Decision Making and Communication of Risk

Dr Dawn Dowding
Senior Lecturer in Clinical Decision Making
Hull York Medical School and Department of Health Sciences
University of York, UK
Email: dawn.dowding@hyms.ac.uk

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Overview

- Decision making in practice
- Influences on decision making
- Communicating risk to inform decisions

How do you make decisions?

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Judgements and Decisions

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Decision Making in Health Care

- Judgements and decisions made under conditions of uncertainty (*estimations of probability of an outcome/event)*
- Sources
  - Defining a disease
  - Making a diagnosis
  - Selecting an intervention
  - Observing outcomes
  - Assessing patient preferences
  - Combining information in a decision

How do we make decisions?

- Identifying the options
- Evaluating the options
  - Search for information
  - Estimation of likelihood of occurrence
- Choose between alternatives
  - Choose the one that ‘maximises’ our likelihood of a ‘good’ outcome occurring
- Time frame?

Where do you get information to help you with your decision making?

Influences on decision making?

- Where we search for information

Google™

Where we search for information?

How do you estimate how likely it is that an outcome will occur?

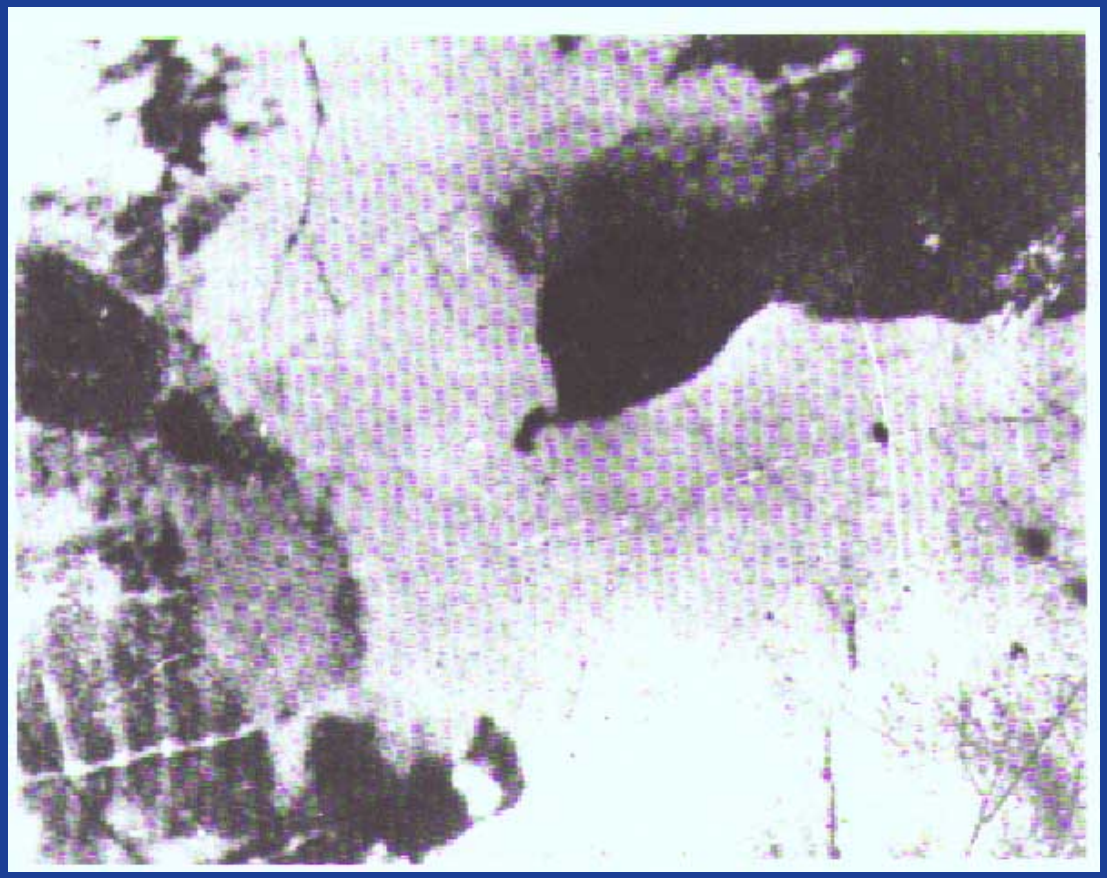
Influences on decision making

- Estimating the likelihood of occurrence

“*'He is an extremely athletic looking young man who drives a fast car and has an attractive blond girlfriend.”*

Is he a professional footballer or a nurse?

Influences on decision making



Influences on decision making

Developing Expertise

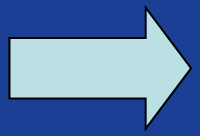
- Novices – use protocols/guidelines to help them with their decision making
- Advanced beginners/Intermediates – starting to develop connections between concepts – used to inform decisions
- Experts – use of ‘intuition’ based on experience

Influences on decision making

- Mindlines
  - “collectively reinforced, internalised tacit guidelines, which were informed by brief reading, but mainly by their interactions with each other and with opinion leaders, patients, and pharmaceutical representatives and by other sources of largely tacit knowledge that built on their early training and their own and their colleagues' experience” (Gabbay J & le May A. (2004) Evidence based guidelines or collectively constructed “mindlines?” Ethnographic study of knowledge management in primary care. British Medical Journal 329:1013-1016)

Decision Making

- Evaluating alternatives influenced by:
  - The sources we use to inform our decisions
  - Heuristics (e.g. representativeness and availability)
  - Tacit ‘mindlines’ built up from experience, talking to people and tacit knowledge



Information communicated by another ‘expert’ more likely to be effectively integrated into practice

Read the information on your chair

Would you have surgery or radiation therapy?

Influences on decision making

What did you read?

Front of the room:

Surgery: Of 100 people having surgery **90 live** through the post-operative period, **68 are alive** at the end of the first year, and **34 are alive** at the end of five years.

Radiation Therapy: Of 100 people having radiation therapy **all live** through the treatment, **77 are alive** at the end of one year, and **22 are alive** at the end of five years.

Influences on decision making

What did you read?

Back of the room:

Surgery: Of 100 people having surgery **10 die** during surgery or the post-operative period, **32 die** by the end of the first year, and **66 die** by the end of five years.

Radiation Therapy: Of 100 people having radiation therapy **none die** during treatment, **23 die** by the end of one year, and **78 die** by the end of five years.

Influences on decision making

Decision Framing

- If the problem is framed according to lives saved, people are more likely to be risk averse (i.e. more likely to choose surgery). If the problem is framed according to lives lost, people are more likely to be risk seeking (i.e. more likely to choose radiation therapy)

- Previous experiments have shown that radiation therapy chosen by 18% of individuals if framed as lives saved and 44% if framed as lives lost.

So…

- HOW we communicate information about the likely benefits/harms of an intervention will effect how people FEEL about that intervention

Shared Decision Making

"Shared decision-making (SDM) is defined as a decision making process jointly shared by patients and their health care providers. It aims at helping patients play an active role in decisions concerning their health, which is the ultimate goal of patient-centered care."

(Gravel et al 2006. Implementation Science 1:16)

Why?

- Patient’s want to be more involved in decisions about their care and treatment
- Availability of information for patients

In Shared Decision Making

- Need to communicate the risks and benefits of different options to the patient
- Evaluate how they feel about the different options
- Negotiate what the best decision for them would be, given their values and preferences

Communicating risk information

- Purpose
  - To ensure that an individual is fully informed about the likely benefits and risks associated with a particular treatment or intervention, to help them with their decision making
  - Information should be based on research evidence (rather than experience/anecdote)

Communicating risk information

- Verbal descriptions of risk
  - May occur
  - Very rarely
  - Rarely
  - Small chance
  - Sometimes
  - Common
  - A large chance
  - Very likely

Communicating risk information

- Numerical representations of risk
  - Frequency

    "16 in 100 people give up smoking using nicotine replacement therapy, compared to 10 in 100 people who receive a placebo"
  - Probability

    "The probability of an individual giving up smoking with nicotine replacement therapy is 16%"

Communicating risk information

– Absolute risk

"Taking nicotine replacement therapy increases the chance you will give up smoking by 6%"

– Relative risk

"Taking nicotine replacement therapy increases the chances of you smoking by 70%"

– NNT

"You would need to treat 18 patients with nicotine replacement therapy for one person to stop smoking"

Communicating risk

- What's best?
  - Use absolute rather than relative risks (which are more likely to unduly influence choices)
  - Natural frequencies are understood much better than probabilities
  - Giving individuals the baseline risk enables them to evaluate the difference the intervention makes

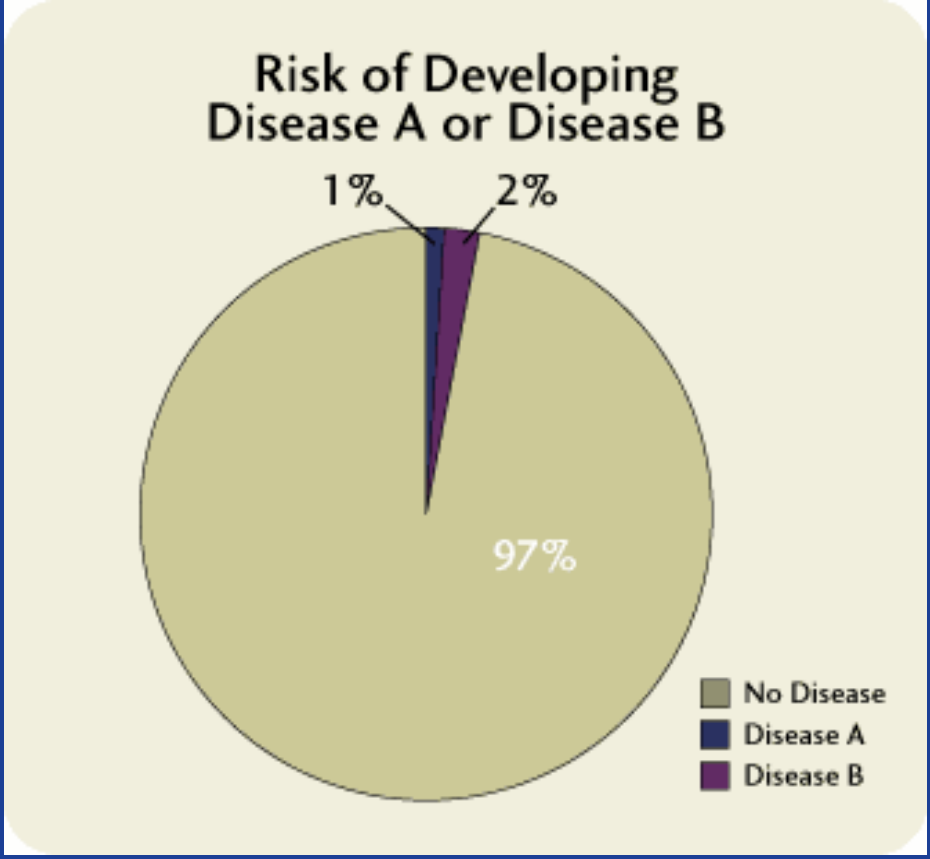
"In 100 people just like you 16 people will give up smoking using nicotine replacement therapy, compared to 10 people who would give up not using anything at all"

Communicating risk

- Graphical representations of risk
  - If individuals have difficulty understanding numerical information
  - Maybe easier to understand

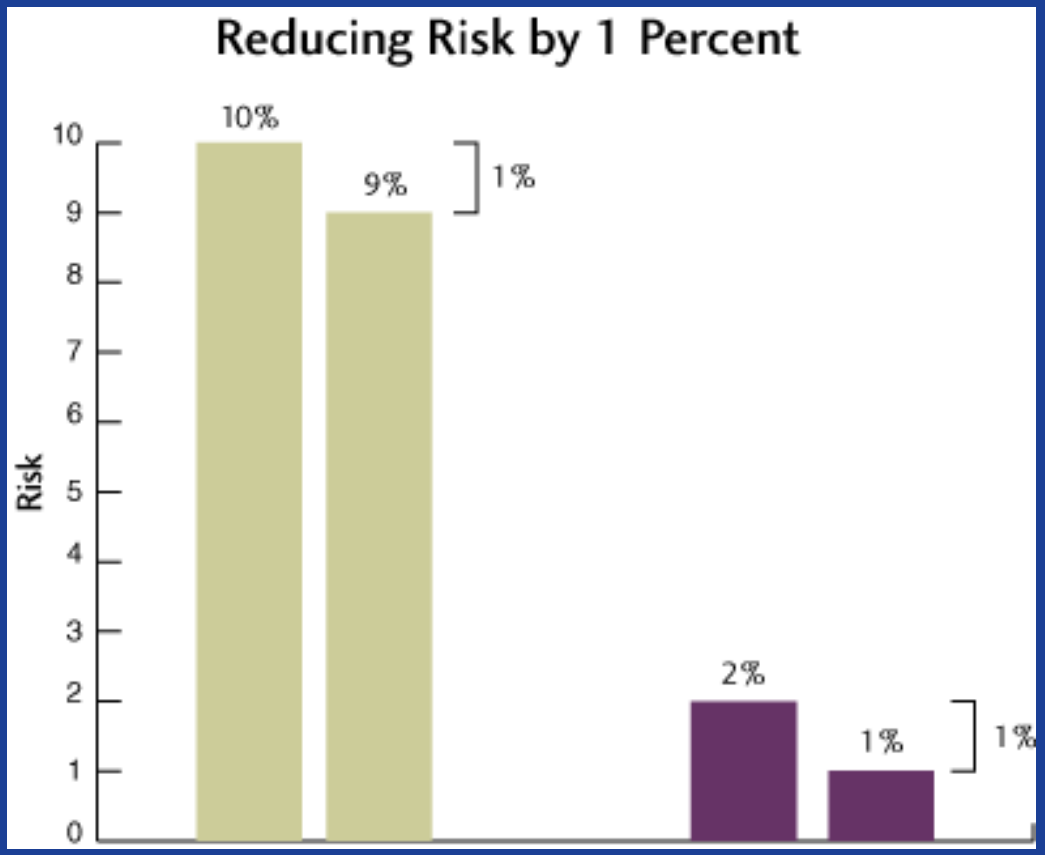
Communicating risk

- Pie Chart



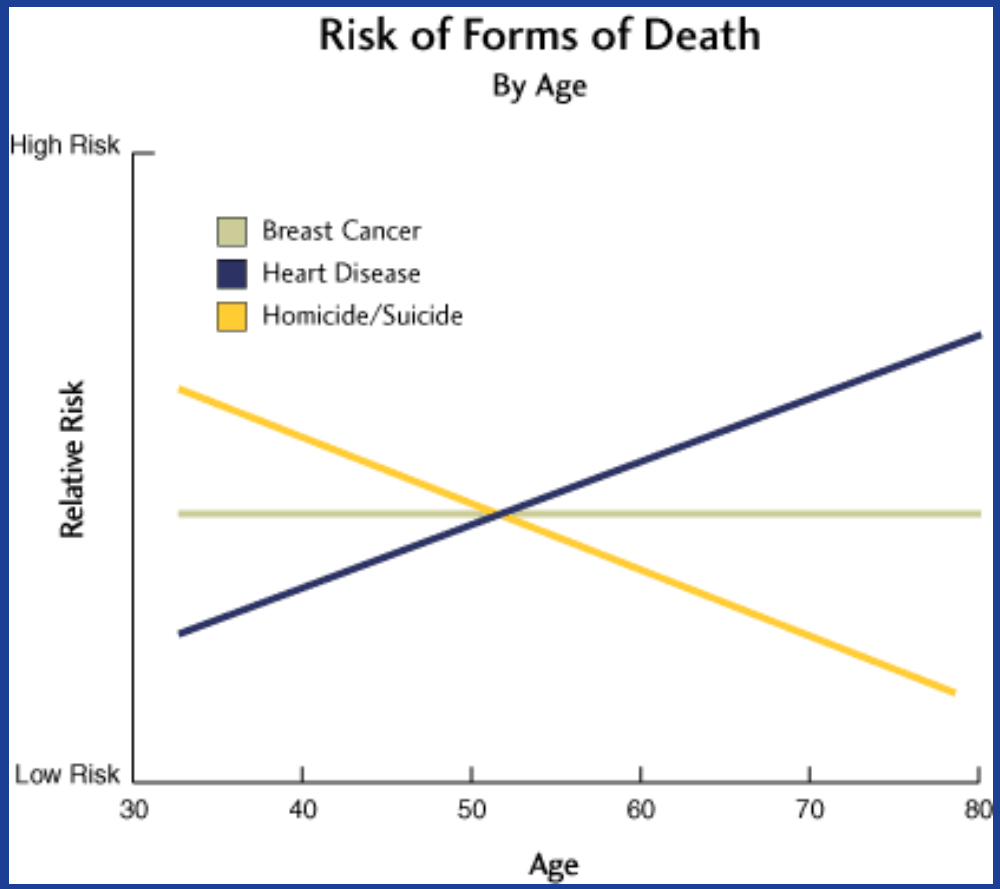
Communicating risk

- Bar Graph



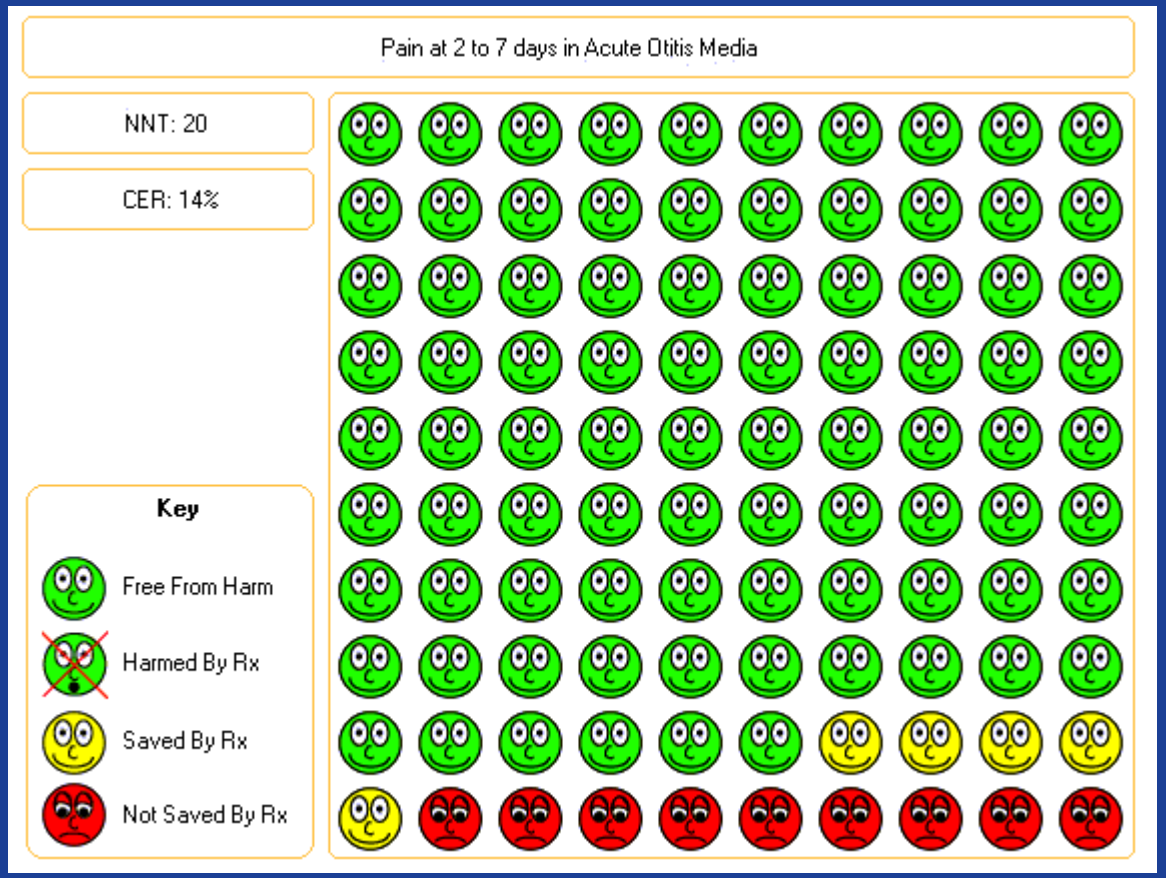
Communicating risk

- Line graph



Communicating risk

- Icons



Communicating risk

- Online tools:
  - Qrisk: Cardiovascular risk calculator: http://qr2.dyndns.org/
  - Chris Cates EBM site (good online calculation tool, and can do electronic smiley faces): http://www.nntonline.net/visualrx/

Summary

- Decision making is influenced by a number of factors
- How you communicate information about the risks and benefits of interventions will affect the decisions individuals take
- Learning to communicate evidence effectively is important for influencing practice