

# *Top health industry issues of 2016*

## Thriving in the New Health Economy

*December 2015  
Health Research Institute*

### **At a glance**

PwC's Health Research Institute's annual report highlights the forces expected to have the most impact on industry in 2016, with a glance back at key trends from the past decade.

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# Introduction

In 2016, millions of American consumers will have their first video consults, be prescribed their first health apps and use their smartphones as diagnostic tools for the first time. These new experiences will begin to make real the dream of care anywhere, anytime, changing consumer expectations and fueling innovation.

2016 also will be the year that many Americans, faced with higher deductibles, manage medical expenses with new tools and services rolled out by their insurance companies, healthcare providers, banks and other new entrants. These new experiences will remind consumers of the way they now plan for retirement, using 401(k)s and other financial vehicles. Increasingly, in this developing New Health Economy, the way healthcare is paid for, delivered and accessed will start to echo other industries.

This will be the year that, shift by shift, visit by visit, nurses, doctors and other clinicians learn to work in new ways, incorporating insights gleaned from data analyses into their treatment plans. They will begin conducting e-visits with behavioral health patients and reacting to alerts from remote patient monitoring devices sent home with newly discharged patients.

Some clinicians will begin work in new “bedless” hospitals and virtual care centers, overseeing scores of patients in far-flung locations. Fueled by alternative payment models, technological advances and powerful new database tools, these new ways of delivering care will spread. Care delivery will begin to change.

In many cases, these are initial steps in a long journey. Much of the \$3.2 trillion industry still lacks the financial incentives that are key to sweeping transformation.<sup>1</sup> Questions about who owns the data persist, impeding information sharing, formation of partnerships and the seeming holy grail of interoperability.

2016 also is an election year, and healthcare will be in the political mix, as it has been before. Despite two US Supreme Court decisions solidifying the legality of the Affordable Care Act (ACA), efforts will continue in 2016 to chip away at provisions such as the “Cadillac tax” on high-cost

health policies, the contraception mandate, the medical device tax and scheduled provider payment cuts.

Drug pricing also has become an issue on the campaign trail as consumers feel the pinch of higher costs, even with generic medications and new “biosimilar” products. And politics may play a role in regulatory appraisals of the many mergers and acquisitions announced by insurers, healthcare systems and drug makers.

HRI’s main findings this year:

- **Adoption of health-related smartphone apps have doubled in the last two years.**

In 2013, 16% of consumers said they had at least one health app on their device.<sup>2</sup> Two years later, 32% said they did.<sup>3</sup> HRI also found that millennials, who are enthusiastically embracing wearables and health apps, prefer virtual communication for health interactions.<sup>4</sup>

- **Well-known healthcare brands may have a market advantage.**

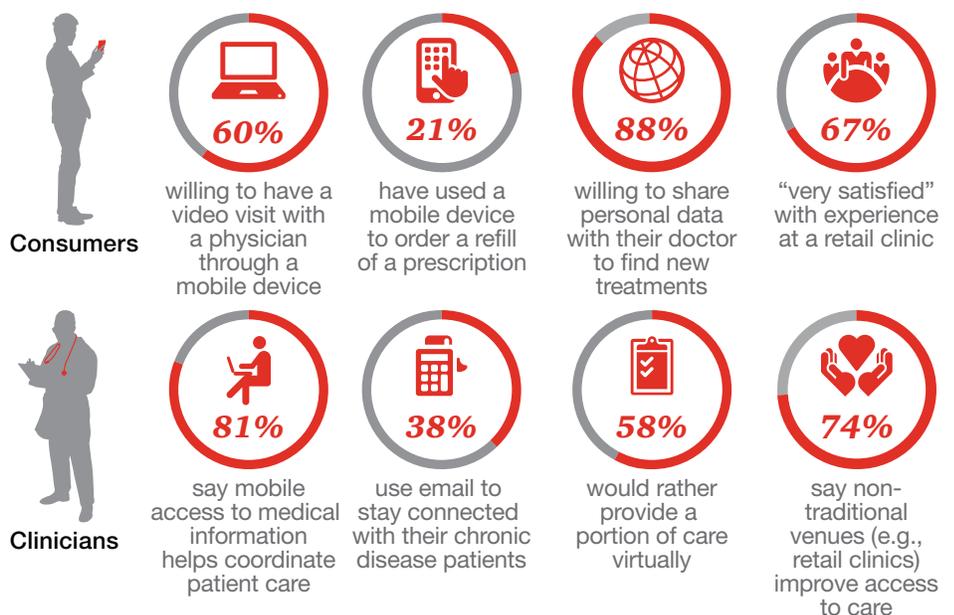
Consolidation is creating larger health systems and insurers. These moves make branding critical. HRI’s 2015 consumer survey found Americans are willing to drive further to receive care from a well-

known system, signaling receptiveness to brand over convenience. Many consumers, however, say they are not willing to pay more for care delivered health systems considered “best in field.”<sup>5</sup>

- **Nearly 40% of consumers would abandon or hesitate using a health organization if it is hacked.**<sup>6</sup> Medical devices from pacemakers to infusion pumps are becoming more connected, but also more vulnerable to breaches and cyberattacks. More than 50% of consumers told HRI they would avoid, or be wary of using, a connected medical device if such a breach were reported.<sup>7</sup>

In 2016, the health industry will begin to lay down rough new paths to a more connected, transparent, convenient ecosystem. Eventually these paths will develop into well-trodden trails, roads and highways. This hard work—this forging of new ways of receiving, paying for and delivering care—is a hallmark of the creation of a New Health Economy, an industry that is more digital, nimble, responsive and focused on consumers. As organizations master these tools and services, they will combine them in new ways, form new partnerships and ultimately transform the industry.

Figure 1: More mobile, more accessible, more connected



Source: HRI Consumer Survey, PwC, 2015 and HRI Clinician Workforce Survey, PwC, 2014 and 2015

# 2016 is the year of merger mania

The ACA's emphasis on value and outcomes has sent ripples through the \$3.2 trillion health sector, spreading and shifting risk in its wake. At the same time, capital is inexpensive, thanks to sustained low interest rates. Industry's response? Go big. In 2016, high-profile mergers and acquisitions are likely to continue, with attention focused on insurers as they work to assure regulators that consolidation will benefit consumers.

Like airlines during their period of consolidation, insurers are making long-term bets that greater market share will create operating efficiencies and improve profitability. Motivated by consolidation elsewhere in the industry, insurers also are aiming to boost negotiating power.

But there's more at stake than just leverage. Insurers are seeking competitive advantages such as diversified revenue streams from new products, the optimization of IT infrastructure and powerful data analytics. The second half of 2015 has been marked by attention-grabbing announcements of mergers between insurers. If the deals pass regulatory scrutiny unscathed, three major players will dominate the insurance market by 2017.

Approval of these mega-mergers could spur a chain reaction of further consolidation, with repercussions throughout the industry. Like low-cost airlines that gained from the divestiture of airport take-off and landing slots as larger airlines merged, smaller insurers could benefit from the fallout of larger deals.<sup>8</sup> Mandatory divestitures could spin off attractive acquisition targets for other plans.

While insurers may take center stage in the coming year, deals activity across the industry—which has been shifting away from traditional acquisitions and toward affiliations, joint ventures and partnerships—shows no signs of slowing either.<sup>9</sup> Increasingly, independent hospitals and clinician groups will find it difficult to compete on their own. Looking to generate more touchpoints with existing customer bases, large physician management companies are acquiring complementary groups.<sup>10</sup>

Shifting from treating individual patients to managing populations, healthcare providers will focus on growth that enhances their bottom lines and brands.

Brand could be key to attracting consumers in a consolidating ecosystem. Eighty-six percent of consumers surveyed by HRI said that “best in field” recognition is important when choosing a health system, although consumer interest in making tradeoffs is mixed (see figure 2).<sup>11</sup> Providers should choose their growth strategy wisely. Collaborations with top-tier health systems, such as the Mayo Clinic Care Network, which has affiliation agreements with local hospitals in 20 states, is one alternative to traditional acquisitions.<sup>12</sup>

The pharmaceutical and life sciences sector also is experiencing a significant wave of deals activity. Drug companies are looking beyond traditional M&A by acquiring “beyond-the-pill” products and services to bolster their portfolios and pipelines of drugs. To help improve medication adherence, Teva Pharmaceuticals recently acquired Gecko Health Innovations, a technology company that develops software to manage respiratory diseases.<sup>13</sup> Seeking robust pipelines and products that augment their current ones, pharmaceutical companies are willing to pay top dollar for promising products and services.

By mid-year 2015, healthcare deals already had broken records set in 2014, with nearly \$400 billion in agreements announced.<sup>14</sup> Expectations are high for 2016. As industry alignment leaves fewer dominant players,

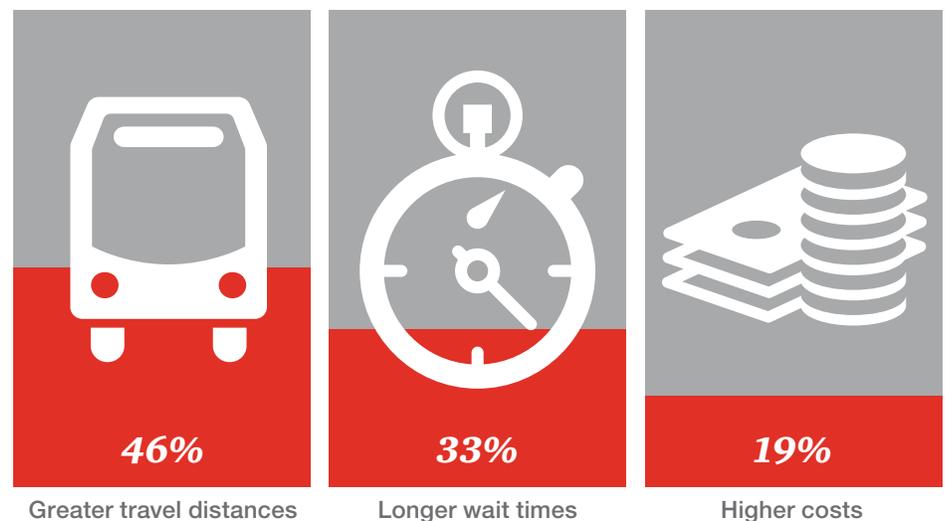
pressure to differentiate in the market will mount. Success will come through tactical growth delivering what consumers value—greater access, improved outcomes and lower costs.

## Implications:

- **Consider the unconventional.** Innovative partnerships—achieved through joint ventures or loosely structured alliances—provide flexibility. M&A activity also is increasing around new entrants providing services, often outside of the traditional system, that are gaining traction with consumers. Regulatory scrutiny will only heighten as consolidation continues, and those who go to market in unconventional ways may be better positioned to address it.
- **Capitalize on integration.** Successful acquisitions hinge on well-executed integration. Investing heavily in up-front planning efforts focused on consumer value will help ensure that strong brands are not diluted through poor execution.
- **Plan around strengths.** Smaller regional and niche players without well-defined strategies could quickly become targets. These systems should focus on products and service offerings considered best in class, and align with those providing complementary services to round out offerings.

**Figure 2: Many willing to go the distance for “best in field” care**

Percentage of consumers who are willing to make the following tradeoffs to receive services from a health system recognized as “best in field”



Source: HRI Consumer Survey, PwC, 2015

## Goldilocks comes to drug prices

Drug prices have reached a boiling point in the US. Insurers, patients and a bipartisan cast of politicians say they are too high. The pharmaceutical industry, meanwhile, is concerned about further downward pressure on prices and its ability to fund new innovation. Like the proverbial story of Goldilocks, the search is on for a pricing formula that is “just right.”

Under threat of strong government action in 2016, pharmaceutical companies are contemplating new ways to justify the cost of drugs. Collaboration—with insurers, patients and new value assessment groups—may be the key ingredient.<sup>15</sup>

Many factors are fueling the debate. Spending on more complex specialty drugs increased nearly 27% in 2014.<sup>16</sup> Price increases for branded drugs have outpaced inflation every year since 2006.<sup>17</sup> Even generic drugs, ordinarily a price deflator, are increasing in price—nearly 9% on average in 2014.<sup>18</sup> The trajectory is expected to continue into 2016 as new specialty drugs—many costing in excess of \$100,000—expand their market share.<sup>19</sup>

As matters of value become increasingly important in drug pricing decisions, the pharmaceutical industry will need to address concerns. “The pricing world abhors a vacuum, and if somebody doesn’t lead, somebody else is going to come in,” Leonard Schleifer, CEO of Regeneron Pharmaceuticals, told HRI. Criticizing some industry players that purchase a company and then drastically increase its drug prices, Schleifer supports payment formulas that reward risk takers that successfully pursue novel therapies.

Scrutiny also is coming from third-party, non-profit value assessment groups such as the Institute for Clinical and Economic Review, the National Comprehensive Cancer Network and the American Society of Clinical Oncology. All are developing formulas for drug prices based on clinical results, economic impacts, comparative effectiveness, drug toxicity and more.

Similar approaches have been used for many years by the UK’s National Institute for Health and Care Excellence, Germany’s Institute for Quality and Efficiency

in Health Care and other countries to successfully bring down prices. US insurers—already challenged by escalating drug prices and seeking to limit or delay costs—may use this data to negotiate prices.

Consumers are caught in the middle, and often struggle to afford the medications they are prescribed. Seventeen percent of American adults have asked their doctors for cheaper prescriptions, according to a 2015 HRI “Money matters” consumer survey.<sup>20</sup> As high-deductible health plans become ubiquitous in the New Health Economy, frustrations are likely to increase.

As prices have risen, politicians are taking notice. Several 2016 presidential candidates have released plans targeting drug prices and out-of-pocket costs, and states such as California, Massachusetts and New York are considering legislation of their own.<sup>21</sup> Attention from legislators has raised the prospect of future prices being based on cost, not value.

### Implications:

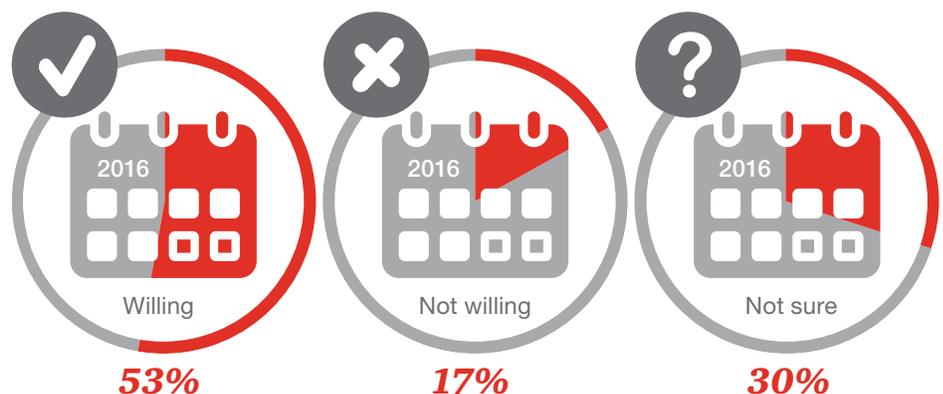
- **Use verified outcomes data to build trust.** Neither insurers nor pharmaceutical companies trust each other’s data.<sup>22</sup> Collaborative data collection and analysis efforts between insurers, drug companies and third parties will help lay the groundwork for new, mutually agreed-upon pricing and value models based on robust and

credible information. Jointly developed value models will help avoid shifting criteria and defend against arbitrary drug access decisions by purchasers or legislators.

- **Value is in the eye of the beholder and must be defined.** As value assessment groups grow in prominence, drug manufacturers should develop compelling economic, value and outcomes data available at the time of launch. Companies should collaborate with patients to better understand the full value of their products. Value-add programs, such as companion diagnostics or technologies to improve adherence or reduce side effects, also will help companies justify costs.
- **Pricing models can add value.** Value means little if a drug is unaffordable. Sixty-two percent of survey respondents told HRI they would find it difficult to pay for a drug costing more than \$12,000 per year, even with insurance or other assistance.<sup>23</sup> Companies should consider the feasibility of alternative financing models, such as spreading out payments, to make drugs more affordable and budgeting more predictable (see figure 3).<sup>24</sup> Outcomes-based reimbursement agreements, such as those created by Amgen and Harvard Pilgrim Health Care for the cholesterol-lowering drug Repatha, may also add value by sharing risk.<sup>25</sup>

**Figure 3: Consumers are open to financing their prescriptions**

More than half of consumers would be willing to pay the cost of a drug over time instead of all at once



Source: HRI Consumer Survey, PwC, 2015

## Care in the palm of your hand

Smartphones, connected medical accessories and apps have been underutilized by the healthcare industry. In 2016, care will begin to shift into the palms of consumers' hands, helping to drive down costs, increase access and fulfill the public's desire for "anywhere, anytime" monitoring, diagnosis and treatment.

Primary care and chronic disease management are leading the way. Connected otoscopes, activity trackers, scales, health apps, algorithm-based symptom checkers and on-demand e-visits are being offered directly to consumers. Clinicians are sending patients with chronic conditions home with connected pacemakers, ECG monitors, glucose trackers and other remote monitoring devices.

This move toward handheld medicine is occurring thanks to advances that have made the tools and their wireless links ubiquitous, reliable and affordable. About half of all Americans have smartphones.<sup>26</sup> Eighty percent of the time, the average American is in range of 4G LTE, making it nearly as easy to conduct a video visit with a doctor as it is to call a cab with a smartphone.<sup>27</sup>

As the health system moves away from fee-for-service, clinicians are tapping virtual medicine to help power population health efforts and expand services in areas such as behavioral health. Employers are embracing connected tools to engage employees in wellness programs and chronic disease management; health plans are using the same to reduce spending. Drug makers have been creating apps—more than 700 so far—to help connect with their customers.<sup>28</sup>

Tools such as Omada Health's online behavior change program, called Prevent, are gaining traction as the New Year approaches. The program kicks off with home delivery of a connected wireless scale and activity tracker. These stream data to Prevent's app and a personal health coach, who makes recommendations based on objective information rather than enrollees' impressions of progress.

Omada Health has 30 clients—mostly employers and health plans—and has served more than 25,000 participants, said CEO Sean Duffy. "It's coming together," Duffy said. It hasn't been entirely easy:

Omada Health has had to navigate regulatory complexity and continues to publish peer-reviewed clinical results in order to gain support for reimbursement of its services.

Consumers will drive adoption, too, perhaps more quickly than the medical establishment. After his wife was diagnosed with Brugada syndrome, a sometimes-fatal condition distinguished by irregular electrocardiogram results, tech writer Jeremy Horwitz got his hands on AliveCor's Mobile ECG. The FDA-cleared device, sold to consumers online for \$74.99, works with smartphones.<sup>29</sup>

"I can't begin to imagine how many 'oh no' moments we would have had without something to check against," Horwitz, who reviewed the device for 9to5mac.com, told HRI.<sup>30</sup> "Knowing that we could send an ECG directly from our home to [her cardiologist's] office within two minutes is a game-changer."

### Implications:

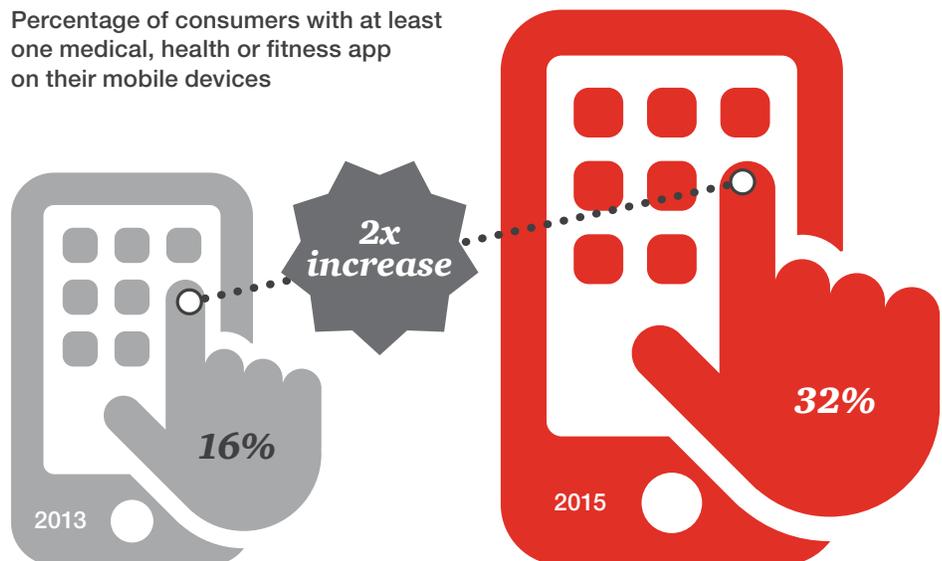
- **Look to remote regions and emerging markets for innovation.** Necessity is the mother of invention, and innovative uses of connected tools will come out of remote and emerging regions. For example, India's DoctorKePaas sets patients up with smart home monitoring kits, which wirelessly connect to the company's online platform. From there,

patients can connect with a range of clinicians, from dermatologists to cardiologists to fertility doctors, who conduct virtual examinations and can prescribe remotely.<sup>31</sup>

- **Build virtual medicine into long-term strategic plans.** Health systems should re-examine long-term capital investments in light of virtual medicine, including moving from centralized brick-and-mortar plans to decentralized investments featuring partnerships, joint ventures and new roles in the New Health Economy. From "bedless" hospitals to smartphone medicine, a growing share of care can be delivered remotely.
- **Seize a new role.** Just as retailers' move online created new roles for companies that could help with mobile payment, app creation and digital advertising, healthcare's shift into the palms of consumers' hands will set off an explosion in new industry needs. Organizations will need help managing utilization, connecting fragmented healthcare providers and overseeing data. There will be a need to evaluate tools with security, privacy and risk in mind. Connected tools will create fresh links to industries that rarely interact with healthcare such as retail, financial services and hospitality—and generate opportunities to plug in.

Figure 4: Mobile health app adoption doubles in two years

Percentage of consumers with at least one medical, health or fitness app on their mobile devices



Source: HRI Consumer Survey, PwC, 2013, 2015

## Cybersecurity concerns come to medical technology

From mobile apps to insulin pumps, medical devices increasingly are connected to the Internet. By 2020, Internet-connected healthcare products are expected to be worth an estimated \$285 billion in economic value.<sup>32</sup> But connectivity comes with a price — vulnerability to hackers and criminals.

As security breaches become more common and costly, medical device cybersecurity will emerge as a major issue in 2016, requiring device companies and healthcare providers to take preemptive action to maintain trust in medical equipment and to prevent breaches that could cripple the industry.

There is cause for concern. 2015 saw the first-ever government warning that a medical device was vulnerable to hacking — an infusion pump officials warned could be modified to deliver a fatal dose of medication.<sup>33</sup> The repercussions of a hacked medical device could be devastating. Patients could be harmed or killed by compromised devices. Devices could allow improper access to networks of hospitals and other healthcare providers. Commercially-valuable research data could be stolen from devices used in clinical trials.

Regulators have taken notice of the risks. The FDA has issued warnings and guidance documents about cybersecurity, and says it expects — but does not require — manufacturers and healthcare providers to ensure only “trusted” users can access devices.<sup>34</sup> However, the agency does require vulnerabilities to be promptly corrected and reported.<sup>35</sup>

While no hacked device is known to have caused patient harm to date, recent hacks of organizations from insurance companies to retailers show those unprepared to deal with breaches can suffer lawsuits, lost revenue and reputational harm. An estimated 85% of large health organizations experienced a data breach in 2014, with 18% of breaches costing more than \$1 million to remediate.<sup>36</sup>

“It comes down to network architecture and design,” says retired Col. Jeff Schilling, chief security officer at Armor, Inc., a cybersecurity company. “Medical devices need to be segmented apart from other devices on a hospital’s network. This is one of the very few cases where a cyber actor could take action and hurt someone very quickly.”

The stakes of failure are high for healthcare systems and device manufacturers (see figure 5). Sixty-two percent of consumers say they value device security more than ease of use.<sup>37</sup> Devices not embedded with security features — especially consumer-oriented applications or wearables — may be at a disadvantage.

### Implications:

- **Device manufacturers need to be proactive.** Companies should conduct routine security assessments to review device vulnerabilities. Incentives should be offered to “white hat” security researchers to identify and responsibly disclose unknown vulnerabilities. The banking industry offers several best
- practices to mitigate risk: secure data submission protocols, focus on designing security into each product and process and develop limits on how devices can be connected.<sup>38</sup> Failure to protect devices may invite future regulation.
- **For providers, segmentation and device management are crucial.** Devices should be kept updated, behind firewalls, on networks separated from key medical and personal data and limited in what they can do — a major challenge given trends towards interoperability. Password management is a key concern. Hospitals often don’t change default device passwords, making breaches easier. Many hospitals aren’t aware of which devices are used by doctors at their facilities.
- **New entrants may have an advantage.** Strong security protocols may be a market differentiator when selling products or services. New entrants can benefit by adopting best security practices from the outset, thereby avoiding the need for costly upgrades. As drug companies use apps to boost adherence, security breaches could affect companies’ sales, reputations and patients.
- **Regulators are a target, too.** The government will need to secure its data. Just as the breach of the Office of Personnel Management put millions of employees’ records at risk, a breach of regulators’ data could threaten thousands of devices and their users.<sup>39</sup>

**Figure 5: Hacked devices, lost customers**

Many consumers would be wary of using connected medical devices after a hacking incident



50%

Would think twice about using any connected device



51%

Would think twice about using the manufacturers’ devices



38%

Would be wary of using a hospital associated with the hacked device

High-deductible plans are ubiquitous. Out-of-pocket expenditures are growing while uncompensated hospital care increases.<sup>40</sup> Patients are frustrated with medical billing and payment systems.<sup>41</sup> In 2016, consumers will begin to manage their own health spending in ways that will ripple across the industry, using new services for healthcare planning that echo those that grew out of the advent of 401(k) retirement plans.

Consumers, especially younger ones, are interested. More than half of 18 to 34 year olds said they would use a service that helped plan for medical expenses, according to a 2015 HRI survey (see figure 6).<sup>42</sup> Increasingly, financial advisors are answering that call. Guiding consumer decisions on how best to allocate money, the five largest wealth management firms incorporate healthcare into long-term financial planning.<sup>43</sup>

Healthcare payment and billing will be embedded into broader consumer experiences, similar to the way other industries link spending to rewards, offering frequent flier miles, discounts or points. In 2015, John Hancock Insurance teamed with Vitality to launch the John Hancock Vitality Program. Consumers receive life insurance premium discounts and accumulate rewards points for engaging in healthy behaviors.<sup>44</sup>

In 2015, Alegeus Technologies announced an agreement with Walgreens, in which consumers earn points in Walgreens' Balance Rewards program for engaging in healthcare financial activities, such as

enrolling in and funding Health Savings Accounts or using their cards for certain purchases.<sup>45</sup> Pooling a variety of consumer activities into a single rewards program, Walgreens is creating a broad ecosystem to learn how best to interact with consumers.

Employers also are providing tools and incentives for smart healthcare shopping. California Public Employees' Retirement System (CalPERS) has saved millions through reference pricing for select procedures such as colonoscopies and hip replacements, offering full coverage for cost-effective providers and partial coverage for the more expensive ones. The CalPERS program offers employees full pricing transparency to help them plan their healthcare spending.<sup>46</sup>

Companies such as Castlight Health help employers highlight lower-cost, higher-quality doctors and hospitals, enabling employees to earn points for making good decisions.<sup>47</sup> Others are setting up transparent healthcare marketplaces. SpendWell Health allows consumers to shop for routine care at competitive prices. By providing consumers with total out-of-pocket costs, provider reviews and an online payment portal—all in advance of appointments—consumers can better manage their healthcare spending.<sup>48</sup>

Healthcare providers, struggling to deal with point-of-service collection while managing cost, are embracing new consumer-centric tools and services aimed at helping with both. Some are offering user-friendly credit options to patients

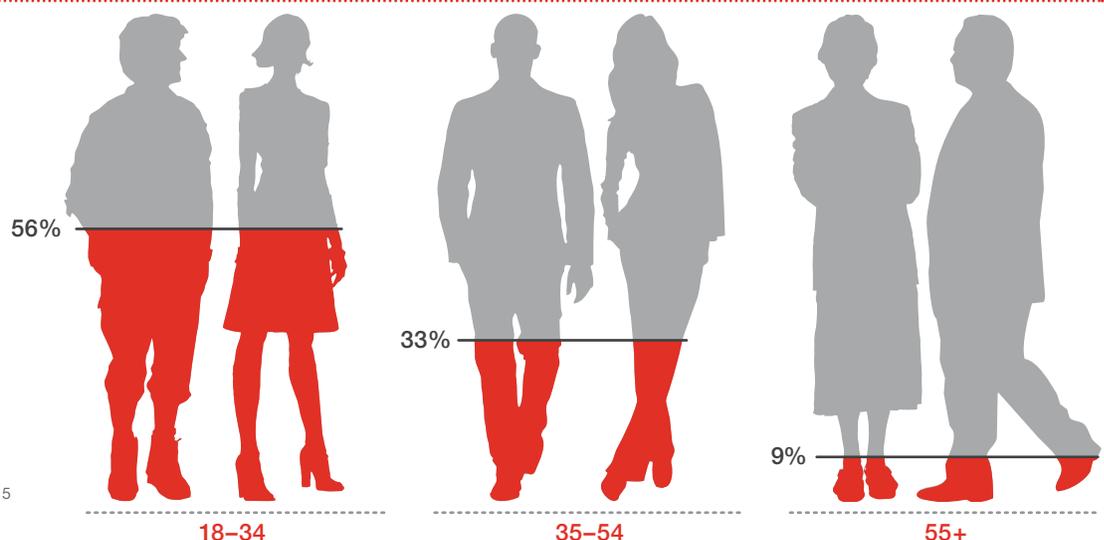
in need of financing. North Carolina-based Novant Health pairs an online cost estimator with no-interest loans and flexible repayment terms. The result has been a drop in the patient default rate.<sup>49</sup> Increasingly, financing options once reserved for elective procedures such as cosmetic or laser eye surgery are being extended to essential healthcare services.

### Implications:

- **Engage the ecosystem.** Traditional players and new entrants should think beyond solving discrete payment problems. They should think broadly, bundling innovative financing with other offerings that cater to consumers' demands for convenience and value.<sup>50</sup> These offerings may be healthcare-related, but they also can come from other industries such as entertainment, financial services, retail and hospitality.
- **Segment patient populations.** Patients approach healthcare with varied levels of sophistication. Taking lessons from retailers, healthcare companies should invest in a well-defined consumer segmentation to address specific needs and perspectives across a customer base.<sup>51</sup>
- **Educate.** Infrequent healthcare consumers could be the biggest hurdle, questioning their roles in managing and financing personal health. Companies that enter the value chain early, educating consumers on responsibilities and risks, will have a leg up.

Figure 6: Openness to new ways to manage health expenses skews young

Percentage of consumers who would use a service that helped them plan for medical expenses, similar to what retirement advisors offer today



Source: HRI Consumer Survey, PwC, 2015

## Behavioral healthcare: no longer on the backburner

One out of five American adults experiences a mental illness every year. These conditions cost US businesses more than \$440 billion annually.<sup>52</sup> Yet behavioral healthcare has long languished on the backburner. That will begin to change in 2016 as the industry's stakeholders—from employers to insurers—recognize mental health as important to their employees' and customers' well-being and productivity.

Employers increasingly are prioritizing behavioral health. In October 2015 at the New York Stock Exchange, a CEO Mental Health Summit was convened to discuss strategies to support mental health awareness, acceptance, prevention and recovery in the workplace.<sup>53</sup>

Companies such as Prudential Financial are tackling issues of stigma and awareness. Prudential's company leaders are leading a dialogue with employees about traditionally taboo topics.

"We are working to build a culture in which it is as appropriate to mention that you are struggling with depression as it is to say you are struggling with diabetes," said Ken Dolan-Del Vecchio, a vice president in the company's health and wellness organization. "No challenge that faces human beings should be unmentionable. Because, to paraphrase the late Fred Rogers, 'if it's mentionable, it's manageable.'"

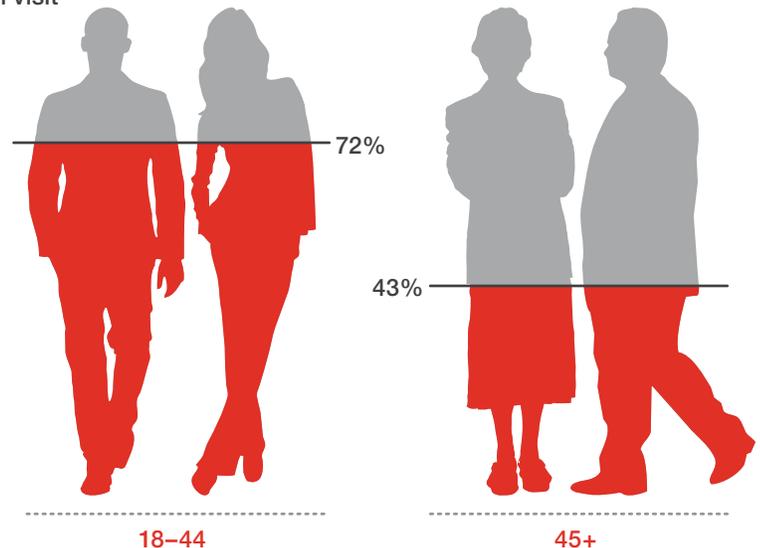
In addition to building cultures of well-being, employers and insurers are addressing problems of access to behavioral healthcare. More than half of US counties—all rural—have no practicing mental health clinicians.<sup>54</sup> At the same time, many more individuals requiring mental health services now have coverage through the ACA, increasing demand for already-strained resources.

Demand also will increase as federal and state parity laws are enforced. These laws require insurers to cover behavioral health services as they do other medical treatment.<sup>55</sup> Healthcare executives say they expect to see more enforcement of the laws in the future. In the first nine months of 2015, for instance, New York's Attorney General reached two settlements with insurers for parity violations.<sup>56</sup>

With demand growing and the system already stretched, the industry is ripe for cost-effective strategies to deliver care. The Boston-based Pediatric Physicians' Organization at Children's Hospital and the

**Figure 7: Telehealth mental health services for the Snapchat generation**

Percentage of consumers willing to use telehealth services, such as videoconference, to consult with a mental health provider instead of an in-person visit



Source: HRI Consumer Survey, PwC, 2015

Charlotte, NC-based Carolinas HealthCare System are integrating behavioral health within primary care. Using strategies such as on-site integration and tools such as videoconferencing, these groups connect primary care clinicians with behavioral health specialists. The collaboration empowers primary care teams to better manage routine behavioral health problems and refer to psychiatrists when needed.

Behavioral healthcare providers also are using technology to conduct virtual visits directly with patients. In 2014, the US Department of Veterans Affairs delivered 325,000 behavioral telehealth visits to over 100,000 veterans at local community-based clinics using videoconferencing.<sup>57</sup> These services reduced psychiatric admissions by 24%.<sup>58</sup> Now the department is taking the same technology into veterans' homes via computers, tablets and mobile apps to aid in patient screening and education.

Start-ups such as Lyra Health and Doctor on Demand are driving change in the private sector, connecting consumers with mental health clinicians with a few swipes on a smartphone. Meanwhile, technologies that improve diagnosis of mental illness through biometric indicators—such as the virtual interviewer “Ellie” developed by researchers at the University of Southern

California—are becoming a reality as well. Such digital options may go furthest with young people, who are most open to virtual mental health services and have significant need for them (see figure 7).<sup>59</sup>

### Implications:

- **Treat the whole person to improve health and quality.** Failure to consider mental health could mean misdiagnosis and poor treatment of physical illness, leading to worse outcomes for patients and, ultimately, wasted healthcare dollars. Collaborative, team-based models that link primary care with behavioral healthcare specialists have yielded improvements in the value and quality of care.<sup>60</sup>
- **Target technology to help expand access.** Telehealth holds great promise in behavioral healthcare, although its use should be targeted. Bottom-up analyses of volume and reimbursement can help identify the most worthwhile investments.
- **Assume increased scrutiny from regulators and consumer groups.** Employers and health plans should commit the necessary resources to assess and establish parity or risk facing penalties from regulators.

## Care moves to the community

Reducing health costs has been a mantra for years. But as payment shifts to value-based models, health systems in 2016 will pursue lower-cost care settings more aggressively and creatively than before. Many are literally relocating costs.

Lahey Hospital and Medical Center, a tertiary teaching hospital for Tufts University School of Medicine in Massachusetts, transfers patients with less serious illnesses from its hospital emergency department to community hospitals in the Lahey Health network. “You can only move care to the community when you have excellent community hospitals to partner with,” said Dr. Richard Nesto, chief medical officer of Lahey Health.

This amounts to a win-win for the system—the “mothership” hospital opens up beds for sicker patients and improves its bottom line, patients receive care closer to home, and the mission of community hospitals is preserved. Other health systems are following suit—in the past 24 months, five of the top 15 academic medical centers have acquired community hospitals.<sup>61</sup>

Other health systems are lowering costs by eliminating inpatient care in new facilities, called “bedless” hospitals. These bedless hospitals not only avoid the high fixed costs of inpatient care, but they also reduce wait times and improve the overall experience. Bedless hospitals are still a

new phenomenon—Montefiore Medical Center opened the first in 2014 and three other health systems expect to open similar facilities in 2016 and beyond.<sup>62</sup> One such health system is Detroit Medical Center’s Children’s Hospital of Michigan. The hospital will be outfitted with an emergency room, observation unit, operating rooms and outpatient facilities for specialties such as cardiology, neurology and oncology—but no inpatient beds.<sup>63</sup> “The new community-centered outpatient facility gives our patients access to sub-specialties where they live,” said chief medical officer Dr. Rudolph P. Valentini. “Not everyone will need to travel downtown to our main campus.”

Some health systems are going a step further by building hospitals without patients. Mercy Virtual Care Center in Chesterfield, Mo. is one of the first facilities in the world dedicated to providing care virtually. This digital health center uses audio and video technology to monitor and treat patients anytime and anywhere.<sup>64</sup> Going virtual allows health systems to reduce their costs while expanding their business globally.

### Implications:

- **Hospitals need to develop a community extension strategy.** Pressure on margins will continue to necessitate a move away from inpatient care. Infrastructure for community hospitals, bedless hospitals

and virtual care centers require large capital investments (see figure 8). Hospitals will need to determine if revenue gains from a selected strategy outweigh the upfront costs.

- **Partner with retail clinics if capital is tight.** Partnerships with retail clinics provide a less capital-intensive option for moving patients to outpatient settings. The percentage of consumers who have visited a retail clinic increased from 10% in 2007 to 36% in 2015, according to HRI’s consumer survey.<sup>65</sup> Retail clinics are expanding services and consumers are noticing—of the 36% of consumers who have been to a retail clinic, 11% received chronic disease management services.<sup>66</sup>
- **Health systems should keep an eye on the consumer experience as they expand and extend.** More partnerships and more caregivers could mean confusion for patients and poor customer experiences. According to HRI’s survey, 52% of patients said that it’s “very important” that they have one physician coordinating care.<sup>67</sup> Health systems partnering with post-acute care providers such as home health and nursing homes should be particularly focused on reducing fragmentation.

**Figure 8: New strategies to deliver lower-cost care**

Acquisitions, new types of facilities and partnerships are ways that health systems are delivering care to the community

	 Acquire or affiliate with community hospitals	 Build a bedless hospital	 Build a virtual care center	 Partner with retail clinics
<b>Description</b>	Patients sent to community hospitals, while inpatient beds at “mothership” hospital are reserved for the sickest and most complicated patients	New types of facilities that are multi-specialty and offer many hospital services except inpatient care	Centers that utilize audio and virtual technology to provide lower-cost care anywhere, anytime	Retail clinics are starting to deliver lower-cost and local services beyond primary care, such as chronic disease management
<b>Capital investment</b>	Acquisition costs	Construction costs	Construction costs	Partnership fees

## New databases improve patient care, consumer health

High hopes surrounding big data investments in healthcare have been dampened by the challenge of converting large and diverse datasets into practical insights. In 2016, the health industry will begin to use these data in new ways, thanks to high-tech, so-called “non-relational” databases.<sup>68</sup> These databases arrive at a time when the industry is thirsting for ways to make good use of a swelling ocean of consumer and health data.

Traditional relational databases, such as electronic health records (EHR) systems, organize data into columns, rows and tables, forcing information into predetermined categories. While these databases are ideal for information that is easily structured, they cannot handle information such as clinician notes, transcripts and other unstructured data as easily. Only 17% of healthcare providers have been able to integrate population health analytics into their EHR systems, according to an eHealth Initiative survey.<sup>69</sup>

Newer databases employed by health systems such as Montefiore Medical Center and Children’s National Health System, and pharmaceutical companies make it easier to bypass the rigid structure and analyze many different forms of data together.<sup>70</sup>

For example, take two female consumers, both age 57, with the same chronic condition—asthma. In a relational database, these two women may appear

to be virtually the same: female, 57, asthma. And yet, digging deeper reveals that one is a triathlete who only uses her rescue inhaler before training, while the other uses hers during hay fever season—insights buried in handwritten physician notes that had been converted to PDFs.

New database tools could help clinicians distinguish between these two women, offering insights to drug makers about how the inhalers are being used, to pharmacies about these patients’ unique buying patterns, and to the patients’ clinicians about how best to treat them.<sup>71</sup>

These databases already are being used by the Patient-Centered Outcomes Research Institute (PCORI) to combine and analyze consumer health data with the goal of personalizing treatment and advancing medical knowledge. But consumers must be willing to share their information to power these new capabilities. A 2015 HRI survey found that most consumers are willing to share their health data with a doctor (88%) or local health system (78%), but fewer are willing to share this information with a drug company (53%).<sup>72</sup>

### Implications:

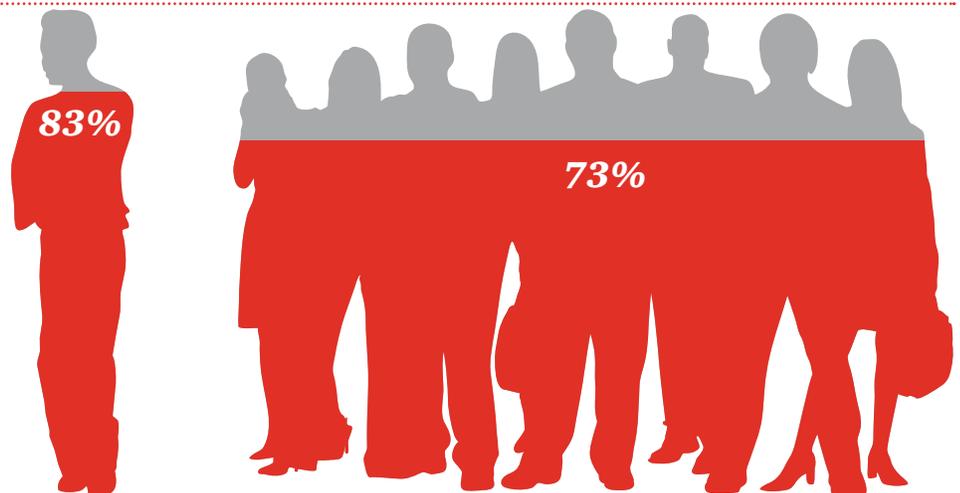
- **New databases boost the value of existing EHR systems.** Healthcare providers have made significant investments in EHR systems, and may be hesitant to spend on another system.

EHR systems cost between \$15,000 and \$70,000 per doctor to purchase.<sup>73</sup> However, databases that provide richer, more flexible data modeling and a range of analytical techniques can increase the value of existing technology by extracting new insights from stored data.

- **Cut costs and avoid mistakes.** Pharmaceutical companies should consider using “data lakes,” large unstructured data repositories, for specific functions such as drug development, prevention of duplicative experiments, prediction of drug performance in clinical trials and maximization of efficiency in the supply chain.
- **Patient participation is critical.** Educating patients about data sharing and how health information is being used to improve care delivery and treatment decisions will be an important step in addressing privacy concerns. According to an HRI survey, many consumers are willing to share health data, especially if they stand to benefit (see figure 9).<sup>74</sup> Part of this education effort involves explaining how care decisions based on historical data will give patients more personalized paths to better health outcomes.

**Figure 9: Happy to share, especially for personal benefit**

Percentage of consumers willing to share their medical records with a health system in order to aid in their own diagnosis and treatment, or in the diagnosis and treatment of others



Source: HRI Consumer Survey, PwC, 2015

Willing to share data to aid in diagnosing and treating themselves

Willing to share data to aid in diagnosing and treating others

Finally entering the US market, biosimilar drugs have the potential to be as disruptive as generic drugs following the Hatch-Waxman Act of 1984. The first US biosimilar—Sandoz’s Zarxio, which prevents infections in cancer patients—received FDA approval in 2015,<sup>75</sup> and entered the market at a 15% discount. At least four biosimilar applications are pending FDA review in 2016, with another 50 in the FDA review process.

Similar to generic drugs, a biosimilar is a near substitute for an original brand drug, sold at a discount once the original loses patent protection. Unlike generic drugs derived from chemical substances, biosimilars—and the biologics they aim to replace in the market—are derived from living organisms. As a result, biosimilar manufacturing and the FDA review process is more complex and more expensive, compared with traditional generic drugs.

Biosimilars are expected to bring significant price discounts compared with branded versions of biologics. This may bring welcome relief to rising drug costs from expensive specialty drugs and help consumers with high-deductible health plans.<sup>76</sup> Physicians and insurers hope biosimilars will bring choice and competition to offset rising drug costs, and new entrants are using biosimilars as a way into the biologic drug market.<sup>77</sup>

Pharmaceutical companies are hedging their bets by crafting defensive strategies to protect sales of branded biologic drugs while also developing biosimilars of their own. Half of the top 10 pharmaceutical companies are developing biosimilars.<sup>78</sup> Legal disputes over the exchange of information between brand drug patent holders and biosimilar manufacturers will likely remain the final hurdles for biosimilar product launches<sup>79</sup> following FDA approval.

Before the Biologics Price Competition and Innovation (BPCI) Act was passed as part of the ACA, there was no established regulatory pathway for biosimilar drugs. The law has the potential to usher in the next wave of high-science, lower-cost products, but much will depend on FDA rulemaking and the ability to substitute biosimilar products for brand name drugs at the pharmacy.

Bruce Leicher, general counsel and senior vice president at biosimilar company Momena Pharmaceuticals, told HRI that the FDA is taking a “much more engaged approach” to biosimilar development, and is providing instructive guidance during agency meetings with drug makers.

Most consumers, however, have no idea what a biosimilar is. Approximately eight in 10 consumer respondents to a 2015 HRI survey failed to choose the correct definition of a biologic from a short list (see figure 10).<sup>80</sup> Lower prices helped consumers overcome initial feelings of unfamiliarity and unease with generic medications over the last three decades, and patient feedback—increasingly posted online—may help to speed adoption of biosimilars.

Still, many consumers are blind to cost considerations when receiving a new prescription. Thirty percent don’t know if their physicians consider the financial burden of a new prescription, and 41% don’t know if their insurers offer discounts for switching to lower-cost medications, according to an HRI survey.<sup>81</sup>

## Implications:

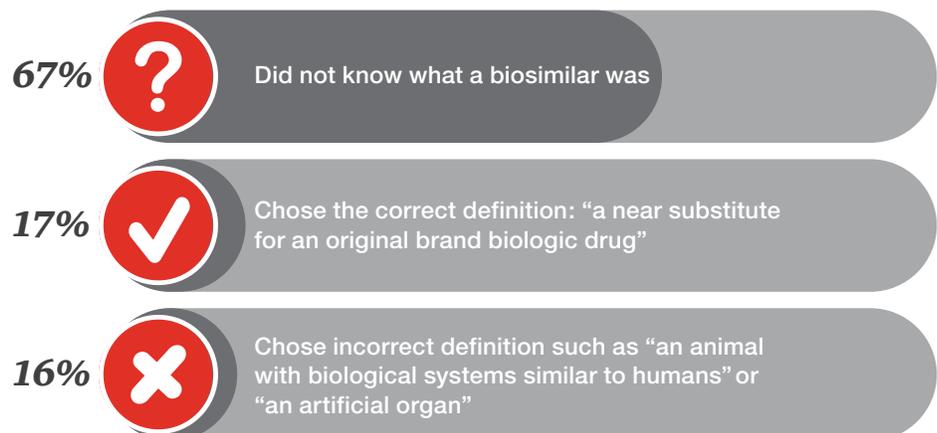
- **Multiple stakeholders will influence biosimilar use.** Integrated delivery networks, insurers, purchasers and physician groups participating in quality- and outcomes-based payment structures can fuel adoption of biosimilars as a cost-containment

strategy. Integrated health systems should encourage patients to switch to biosimilars when appropriate, or begin new prescriptions with biosimilars.

- **Product services differentiate brands from biosimilars.** Pharmaceutical companies seeking to defend the market position of their products against biosimilars should offer and promote complimentary services—such as mobile apps, patient education and financial assistance—to build brand loyalty and discourage patients from switching to lower-cost alternatives. Biosimilar makers also may need to advertise the availability of new products, an expense that may prevent deep discounts against the original biologic.
- **Physicians appreciate low-cost options.** Adding a biosimilar to a broader therapeutic portfolio of branded therapies can help pharmaceutical companies engage physicians and promote trust by providing a lower-cost option among premium products. For oncologists and their patients, a biosimilar marketed alongside branded cancer drugs could help to ease the financial burden of treatment. Partnerships between brand pharmaceutical companies and biosimilar manufacturers allow both to combine and leverage their respective strengths in the market.

**Figure 10: Consumers remain in the dark about biosimilars**

When given multiple choices for definitions of a biosimilar...



Source: HRI Consumer Survey, PwC, 2015

Health systems command billions of dollars in revenue and yet few can do what other billion-dollar companies consider table stakes—identify the cost of the services they provide. Now insurers, consumers and other major healthcare buyers are demanding better value for their spending, and healthcare providers are scrambling to calculate these costs.

In 2016, these efforts will expand. Dr. Vivian Lee, CEO of University of Utah Health Care, recognized this need four years ago when she first considered a “bundled” payment for some medical procedures. In order to develop bundled payments, she needed to understand the true cost of clinical diagnoses.

That task proved harder than expected. “I thought, how on earth can I experiment with new payment models if I don’t have any sense about my costs and how to allocate those?” Lee told HRI. “How am I going to work on getting the cost down and at the same time tracking quality and patient outcomes?”

Like other health systems, University of Utah Health Care had a system in place that calculated general charge estimates. But more data would be required to measure value—not volume. Lee assembled a team of 15 to 20 hospital leaders from the clinical and informatics fields to create a cost-accounting program.

A working model took six months to develop. Within a few years, the software could tally the total cost for even the smallest procedure, calculating down how much it costs the system for patients who

are admitted, for example, to the emergency room (82 cents a minute) or the ICU (\$1.43 a minute).<sup>82</sup>

The data proved useful beyond understanding costs, prompting improvements in patient care. In one study, the health system’s chief cardiologist identified nine measures that would lead to optimal care for heart bypass, including new policies that gave nurses more freedom. University of Utah Health Care also reduced the cost of total joint replacement by about 30% a year.<sup>83</sup> As costs increased at area academic medical centers, University of Utah Health Care lowered theirs by 0.5% a year.<sup>84</sup>

Utah’s not alone. In a harbinger of new practice patterns to come, Pennsylvania’s Geisinger Health System, an integrated network made famous by its guaranteed price “ProvenCare,” has reduced unnecessary medical procedures and the average length of patient stays. The health system, which also includes an insurance arm, has worked to innovate care delivery, using pharmacists, for example, to help treat chronically ill patients.

And in California, Sharp HealthCare continues to work towards delivering high-value care. They are moving away from the traditional fee-for-service model in favor of capitation (or global payments) and shared savings models. “How do we take it to the next level?” said John Jenrette, CEO of Sharp Community Medical Group. “We’re constantly holding the health system up to that mirror of high quality and affordability and being a value-based organization.”

### Implications:

- **Spend carefully and judiciously.** As purchasers demand more cost accountability, hospitals and physicians must take a granular view of what they spend. Medicare is providing a needed push. Under a new initiative, the government set goals for providers to have 50% of payments in alternative reimbursement models and 90% tied to quality improvement.<sup>85</sup>
- **Be transparent with pricing.** Consumers are ready to move care—especially primary care services and lab testing—to more affordable, price transparent, convenient locations, making billions of dollars in traditional healthcare provider revenue up for grabs by new players. Providing accurate pricing—something consumers increasingly are demanding—can be a differentiator among health systems (see figure 11).<sup>86</sup>
- **Make the case for cost accounting as a business imperative.** A group within Boston Children’s Hospital studied how much it costs to treat plagiocephaly, a condition among infants characterized by flattening of the skull. The hospital used a technique known as Time-Driven Activity-Based Costing, which requires a detailed accounting of each step in a particular process. A team found ways to make the process more efficient, including rethinking the patient education process. Caregivers and patients now receive more at-home materials and are asked to review a short video during their visit.

Figure 11: Price is the unspoken word

Percentage of consumers who have never had a conversation with a physician or nurse about:



Source: HRI Consumer Survey, PwC, 2015

# Acknowledgements

## **About this research**

This annual report discusses the top issues for healthcare providers, health insurers, pharmaceutical and life sciences companies, new entrants and employers. In fall 2015, PwC's Health Research Institute commissioned an online survey of 1,000 US adults representing a cross-section of the population in terms of insurance status, age, gender, income, and geography. The survey collected data on consumers' perspectives on the healthcare landscape and preferences related to healthcare usage.

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