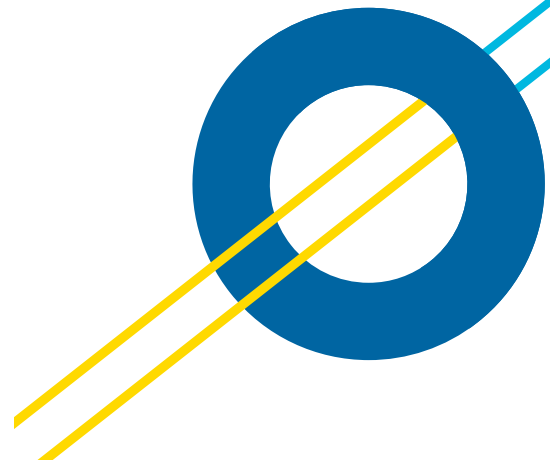




# Medtronic

## Value & Innovation: Today's Definitions Are Not Tomorrow's Reality



For most of medical history, innovation has been defined by any iterative improvement beyond what already existed. The current global healthcare situation, marked by worsening chronic conditions, rising healthcare costs, and a growing disparity between the outcomes of the wealthy and poor, demands a new approach by all.

The traditional idea of clinical innovation is evident as you consider the history of pacemakers. Early models were outside the body, the size of TVs, and needed to be plugged into an electrical outlet. That meant a power outage or surge could render the early pacemakers useless and, in some cases, even dangerous.

That's exactly what happened in Minneapolis on Halloween in 1957. A blackout covered a wide swath of the Twin Cities and lasted more than three hours. There were backup generators for surgery suites at the hospital, but not for patient rooms – putting lives in danger. After the blackout, Dr. C. Walton Lillehei, a leading cardiac surgeon at the University of Minnesota, approached Medtronic's founder Earl Bakken to find a solution. Earl was tasked with developing the first prototype for a battery-operated external pacemaker. Four weeks later, Dr. Lillehei used the prototype, which had a battery life of 1,000 hours, on a young girl, and thus began a series of innovations that significantly improved patient treatment options.

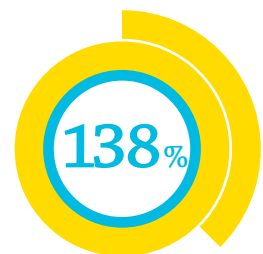
Today, of course, pacemaker technology (as well as clinical trial regulation) has advanced considerably. Modern devices are a fraction of the size of the prototype Earl delivered, and they can function for a decade or longer. They provide significantly more medical value than they did 60 years ago.

However, today's innovations and the care provided to patients are available at a considerably higher cost. This brings us to the larger problem of how we, as an industry, are defining value in healthcare today.

In the U.S., our medicines, hospitals, devices, and other therapies have never been better at helping people with acute problems. The ways in which we can target specific genetic mutations in cancer cells, create 3D maps of a beating heart, and revive or replace failed organs were unimaginable half a century ago. Our current system has improved patient outcomes and is the source of tremendous innovation, and we must strive to find long-term sustainable solutions.

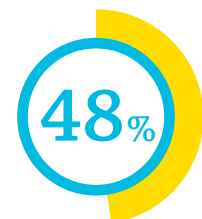
The way healthcare systems approach patient needs and pay for services has led us to this point, and is ripe for change. Healthcare companies, including Medtronic, have focused on creating and selling products that are clinically and technologically better than previous generations. But those improved products also cost more due to the increasing expenses associated with R&D.

Hospitals and doctors have newer and better ways to treat patients. They also have been incentivized to do as much as possible for reimbursements in the pay-for-service model. Patients are coming into the doctor's office to have acute symptoms treated instead of addressing chronic problems that could limit their frequent, episodic-based utilization of system resources. Insurers collect higher premiums from patients and push back on paying for the services, tests devices, and drugs that doctors, hospitals, and patients use.



INCREASE IN PREMIUMS FOR  
EMPLOYER-SPONSORED  
HEALTH INSURANCE

VS.



WAGE GROWTH FROM  
1999 TO 2010

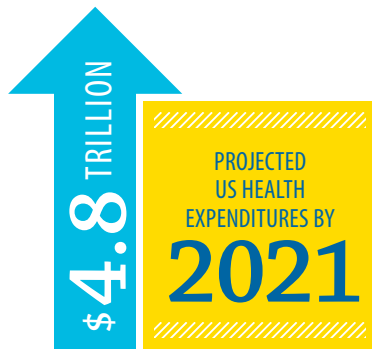


## Value & Innovation: Today's Definitions Are Not Tomorrow's Reality

Total healthcare costs in the United States are expected to climb to \$4.8 trillion by 2021, a startling increase from the \$75 billion spent in 1970. If we keep going down this path, we will risk a system-wide failure. The definition of value determines how the system approaches healthcare.

At Medtronic, when we recognized this fact several years ago, we introduced a concept we call economic value and incorporated it as a cornerstone of our business strategy. In short, we saw a shift in what our customers expect from us. They don't just need clinical value from our therapy innovations, they need economic value as well. The product or service we deliver must also provide an economic benefit such as making care delivery more efficient, minimizing system waste, or expanding patient access to therapies.

By working across the care continuum with a variety of partners, Medtronic is playing a role in moving the healthcare system forward. We're redefining value while continuing to embrace the importance of meaningful innovations. That's why we're excited to sponsor the *Harvard Business Review* and *New England Journal of Medicine's* Insight Center on "Innovating for Value in Healthcare." It's a particularly relevant topic in healthcare and one that cuts across stakeholders to ultimately, provide a better and healthier system.



As a leading medical technology company, we accepted this broader perspective of value. We shifted our business to address this challenge, and we haven't looked back. Since embracing economic value, we identified an opportunity to increase value not only with our devices, but also through our clinical expertise and therapeutic knowledge. That's one of the reasons we created the Medtronic Integrated Health Solutions<sup>SM</sup> business – a new offering that moves beyond devices to focus on system-level services and solutions. Today, Medtronic Integrated Health Solutions is helping hospitals, public and private payers, and health systems align value within the care continuum by delivering more efficient and improved care to patients.

The good news is that the construct of value in healthcare is widely recognized. The U.S. government has already approved reforms that focus on paying for better patient outcomes, not just for the number of services, products, and tests provided. But improving patient outcomes after diagnosis isn't enough. We need to increase value in the healthcare system throughout the continuum of care.



Follow along as thought leaders discuss this critical topic in healthcare. If you would like to learn more about Medtronic's efforts to innovate for value in healthcare, please [sign up here](#).