

Clinical Decision Making: From Theory to Practice

Connecting Value and Costs

Whom Do We Ask, and What Do We Ask Them?

AS A SOCIETY, we are in conflict with ourselves about the cost of health care.¹ On one hand, we want the best care possible, regardless of cost. On the other hand, we are not willing to pay the cost of the care we want. Our conflict parallels a flaw in the medical marketplace. An essential condition for achieving an equilibrium between cost and value is that the two must be connected through decisions. When people decide what products and services (goods) they want, they must not only see the value they will receive, but they must also be responsible for the costs. Because of a variety of features of the medical marketplace—most notably third-party coverage, third-party advice, and uncertainty about outcomes—the required connection between value and cost is severed. The result is what we see. One side of our collective mind demands more services while the other side cries that costs are too high.

Resolving our conflict will require connecting value to cost. An essential step in accomplishing this will be to incorporate costs in practice policies.¹ As controversial as that thought might seem (the great majority of practice policies currently do not take costs into account except in the most rudimentary way), arriving at the conclusion is the easy part. A more difficult issue is how to implement the goal of connecting value to cost. Suppose we agree that, in principle, costs should be considered when practice policies are designed, and that an activity should be recommended and covered only if its health outcomes (benefits minus harms) are deemed to be worth its costs. The next questions are, Who should do the deeming? What should the deemers be asked?

Whom Do We Ask?

The determination of whether the value of a health activity is worth its costs should be made by the people who will both actually receive the value (experience the benefits and harms) and pay the costs. These people are not third-party payers, not legislators, and not government administrators. They are not health planners, economists, or statisticians. Neither are they medical experts, clinical researchers, or practitioners. They are people who either already have a health problem (current patients) or people who might get a health problem some time in the future (future patients). For convenience, I will combine both groups under the general label "Patients" (note the capital *P*), with the understanding that this is really everybody. These people are clearly the ones who will experience the benefits and harms. What is less obvious but equally true is that they are also the people who will ultimately pay the costs. After all the costs have been sliced and diced and spread around, they will all eventually be paid by people¹—the same people who are now, or eventually will be, Patients.

If current and future Patients should be the ones to com-

pare value and cost, we must now look more closely at how they think. A key to resolving our conflicting positions on costs is to understand that this is not a debate between different groups that hold different philosophic or economic viewpoints; this is a debate within each of us. Every one of us has two minds when we make a decision about whether a health care activity is worth its cost. We have one mind when we are well, sitting in our living rooms, paying taxes, or writing out a check for health insurance. We have another mind when we have a health problem and are sitting in a physician's office. To appreciate the distinction, imagine a hypothetical example.

A new drug is introduced to treat myocardial infarction. The drug increases 1-year survival by an actual 1% (0.01) compared with other drugs. (For comparison, with conventional care the chance of dying of a myocardial infarction within 1 year is on the order of 12%; with streptokinase it is decreased to about 9%. Assume that this new drug will decrease the probability of death by 1% further, down to 8%.) The drug has no risks, but costs about \$10 000. Imagine that a third party has decided to handle coverage for the drug through a rider—each subscriber can decide whether to pay an increase in the premium in order to have the drug covered, should the need arise.

Suppose I am trying to decide whether to add the rider to my policy. To make an intelligent decision I must estimate the benefits and costs to me of covering the drug. The main benefit is a decrease in the probability that I will die of a heart attack. Given my age and risk factors, I have about a five in 1000 (0.005) chance of having a myocardial infarction in the coming year. After taking into account the chance that I will have a heart attack and the effect of the drug on my chance of dying if I should have one (0.01), access to this drug will decrease my chance of dying of a heart attack in the next year by about 0.00005 (0.005 × 0.01), or one in 20 000. The cost of the insurance rider is calculated as the chance I will have a heart attack and need the drug (0.005) multiplied by the cost of the drug (\$10 000), or about \$50. (For this example, ignore the administrative costs.)

Now, when I am trying to decide whether to pay the \$50 premium in order to have access to this drug in case I should have a heart attack, I can weigh the probabilities, compare the expected benefit to the cost, and decide if, to me, the benefit is worth the cost. This is a personal value judgment.² Suppose I decide the expected benefit is not worth the cost. That is, suppose I am not willing to pay \$50 to decrease my chance of dying of a heart attack in the coming year by one in 20 000. (Perhaps I'd rather buy some compact disks.) I will not buy the insurance rider.

That was one of my minds. Now consider my other mind. Imagine that I am unlucky and have a heart attack. I am now on a stretcher in an emergency department. A physician is

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leaning over me and asking if I want the new drug. Of course I do. There is no longer any uncertainty about whether I will have a myocardial infarction; I just had it. The benefit is still fairly small (the drug will decrease my chance of dying by 1%), but it is a lot (200 times) larger now than it was before I had my heart attack (0.005%). The benefits are definitely worth \$50 and I want the drug to be covered. Give me my drug!

As this example illustrates, our conflicting views on costs correspond to two positions that we can be in with respect to our knowledge about which health problems we might contract, which health interventions we might want, and how much we have to pay. In the first position we do not know which, if any, health problems we will contract, or which interventions we will want, and we know we have to pay for whatever we choose. When we weigh the expected benefits against the costs, we might decide not to cover some interventions, even some that are effective and for which there is a positive net benefit (the benefits outweigh the harms). In the second position our perspective is quite different; we know precisely which disease we will get and which interventions we will want, and the insurance check has already been sent. The magnitude of the expected benefit has changed, the costs are out of the picture, and an intervention that used to look bad now looks good.

What Do We Ask Them?

A crucial step in connecting value to cost is to agree on which of our minds we should be talking to. In fact, both minds are real and have a legitimate say in whether the value of a health activity is worth its cost. However, it is essential to keep straight which mind should be asked which questions. The person in the first position (the person sitting in his or her living room) can be asked either of two questions.

1. There is a probability of 0.005 that you will have a heart attack in the coming year. If you do have a heart attack, the drug we are discussing will decrease your chance of dying by 1%. Thus, having access to the drug will decrease your chance of dying by 0.005%, or one in 20 000. The additional premium to cover this drug is \$50. Are you willing to pay \$50 to have this drug covered?

2. *Imagine* that you have just had a heart attack. The drug we are discussing will decrease your chance of dying by 1%. The cost of the drug is \$10 000. Would you be willing to pay \$10 000 to receive the drug?

The essential element of these questions is that the probability of having a heart attack (0.005) enters both sides of the questions equally. For the first question, the probability that the person will have a heart attack affects *both* the benefits and the costs: the expected benefit is calculated as the probability of having a heart attack (0.005) multiplied by the effect of the drug for people who actually have had heart attacks (1%); the premium is the proportion of people who get heart attacks (0.005) multiplied by the cost of the drug (\$10 000). For the second question, the probability of having a heart attack enters *neither* side of the comparison: the heart attack has occurred (the probability is 1), and the cost to be considered is the full cost of the drug (\$10 000).

For the person in the physician's office who actually has the disease, the appropriate question is equivalent to the last one, with the only difference being that the circumstances are real.

3. You have in fact just had a heart attack. The drug will decrease your chance of dying by 1%. The drug costs \$10 000.

Are you willing to pay \$10 000 to receive it?

Any of these questions can lead to a proper conclusion about whether the benefits and harms of the intervention are worth the costs to the individual. We might get different answers to the three questions, but they are all fair in the sense that they accurately represent the expected benefits and costs that apply to the respective positions. The third is the best in the sense that the Patient in the physician's office does not have to imagine how he or she would feel if a health problem were to develop; the health problem *has* developed and the Patient knows how he or she feels. However, if the cost of the intervention is beyond reach, an individual in that position might not be able to contemplate this question, as well as the second question (which is why people buy health insurance). For very expensive interventions, the first question must be used. The first question is real in the sense that it corresponds exactly to that faced by anyone making a decision about insurance. The only drawback to this question is that it requires the person to *imagine* what he or she would want if a health problem were to develop.

While it might be difficult for an individual to put himself or herself in those shoes, it is an inevitable part of life that arises whenever a decision is made about anything that has important but uncertain consequences for the future, such as purchasing other types of insurance, choosing a career, or getting married.

While each of these questions poses some theoretical and practical problems, those problems are trivial compared with the problems that are raised by a fourth question. It is *not* appropriate to ask the person who has the health problem (ie, the individual in the second position) the following:

4. You have in fact had a heart attack. The drug will decrease your chance of dying by 1%. The drug will cost you nothing (or some small copayment far below the full cost, or a slight increase in next year's premium). Do you want to receive the drug?

The inappropriateness of this question is that it applies the probability of having a heart attack to only one side of the comparison—the costs. The person has the heart attack, but was asked whether he or she was willing to pay only a small fraction of its full cost (eg, \$50 vs \$10 000). To ask this question should be just as absurd as asking the following:

5. You have a probability (0.005) of having a heart attack that would make you a candidate for a drug that will decrease your chance of dying by 1%. The cost of the drug is \$10 000. Are you willing to pay \$10 000 up front to have the drug covered *in case* you should have a heart attack?

Ironically, the least desirable question (question 4) is the one that currently forms the basis for most practice policies, including coverage policies. Any policy that is based solely on the effectiveness of an intervention or its benefits and harms, without considering cost, is, in essence, asking question 4. Any policy that is based on a "community standard" or "common and accepted practice" is, in essence, determined by decisions made in physicians' offices, where Patients do not see the costs of interventions.

This illustration has been simplified on purpose to isolate the important concepts. For example, most people have group policies in which the majority of an insurance premium is paid by employers; thus, most people do not even face the full premium, much less the full cost of an intervention. Also, relatively few interventions are covered by specific riders.

and most policies are for groups, not individuals. Thus, it is rare that an individual has an opportunity to make an insurance decision about a particular intervention. In addition, for most health activities, both the health and economic outcomes are uncertain. Finally, most Patients' decisions in the second position are strongly influenced by practitioners (third-party advice). However, none of these complicating factors changes the three-point moral of the story: first, we have two minds depending on whether we have a disease, and whether we have to back up our choices with our checkbooks; second, a main reason costs are out of control is that decisions and policies are determined by answers to the wrong questions; and third, to connect value and cost, it will be necessary to ask the right questions, and hold ourselves to our answers.

Implementing the Connection

If a commitment is made to resolving the problem of cost by connecting value to cost, implementing the connection will require the following steps: (1) Estimate the health outcomes (benefits and harms) of the intervention.¹ (2) Ask Patients if the benefits outweigh the harms. (3) If the answer is no, stop. The intervention should not be used, recommended, or covered. (4) If the answer is yes, proceed to estimate the cost of the intervention. (5) Ask Patients if the value of the intervention (benefits minus harms) is worth its cost (using questions of the form of questions 1, 2, or 3). That is, are they willing to pay the cost to receive the benefits and harms of the intervention? (6) If the answer is yes, the intervention should be used, recommended, and covered. (7) If the answer is no, the intervention should not be used, recommended, or covered. (8) Finally, adhere to the decision.

This list is simplistic in that it sets aside (for a later article) very important issues such as what constitutes a representative group of Patients, how to frame the questions and make them realistic, what to include in costs and how to estimate them, what proportion of Patients must agree in order to conclude whether benefits are worth harms and cost, and the very important fact that the Patients' answers will depend on how wealthy they are. These issues are not merely methodological; many of them imply social value judgments. However, given these simplifications, this list identifies the essential steps that must be taken to connect value to cost.

Conclusions

First, the process described by these steps is not an alternative to administrative approaches to bringing cost into alignment with value. Rather, this process represents what must occur for the successful implementation of *any* rational approach to this problem. Most of the administrative mechanisms employed so far do not attack the problem of cost directly; instead they put pressure on someone else to solve it. Limits on Medicaid budgets, prospective payment, performance targets, physician profiling, and other mechanisms only create incentives; they do not specify what actually should be done. Ultimately they push the difficult choices about costs vs quality to individual decision makers. In the end, practitioners and Patients will have to resolve the conflict at the level of their decisions. This is the point at which the steps for connecting value and cost described in this article must be applied. If the resolution of the problem of cost is truly to reflect the interests of Patients (addressing simultaneously their concern for both value and cost), the resolu-

tion must follow the steps just outlined.

Second, it is worthwhile to review the essential ingredients of this process. There are three. Connecting cost to value requires (1) information about health and economic outcomes, (2) actual comparisons of health and economic outcomes by Patients, and (3) a conviction on the part of practitioners and Patients to live with their decisions. On the first point, it should be obvious that, if value is to be connected to cost, it is essential to explicitly estimate the health and economic outcomes of alternative interventions. The only reason to belabor this point is that currently few programs that design practice policies explicitly estimate even health outcomes, much less economic outcomes. There is a strong tradition in medicine not to do either. On the second point, there is also a strong tradition in medicine for practitioners to determine what is best for their Patients, rather than turning to Patients for those decisions (third-party advice). While it is neither feasible nor desirable to have every Patient compare benefits, harms, and costs at the time of every decision, it will be necessary to systematically survey representatives of Patients to learn their preferences.

These first two ingredients will be difficult to achieve for methodological reasons. The third ingredient will present an additional challenge. Implementing these steps will mean that there will be some health activities that Patients will determine have benefit, but are not worth their cost. This in turn will mean that some beneficial activities will not be used, recommended, or covered, solely because of their cost. Adhering to a Patient's decision not to pay to have a beneficial activity will require a sharp transformation in our collective and personal instincts to always provide the maximum care possible. If the Patient is in the first position (sitting in his or her living room) when the decision is made, adhering to the decision will mean that *if* he or she should eventually get a health problem for which the intervention might be used, the intervention will not be covered. The Patient will always be able to receive the intervention, but he or she will have to pay for it in full. If the Patient does not have the money, he or she will not get the intervention. If the Patient is in the second position (the individual in the physician's office) when the decision is made, adhering to the decision will mean the Patient does not get the intervention.

What? Not cover an intervention that has benefit, just because of its cost? That's heresy! No, it's not heresy; it is the connection of value and cost. When value and cost are connected, this is the *form* the connection takes—a conscious comparison of whether some real value offered by an intervention is worth its costs, and a determination to live with the decision. But isn't that rationing? Yes, it is. Isn't that bad? Not necessarily.

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NEXT: "Rationing: Villain or Savior?"

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