

[www.pwc.com/hri](http://www.pwc.com/hri)

# *Customer experience in the New Health Economy: The data cure*



# Content

## Heart of the matter

### An in-depth discussion

Finding #1: American consumers can help the industry define modern measures of customer experience	6
Finding #2: A healthy dose of consumer preference, lifestyle and behavioral data can yield a return on investment	9
Finding #3: The data to revamp customer experience are scattered or hiding	13
Finding #4: Industry stakeholders offer different data capabilities	15

### Recommendations

Choose the data cure for customer experience	17
Make customer experience second nature for staff	19
Unwire the experience	21

### Appendix A

### Appendix B

# Heart of the matter



US health leaders say that building a better customer experience for patients is a top priority. Yet, despite spending millions of dollars on the administrative aspects of healthcare such as online billing, digital communication tools and facility improvements, a gap remains between where companies need to be and where they are today. The primary reason for this gap is that the US health industry is not able to reap the full potential of data being generated about American health consumers.

With the advent of digital technologies, consumers are generating reams of data that are being collected by various players across the health industry and beyond. Uniting these data will be crucial for delivering an outstanding customer experience that can increase brand strength, grow market shares of profitable business lines, enhance margins and improve health outcomes—all crucial for value-based care.

In the New Health Economy, patients are consumers first, with the freedom and responsibility that comes with making more decisions and spending more of their own money.<sup>1</sup> The health industry has made strides in shifting from the business-to-business to the business-to-consumer mentality that other service industries such as retail and banking adopted long ago. But health companies still lack a complete view of their customers because they lack data. In an HRI survey, 64 percent of health insurance executives and 88 percent of provider executives said having insufficient information about customers is a barrier to meeting their expectations.

Industry outsiders already have been disrupting the customer experience in healthcare.<sup>2</sup> But there is evidence some of these new entrants are doubling down on their efforts. A flurry of recent announcements signals that new entrants to the health industry are poised to disrupt the customer experience in healthcare using technology and data. Amazon, JPMorgan Chase & Co. and Berkshire Hathaway announced in January 2018 they are forming a company to reduce employees' healthcare costs, likely relying on the use of technology.<sup>3</sup> Days earlier Apple said users would be able to access and store personal health records from different providers through its Health app.<sup>4</sup> CVS Health CEO Larry J. Merlo announced in December 2017 the company would acquire national health insurer Aetna in a move to “remake the consumer health care experience,” while citing Aetna's strength in analytics.<sup>5</sup>

Health companies should start connecting data about not just the patient encounter but also the preferences and social circumstances shaping everyday health and healthcare-related purchasing decisions. They should use that information to provide a more seamless and customized experience and be able to stay connected to customers in the “white space” of health. “We interact with people as a set of transactions, but people are on journeys,” said John Glaser, senior vice president of population health at Cerner, a North Kansas City, Mo.-based technology company and a leader in the inpatient electronic health record market, in an interview with

HRI. “We need to understand the journey the patient is on, where they are on it and how do we help them.” Consumers know what they want. Grasping the nuances of their experience priorities and addressing them can generate a return on investment in the New Health Economy.

For this research, PwC’s Health Research Institute (HRI) interviewed 25 executives from US health insurers, pharmaceutical companies, health systems, technology companies and academia and analyzed data from its consumer and executive surveys.

All told, HRI found that a customer experience transformation is underway. Forty-nine percent of provider executives surveyed by HRI said revamping the customer experience is one of their organization’s top three priorities over the next five years. Eighty-one percent of insurer executives surveyed by HRI said their organizations are investing in technology to improve the member experience. Insurance executives surveyed by HRI understand that they need to work with providers to tailor care to consumers’ needs. Pharmaceutical companies are beginning to use value-based contracts, which often hinge on whether a patient achieves a specified outcome.<sup>6</sup> Thirty-six percent of pharmaceutical executives surveyed by HRI said that remote monitoring and smart devices represent the greatest opportunities for their companies to improve the customer experience.

“We need to understand the journey the patient is on, where they are on it and how do we help them.”

– John Glaser  
Senior VP of Population Health  
Cerner

## HRI's research also found:



### American consumers can help the industry define modern measures of customer experience

The metrics being collected in traditional satisfaction surveys are not timely and do not capture what healthcare customers value most. Ninety-seven percent of provider executives surveyed by HRI said that new ways to measure customer experience will become important in a value-based care environment. To measure which experiences matter most to American consumers, HRI devised a survey to evaluate the relative importance of 47 healthcare experience features. HRI surveyed 1,500 consumers and found 12 highly-valued features common to all consumer segments. Above all, consumers want their preferences and circumstances understood, shared decision-making, clear communication and convenience.



### A healthy dose of consumer preference, lifestyle and behavioral data can yield a return on investment

The most sophisticated health companies will be able to segment their customer populations in ways that appreciate demographic differences and critical clinical, behavioral and preference differences.<sup>7</sup> These companies will do a better job of determining which interventions are worth trying and which will result in higher returns on investment. But 50 percent of insurance executives and 85 percent of provider executives surveyed by HRI said customer segmentation is difficult.



### The data to revamp customer experience are scattered or hiding

Customer data are collected throughout the healthcare ecosystem but no single stakeholder has the complete picture. Data sharing is limited. Some important data are not being collected at all. For example, patient and caregivers hold critical data about the customer experience that are not captured consistently anywhere, presenting untapped opportunities to push customer experience higher.



### Industry stakeholders offer different data capabilities

Payers and pharmaceutical companies have the technical capabilities to work with large data sets and perform advanced analytics.

Payers are more heavily invested in artificial intelligence compared to providers and pharma companies, according to HRI research.

Clinicians and community organizations, such as patient advocacy groups, enjoy high levels of patient trust and are well-positioned to collect patient data and increase engagement. But they're falling short on sharing or leveraging that trust to fill data gaps.

Health companies will need to find ways to connect the data and hardwire them into employee workflows so that customer experience becomes a core focus of working rather than an added burden. Gary Christensen, general manager at InterSystems, a database, interoperability and healthcare solutions company based in Cambridge, Mass., told HRI that more data doesn't equal better care. Rather, Christensen said, the impact comes from "what can be learned through the data that can drive activities—gaps in care, understanding risk parameters, impactability parameters."

With consolidation heating up in the healthcare market, renewed pressure from healthcare's new entrants and increased scrutiny on drug value, stakeholders don't have time to waste. They will need the customer on their side to remain competitive in an uncertain, rapidly changing market where resilience is key.

# An in-depth discussion

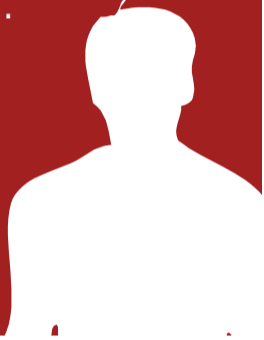
## Finding #1

American consumers can help the industry define modern measures of customer experience

Traditionally, providers have built their customer experience efforts around the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), and with good reason. According to Press Ganey Associates, a leading patient satisfaction survey firm, US hospitals have, on average, \$850,000 at risk every year directly tied to their HCAHPS results.<sup>8</sup> For insurers, a five-star rating from the Centers for Medicare and Medicaid Services serves as a ringing endorsement in an increasingly competitive market.<sup>9</sup>

“I don’t want to repeat my date of birth every time I enter a room.”

Male—  
Healthy enthusiast  
consumer



But the metrics collected in satisfaction surveys fail to capture what healthcare customers value most, what they prioritize and what motivates them toward healthy behaviors and purchasing decisions. For example, many traditional surveys ask about wait times. As Dr. Felix Horng, medical director of Orange County, Calif.-based Hoag Urgent Care, told HRI, “the real issue isn’t wait times—it’s wait perception.” The HCAHPS questionnaire, for example, cannot discern that people may have different views on wait times for primary care appointments as compared to visits to the emergency

room. A study published in the journal Health Affairs found that the topics most strongly correlated with the sentiment of Yelp hospital reviews—including compassion and kindness of staff, cost of care and billing—were not measured by HCAHPS.<sup>10</sup>

Ninety-seven percent of provider executives surveyed by HRI said that new ways to measure the customer experience will become important in a value-based care environment. Under the Medicare Access and CHIP Reauthorization Act (MACRA), the law governing clinician payments for Medicare services, provider reimbursements will be based, in part, on patient engagement efforts such as promoting self-management and coaching between visits.<sup>11</sup>



*of provider executives believe the industry needs new measures of customer experience*

Researchers have recommended a broader array of customer experience metrics such as doctor-patient communication, psychological well-being and active participation of patients in their care plans.<sup>12</sup> Pharmaceutical companies increasingly have been focused on understanding quality of life as a measurement of experience for patients taking their drugs.<sup>13</sup> Some health companies are starting to trace how experience correlates with customers' actions over their lifetime, such as whether they stay in a single provider system for all their care or recommend the company to a friend.

Measuring the experience requires more information than can be gathered from a patient satisfaction survey administered after treatment. The New Health Economy provides the health industry with incentives to gather customer feedback in real time to continuously learn about the customer and cycle that information back to clinicians and other staff. For example, an Arizona-based nonprofit health system—Banner Health—took lessons about rising consumer expectations from retail and adopted the inMoment tool, which gives providers real-time information about customer needs and complaints.

In an interview with a health technology website, Dave Kriesand, vice president of the consumer experience center at Banner Health, said that this information is more immediate and actionable than traditional satisfaction surveys.<sup>14</sup>

In its consumer survey, HRI found 12 features that are highly valued across all consumer segments and can be satisfied by using data. (see Figure 1). These features fall into five main categories: convenience, quality, support, personalization and communication.



The image contains three testimonial cards stacked vertically. Each card has a white silhouette of a person on a dark red background. The top card features a female silhouette on the left and text on the right. The middle card features a male silhouette on the right and text on the left. The bottom card features a female silhouette on the right and text on the left.

“I want a holistic approach to treatment. I see several specialists within one system, but they do not communicate with one another.”  
Female—  
Complex chronic disease consumer

“I want to be treated like a person and not just a number.”  
Male—  
Frail elderly consumer

“I don’t want to have to go over what’s happening over and over again.”  
Female—  
Healthy family consumer

**Figure 1: The features that American health consumers value most fit into 5 pillars of customer experience**



Note: HRI found features highlighted in red to be of high importance across all customer segments. Clean/comfortable facility also ranked as a top feature but was excluded from the analysis since it was not considered data-relevant.

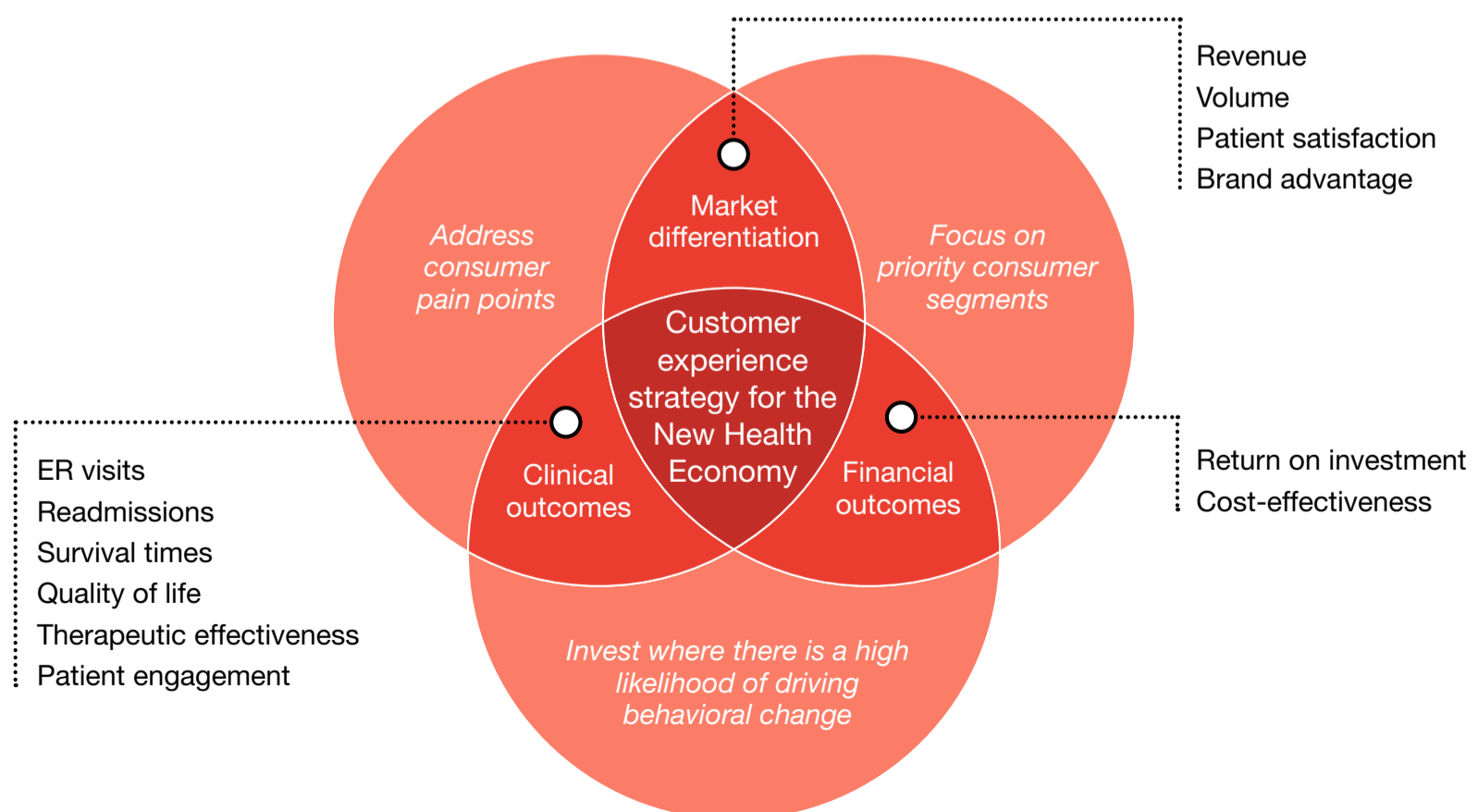
## Finding #2

### A healthy dose of consumer preference, lifestyle and behavioral data can yield a return on investment

Health companies can strengthen their brand, increase revenue and manage cost by focusing on what matters most to their customers. For example, provider executives from organizations that use customer feedback to inform their customer experience investments report realizing economic benefit from those investments, according to an analysis of HRI survey data. By looking at consumer preferences by segment, companies can do a better job of figuring out which interventions are worth trying and which will result in higher returns on investment. The most sophisticated health companies will be able to segment their customer populations in ways that acknowledge demographic differences and critical clinical, behavioral and preference differences.<sup>15</sup> Some retail models are illustrative. “How does Amazon categorize?” asked John Glaser, senior vice president of population health for Cerner.<sup>16</sup> “Is he a thorough shopper or an impulsive shopper? Does he just get the product or compare prices and features?”

Increasing the precision of their segmentation exercise allows companies to predict individual behavior based on unique motivators and preferences. It also allows companies to estimate the value of changing that behavior, such as getting consumers to increase adherence, switch providers or renew insurance policies. Being thoughtful and prescriptive to unearth meaningful consumer insights is key to population health management and driving wellness. It also could lead to improved clinical outcomes, which are the lynchpin of value-based reimbursement initiatives, and help healthcare players reap the financial benefits of market differentiation (see Figure 2).

**Figure 2: In the New Health Economy, the health sectors will benefit most from customer experience strategies that address consumer pain points, generate economic value and drive behavioral change**



HRI previously identified seven consumer segments for care in the US: healthy skeptics, healthy enthusiasts, healthy families, mental health, frail elderly, chronic and complex chronic (see Appendix A for detailed descriptions of each segment).<sup>17</sup> Consumers in each segment have distinct needs and preferences. Many of these needs and preferences are not medical in the traditional sense. These consumer segments, when surveyed about which customer experience features they value most, varied in their responses. Even the top 12 features overall elicited varying degrees of enthusiasm from different segments (see Figure 3).

**Figure 3: HRI’s seven healthcare segments differ in the intensity of preference for top customer experience features (for entire heat map, see Appendix B)**



Legend: Top to bottom indicates broader to more narrow appeal. Dark to light indicates less intense preference for the feature.

Note: See Appendix B for a heat map of all 47 experience features.

Source: PwC Health Research Institute Consumer Tradeoff Survey, 2017 and PwC Health Research Institute analysis of the Medical Expenditure Panel Survey, 2015

For example, HRI’s research indicates that community partnerships have narrow appeal for a large portion of the population. But, for the frail elderly, they matter a lot. Seventy-three percent of provider executives and 50 percent of payer executives surveyed by HRI said their organizations have implemented or are implementing partnerships with allies in local communities, such as schools, grocery stores and churches. But unless these partnerships are targeted at groups that care a lot about them, they may be a waste of time and resources.

Consumers with chronic or complex chronic illnesses value modern healthcare technology to treat their conditions. Sending these customers to lower-tech facilities may reduce trust and prompt them to switch providers. But, it may be possible to treat consumers in other segments with standard medical technology without adversely impacting their perceptions of the quality of the treatment they received or their satisfaction with the experience.

Health companies have an increased interest in data about their customers’ lives outside of the doctor’s office. “Unless we understand our members better and the conditions they live in, we will never optimize the health of our members,” said Dr. Bechara Choucair, chief community health officer at Oakland, Calif.-based Kaiser Permanente, in an interview with HRI. A recent study published in *The New England Journal of Medicine* found that social and environmental factors—such as residential neighborhood and exposure to air pollution—account for 20 percent of premature deaths.<sup>18</sup> PwC estimates that health disparities account for \$102 billion in direct medical costs annually.<sup>19</sup>

“I want doctors who take time to hear you and don’t rush into a diagnosis to get to the next patient.”  
Female – Healthy family consumer

“I would like to be understood better.”  
Female – Healthy family consumer

“I want total transparency.”  
Female – Mental health consumer

Better understanding of a patient’s life can allow health systems to determine the root cause of the problem and support patients with customized care plans (see Figure 4). A more targeted care plan may reduce the overall cost of care from the health system. “As we look at patient experience, we’re also thinking about the impact of emerging technology such as artificial intelligence, 3D printing and virtual reality on community health,” Choucair said. “We are placing an equity lens as we look at these investments.”

**Figure 4: Some health companies are using data to address the social determinants of health and other barriers to care**

<b>Sector</b>	<b>Who</b>	<b>What</b>	<b>Result</b>	<b>Customer experience priorities addressed</b>
<i>Payer/provider</i>	Kaiser Permanente (Oakland, Calif.)	<p>Gathers information directly via “life situation forms” and assigns patient navigators to help overcome obstacles to care.<sup>20</sup></p> <p>In process of making curated database of community resources available in EHRs in all of KP’s 8 regions.</p> <p>Incorporated tool into EHR to screen members for social needs in 7 categories.</p>	In a partnership with Hunger Free Colorado, KP has screened pediatric and senior members for food insecurity and connected 6,709 members to food banks between 2012 and 2017.	Staff attentive to my needs and preferences
<i>Academic medical center and university system</i>	The Univ. of Texas System (Austin, Texas)	<p>Convened more than 200 community organizations to work together to bridge gaps in care to address high rates of diabetes in Brownsville, Texas.<sup>21</sup></p> <p>Data hub aggregates data from wearables, EHRs, monitoring devices, screening data, and patient and provider mobile application and web access points so that data can be shared across care and support settings.</p>	Raised awareness about diabetes risk, lowered HbA1c of patients with diabetes, and reduced inpatient and ER readmissions among heavy users.	<p>Staff attentive to my needs and preferences</p> <p>Not having to repeat my information</p>
<i>Physician</i>	Dr. Minda Gold, Full Circle Direct Primary Care (Damariscotta, Maine)	Uses the comparemaine.org app to help patients find the least expensive medical facility to have a breast ultrasound.	Plugging a zip code in the app, she can show the patient that it would cost \$346 to \$495 at local hospitals but \$104 at a freestanding facility farther away. <sup>22</sup>	<p>Lower-cost care options</p> <p>Deciding treatment options with my doctors</p>
<i>Health advocate/navigator</i>	Accolade (Plymouth Meeting, Pa.)	Uses machine learning to continually learn about a patient and to produce a personalized journey that factors in the patient’s unique circumstances. <sup>23</sup>	Assumptions can be drawn from this information about other patients with similar characteristics in the absence of a complete profile.	Staff attentive to my needs and preferences

## Finding #3

The data to revamp customer experience are scattered or hiding

Masses of data are being collected throughout the health ecosystem, but companies rarely share the data with each other and no single company has a complete view of its customers (see Figure 5). Claims and grievances data sit with payers, clinical information remains with providers, while community organizations and retailers own shopping, personal preference and lifestyle data. Drug and device manufacturers and technology companies are beginning to gather drug adherence and real-time biometrics through apps and wearables.

**Figure 5: Patient and customer data are housed in different parts of the healthcare ecosystem; no single stakeholder has the complete picture**

Type of data	Drug and device companies	Health systems	Clinicians	Insurers	Community organizations	Patient advocacy groups	Consumer health technology companies	Retail pharmacies
Clinical and family history			●					
Benefits/medical and Rx claims				●				
Call center		●		●				
Appeals, grievances, complaints				●				
Cost of care		●		●				
Real-time monitoring	●						●	
Clinical trials and reported incidents	●							
Preferences, expectations						●	●	●
Motivators, lifestyle, personality, behavior and habits						●	●	●
Caregiver data					●			
Social determinants					●			
Patient-reported outcomes					●			
Social media		●		●		●	●	●
Drug adherence								●

Source: PwC Health Research Institute Analysis

Few clinicians collect patient lifestyle information beyond basic demographics and tobacco and alcohol use. These types of socio-economic and environmental data are collected by community organizations and patient advocacy groups. Other health sectors can address the gap to understand the lives of patients by partnering with these organizations. Only 25 percent of provider executives surveyed by HRI strongly agree that they know enough about their patient populations to engage with patients outside of the clinical setting in their daily lives. Seventy-eight percent of provider executives surveyed by HRI say they lack the data to identify patients' social needs.

The gaps are having a business impact. Sixty-two percent of provider executives surveyed by HRI who were dissatisfied with their ability to lower costs in value-based care models cited challenges with population data and analytics. "The big challenge for the providers is...they only have access to the clinical information," said Kara Trott, founder and CEO at Columbus, Ohio-based Quantum Health, a company that specializes in helping consumers navigate their healthcare journeys. "They can't solve for problems relating to family situations, transportation issues, claim challenges or financial limitations."

Patients and caregivers themselves are primary sources of very critical information related to daily prescription management, quality of life and caregiver stress levels, yet no formal mechanism has emerged in the industry to regularly obtain data from them. An untapped market may exist for collecting and selling this information to health companies.

Gaining access to data and analyzing them will be critical for matching patients with the services they want and need. Yet the industry is still in the early days when it comes to using this information to improve the patient experience. "It's a lot of hard work to make sure you are dealing with the same person when you collect data from various sources," said Lee Pierce, chief data officer at Salt Lake City-based Intermountain Healthcare, in an interview with HRI.

"The big challenge for the providers is...they only have access to the clinical information. They can't solve for problems relating to family situations, transportation issues, claim challenges or financial limitations."

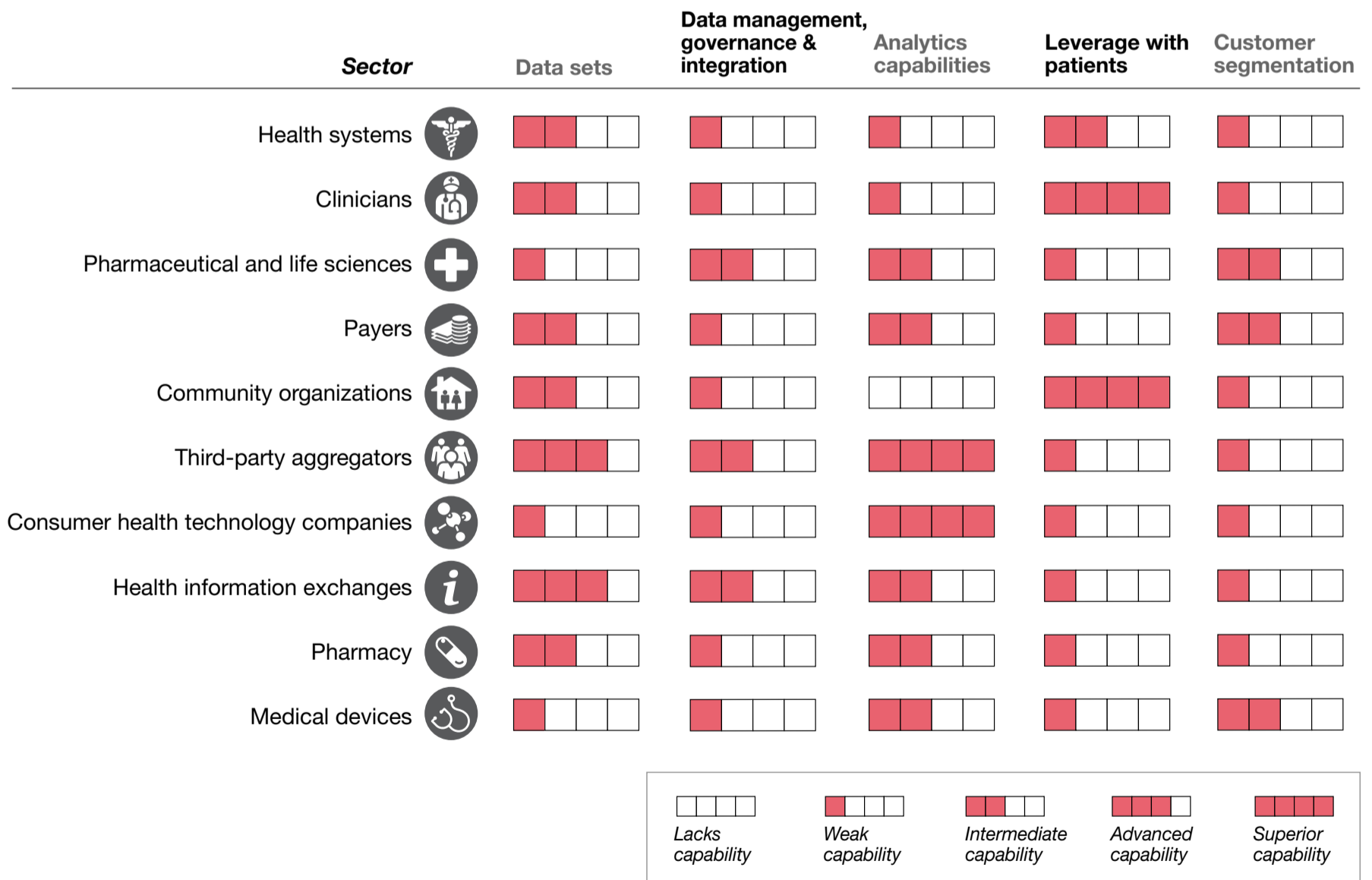
– Kara Trott  
Founder and CEO  
Quantum Health

# Finding #4

## Industry stakeholders offer different data capabilities

HRI found that industry stakeholders have varying abilities to obtain, integrate, analyze and manage data (see Figure 6). Data sharing and strategic partnering are paths to seamlessly piece together critical patient experience information. Clinicians and community organizations, such as patient advocacy groups, enjoy high levels of patient trust and are well-positioned to collect patient data and increase engagement. But they're not sharing or using that trust or other resources to fill data gaps. Thirty percent of clinicians surveyed by HRI said they fail to share patient data within their own practice or health system. Only 13 percent of clinicians responding to an HRI survey said that they use community data sets such as state inpatient and emergency department databases, public health data warehouses and disease registries to fill in the blanks.

**Figure 6: Industry stakeholders have varying abilities to obtain, integrate, analyze and manage data**



Source: PwC Health Research Institute Analysis

Even with the data they have, providers often lack the analytical capabilities and resources to make the best use of the massive amount of data encountered on a daily basis. Seventy-nine percent of provider executives surveyed by HRI think that the lack of analytical tools is a barrier to effectively segmenting their patient population. Forty-four percent say they are using their EHRs to warehouse their data even though EHRs were not effectively built for integrating disparate sets of data.<sup>24</sup>

Insurers, meanwhile, have a hard time getting their members to tell them sensitive personal lifestyle information. Eighty-three percent of payer executives surveyed by HRI cited lack of consumer engagement and trust as barriers to better meeting consumer expectations. As Trott told HRI: “Payers are in a tough position. They are perceived as being very scary to people that are on a healthcare journey. Institutional trust is at an all-time low.”

Pharmaceutical companies garner more trust with their consumers, but their data collection efforts are highly fragmented since they are focused at the brand level.

Payers and pharmaceutical companies do have the technical capabilities to work with large data sets, such as existing member data and clinical trial data, and perform advanced analytics. Seventy-three percent of payer executives surveyed by HRI said their organizations have invested to build out their data analytics capabilities; 22 percent said their organizations are considering doing so. Compared with executives at providers and pharma companies, payer executives report being more heavily invested in artificial intelligence, according to HRI research.

“Payers are in a tough position. They are perceived as being very scary to people that are on a healthcare journey. Institutional trust is at an all-time low.”

– Kara Trott  
Founder and CEO  
Quantum Health

# Recommendations

Based on interviews with industry executives, an examination of successful efforts and industry surveys conducted over the past year, HRI has identified three high-value customer experience initiatives for health companies.

## Choose the data cure for customer experience

Health executives are beginning to realize that they cannot revamp the customer experience on their own and that data sharing and strategic partnership are cornerstones for building their organization’s success, according to HRI’s provider, payer and pharmaceutical executive surveys. But direct data-sharing partnerships are not the only way to go. The health sectors are beginning to find different data strategies for revamping the customer experience including using or becoming data hubs or aggregators and commercializing their own insights (see Figure 7).<sup>25</sup>

**Figure 7: Health companies have four main data plays to enable their customer experience strategies**

Data play	Description	Examples
<p><i>Create data hub or contract with data broker</i></p>	<p>A data hub connects disparate sets of data and makes information accessible to member organizations.</p>	<p>The University of Texas System convened more than 200 community organizations to work together to bridge gaps in care to address high rates of diabetes in Brownsville, Texas. Data hub aggregates data from wearables, EHRs, monitoring and screening data so that data can be shared across care and support settings.<sup>26</sup></p> <p>Great Lakes Health Connect, based in Grand Rapids, Mich., which relies heavily on membership fees, announced that it has surpassed 1 billion health information transactions annually, achieved a critical mass of 1,000 medical practices using its closed loop referral application and soon will have 1,000 provider practices linked to its state immunization registry. Community-level data is also shared.<sup>27</sup></p>
<p><i>Work with data aggregator</i></p>	<p>A data aggregator houses multiple sets of disparate data and removes identifying information, appealing to health players wanting to partially sidestep the thorny task of grassroots data collection.</p>	<p>OptumLabs, owned by Minnetonka, Minn.-based UnitedHealth Group, includes clinical and claims data on 150 million individuals gathered from partners including co-founder Mayo Clinic, based in Rochester, Minn.<sup>28</sup></p> <p>HealthCore, the outcomes-research subsidiary of Indianapolis-based Anthem, Inc., maintains a database of medical, pharmacy and lab data covering nearly 65 million individuals.<sup>29</sup></p> <p>Medisafe, a personalized medication management platform, announced in 2016 that its new feature, “Import from Pharmacy,” can integrate a Medisafe user’s full prescription list and schedules from multiple provider and pharmacy data sources with the user’s health profile to help improve drug management and adherence.<sup>30</sup></p>

<b>Data play</b>	<b>Description</b>	<b>Who</b>
<i>Pursue direct data partnerships</i>	Organizations may want to build their data collection efforts on a smaller scale, for a specific purpose (e.g., a specific therapeutic area or population health program).	In 2017, CVS MinuteClinic, CVS Pharmacy and Cleveland-based Cleveland Clinic announced they would collaborate to make communication more efficient and coordinated using EHRs for medication related e-alerts and for sharing treatment plans between doctors and pharmacists. <sup>31</sup>
<i>Commercialize insights</i>	Invest in proprietary data and tools to generate insights and sell them to other industry players. Largely characteristic of integrated delivery networks that already invest in research and data infrastructure. Some insurers with strong analytic abilities looking for opportunities to diversify into nonregulated lines of business are commercializing their insights. <sup>32</sup>	In 2015, Rochester, Minn.-based Mayo Clinic and Cleveland Clinic, announced they would share algorithms and predictive models with the industry on Chicago-based Apervita’s analytics platform. <sup>33</sup>

These options will likely grow with more vertical consolidation expected in the market, such as Woonsocket, RI-based CVS Health’s pending acquisition of Hartford-based health insurer Aetna and as other nontraditional players enter the healthcare space looking to generate insights to improve the customer experience.<sup>34</sup> Some companies are skilled at analyzing and integrating data passively through web usage and wearables once they have consumer consent. “One of the reasons social networks and companies that collect data for targeted marketing are effective is because they’re not asking people to tell them something,” Paul Eddy, executive vice president and chief information officer at Wellmark Blue Cross and Blue Shield based in Des Moines, Iowa, told HRI.

“One of the reasons social networks and companies that collect data for targeted marketing are effective is because they’re not asking people to tell them something.”

– Paul Eddy  
Executive VP and Chief Information Officer  
Wellmark BCBS, Des Moines, Iowa

## Make customer experience second nature for staff

Providing staff—clinical and administrative—with the appropriate tools and training can enable them to spend less time looking for and reviewing data and more time having meaningful conversations with patients (see Figure 8). Many physicians see small return from the portion of their day spent navigating scroll-down menus and clicking on boxes to feed EHRs. Only 32 percent of provider executives surveyed by HRI said they are offering clinician tools and support as part of their customer experience initiatives. HRI found that payers and pharma companies see value in providing these tools to clinicians.

Digital platforms and automation likely will become important. At Arlington, Texas-based Texas Health Resources, Winjie Miao—who also is responsible for enterprise transformation—told HRI that the health system’s patient education system was implemented to allow patients to be more active in their care and to reduce the burden on nurses. But simply offering the tool without a clear plan on how to integrate it into hospital workflows was insufficient to drive the change through the organization. Miao said they saw more success when tools were embedded within clinical care models.

**Figure 8: Some leading health companies are hardwiring customer experience into staff workflows**

<b>Sector</b>	<b>Who</b>	<b>What</b>	<b>Result</b>	<b>Customer experience priorities addressed</b>
<i>Payer</i>	Humana (Louisville, Ky.)	Humana implemented a triage model in its call centers, using artificial intelligence to predict the likely needs of callers and direct them to the appropriate associate.	As of December 2016, issue resolution increased 6%, average handle times dropped by 7 seconds, agent engagement increased 60%, and net promoter score improved. <sup>35</sup>	Staff attentive to my needs and preferences Not having to repeat my information Communicating with patience
<i>Provider</i>	Dartmouth-Hitchcock Medical Center (Lebanon, NH)	Dr. Corey Siegel surveyed patients to understand their preferences during treatment for ulcerative colitis.	Found patients were more concerned about complications of the condition than side effects of medication, which invalidated the doctor's hypothesis and changed his approach to treatment. <sup>36</sup>	Deciding treatment options with my doctors Staff attentive to my needs and preferences
<i>Provider</i>	Cedars-Sinai Medical Center (Los Angeles)	Integrated recommendations from the Choosing Wisely initiative into physician alerts via their EHRs to help physicians cut down on extraneous treatments.	Cost savings of \$6 million in the first year with evidence of improved clinical outcomes such as fewer complications and shorter length of stay. <sup>37</sup>	Communicating with patience Test/Rx/procedures only when necessary Lower-cost care options
<i>Pharma</i>	Genentech (San Francisco)	Built a big-data platform capable of analyzing volumes of patient data in seconds.  Analyzed data of patients previously diagnosed with cancer to understand the outcomes of different patient subtypes and treatment regimens. <sup>38</sup>	Revealed effects of different biomarker alterations and how different treatment patterns affect clinical outcomes in real-world settings, which may impact drug development.	Deciding treatment options with my doctors Drug with proof of good outcomes, few side effects
<i>Payer/provider</i>	Geisinger Health System (Danville, Pa.)	Developed the Open Notes (Our Notes) system with protocols to promote information-sharing between physicians and patients. Patients document questions before the visit, the physician must answer them and the patient signs off on the notes.	Improved medication adherence by bringing patient's agenda to the forefront and facilitating shared decision-making. <sup>39</sup>	Deciding treatment options with my doctors Staff attentive to my needs and preferences

## Unwire the experience

Digital technologies can enable consumers to get care when and where they need it, often at lower costs than through traditional channels (see Figure 9). Consumer demand for convenience and cost-effectiveness makes this a promising area for investment. HRI's consumer survey revealed that patients place high value on convenient location and hours, the ability to see a provider quickly and lower-cost care options.

The proliferation of digital health technologies means that the care experience is no longer tied to the physician's office.<sup>40</sup> Telemedicine has been implemented by 47 percent of provider organizations. An additional 24 percent are in the process of implementing it, according to an HRI survey of provider executives.

Remote monitoring tools such as WiFi-enabled scales, mobile health apps for diabetes tracking and wireless biometric sensors are projected to save the US healthcare system up to \$27 billion by 2018 and likely will make telehealth more effective.<sup>41</sup> Studies have shown that remote monitoring may reduce acute care utilization and improve survival rates for patients with chronic conditions.<sup>42</sup> Jon Zimmerman, vice president and general manager of value based care solutions at GE Healthcare Digital, told HRI he envisions a future in which data about a person, their genomics and clinical experience are continuously scanned with "things like monitors and bots." The goal, he explained, is to get to an interactive healthcare experience where "my digital health assistant is watching out for me."

Pharmaceutical companies are turning the corner toward a new era of remote technologies. Twenty-three percent of pharmaceutical companies offer digital product support and educational tools like mobile apps, according to a survey conducted by HRI. Ninety-one percent of pharmaceutical and life sciences executives surveyed by HRI said patients will increasingly manage their health at home over the next 10 years through pharma patient engagement services such as drug adherence programs and health management apps.

"As a physician, I need a framework so that I'm not putting more burden on my patient to use yet another device or take yet another action," said Dr. Ivor Horn, chief medical officer at Accolade, a healthcare advocacy solution for employers, health plans and their members. "We have to consider how we can use tools that fit into the life flow of the consumer, in a way that works for them and creates an experience they want. It shouldn't be about how the consumer fits into our process. The consumer has to come first."

**Figure 9: Some health companies are leading the way in broadening the customer experience beyond the transaction**

<b>Sector</b>	<b>Who</b>	<b>What</b>	<b>Result</b>	<b>Customer experience priorities addressed</b>
<i>Payer</i>	Humana (Louisville, Ky.)	Analytics predict fall risks for seniors living at home and target interventions. Also alerts someone immediately if a member does fall.	The program gives members “mobility and much needed sense of security,” said Vipin Gopal, enterprise vice president of clinical analytics.	Staff attentive to my needs and preferences
<i>Pharma</i>	Pfizer (New York City)	Implemented device/app combinations that gather patient data and help manage symptoms for conditions including hemophilia, lupus and depression. <sup>43</sup>	Goal is to improve data capture by collecting it in real time. Current paper method is cumbersome and often inaccurate as patients may not remember all the symptoms on the day of their appointment.	Not having to repeat my information Remote monitoring of my condition via device
<i>Provider</i>	Roanoke Chowan Community Health Center (Ahoskie, NC)	Remote monitoring program alerted the staff to an unusual rise in a patient’s blood pressure occurring every Wednesday morning.	After discovering that the patient ate dinner at the same restaurant every Tuesday night, a case manager suggested more heart-healthy dishes on the menu. Program improves patient’s knowledge of their condition, empowering them to take charge of their own care. <sup>44</sup>	Staff attentive to my needs and preferences Convenient location/hours Getting test results without seeing doctor
<i>Payer</i>	Oscar Health (New York City)	Launched clinician dashboard that collects scattered data and provides a comprehensive look at a patient’s health journey. The tool generates alerts and also integrates claims data to allow the clinician to see what a treatment procedure would cost.	Minimizes time spent tracking down information, reduces duplicative testing; eliminates need for patients to carry their entire medical history. <sup>45</sup>	Test/Rx/ procedures only when necessary Not having to repeat my information Upfront explanation of out-of-pocket costs

# Appendix A

In a previous report, HRI analyzed the Medical Expenditure Panel Survey and identified seven consumer segments for care in the US: frail elderly, chronic disease, complex chronic disease, mental illness, healthy adult skeptics, healthy adult enthusiasts and healthy families.<sup>46</sup>



**Frail elderly** are over the age of 75, living at home and facing health issues related to falls or dementia and suffer generally poor health. At \$89 billion in healthcare spending annually, these retirees are not the health system's most expensive but they are the heaviest utilizers of care services and prescription drugs—with an average of 15 visits and 39 prescriptions fills—and have the highest per capita spending. About 5.4 million consumers, or 1.7 percent of the American population, meet the definition of frail elderly.



**Consumers with chronic disease** have problems affecting a single body system such as hypertension and require uncomplicated disease management. Because of their sheer numbers, these consumers rank first in total spending at \$959 billion each year, however their per capita spending of \$5,600 is much less than that of consumers in the complex chronic disease market. They average eight care visits each year and fill 13 prescriptions. About 173 million Americans, or 54 percent, fit this description and are the wealthiest of the consumer markets.



**Consumers with complex chronic disease** live with one or more chronic diseases affecting multiple body systems and requiring complicated disease management. These individuals account for \$397 billion in total spending each year, with \$16,000 in per capita spending, the second-highest among the seven consumer groups. On average they interact with the health system 15 times and have 34 prescriptions filled. About 25 million Americans, or 8 percent, are dealing with complex chronic disease.



**Consumers with mental illness** face depression and mood disorders, post-traumatic stress disorder, addictions and suicidal ideations as their primary health issue. These patients spend \$34 billion on care each year and have an average of \$3,000 in per capita spending. They have six touchpoints with the system and fill seven prescriptions. About 11 million, or 3 percent, of Americans have a mental illness as their primary health issue.



**Healthy adult skeptics** generally avoid interacting with the health system and are less likely to have health insurance than other consumer groups. This market is approximately 12 million strong with \$7 billion total and \$600 per capita spending. Individuals in this market make visits to the emergency room and are admitted to the hospital at nearly the same rates as healthy adult enthusiasts, but they go to the doctor less often.



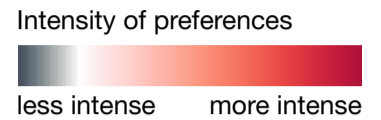
**Healthy adult enthusiasts** value a regular physical and wellness/coaching services. They get recommended screenings. These consumers spend approximately \$37 billion on healthcare services annually, average \$1,500 in per capita spending and interact with the health system one or two times throughout the year. About 24 million Americans form this group.



**Healthy families** are households with healthy dependent children under the age of 18. There are 69 million people living in healthy families in the US and they spend \$70 billion on healthcare each year. They interact with the health system at about the same frequency as “healthy enthusiasts” — mainly for vaccinations and the occasional cold or sinus infection — but have lower spending per capita at \$1,000.

# Appendix B–Heat map

Top to bottom indicates broad to narrow appeal. Dark to light indicates higher to lower intensity of preference for the feature.



**Consumer segments:**

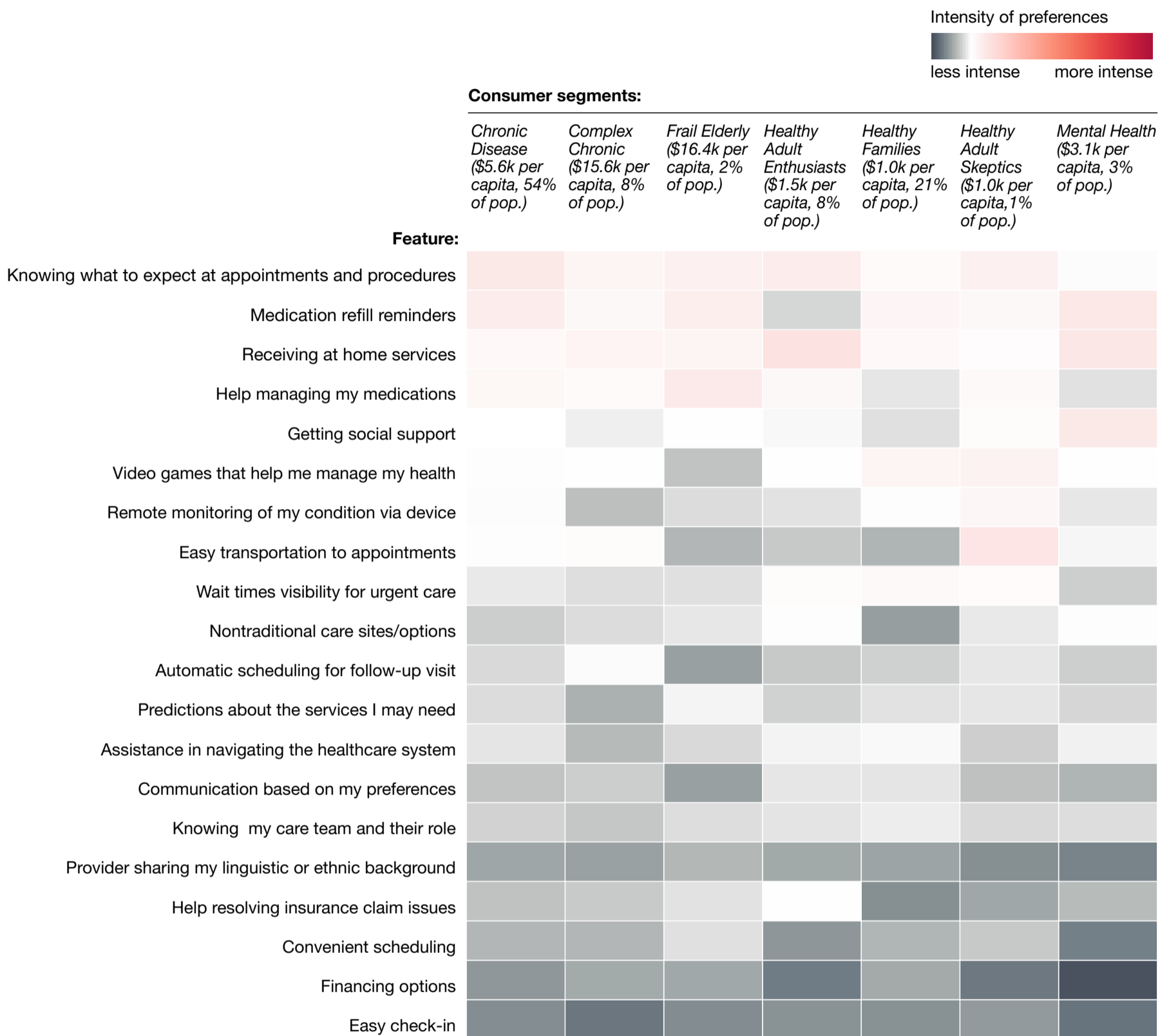
Chronic Disease (\$5.6k per capita, 54% of pop.)	Complex Chronic (\$15.6k per capita, 8% of pop.)	Frail Elderly (\$16.4k per capita, 2% of pop.)	Healthy Adult Enthusiasts (\$1.5k per capita, 8% of pop.)	Healthy Families (\$1.0k per capita, 21% of pop.)	Healthy Adult Skeptics (\$1.0k per capita, 1% of pop.)	Mental Health (\$3.1k per capita, 3% of pop.)
--	--	--	---	---	--	---

**Feature:**



# Appendix B–Heat map (cont'd.)

Top to bottom indicates more narrow appeal. Dark to light indicates lower utility (i.e. less intense preference for the feature).



Note: Top to bottom indicates broader to more narrow appeal. Dark to light indicates less intense preference for the feature.

Source: PwC Health Research Institute Consumer Tradeoff Survey, 2017 and PwC Health Research Institute analysis of the Medical Expenditure Panel Survey, 2015

# Endnotes

- 1 PwC Health Research Institute, “New Health Economy,” April 2014, <https://www.pwc.com/us/en/health-industries/healthcare-new-entrants/assets/pwc-hri-new-health-economy-essay-2.pdf>.
- 2 PwC Health Research Institute, “Healthcare’s new entrants: Who will be the industry’s Amazon.com?,” April 2014, <https://www.pwc.com/us/en/health-industries/health-research-institute/publications/healthcares-new-entrants.html>.
- 3 [https://www.jpmorganchase.com/corporate/news/pr/january-announcement.htm?elq\\_mid=10007&elq\\_cid=539914](https://www.jpmorganchase.com/corporate/news/pr/january-announcement.htm?elq_mid=10007&elq_cid=539914) JPMorgan Chase & Co., “Amazon, Berkshire Hathaway and JPMorgan Chase & Co. to partner on U.S. employee healthcare,” Jan. 30, 2018, [https://www.jpmorganchase.com/corporate/news/pr/january-announcement.htm?elq\\_mid=10007&elq\\_cid=539914](https://www.jpmorganchase.com/corporate/news/pr/january-announcement.htm?elq_mid=10007&elq_cid=539914).
- 4 [https://www.apple.com/newsroom/2018/01/apple-announces-effortless-solution-bringing-health-records-to-iPhone/?elq\\_mid=10007&elq\\_cid=539914](https://www.apple.com/newsroom/2018/01/apple-announces-effortless-solution-bringing-health-records-to-iPhone/?elq_mid=10007&elq_cid=539914) “Apple announces effortless solution bringing health records to iPhone,” Jan. 24, 2018, [https://www.apple.com/newsroom/2018/01/apple-announces-effortless-solution-bringing-health-records-to-iPhone/?elq\\_mid=10007&elq\\_cid=539914](https://www.apple.com/newsroom/2018/01/apple-announces-effortless-solution-bringing-health-records-to-iPhone/?elq_mid=10007&elq_cid=539914).
- 5 CVS Health, “CVS Health to acquire Aetna; combination to provide consumers with a better experience, reduced costs and improved access to health care experts in homes and communities across the country,” Dec. 3, 2017, <https://cvshealth.com/newsroom/press-releases/cvs-health-acquire-aetna-combination-provide-consumers-better-experience>.
- 6 PwC Health Research Institute, “Launching into value: Pharma’s quest to align drug prices with outcomes,” September 2017, <https://www.pwc.com/us/en/health-industries/health-research-institute/publications/value-based-drug-pricing.html>.
- 7 PwC Health Research Institute, “Population health: Scaling up,” May 2016, <https://www.pwc.com/us/en/health-industries/health-research-institute/publications/population-health.html>; PwC Health Research Institute, “ROI for primary care: Building the dream team,” October 2016, <https://www.pwc.com/us/en/health-industries/health-research-institute/publications/primary-care-part-two.html>.
- 8 Press Ganey, “The time to prepare for value-based purchasing is now,” 2011, [https://helpandtraining.pressganey.com/Documents\\_secure/White%20Papers/VBP\\_TimeToPreparesNow.pdf](https://helpandtraining.pressganey.com/Documents_secure/White%20Papers/VBP_TimeToPreparesNow.pdf).
- 9 PwC Health Research Institute, “Top health industry issues of 2018: A year for resilience amid uncertainty,” <https://www.pwc.com/us/en/health-industries/assets/pwc-health-research-institute-top-health-industry-issues-of-2018-report.pdf>.
- 10 B.L. Ranard, R. M. Werner, et al., “Yelp reviews of hospital care can supplement and inform traditional surveys of the patient experience of care,” *Health Affairs* 35, no. 4 (April 2016): 697-705, <https://www.healthaffairs.org/doi/abs/10.1377/hlthaff.2015.1030>.
- 11 Centers for Medicare and Medicaid Services, Quality Payment Program, “Improvement Activities,” accessed Jan. 23, 2018, <https://qpp.cms.gov/mips/improvement-activities>.
- 12 Angela Coulter and Jo Ellins, “Effectiveness of strategies for informing, educating and involving patients,” *The BMJ* 335, no. 7609 (July 2007): 24-27, <http://www.bmj.com/content/335/7609/24>.
- 13 IQVIA Institute for Human Data Science, “The growing value of digital health evidency and impact on human health and the healthcare system,” November 2017, <https://www.iqvia.com/institute/reports/the-growing-value-of-digital-health>.
- 14 Sara Heath, “Retail consumer experience key in consumer-driven healthcare,” *PatientEngagementHIT*, March 1, 2017, <https://patientengagementhit.com/news/retail-consumer-experience-key-in-consumer-driven-healthcare>.
- 15 PwC Health Research Institute, “Population health: Scaling up,” May 2016, <https://www.pwc.com/us/en/health-industries/health-research-institute/publications/population-health.html>; PwC Health Research Institute, “ROI for primary care: Building the dream team,” October 2016, <https://www.pwc.com/us/en/health-industries/health-research-institute/publications/primary-care-part-two.html>.
- 16 Erin Dietsche, “Epic, Cerner hold majority of EHR market share in acute care hospitals,” *MedCity News*, May 4, 2017, <https://medcitynews.com/2017/05/epic-cerner-ehr-market-share/>.

- 17 PwC Health Research Institute, “Primary care in the New Health Economy: Time for a makeover,” 2015, <https://www.pwc.com/us/en/health-industries/health-research-institute/publications/primary-care-report-new-health-economy-2015.html>; PwC Health Research Institute, “ROI for primary care: Building the dream team,”
- 18 Steven A. Schroeder, “We can do better—Improving the health of the American people,” *The New England Journal of Medicine*, Sept. 20, 2007, <http://www.nejm.org/doi/full/10.1056/NEJMsa073350#t=article>.
- 19 PwC Health Research Institute, “Top health industry issues of 2018: A year for resilience amid uncertainty.”
- 20 Kaiser Health News, “Patient navigators track social determinants through EHRs with positive results,” Aug. 7, 2017, <http://www.healthcareitnews.com/news/patient-navigators-track-social-determinants-through-ehrs-positive-results>.
- 21 The University of Texas System, “UT diabetes project receives \$3 million from health foundation to expand in Rio Grande Valley”, Sept. 8, 2016, <https://www.utsystem.edu/news/2016/09/08/ut-diabetes-project-receives-3-million-health-foundation-expand-rio-grande-valley>.
- 22 PwC Health Research Institute interview with Dr. Minda Gold, Dec. 5, 2017.
- 23 Accolade, “A personalized healthcare experience powered by technology,” accessed Jan. 23, 2018, <https://www.accolade.com/>.
- 24 PwC Health Research Institute, “EHRs in the New Health Economy: Essential but insufficient,” Oct. 26, 2017 <https://www.pwc.com/us/en/health-industries/health-research-institute/publications/future-of-ehrs.html>.
- 25 PwC Health Research Institute, “EHRs in the New Health Economy: Essential but insufficient,”
- 26 The University of Texas System, “UT diabetes project receives \$3 million from health foundation to expand in Rio Grande Valley”, Sept. 8, 2016, <https://www.utsystem.edu/news/2016/09/08/ut-diabetes-project-receives-3-million-health-foundation-expand-rio-grande-valley>.
- 27 Great Lakes Health Connect, “Growing network boosts Great Lakes Health Connect’s national stature Michigan’s largest health information exchange helps guide companies across country”, July 20, 2015, <https://www.prnewswire.com/news-releases/growing-network-boosts-great-lakes-health-connects-national-stature-michigans-largest-health-information-exchange-helps-guide-companies-across-country-300115723.html>.
- 28 Optum Labs, “Our Story,” accessed Jan. 30, 2018, <https://www.optumlabs.com/about/story.html>.
- 29 PwC Health Research Institute, “Top health industry issues of 2018: A year for resilience amid uncertainty.”
- 30 Stephanie Baum, “Pharma companies gain access to de-identified data on adherence for specific drugs,” *MedCity News*, July 25, 2016, <https://medcitynews.com/2016/07/channel-pharma-companies-give-new-insight-adherence-specific-drugs>; Medisafe press release, “Medisafe app becomes first to add ‘import from pharmacy’ capability in latest effort to break down health system barriers,” accessed Jan. 23, 2018, <https://medisafe.com/press-release/medisafe-app-becomes-first-to-add-import-from-pharmacy-capability-in-latest-effort-to-break-down-health-system-barriers/>.
- 31 Beth Jones Sanborn, “CVS Health, Cleveland Clinic expand clinical affiliation, expand EHR communication,” *Healthcare IT News*, July 25, 2017, <http://www.healthcareitnews.com/news/cvs-health-cleveland-clinic-expand-clinical-affiliation-expand-ehr-communication>.
- 32 PwC Health Research Institute, “Health insurer of the future: Consumers’ advocate, providers’ partner,” March 2017, <https://www.pwc.com/us/en/health-industries/health-research-institute/publications/health-insurer-of-the-future.html>.

- 33 Apervita, “Mayo Clinic brings their analytics to Apervita,” Feb. 25, 2015, <https://www.healthitoutcomes.com/doc/mayo-clinic-brings-their-analytics-to-apervita-0001>; Cleveland Clinic, “Cleveland Clinic to share health analytics on Apervita,” May 5, 2015, <https://www.businesswire.com/news/home/20150505005188/en/Cleveland-Clinic-Share-Health-Analytics-Apervita>.
- 34 CVS Health, “CVS Health to acquire Aetna; combination to provide consumers with a better experience, reduced costs and improved access to health care experts in homes and communities across the country.”
- 35 PwC Health Research Institute, “Health insurer of the future: Consumers’ advocate, providers’ partner.”
- 36 Sara Heath, “How to include patient preferences in shared decision-making,” PatientEngagementHIT, Aug. 1, 2016, <https://patientengagementhit.com/news/how-to-include-patient-preferences-in-shared-decision-making>.
- 37 Greg Slabodkin, “Cedars-Sinai reduces unnecessary care using EHR alerts,” Health Data Management, May 22, 2017, <https://www.healthdatamanagement.com/news/cedars-sinai-reduces-unnecessary-care-using-ehr-alerts>.
- 38 Ryan Copping and Michael Li, “The promise and challenge of big data for pharma,” Harvard Business Review, Nov. 29, 2016, <https://hbr.org/2016/11/the-promise-and-challenge-of-big-data-for-pharma>.
- 39 Scott Mace, “Changing patient behavior through technology,” HealthLeaders, Feb. 23, 2016, <http://www.healthleadersmedia.com/technology/changing-patient-behavior-through-technology>; Geisinger, “Access to doctors’ notes increases med adherence,” Nov. 16, 2015, <https://www.geisinger.org/about-geisinger/news-and-media/news-releases/2017/03/24/14/32/geisinger-study-access-to-doctors-notes-increases-med-adherence>.
- 40 PwC Health Research Institute, “Primary care in the New Health Economy: Time for a makeover.”
- 41 Jonah Comstock, “Remote patient monitoring to save \$36B by 2018,” MobiHealthNews, July 17, 2013, <http://www.mobihealthnews.com/23880/remote-patient-monitoring-to-save-36b-by-2018/>.
- 42 Cecile Davis, Miriam Bender, Tyler Smith, Jason Broad, “Feasibility and acute care utilization outcomes of a post-acute transitional telemonitoring program for underserved chronic disease patients,” Telemedicine and e-Health, Nov. 14, 2014, <http://www.cchpca.org/sites/default/files/uploader/Feasibility%20and%20Acute%20Care%20Utilization%20Outcomes%20of%20a%20Post-Acute%20Transitional%20Telemonitoring%20Program%20for%20Underserved%20Chronic%20Disease%20Patients.pdf>.
- 43 Pfizer, “Pfizer Rare Disease launches two first-of-its-kind innovative technologies for people living with hemophilia at National Hemophilia Foundation annual meeting,” Aug. 24, 2017, [https://www.pfizer.com/news/press-release/press-release-detail/pfizer\\_rare\\_disease\\_launches\\_two\\_first\\_of\\_its\\_kind\\_innovative\\_technologies\\_for\\_people\\_living\\_with\\_hemophilia\\_at\\_national\\_hemophilia\\_foundation\\_annual\\_meeting](https://www.pfizer.com/news/press-release/press-release-detail/pfizer_rare_disease_launches_two_first_of_its_kind_innovative_technologies_for_people_living_with_hemophilia_at_national_hemophilia_foundation_annual_meeting); Pfizer, “New smartphone app may enable lupus patients to report symptoms more easily and accurately,” May 9, 2017, [https://www.pfizer.com/news/press-release/press-release-detail/new\\_smartphone\\_app\\_may\\_enable\\_lupus\\_patients\\_to\\_report\\_symptoms\\_more\\_easily\\_and\\_accurately](https://www.pfizer.com/news/press-release/press-release-detail/new_smartphone_app_may_enable_lupus_patients_to_report_symptoms_more_easily_and_accurately).
- 44 Hannah Rael, “Remote monitoring helps people in North Carolina manage chronic conditions,” Direct Relief, Feb. 23, 2015, <https://www.directrelief.org/2015/02/remote-monitoring-helps-people-north-carolina-manage-chronic-conditions/>.
- 45 Alan Warren, “Connecting the dots with the Clinical Dashboard,” Oscar Health, accessed Jan. 23, 2018, <https://www.hioscar.com/blog/connecting-the-dots-with-the-clinical-dashboard>.
- 46 PwC Health Research Institute, “Primary care in the New Health Economy: Time for a makeover.”

# About this research

HRI conducted phone interviews with 25 executives representing health insurers, pharmaceutical/life sciences companies, health systems, academia and technology companies from June 2017 to January 2018 and analyzed findings from its clinician survey and payer, provider and pharmaceutical/life sciences executive surveys conducted in 2017.

HRI also conducted a consumer tradeoff survey for this report in October 2017. HRI had respondents screen a list of 47 experience features to choose their top 25 preferences. The respondents also selected between different combinations of features multiple times. Based on the respondent's choices, HRI calculated a utility score for each feature to serve as a measure of the relative importance of that feature to the respondent. HRI then combined the screening and utility score results to calculate an overall value score for each feature.

# About the PwC Health Research Institute

PwC's Health Research Institute (HRI) provides new intelligence, perspectives and analysis on trends affecting all health related industries. The Health Research Institute helps executive decision makers navigate change through primary research and collaborative exchange. Our views are shaped by a network of professionals with executive and day-to-day experience in the health industry. HRI research is independent and not sponsored by businesses, government or other institutions.

# Acknowledgments

**Bob Chib**

*Head of Corporate Strategy and Innovation, Licensing and Alliances  
Astellas Pharma*

**Dr. Bechara Choucair**

*Senior VP and Chief Community Health Officer  
Kaiser Permanente*

**Gary Christensen**

*General Manager  
InterSystems*

**Paul Eddy**

*Executive VP and Chief Information Officer  
Wellmark Blue Cross and Blue Shield*

**Brian Fugere**

*VP, Global Marketing, Value-Based Care Solutions  
GE Healthcare Digital*

**Sam Garrard**

*Marketing Coordinator  
Accolade*

**John Glaser**

*Senior VP of Population Health  
Cerner*

**Dr. Minda Gold**

*Full Circle Direct  
Primary Care*

**Vipin Gopal**

*Enterprise VP of Clinical Analytics  
Humana*

**Charles Haddad**

*Senior Advisor, Information Technology, Medicines Development Unit  
Eli Lilly and Company*

**Dr. Ivor Horn**

*Chief Medical Officer  
Accolade*

**Dr. Felix Horng**

*Medical Director  
Hoag Urgent Care*

**Charles Jaffe**

*Chief Executive Officer  
HL7*

**Dr. Ira Klein**

*Senior Director of Quality, Strategic Customer Group  
Janssen Pharmaceuticals*

**Winjie Miao**

*Executive VP and Chief Experience Officer  
Texas Health Resources*

**Dr. David Nash**

*Dean, Jefferson College of Population Health  
Thomas Jefferson University*

**Lee Pierce**

*Chief Data Officer  
Intermountain Healthcare*

**Lisa Plimpton**

*Director, Digital Innovation  
Pfizer*

**Rick Ratliff**

*President and Chief Commercial Officer  
ConnectiveRx*

**Raj Singh**

*Chief Executive Officer  
Accolade*

**Becky Sparhawk**

*Director of Strategic Alignment  
Quantum Health*

**Sam Steinwinder**

*VP of Marketing  
Accolade*

**Kara Trott**

*Chief Executive Officer  
Quantum Health*

**Dr. Susan Turney**

*Chief Executive Officer  
Marshfield Clinic*

**Jon Zimmerman**

*VP and General Manager, Value Based Care Solutions  
GE Healthcare Digital*

*HRI would also like to acknowledge the leadership and board members of the eHealth Initiative in Washington, DC.*

# HRI Advisory Team

**Nikki Parham**

*Principal*

**Karla Anderson**

*Principal*

**Ian Bonnet**

*Managing Director*

**Paul D'Alessandro**

*Principal*

**Serena Foong**

*Director*

**Jamie Gunsior**

*Principal*

**Jon Souder**

*Director*

## Contributors

**Jorge Alvarez**

*Director*

**Jaik Balakumar**

*Director*

**Anirban Bhaumik**

*Director*

**Saty Chandrashekhar**

*Director*

**Pradeep Giri**

*Director*

**Sierra Hawthorne**

*Manager*

**Erin Schneider**

*Manager*

**Laura Schweitzer**

*Managing Director*

# PwC Health Research Institute

**Kelly Barnes**

*Partner, US Health Industries  
and Global Health Industries  
Consulting Leader*  
kelly.a.barnes@pwc.com

**Benjamin Isgur**

*Health Research Institute Leader*  
benjamin.isgur@pwc.com

**Sarah Haflett**

*Director*  
sarah.e.haflett@pwc.com

**Trine Tsouderos**

*Director, HRI Regulatory  
Center Leader*  
trine.k.tsouderos@pwc.com

**Benjamin Comer**

*Senior Manager*  
benjamin.comer@pwc.com

**Alexander Gaffney**

*Senior Manager, Regulatory*  
alexander.r.gaffney@pwc.com

**Jason Ranville**

*Senior Manager, Regulatory*  
jason.ranville@pwc.com

**Ingrid Stiver**

*Senior Manager*  
ingrid.stiver@pwc.com

**Janet Rubin**

*Research Analyst*  
janet.a.rubin@pwc.com

**Pritha Vijay**

*Research Analyst*  
pritha.vijay@pwc.com

# Contacts

To have deeper conversations about how this subject may affect your business, please contact:

**Kelly Barnes**

*Partner, US Health Industries and Global Health Industries Consulting Leader*

214 754 5172

kelly.a.barnes@pwc.com

**Benjamin Isgur**

*Health Research Institute Leader*

214 754 5091

benjamin.isgur@pwc.com

**Nikki Parham**

*Principal*

214 808 5463

nikki.r.parham@pwc.com

**Jamie Gunsior**

*Principal*

410 336 3492

jamie.gunsior@pwc.com

**Karla Anderson**

*Principal*

703 674 6020

karla.s.anderson@pwc.com

**[www.pwc.com](http://www.pwc.com)**

**[www.pwc.com/us/healthindustries](http://www.pwc.com/us/healthindustries)**

**[www.pwc.com/hri](http://www.pwc.com/hri)**

**[twitter.com/PwCHealth](https://twitter.com/PwCHealth)**