Establishing new payment provisions for the high cost of curing disease

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**Key Points**

- Medical research is making significant advances toward treatments to cure major diseases, but these treatments will often entail very high upfront costs.

- The health care industry needs to consider new models for funding the development and delivery of curative treatments if the US is to achieve its intended public health goals.

- Potential solutions to help provide for the cost of these cures include new credit and contracting arrangements between payers and the health care industry that allow for the cost of treatment to be amortized over many years.

This month, scientists reported that stem cell transplants could effectively cure sickle cell disease.\(^1\) It was a transformative milestone in the treatment of the condition. By completely reconstituting the precursors to a person’s blood, you could essentially wipe out the inherited blood cells that cause the disorder.

Although highly promising, the treatment is not for everyone. Stem cell transplants are brutal affairs. In their study, scientists reserved the therapy for older individuals. In the small trial, the treatment did not cure everyone and was hugely expensive.

Yet the treatment offered a glimpse into the potential for a paradigmatic shift in the treatment of the disorder. Behind this research are even more promising therapies for
sickle cell disease that can offer outright cures for some patients, perhaps with far less morbidity and risk. Some of these strategies use gene therapy to permanently alter the structure of blood precursors, returning them to normal cells. Sickle cell disease is just one malady that these tools may transform.

All of these opportunities raise an obvious question of cost. If such a cure were to come along, we would want to make it widely available. But rapid adoption of these potentially pricey treatments can create an exorbitant, one-time charge for payers.

Curative therapies for chronic ailments create a new challenge for our existing payment and delivery systems. These would present huge and immediate charges as a curative therapy gains rapid adoption among providers and is used to immediately end an ailment that afflicts many thousands of patients.

Right now, our health care system is structured to pay for the comparatively smaller increments required every year to manage people’s chronic diseases. It is not well suited to pay to rapidly cure everyone of a chronic disease using a treatment that can be priced much higher than the chronic therapies. The research and development costs of the cure and incentives for innovation must be repaid over a much shorter period of time. All of those costs must be loaded into the price of a treatment that is delivered with perhaps only a single infusion or procedure.

In all of these scenarios, the issue is not just price but also volume. The closer a treatment is to a cure, the more people will want to immediately use it.

We have seen examples where the high cumulative cost of even moderately priced curative treatments can, when aggregated over many patients, disrupt financial expectations and create substantial uncertainty for payers. One recent case that has gained widespread attention involves Sovaldi, a potential cure for hepatitis C. The drug’s rapid and widespread adoption has created challenges for some payers that did not anticipate the cost. What will the strain to our system be when a curative therapy that involves gene
transfers or cellular treatments can cost many hundreds of thousands of dollars to treat a single patient?

We need to consider new models for funding the delivery of curative treatments if we are going to encourage the development of such technologies and enable their efficient adoption. Only by changing our economic constructs are we going to realize the full public health benefit of the curative treatments in development.

**Designing a New Payment Model for Cures**

The opportunities could not be riper. Drug companies are developing treatments that offer the promise of outright cures for some inherited metabolic disorders or certain kinds of rare cancers, to reference just a few of the opportunities. Some of these treatments are built on entirely new platforms that aim to cure illness through the manipulation of genes or the delivery of cell therapies or bits of RNA analogues. In most cases we consider here, the therapies aim to reverse or curtail the underlying mechanism of disease, effectively curing patients of their condition.

To finance these opportunities, we need payment models that more easily spread the potentially high upfront costs of curing a disease over the time during which the public health and economic benefits are realized. We will need payment models that can encourage the rapid adoption of these curative treatments when they come along so that we may realize their full public health potential.

There is much more that we can do to make the process for developing new medicines more efficient and less expensive. But the fact remains that curing vexing diseases like cancer or inherited genetic disorders will not be cheap in most cases.

Among other things, there is a high direct cost for the research and development of these curative treatments, to compensate investors for uncertainty and for the incentives needed to attract investment capital to fund these high-risk endeavors. Moreover, many of these new treatment platforms, such as cell and gene therapy, are not simple affairs. There is a
high cost to both the goods associated with these treatments and the procedures required to deliver them.

But what if the cost could be carved out, either to be reinsured by private or public sources or to be financed over a longer period of time? What if new financial arrangements allowed the high one-time charge of widely adopting a curative treatment to be turned into a recurring charge that is easier to amortize, better aligning the cost of the cure with the realization of its long-term economic benefits?

The first consideration is whether these costs can be carved out of ordinary insurance plans. This could create new vehicles for financing their payment. For example, in private arrangements, by enabling a curative treatment to be handled outside traditional insurance structures, the cost of financing its rapid adoption could be managed through a reinsurance scheme. In other cases, these costs could be partially backstopped either directly by existing government health care programs or indirectly through government-led credit vehicles that, in turn, can accelerate the delivery of curative therapies by enabling their costs to be paid over time through credit financing.

Since under these scenarios, government programs would no longer inherit the financial burden of caring for a chronic condition, public payers could pull some of those projected savings forward to help fund widespread delivery of the remedy.

**Amortizing the Cost of Cures**

The other opportunity is to adopt accounting rules that allow payers to spread the high upfront cost of a cure out over a longer period of time. Such payment models are commonplace when it comes to capital equipment, where leveraged lease financing and other terms are a routine part of the acquisition process. Such financing schemes prevail in these settings precisely because there is a high upfront cost of acquisition and a much longer period over which the benefits of the purchase will be recognized.
A medicine that can cure a vexing and costly illness is not that different. The costs of such a treatment will be borne upfront, with its initial administration. The benefits will accrue over many years. These benefits are borne not only in terms of averted morbidity, but also in the reduced long-term costs from quashing a chronic ailment.

Payment terms would need to be developed that allow payers to spread out, under generally accepted accounting principles, high upfront costs of curative therapy over more of the years in which the benefits (and cost savings) of such interventions will be realized by both patients and payers alike.

In health care, the same general constructs are already common when it comes to the purchase of medical capital equipment. The cost of a robotic tool for performing prostate surgery, for example, is typically spread out (or amortized) over the seven years during which the device is presumed to be useful.3

Because assets like robotic tools or imaging scanners are very costly but have only a limited span of productive use, one of the main principles of accrual accounting requires that an asset’s cost be proportionally expensed based on the time period over which the asset was used. Both depreciation and amortization are used to prorate the cost of a specific type of asset over the asset’s life.

Depreciation refers to prorating a tangible asset’s cost over that asset’s life. For example, an office building can be used for a number of years before it becomes rundown and is sold. Amortization, on the other hand, usually refers to spreading an intangible asset’s cost over that asset’s useful life. For example, a patent on a piece of medical equipment usually has a life of 17 years. The cost involved with creating the medical product is spread out over the life of the patent, with each portion being recorded as an expense on the company’s income statement.4

In the case of a medical treatment, amortization is a more operative concept. Instead of spreading out the costs over the useful life of a piece of capital equipment, amortization
in this context would allow a payer to spread out the costs over the period during which it would accrue the benefits of the reduced downstream costs from disease averted.

One way to operationalize such an approach might entail a financing arrangement that payers enter into with drug companies. Either the drug company (or another financial intermediary acting as a third party to the transaction) would extend financing terms that would allow the payer to book the costs of the curative treatment in annual increments. The drug maker could book the revenue in increments or upfront, depending on the terms of the financing.

A number of challenges must be addressed to make such a scheme attractive and sustainable. First are the irregular and high aggregate costs that insurers face through the introduction of a transformative new medical technology such as a cure for a high-prevalence disease. Insurers would like to reduce the unpredictability of these costs and their impact on current earnings.

At the same time, product developers want to book immediate revenue to boost their return on investment, show high growth rates, and provide a return to investors. Finally, patients want immediate access to the new cure and will be impeded by payment arrangements that transfer a large amount of out-of-pocket costs to them. There is also the issue of accounting standards. Payer accounting rules would probably need to be changed to accommodate such arrangements.

**Conclusion**

Much of our existing medical progress has been a result of gains achieved by incremental improvements in the care of chronic disease. In part because there have been so few curative therapies in development; the financial burden posed by rapid adoption of a disease cure has not been a prominent issue. But the characteristics of today’s drugs require us to think differently about how to finance medical care. New technology has the potential to make curative opportunities more widespread and associated financial challenges more common.
In other economic spheres, where the acquisition of technology represents a substantial economic investment and the benefit of that outlay is recognized over time, sellers and buyers alike have evolved sophisticated schemes to help finance these transactions. Until now, the biopharmaceutical industry and health insurers did not have to contemplate similar arrangements. But times are changing.

Payers are increasingly reluctant to absorb large costs associated with the rapid and widespread introduction of a transformative medicine as their own operating margins come under pressure from marketplace forces and growing government regulation. This is compounded by skepticism, at times, among payers who believe that the evidence necessary to understand the full value of these technologies and how to best deploy them is not fully developed at the time of their launch.

These pressures are running headlong into a period of scientific opportunity marked by growing potential for novel treatments that can cure vexing diseases. The resulting opportunities and challenges will require more creative thinking on how to finance adoption of these transformative therapies. Measures must enable rapid adoption while maintaining economic incentives for continuing to develop these new technologies and refine their use in medical practice.

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