

# Innovation and the Cost of Health Care

BY WAYNE A. SMITH

INNOVATION CAN and often does drive cost down. Innovation in health care is life saving and the benefits are exciting as we contemplate new drug discoveries and therapies that cure or better manage disease. However, simple math shows how costly the pace of innovation may be as we learn to cure or treat rarer and rarer disease populations. We as a nation need to figure out how to address this cost issue.

Take a flu vaccine for example. It is estimated to cost up to \$500 million to develop a vaccine.<sup>1</sup> Millions of Americans get the flu vaccine each year which is why it can be had at around \$20 a dose.<sup>2</sup>

On the other hand, there are numerous rare diseases that only affect a small number of people. These small populations must unfortunately take on more of the cost of a treatment, simply because there are less people to share in the burden. One study found that it can cost as much as \$2.6 billion to develop a new drug.<sup>3</sup> Fewer people to split these costs can add up to a hefty price tag.

This is one of the factors contributing to a \$100,000 per year price tag on a drug that must be taken for life to treat sickle cell disease, a blood cell disorder that impacts approximately 100,000 people in the United States. A treatment for spinal muscular atrophy (SMA) — a disease that affects approximately 10,000 children and, in some forms, can cause many not to live past the age of two years old — carries a \$2 million price tag. The cure for many with Hepatitis C — Sofosbuvir — costs over \$80,000 for a three-month course of treatment. Luxturna cures blindness in kids caused by a specific genetic mutation — at a cost of over \$800,000.

Health care is already an expensive proposition for an aging nation. As exciting new discoveries are brought to market in the coming decades, important public policy decisions loom.



For those with rare diseases, accessing these lifesaving and life improving medications and therapies is critical — but who will pay? Patients? Health insurers? Very likely the government.

We are a creative and innovative people married to a system that allows for the productive investment of dollars in the types of research likely to accelerate the development of these very expensive drugs and therapies — treatments that are unaffordable to almost everyone and will require large increases in premiums to be covered by insurance.

We are also a compassionate people who will want to see these costs underwritten so people can live or better live. Neither our ethos nor system will allow people to die or suffer with these types of treatments available.

We are going to need to be a smart people to figure out the right way to encourage wonderful innovations like these and pay for them. This will be a growing challenge for our future. ■



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<sup>1</sup> Irina Serdobova, MBA, PhD and Marie-Paule Kieny, PhD. *Assembling a Global Vaccine Development Pipeline for Infectious Diseases in the Developing World*. 2006.

<sup>2</sup> CDC Vaccine Price List. July 2020.

<sup>3</sup> Joseph A. DiMasia, Henry G. Grabowski, Ronald W. Hansen. *Innovation in the pharmaceutical industry: New estimates of R&D costs*. *Journal of Health Economics*. Volume 47, May 2016.