

A person wearing a hat and jacket is sitting on a thick tree branch in a forest, reading a book. The background is a dense forest of tall trees with sunlight filtering through the leaves.

How will you seize the upside of disruption?

New horizons

Insights for health executives

September 2017 edition



The better the question. The better the answer. The better the world works.



Building a better
working world

To our clients and other friends



Jim Costanzo
EY Global Health Leader

“The status quo is not sustainable for the health sector. But businesses are capitalizing on the opportunity for innovation by reinventing health and wellness.”

Welcome to the 2017 edition of *New horizons*. In response to the overwhelming positive feedback on last year’s edition, we are again pleased to bring you a series of executive insights that explore some of the most pressing issues in the health sector today.

There are powerful forces and enablers of change that, together, are reshaping the way we think about health, care delivery and wellness. Health care is being reinvented at an astonishing pace, as established stakeholders and new entrants find new ways to deliver higher quality outcomes to a greater number of people while combating rising costs.

This brings us to the thread underlying all of our articles: disruption. It has long been clear that the status quo is not sustainable for the health sector. And political and regulatory uncertainty have made planning even more difficult. But businesses are capitalizing on the opportunity for innovation presented by the disruptive forces affecting the sector by reinventing health and wellness. Disruption is an opportunity for positive growth; this is the theme at the heart of this year’s *New horizons*.

We kick off this series of executive insights with a discussion of the opportunities inherent in aging populations, a megatrend as disruptive as digital. In our *What does the participatory health system of tomorrow look like?*, we see how technologies are rising to meet the growing demand for a consumer-centric health marketplace. Interviews with the Mayo Clinic and Karolinska University Hospital show how leading providers are shifting to value-driven care, meeting headlong the challenge to delivering outcomes in a sustainable way. Meanwhile, technologies like Robotic Process Automation are helping the back office streamline operations, and perform repetitive tasks with greater data accuracy. In *Consolidation in the Health Sector and disruptive trends*, we discuss how mergers, greenfield acquisitions and partnerships are aligning incentives across stakeholder groups, bringing value to consumers and businesses alike.

I look forward to discussing these topics with you in the coming year. In the meantime, please visit our [Health Reimagined blog](#) to explore EY Health’s latest insights. I wish you a happy and a productive year.

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1.

Diving into disruption: engaging with aging will transform health

We are living longer now than we have at any point in the past. Early gains due to decreases in infant mortality, vaccines, improved sanitation and hygiene have given way to an increase in life expectancy for those aged 60 or older. In fact, by 2050, the United Nations estimates that the global population of those 60 and older will be twice what it was in 2015.^{1.1} The World Economic Forum lists aging populations as one of the top five drivers of global change, alongside growing income and wealth disparity and climate change.^{1.2}

Aging has the power to disrupt the status quo that is on par with the rise of digital technologies. This is a good thing. By embracing and preparing for this change, we have the opportunity to close the gap between our life- and “health spans”; write a story of purpose and productivity for a chapter of life that is, for many, a blank slate; and tap into a market full of savvy consumers just waiting to be courted.



As Michael Hodin, CEO of the Global Coalition on Aging, put it,

.....
"When 35% of the population is older than 60, there are opportunities for new solutions across every industry."
.....

Figure 1.1:
The disruptive power of aging

Population	
The world's population over 65 will triple by 2050	This will result in an increase in chronic diseases
Treating diseases	
Treating diseases as they arise is unsustainable:	
> US\$47t: Global economic toll of chronic disease by 2050	US\$470b: The estimated economic value of caregivers' unpaid contributions in the US in 2013
5x: Estimated amount US health system spends on seniors (>65+) vs. under-25 generation	
Wellness	
New incentives promoting wellness are needed:	
50%: Estimated reduction in risk of heart disease, cancer or Alzheimer's disease if aging is delayed seven years	£9b: Amount UK could save from 2015 to 2030 if it reduced fall-related hospitalizations 20%

Source: EY analysis, World Health Organization, Organisation for Economic Co-operation and Development (OECD) and the International Longevity Centre - UK. Caregivers and Technology, Project Catalyst and HITLAB, April 2016.

In preparation for its first Engaged Aging Summit (see inset), EY identified four overarching themes that highlight the cross-sector opportunities related to aging and that need prompt action to capitalize on them.

We explore those ideas in four themes, highlighted below.

Together with the discussion at the Summit, these themes point to three "big bucket" opportunities. The first is to use existing and near-future technologies to create platforms that integrate health care with the social contributors to health. This requires a change in the way we think about health, to one that encompasses the mental/emotional, physical and financial dimensions of well-being. The second is an opportunity to invest in precision health – a path to lifelong wellness that starts with precision medicine and continues to one that is fully personalized, precise, preventive, predictive, pharmaco-therapeutic and participatory. P-medicine, in short. The third is to harness the power of the engaged consumer to build a purposeful and lifelong wellness mentality that puts them at the very center of the health ecosystem. The final theme is fostering creative partnerships, fostering innovation at the intersection of sectors.

Managing societal priorities

Globally, health expenditures account for 9.9% of the world's GDP but have wide variation: they account for 10.2% of GDP in Japan, 9.1% in the United Kingdom and 17.1% in the United States.^{1,3} The up-front costs of treating diseases of aging in developed nations are a growing part of those costs (see Figure 1.1). Without careful planning, these costs could displace other societal priorities, straining budgets that are already stretched and result in a stagnating quality of life for the elderly.

The way we think about health and wellness, and how we prioritize our spending, needs to change.

By some estimates, we spend about 50 times more as a society managing diseases as they occur than we do on research that might prevent those diseases from happening in the first place.

The global "we" has the opportunity to act on the idea that managing diseases of aging as they arise is no longer affordable. This proverbial game of "whack-a-mole" can be obviated with a wellness mindset, one that is bolstered by a holistic view that encompasses its interrelated mental/emotional, physical and financial aspects.

The Engaged Aging Summit

On May 11, 2017, EY brought senior executives from the health, life sciences, technology, government and nonprofit sectors together to discuss the most promising opportunities today, both for near-term impact and for investment in tomorrow's solutions. Over the course of the day, participants discussed the trenchant issues in aging in interactive forums and brainstormed creative solutions in small-group workshops. There was general agreement that the greatest need and opportunities lie in the creation of easy to use platform technologies designed to meet a holistic definition of health, one that promotes wellness by addressing and integrating the social determinants of health with more traditional health care activities.

For more on Engaged Aging, including video highlights from the summit, visit <http://www.ey.com/gl/en/industries/engaged-aging>.



While the decisions we make are rule-based, they are not always in line with our long-term objectives. For instance, we tend to choose immediate rewards over future gains, a phenomenon those who study behavioral economics call “hyperbolic discounting.” In practical terms, this means we tend to pull the covers over our head after turning off the alarm that was supposed to rouse us to get to the gym, or saving less than we will likely need for retirement.

Simply providing information isn't enough for us to make the everyday decisions that put us on a wellness trajectory. Studies using fitness trackers to provide information to

those with cardiovascular disease, diabetes or to assist in weight loss have not been universally positive. Solutions will have to integrate data from a variety of sources: consumer-generated, environmental and medical data will all be needed to provide the kind of context that can help us understand our decisions and guide us in the moment. Environments designed to “nudge” our behavior may be most effective when they are just at or are slightly below the level of our awareness, while still influencing change. Influencing behaviors by setting up distinct choice architectures that bias us toward healthy behavior is one example of

an approach to low-awareness, high-impact nudges. Similarly, creating societal messages and strong social networks that position lifelong wellness as a norm can shape our mental framework, and ultimately behavior.

Harnessing disruptive technologies

At present, we have a limited understanding of what it means to be healthy. As Dr. Ken Bloom, President Of Human Longevity, puts it,

“Today we are healthy in the absence of disease. But in reality, we are only ‘healthy’ because we haven’t identified the events that will age us.”

The ultimate goal is to develop technologies that will delay the breakdown of bodily function that accompanies the aging process and extend the health span. We would have the ability to age disease-free.

A variety of data sources will contribute to the understanding that will make this kind of predictive health possible, including:

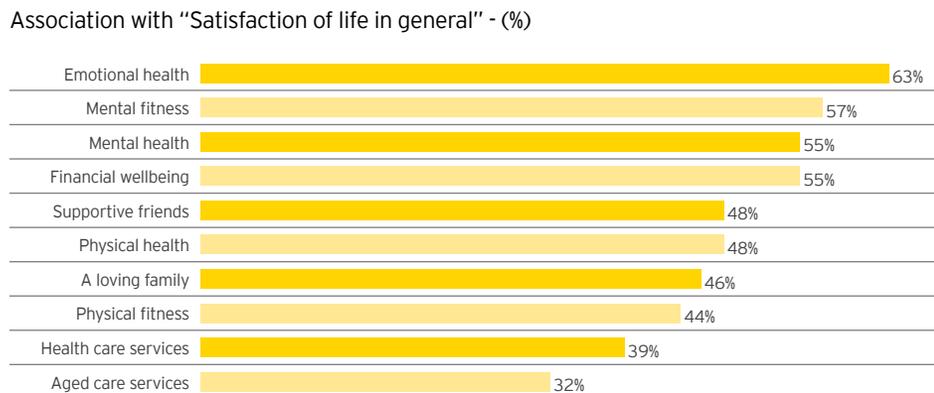
- ▶ Cheap, reliable whole genome sequencing
- ▶ Traditional clinical laboratory results

The silver “umami”

In 1908, a scientist named Kikunae Ikeda wrote about his discovery of a new taste sensation, distinct from the existing four (salty, sweet, sour and bitter). He named it umami, and he described it as being responsible for our sensation of savory, giving food depth and richness when combined with other tastes. While foods rich in umami existed long before Ikeda's discovery, his work allowed for improvements in food preparation to highlight and support this flavor.

When aging is discussed, it is frequently done with a focus predominantly on the negative (or even pejorative). For instance, the rising tide of aging individuals has been described as akin to a tidal wave of cataclysmic proportions. But, as Joe Coughlin, Director of the MIT AgeLab, points out, the amount of time we have after retirement is the same length as the period between college graduation and mid-life. This is a longevity dividend and a chapter of life waiting to be written. By closing the gap between our “health span” and our lifespan, this period of life can truly be a time to be savored by individuals, corporations and societies.

Figure 1.4: **Support for the cognitive and emotional aspects of health are the most important components of a satisfying life**

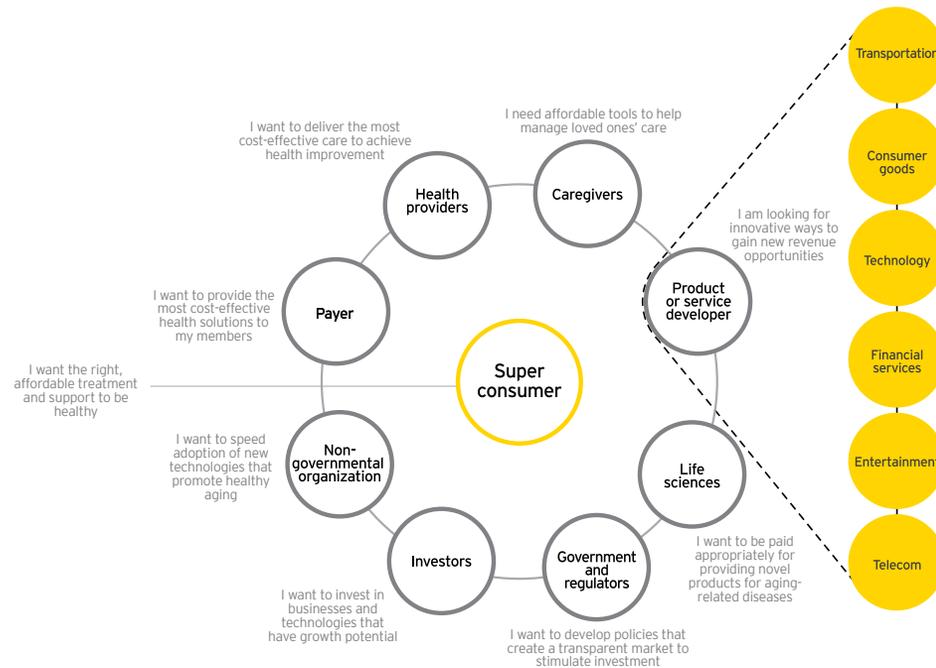


Source: EY original research conducted in cooperation with EY Sweeney, April 2017.



- ▶ So-called “multi-omics” analyses that quantify collections of biological molecules, including the totality of proteins or genetic transcripts
- ▶ Real-time data generated by wearables and other mobile technologies
- ▶ Personal, local and regional environmental sensors that can be used to make exposure estimates
- ▶ Behavioral data gleaned from social media sites (e.g., Facebook and Twitter) and advocacy organizations (e.g., PatientsLikeMe)

Figure 1.5:
Partnerships are the key to seizing the upside of aging



Source: How can new partnerships close the gap between healthy aging and “growing old”?, EYGM Limited, 2017.

With the unprecedented amount and variety of – and linkages between – data rapidly expanding, smart algorithms, particularly the branch of artificial intelligence that focuses on deep learning, are poised to transform the way we think about health care and expand the logic behind precision medicine to health more generally. As our understanding of the drivers of age-related diseases grows, the demarcation between disease management and disease prevention will blur, leading to earlier disease interception.

In the current state, when attention is given to prevention, it is largely ad hoc and episodic. In a consumer-empowered future, however, providers will be able to personalize care further, moving away from reliance on population-based metrics to individualized risk assessments.

Near term, the greatest business opportunity is the development of simple, concierge services that either coordinate care or support wellness by integrating insights from big data with high-touch behavioral tools.

And the desire for the new digital services is strong: 70% of adults EY surveyed in Singapore, the UK and the US say technology will play an important role in their quality of life as they age.^{1,6} Moreover, there is a strong interest in support for the cognitive, emotional and material aspects of health,

which those surveyed associated most with living a satisfying life (see Figure 1.4).

Fostering creative partnerships

There are enormous benefits to building relationships with non-traditional health players, and with established stakeholders in new markets, as the health sector transforms itself. For one thing, there won't be a single solution for the entire globe – there will be many. And solutions that meet the consumer's goal of affordable, comprehensible and effective support for lifelong health require a multi-stakeholder approach (see Figure 1.5). A number of factors will need to be considered to achieve success:

- ▶ Understanding of each individual's risk profile
- ▶ Regional and cultural differences in how healthy aging is defined
- ▶ Local variations in health delivery
- ▶ Varying levels of infrastructure and other resources

Multi-stakeholder engagement across industries requires a shared vision that is broad enough – and flexible enough – to galvanize a diverse group of stakeholders, that bridges differences in vocabularies, takes into account risk tolerance and investment timelines, and, ultimately, coalesces around a shared vision for outcomes.



This can be difficult, as Dr. Rhoda Au, Director of Neuropsychology for the Framingham Heart Study and a professor at the Boston University Schools of Medicine and Public Health, points out:

.....
“Stakeholders are there for different reasons. It’s hard to craft a unified message that speaks to all of them.”
.....

Hard, but not impossible. Each partner brings a unique skill or resource to the table, creating the opportunity for innovation through the unique combination of resources brought to bear on their shared vision. Broadly speaking, the categories of resources include:

- ▶ **Innovation/new technology:** A variety of digital and genetic technologies have emerged that allow the cost-effective management of diseases of aging. In the future, innovations will move treatment upstream to the pre-disease state.
- ▶ **Data:** Data will be central to proving the value of new innovations. As data from a variety of sources can be gathered, combined and analyzed in new ways, companies can demonstrate to consumers and other payers the value of a particular innovation relative to its costs.

- ▶ **Capital:** In many cases, the most critical resource is the capital that mitigates the financial risks associated with adopting a new technology. Increasingly, investors interested in financing projects with high social impact can play a role in bridging funding gaps.
- ▶ **Deployment in the marketplace:** It is imperative that partners avoid pilot fatigue. Too often, small experiments are not being scaled as organizations get bogged down repeating what’s been done before. As noted above, new solutions will only be transformative if they are deployed broadly.

Investing for the longevity dividend

Seizing the upsides of aging requires jettisoning preconceived ideas about aging and developing engaging solutions that optimize individuals’ wellness – regardless of personal health status. To be most effective, these services will be technology-independent, community-driven and focused on the whole person.

Delivering medical care to optimize physical and cognitive wellness will be an important component of any overarching solution, but ultimately only a piece of a larger offering. What the marketplace most needs are platforms that simultaneously enable

solutions for all aspects of health: physical, social and financial.

In the short term, these aging solutions will be more heavily weighted toward helping individuals and caregivers manage complex, chronic diseases. Longer term, there is an opportunity to advance investments in

precision medicine that will one day lead to precision health. Such offerings will promote preventive interventions long before any signs of disease manifest. This shift to precision health will spark changes to the businesses of both health delivery and life sciences companies.





2.

Insights into value-driven care: for providers, payers and patients

Although value-driven health care is widely discussed, the importance of the human (and human resource) impact is often overlooked. This article explores new aspects of the roles the provider, the payer and the patient play in the success of value-driven care: specifically, the provider motivation for change, the role of the employer as payer, and the patient conversation around value.

Insight

The magic is in the motivation – and in aligning the strategy

In recent years, payers have been wielding their reimbursement power to force a provider shift toward patient outcomes and quality – a recognition that the current transactional model of care is faltering and that focusing on the procedures, not the results, is not a sustainable business model.

Globally, but especially in developed countries, cost pressures are a leading driver of change. In the US, affordable care has been at the center of public discussion about health care. According to Yele Aluko, MD, US Health Advisory Executive Director, Ernst & Young LLP, cost containment shouldn't be the driving force. Rather, the priority should be delivering consumer value through systems efficiencies.

Dr. Aluko points out that true value-driven care has the customer – the patient – at its core. "Effecting real change requires centering everything around truly delivering positive results for the patient," Dr. Aluko said. "If the motive for change is reactive to the threat of reduced reimbursements or other pressures, a value-driven culture will not take root." According to Dr. Aluko, forward-thinking providers are reinventing their strategy and culture to deliver excellent clinical outcomes while also containing costs.



The ultimate expectation of satisfied patients is cascading to every person and process within the organization. Although providers understand the urgent need to take a more firm and decisive step toward value-driven care, changing attitudes within health care organizations may be an uphill battle. A recent survey conducted by EY and Peppercomm found that the surveyed provider organizations overall identified clinical quality and value-driven care among their top five priorities for 2017. However,

there was variation among respondents. Organizations with less than \$500m in revenue were more focused on new technologies and cost containment.^{2.1}

Further, a recent Medical Group Management Association (MGMA) poll found that only 11 percent of physicians reported having positive sentiments around the shift toward value-based payment models, while 40 percent of physicians have negative sentiments.^{2.2}

A well-defined organizational purpose could be the missing ingredient needed to activate transformative change for the health industry. Hospital organizations – and their employees – want to know what the future of health care has in store, where the organization is going, and how it will get there. Moreover, employees want to be reminded their work is important and to understand how it contributes to the hospital's mission and vision. Understanding how the work they do connects with and supports the organization's vision is critical for employees to be truly engaged – and employee engagement impacts everything from patient safety, quality and service delivery to innovation, problem-solving and financial performance.^{2.3}

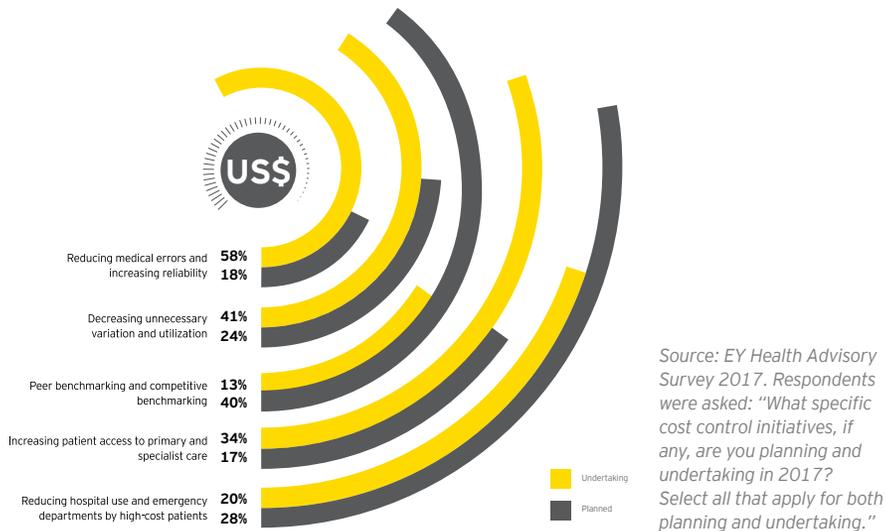
Optimist and author Simon Sinek agrees. “When companies focus on a purpose that is rooted in creating value for others and inspiring the organization at all levels, they increase their ability to drive profits and create sustainable value,” Sinek said. The results are borne out in other industries undergoing transformation. The first step of a purpose-led transformation is to answer the question “why are we making this change?” Spend the time to craft a meaningful, thoughtful answer. Communicate it widely, clearly and often. Then carefully think through how this change will impact and be activated at every level of the organization – from strategy, to operations and finance, to talent management. “Purpose turns managing change into unleashing change by engaging the full potential of the entire organization. Everything needs to be aligned and pointed in the same direction, so the entire organization moves forward,” Sinek said.^{2.4}

A deliberate shift in strategy requires clearly and compellingly articulating the why, what and how to physicians and everyone involved in patient care – so they all understand and embrace the strategy. Why is this change needed? What is my role in helping achieve positive patient outcomes? How will it impact my job? What is my role in helping achieve positive patient outcomes? How will job performance be measured? All the traditional change management and HR issues need to be addressed. “Organizations recentering their strategy now will have an advantage,” Dr. Aluko said. “Yes, while technology is a crucial enabler of business strategy, strategic repositioning is the starting point.”

Although the path toward this culture shift is not easy, the potential upside is compelling: great patient outcomes, reasonable prices, and strong workforce satisfaction and talent retention. “The organizational focus of provider organizations has been on preserving operating margins sometimes at the risk of compromising quality and the psychological impact and professional satisfaction of physicians, nurses, technicians – the people actually delivering the care,” Dr. Aluko said.

Figure 2.1:
Top five cost-control initiatives for 2017

Of the professionals surveyed, 78% think the cost of care is “considerably important” or “very important.” In addition, 95% of respondents are taking “cost-control measures.”





“Every person in the care delivery chain needs to understand how they impact patient outcomes, and must be motivated and incentivized to achieve positive results.”

Insight

Employers as power payers

As provider organizations and associations take the lead in owning the quality agenda, creating the “pull” toward value-driven care, payers have a role in “pushing” change using reimbursement and other cost containment strategies to incentivize results. Although governments and insurance companies have a strong voice, large employers or employee groups are emerging as “power payers” in the industry. These groups are highly motivated to change toward value-driven care. According to Jeff Jackson, a partner in EY Americas Health Advisory service, “Employer groups have almost the same level of clout and influence as insurance companies and in many ways are in a better position to demand value for their employees.” This makes sense when you account for the motivation behind value-driven care. Jackson continued, “For most people, doctors are the most trusted source of health care information. However, employers are maybe the second-most trusted. Who else has a strong vested interest in our health and well-being – and

in ensuring we get both a good value and good outcomes for our health care dollars?”

The employer motivation to encourage a healthy workforce is well-documented: work-related injuries and illnesses, chronic diseases, absenteeism and other issues cost U.S. employers billions of dollars each year. Productivity losses linked to absenteeism cost employers \$225.8 billion (or \$1,685 per employee).^{2,5} An aging workforce and factors such as stress, fatigue and depression all impact employers’ medical costs and employees’ productivity.^{2,6}

High reliability fuels patient-centered care

The health care industry could look to High Reliability Organizations (or HROs) as a role model for organizations with a patient-centered strategy. Although the starting point is different – eliminate risk of error and increase reliability – HROs in practice end up with a sharp focus on patients. “The core components of value-driven organizations follow the same philosophy as an HRO. The ‘patient at the center’ mindset is woven into the fabric of the HRO health system,” said Aloha McBride, EY Federal Health Leader and EY Johns Hopkins Strategic Collaboration Leader.

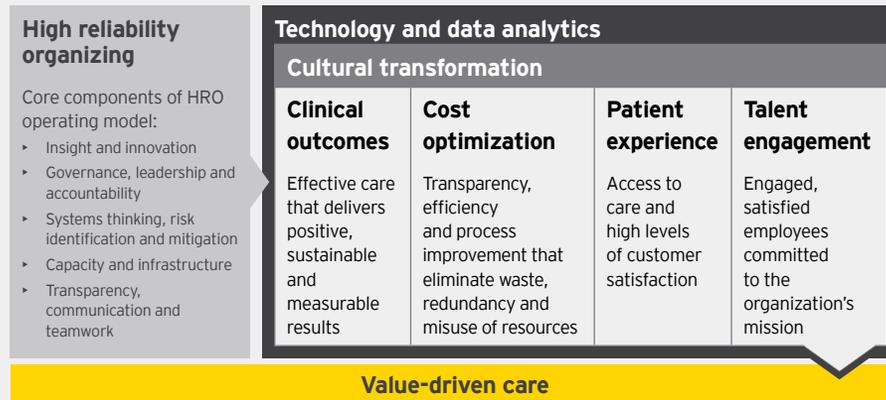
EY member firms’ strategic collaboration with The Johns Hopkins Medicine Armstrong Institute for Patient Safety and Quality (Johns Hopkins Medicine) is a leading example of this. The combination of EY’s experience supporting system-wide transformation and Johns Hopkins Medicine’s evidence-based clinical expertise is helping hospitals and health care organizations reduce patient harm in hospital settings, using High Reliability Organizing principles.^{2,8} This enterprise-wide cultural transformation is built on the tenet that the key to successful patient outcomes is the integration of people, processes and data, designing

them to work in concert with one another and in the service of patient results.^{2,9} “If performance measures from one department do not align with those of another, this might affect the next stage of the care pathway,” McBride said. “In a value-driven, highly reliable organization, everyone understands the patient path upstream and downstream, and that there is a clear procedure for handoff.”

It’s not easy for large organizations to shift gears to achieve high reliability. Moving toward a value-driven care or HRO model is an enterprise-wide effort and may require redesigning the culture, infrastructure, procedures – and focusing the data on the patient, not the finances. But the potential payoff is high: great patient outcomes and reasonable prices, and strong workforce satisfaction and talent retention.

Figure 2.2:

High reliability organizations in health focus on many of the operational components and organizational qualities that enable value-driven care



Source: Johns Hopkins Medicine, Armstrong Institute for Patient Safety and Quality: Proprietary.



In their 2015 report, AARP estimated 43.5 million adults in the United States have provided unpaid care to an adult or a child in the prior 12 months.^{2,7}

Employers are already active in offering and encouraging healthy choices in the workplace through programs such as on-site cafeterias, subsidized gym memberships and others, because they see the financial and productivity results. In fact, companies with exemplary safety, health and environmental programs have outperformed the S&P 500 by between 3 and 5 percent.^{2,10}

And they are poised to do more. With built-in employee communication and education infrastructure, large employers and groups of employers have the power to help to change the way employees consider and think about health care costs and value. “How well do I understand the importance of the decision I am making, both to my pocketbook and to my health?” Jackson asked. “If value is the goal, what is the definition of value? Where do we get the information needed to make an informed choice? Employer groups could play a big role in shifting the culture and changing employees’ thinking to routinely ask these questions,” Jackson said.

Insight

Changing the patient conversation

It is a near global truth that people “buy” health care with no idea of its actual cost. Although many people are keenly aware of their monthly premiums and out-of-pocket fees, there are few incentives to understand the true cost of care, differences in cost between providers, or the cost/benefit value of any given procedure or test. In fact many people don’t think of it in terms of a purchase at all. “Historically, it’s been a binary, disconnected conversation, with insurance companies driving cost, providers driving clinical quality and patients largely left in the dark,” Jackson said. “True value-driven care requires collaborating to integrate the conversation. Saving money to save money misses the point. Patients need to think about and understand the value of their health care purchasing decision.”

Although value has a different meaning to different people, broadly speaking it is considered to be the importance or worth patients gain from a medical treatment, taking into account the projected medical outcomes as well as the costs for the patient and family. According to Dr. Aluko, “In fact, value is a composite of patient experience, quality and cost, delivered with complete transparency. It is about the quality of services consumers receive, how they

Global success stories in value-driven care

The Commonwealth Fund’s International Health Policy and Practice Innovations team collaborated with the global health policy and payment reform team at Duke University’s Margolis Center for Health Policy to extract lessons for US providers and policymakers from the global landscape of health innovation. The team found that the successful international models shared three key approaches:

1. Leaders recognized opportunities in the environment to support accountable care reforms
2. public and private payers implemented policies that aligned payments and nonfinancial supports with outcomes, and
3. providers developed organizational competencies that created a culture and capacity for change.^{2,11}

The analysis found several opportunities for US providers and policymakers to learn from other countries’ experiences, as outlined in the case studies to the right:

Better Together (England)

is a regional alliance that has integrated health and social services for an aging population with high rates of chronic conditions. The alliance has achieved a 122 percent return on its investment.

Gesundes Kinzigtal (Germany)

is a private health management company that developed shared savings contracts with insurers to manage care for all residents in the region. By leveraging data, improving care quality, engaging patients and linking provider payment to outcomes, it has achieved a 7.4 percent reduction in per member costs.

Possible (Nepal)

is a public-private partnership that uses community health workers and telehealth tools to provide free health services to remote rural populations for less than \$20 per patient.

Zio (the Netherlands)

is an integrated care network that accepts bundled payments and deploys nurse managers to help patients manage their chronic conditions—leading to a 54 percent decrease in hospitalizations.



appreciate what they receive, whether it met their satisfaction and whether it was delivered at a price they could afford.”

The advent of big data and increasingly sophisticated analytics is having a profound impact on chronic disease and patient outcomes, offering new insights into how organizations think about health and patient care. Providers now have access to data shared within their networks of care, and in some cases, patient wearables, allowing for data gathering at a population level. New technologies are fueling progress in the analytics needed to consolidate these large sets of data into meaningful insights. All these steps have the potential to give providers the information patients need to make better – and better informed – decisions about their health care and improve health organizations’ operational infrastructures. However, data and analytics alone are not enough. These insights will only become a reality if people are at the center of the equation, curating the data, managing the algorithms and finding ways to translate the insights into practical use.^{2.12} Many patients misinterpret the value of interventions, frequently assigning a higher value to costlier treatments than may be warranted – simply because they are more expensive.^{2.13}

What’s needed is the crucial interaction and “dialogue” between the data, technology and people, requiring an active level of human

judgment and decision-making, informed by the analytics.^{2.14} “What is the success rate of this procedure for someone my age? What are the financial and quality of life costs? Are there other care or treatment options? What are the risks for each? What is the cost/benefit analysis? These are the questions patients need to begin asking,” Jackson said. “While analytics are beginning to make the answers possible, we need to change the conversation, too.”

Although adoption of this approach looks different around the globe, providers in many countries are seeing value-driven care as an enterprise wide way to fix problems overall. Organizations in Asia, New Zealand and the Middle East are early adopters and have health systems that are implementing and striving toward high reliability as a path toward value-driven care. Europe is approaching high reliability as a possible solution to both increased citizen acceptance and cost cutting. “The U.S. is just starting to engage in the conversation, as it is pushed toward value-driven care through MACRA and other regulations that adjust CMS payments (incentives or penalties) to providers based on outcomes,” said Aloha McBride. “It will take time but will accelerate, as payers shift from fee-for-service to bundled services and providers recognize they need a change in philosophy.”

Building and procurement to drive value

Karolinska University Hospital in Solna, Sweden is working with EY’s Linda Andersson, Partner, Advisory Services, EY Sweden, and her team on an innovative approach to medical technology equipment (MTE) procurement as a means to providing value-driven care to its patients.

Sweden is already a global leader in making health decisions based on value. The government sets evidence-based treatment guidelines, provides oversight to ensure quality and adherence to treatment standards, and is moving gradually toward a system of outcome-based reimbursement for specialty care.^{2.15} The Karolinska University Hospital is one of Sweden’s largest medical and research institutions and its new 330,000 square meter Nya Karolinska Solna (NKS) hospital facility is due to be completed in 2019. During the planning and construction, EY helped the hospital consider efficient, effective care pathways – literally built into the structure of the facility. What followed was dramatic: a complete overhaul of the way NKS made decisions, approached its finances and thought about leadership. It reinvented its operations infrastructure to encourage continuous improvement from the ground up.

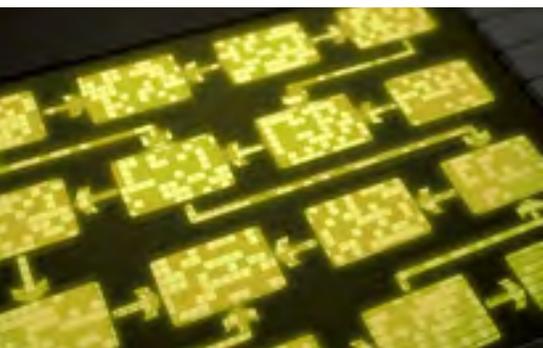
Take medical imaging as an example. Before purchasing a single imaging machine, workshops were held with radiologists, radiology nurses, medical technicians, medical physicists, other medical specialists, and controllers to identify optimal patient care pathways. The groups were asked to map out the flow of care; think through the handoff points; and brainstorm logistic, process and operational ideas to achieve better outcomes for patients. This resulted in concrete ideas for process improvement such as placing machines on specific patient floors co-located with areas of highest and most urgent patient need, or better locating heavy machines such as magnetic resonance imagers.

Suppliers were then challenged to make this a reality, identifying the machines, locations and processes needed to make these pathways more efficient and support the desired patient results. The focus was on delivering a desirable patient experience and optimal outcomes. “Karolinska University is one of the first hospitals in the world to focus on value-based health care during the procurement process when designing a new hospital, considering the care itself as they make technology purchasing decisions,” Andersson said. “It has been exciting and rewarding to be part of this new solution.”



Dive deeper

Mayo Clinic – it’s what the future looks like



Mayo Clinic has long since adopted a culture where value-driven care thrives and flourishes. Since Dr. William Worrall Mayo and his sons helped to establish Saint Marys Hospital in 1889, everything the organization does – from their physician salary structure to their communication protocols – has centered around patient care. Now that the rest of the health industry is catching up, Mayo is focused outward, using analytics to drive effective conversations with payers and partners.

Proving the case

According to Kedrick Adkins, CFO of Mayo Clinic, analytics are even more important given the new market-based changes.

“Value-driven care for complex patient cases is already our sweet spot. Better, more thoughtful analytics helps us articulate the clinical difference in care and demonstrate the real value we provide,” Adkins said.

.....
“Existing Mayo practices are ahead of the industry shift. A strategic approach to analytics is what will help continue to set us apart.”
.....

Dr. Lyell Jones agrees. “We’ve had analytics for a long time, and it complements our patient and outcomes-focused culture,” Jones said. “We look at collective experience, gain insights and deliver this back to the next patient we see. What’s new is using this collective experience to explain to organizations outside the Mayo walls what is unique about our practice.” Analytics help Mayo better demonstrate value when in conversation with other providers and payers.

The payer conversation

Since Mayo takes on complex and difficult cases, it is not always easy to make comparisons on outcomes and compel payers to reimburse for the treatment plans. Analytic modeling helps compare various treatment protocols, identify hypothetical outcomes and provide evidence on the effectiveness and cost – a distillation that clearly demonstrates the value of any given treatment. Dr. Robert Nesse sees this as a powerful new tool for change. “We are using analytics to drive the conversation for payment reform, telling a much more specific, numbers-based, outcomes-focused story,” Nesse said. “Instead of saying ‘Mayo is good,’ we must be able to quantify it. For example, if the cost of the Mayo treatment plan results in a better outcome for the patient, lower costs over the total episode of care or a significant reduction in complications or readmissions, that must be considered in the payment model.”



The partner conversation

A destination medical practice, Mayo Clinic also has a large footprint in the Midwest through the Mayo Clinic Health System. These and other providers often send patients to Mayo for specialty and subspecialty care, and this interconnection between organizations requires careful coordination to positively impact outcomes. “We need strong partners in the design and support of care flows to support the clinical practice,” Jones said. “Many of our patients have formal relationships with other health systems and only come to Mayo if they need help uncovering answers or finding solutions.” This requires excellent cross-organizational communication, asking the right questions to get the right data, sharing it in a common format for ready comparison with the existing database and applying the right analytics. The Mayo network works with its partners to develop a shared purpose and a standard methodology: they agree upon one source of clinical information, one strategic plan, one operational plan, shared financial success and a shared goal. “The latter is by far the hardest part of developing a strong network. To get the right outcomes we need the whole network of community and regional providers to have an aligned purpose,” Nesse said. “This shared objective –

and measures of success – is absolutely essential. Without it you will never realize the full impact of the analytics.”

Lessons learned

Adkins believes part of Mayo’s strength lies in its ability to examine and convey the financial and risk implications in the multiple dialects of actuarial science, costs and revenue. To meet this need, Mayo brought in a variety of analytics experts. “We hired a health economist and an actuary to look at our analytics from a payer perspective and help us articulate our story from multiple dimensions. What we do works. But it also needs to be demonstrated and proved.”

Analytics in value-driven care is a journey rather than a destination, and Jones credits their success with what they did not do.

.....

“We did not just dive in. We understood the business model and made the changes we needed in using a thoughtful, step-wise approach. You also don’t want to get too far out in front of the payment model.”

.....

“Plan for a nimble, dual environment and get accustomed to the unsteadiness of having one foot in each canoe of fee-for-service and value-driven care,” Jones said.

Another lesson learned is that analytics will never replace or supplant people. “Analytics are a crucial support tool, but they will never replace clinical judgment,” Nesse said. “We collectively need to truly understand this; otherwise, we will use more rather than less health care.”





3.

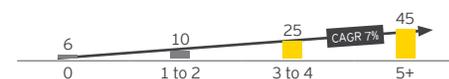
Consolidation, integration and disruption in the health sector

Much of the recent deal activity globally has focused on containing unsustainable costs, controlling risks and creating new efficiencies. The result is an ever-increasing ability to successfully manage disease states, an important goal in an age of rising chronic disease (see Figure 3.1). It also positions those who have made successful acquisitions, partnerships or alliances to take advantage of the next disruptive change: the shift to prevention. This shift has been driven by the need to (1) reign in ever-rising costs, (2) assume care for older and sicker populations, and (3) meet the demand for a more consumer-centric health experience. It has been enabled by the integration of technology, big data and analytics. The health stakeholders who can use these tools to keep the populations they serve the healthiest will see the greatest financial returns while delivering the best outcomes (see Diving into Disruption for more on closing the longevity gap).

Figure 3.1:

Chronic diseases, and associated costs, are on the rise in the US

Health care costs are concentrated among those with multiple chronic diseases
(Annual cost per person, US\$'000s)



Number of people with 3+ chronic diseases is growing
(Number of people with 3+ chronic diseases)



Source: "What is the impact of chronic disease in America?", Partnership to Fight Chronic Disease.

Continued consolidation and integration in the health sector

Health care is one of the world's largest industries – and is getting bigger (Figure 3.2). Global spending on health is expected to grow from approximately US\$9 trillion in 2014 to US\$24 trillion in 2040, with the

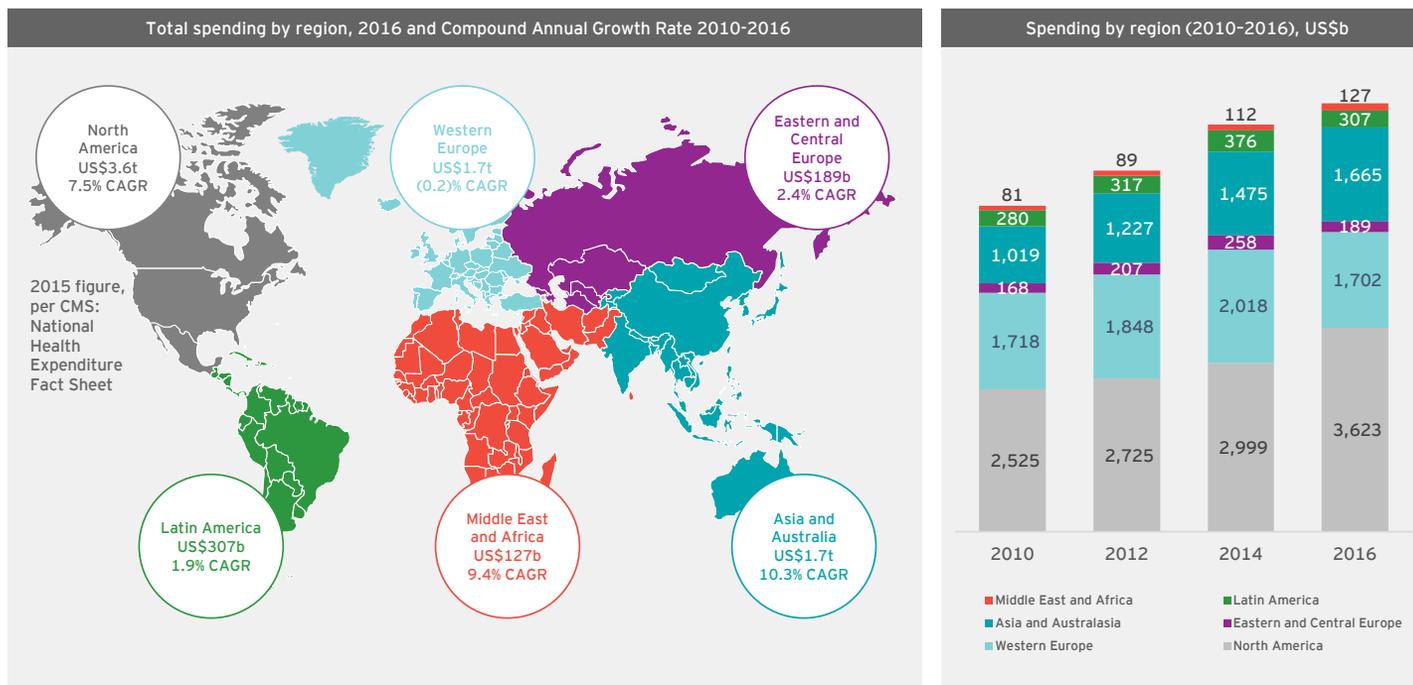
fastest per capita health growth in middle income countries moving forward.^{3.1} Cost containment continues to be driving M&A activity, even as companies look to bolster capabilities that will allow them to thrive in a value and outcomes-driven environment.

In developed markets, managing costs and creating efficiencies that power the shift to outcomes-based care has meant controlling more of the continuum of care through vertical integration, joint ventures and alliances. The largest provider systems can afford better IT (including better clinical

systems) and data analytics necessary to track behaviors that can change outcomes, improve purchasing contracts and have greater negotiating leverage with commercial insurers. Existing physical infrastructure is extremely expensive and, in many cases, outdated given changing models of care, and consolidation has been an important part of eliminating redundancy and excess capacity in brick and mortar facilities. In developed countries with public payers, like the UK, this has been particularly important as the number of dependent people has risen (due primarily to age) relative to the number still working, increasing fiscal pressures.^{3.2}

Providers have also been shifting from inpatient care settings to outpatient settings. Many larger systems have developed extensive outpatient facility networks, including ER clinics, ambulatory care, outpatient surgery, labs and imaging facilities. These integrated systems have become increasingly important as providers assume greater financial risk associated with being reimbursed for patient outcomes. Larger provider affiliation networks assist with value-driven care as well as costs.

Figure 3.2: Health care accounts for nearly 10% of global GDP, with wide regional variation



Source: EY analysis of data from the World Bank and the Economist Intelligence Unit.



For example, one provider system was able to lower its post-surgical readmission rates by building its affiliation network after determining that patients in provider deficient zones were the least likely to adhere to their post-discharge care plan and accounted for the vast majority of readmissions.

Insight

The health care hybrid

The provider-payer blend, dubbed “payviders,” are also driving efficient, sustainable health care delivery. While not every payvider has been able to achieve the scale required to cover the high up-front investment and operating costs, several are successfully building membership, physician groups and integrated delivery networks through acquisitions and joint ventures (see the Parthenon-EY publication [Spotlight on provider-sponsored health plans](#) for more on what to know about implementing a provider-sponsored health plan). The payers and provider systems that are able to make the transition have enormous advantages. For one, they can experiment with payment models and incentives to provide the best care most efficiently. Payvider systems are more likely to have integrated technologies with shared access to data and analytic capabilities that can, in turn, provide a better understanding of their client base and

success of care models. Data pooled from across regions (and in the case of cross-border alliances, across countries) will create the large datasets needed to determine the common drivers and predictors of health and disease. This is a key enabler of precision medicine and is exactly the kind of data needed to make progress towards broader population health initiatives.

Disruption, inside and out

Consolidation through mergers, acquisitions and strategic alliances within the health sector is a natural response to disruptive forces that have the potential to upend investment, growth, resource allocation and other societal priorities. The key disruptive trends include aging populations, rising chronic disease rates, changing reimbursement structures and increasing dependency ratios. New technologies both enable novel responses to these trends and serve as disruptors themselves; this is most noticeable in the number of stakeholders from outside the health sector looking to apply their technologies to thorny problems in health.

The trend toward consolidation has also been good for the alignment of incentives within the sector. Health care has long been siloed – fragmentation across the system has historically created misaligned incentives. For instance, when payers/

Together, telecoms and providers can bridge the last mile of care delivery

Setting the scene

1. Providers are shifting care away from high cost centers to those with lower costs, in an effort to provide timely, quality access while restraining costs.
2. At the same time, rising chronic disease rates and aging populations threaten to swamp already strained resources due to the need for more, and more regular, care.
3. Health consumers, used to the immediate access and impeccable customer service they receive from the online retail and media sectors, are demanding a more personalized health experience.

What will enable the shift to on-demand (and eventually in-home) care? The low friction sharing of data.

In-home communication between health consumers and care providers, coupled with a more complete view of the patient in their environment enabled by data gathered from personal and environmental sensors, will power the future of health and wellness.

Telecom providers have the infrastructure to deliver care wherever the patient is, they can provide the connection that makes the two-way transmission of data possible, and have a solid relationship with their customers. Providers have the medical know-how, care delivery models and health records that power treatment. There is an enormous opportunity to better manage health and enable a preventive, wellness mindset in this type of cross-sector relationship.

providers are separate entities, one is looking to keep costs low and the other is getting paid by volume (creating an incentive to do more). As the role of value-driven care within the sector increases, aligned incentives will be needed to manage the risks associated with being

paid for outcomes and to determine what reimbursement mechanisms create the best incentives across the continuum of care.

Emerging technological solutions to existing health sector woes change the way we think about care delivery on the front end and in the back office.



For instance, automation technologies that speed claims processing, reduce errors and the associated administrative burden (see Robotic process automation (RPA): Insights for the health industry”, in this issue) help to smooth provider-payer interactions and facilitate the focus on outcomes. Companies with robust automation processes in place make attractive targets for alliances or acquisitions.

But the health sector is also facing potential disruption from outside – non-traditional health players, particularly those that are heavily technology or analytics oriented or have consumer products manufacturing experience, are poised to change the way we think about health and care delivery. In addition, private equity, which thrives on investing in industries undergoing dislocation and disruption, has become a catalyst of change across the health landscape, investing in entities positioned to drive change. Relationships and companies that manage to meld sector experience, medical knowledge and technical know-how will usher in Health 2.0.

Health has to continue its move toward prevention – among providers, vertical integration has allowed for controlling costs and assuming more of the risk associated with value-driven care. In payviders we see an alignment of incentives that allows

for a focus on population-level health and wellness. Today we are using technologies that increase access to care, speed diagnosis, reduce error and aid in proper disease management.

But prevention is the ultimate goal – no one wants to be sick, and the cost of treatment once a disease state has been reached (or, as is increasingly common, multiple morbidities) is unsustainable. This requires changing traditional care models. Today we shift from high cost centers to low; tomorrow, care will be wherever the consumer is – most likely in the home. Technologies such as remote sensors, wearables that are integrated into products we use every day (like clothing), massive databases with an unprecedented array of data types, and deep learning algorithms are enabling us to take the first steps toward precision medicine.

Insight

Thriving, not just surviving^{3.3}

There are four things for health stakeholders to keep in mind as they seize the opportunities inherent in disruption:

Smart growth – to grow strengths and fill in weaknesses, it’s necessary to consider the ideal strategic outcome or market positioning, the gaps or risk areas within current offerings or capabilities, and predetermine the optimal financial and operational metrics.

Riding the consumerism wave on the right tech – patients do not want to be sick, and a new generation of sensors, wearables and interactive technologies will generate the data to give a complete picture of a person in their environment; combining, analyzing and visualizing those data can give health stakeholders a chance to support lifelong wellness.

Don’t cut; optimize – reducing spending in areas that least affect patient care and investing in sustainable outcomes can bring the financial stability that can power new innovation and growth.

Regulatory excellence – moving from react and respond to a proactive stance can build confidence with stakeholders and regulators, and allows health care organizations to navigate uncharted territory with confidence.





4.

What does the participatory health system of tomorrow look like?

By 2050, 1 in 5 people globally will be over 60 years of age.^{4,1}

As health systems worldwide strive to improve outcomes and control costs, the convergence of non-traditional players into the health care space, as well as advances and the adoption of new and enabling technologies, are transforming the sector. This shift powers the growth of a participatory health system, a consumer-centric system where patients own their data and care is personalized. Assuming this new paradigm is built correctly, clinical data will take a back seat to the consumer-generated data collected across the lifespan – the former may just amount to two days in a hospital, which pales when compared to what can be gleaned from the way a person lives their life the other 363 days a year. The health care sector has arguably been slow to embrace digital, but with the confluence of pressures mentioned above, the environment is right to implement e-health solutions.

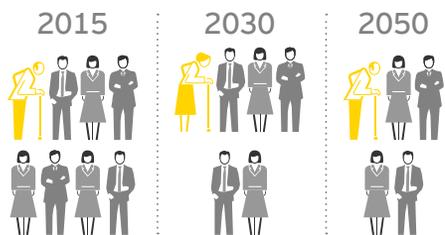
Benefits

Participatory health will reduce the administrative burden on health care professionals, make time-critical information immediately available to providers, and create patient-led health services. It will also generate big data on health trends, which providers can use to predict future demand and allocate resources accordingly.

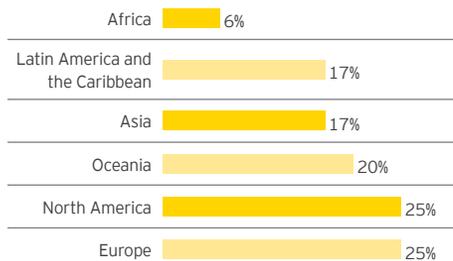
The advantage of such a system is that it can prospectively calculate personalized risk levels and then tailor a health care program for the patient's life. "Imagine a new baby born and given a personal health cloud that can capture their genetic information; this becomes their 'haven' for through-life data and helps plan their care into a predictive model rather than a reactive one," says Kenny O'Neill, EY Oceania Participatory Health Leader.

Figure 4.1:
Population aging and a rising middle class push health systems toward participatory health

By 2050, 1 in 5 people globally will be aged 60+ years. Rapid population aging places increasing demands on health care systems and expenditures.



In some regions, around 25% of the population will be more than 60 years old by 2030. Improved longevity and larger numbers of the aging put pressure on health systems.



Source: UN World Population Ageing 2015.

Working with newly empowered health consumers, payers (government or private) can more accurately model premiums and wellness incentives to individuals' particular risks.

Insight

The role of data

As data-driven technologies become increasingly essential to the health sector, two factors in particular have become important drivers of participatory health. The first is the combination of unstructured and structured data feeds from personal devices that are being aggregated with industry-generated information (such as clinical records and payer data) and curation and navigation technologies. Secondly, there is an overall systematization behind the scenes as order is imposed on chaotic data through a number of different methods: cloud-based services; natural-language processing; APIs; deep learning intelligence and data aggregation platforms; the integration of social determinants of health and behavioral, environmental, and social network data; and, finally, insights based upon meaningful patterns for individuals and populations. This is termed "data fusion" - the glue that binds the new system together. Data fusion aids in the organization of myriad data types, with the aim of generating insights.

So what are the building blocks upon which a participatory health system is constructed?

We propose a model composed of several building blocks that structure the ecosystem and could provide a clear route to achieve scale. There are three key elements that we consider important in the transition toward this ecosystem. We envisage an integrated system of interconnected attributes, all needed to operate and exist within an environment.

These are as follows:

Curation and navigation: the interface between the consumer and health system

Curation and navigation technologies connect patients to, and steer them through, the delivery system (real and virtual) from before diagnosis through to treatment and lifelong learning. A vital part of the participatory care team, curation and navigation technologies follow clear pathways and coordinate resources to help people make the right decisions around their care and to answer the burning questions of "where do I go for help?" and "what do I do next?"

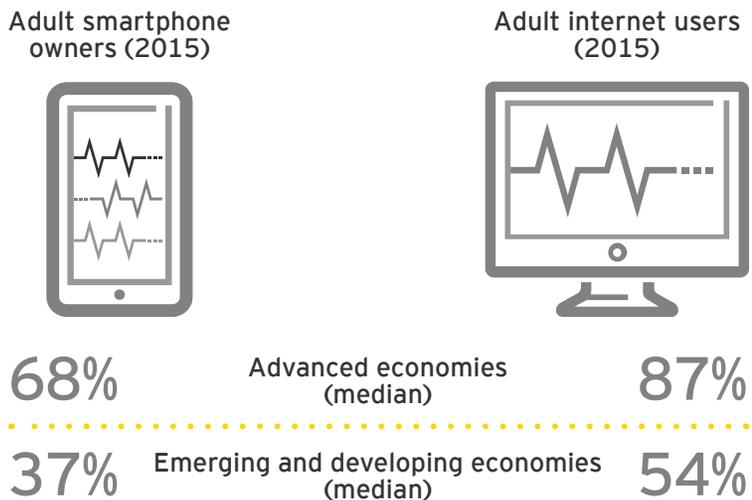
Learnings from behavioral economics can be incorporated into these systems to give individuals the right nudge, at the right time.

What is participatory health?

Participatory health reflects a deep and profound shift in perspective toward well-being and wellness, greater convenience, flexibility, self-direction and personalized experiences. It is a transformation in the patient-provider relationship where individuals actively partner with their health professional team. In so doing, they become empowered, gaining the knowledge, skills and confidence to persistently engage with the health system.



Figure 4.2:
Mobility and rapid telecommunications underpin the shift to integrated, digital health care systems



Source: Pew Research Center 2016.

These interfaces can automate many routine tasks and enhance the work of health professionals, freeing them to focus on more complex tasks and patient relationships. Importantly, navigation can improve communication and coordination of high-risk patients, who typically have multiple chronic conditions and multiple health care providers in a number of settings.

Data fusion platforms: the glue that holds the system together

Vast flows of data – organized through curation and navigation and fused with AI – form the backbone of an integrated health delivery system. Data fusion describes the aggregation of patient data from multiple sources (clinical, financial, social, environmental and operational), which prepares this data for analyses that will deliver insights into care management,

risk stratification, performance and care gaps on the population level (with promise of individualized insights down the road). Through data mining, learning and predictions from captured data, “simple AI” delivers the ability to organize, monitor and support a user; to generate risk alerts from the data; and to recommend services.^{4.2}

Supra-system:

Strong bonds between global players

The catalyst needed to generate scalable solutions will be rising interest from players who see opportunity in a global ecosystem of peer value creation such as large retailers, venture investors, large integrated networks and global technology companies. Network orchestrators, or “digital platform organizations that leverage a growing and

virtual network of suppliers and customers,” will seek to build and manage global networked platforms.^{4.3} A supra-system will draw together dynamic groups of players (traditional and non-traditional) into communities that evolve and change over time. These new models of collaboration and competition can ultimately help create value.

The customer

For health consumers, the result is a highly sophisticated personal health and wellness cloud that captures and curates a digital bio-portrait of deep personal data, including biometrics, a lifelong narrative of health and wellness, and behavioral traits (e.g., cognitive biases, emotions and predilections). It also integrates information from environmental, medical and social

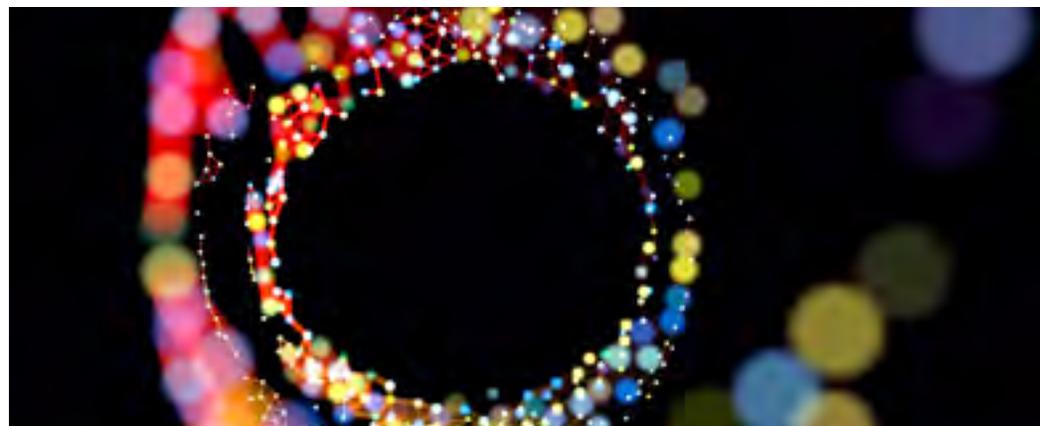
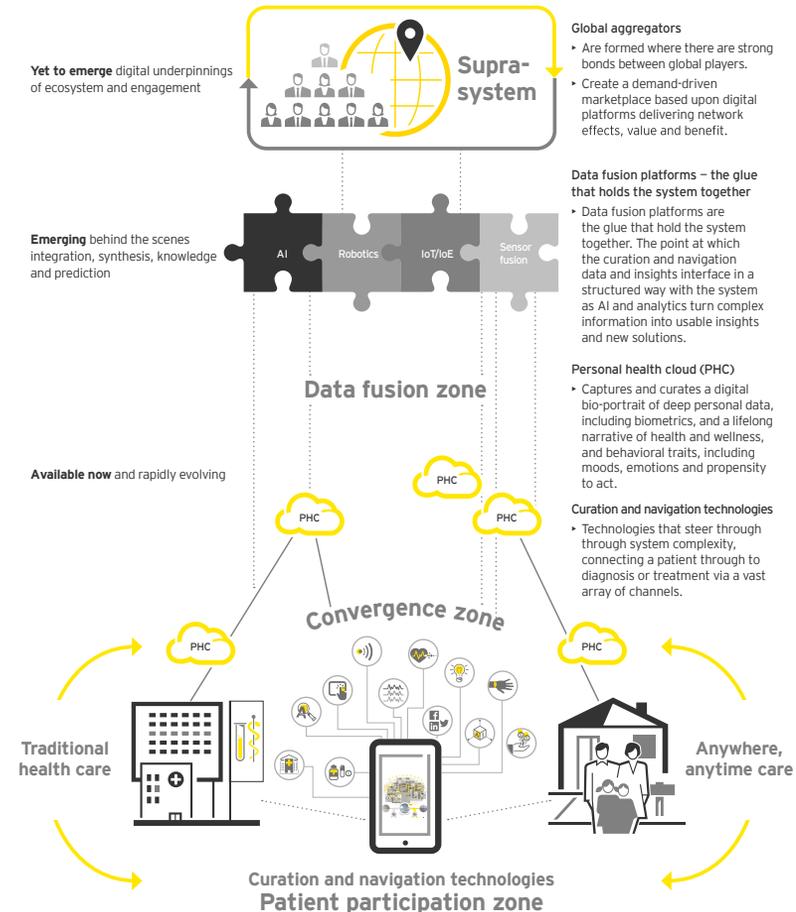


Figure 4.3:
Building blocks of a participatory health care ecosystem



Source: EY analysis of data from the World Bank and the Economist Intelligence Unit.

sources, including unstructured data feeds from wearables, IoT/IoE, remote monitoring, environmental sensors and structured data from clinical information systems and payer portals. The individual is linked to this personal health cloud (and the broader health system) by multiple channels, including mobile devices (phones and tablets), social media and wearables.

Convergence is opening the doors to new opportunities and a new health ecosystem

This environment will attract new set of players with opportunities to leverage expertise in adjacent spaces such as financial services, consumer products and insurance. In the future state, individuals will access care, regardless of geography, through teleconnected services and the core business of health care will be anchored around virtual delivery, consumer engagement, and an integrative and long-term orientation. Platforms are key to new pathways by which to organize and deliver health care and a broad ecosystem of many players becomes possible, including virtual care centers and smart homes, hospitals, technologies (both on/in the person) and insurers.

Modeling eHealth

Unlikely as it may seem, it is the small Eastern European state of Estonia, ranked 104th in the world on GDP in the 2017 IMF forecast, which could provide the health care model for other countries to follow.^{4.4} The smallest of the three Baltic states created following the breakup of the Soviet Union, Estonia could not afford to build a Western-style government and health care system. Instead, they became an early adopter of the opportunities offered by the internet.^{4.5} Estonia has built a digital network of patient-owned, blockchain-enabled health records, which providers access as and when necessary to provide cost-effective care. In 2008, a centrally managed e-health concept was introduced that aimed to make all information about patient health available to patients (using their identification card) and health professionals.



5.

Robotic process automation (RPA): insights for the health industry

Although the use of robotic process automation (RPA) in the health industry is in its infancy, it has the potential to unleash a torrent of change – and benefits – for the bottom line and for the workforce. This article shares key insights for organizations considering (or just curious about) RPA.

A primer on RPA: definition and value

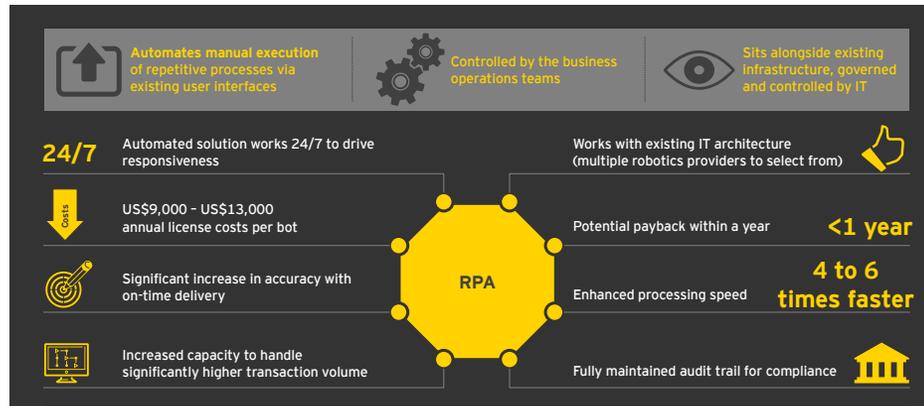
First, RPA is not a physical robot, nor is it artificial intelligence software. Rather, it is software that mimics human interactions and sits on top of existing applications. RPA software is programmed to “swivel chair,” or move from one application to the next, just as a human would. RPA is easier and more user-friendly than a macro, and it better addresses security, performance and audit concerns. Consider the steps needed to process a claim: read it, identify the provider, interpret the medical codes, key in and validate the information, and make a decision about whether to pay or forward for review. Although the flow is more or less sequential, there are varying decision points along the way, and the results are not always identical. RPA is designed exactly for this: repetitive tasks requiring multiple and variable steps to complete.

The value of RPA is clear: once the algorithm has been optimized, RPA will greatly increase the speed and reduce the variability and error rate of such tasks.

The possibilities are enticing to industries worldwide, and the RPA market overall is experiencing explosive growth. According to a report from consulting and research firm the Everest Group,^{5,1} it grew 64 percent to \$200 million last year and is expected to further expand 70 to 90 percent by 2018 as successful pilot projects increase buyer confidence in the technology. Globally, the United Kingdom and parts of Asia are emerging as early adopters, partly because of their proximity to leading-edge providers of RPA technology and partly in response to cost-cutting pressures in these markets.



Figure 5.1:
What are the benefits?



Source: EY Tax Thought Center webcast, "Digital disruption: intelligent tax automation" 29 June 2017.

Other global trends contributing to the demand for RPA technology include: ^{5.2}

- ▶ **Aging workforces and populations –** Impacting both advanced and emerging economies, countries facing an aging workforce are exploring RPA as a way to provide the productivity boost required to meet economic growth projections they otherwise would struggle to attain. Advanced economies include Australia, Canada, France, Germany, Italy, Japan, South Korea, the United Kingdom, and the United States. Emerging economies include Argentina, Brazil, China, and Russia.
- ▶ **Emerging economies with high-growth goals –** Although many of these countries have young populations, high-growth aspirations are driving a search for automation and other productivity-raising measures as a way to remain competitive globally and meet economic development targets. These countries include India, Indonesia, Mexico, Nigeria, Saudi Arabia, South Africa and Turkey.

Insight

RPA opportunities in health care could be all around us

As other industries forge ahead, possible RPA applications in health care are myriad and everywhere. The nascent RPA use in health care is starting first with back office functions such as human resources, finance and tax. But experts suggest going further. "Look around for activities that are rule-based, repetitive, ripe for errors – or where you are expending large amounts of effort to process a high volume of activities and transactions," said Chris Massouras, EY US Health RPA Advisory Leader. "There are likely good opportunities for RPA to support business process optimization efforts and to help achieve real value." Another clue is the high use of macros. A macro is an automated input sequence that imitates keystrokes or mouse actions. These are typically used to replace a repetitive series of keyboard and mouse actions and are common in spreadsheet and word processing applications. "RPA technology is substantially safer and more effective than macros," Massouras said. "Macros are uncontrolled, insecure, linear, one-dimensional and disconnected from each other. Plus, neither the business function nor the IT owns the maintenance and upkeep, so when a relied-upon macro breaks, the whole function breaks."

This pattern points toward payers as natural first adopters. Many insurance companies and large employer groups rely heavily on macros in their claims departments or call centers. However, opportunities for successful applications for RPA could be scoped in almost any function. RPA may offer improvements to the provider revenue cycle: enrolling new customers, lockbox processing and even HR activities such as recruiting and onboarding.

Insight

Consider the business need and the IT infrastructure

The drive toward RPA typically begins in the business area, with the function itself looking for ways to improve productivity, accuracy and speed. However, once the business case seems feasible, bring your technology people into the process for a conversation and a demonstration. "Although the buyer is usually the owner of the business process, the IT department is a necessary voice in the purchasing decision," said Jon Powell, Advisory Executive Director, Ernst & Young LLP. "You will need their support to set up the RPA and keep it running smoothly, and it is best to engage them in the decision." RPA technology is new to many tech people as well, and a demo is the best way to convey its power and complexity.



“People who have a technology background often assume one of two things: 1) RPA is too complicated, requiring too much new infrastructure, or 2) RPA is too easy, something they could program in-house,” Powell said. “Once the technology team sees the demo, it all becomes clear – that RPA simulates someone sitting at a computer.” IT support is crucial, however, to set up a server and leverage existing legacy systems, and also to identify and solve issues that may not be apparent to the business unit. These include capacity planning and failover for servers and storage, licensing of virtual machines, network latency and response times.

Insight

Mind the people impact

While the reduced cost of performing routine tasks is an obvious selling point of RPA, it’s not always about cost. Other benefits include increased speed and accuracy. And RPA could allow for better, more efficient use of professionals’ time. In Scotland, an automated grading system was used to help screen 600 patients a day for a specific eye pathology associated with retinopathy. However, this grading system did not talk to the rest of their information systems, and creating an automated application interface was not an option. Enter RPA, which logs into the automated grading system, performs a routine set of

checks, and then logs into the electronic medical record system to update a patient record with the results. “It’s easy to see the speed, power and cost-effectiveness of having an RPA perform this repetitive task,” Powell said. “The human screener is now needed to intervene only when there are variances requiring judgment and expertise. RPA takes on the drudgery, and people are called to get involved when actual human brainpower is needed – all of which enables better health outcomes.”

In partnership with HR, organizational leaders need to be strategic about the decision, including the reasons for considering an RPA approach. Although the objective is often to reduce costs, this is not necessarily synonymous with reducing head count. Organizations should think through the impact on the workforce – in advance – and communicate clearly with people. “All the traditional workforce management issues are at play here,” Powell said. “Will this have an impact on the headcount? How might we upscale and repurpose people to higher-value activities? What training will we need to get people ready for new types of work?”

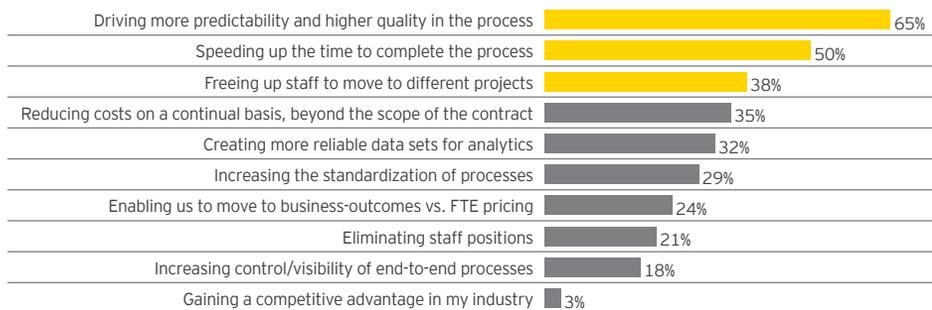
Further, there is some evidence that RPA could actually increase job retention, eliminating the parts of jobs people often find to be dull or repetitive. “The reality for many businesses today is that the drudgery and

low pay associated with repetitive manual processes often creates staff retention problems,” Martin Weis, EY EMEA Robotics Leader said. This not only drives up costs but also means businesses could be losing promising talent for the future. “People don’t really stick with these jobs for more than two years,” Weis said. “RPA could help to reduce this churn and make work more interesting for many people.”^{5.3}

Clear, frequent, honest, advance communications will go a long way toward getting people engaged in the process. And don’t forget: you still need people in the process. Human controls to monitor and track any business processes run by RPA are an imperative. Automating a process to occur at 25 times the speed of a human means that any errors are multiplied exponentially, and human intervention is critical. “There will always be errors, and somebody needs to take care of these,” Weis said. “So we will still need human judgment and analytical interpretation. This is where our efforts should be refocused.”

Figure 5.2:

What do you believe to be the most important components of the value proposition for Robotic Process Automation?



Source: “The Continuum of Intelligent Automation,” HfS Research, 3 December 2015.

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Jim Costanzo serves as both EY Global Health Leader and Global Health Advisory Leader. He has more than 33 years of experience in the health care and health insurance industries, ranging from full life-cycle systems development through capacity planning, execution, maintenance, and operations. He has spent time with industry and government leaders all over the world, understanding the health issues they face and helping them find solutions to their most complex issues. Jim also has extensive experience managing the design, development, and installation of the industry's leading Managed Health Care packages.

Jim has led efforts at some of the industry's largest and most complex clients. His experience includes large-scale business transformation for all aspects of health organizations.



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David Copley is the EY Global Health Assurance Leader. He brings more than 30 years of experience in the health care industry, working with integrated health care organizations, academic medical centers, physician groups, managed care and complex payment models, life sciences and other organizations.

David's extensive experience includes helping health care organizations and emerging companies through various transactions, including initial public offerings (IPOs), tax-exempt bond offerings, mergers and acquisitions, and international expansion. He has served as coordinating partner for several public companies that have successfully implemented all aspects of Sarbanes-Oxley (SOX).

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Gregg Slager is the EY Global Health Transaction Advisory Services (TAS) Leader. Gregg has more than 26 years of experience advising companies on transactions, and has managed or participated in approximately 500 engagements for corporate and nonprofit acquirers, private equity clients and investor groups.

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Petr Medvedev is the EY Global Health Tax Leader. Petr has deep experience with both private and public sector issues, in traditional issues, as well as emerging issues such as location of intellectual property rights, legal treatment of cross-border medical data transfers, personal tax and social security liabilities of mobile personnel, etc.

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Contributions and attribution

1. Diving into disruption: engaging with aging will transform health

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2. Insights into value-driven care: for providers, payers and patients

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3. Consolidation, integration and disruption in the health sector

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4. What does the participatory health system of tomorrow look like?

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5. Robotic process automation (RPA): insights for the health industry

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