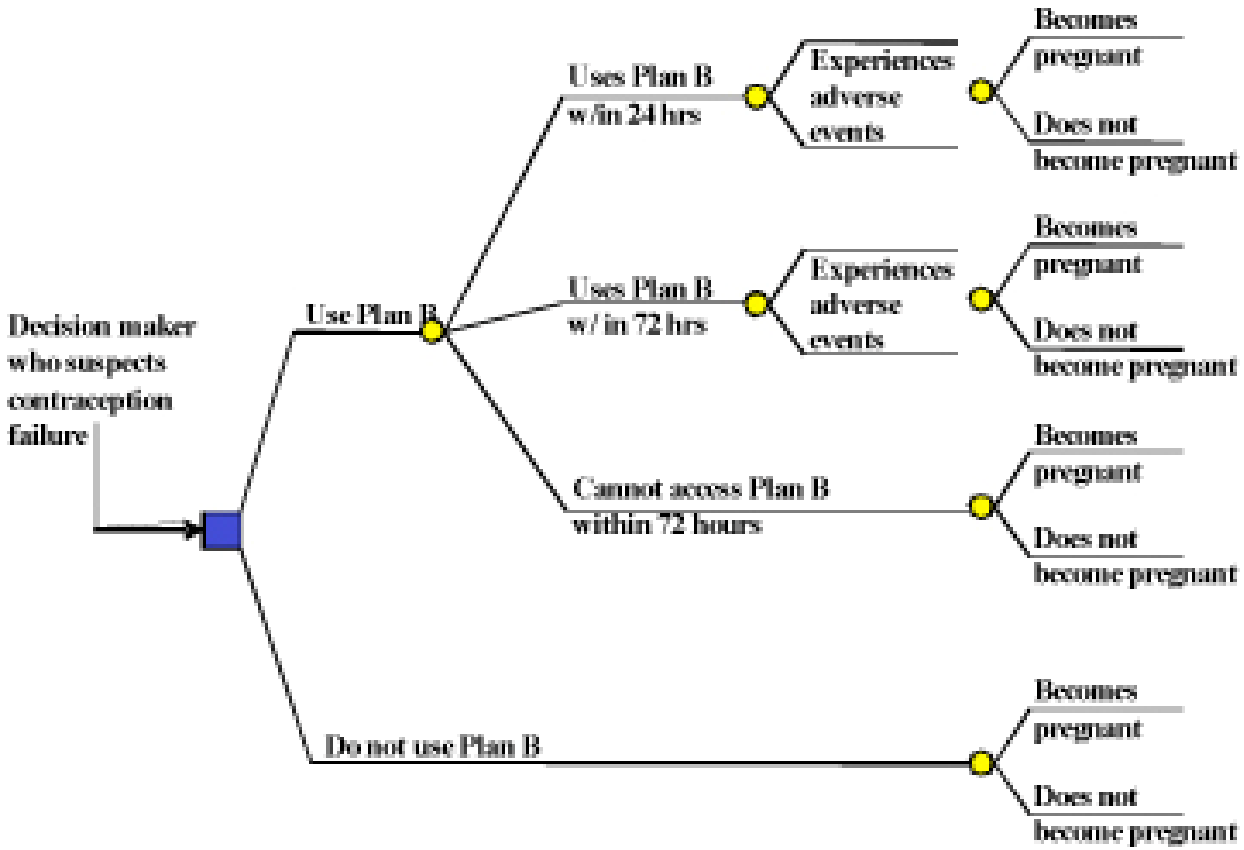
Health Education

Problem: Limited efficacy of information about STI prevention and treatment

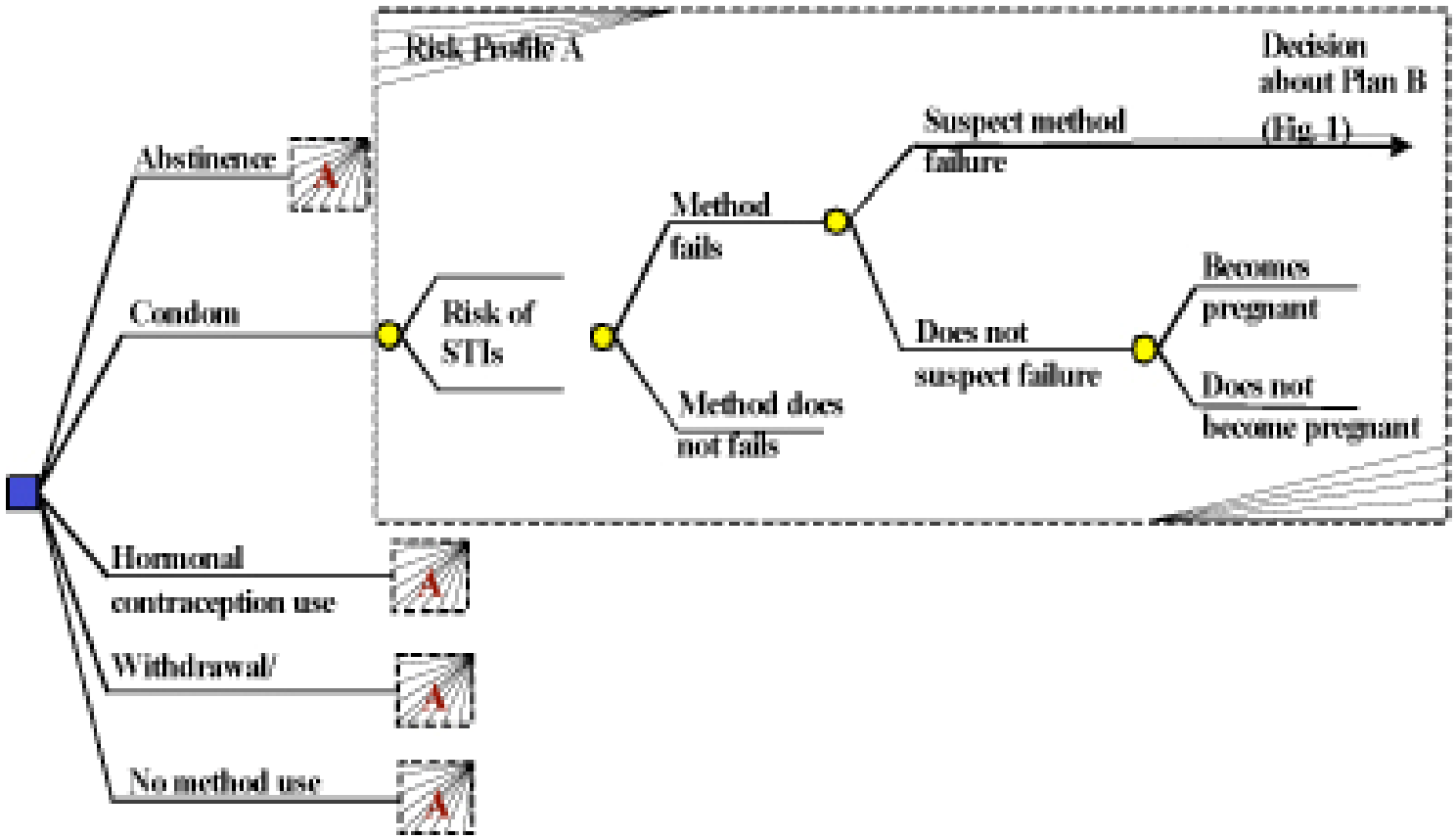
Downs, J. S. Murray, P. J., Bruine de Bruin, W., White, J. P., Palmgren, C., & Fischhoff, B. (2004). An interactive video program to reduce adolescent females' STD risk: A randomized controlled trial. *Social Science and Medicine, 59*, 1561-1572

Analysis

Determine intuitive framing of decisions (perceived options, valued outcomes).
Identify critical facts, including missing outcomes.



Decision tree for Plan B use after suspected contraceptive failure, with potential impact of availability



Decision tree for choice of contraceptive method (if any), including role of perceived STI risk

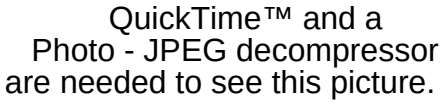
Design

Reduce complexity of topic.

Show difficulty of STI self-diagnosis, even by trusted partners.

Reduce barriers to discussing sensitive issues.

Help young women to see (and create) choice options.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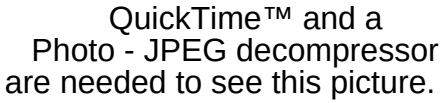
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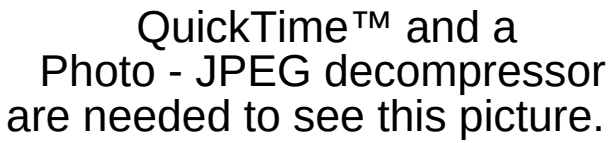
QuickTime™ and a
Photo - JPEG decompressor
are needed to see this picture.

Evaluation

Compared to (a) print version of materials and (b) commercially available leaflets matched for topics, DVD led to

- greater reported condom use
- less reported condom failure
- less chlamydia (tested)
- less reported sex

Not That Hard (or Expensive) to Do

Many examples to serve as models

Some Other Examples

Plan B
radon
LNG
climate change
GMOs
breast cancer
EMF
vaccinations
(MMR, anthrax)

sexual assault
end-of-life decisions
HIV/AIDS
counting casualties
radicalization
breast implants
paint stripper
nuclear power
(land, space)

Not That Hard (or Expensive) to Do

Many examples to serve as models
Basic analysis straightforward
Many design principles in basic research
FDA has individuals with requisite expertise

FDA has much of requisite expertise

Domain specialists, for representing the science of the risks (and benefits)

Risk and decision analysts, for identifying the information critical to choices

Behavioral scientists, for designing and evaluating messages

System specialists, for creating and using communication channels

Additional Resources

Dombroski, M., Fischhoff, B., & Fischbeck, P. (2006). Predicting emergency evacuation and sheltering behavior: A structured analytical approach. *Risk Analysis*, 26, 501-514.

Downs, J. S., Bruine de Bruin, W., & Fischhoff, B. (2008). Patients' vaccination comprehension and decisions, *Vaccine, 26*, 1595-1607.

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Florig, K., & Fischhoff, B. (2007). Individuals' decisions affecting radiation exposure after a nuclear event. *Health Physics*, 92, 475-483

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Morgan, M.G., Fischhoff, B., Bostrom, A., & Atman, C. (2001). *Risk communication: The mental models approach*. New York: Cambridge University Press.

Riley, D.M., Fischhoff, B., Small, M., & Fischbeck, P. (2001). Evaluating the effectiveness of risk-reduction strategies for consumer chemical products. *Risk Analysis*, 21, 357-369

Center for Risk Perception and Communication: http://sds.hss.cmu.edu/risk/

Center for Behavioral Decision Research http://cbdr.cmu.edu/