

PART

I

THE TSUNAMI OF CHANGE

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Chapter 1

Why and How the Healthcare Industry Is Changing So Rapidly

The collective throw-weight of socio-economic and policy changes, technological advances, and structural shifts has primed the healthcare industry for upheaval and disruption—and presented an incredible opportunity to advance the standard of care worldwide.

Over the past several decades, as the healthcare industry (including providers, payers, life science companies, health services companies, and other ancillary businesses) has grown in size and complexity, choices regarding patient care have often become entangled in a myriad of objectives and controls. To survive and thrive, healthcare-related companies and organizations have focused increasingly on individual objectives—the products companies on product sales, the healthcare delivery organizations on providing services at the right price point, the payers on actuarial modeling. And somewhere in the mix, the common goal of achieving the best outcomes for the patient and overall value for the healthcare system was diminished.

But that's all changing. There have been periods throughout economic history where a confluence of policy, technological, and industry structural changes has created a foundation for upheaval and disruption—times where

opportunistic strategies have offered handsome near-term rewards, where new entrants have had the potential to be the better operators, and where consolidations and integrated approaches have created unprecedented opportunities. Healthcare is in one of those periods now. And in 10 to 15 years, it will function fundamentally differently than it currently does. Value, defined anew, will increasingly be the metric that matters as healthcare pivots back to the patient in extraordinarily new and different ways.

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The world changed, and healthcare—broadly speaking—did not. Like all good catalytic circumstances, this one offers to healthcare the opportunity to leapfrog and make fundamental and sweeping changes that will sustain for years to come. As a result, many of us who work in, with, and around the industry now find ourselves simultaneously playing catch-up and looking forward with a new sense of responsibility to ensure that those without care can access it, to build strength into our national health systems, and to see that healthcare truly re-emerges as patient-responsive, responsible, and centric. We're directly confronting the companies and business models we've built or built upon, and we're defining what worked, what did not work, and what will work in the future. We are also comparing where healthcare stands relative to other industries that have transformed themselves in recent years.

But we're doing all of this under increasing pressure.

The global population is expected to increase by 1 billion by 2025. By then, more than 500 million people will be over the age of 50. Projections from a variety of sources (including the United Nations and the World Health Organization) report that by that same year, 70 percent of all illnesses will be chronic diseases. Overall we are living longer, living with an increasing amount of chronic and comorbid illnesses, and doing so regardless of what country or region of the world we are living in.

We're also spending more money. In developed countries such as the United States and Germany, where the aging workforce is a key driver of rising healthcare costs, spending on healthcare ranges from 11 to 18 percent of gross domestic product (GDP). In recently developed countries such as China and Brazil, it is between 5 and 10 percent. Overall healthcare spending will be doubling from an aggregate \$8.4 trillion in 2015 to \$18.3 trillion in 2030 with an estimated lost productivity from chronic diseases alone of \$47 trillion over the same period. As Figure 1.1 shows, all of the world's major healthcare systems face enormous cost pressures and potential productivity losses.

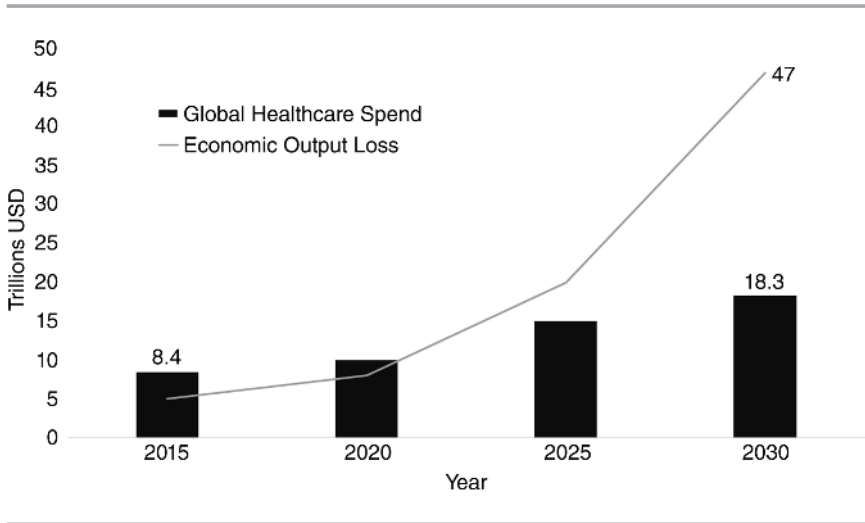


FIGURE 1.1 Global Healthcare Spend and Value of Lost Output Opportunities

Source: WHO Global Health Data Repository, *World Healthcare Outlook*, Economist Intelligence Unit; <http://www.eiu.com/industry/Healthcare> and <http://apps.who.int/gho/data/node.main>.

OPPORTUNITIES

We may be behind the curve and facing unprecedented challenges, but there are also considerable forces pushing us forward.

One piece of good news is that concurrent with (and perhaps as a result of) aging populations and the prevalence of chronic disease, many markets have seen a significant rise in “health consciousness,” which is framing new opportunities for companies to develop (and do very well selling) entire lines of consumer goods and services that facilitate health and wellness.

These offerings increasingly leverage disruptive digital forces that are a key enabler of the changes we are witnessing. Some of them, for example, built into wearable technologies (e.g., watches and activity monitors) and even mobile phones offer customers unprecedented capability to track and store health data. And so the manufacturers of these devices and their digital ecosystems (e.g., app stores) are thus increasingly bringing the healthcare system right to patients—changing the nature of how the healthcare system understands and interacts with patients, and making healthcare look more and more like a consumer market.

Other digital data—from electronic medical records (EMRs) and personalized genomic information, to lifestyle and personal health data—along with the ability to analyze that data, represent another revolutionary force driving unprecedented insights and facilitating scientific breakthroughs in the development of new drugs and therapeutic services.

Healthcare is relatively nascent in its ability to use these data, whereas consumer markets, financial services, and other areas are highly advanced. But that imbalance itself is revealing pockets of opportunity. While external macroeconomic and demographic trends shape the healthcare environment, internal market forces are taking advantage of these trends to change every aspect of how the healthcare market operates and serves patients.

THE SIGNS OF CHANGE

Disruptive indicators lead the way in all major marketplace changes, and we're seeing them now in healthcare. For example:

An unprecedented number of mergers and acquisitions (M&A) have taken place recently in the pharmaceutical and medical device fields. In 2014 alone in those fields, there was \$438 billion worth of M&A activity.¹ A similar trend is evident among payers. Traditional private health insurers are increasingly aware of their own modest scale; in the United States even the largest private health insurers cover only 10 to 15 percent of prospective individuals, a small proportion by any industrial standards. This awareness is driving meta-scale combinations, which will in turn accelerate the pace of healthcare innovation through applications of large-scale, real-world health claims data sets.^{2,3}

New business models are emerging, and they're breaking old boundaries. Traditionally, there were three distinct types of healthcare players: health providers (delivering treatment and services), health manufacturers (pharmaceutical and medical device companies), and health payers (insurers). However, the traditional lines of distinction among different types of companies are blurring. Device companies are transforming into service entities, providing catheterization lab management services and focusing on the remote management of specific patient populations. Pharmaceutical companies are focusing on service. Providers are extending services beyond their traditional regimens into home care and post-discharge monitoring. Additionally, we're seeing new types of *collaborative pairings*—medical device companies with pharmaceutical firms, digital technology companies

with pharmaceutical firms, payers with providers, payers with digital technology companies, and so forth, for example, Novartis co-investing with Qualcomm, or Humana's acquisition of Concentra.⁴

New players are making noise and resetting expectations of what's possible. Chief among these are influential consumer digital technology companies that bring new capabilities to the table and offer new forms of partnership. Apple Inc., for example, has launched an app that provides a network for the sharing of health information between its vast consumer base and researchers interested in large-scale data sets.⁵ Additionally, Google Inc.'s partnership with AbbVie Inc. promises to yield \$1.5 billion in research activity around developing solutions for age-related illnesses.⁶

And all of these changes are taking place against a backdrop of full-fledged industry reform.

A CLOSER LOOK AT HEALTHCARE REFORM

Admittedly, we're taking a rapid tour through the foundations of disruption in the healthcare industry. However, current reform efforts warrant a slight slowdown and a closer look.

Reform, in this context, refers to a broad set of sweeping changes that are needed to solve problems that cannot be solved by tuning or tweaking existing policies and incentives. Industry reform generally occurs in areas where there is significant government oversight and where that oversight forms the "rules of engagement" for industry players. While undoubtedly a simplification, two examples demonstrate the point: Campaign finance rules and banking have each been reformed—the first to limit and enable sources of influence and the second to create agencies and new rules to limit broad risks to the national economy and to protect the financial interests of individuals.^{7,8}

The fundamental problem compelling reform efforts in healthcare was (and still is) that the value created—for patients, for providers, for payers—did not (and still does not) align with spending levels. The industry has for years increased expenditures without improving returns to health—paying for procedures done, but not for what those procedures are supposed to accomplish.

In the United States, the Netherlands, Germany, and many other locations, this approach is known as *fee-for-service*, and it utilizes tables of codes, procedures, and treatment groupings to determine how much is

paid for what is done. Healthcare providers are thus given incentives to do “more” in the most acute setting and with the most skilled clinical personnel, in order to “code” as highly as they can in order to optimize revenues. And manufacturers selling therapeutics, devices, and diagnostics are motivated to encourage key decision makers at provider and payer organizations to get their products and services used or prescribed as often as possible.

With these incentives, and without an efficient market for value in terms of outcomes, healthcare costs over the past decade and more rose faster than general inflation.⁹ It’s true that the fee-for-service approach originated during a period when we needed more healthcare capacity—more facilities, more physicians, and more allied healthcare professionals, all of whom were tasked with providing healthcare to a growing private workforce of increasingly skilled workers. However, once a capacity threshold had been reached and the value of pure supply had diminished, the industry missed a chance to transition to an output-based system.^{10,11}

Failed Healthcare Fixes

Not that no one tried. There have in fact been valiant attempts to reform key aspects of the fee-for-service, pay for input model. The 1980s, for example, witnessed the development of implemented diagnosis-related groups (DRGs), which classified hospital procedures into tightly related sets of activities that could be assigned a single price or payment. The idea was that the costs of treatment for a particular diagnosis would follow standards derived from historical aggregate analyses. If a drug or treatment was not related to the specific procedure or group under consideration, it would be challenged when submitted for reimbursement, potentially not reimbursed, or reimbursed at a lower level. DRGs did slow the cost trend and lowered some costs of patients’ initial visits, but they also created adverse incentives that compelled providers to discharge patients too quickly; they had no quality criteria assigned to the care delivered; and they allowed hospitals and physicians to be paid for additional outpatient visits and readmissions associated with the original DRG-defined care provided. And so, unintentionally, DRGs resulted in increasing numbers of patients being readmitted or having extensive follow-up care.

In the United States, the 1990s saw another attempt: capitation. Since fee-for-service provided incentives to do more, capitation capped the amount reimbursed for specific procedures, like coronary artery bypass graft or the normal delivery of a newborn. But clinical care ended up being more complicated than the system could support. Comparable populations in different regions could have different acuities and therefore different risks. The system encouraged focusing on specific procedures for higher volumes, market share, and positive margins, often limiting reimbursement for, and de-emphasizing, routine or preventative care. The model also saw different private insurers implementing their own capitation approaches that often expected providers to differentiate their care based on who was paying—something that not only proved difficult to do but also was inadvisable for the sake of quality and consistency.

Other attempts to introduce cost containment and discretionary measures also failed. Some countries chose to implement policies that restricted access, creating queues or waiting periods to constrain demand.¹² Some created councils or committees to approve or deny access to expensive procedures or medicines.¹³ Some limited the approval or commercial availability of therapeutics, technologies, or procedures they did not want to, or had no ability to, pay for. Some set limits on their healthcare spend to a percentage of GDP and then put mechanisms into place to force tradeoffs.¹⁴ Others created technology assessment groups to place a value on new therapeutics, diagnostics, and interventional devices as the basis for their availability and reimbursement.¹⁵ Nevertheless, most of these approaches ultimately failed, serving only to control the rate of increase in aggregate spending, but not to improve overall productivity, efficiency, or population outcomes.¹⁶

REAL REFORM: WHY THIS TIME WILL BE DIFFERENT

The weight of the fee-for-service model has become too much to bear, and everyone knows it. We have seen increasing, broad awareness of the fact that the model is deeply flawed and we now know that no mere modification will yield a different outcome. But we have also seen technology advance to open up other possible solutions.

Consider: In order to make payments on the basis of inputs (treatments offered, procedures performed, actions taken), a healthcare system—a provider treating a patient and seeking reimbursement from an insurer—needed only to have administrative support for scheduling and coding,

and an accounting capability to track the costs and charges incurred for specific patients and specific procedures.

For payment based on outputs or patient value (best possible health achieved) and system value (effective treatments at efficient costs), that system would have needed to be able to measure clinical outcomes realized—and that capability, until recently, was not part of most hospital, health, or enterprise-resource-planning systems.

Now, it is. Now, it is possible to collect data on the clinical activities of healthcare, the health status of a patient pretreatment, and the change in health status after treatment. These data, captured through EMRs, are enabling reform efforts to create standards for how care is administered and outcomes captured. In addition, using publicly available data, analysts, academics, and other parties can calculate the health status of a patient population and assess the health risks of the individuals within it.¹⁷ And so for the first time, it is possible to set the foundations for a healthcare market focused on output and value.

Global Healthcare Reforms Ensure the Move from Volume to Value

Reform efforts are taking these advances as motivation and as fuel.

In the United States, for example, several new initiatives have been implemented as part of healthcare reform. These include: financial incentives to health providers to achieve meaningful use (a certain standard of improvement in quality, safety, and efficiency and efficacy of care) of EMR technology under the HITECH Act¹⁸; Patient Centered Medical Homes (PCMHs) and accountable care organizations (ACOs) that provide integrated models of care within specific regions and for specific populations of patients; Shared Savings programs created as part of the Affordable Care Act (ACA); quality reporting on care providers and physicians; and the Center for Medicare and Medicaid innovation to pilot different quality and outcomes reimbursement models within regions and targeted populations of patients. Many of these programs assume an increasing level of private sector engagement and co-investment in order to move toward an outcomes- and value-based system.^{19,20}

Figures 1.2 and 1.3 illustrate how these programs will progress, strongly de-emphasizing the Fee-for-Service (FFS)–based models in favor

	Category 1: <i>Fee for Service — No Link to Quality</i>	Category 2: <i>Fee for Service — Link to Quality</i>	Category 3: <i>Alternative Payment Models Built on Fee-for-Service Architecture</i>	Category 4: <i>Population-Based Payment</i>
Description	Payments are based on volume of services and not linked to quality or efficiency.	At least a portion of payments vary based on the quality or efficiency of healthcare delivery.	Some payment is linked to the effective management of a population or an episode of care. Payments still triggered by delivery of services, but opportunities for shared savings or two-sided risk.	Payment is not directly triggered by service delivery so volume is not linked to payment. Clinicians and organizations are paid and responsible for the care of a beneficiary for a long period (e.g. ≥ 1 year.)
Medicare FFS	<ul style="list-style-type: none">Limited in Medicare fee for serviceMajority of Medicare payments now are linked to quality	<ul style="list-style-type: none">Hospital value-based purchasingPhysician value-based modifierReadmission/hospital acquired condition reduction program	<ul style="list-style-type: none">Accountable care organizationsMedical homesBundled paymentsComprehensive primary care initiativeComprehensive ESRDMedicare – Medicaid financial alignment initiative fee-for-service model	<ul style="list-style-type: none">Eligible Pioneer accountable care organizations in 3–5 years

FIGURE 1.2 Payment Taxonomy Framework

Source: <https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets-items/2015-01-26-3.html>.

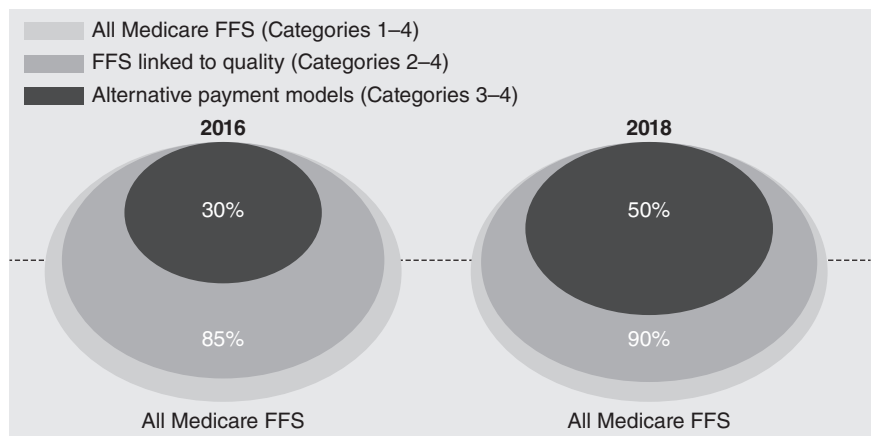


FIGURE 1.3 Target Percentage of Medicare FFS Payments Linked to Quality and Alternative Payment Models in 2016 and 2018

Source: <https://www.cms.gov/Newsroom/MediaReleaseDatabase/Fact-sheets/2015-Fact-sheets-items/2015-01-26-3.html>.

of those that rely on alternative payments (payment linked to an outcome but still provided with provision of clinical services) and population-based assessments (linked to a real-world measurable population outcome).²¹

By 2018, in fact, these performance-based reimbursement mechanisms are anticipated to comprise 50 percent or more of payments made by Medicare. (Medicare accounts for 50 percent or more of the payments made in a variety of major chronic and acute chronic diseases, such as cardiovascular, neurodegenerative, and certain cancers.) This is why we strongly believe that the U.S. market will increasingly tilt toward a value basis for pricing therapeutics, devices, and care services.

This shift also opens up more opportunities for sharing risk and delivery models for advanced clinical services that involve remote management and monitoring of higher cost and higher risk patient populations. Also, many of these initiatives increasingly focus on patient involvement, engagement, and responsibilities. The Physician Quality Reporting System and Meaningful Use initiatives, for example, are penalty- and incentive-based programs that focus on adherence to

required standards—emphasizing consistency of infrastructure and quality control.

But the real changes in the United States will occur through the broader implementation of the accountable care organizations (ACOs). At its essence, the ACO integrates acute or inpatient health providers with outpatient and physician office–based care under a common set of criteria for quality and cost defined for a population. Shared savings and shared benefits are realized by achieving or exceeding specific population health targets. By adding risk and care coordination as additional requirements for fund allocations, the ACOs are the bridge from the fee-for-service foundation of the old healthcare system to the value-based system of the future. The first 27 ACO Shared Savings Programs were launched in April 2012 and their initial progress to goals was reported in late 2014. While only a modest beginning, ACOs were shown to reduce Medicare expenditure within the first year of their operation.²²

As Figure 1.4 shows, many U.S. institutions are using an approach to operationalizing value-based care that focuses on three distinct elements: Population Management, Affordability, and Patient Experience. In doing so, they are trying to shift their operating focus from volume to health at the population and personal level, and to system-wide efficiency.²³

Dr. Vivek Murthy, MD, Surgeon General of the United States, has been candid about his hopes for reform: “My overarching goal is to get every individual, every institution and every sector . . . to ask themselves the question [of] what they can do to improve the health and the strength of our nation,” he said in an interview with the *Washington Post*, published in April 2015. “The health challenges that we face right now are too big to be solved by the traditional health sector alone. . . .”

Murthy went on to note, “Many of the patients that I [have seen] come in with illnesses and conditions that were preventable. And that’s not an experience that’s unique to me. Doctors all across the country, nurses across the country, share similar stories of feeling a great deal of sadness when they see the pain and the suffering that patients and their families go through, and realize that if we had a system that could care for people better, that was actually more focused on prevention than our current system, that we may be able to prevent a lot of the illness, the suffering and the health care costs that we see in our current world.”²⁴

Population Management	Affordability	Patient Experience
<ul style="list-style-type: none">• Focus on inclusive understanding of health; collaboration• Beyond inpatient and acute care<ul style="list-style-type: none">◦ Preventive care◦ Chronic care• Population health and outcomes analysis<ul style="list-style-type: none">◦ Utilization and medical cost predictive modeling◦ Condition identification and risk stratification◦ Outcomes performance measurement◦ Wellness and prevention• Care transition/redesign• Innovation/mobile health<ul style="list-style-type: none">◦ Texts, Internet, Telehealth	<ul style="list-style-type: none">• Medical-population cost management<ul style="list-style-type: none">◦ Reduce PMPM◦ Avoidable episodes of care◦ Actuarial tools• Revenue/technology opportunities<ul style="list-style-type: none">◦ Quality, P4P◦ HIT (EMR, other)◦ Market share◦ Patient base• Operational efficiency/cost<ul style="list-style-type: none">◦ Admin costs◦ Manage risk-sharing agreements (ACO, PCMH, bundled payments)◦ Nontraditional revenue streams• Compliance and penalties• Utilization, Disease, Case Management• Complex Care Management• End of Life/Hospice	<ul style="list-style-type: none">• Quality• Home based or close to home services• Patient engagement<ul style="list-style-type: none">◦ Self-management◦ Patient satisfaction/retention• Patient-centered care• Care continuity• Patient adherence<ul style="list-style-type: none">◦ Medication◦ Programs◦ Support network• Self and home care• Patient access enhanced<ul style="list-style-type: none">◦ Multi-channel communications◦ patient engagement, remote monitoring, and remote care coordination

FIGURE 1.4 Value-Based Care

Source: Derived from the Institute for Healthcare Improvement <http://www.ihl.org/engage/initiatives/tripleaim/pages/default.aspx>.

Reform in Socialized Medicine Systems

Meanwhile, in socialized medicine systems throughout Europe, Japan, and China (post the 2009–2011 Healthcare Reform), where access to health systems for the broad population is a fundamental element of constitutional right, the push is to increase efficiency and effectiveness.

In Europe, for example, the clear trend is toward population- or value-based reimbursement. Europe has a high proportion of seniors relative to other geographies, with a quarter of its population expected to be over age 60 by 2020, with chronic diseases affecting a third of its population. Comparatively, constrained national budgets meant annual health spending actually decreased slightly (0.6 percent) between 2009 and 2012, and there will be an estimated shortage of 1 million healthcare workers by 2020. These opposing trends are compelling healthcare payers to find new approaches to continue to meet the healthcare needs of their citizens.

Their efforts had slow starts, as they wrestle with key issues such as data privacy, funding levels, and the balance between public and private care. And all of these initiatives have required multifaceted changes spanning technology, cultural, and care management processes.

Nonetheless, health authorities across different countries are now experimenting with several alternative models and relationships. These range from regional pilots to full-scale transformations of healthcare delivery models—such as creating virtual care centers that provide remote delivered services to patients with multiple conditions while maintaining them at home.

According to a 2013 European Commission survey, in fact, three countries (the Netherlands, Denmark, and the United Kingdom) have succeeded in digitizing over 80 percent of their patient health records and, while challenges continue to be addressed, that achievement has supported country-wide efforts to pilot models focused on patient outcomes and care coordination. Denmark has been a leader in the use of new digital approaches, including remote monitoring, video consults and remote conferencing (including translation), and photo exchange. In Denmark, for example, new models of diabetes care have used these systems to support incentivizing GPs to coordinate care or to bundle payments to “care groups.”

The United Kingdom, meanwhile, has emphasized more stringent and transparent measurement of healthcare outcomes and linked these

explicitly to assessing pilots in new delivery models (e.g., technologically enabled remote engagement and consults) deployed by NHS providers and private care providers as well. In the United Kingdom, 2012 legislation allows “any qualified provider” (NHS or private) to respond to tenders or be reimbursed by NHS-set tariff, with contracting generally focused on care in specific specialties (e.g., radiology/diagnostic imaging, orthopedics, ophthalmology). Large tenders included £800m for elder care and £1.2bn for cancer care. Of these NHS contracts about 6 percent of its budget went to private companies, which won about one third of recent tenders, a major emerging change in the structure of the U.K. healthcare delivery system.²⁵

France has also been rapidly implementing major reforms. The French government views fragmented governance and misaligned policies as a root cause of the current inefficiencies and lack of a population-based healthcare focus there. To respond, the national health agency created *Agence pour les Systèmes d’Information de Santé Partagés* (ASIP) in 2009, an eHealth competence center,²⁶ and established tenders for five regional pilots (80m euros over three years) to develop multichannel centers to support chronically ill patients (200 to 1,000 in each region). Given the economic constraints, these tenders specifically sought new thinking on new economic models for care services that would allow them to access funding sources and partners outside the public budget.

There are also major new proposals for bundled payments for hospitals, based on the 2014 pilots in chronic renal insufficiency and radiotherapy cancer treatment. As we were writing these words, new disease management programs were being piloted on the national, regional, and local levels. These programs are driven by national reforms for digital health launching in five regions. New disease management programs will likely be developed at the regional level over the next five years.²⁷

DRG reforms are debated in the 2015 draft of France’s Social Security Financing Act. On September 24, 2015, the French Minister of Social Affairs, Health and Women’s Rights Marisol Touraine and the Secretary of State for the Budget Christian Eckert presented a draft for France’s 2016 Social Security Financing Act (*Projet de Loi de Financement de la Sécurité Sociale*; PLFSS) to outline a plan for the reduction of the Social Security General Scheme by EUR3 billion in 2016, increasing over time to EUR6 billion. As part of this, quality incentives are being proposed for 2016 in acute care hospitals, for nosocomial infections, re-hospitalizations, and

in-hospital drug use. Now, guidelines for new Health Technology Assessment (HTA) requirements call for significant increases in comparative or cost effectiveness for reimbursement. While these initiatives continue to be controversial, they should establish a new baseline cost remedying the budget deficit attributable to shortfalls in healthcare funding.

In Spain, little is being done at the federal level, but each state is advancing its own solution to cost and capacity constraints and population health, increasingly emphasizing risk-sharing agreements that allow for non-compensation for ineffective interventions or treatments. Most solutions and new structures there are being implemented regionally.²⁸

The Basque Country provides a good example of one micro-region's unique initiatives. This area has one of the highest proportions of elderly in Europe, and 80 percent of patient encounters with the public health system are related to chronic diseases. Unsustainable estimates of future health spending drove the Basque Country health department to seek a comprehensive change to its approach to population health management, ultimately launching 14 strategic initiatives to reshape its system to better support patients with chronic diseases. The effort is ongoing, but services provided by the O-sarean²⁹ Multichannel Health Service Centre since 2009 have begun to reverse the historical upward trends in healthcare spending in the area. These efforts are helping patients stay informed, and increasing homecare almost 50 percent through a revolutionary and well-received telemedicine program, ultimately leading to \$55 million in savings through 52,000 fewer hospital stays in the region between 2009 and 2011.

Other areas continue to lay digital foundations to catalyze the evolution of their healthcare as well. Certain regions in Italy have been tendering for solutions ranging from population analytics to designing and delivering patient clinical treatment pathways with the goal of better managing both patient outcomes and the allocation of healthcare resources. The Trento province in particular has been a leader in eHealth solutions and is using its digital care platform, TreC (Cartella Clinica del Cittadino), to support pilots in remote monitoring and self-management of patients in oncology, diabetes, hypertension, and youth asthma.

In Sweden, where new medical technologies have to be funded out of existing hospital budgets, registries³⁰ serve as vehicles for value-based incentives,³¹ and novel programs in value-based reimbursement are underway in major regions. For example, in Stockholm, the County

Council and the Karolinska Institute (a major academic and regional care center) are working together to align healthcare infrastructure, capacity, and payment models to advance the health of the population and to more efficiently allocate spending to the areas of greatest need.³²

In some areas, such as in the United Kingdom and some Spanish regions, hospital systems with incentives to reduce unplanned readmissions have made strides in improving their effectiveness around patient discharge and remote monitoring. For example, La Fe Hospital in Valencia partnered with Accenture having been leading the way in a clinical trial to validate the potential impact to patient outcomes and budget savings of a multi-chronic disease patient care management program. The trial resulted in a 65 percent reduction in costs and 80 percent reduction in participants' annual days in the hospital. Other hospitals in France and Italy have sent out confidential tenders to develop better programs to manage chronically ill patients.

Germany, too, has been contemplating changes. The primary focus there has been on stemming the rising costs associated with immigration and an aging population. In 2010, the public health insurance system projected a deficit of €9 billion for the upcoming year. The CDU-FPD political coalition passed the GKV-Finanzierungsgesetz for insurance reform and the Arzneimittelmarktneuordnungsgesetz (AMNOG) for pharmaceutical reform, both of which went into effect in early 2011. The GKV-Finanzierungsgesetz leaves the insurance system generally intact, altering the financing ratios for public health insurance (Gesetzliche Krankenversicherung, GKV) and implementing measures incentivizing competition to hold down the costs of private insurance. Meanwhile, the AMNOG focuses on cost containment of pharmaceuticals by leveraging the purchasing and tendering scale of the Krankenkassen.

Different Stages of Evolution in Top Markets

Countries across the globe are at different stages of evolution in the movement from no coverage to universal coverage governed by traditional instruments such as drug approval, discounting, and cost control, toward integrated systems held accountable for outcomes.³³ These renovations of the healthcare payment system and a move toward outcomes-based reimbursement are propelling the industry forward and forcing a rethink of the core business models that serve this industry.

This time efforts can be, and are, aimed at addressing the underlying problem with the healthcare ecosystem overall. This time reform and disruption will work together to shift the basis for payment *from inputs to outcomes realized* and effect on the healthcare system. As socioeconomic pressures increase, as science continues to break new boundaries, and as the new breed of patient-consumers demands higher levels of integrated services and capabilities, the availability of data—genomic, lifestyle, medical, clinical, and scientific—coupled with the methods of using and analyzing that data will compel and enable us all to challenge the traditional norms, satiate needs, and address the rising cost-of-care crisis.

FROM REACTIVE TO PROACTIVE

The move to value- and outcomes-based compensation changes the way the healthcare system positions itself with respect to the patient. Whereas to a large extent, today's healthcare system is reactionary, giving us the health services that result from our persistence, our phone calls, our queuing, our waiting in waiting rooms, and our calls to healthcare insurers, tomorrow's system can be a force for health maintenance and health solutions.

ACO entities in the United States and new public policy in various European countries act as an essential support to the health of specific patient populations within defined services regions. This provides them with the financial means and incentive to focus on maintaining patient health. With the ubiquity of the electronic medical record and technologies, such as the Health Information Exchanges (HIEs) in many countries, there is now the ability to pull data together on individual patients, confederate those data together, develop a picture of a population of patients, and then identify the needs of the individual patient relative to the goals of the overall population.³⁴

In the United States, for example, it is anticipated that close to 95 percent of all patients and patient encounters will be captured in the various physicians' offices, ambulatory facilities, and acute hospitals as part of mechanisms integrated into healthcare reform legislation, incentives, and penalties. To date, more than \$20.9 billion in Medicare EHR Incentive Program payments have been made between May 2011 and July 2015, highlighting the influence and impact this is having on practices and available infrastructure.³⁵ Based on that assessment,

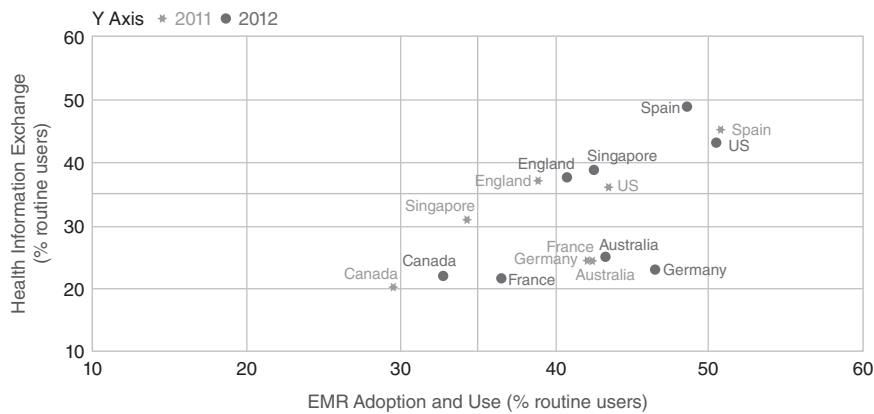


FIGURE 1.5 Countries Are Showing Increases in Connected Health Maturity across Both HIE and EMR

Source: Accenture Doctors Survey, “Connected Health Maturity Index: Total Doctors, 2011–2012.” Accenture analysis from the Doctors Survey: https://www.accenture.com/us-en/~media/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Industries_11/Accenture-Doctors-Survey-US-Country-Profile-Report.pdf#zoom=50; and <https://www.accenture.com/us-en/insight-digital-doctor-is-in.aspx>.

messages and requests can be sent to that patient’s personal care physician and medical practice with specific guidance. In turn, the patient can receive notifications about vaccinations, nutritional counseling, or a request for a formal assessment of the effectiveness of specific chronic disease management therapeutics. There are comparable scenarios for proactive management of more acute patients or patients who are more ill. (Figure 1.5 shows the impressive rate of increase in EMR usage even in 2012.)

Insurers are also becoming active in the area of prevention, doing their part to keep costs under control. Discovery Health, a South Africa–based health insurer, has deployed proactive “Vitality” programs across the United Kingdom, Africa, and Asia that offer loyalty rewards to citizens who eat healthy foods, exercise regularly, and provide links to their Fitbit™ data to demonstrate those healthy habits. The insurer offers lower premiums as incentives for demonstrated healthy behaviors; it also offers rewards on a weekly and monthly basis. While the ultimate goal is to

reduce policy payouts, the result is a more health-conscious population focused on prevention rather than cure.

And critically, the pharmaceutical, biopharmaceutical, medical device, and medical diagnostics companies have an unprecedented opportunity to enable and effect change. In fact, these organizations may hold a critical link between what can be and what will be.

With the external environment changing at an accelerating pace, many organizations are seeing core elements of their operating models diminish in effectiveness, or even begin to act as barriers to strong performance. Nearly every major pharmaceutical, biopharmaceutical, medical device, and medical diagnostic company has the opportunity and responsibility to overhaul its strategy, defining its own future paths on multiple dimensions, and developing coherent responses to the powerful rising trends and focus on better patient and economic outcomes as the new currency.

