

Where Do We Need to Focus Future Healthcare Technology Investments?

KLAS DIGITAL HEALTH Investment SYMPOSIUM

KLAS convened its first annual investor conference, The KLAS Digital Health Investment Symposium, in Park City, Utah on September 27 and 28, 2017. The intent of this white paper is to give corporate development firms and investors an idea of the major challenges in healthcare and provide ideas for possible solutions and areas for investment so that current challenges can be mitigated.

Symposium Objectives

- To convene some of healthcare's most influential and innovative thinkers from a unique ecosystem.
 - Attendees included healthcare providers, healthcare payers, corporate development firms, and representatives from private equity firms, venture-capital firms, digital-health companies, health-system-incubator companies, analyst firms, and investment banks.
- To explore the biggest challenges in healthcare and uncover solutions that will lead to meaningful change.
- To align capital with innovative companies and health systems to encourage solving some of healthcare's most challenging problems.

Top Three Identified Healthcare Challenges

1. Payment-model challenges, ranging from uncertainty about the future to difficulty straddling both the fee-for-service and value-based care worlds. The most striking theme was the lack of alignment between current payment structures and expected clinician behavior.
2. Interoperability and integration also encompassed many challenges, including data ownership, stagnant development due to lack of data access, care-coordination difficulties, and a lack of outcomes.
3. Lack of patient engagement through education, wellness initiatives, and data ownership emerged as a top challenge. Additionally, data acquisition, specifically difficulty making acquired data actionable on both an organizational level and an individual-physician level, was brought up as a challenge standing in the way of true care-delivery transformation.

Top Three Identified Healthcare Solutions

1. Participants favored an open-system mentality in terms of interoperability and even suggested providing financial incentives for moving to this model. There is a big opportunity for corporate development firms and investors to put companies together to drive consolidated, integrated solutions.
2. Participant suggestions for addressing misaligned payment incentives included incentivizing healthcare consumers through better health plans, taking steps to move out of the fee-for-service world, and timelier payer payments for appropriate care.
3. Participants noted a need for improved physician education about acquired patient data, how to use that data, and what data is actionable. Additionally, physicians would like to infuse the insights into the physician workflow.

Discussion Summary

Participants discussed population health, value-based care transformation, the current state of revenue cycle, and the impact that value-based care will have in this space. Additional discussion emerged around understanding the full picture of healthcare costs, including how health systems are trying to understand cost, patient engagement, wellness, and telehealth. Finally, the need for data aggregation and artificial-intelligence tools to inform business decisions and provide impactful insights was an important topic of discussion.

Key Findings from Pre-Symposium Poll

One of the key objectives of the symposium was to discuss the biggest challenges that healthcare is facing today. To uncover these challenges, KLAS conducted a straw poll with attendees in preparation for the symposium. KLAS asked participants to list the top three challenges that they perceive healthcare organizations are facing and trying to solve. The results were then used to guide roundtable discussions during the event.

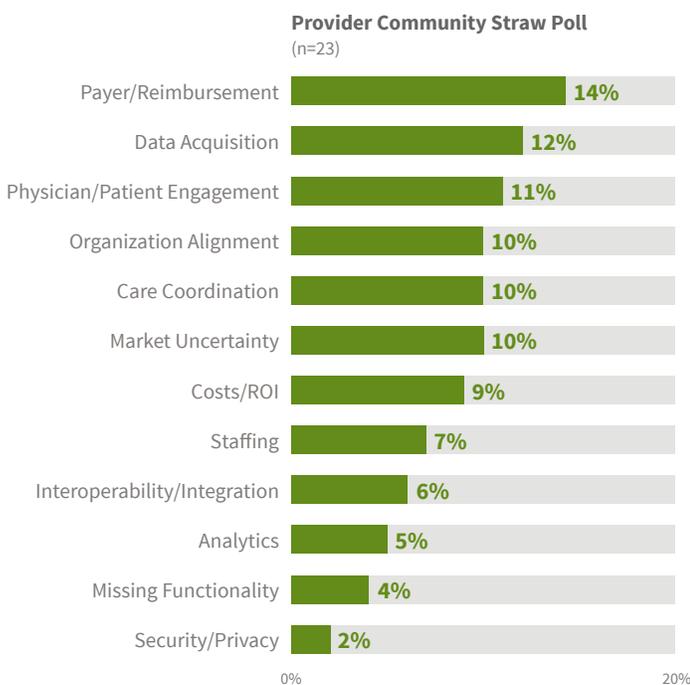
In this preliminary poll, KLAS learned that providers and others (e.g. healthcare payers, private equity firms, investment banks, etc.) see similar problems as being key barriers to the current and future success of the healthcare industry. However, each group prioritized these challenges differently. Providers were most concerned with navigating relationships with payer organizations and reimbursements, data acquisition, aggregation of clean data across multiple EMRs and other data sources, and accessing needed analytics to make use of aggregated data. One provider executive described the challenge: *“Artificial intelligence is the future, but before we can get to artificial intelligence, we need to write predictive and learning algorithms. But before we can write the algorithms, we have to have the data normalized and aggregated.”*

While these challenges were of interest to the investor/vendor community, they were lower priorities and were mentioned less frequently. Yet, both groups agreed on the importance of challenges surrounding physician/patient engagement. Leadership from both groups reported that getting physician buy-in, adopting tools, and changing behaviors are challenges. On the patient engagement side, compliance remains a puzzle. One provider executive commented, *“Just because I prescribe something does not mean that the patient will take it.”* Furthermore, getting patients to engage in their own health and wellness is still a mountain the industry must scale.

Care coordination was the most frequently reported challenge on the investor side, though most investor respondents listed care coordination as their second- or third-biggest challenge. Still, the need for the healthcare industry to improve the communication and coordination of care for a patient was pervasive. Providers validated this concern further by pointing to the need for improved workflows, evidenced-based guidelines, and patient-care coordination.

Top Challenges Reported by Providers and Investors/Vendors

What are the **top three** challenges healthcare organizations are facing today?

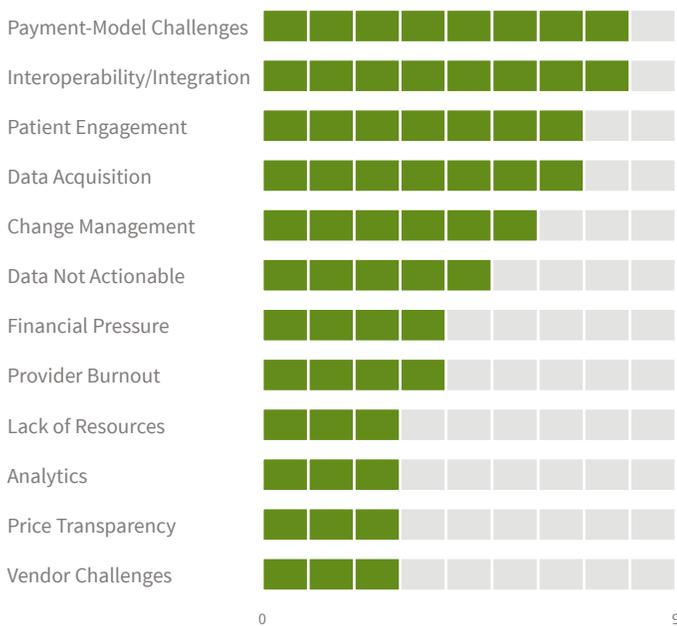


Group Discussions: Top Challenges in Healthcare

During the symposium, members of the provider and investment communities were divided into nine groups for a roundtable discussion about industry problems. The goal of this exercise was to consolidate each community's challenges and brainstorm solutions to help alleviate these problems. Each table was asked to provide a list of what they view as the most pressing challenges in healthcare.

Top Challenges

Number of groups that identified an area as a top challenge (Out of 9)



The two most frequently mentioned topics were payment-model challenges and interoperability/integration, with all but one group identifying these two areas as primary pain points. A myriad of payment challenges were mentioned; these ranged from uncertainty about the future to difficulty straddling both the fee-for-service and value-based care worlds. The most striking theme was the lack of alignment between current payment structures and expected clinician behavior. As an example, one provider shared that some physicians at the provider's organization were unwilling to look at wound-care pictures provided by nurses because of the inability to bill for that work. One group of participants shared that, *“Until reimbursement is changed, the adoption of new workflows and technology won't drive change.”*

The second major area of discussion, interoperability and integration, also encompassed a number of challenges, including data ownership, stagnant development due to lack of data access, care-coordination difficulties, and a lack of outcomes. Providers discussed how difficult it can be to make decisions without adequate access to information about a patient. Interoperability has been an industry-wide

problem for years, and KLAS' research indicates that few organizations today have achieved true interoperability. Unfortunately, as both the provider and investor communities pointed out, this is negatively impacting care delivery on a very broad scale: *“Great opportunities exist for innovation,”* one group explained, *“but if we don't have interoperable access to data sources, that mutes the innovation in big ways.”*

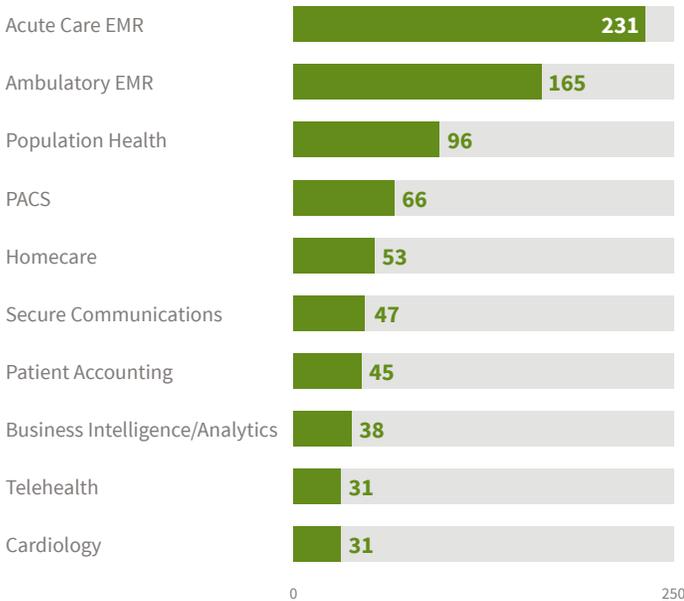
A lack of patient engagement (e.g. through education, wellness initiatives, and data ownership) and data acquisition were the next challenges on the list. Both were identified as key challenges in the pre-symposium participant poll. In the case of data acquisition, difficulty making the acquired data actionable on both an organizational and an individual-physician level was brought up as challenge standing in the way of true care-delivery transformation. From a technology perspective, both providers and investors said IT systems need the ability to *“frame knowledge at the point of care”* as well as put *“actionable data in the right hands and at the right time”* to truly affect patient care and drive outcomes. Additionally, providers desire more guidance on how to use data they have. According to one provider, *“Data by itself is meaningless. Genomic creates a ton of data, but we don't know what to do with that data.”*

The final major theme discussed by over half of the groups was the need for change management within healthcare organizations themselves. Beyond incentive/reimbursement alignment, a cultural shift needs to take place within healthcare. Individual departments and caregivers must feel connected to the mission of delivering value-based care and take individual responsibility for moving the needle. Participants felt that success in a value-based world will hinge on whether this cultural change takes place.

Group Discussions: Top Challenges in Healthcare Continued

Where Are Providers Making Investments?

Number of decisions in top 10 most frequently mentioned market segments



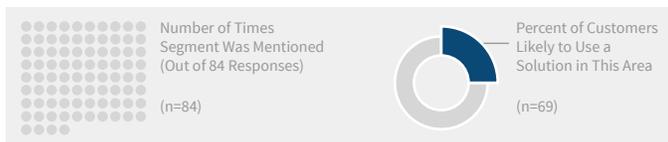
One barrier to this change is a growing disconnection between the IT staff and clinicians. Participants suggested addressing this challenge sooner rather than later. Ultimately, successful change management will hinge on “*accountability, transparency, and a willingness to look deeply at data discrepancies.*”

Financial pressure, provider burnout, a lack of resources, analytic gaps, a lack of price transparency, and challenges with IT vendors were also identified as challenges, though they did not dominate the discussion in most groups.

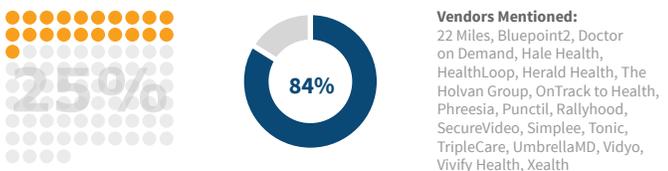
The identification of the challenges discussed above as key issues in the healthcare industry are further validated by healthcare provider buying energy. Since the beginning of 2017, KLAS has tracked provider-purchase decisions in roughly 100 segments. The top 10 areas where providers are making investments are geared toward addressing interoperability, financial, analytics, and care coordination/communication concerns.

Additionally, KLAS has been conducting research in October 2017 to find out which emerging vendors and technologies have caught provider organizations’ attention and are gaining mindshare (see [Emerging Companies 2017](#) for more details). The vendors identified in this report are also focused on addressing key challenges around patient engagement, the use of data, and improving the physician experience.

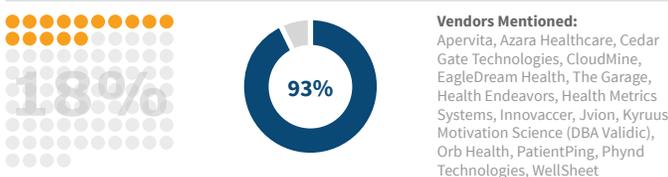
Most Mentioned Market Segments



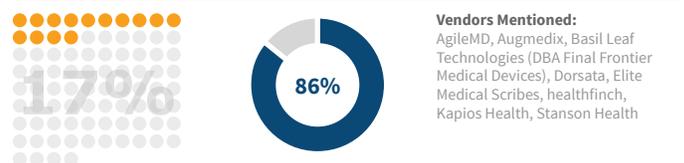
Patient Engagement/Experience



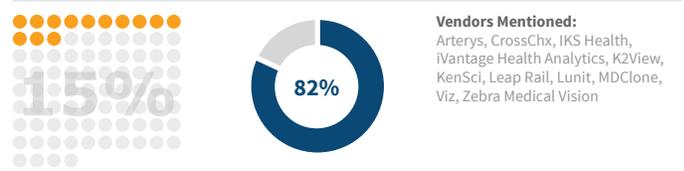
Population Health



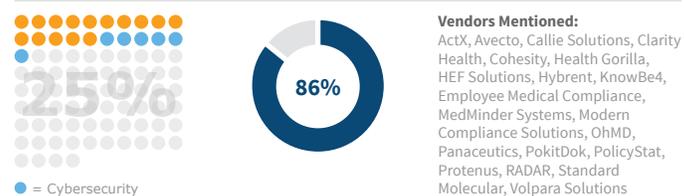
Physician Experience



Artificial Intelligence/Business Intelligence



Other



Other Market Segments Mentioned:

- Cybersecurity
- Data Migration
- ERP
- HIE
- HR Compliance
- Mammography/Imaging
- Medication Management
- Patient Access
- Precision Medicine
- Secure Communications Platforms

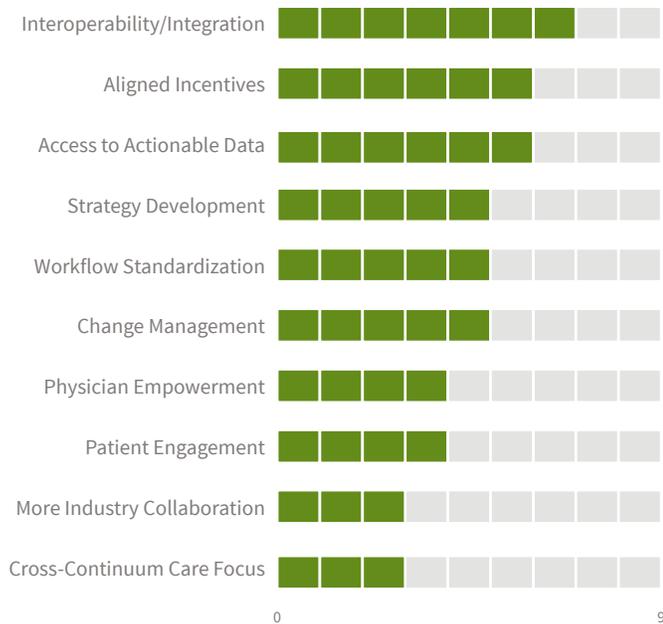
Chart is from the *Emerging Companies 2017* report, October 2017.

Group Discussions: Solutions to Top Challenges in Healthcare

After discussing the top challenges, groups were asked to discuss and create a list of the primary solutions and areas of focus that will help mitigate pain points. Some of the suggested solutions will require broader industry changes; others can be implemented by individual health systems with support from healthcare IT vendors and the investment community.

Top Solutions

Number of groups that identified an area as a solution (Out of 9)



Perhaps unsurprisingly, interoperability and the need for aligned payment incentives emerged as the two most pressing areas of focus. Participants favored an open-system mentality around interoperability, and one group even suggested providing financial incentives for moving to this model. Additionally, success in this realm will require healthcare organizations to build their infrastructure “*in effective ways to prepare to receive critical data when it comes in.*” Moving beyond providers, one group saw the opportunity for investors to help move the industry in the right direction: “*Investors often see companies form and dream up optimistic tools. We don’t need more tools; we need to drive consolidated, integrated solutions. . . . There is a big opportunity for investors and [corporate development firms] to put companies together to do this.*”

Participant suggestions for addressing misaligned payment incentives included incentivizing healthcare consumers through better health plans, taking steps to move out of the fee-for-service world, and timelier payer payments for appropriate care.

Participants also felt that additional focus on providers’ access to actionable data could benefit the industry. While it was not the most frequently discussed topic, the depth of discussion in this area underscores its importance. One of the ways through which improvements could be made is better physician education and use-case training. One group recommended “[i]mproved/reformed medical education for providers to understand what data they receive, how to use it, and how to focus on actionable pieces that directly affect patient care.” Another group added that providers “tend to get overwhelmed now with data coming in. How do we manage that and provide education for providers?” Groups agreed that one of the first steps organizations can take is to move beyond simply reporting measures: “*There has to be an action item associated with the actions that we measure and report on.*”

The key to making data actionable is making sure that the data and associated action steps are part of the physician workflow. One provider explained that “*just having insights is not enough. We have to infuse the data into the workflow.*” Workflow standardization was put forward by just over half of the groups as a solution to actionable data challenges. Additionally, it was suggested that standardizing workflows could help keep costs down and improve care coordination across the continuum.

Another solution to the challenges put forward primarily by the investor community was more robust value-based care strategy development. One participant recommended that healthcare organizations shouldn’t “*try to bite off everything. . . . Look for use cases and understand the problem. Develop the strategy first and adopt the tools second.*” In order to help develop strategy, groups suggested being more open to new technologies, open-market ideas, going outside organizations’ delivery networks, and leveraging experts outside of healthcare. Starting in a small, targeted area, such as an individual department, or with a specific disease was also mentioned as an effective way to develop and grow strategies.

Group Discussions: Solutions to Top Challenges in Healthcare Continued

Here again, participants pointed to change management as essential to the success of any strategy. Engaging clinicians in what they can control, giving all stakeholders a voice, clear communication of expectations, and the use of physicians as key influencers within an organization were all suggestions that groups put forward as ways to ensure successful change management.

More physician empowerment, patient engagement, broader industry collaboration, and a focus on nonacute-care delivery across the continuum were also identified as possible solutions to key healthcare challenges.

Summary

The intent of the symposium was to bring together some of healthcare's most influential and innovative thinkers to explore the biggest challenges in healthcare and uncover possible solutions that will lead to meaningful change.

We would like to extend a special thanks to the approximately 100 thought leaders representing healthcare providers, healthcare payers, corporate development firms, and representatives from private equity firms, venture-capital firms, digital-health companies, health-system-incubator companies, and investment banks.

Alignment Healthcare	GetWellNetwork	Pieces Technologies
Ascension Ventures	HBI Solutions	QGenda
Avizia	Health Catalyst	R1 RCM
Bain Capital Ventures	Hellman & Friedman	Regence BlueCross BlueShield of Utah
Blue Cross Blue Shield of Michigan	IBM Corporation	Sandbox Industries
Carevive Systems	Intermountain Healthcare	Seaport Capital
Carolinas HealthCare System	Kaiser Permanente Ventures	Siemens Healthineers
Change Healthcare	KLAS	Stanford Health Care
CHSO	Kyruus	Susquehanna Growth Equity
Cimarron Healthcare Capital	LLR Partners	swyMed Inc.
Cleveland Clinic	LogicStream Health	Symphony Technology Group
Conifer Health Solutions	Long River Ventures	TCV
Deerfield Management	Marwood Group	Thomas Jefferson University and Jefferson Health
Doc Halo	McKesson Ventures	Trinity Health
Empiric Health	Merck Global Health Innovation Fund	TripleTree
Evariant	MModal	TVR Communications
Flare Capital Partners	NAVICAN	Varagon Capital Partners
Flexpoint Ford	New Mountain Capital	Verge Health
Fort Drum Regional Health Planning Organization	Noro-Moseley Partners	VigiLanz
Frontier Capital	Nuance Communications	Vocera Communications
GE Ventures	Nucleus Health	VYNE Corp.
General Atlantic	NucleusHealth	WCAS

The intent of this white paper is to point corporate development firms and investors to the major challenges and solutions that emerged as key findings from the symposium.

