

TAKING THE PULSE OF HEALTH CARE TRANSFORMATION



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Taking the Pulse of a Changing Industry



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Large-scale transformation is happening in health care. With providers striving for better outcomes at lower costs, the first half of this century will be seen as a turning point in the worldwide development of efficient, outcome-driven, and more personalized health care service delivery.

As CEO of Siemens Healthineers, I experience these changes, happening at different rates in different countries, to be sure—but happening nonetheless. How do health care professionals

view these changes? We always listen to our customers and know them quite well. Additionally, I am also convinced that fostering a continuous dialogue with industry experts as well as promoting the exchange of forward-thinking ideas and best practices belong to our role as an innovative company that helps shape the future of health care. We had Harvard Business Review Analytic Services survey 613 health care decision makers, influencers, and managers to get a pulse on key industry trends. The results, as you'll see, are very telling of these exciting times.

For example, 78% of survey respondents believe that the health care industry as a whole is lagging behind other industries in its capacity to adapt. However, they see that as an opportunity. In fact, 78% see transformation as a great opportunity for providing better outcomes and more value.

The survey also confirms our view that effective care delivery of the future will require the coordinated efforts of a multi-disciplinary team. That's according to 85% of respondents.

What else will the future look like? Nobody has a crystal ball. But we believe the future of health care—given today's market dynamics—will reflect the following:

- **Medicine will be more precise and affordable.** Therapies tailored to the individual will move us closer to the goal of “the right treatment for the right patient at the right time.”
- **Value will be at the heart of care delivery.** Reducing costs without sacrificing outcomes will require dedicated teams working collaboratively across the full continuum of care.
- **Patients will be treated as consumers.** As patients continue to bear more financial responsibility for their own care, the search for better value will be the driving force shaping decision making.
- **Health care will be digital.** Digital technologies and big data will continue revolutionizing our understanding and treatment of disease and the very nature of wellness and health care.

In short, health care transformation calls for less expensive and excellent care. That is why we will continue to partner with our customers throughout health care's transformational journey toward more value, enabling them to achieve better outcomes at lower costs by:

- Expanding precision medicine
- Transforming care delivery
- Improving patient experience
- Digitalizing health care

I invite you to take a look at the survey to see what health care decision makers say about the direction of our industry. Despite the challenges, the future is promising for health care providers. We look forward to being a part of it.

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TAKING THE PULSE OF HEALTH CARE TRANSFORMATION

As the prevalence of chronic disease increases and medical care becomes ever more sophisticated, health care professionals are able to intervene and turn around critical medical situations that even a few years ago might have seemed impossible. The high cost of this care is staggering. And rising.

Meanwhile, the aging of the world's population and the increasing prevalence of obesity, along with the concomitant growth of type 2 diabetes and cardiovascular disease, push demand for lower-end services such as regular primary care. In the U.S., these realities translate to health expenditures that account for nearly 20% GDP, about double that of the U.K. and other European countries.

The drive to tackle ever-more complex medical cases will never abate, nor should it. But neither can costs be ignored.

Enter value-based care. It safeguards quality while controlling costs. And it's something that's very much top of mind with health system executives and consultants who work in health care, according to a survey conducted by Harvard Business Review Analytic Services. The global survey garnered 613 respondents, 85% of whom are in health care industries, and 15% of whom are consultants with clients in the health care industries.

Disruption Ahead, Ready or Not

Disruption is here. Actually, disruption is everywhere, say survey respondents—in the form of new technologies and new business models as well as changing perceptions and expectations on the patient's part.

As many as 76% of respondents see disruption in the form of new technologies and new business models. And an even higher percentage (91%) see great opportunity lying ahead for health care because of the disruption offered by said new business models and technologies. [FIGURE 1](#)

Picking it all apart is a challenge, but for Dr. Kevin Mahoney, executive vice president of Penn Medicine, based in Philadelphia, the most exciting opportunities are opening up at both the top and the bottom of the care delivery spectrum. Penn Medicine, affiliated with the University of Pennsylvania, based in Philadelphia, is

HIGHLIGHTS

76%

OF RESPONDENTS SEE DISRUPTION IN THE FORM OF NEW TECHNOLOGIES AND NEW BUSINESS MODELS

91%

SEE GREAT OPPORTUNITY LYING AHEAD FOR HEALTH CARE BECAUSE OF THE DISRUPTION OFFERED BY SAID NEW BUSINESS MODELS AND TECHNOLOGIES

FIGURE 1

NEW TECHNOLOGY DISRUPTION

Respondents agreeing with each of the following statements

A great opportunity exists for health care services to vastly improve outcomes by leveraging new business models and technologies



My organization is rapidly expanding the use of new technologies to improve treatment outcomes



My organization is unable to transform as quickly as our competitors



The health care industry is being disrupted by new technologies, treatments, and business models



The health care industry is unable to transform as quickly as other industries



- STRONGLY DISAGREE
- SOMEWHAT DISAGREE
- NEITHER AGREE NOR DISAGREE
- SOMEWHAT AGREE
- STRONGLY AGREE

SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, SEPTEMBER 2017

HEALTH CARE DOESN'T HAVE AN INNOVATION PROBLEM; IT HAS AN IMPLEMENTATION PROBLEM.

the U.S.'s oldest hospital as well as the nation's first teaching hospital.

Mahoney recalls a time early in his career when he was involved in a case where an 80-year-old had open heart surgery.

"I was at Bryn Mawr Hospital then, and after the operation, we all gathered in the library and held hands. We thought what we had just done was the outer limit of what was doable, and we were right. But now, it's pretty routine to perform major surgery on 90-year olds."

"By the same token, on the lower end of the spectrum, it's fascinating to see health care deconstructed into retail clinics and health apps for smartphones. As fast as new forms of advanced medicine proliferate at

the top of the curve, the other end is creating more lower-cost, outpatient-based services."

Mark Van Houdenhoven, CEO of The Sint Maartenskliniek (Nijmegen, The Netherlands), agrees. He quips that soon enough, we'll see "Walgreens"—an American drugstore chain—"performing cataract surgery."

His own facility is a hospital specializing in orthopedic surgery, rehabilitation medicine, and rheumatology, employing about 18,000 staffers, which includes some 150 physicians. Additionally, it also has its own Research, Development and Education (RD&E) Institute, which supports the quest for evidence-based medicine in all disciplines of the hospital. At the RD&E Institute, scientists work in close collaboration with specialists from the clinical departments and other staff members to regularly analyze outcomes from a particular intervention—that could be surgery or treatment with a particular medication—to ensure that patients are receiving optimal care.

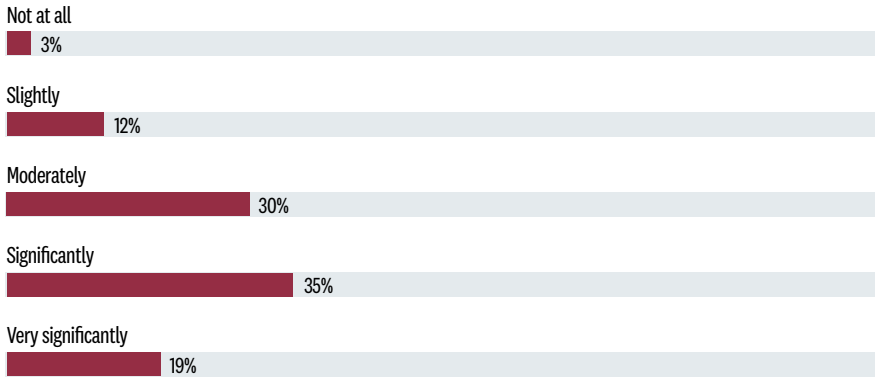
Van Houdenhoven's quip about cataract surgery on the go makes a good point about the economics of health care delivery. If all lower-cost procedures and care are done outside of hospitals, and only highly complex care, such as cancer treatment, is delivered in hospitals, then those facilities' footprint will become a very expensive one indeed, he observes.

But a more immediate issue for Van Houdenhoven is a cultural one, and here he takes a contrarian view compared with the survey respondents. Health care doesn't have an innovation problem; it has an implementation problem. Call it a bias toward action, but Van Houdenhoven wants to see good ideas adopted and spread, with value for the patient the ultimate goal.

FIGURE 2

DIGITAL DISRUPTION EXPECTATIONS

Percentage of respondents expecting their organization to be disrupted to various degrees by digital technologies over the next three years

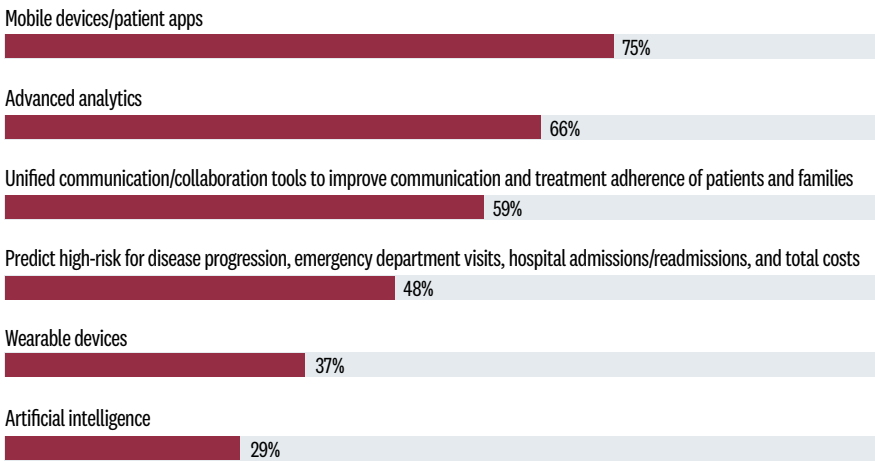


SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, SEPTEMBER 2017

FIGURE 3

TOP 6: TOOL ADOPTION

Respondents selecting which tool they expect their organization to adopt over the next three years [SELECT ALL THAT APPLY]



SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, SEPTEMBER 2017

ONLY 43% SAID THAT THEIR ORGANIZATION IS ABLE TO TRANSFORM AS QUICKLY AS THEIR COMPETITORS DO.

“My patients shouldn’t be subjected to my efforts to innovate new treatments each day just for the sake of innovation,” he says.

Time to Change

Survey respondents expressed optimism about the opportunities available, but this optimism diminished when they were asked about their own organizations: Only 43% said that their organization is able to transform as quickly as their competitors do. A sense that health care as a whole is lagging behind other industries in its capacity to adapt was expressed by 78% of respondents.

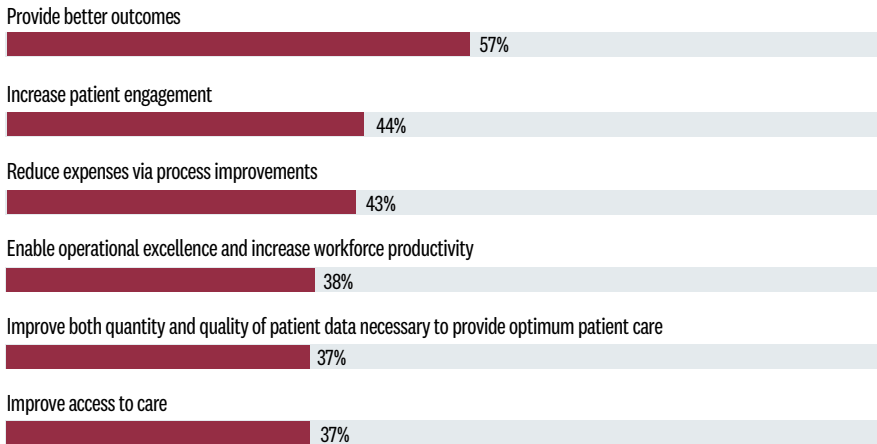
Digital technologies will significantly or very significantly disrupt their organizations in the next three years, said 54% of respondents, with another 30% forecasting at least moderate disruption from them. [FIGURE 2](#)

Which tools and capabilities will prove disruptive? Mobile devices/patient apps were cited by 75%, advanced analytics by 66%, and unified communication/collaboration tools to improve communication and treatment adherence by 59%. [FIGURE 3](#)

FIGURE 4

TOP 6: NEW BUSINESS MODELS AND TECHNOLOGIES TO IMPROVE VALUE

Respondents selecting key drivers for adopting new business models and technologies to increase value in health care [SELECT ALL THAT APPLY]

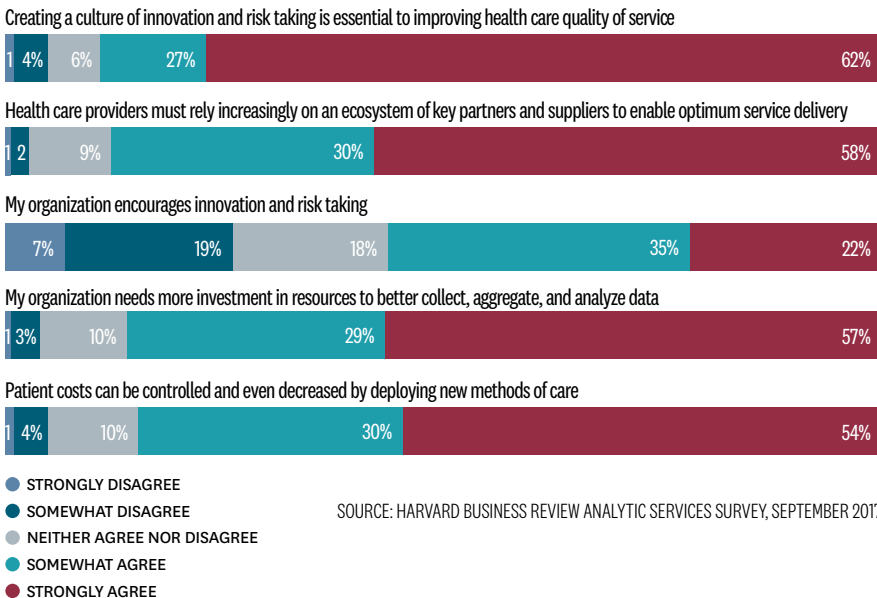


SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, SEPTEMBER 2017

FIGURE 5

CREATING A CULTURE OF INNOVATION

Respondents agreeing with each of the following statements



SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, SEPTEMBER 2017

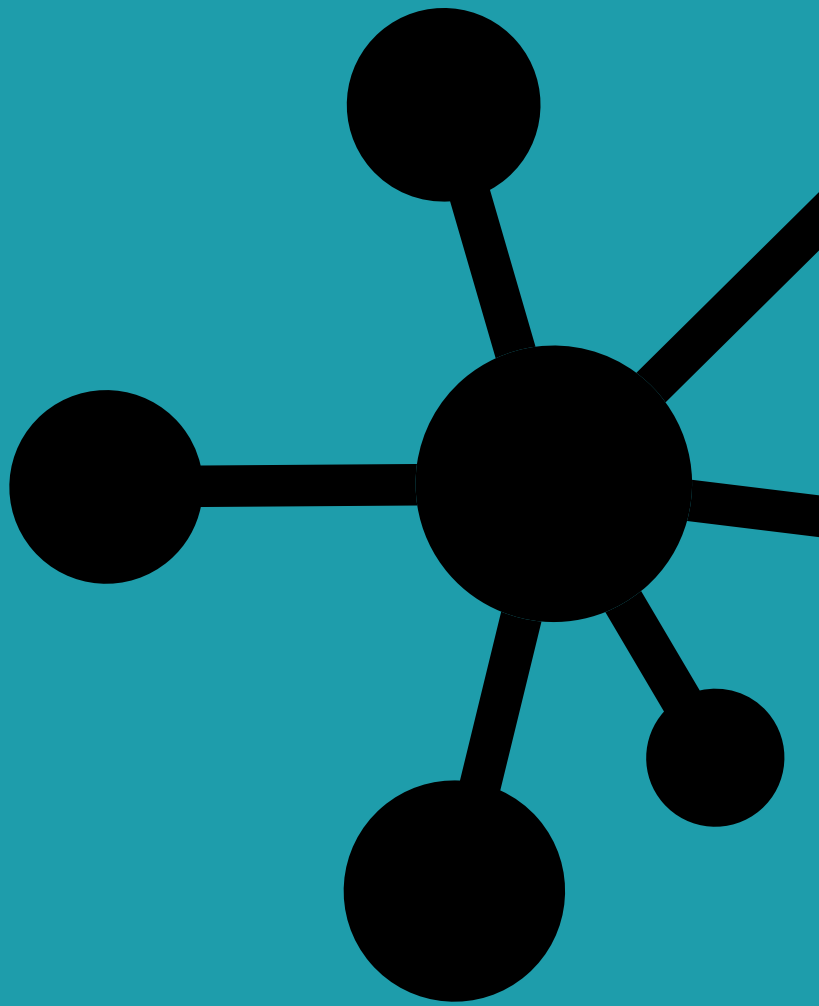
What's Driving the Need to Change?

Providing better outcomes was cited by 57% of respondents as a key driver for adopting new business models and technologies, followed by increasing patient engagement (44%), reducing expenses via process improvement (43%), enabling operational excellence and increasing workforce productivity (38%), and improving the quality and quantity of patient data to provide optimum patient care (37%). [FIGURE 4](#)

Cultural Transformation

Creating a culture of innovation and risk taking is essential to improving health care quality is a statement that 62% of respondents said they strongly agreed with. At the same time, only 22% said they strongly agreed that their own organizations encouraged innovation and risk taking. Hand in hand with culture change is a need for better data collection, aggregation, and analysis, cited by 57% of respondents. [FIGURE 5](#)

RESPONDENTS STRONGLY AGREE THAT CREATING A CULTURE OF INNOVATION AND RISK TAKING IS ESSENTIAL TO IMPROVING HEALTH CARE QUALITY.



57%

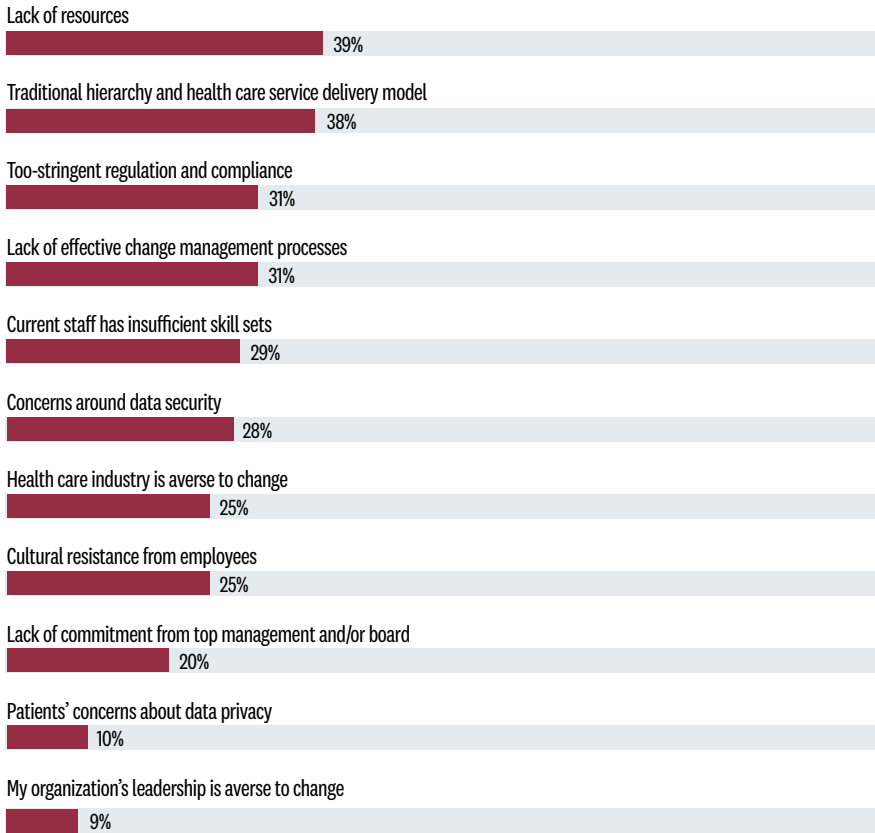
**SAY PROVIDING BETTER OUTCOMES IS
THE KEY DRIVER IN ADOPTING NEW
BUSINESS MODELS AND TECHNOLOGIES
TO INCREASE VALUE IN HEALTH CARE.**

FIGURE 6

BARRIERS TO OPERATIONALIZING NEW TECHNOLOGIES

Percentage of barriers to operationalizing new technologies in respondent's organization

[SELECT UP TO THREE]



SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, SEPTEMBER 2017

Barriers

Operationalizing new technologies is a key need, yet 39% of respondents cited a lack of resources as a barrier to doing so. Old-school hierarchies and traditional health care service delivery models as well as a lack of effective change-management processes were cited by 38% and 31% of the respondent pool, respectively. [FIGURE 6](#)

The Way to Better Value

That health care leaders are looking for greater value in health care delivery is clearly discernible from survey results. Saving costs while

increasing efficiencies in processes and also improving outcomes is a recurrent theme in respondents' answers.

Patient engagement should be increased, as this improves care outcomes, said 93% of respondents (72% strongly and 21% somewhat).

FIGURE 7

Opportunities for increased efficiency are there, with more than half of respondents saying they strongly agree that their organization has great room for operational improvement, that the health care industry is creating avoidable waste, and that doctors spend too much time on tasks that could be fulfilled by lower-level providers or automation.

Indeed, team-based care and automation are seen as valuable, with 85% saying that effective care delivery requires the coordinated efforts of a multidisciplinary team and 52% saying that automated processes and technologies enable more productive operations.

Indeed, automation will enable better team-based care, says Sally Daub, CEO of San Francisco-based Enlitic, which deploys deep learning to identify and characterize anomalies in medical images to aid diagnosis. "Enlitic's AI models allow health care teams more time to discuss results and manage patient care together," she says. "It removes radiologists from the back room examining images and places them squarely with the medical team working with the patient."

Perceptions on Engagement, Efficiencies, and Routine Work

Delivering greater patient value is an added challenge right now for all hospitals and health systems, says Van Houdenhoven, as they shift from an acute-disease focus to a chronic-disease focus. For him, improving the quality side of the equation—outcomes—goes hand in hand with increasing efficiency, and his clinic has what it needs to do both: a lot of good-quality patient data.

39%

**SAY A LACK OF RESOURCES IS THE
GREATEST BARRIER TO OPERATIONALIZING
NEW TECHNOLOGIES.**

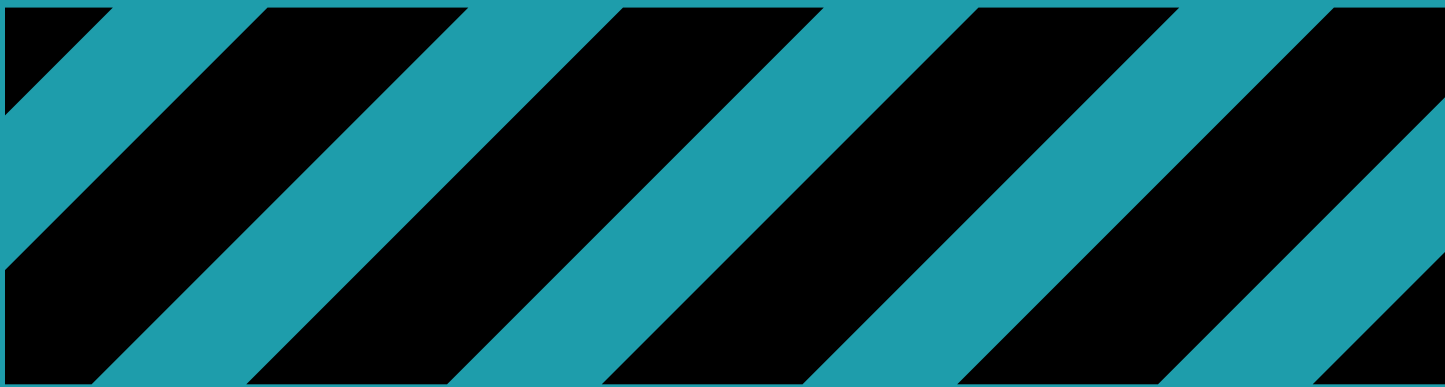
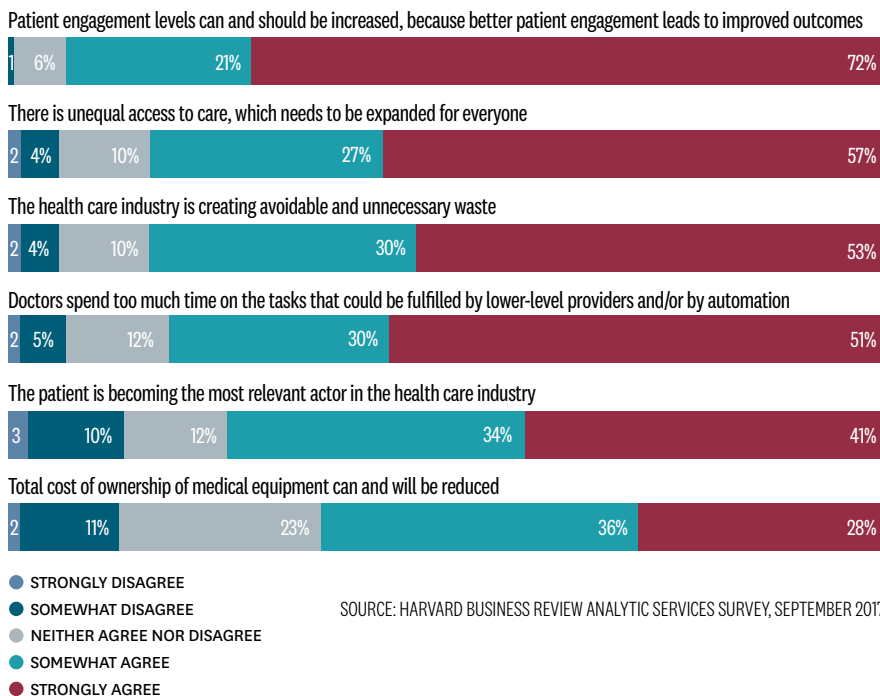


FIGURE 7

MANAGEMENT ISSUES

Respondents agreeing with each of the following statements



SOURCE: HARVARD BUSINESS REVIEW ANALYTIC SERVICES SURVEY, SEPTEMBER 2017

Take blood management, for instance. Analyzing its use of transfusions, Sint Maartenskliniek saw room for improvement. So it instituted blood management protocols that led to an 82% drop in use of donated blood. In turn, the infection rate fell by half and average length of stay dropped by three and a half days.

Through dose optimization, the clinic has reduced the amount of pharmaceuticals administered to patients being treated for rheumatoid arthritis (RA). Given the high cost of biologics, which have become the standard of care in RA, the savings add up. “For our patients with RA, we monitor their DAS [disease activity score] closely. Even though we have reduced dosage of biologics by about 30%, our patients’ DASs have improved.”

The Sint Maartenskliniek uses its data to risk-stratify patients and also guide decisions about surgery and other treatments. Its Nijmegen Decision Tool, for instance, is a validated instrument that provides guidance about whether a patient is a candidate for low back surgery. Researchers at the clinic are working now on a tool that will give similar predictions about RA treatments.

Making Way for More Value

Health care is in the midst of a profound transformation, says Daub, echoing what our survey respondents reported.

“The practice of health care will see more change in the next 10 years than it has in the last 100. It’s a perfect storm as rising cost pressures, in both public and private systems, and technological innovation and capability are colliding. And this is a good thing.”

Daub refers to deep learning in particular as driving change. For her, it will not only accelerate early detection of disease, but also provide insights about the most effective treatments, improve workflows, accelerate pharmaceutical research, and make health care more accessible and engaging.

The proliferation of data will pose both opportunities and challenges, say survey respondents. Interoperability continues to be an issue, especially for patient-generated data such as that created by wearables. At the same time, the abundance of data out there offers the hope of new knowledge that can be applied to improve patient care, particularly preventive care. “Using data predictively, health care will be able to prevent disease instead of reacting after the fact,” says Daub. “And patients will be more engaged and proactive by virtue of tools that monitor and manage their health.”

METHODOLOGY AND PARTICIPANT PROFILE

Harvard Business Review Analytic Services conducted an online survey in September 2017 of its research audience, receiving 613 responses.

SIZE OF ORGANIZATION

54% 1,000 EMPLOYEES OR MORE	29% 999 EMPLOYEES
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SENIORITY

37% EXECUTIVE MANAGEMENT/ BOARD OR C-LEVEL	37% VP/DIRECTOR/ SENIOR MANAGER	24% MIDDLE MANAGEMENT, CONSULTANT, OR ACADEMIC GRADES
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KEY INDUSTRY SECTORS

85% HEALTH CARE OR RELATED, INCLUDING PHARMA/BIOTECH	15% CONSULTANTS SPECIALIZING IN HEALTH CARE
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REGIONS

58% NORTH AMERICA	20% EUROPE	12% ASIA/PACIFIC	6% LATIN AMERICA
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EXPERT INSIGHTS

PENN MEDICINE

DR. KEVIN MAHONEY, EXECUTIVE VICE PRESIDENT

THE SINT MAARTENSKLINIEK

MARK VAN HOUDENHOVEN, CEO

ENLITIC

SALLY DAUB, CEO



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