

ALIGNING VALUE ACROSS THE HEALTHCARE ECOSYSTEM



Around the globe, governments, insurers, hospitals, physicians, and other caregivers are struggling to address unmet healthcare needs without further increasing costs or inhibiting economic growth. At Medtronic, we are committed to working with the health community to better leverage technologies and services that improve patient outcomes, integrate care delivery, and support the global shift toward Value-Based Healthcare (VBHC). While the role of medical technology in VBHC is only beginning to be defined, and we're in the early stages of demonstrating how it can be applied, we're certain it can play a fundamental role in improving healthcare for all.

A century ago, the leading causes of death were infectious diseases such as the flu and pneumonia. During the ensuing decades, the development of vaccines, improved sanitation, greater public health awareness, and modern medicine helped reduce overall mortality by more than 50 percent while boosting life expectancy by 30 years.¹

To address healthcare needs of modern society, we need a healthcare system that confronts our current healthcare challenges. We are struggling to manage the leading causes of mortality globally — heart disease, stroke, cancer, chronic respiratory diseases, and diabetes — which account for 87 percent of all deaths in high-income countries.²

At Medtronic, we believe that the technologies we create and the solutions we offer can play an important role in helping care organizations align value, share accountability, and propel healthcare past the fragmented state that exists today.

Instead of being set up to help patients with these chronic conditions get back to a high-quality life through proper, coordinated treatment, our systems are designed to best handle acute, episodic care — and the cost and quality of that

care can vary greatly. Our payment systems reward activity and function, not coordination and management, and this leads to billions of dollars in waste around the globe. To make matters worse, patients with multiple chronic conditions consume a large percentage of healthcare dollars, thanks in large part to the overlap from this disjointed system.

What healthcare needs desperately are therapies and care pathways for patients that deliver clinical and economic-value and drive efficient, integrated care. This emphasis on fee-for-value instead of fee-for-service can help better manage patient conditions, control costs, and continue to drive and reward innovations. These must be rigorously tested and rapidly applied in safe, effective ways to drive shared accountability for better patient results. At Medtronic, we believe that the technologies we create and the solutions we offer can play an important role in helping care organizations align value, share accountability, and propel healthcare past the fragmented state that exists today.

THE NEED FOR A HEALTHCARE TRANSFORMATION

Healthcare costs, now at \$948 per person a year globally, are increasing.³ According to a 2016 study by *The Lancet*, total global healthcare spend now exceeds \$7.8 trillion.⁴ This amount, about 10 percent of the world's gross domestic product, is climbing. For countries in the Organization for Economic Co-operation and Development, average public healthcare expenditure is projected to increase from 5.5 percent of GDP in 2010 to 8 percent in 2060. Public long-term care expenditure is projected to increase from 0.8 percent to 1.6 percent of GDP in 2060.⁵

**\$7.8
trillion+**
total global
healthcare
spending⁴



In the U.S. alone, costs reached roughly \$3 trillion in 2014 and are expected to account for almost 20 percent of the country's GDP by 2024. About one-third of that spending takes place in hospitals, demonstrating the need to make spending considerably more efficient.⁶ All of us can play a role in Value-Based Healthcare delivery.

One way to reduce these costs is to rethink how and where we provide care.

"The best hospital bed is an empty one," said Don Berwick, former administrator of the U.S. Medicare and Medicaid programs. In the current fee-for-service models, he argues, hospitals aim for volume of care because this is how they stay profitable. But new rules and regulations are shifting payments toward a patient's overall health. That's important, because in an environment where chronic conditions are on the rise and patients with them need better care coordination, what should be rewarded is keeping a patient out of the hospital through preventative screenings, wellness plans, at-home care, and other measures that can improve outcomes and generate shared savings.

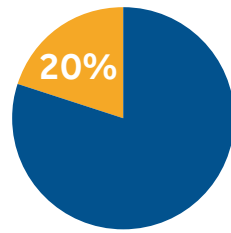
FACILITATING THE MOVE TO A VALUE-BASED FUTURE

Medtronic supports efforts to drastically restructure healthcare delivery systems and make payment for products and services contingent upon the ability to improve patient outcomes relative to the cost. This shift is what many leaders and stakeholders mean when they discuss "Value-Based Healthcare."

The attempts to move towards value-based models are only in the early stages, and many systems, payers, and governments are just beginning to learn how to implement value-based care models. However, key trends are emerging

To highlight best practices and facilitate implementation, Medtronic commissioned the Economist Intelligence Unit to conduct a first-of-its-kind research project looking at 25 countries and their status of adopting Value-Based Healthcare. The researchers brought together an international roster of independent healthcare experts to offer global perspectives and establish a unified framework that includes key indicators that make up the enabling environment for value-based care. While it's clear from the findings that no one has all the answers yet — the report, "Value-Based Healthcare: A Global Assessment," provides a valuable road map to be used by governments and healthcare systems to help define strategies and track progress towards Value-Based Healthcare.⁷

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Michael Porter, a Harvard Business School professor, and Thomas Lee, chief medical officer at Press Ganey Associates, leading experts on Value-Based Healthcare, describe the status of this shift, "There is no longer any doubt about how to increase the value of care. The question is, which organizations will lead the way and how quickly can others follow? The challenge of becoming a value-based organization should not be underestimated, given the entrenched interests and practices of many decades."⁸

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Value-based efforts are starting to gain traction around the world. The International Consortium of Health Outcomes Measurement (ICHOM) has been working to better define outcome measurements in many of the most common disease conditions or episodes of care. These measures look beyond a procedure's immediate success toward longer-term measurements that include quality of life aspects of concern to patients. They're working to publish standardized sets of outcomes across more than 50 percent of the global disease burden, with 23 already established for conditions such as atrial fibrillation, hypertension, and diabetes, with more in progress.⁹

In the United States, the Medicare Access and CHIP Reauthorization Act (MACRA), a bipartisan law passed in 2015, continues to be implemented throughout the country by the U.S. Department of Health and Human Services. MACRA establishes a new framework for reimbursing physicians, rewarding the quality of care delivered by integrating performance-based protocols and alternative payment models to guarantee reimbursement is tied to successful patient results.

Clearly, challenges remain, but Medtronic is committed to furthering Value-Based Healthcare and partnering with like-minded organizations — such as Harvard Business School, ICHOM, Boston Consulting Group, the Brookings Institution, Duke University, and the U.S. Centers for Medicare and Medicaid Services (CMS), to name a few — to realize its potential. We're confident that our focus on developing and deploying technologies, services and solutions will play a meaningful role in achieving the goals of this transformation. We have worked closely with healthcare leaders and across Europe, Asia, the Americas, and China.

IMPROVING CARE EFFICIENCY

While there is a consensus on moving to value-based structures, governments, health insurers, employers, and hospital systems are still searching for methods that spur value. It has become increasingly apparent that the only way this challenge can be addressed is if all sides are aligned toward more integrated, efficient care. Historically, factions of the healthcare universe have been siloed — manufacturers create technologies and therapies for providers to deliver care, and insurers pay for that process. And while we have produced impactful innovations in healthcare through this arrangement, it's clear we need to do more to drive better value in the system.

For this reason, Medtronic is stepping forward to put the full power of our technologies — and our people — to work with new partners, in new ways, to align value and usher in a new era in healthcare. We are leveraging our unique skill set and expertise to move beyond our traditional role and also offer services and solutions. This starts by approaching our work with the patient journey in mind, focusing on every care touchpoint from awareness, prevention, and diagnosis, to treatment, therapy optimization, and follow-on management, and then pushing ourselves to develop new and refine existing business and payment models with our partners.

As a case in point, operational efficiency is an issue many hospitals struggle with implementing, especially as leaders know it can improve the patient experience and reduce the cost of doing business through process reengineering, staff optimization, technology, analytics, and outsourcing services. Through Medtronic **Integrated Health Solutions**, we recently partnered with the Imperial College Healthcare NHS Trust in the United Kingdom, a major teaching hospital recognized as a center of excellence in cardiology and cardiothoracic surgery.

By renewing aging cath lab equipment with the most innovative medical technology available and by optimizing daily operations, Medtronic was able to show significant value creation — including efficiency savings — estimated at £840,000 in the first year. The partnership did this through improving capacity, reducing waiting lists, and allowing more focus on core clinical activities. Such value creation was also seen at hospitals in similar collaborations across Europe, including Maastricht University Medical Center, Erasmus Medical Center and St. Antonius Hospital in the Netherlands, and University Hospital of South Manchester in the UK.

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We also focus on patient results outside of the hospital setting, keeping in mind Don Berwick's idea that the best hospital beds are empty ones. For example, we recently entered an outcomes-based agreement with Aetna, a major health insurer in the United States, for type 1 and type 2 diabetes patients who currently inject insulin multiple times per day. The agreement measures outcomes for patients who choose to transition to pump therapy using a Medtronic insulin pump and ties a component of our reimbursement to successfully meeting clinical improvement thresholds. We constructed a similar partnership with UnitedHealthcare, another major payer in the US, and we are pursuing other agreements that guarantee the performance of our technologies will lead to better patient results.

ALL PATHS LEAD TO VALUE

At Medtronic, all of our products provide clinical value — but we're also working to demonstrate economic value, too. These two features are the central tenets of our contribution to Value-Based Healthcare, and we are actively looking for ways to bring more products and services to market that include clinical and economic outcomes as key factors to improving patient care. To help source such programs, we developed a rigorous internal framework that our offerings must meet to be considered Value-Based Healthcare Solutions. These offerings are focused on therapy optimization, chronic care, and episodic care.

In one example, our commitment to value-based therapy optimization led to our work to reduce infections associated with cardiac implantable electronic devices (CIED), which are increasing at a faster rate than that of device implantation. In the US, infections occur in 1-4 percent of all CIED procedures, which cost an average of roughly \$50,000 to treat and lead to a 3-year mortality rate of 50 percent. To improve the safety of implanting these life-saving devices, Medtronic is now offering the TYRX absorbable antibacterial envelope (which has been shown to reduce the chances of infection among high-risk patients by 70-100 percent) to hospitals within an outcomes-based arrangement — helping drive shared savings across the healthcare continuum.¹⁰

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The effort by Medtronic to pilot and implement value-based arrangements with other organizations using TYRX and other therapies is progressing. Today, we are executing outcomes-based agreements with hospitals, payers, and other providers, and we are conducting pilot studies of shared risk models with our care delivery partners involving a number of our leading therapies.

At the same time, we are also working on bundled payment arrangements and discussing approaches for outcomes-based data sharing with providers. We are also working with a number of payer organizations on value-based partnerships and new business models. Importantly, we are taking these steps and making these commitments not only in the US, but in countries around the world. Taking action to align value and create meaningful change in the healthcare system is hard work, and we are appreciative of our partners and other interested stakeholders who trust us to take the journey with them.

One value-based program in the realm of chronic care helps patients and providers manage diabetes. In 2015, we acquired Netherlands-based company Diabeter — which uses high-tech and high-touch solutions to manage the care of 1,700 children and young adults living with Type 1 diabetes. Our Diabeter clinics use an integrated care approach that puts the patient first, and we're applying learnings from this model to identify other global geographies with similar challenges to roll it out more broadly.

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Programs like Diabeter require vision and long-term commitment, and they often start from simple ideas that challenge the status quo. Across Medtronic, we are examining ways of working more effectively with our healthcare partners. We are starting a number of value-based pilot programs, leveraging innovation teams from across Medtronic, to develop and test new care models using medical technology. Many of these value initiatives start off from humble beginnings. Specifically, we are in some cases piloting programs with providers to optimize patient selection or a care pathway. In this way, we are seeking out even more robust evidence to support the improvement of patient care across a care continuum.

In order to share accountability in our business models (our ultimate goal for such programs), early program innovations require an incremental step prior to being fully operational,

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Value-Based Healthcare programs. But we invest in and work on these value initiatives because they are capable of solving problems in healthcare today, delivering value to key stakeholders, and have the potential to improve patient care. All the while, these initiatives have the potential to become even more impactful Value-Based Healthcare solutions in the future.

These value-based initiative and ultimately Value-Based Healthcare programs are representative of the larger commitment we are making to push our entire portfolio toward a new era of high-performance healthcare based on outcomes that matter to patients. Ultimately, we are convinced this approach also drives significant efficiencies for the healthcare system overall — helping to drive a winning formula of better, more cost-effective healthcare.

GREATER VALUE IN PARTNERSHIP

While we firmly believe Medtronic has a unique role to play in the move toward aligned, value-based care, we know we can do even more by working with others. We have the ability to create powerful new technologies and services to achieve better outcomes for patients at a reduced cost. And, we recognize that no one single entity can completely move the healthcare environment in this direction. Only through collaboration can we drive healthcare toward a healthier, more efficient future. We ask for your ideas and partnership in forging a path for the future of healthcare.

If your organization shares the belief that progress is possible by working together, we'd love to explore opportunities with you. Let's take healthcare **further, together**.

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