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When are effective medications just too expensive?

THE ERA OF ALL-ORAL AGENTS for hepatitis C virus infection has begun. Previous treatments for this disease included pegylated interferon and ribavirin, which had limited effectiveness and side effects severe enough to reduce adherence and quality of life. Recent trials have documented the effectiveness of the new direct-acting antiviral agents.¹ These new drugs work better and offer the promise of an all-oral treatment regimen that avoids pegylated interferon.

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But they cost a lot. Prices of more than \$50,000 are estimated for a 2-to-3-month course of treatment.² These new medications reflect the kind of societal advances that justify a long-term investment in basic and clinical research. But do we value advances at any cost?

■ DOES COST MATTER?

Leaving aside the question of whether these particular drugs are too expensive, the general question remains whether effective therapies can ever be so expensive that we should not use them.

Does cost matter? Well, we all know that it does. We pay attention to cost in our individual purchasing and in how we think about business and government spending. And yet, while everyone agrees that we shouldn't pay for care that provides no benefit, many of us stop at just that line, and think or act as if we can't put a price on those elements of health

care that offer some potential to save lives. It's a comfortable position, because in going after pure waste we feel like fiscally temperate guardians of societal resources without feeling responsible for heart-rending choices about overspending on things that do work. Yet that spending threatens societal resources just as much as useless therapies.

In the end, though, it is an illogical position. The illogic is easy to understand once you walk it through: if you are unwilling to put a price on life, then you are saying that there is no price too high for any potential health benefit, no matter how small. That means you commit all your resources to health and you go bankrupt.

So, implicitly or explicitly (our society does so implicitly—and inconsistently, at that), you have to put a maximum price on life. But at that point, you are (again, implicitly) saying that when there are treatments that cost more, you shouldn't buy them.³ Admittedly, it doesn't sound good, and in health care, which touches us so intimately, it doesn't feel good either.

■ SHOULD PHYSICIANS CARE ABOUT COST?

Many of us were taught in medical school that it isn't the doctor's job to think about cost. Physicians are to be clinical advocates for their patients without consideration of cost—but that can't be right, and it isn't right.

First, even if physicians are patient advocates first, they ought to consider cost when the patient is paying. The rise in the use of high-deductible health insurance plans has expanded the financial risk that individual

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patients face in their own health care decisions. Physicians may be unprepared to help patients with those decisions, but it seems like a service they ought to provide.

Second, the line between cost to the individual and cost to society is blurred at best. Our societal health care spending is nothing more than the aggregation of our individual health care spending. Even if we don't want physicians to focus on cost when with an individual patient at the bedside or at the examination table, don't we want societal cost to be at least in their peripheral vision?

Many obstacles impede this view. Even if physicians can keep societal costs in their peripheral vision, they certainly can't see to the edges of the broad canvas that all of health care represents, and they have no easy decision rules for how to turn what vision they have into a decision for a particular patient.

A variety of stakeholders have succeeded in turning what might have been seen as socially responsible thinking into a dirty word. The same politicians who use the term "stewardship" when they are in favor of considering societal implications call it "rationing" when they feel the other way. As a result, some of our most important institutions—eg, Medicare—are prohibited from considering price. Commercial insurers, still smarting from the managed-care backlash of the 1990s, have limited ability to effectively manage costs while maintaining quality. In some sense, this vacuum creates an opportunity for physician leadership.

■ COST-EFFECTIVENESS ANALYSIS AND ITS LIMITATIONS

Cost-effectiveness analysis, which represents the health care value of a therapy as the ratio of its financial cost to its benefit (eg, cost per quality-adjusted life-year), offers a disciplined approach to these conflicts between individual good and social good.⁴

The long-term costs of hepatitis C are substantial and include multiple diagnostic tests, hospitalization, surgery, and death. A major treatment for both liver failure and hepatocellular cancer is liver transplantation, which can entail hundreds of thousands of dollars in cost for the surgery and ongoing care. Prevent-

ing just one transplant can provide enormous savings, in addition to freeing up cadaveric organs for another patient. A careful cost-effectiveness analysis could tell us whether the new direct-acting antiviral agents are worth their cost.

These analyses are appealing because they are formal and disciplined, but it turns out that they are far from value-free. Their methodology is complicated and is sensitive to subjective modeling assumptions whose implications are often not straightforward, are hard to report in the compact methods sections of manuscripts, and are harder still to interpret by most readers of these articles.

Further, these models focus exclusively on economic efficiency, so even the most carefully constructed cost-effectiveness analyses need to be tempered by a sense of social equity not captured in these models. For example, an emphasis on increasing quality-adjusted life-years will naturally lead to policy decisions that favor groups that have more life-years remaining. That may sound fine if we are comfortable with the idea that, in general, we should target our resources toward younger people rather than older people. But the same thinking means we should target our resources away from men (who don't live as long as women) or away from members of racial minority groups (who don't live as long as whites).

Finally, although some throw about numbers like \$50,000 to \$100,000 per quality-adjusted life-year as a guide, the price thresholds revealed by our current practices and policies are inconsistent. Hemodialysis is funded through Medicare by a federal mandate, but more cost-effective vaccines and preventive care are not covered to the same degree. Cost-effectiveness analyses are essential to establish a quantitative sense about the efficient use of resources, but they need to be interpreted alongside other considerations we also value. Cost-effectiveness analyses don't take us all the way to the decision line by themselves.

■ WHY ARE NEW DRUGS SO EXPENSIVE?

The high cost of the new direct-acting antivirals for just months of therapy seems excessive on its face. Even though most patients will

Medicare covers hemodialysis, but vaccines and preventive care are not covered to the same degree

not pay these costs directly, they are borne by society through higher taxes or premiums for commercial insurance, which are paid out-of-pocket by those who purchase individual insurance, or substitute for wages in employment-based health insurance.

We know that the actual cost to manufacture these drugs is significantly less than the prices charged by pharmaceutical companies⁵ and that the government subsidizes both the research and the reimbursement for certain therapies. However, the companies need to cover the long-term costs of research and development not only for these drugs but for other drugs that did not make it through the pipeline but might have.⁶

There are at least two sides to this economy. First, the more we are willing to pay for successful drugs that go to market, the more the developers of those drugs will be willing to invest in finding new ones. If we were to pay less for individual successes, we would in the end have fewer trials and fewer overall successes.

Second, pharmaceutical companies hire economists to do their own cost-effectiveness calculations. One reason it should be no surprise that new drugs often arrive on the market at prices that are pretty close to commonly accepted thresholds for cost-effectiveness is that this is partly how they were priced in the first place. Pharmaceutical companies naturally want to price their products as high as they can. Since there is a limit to what people

are willing to pay for the benefit they get in return, determining that limit and setting the price at that point helps firms extract as much of the surplus as possible.

■ AN OPPORTUNITY FOR LEADERSHIP

A disciplined analysis of the costs and benefits of new drug therapies is critical to any medical policy decision, rather than cost alone. There will always be a point where new treatments are too expensive—a point not based on absolute cost, but on cost relative to what is gained over and above the next best alternative.⁷ However, we should acknowledge that these analyses are based on estimates that may change over time, that they require modeling assumptions that are often subjective and opaque, and that the interpretation and implementation of these policies within their social context is just as important as the analysis of their economic efficiency.

As challenging as these decisions are, they offer an opportunity for leadership from medicine. Some organizations have already taken a stance on eliminating waste—through their participation in the Choosing Wisely initiative led by the American Board of Internal Medicine⁸ or through stands against the use of drugs and procedures that offer no benefit over cheaper alternatives.⁹ As these decisions get harder and as we aim to reduce not just zero-value care, but also low-value care, physicians have an enormous amount to contribute. ■

New drugs often arrive at prices close to commonly accepted thresholds for cost-effectiveness

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