Shared Decision Making: Communicating about Risk

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MaineHealth Shared Decision Making Program
Definition

- Shared Decision Making is an integrative process between patients and clinicians that:
  1. Engages the patient in decision making to the extent that each patient desires;
  2. Provides the patient with current and unbiased information about alternative treatments; and
  3. Facilitates the incorporation of patient preferences and values into the medical plan. (adapted from Charles, 1997)
Preference Sensitive Care

• Clinical situations for which:
  – there is more than one reasonable treatment option, or
  – there is not good evidence about best treatment, and

• Patient preference about the balance of benefits and risks/harms is important in deciding about which treatment should be used.
Outcomes: SDM/ DA Use

- Cochrane review: use of DAs has led to improvements:
  - Greater knowledge
  - More accurate risk perceptions
  - Greater comfort with decisions
  - Greater patient participation in decision-making
  - Decisions more consistent with expressed values
  - Better patient-provider communication
  - Fewer people remain undecided
  - Fewer patients choose major surgery
    - Eight studies specifically looked at the choice of surgical procedures and found a 24% reduction after SDM
      - Stacey et al, Cochrane Database of Systematic Reviews, 2011
DECISIONS STUDY

• Nationally representative survey
  – People who discussed one of 10 common medical decisions with their providers
    • Cancer screening – breast, colon and prostate
    • Elective surgery – hip/knee replacement, low back surgery, cataract surgery
    • Medications for chronic illnesses – blood pressure, cholesterol, depression
  – More than 3000 patients enrolled
DEcisions Survey Results

- More than 90% reported that pros of decisions were discussed.
- Less than 50% reported that cons of decisions were discussed.
  - Exceptions were back (80%) and hip/knee (60%) surgery.
- Patient preferences elicited less than half the time for most decisions.
  - Providers expressed opinion more than \( \frac{3}{4} \) of the time for all decisions.
SDM Requires Changes

- SDM is primarily about the conversation and the decision making process
- Health care providers and patients will need to learn to have different conversations and to make decisions in different ways
RISK TALK
How to communicate risk information in health care
LEARNING OBJECTIVES

Understand basic principles of risk communication in health care

Learn practical strategies for communicating risk information in health care
## WHAT IS RISK COMMUNICATION?

<table>
<thead>
<tr>
<th>The act of conveying information on the probability of future outcomes</th>
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<tbody>
<tr>
<td>Translating risk information into an understandable form</td>
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</table>

### The Goal

Informed and shared decision making
TWO MAJOR CHALLENGES TO EFFECTIVE RISK COMMUNICATION

Innumeracy

Heuristics and cognitive biases
## INNUMERACY

The ability to understand and use numbers

Multiple levels and tasks

### Basic and Computational
- Recognizing numbers
- Performing simple arithmetical calculations

### Analytical and Statistical
- Interpreting charts, graphs
- Understanding meaning of probability
- Higher level reasoning: appreciating uncertainty

Lack of numeracy (innumeracy): a primary barrier to effective understanding of risk information

HEURISTICS AND COGNITIVE BIASES

Psychological factors that impede interpretation of risk information

Heuristics

Mental “short-cuts” in interpreting risk information

Make reasoning “fast and frugal,” serve adaptive purpose (Gigerenzer)

Also lead to errors

Cognitive biases

Psychological propensities to interpret risk information in specific ways
HEURISTICS AND COGNITIVE BIASES

Edward H. Adelson
Risk reduction of myocardial infarction with Magicstatin vs placebo

- 54% relative risk reduction (HR = 0.46 (95% CI 0.30-0.70), P < 0.01)
- 0.4% absolute risk reduction

Number at risk:
- Magicstatin: 8901, 8449, 3929, 1374, 546
- Placebo: 8901, 8411, 3939, 1373, 549
HEURISTICS AND COGNITIVE BIASES: Example 3

Risk reduction of myocardial infarction with Magicstatin vs placebo

- Number at risk:
  - Magicstatin: 8901
  - Placebo: 8901

- Percentage cumulative incidence:
  - Magicstatin: 2.5
  - Placebo: 0.0

- Time (years):
  - 0
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6

- Events:
  - 68 events
  - 31 events

- Relative risk reduction:
  - 54% (95% CI: 0.30-0.70, P<0.001)

- Absolute risk reduction:
  - 0.4%

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RISK COMMUNICATION: Addressing the 2 major challenges

Innumeracy (Basic/Computational and Analytical/Statistical)
→ Make risk information more “evaluable”

Heuristics and cognitive biases
→ Be aware of cognitive shortcuts and illusions, and help patients overcome them
## ESSENTIAL ELEMENTS OF EFFECTIVE RISK COMMUNICATION

### Risk communication: Problems & Solutions

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>SOLUTION</th>
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<tbody>
<tr>
<td>Innumeracy: Basic / Computational</td>
<td>Use round numbers, denominators (e.g., “3/1000”)</td>
</tr>
<tr>
<td></td>
<td>Avoid “1-in-X” format</td>
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<tr>
<td></td>
<td>Use percentages or consistent denominators when comparing risks</td>
</tr>
<tr>
<td></td>
<td>Minimize computations for patients</td>
</tr>
<tr>
<td>Innumeracy: Analytical / Statistical</td>
<td>Explain nature &amp; origin of risk evidence</td>
</tr>
<tr>
<td></td>
<td>Convey uncertainty: limitations in applying risk estimates to individual cases</td>
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<tr>
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<td>Explain concepts of randomness, imprecision, limitations in knowledge</td>
</tr>
<tr>
<td></td>
<td>Distill the “bottom-line” gist of information</td>
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<tr>
<td>Heuristics &amp; Cognitive Biases</td>
<td>Clarify the reference class for risk estimates</td>
</tr>
<tr>
<td></td>
<td>Use multiple frames to explain risk magnitude</td>
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<tr>
<td></td>
<td>Gain &amp; loss</td>
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<tr>
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<td>Absolute &amp; relative risk reduction</td>
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## RISK TALK: Essential tasks

<table>
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<tr>
<th>Step</th>
<th>Tasks</th>
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</table>
| Set the stage | Provide overview  
Assess preferences for information  
Discuss nature and origin of the risk evidence |
| Explain the magnitude of risk(s), using multiple frames | Positive and negative  
Absolute and relative risk reduction |
| Explain meaning of the reference class | Relevance of the risk evidence to this particular patient |
| Acknowledge uncertainty | General scientific uncertainty  
Meaning of chance, inability to predict single events  
Limitations in risk estimates |
| Recap and summarize | Distill the gist |
## RISK TALK: Essential tasks

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<th>Details</th>
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<td>Set the stage</td>
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<td>Recap and summarize</td>
<td>Distill the gist</td>
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EXPLAIN THE MAGNITUDE OF RISK

Both negative and positive frames

**Disease vs. Health**

“Medical experts estimate that about 10 out of 100 people like you will develop colon cancer during their lifetimes.”

“You can also look at this in another way: 90 out of 100 people like you [with your characteristics] will stay free of colon cancer.”

**Mortality vs. Survival**

“Based on who you are, your chance of dying from your cancer in the next 5 years is 25%. In other words, about 25 out of 100 people like you will die within 5 years.”

“We can also look at this in another way: based on who you are, your chance of surviving for the next 5 years is 75%. In other words, about 75 out of 100 people like you will be alive in 5 years.”
Emphasize absolute risk reduction

“Studies show that taking DRUG X lowers people’s risk of a heart attack by 25%, or about ¼. But to see if it is worth taking DRUG X, we need to count the number of people who are actually helped by DRUG X…”

“The studies showed that DRUG X lowered the total number of people having heart attacks from 4 out of 100 to 3 out of 100. So DRUG X helped about 1 out of every 100 people who took it.”