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Thinking about risk. Can doctors and patients talk the same language?

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Risk models are a powerful tool for assessing the biomedical significance of health problems and medical interventions. We know that if John Everyman is a smoker aged 70 with a BP of 152/85 mmHg and a normal cholesterol, then he has a 25–30% risk of a cardiovascular event (CVD event) over the next 5 years.[1] Medical treatment will reduce that risk by 9% over 5 years to a range of 22–27%. We also know that if John Everyman never saw a doctor, but simply stopped smoking, his risk would fall to 15–20%, a much more impressive health gain.

Balancing the gains in risk reduction from different treatments is an important part of clinical practice, and doctors have three statistical representations to help them in this task.

- **(i) Absolute risk**: there is a 25–30% probability of John Everyman having a CVD event in 5 years.
- **(ii) Relative risk**: John Everyman is 1.6 times as likely to have a CVD event in the next 5 years than his identical but non-smoking twin brother.
- **(iii) Number needed to treat (NNT)**: we would have to treat 11 John Everymans for 5 years to prevent one CVD event.

However, this choice of statistical support is rather illusory as all derive from the same underlying (usually trial) evidence. The question is less how much would John Everyman gain from treatment, but more how can this gain best be expressed? Chatellier recommended the use of NNT when considering the needs of the individual patient[2] but, as there are not 11 John Everymans in most practices, the 'personal probability of benefit' (PPB) may make the probability as meaningful as possible to the individual patient. (%PPB = 1/NNT × 100, i.e. John Everyman would have a 9% chance of benefiting from treatment over the next 5 years.)

Different mathematical expressions of risk are difficult enough for the doctor, but are likely to be harder for patients. Misselbrook and Armstrong showed that patients make very different choices about treatment depending on which of the above risk statistics they used as the basis of their judgement.[3] Rather than empowering patients, such risk models can therefore make them yet more dependent on their doctors. Mathematical models are designed for the world of the doctor and do not fit easily with the world of the patient. So how can we proceed?

First we must recognize that patients have their own risk models. These bear little relation to the mathematical risk models used by doctors. Davison and his colleagues found that the lay classification of risk was based on a polarity model rather than the gradation of a continuing spectrum.[4] People saw themselves as either high risk or low risk. This model identified 'likely candidates' for illness. Thus a beer-swilling heavy smoking overweight man would (rightly) be seen as at high risk of a heart attack. However, if he did not have a heart attack and his healthy living neighbour did, Davison found that a second element in the lay risk model came into play. Luck, fate and destiny were also perceived to determine health outcomes.

Remember, John Everyman wants to know whether he himself is going to have a heart attack, and my mathematical model will not tell him. If we are not talking about populations but about individuals, then a high risk/low risk model feels like a better fit. It provides the patient with a map to enable them to function and to cope in an uncertain and threatening world.[5]

If doctors and patients use such different risk models, is it possible to talk meaningfully to one another about risk at all? This is a big question with no easy answers.[6] In this issue of *Family Practice*, Ohnishi *et al.* explore patients' and physicians' interpretation of expressions of probability.[7] They found that patients, unlike doctors, want probability information in the form of words, not numbers. They also found that patients tended to lump together negative probability expressions. This connects with the conceptual basis for Davison *et al.*'s high probability/low probability model.

Ohnishi *et al.* warn that 'the message sent may differ from the message received'. They challenge us to use both words and figures when we talk to patients about risk. They echoed the view of Edwards and Jones Elwyn,

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that to listen to the patient and facilitate their choice involves work on our part.[8] We need to construct a language common to both doctors and patients.

So how can we construct this common language? Sir Kenneth Calman has proposed a shared classification for risk using the following standardized terms:[9] negligible = a probability below 1 in a million; minimal = less than 1 in 100 000; very low = less than 1 in 10 000; low = less than 1 in 1000; moderate = less than 1 in 100; and high = a probability greater than 1 in 100.

Unfortunately, it seems unlikely that Calman's definition of 'high risk' (a risk of >1%) would correspond to the bimodal lay concept of high risk. Calman's hope is that if we all talk about risk more, we may eventually arrive at a shared vocabulary. This might appear fanciful but for the fact that risk assessment is likely to become an increasing facet of all our lives as we move into the 'Risk Society' of the 21st century.[10]

Language is only part of any discussion. Ohnishi referred to the ambiguity present in Japanese communication. The Japanese have the honesty to differentiate between 'honne'—what you think—and 'tatemae'—what you want others to think that you think (P Garwood, personal communication). This may be the polite "yes" that fellow Japanese recognize as "no", but which so frustrates westerners. The English language would benefit from similar candour. In the consulting room, the patient may well politely agree with our advice, but in daily life the patient makes his own choice whether to act on it.

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