

ON CHANCES AND CHOICES

S.V. Ramanan, Associate Professor of Clinical Medicine, University of Connecticut, Connecticut

'What are my chances?' asks the patient afflicted with cancer. Although many patients have used almost identical words after being told of an illness, perhaps the question is not the right one to ask. 'That depends,' responds the physician, 'there are two ways of treating this.' Wisely sidestepping the question and discussing instead therapeutic options. Later, the physician does answer: 'with either treatment, you've got about a 50:50 chance'.¹ Does the patient really have a 50:50 chance?

Is the patient really interested in the *chances* of there being a favourable outcome? I think not. What the patient really wants to know is: 'Will I get better or will I not? If you think I will get better, how much will I improve; and if I am to get worse, what will be the natural history of the disease and its ultimate outcome?' Chance has been described as the occurrence of an event that has no apparent cause in antecedent events or in predisposition of character.² Consider what happens when a coin is tossed in the air and falls to the ground. The chances of its being *heads* is not 50%, but 100% or 0%. It *was* 50% when spinning in the air, but once it has fallen, the outcome has been established; it will be either *heads* or *tails*. Chance determines the anticipated likelihood of the final outcome, but once an event has taken place, the question of chance does not arise. As Sherlock Holmes points out in *The Sign of the Four*:

While the individual man is an insoluble puzzle, in the aggregate he becomes a mathematical certainty. You can, for example, never tell what any one man will do, but you can say with precision what an average number will be up to. Individuals vary, but percentages remain constant. So says the statistician.³

While the word 'chance' reflects the uncertainty of an event occurring, the term 'probability' lends a quantitative aspect to chance. Probability provides a numerical estimate of the manner in which chance or uncertainty influences some situation of interest.⁴ When an experiment – which, in medicine, is usually a form of treatment – is repeated several times, the various outcomes can be expressed as a fraction of the number of experiments; and clearly, the larger the sample, the more accurate the probability estimate is likely to be. This, of course, constitutes the basis of clinical trials, and provides physicians with the information they need for treatment. The greater the number of uncontrollable variables, the larger the sample has to be to obtain a statistically valid estimate of probability.

Too often does the physician describe to a patient the 'chances' of his or her outcome in terms of a percentage probability: 'There is a 90% chance of the treatment being successful,' or, 'Surgery has a 5% mortality.' The facts may well be correct, but what the patient (and sometimes the physician) does not appreciate is that the figure quoted refers to retrospective data. It does not apply to the outcome

in a single patient yet to be treated. If three forms of treatment A, B and C yield success rates of 60%, 70% and 90% respectively, the next patient to be treated will, quite obviously, receive treatment C. Yet, there is no telling that he or she will fall in with the 90% responders; the patient may well be a non-responder in regimen C and a responder in regimen A. One cannot tell in advance.

It is therefore safer to make no prediction of the outcome of treatment for a specific patient, although one may use probability figures to illustrate past experience. We know that although much effort is spent in controlling patient characteristics in clinical trials, the variability of characteristics in individual patients is beyond control. A more realistic statement would be, 'I cannot tell how you will respond to treatment, but based on our past experience, I can tell you what to expect.'

The days of 'Physicians' orders' and patient acceptance of those 'orders' have become a thing of the past – and well it should be. We now live in an era of shared responsibility for decision making in patient management. An editorial in a recent issue of the *BMJ* devoted to Embracing Patient Partnership suggested that 'the shared model' was in the ascendancy; and it is.⁵ Patients are increasingly well informed, and this is good as an informed patient is more likely to make a reasoned decision on the basis of their knowledge and what they are told by the physician. Shared Decision Making, a phrase that has come of age, known by its abbreviated form SDM, is very much in vogue today. The foundation for informed medical decision making has been well described.⁶ Indeed, SDM protocols have been devised for a variety of illnesses, notably diseases of the prostate and ischaemic heart disease, and outcomes have been measured.⁷⁻⁹ Whether or not a protocol is used, a conclusion that satisfies both patient and physician is reached in most instances of joint decision-making. This, however, is not always so. There are times when the patient perhaps feels that his or her decision has been overly influenced by the physician's choice; and in a smaller group, patients feel that their physicians have not given them sufficient help in making a decision. Occasions where patients wish to relegate the ultimate decision to their physicians are also common.

In a recent survey describing the impact of Shared Decision Making a year after the decision, patient attitudes to trust and satisfaction were reviewed.¹⁰ Of the 650 patients polled, 87.5% felt that 'the doctor(s) took charge' in the appropriate instance, 5.5% felt that the physicians' participation was too much and 6.9% thought that their physicians had participated 'less than I liked'. I believe that at least some of the patients in the last group would have preferred to have the physician make the decision for them.

At a social gathering, a casual acquaintance sought my opinion on whether he should elect for medical treatment, angioplasty or surgery for his coronary artery disease. Of course, I strongly suggested that he direct the question to his cardiologist. 'But he won't tell me what to do,' was the

response, 'he has discussed with me the advantages and risks of each option. He has given me a great deal of information about each choice, but I still don't know what to do.' When the patient directly asked the cardiologist for his opinion, the response was: 'It's up to you.' 'How can I decide when I don't know anything about medicine?' And that is the point!

A few months ago, I was faced with a similar dilemma when my 95-year-old father was advised to undergo aortic valve replacement and triple vessel coronary artery bypass surgery. After much discussion, the point of decision making had arrived. 'What do you think?' the surgeon asked me. My indecision was reflected in the several seconds of silence that ensued. After what the surgeon thought was a reasonable period of time, he quietly said, 'If you won't decide, I will. We operate – tomorrow.' The relief I felt when the decision had been made was indescribable. I was grateful that the surgeon, appreciating my inability to make a decision, elected for a specific option. If I had expressed an opinion, he would almost certainly have concurred. Knowing that I was uncertain, and fully cognisant that there was no 'right' answer, he took it upon himself to recommend what, in his best judgement, was the most appropriate action, albeit with my tacit approval. A cynical colleague to whom I related this incident remarked, 'If you go to a shoemaker, wouldn't you expect him to sell you a pair of shoes?' Perhaps; but if I had established a relationship with a shoemaker, I would not expect him to sell me a pair of shoes that did not suit my needs. If I did not know what I wanted and he made a reasonable suggestion, I would take it.

A significant number of intelligent and well-informed patients would rather have their physicians make decisions relying on their knowledge and judgement.¹¹ This is based on the premise that the physician is the better informed and more experienced person to make such a decision. No person can be absolutely certain of the correctness of a decision made prospectively. Patients have been told that medicine is an imprecise science, 'at its base, more gamble

and guesswork than certainty'.¹² Patients go to their doctors for advice and opinions which they may accept or decline. When, however, 'the ball is thrown back into their court time and time again, ultimately respect is lost and we all lose out in the end'.¹³ All that a physician can do, and must do, is to accept the responsibility of making a judgement as best he or she can, despite the uncertainty that surrounds every decision.

REFERENCES

- ¹ Shimm DS. Chained Smoker. *Ann Intern Med* 1998; **129**:331-2.
- ² Perrine I. In: *Story and Structure*. New York: Harcourt Brace Jovanich Inc.; 1983; 48.
- ³ Baring-Gould WS. In: *The Annotated Sherlock Holmes*. 2nd ed. New York: Clarkson N. Potter Inc; 1972; 666.
- ⁴ Hadley G. In: *Introduction to Business Statistics*. Oakland: Holden Day; 1968; 3.
- ⁵ Editorial. *BMJ* 1999; **319**:717.
- ⁶ Kasper AF, Mulley SG, Wennberg GE. Developing shared decision making programs to improve the quality of health care. *QRB* 1991; **18**:183-90.
- ⁷ Barry MJ, Fowler FJ, Mulley AG *et al*. Patient reactions to a program designed to facilitate patient participation in treatment decisions for benign prostatic hyperplasia. *Med Care* 1995; **33**:771-82.
- ⁸ Onel C, Hamond C, Wasson JH *et al*. Assessment of the feasibility and impact of shared decision making in prostate cancer. *Urology* 1998; **51**:63-6.
- ⁹ Morgan MW, Deber RB, Llewellyn-Thomas HA *et al*. A randomised trial of the ischemic heart disease shared decision making program: an evaluation of a decision aid. *J Gen Intern Med* 1997; **12**(1):A62.
- ¹⁰ Deber R, Kraetschmer N. How does Shared Decision Making affect patients' attitudes: Trust and satisfaction after one year follow-up. *Med Decis Making* 1995; **4**:427.
- ¹¹ Taylor I. Some Patients are happy for doctors to make decisions. *BMJ* 2000; **320**:58.
- ¹² Mulley AG, Eagle KA. What is inappropriate care? *JAMA* 1988; **260**:540-1.
- ¹³ Carvel D. Patient-partners may be political correctness gone too far. *BMJ* 1999; **319**:783-4.