

**Digital Business** 

# Value-Based Care and Healthcare Consumerism: Opportunities for Health IT and Technologies

Health IT and technology solutions are central in the shift to value-based care and to meeting the demands of patient consumerism. Hurdles remain, but all primary players in the healthcare ecosystem, patients, providers and payers, are seeking more and better data, platform interoperability, real-time and actionable analytical insights, and more effective engagement.

# **Executive Summary**

The convergence of the U.S. healthcare industry's shift to value-based care combined with a technological revolution that promises increased transparency, connectivity and real-time information presents unique opportunities for providers and health systems to optimize care delivery, improve quality of care and control costs. As providers become more accountable

for the wellness of their patient populations, tech companies are aggregating, integrating and operationalizing data to help providers more accurately understand their patients' needs and provide more strategic care. Likewise, as patients become more engaged consumers of healthcare, providers are reevaluating how they interact with patients. These



industry drivers — value-based care and increased consumerism — create opportunities for innovative and potentially disruptive technology solutions that can enable organizations to sustainably evolve in a value-based, patient-centered healthcare system.

Furthermore, a now regular cadence of press release announcements involving new collaborations, partnerships, joint ventures, and merger and acquisition (M&A) activity signals a disruptive confluence among previously disparate industry stakeholders. These efforts are dedicated to creating high-performance, connected healthcare networks focused on customer engagement, building a critical mass of sustainable revenue while reducing costs and improving quality. As payers and providers seek to re-create and simplify the healthcare value chain, disruptive technologies will be an enabling cornerstone.

To investigate how the move to value-based payment models and rising consumerism are affecting investment in digital health and technology solutions, Leavitt Partners conducted a series of interviews with key tech-minded decision-makers (e.g., chief information officers, chief medical information officers, chief strategy officers, chief operating officers, etc.) at health systems and hospitals across the country. The interview findings suggest that as the industry continues to shift from fee-for-service to valuebased care, provider systems are seeking greater leverage of healthcare data, better tools to predict risk and the generation of real-time, actionable insight. Similarly, as healthcare consumerism surges, hospitals and health systems seek to provide improved patient engagement tools, empower patients through data ownership and serve healthcare consumers with greater price transparency.



# **Emerging opportunities for health IT in value-based care**

A main tenet of value-based care is that providers are paid based on patient health outcomes.1 In these arrangements, health systems are increasingly responsible for the health of a population. As providers take on risk for a patient population, better tools to stratify and predict impactable risk, greater access and ability to leverage data, and improved solutions to generate real-time actionable insight are not only urgent priorities but are imperative to long-term financial viability.<sup>2</sup> Often, addressing these priorities has involved significant investment both internally and through technology vendor relationships. While significant progress has been made in fulfilling these needs, three main obstacles remain that can be addressed through structural and technology improvements.



## Liberate and leverage data

As providers take on more risk for patients' health outcomes, they are increasingly incentivized to know more about patients and to expand their ability to influence patients' health outcomes. As such, value-based care drives demand for patient data, including clinical, claims and social determinants of health (SDH) data. However, longstanding structural and technological barriers some of which are rooted in the traditional fee-for-service system – impede providers' ability to fully leverage data as the industry shifts to value-based care

## Interoperability, data aggregation and orchestration

As technology companies rose to meet market demands, many of their solutions inadvertently created a fragmented system that limited data's potential to create a robust portrait of health. Electronic medical records (EMRs), as one

We need more data with less friction.

**Health Information Technology Expert** 

As far as technology to move us to better valuebased contracting and bundled contracting, we are just not there yet.

**Health System Executive** 

interviewee stated, are "legacy siloed system" databases that struggle to integrate among varying data platforms and other EMR platforms. Imagine a multiple lane highway interchange devoid of signs and without clear indications of which lanes connect to which. The lack of interoperability among varying EMRs and between clinical data and payer data platforms presents significant hurdles as providers seek to develop a more complete picture of and coordinate care for the patient populations that they serve. A well-designed data orchestration platform — a technology solution that enables data integration and movement among platforms — can allow for a true exchange of complex data points across these various siloed systems.



Instead of merely providing an electronic version of an analog health record, EMRs offer the potential to connect data, track performance, measure against quality metrics and help create a frictionless pathway for patients to receive high-quality care. In order to capitalize on bundled payments, for example, EMRs need to more accurately document and coordinate health services and tie these services to a continuum of care based on an initial diagnosis or problem. As providers increasingly take on risk, they must be able to centralize and access data from disparate sources and make that data interoperable across platforms.

## Regulatory changes related to HIPAA

In additional to data interoperability, there remain significant regulatory barriers to fully sharing and leveraging healthcare data. When asked about the biggest barriers to the various healthcare stakeholders getting the information they need to coordinate care, one interviewee responded. "Consent! Consent! This sentiment was reflected across multiple interviews.

Structural and regulatory barriers to the transfer of healthcare data are a source of friction that the current administration seeks to address. Recently, the U.S. Department of Health and Human Services' Office for Civil Rights (OCR) published a request for information soliciting feedback on whether and how HIPAA rules should be amended to promote coordinated care.3 Given the current administration's prioritization of enhancing consumer access to data and increasing payer and provider transparency, the healthcare industry may be the beneficiary of future structural changes to HIPAA that could further enable data-sharing between healthcare stakeholders and employer providers to more fully leverage data in the near term.

Ultimately, these regulatory changes may eliminate some structural barriers that prevent provider organizations from fully leveraging healthcare data. However, as the need to improve care coordination via the seamless transfer of data under valuebased models of care becomes more widespread, addressing this regulatory friction with technology resources represents an opportunity for technology companies to address a significant pain point experienced by hospitals and health systems.



# **Develop better technology resources** to stratify and predict impactable risk

The industry leaders whom Leavitt Partners interviewed emphasized the need to better stratify risk in the patient population. Accurately predicting and aligning patient risk levels with the appropriate treatment plan, they noted, enables providers to deliver the right care while avoiding unnecessary high-cost utilization such as inappropriate emergency department (ED) visits and hospital readmissions. However, stratifying risk is not enough; rather, the next generation of data tools needs to help predict and drive impact as well.

We waste a lot of resources on people that we can't really impact ... we need to understand which patients are amenable to change and which patients may not be impactable for a number of reasons.

**Health System COO** 

Significant investment has been made to aggregate and analyze patient data to identify and categorize patient risk levels via analytics tools that leverage available sources, such as claims and EMRs, which can contain clinical, social, family and demographic data. However, current and future technological developments need to help provider systems understand patients more holistically. Providers need to know where targeted interventions will impact outcomes and reduce costs.

Today, available data and analytics resources provide an incomplete assessment of patient risk that can lead to inappropriate care interventions and resource waste. Risk assessment and care intervention technologies that leverage artificial intelligence and machine learning coupled with a robust patient-physician communication interface, for example, could enable health systems to better understand patient behavior, hone their risk profiles, and more accurately predict and carry out timely, high-impact interventions.

# Generate real-time, actionable insight



Corresponding with the cross-industry interest in real-time, big-data analytics solutions, healthcare providers with risk-based contracts expressed a need for real-time actionable insights to optimize care coordination and care delivery decisions, from both clinical and administrative standpoints. As providers are held accountable for patient health outcomes through reimbursement adjustments and contracting arrangements that penalize

There is a need for more 'real-time' data to react to during the episode of care instead of 'ex post facto' data to react to after care.

**Health System Executive** 

inefficiencies, retrospective insight from claims and clinical data is not actionable. Therefore, it does not help at-risk providers make cost-effective decisions to optimize care.

To a certain extent, the need for actionable, realtime insight to enhance care coordination and control costs has incented payers and providers to collaborate and communicate more closely under risk-based contracts and partnerships.<sup>4</sup> For example, a number of provider systems have partnered with Oscar Health, a technologyfocused health plan that facilitates patientprovider communication and a more transparent claims pricing system. This is one example where technology-enabled payer-provider collaboration has the potential to enhance the efficiency and quality of care.

While the need for real-time insight is not new, as the healthcare industry continues to shift to value, real-time, actionable insight is becoming a more pressing priority.<sup>5</sup> Hospitals and health systems involved in risk-based contracts, EMR vendors and other health IT companies have invested in technologies to improve their analytical capabilities, which will provide physicians and patients with better access to real-time, actionable data. However, significant room for improvement remains.

For example, a growing digital therapeutics industry, funded by a variety of healthcare industry stakeholders – and which has yet to be integrated into mainstream healthcare – shows promise by empowering patients to leverage their healthcare data and augment traditional clinical therapies with actionable intelligence provided to patients and physicians in real time. Illustrative of this point, the Food and Drug Administration (FDA) recently approved a mobile medical app to help treat people with substance use disorders (SUDs) based on

Digital therapeutics (DTx) deliver evidence-based therapeutic interventions to patients that are driven by high quality software programs to prevent, manage, or treat a medical

**Digital Therapeutics Alliance** 

clinical trials. Early results show that 40% of patients who used the app abstained for three months, compared with 17.6% who used standard therapy alone.<sup>6</sup> This ability to leverage data to change patient behavior, especially for patient populations with high-cost, chronic conditions, directly impacts financial profitability, particularly for provider systems that are involved in value-based contracts. In addition to high-risk patients, exemplified in the SUD example, digital therapeutics also shows promise to benefit mid- and low-risk patients through preventive care and improved patient engagement.

disorder or disease.

As the need to provide cost-effective care becomes increasingly urgent in a value-oriented healthcare system, providing physicians with timely and actionable intelligence is paramount. Executive decision-makers will continue to seek technology solutions that are effective to that end.7

# **Emerging opportunities for health IT in healthcare** "consumerism"

Another important area of opportunity for technology solutions that industry experts identified are the growing demands of consumerism. As patients increasingly access the healthcare system as consumers, they are expecting more convenience, more transparency and greater access to their health information. Increasingly, patients, payers and providers are looking to technology solutions to meet growing demands for improving patient engagement tools, increasing price transparency and empowering patients to own their data.



# Improve patient engagement tools

One key opportunity for health IT is to redesign engagement tools in ways that empower patients. Many healthcare organizations and technology vendors are already aggregating and transmitting data; however, patients need access to the right data in a format designed for their user experience. The goal is not just to dump data, but to engage patients to "own" their health. However, the industry needs to innovate in significant ways to overcome two immediate challenges:

- Patient portals are slow to gain traction among patients.
- Reimbursement for patient engagement tools (e.g., telemedicine, remote patient monitoring, etc.) is still in a nascent stage.

#### Utilization of engagement tools

With the ubiquity of smartphones and internet access, provider systems are harnessing mobile apps and online portals to engage with patients. These online portals include scheduling, live messaging, medication reminders, prescription fill requests, lab-result updates, billing and other services.

Additional patient engagement technologies include wearables, telemedicine and remote patient monitoring. Illustrative of the high prevalence of digital health technologies, a recent survey published by the American Hospital Association indicated that 78% of U.S. hospitals currently or soon plan to connect with patients and consulting practitioners remotely using video and other technology.8 While these technologies can reduce readmission rates, improve management of chronic conditions and increase access to care, many of these solutions lack interconnectivity. In contrast to ubiquitous but disparate digital health solutions, an integrated, central platform-based approach, interoperable with EMRs, could allow providers to curate and configure digital therapies to engage patients across all risk thresholds.

While these engagement resources exhibit substantial benefits, providers are finding that their portals and digital health tools are significantly underutilized, largely due to the fact that many patients are not aware of the technology resources that their providers offer, or in many cases patients have multiple patient portals which results in technology avoidance (e.g., too many usernames and passwords to remember, etc.). Resistance to patient portals is also a reaction to the impersonality of the communication and the impression that the clinicians are not reaching out in real time to their patients. The Medicare population especially experiences low engagement with these tools because they are not familiar with the functionality such tools provide. The generational technology gap also hinders older patients' use of smartphones to become more engaged in their healthcare.

To address low engagement issues, many provider organizations are implementing education and registration initiatives to introduce patients to engagement tools at the moment they enter the facility. Pamphlets and demonstrations are provided at initial registration to ensure that the patient is aware of and understands the benefits available via the patient portal and telemedicine resources. One chief medical information officer cited that these efforts led to a 30% increase in patient engagement.

Actionable data is true patient engagement. **Health Information Technology Expert** 

> Patient engagement resources enable providers to interact with patients beyond the traditional care setting, which can ensure that effective followup measures are taking place outside of an office visit. With more frequent contact through these nontraditional care modalities and interfaces. providers hope to improve patients' overall health and satisfaction. Significant opportunity lies in providing patients with technologies that offer actionable health information, so they can proactively avoid exposure to high-risk situations and effectively manage their acute and chronic conditions.

Respondents from provider systems want the ability to deploy targeted care plans and campaigns to keep users engaged and informed. Dynamic content and real-time notifications provide real value and help users feel more connected to care. For example, providers want the ability to remind patients of their colonoscopy appointment and send text messages with pre-procedure

instructions to enable a successful visit to the provider office, and post procedure to see how the patient is doing (e.g., digital therapeutics). Enabling and empowering patients allows for a better digital experience by creating a sense of personalized care as well as better outcomes and success of the care management plan. While nothing replaces a physician calling a patient for follow up, which is rare, we must remember healthcare comprises highly people-oriented interactions. A digital experience that advances a patient through steps in a visit, process or follow up presents to patients a personalized experience that's tailored to their specific needs, thereby imparting to the patient that their provider really understands and cares about their health outcome.

In addition to care providers, insurance payers seek technology that enables them to communicate with members around their health plans and encourage members to fulfill their responsibility to achieve care plan goals. The various constituents in the healthcare ecosystem find value in operating on a single framework or platform to ensure that information is available, reliable and actionable. Through this platform-centric approach, the goal is for payers, providers and patients to get timely access to information to generate operational efficiencies and drive more engagement. Real-time information will increase self-service engagement, thus decreasing the overall cost to serve the patient base and operate profitably.

These engagement tools exhibit significant potential, but while usage is increasing, it still is not at an optimal rate. One chief medical information officer stated that patients who are "worried well" and "aspiring well" are and will continue to pave the way in terms of engagement tool use. As the more complex case patients observe the benefits of these tools, their adoption will subsequently follow.



#### Reimbursement for patient engagement tools

Another barrier that the healthcare industry faces regarding the widespread use of patient engagement tools and technologies is that reimbursement for these services has not fully matured. There is growing interest in reimbursement for telemedicine services, remote patient monitoring, care coordination technologies and other nontraditional forms of patient interaction, but the journey to full and equal parity of reimbursement for these services is not yet complete.

While there is progress yet to be made, the Centers for Medicare and Medicaid Services (CMS) has shown significant interest in reimbursing for many of these nontraditional care delivery services. The 2019 physician fee schedule released by CMS takes significant strides toward modernizing medicine and paying for patient engagement services.9 Changes to the fee schedule include provisions for Medicare to reimburse for "brief communication technology-based service and remote evaluation of recorded video and/or images submitted by an established patient." Similar to other CMS innovations, once Medicare adopts a provision, commercial health plans tend to follow suit. This could likely happen for patient engagement services.

# **Empower patients through** data ownership

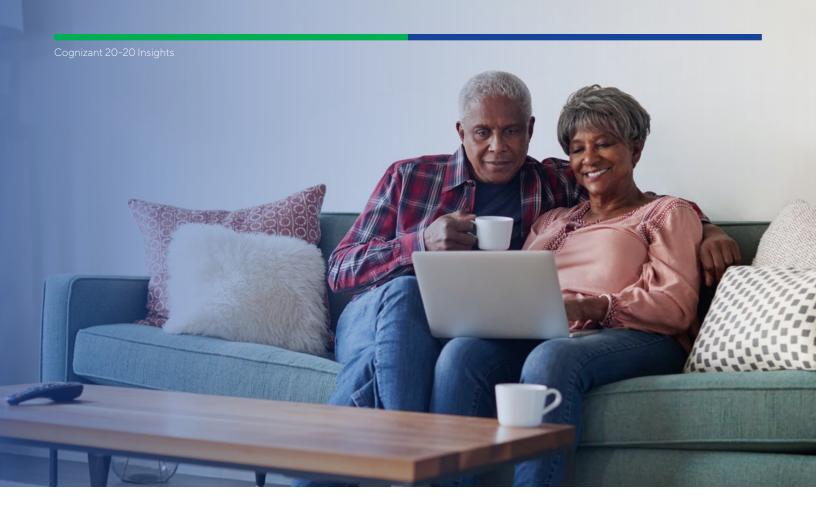


A key element to addressing consumerism in healthcare is empowering patients to take ownership of their health data, which will contribute to significantly improved and informed healthcare decision-making for both patients and providers. Patients are then capable of sharing their data with whichever healthcare stakeholders or providers they choose. However, current regulation and the atmosphere around data privacy in society today make this form of data sharing difficult. Significant challenges regarding empowering patients through data ownership include:

- Controversy over who has the right to access and transmit data.
- Asymmetry of power that exists among patients and providers.

#### **Data access**

It is widely acknowledged that leveraging data to support healthcare decisions provides significant value. Challenges, however, stem from the fact that both patients and providers often do not have this data to inform the provision of healthcare. Regulations like HIPAA often create barriers to seamless transmission of relevant information between disparate entities. If separate providers use different EMRs, then little to no transmission of medical information occurs because of a lack of interoperability. For example, when a patient receives care at one hospital or health system and later receives care at another hospital or health system, the data gathered on the patient at the former location frequently is not transferable to the latter. This lapse in data-sharing institutes a gap in care coordination because the "wheel is reinvented" at the new care delivery site, often resulting in higher healthcare costs through



repeated medical tests or more intensive patient evaluation due to lack of current medical record information.

Opportunity lies in empowering patients to take ownership of their data by offering technology solutions such as apps, web portals and other interfaces that allow data to be stored in a personal repository and transferred to each healthcare provider the patient desires. This data aggregation would help paint a complete patient profile that could shape and inform the care received, thus creating a patient-centric approach to care delivery.

#### **Power asymmetry**

High-quality care requires that all parties actively engage in creating positive and lasting health outcomes. Healthcare today is often driven by providers; patients become injured, ill or mismanage their chronic condition and expect providers to "fix" them, thereby relinquishing their "power." This power asymmetry often leads to inefficient and uninformed care. Technology and digital health solutions address this issue by allowing patients to own their health, own their data, become more engaged and interact with the provider in unique ways.

You want an informed, educated, empowered patient who is given the technological tools to shape their own health course.

**Health System Executive** 



## Provide greater price transparency

One issue that riddles the healthcare industry is the lack of price transparency. This creates immense barriers to promoting an informed, engaged and aware patient population. Patients' desire to gather intel and make informed, cost-effective healthcare decisions is growing, but the resources to enable them to access this relevant information are lacking. Significant challenges regarding price transparency include:

- An increase in high-deductible health plan (HDHP) prevalence causes patients to become more sensitive to healthcare costs and often to delay care.
- Convergence between payers and providers is still in the beginning stages.

#### **Increase in HDHPs**

The increased prevalence of HDHPs subsequently increases the patient-pay portion of medical bills. As a result, patients have become increasingly sensitive to the cost of care. According to a 2018 consumer survey conducted by Leavitt Partners, 32% of respondents stated they are very concerned about their ability to pay medical bills not covered by insurance, and 23% conveyed they are somewhat concerned. These numbers have increased by 7% percent and 4%, respectively, since 2017.

Several healthcare "shopping tools" are available, but the industry faces two issues that have hindered the usage of these resources: (1) providing patients with accurate prices for medical services in the current regulatory environment is extremely difficult,10 and (2) patients are significantly underutilizing the solutions that are available.<sup>11</sup>

As the adoption of value-based care continues to increase, price transparency will likely become more of a reality. This will enable provider organizations to market more accurate prices

and quality metrics to patients.<sup>12</sup> However, this marketing of prices and outcomes will not significantly impact the healthcare industry unless patients utilize the information made available to them to make informed decisions about their health. Patients are simply underutilizing these services, again, largely due to a lack of awareness and understanding. There is a substantial need to educate patients about these price-comparison tools — how to use them, how to interpret them, etc. Doing so could contribute to improved quality and lower healthcare costs. As patients use these tools more frequently as consumers of healthcare, they will be able to "shop around" and price-compare various procedures, therapies, treatments and pharmaceuticals as well as price variances in sites of care.

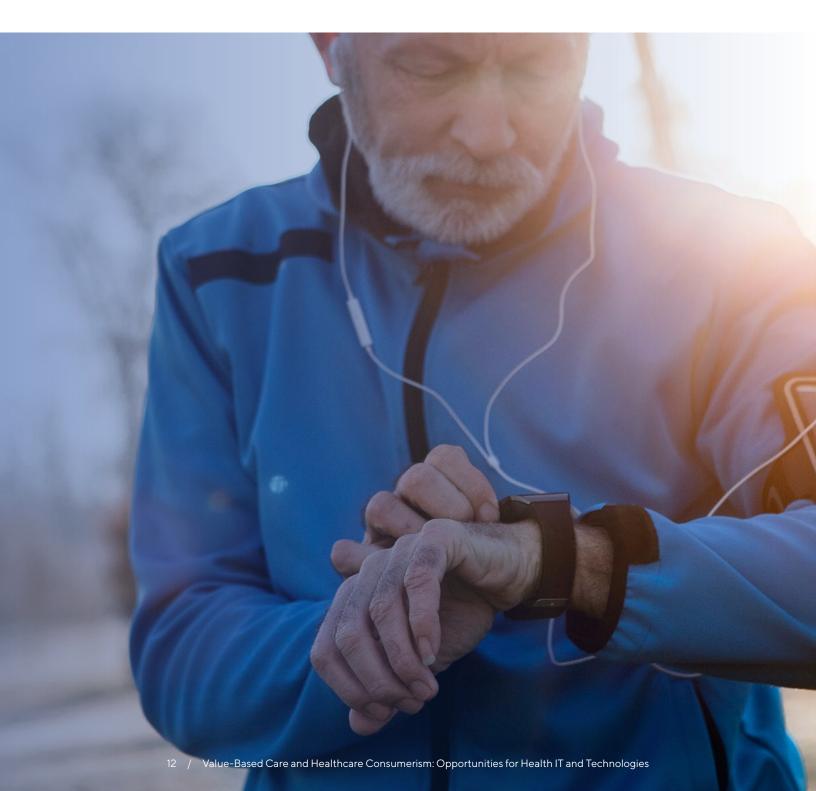
#### Convergence between payer and provider

Consumerism calls for convenient, functional highquality services. A payer-provider convergence is required to deliver on these expectations. An empowered patient-consumer market demands effective personalized care that is corroborated holistically among industry operators. This "ecosystem approach" requires that organizations bring together disparate sources of information to create an integrated view across payers, providers and consumers by orchestrating engagement, insights and services.

Payers and providers often have aligned incentives, which would ideally increase price transparency; but that is often not the case. Providers benefit from concealing their prices when contracting with payers, which contributes to patients' inability to receive prices for various procedures or sites of service. Finding a win-win contractual relationship between payer and provider in the quality-based contracting environment has proved to be challenging.<sup>13</sup>

Technology solutions, such as improved patient engagement tools and efficient data exchange platforms, can play a significant role to facilitate this convergence, enabling it to occur effectively, with added focus on a patient-centered model of care. These digital health technologies can help solidify and deepen the patient relationship with both

providers and payers and align incentives across stakeholders to promote improved transparency. Bringing all disparate parties together to interact on a consolidated, integrated platform with the consumer at the center presents a substantial opportunity for the industry, which can contribute to higher-quality, lower-cost care.



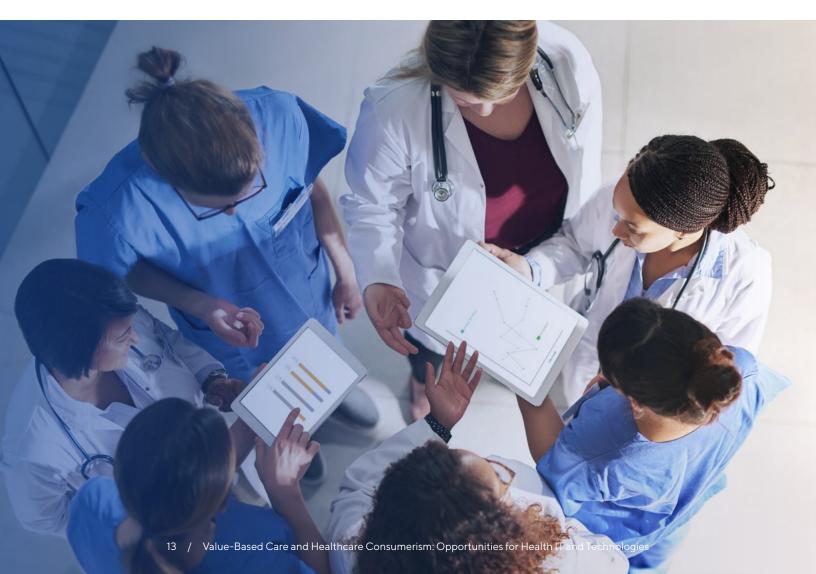
# Looking ahead

The U.S. healthcare system is undergoing a transformation similar to the ongoing digital revolution that has changed traditional business models and empowered consumer engagement in multiple industries. As the healthcare industry continues to shift to value-based care and as consumerism surges, investments in digital health and technology solutions will become increasingly important and prolific.

More specifically, as more hospitals and health systems shift to risk-based payment models, liberate and leverage healthcare data, develop better tools to stratify and predict impactable risk, and generate real-time actionable insight, these priorities become essential for future financial

viability and success. Similarly, as patients become more engaged consumers of healthcare, providers will continue to reevaluate how they interact with patients by improving patient engagement tools, empowering patients through data ownership and providing greater price transparency.

Ultimately, as organizations across the healthcare ecosystem adapt and, in many instances, converge to thrive in the emerging patient-centric, value-based healthcare system, technology that facilitates connectivity between disparate stakeholders, including patients, payers and providers, will be a foundational cornerstone that enables high-quality, cost-effective care.



# Methodology

Findings in this issue brief are the culmination of both primary and secondary research conducted by Leavitt Partners, a health intelligence consulting firm founded by former Secretary of Health, Gov. Mike Leavitt. Primary research featured a series of 12, 60-minute interviews with key executive decisionmakers at influential hospitals and health systems throughout the U.S. in November and December 2018. Interviewees included chief information officers, chief medical information officers, chief strategy officers, chief operating officers, etc. Secondary sources that informed the issue brief findings have been cited throughout the document.

# **Endnotes**

- "What is Value-Based Healthcare?" New England Journal of Medicine (NEJM) Catalyst, Jan. 1, 2017, https://catalyst.nejm. org/what-is-value-based-healthcare/.
- Leavitt Partners Intelligence Interviews, December 2018.
- "OCR Requests Information from Stakeholders on Significant Changes to HIPAA Rules" The National Law Review, December 20, 2018, www.natlawreview.com/article/ocr-requests-information-stakeholders-significant-changes-tohipaa-rules.
- Leavitt Partners Intelligence Interviews, November 2018.
- Leavitt Partners Intelligence Interviews, December 2018.
- Sy Mukherjee, "FDA clears the first-ever mobile app to treat alcohol, marijuana, cocaine addiction," Fortune, September 14, 2017, http://fortune.com/2017/09/14/fda-alcohol-marijuana-cocaine-mobile-app/.
- Leavitt Partners Intelligence Interviews, December 2018.
- "Factsheet Telehealth" American Hospital Association, 2018, www.aha.org/system/files/2018-04/fact-sheettelehealth-2018.pdf.
- "Final Policy, Payment, and Quality Provisions Changes to the Medicare Physician Fee Schedule for Calendar Year 2019."  $Centers for Medicare and Medicaid Services (CMS), November 2018, \\www.cms.gov/newsroom/fact-sheets/final-policy-newsroom/fact-sheets/final-p$ payment-and-quality-provisions-changes-medicare-physician-fee-schedule-calendar-year.
- 10 "Health Care Price Transparency: Can It Promote High-Value Care?" The Common Wealth Fund, 2019, www.commonwealthfund.org/publications/newsletter-article/health-care-price-transparency-can-it-promote-highvalue-care.
- Austin Frakt, "Price Transparency Is Nice. Just Don't Expect It to Cut Health Costs." New York Times, December 2016, www.nytimes.com/2016/12/19/upshot/price-transparency-is-nice-just-dont-expect-it-to-cut-health-costs. html?module=inline.
- <sup>12</sup> "CMS Finalizes Changes to Empower Patients and Reduce Administrative Burden." Centers for Medicare & Medicaid Services (CMS), August 2018, www.cms.gov/newsroom/press-releases/cms-finalizes-changes-empower-patients-andreduce-administrative-burden.
- 13 Christopher J. Donavan. "Six Key Investment and Strategic Themes from Payer-Provider Convergence Deals." The National Law Review, June 2018, www.natlawreview.com/article/six-key-investment-and-strategic-themes-payer-providerconvergence-deals.



## **About Leavitt Partners**

Leavitt Partners is a healthcare intelligence business. The firm helps clients navigate the evolving role of value in healthcare by informing, advising and convening industry leaders on value market analytics, alternative payment models, federal strategies, insurance market insights and alliances. Through its family of businesses, the firm provides investment support, data and analytics, member-based alliances and direct services to clients to support decision-making strategies in the value economy. For more information, visit leavittpartners.com.



#### **About Cognizant Healthcare**

Cognizant's Healthcare Business Unit works with healthcare organizations to provide collaborative, innovative solutions that address the industry's most pressing IT and business challenges — from rethinking new business models to optimizing operations and enabling technology innovation. A global leader in healthcare, our industry-specific services and solutions support leading payers, providers and pharmacy benefit managers worldwide. For more information, visit www.cognizant.com/healthcare.

## **About Cognizant**

Cognizant (Nasdaq-100: CTSH) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 195 on the Fortune 500 and is consistently listed among the most admired companies in the world. Learn how Cognizant helps clients lead with digital at www.cognizant.com or follow us @Cognizant.

# Cognizant

#### **World Headquarters**

500 Frank W. Burr Blvd. Teaneck, NJ 07666 USA Phone: +12018010233 Fax: +12018010243 Toll Free: +1888 937 3277

#### **European Headquarters**

1 Kingdom Street Paddington Central London W2 6BD England Phone: +44 (0) 20 7297 7600 Fax: +44 (0) 20 7121 0102

### India Operations Headquarters

#5/535 Old Mahabalipuram Road Okkiyam Pettai, Thoraipakkam Chennai, 600 096 India Phone: +91 (0) 44 4209 6000 Fax: +91 (0) 44 4209 6060

© Copyright 2019, Cognizant. All rights reserved. No part of this document may be reproduced, stored in a retrieval system, transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the express written permission from Cognizant. The information contained herein is subject to change without notice. All other trademarks mentioned herein are the property of their respective owners.