Managing the Convergence of Healthcare and Technology

Executive summary

Health IT adoption and spending trends indicate unprecedented convergence of healthcare and technology. As the industry transitions to risk-sharing, value-based care models, technology proves the only way to scale care delivery, coordination and management for an increasing patient population, decreasing workforce, and amounting pressure to reduce costs. Breaking down the key concerns for providers and payers - supported by global research from the HIMSS Analytics Database®, Validic leverages data-driven methodology and healthcare executive surveys to forecast this year's top four trends.

- Spending in the health IT market is shifting from large capital investments in electronic health records (EHRs) and associated hardware to more software as a service (SaaS) and cloud-computing services – including population management and engagement, clinical and business intelligence, and telemedicine solutions.

- The primary focus for most population health initiatives centers on chronic disease management and wellness/preventative health programs leveraging remote monitoring and continuous engagement features.

- Clinical and business intelligence solutions are slowly becoming vital and significant tools for providers, who are increasingly leveraging this technology for personalized treatments and precision medicine.

- There is an up-tick in adoption of telemedicine – specifically those that enable two-way audio and visual communication – and patient portals as providers continue to address concerns around patient access and filling gaps in patient care.

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Featuring industry research by

HIMSS Analytics

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President & Co-founder
Validic

The evolution of the healthcare landscape – from volume to value

For the most part, all healthcare stakeholders are embracing or at least accepting technology's growing role in care. But the question remains, how quickly will this use of technology help to effectively transition healthcare to a value-based care system.

A variety of factors are signaling an intensified adoption of digital technologies in healthcare:

Patients are demanding more. "Patient expectations for care are changing and that is forcing the industry to change," said Ryan Beckland, President and co-founder of Validic. "There is increased competition for patients, particularly among brick-and-mortar providers. And, the way that competition is manifesting itself is in the provision of advanced technology such as digital health services, apps and telehealth solutions. Healthcare stakeholders can evolve or risk losing patients to competition."

Remote technologies are maturing. As devices continue to become more sophisticated, their role and relevance in the clinical space is exponentially increasing – especially with regard to wearable technologies. These devices provide care teams with real-time or daily aggregated insights into a patient's health, history and/or routine outside the provider setting - where 90% of the patient's activities take place.

Interoperability and data access are top priorities. "This year, we are going to see a greater focus placed on truly tackling interoperability and data-access challenges in healthcare," Beckland noted. "The days of band-aids and workarounds are disappearing. There are companies solving these issues, and we are going to see a ramp up in spending for the tools needed to create a more connected care system."

And, perhaps most importantly, payment models are shifting. As risk continues to shift to providers and internal incentivize models promote better outcomes, payer reimbursements are forming around remote services. CMS announced reimbursement codes for remote services and telemedicine early in 2016. Since, several payers have followed.

As these trends converge – and as value-based care becomes the prevailing model – stakeholders in the healthcare ecosystem are leaning on technology more than ever before. Consumers are leveraging technology to better manage their health; providers are increasing panel sizes and patient access; payers are better incentivizing populations and offering discounts; and, pharmaceutical companies are conducting remote trials and building communities around specific diseases.

"The reality is that there is no way to create a real value-based care system today without a heavy emphasis on technological solutions that provide real-time data back to various stakeholders," Beckland said.

For example, remote monitoring initiatives require providers to have fewer costly touchpoints with patients, while yielding comparable or better results than regular in-person visits. "In-home clinical devices can provide care teams with access to real-time or aggregated health data that lets them know which patients are in need of an intervention, before a negative health event occurs, and which patients are compliant and do not require an additional consultation," Drew Schiller, CEO and co-founder of Validic, explained. "Having access to the right information at the right time can enable them to take the right action."

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A change in the course of health IT spend and adoption – moving beyond the EHR

The future of technology implementations is less predictable than it has been in recent years. For several years, the meaningful use program prompted substantial investments in EHRs. These EHRs have laid "the groundwork for a digital healthcare system that can help enable value-based care," Schiller said.

With EHRs in place (and functional for the most part), healthcare organizations are exploring other technology options to fill gaps in care and manage the increasing physician workload. Moving to enhance the now ubiquitous EHR, organizations are looking to integrated or additional technology options to solve for gaps in care, patient access and engagement challenges, and ways to improve outcomes as well as the bottom-line. Other technologies are gaining sizable attention across the market, including clinical and business intelligence (C&BI), patient engagement, and telemedicine solutions.

According to the *Health IT Spending Report,* over the next five years, HIT spend in the hospital market is expected to decrease from current levels by more than $300M. This is not due to a receding health IT market – quite the opposite actually. As more organizations are acquiring SAAS and cloud-computing services, their capital IT spend is shifting to operating IT spend due to a decreased need for large capital investments such as EHRs and associated hardware. This means more investments in less expensive platforms - "expensive" as compared to the sizable investments in EHRs. They are keenly focused on bringing digital health tools into the mix to help power analytics, remote monitoring, and telemedicine initiatives.

"Healthcare CIOs have to think through the most efficient use of their current IT infrastructure to best leverage data that ultimately supports efficiency," Beckland said. "So, the way solutions are delivered will need to speak to the current challenges of access, experience, and outcomes. They will need to integrate data from outside of the four walls of the hospital and capitalize on those insights to keep patients engaged and healthy."

The future of population health, telemedicine and analytics - breaking down the growth and trends

Research from various HIMSS Analytics studies shed light on the direction of this next iteration of technology implementation – specifically with regard to population health management, telemedicine, and clinical and business intelligence solutions.

Population health management

As the emphasis on better care delivery escalates, population health management initiatives are becoming more prevalent across the industry. Organizations, regardless of size and scope, have put in place programs focusing on bettering the health of their population. In total, just over 67 percent of respondents noted having population health initiatives in place, according to responses from the nearly 200 healthcare executives who participated in the HIMSS Analytics' *Population Health Study.*

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Additionally, many organizations have established various population health programs including chronic disease management (82.6 percent), wellness and preventive health (81.8 percent), patient-centered medical homes (49.6 percent), and clinically integrated networks (47.9 percent).

"However, there have been a limited number of organizations that have implemented an alternative payment model, either an at-risk payment structure (30.6 percent) or at-risk cost structure (19.8 percent), which is essential for true population health," Brendan FitzGerald, director of research at HIMSS Analytics, pointed out.

While these programs are a dynamic step in the direction of value-based care, technology investments focused on population health still lag. This is thwarting continued and sustained progress toward improved care delivery because the right technology infrastructure is not currently in place to support scalable population health initiatives. In fact, only 25 percent of organizations with PHM initiatives in place currently use a technology-powered population health solution.

The slow uptake of such technology solutions could be attributed to the complexity of the challenge. "Population health and analytics may ultimately be the most powerful agent for change, yet these paradigms are also the most difficult to implement. The current healthcare system simply isn't set up to aggregate data across multiple health systems and patient populations, and there are not enough healthcare statisticians in place to run analytics even if the data existed," Schiller said. "It will take time, but in the future, genomic tests combined with biometrics will give providers a sense of exactly how at risk a patient is for developing a condition, and exactly what measures or pharmaceuticals that patient needs to take to remain healthy. Data scientists will not be needed, because the technology to accomplish this will be extensive."

There are a number of different areas where vendor-provided solutions are proving useful in helping organizations with the population health initiatives. The top areas for implementation, as indicated by surveyed organizations, are business intelligence/ analytics/ reporting, data warehouse/ aggregation, and patient dashboards or scorecards.

While the move from volume-based to value-based care seems to be the predominant driving factor of population health, other factors include the increase of assumed risk, growth of accountable care, and the use of digital health and telemedicine. All are encouraging healthcare organizations to continue progress on the adoption of population management solutions.

Telemedicine

Providers, of various sizes, are seriously starting to explore and implement an array of new options including telemedicine, predictive modeling, and analytics.

In fact, according to more than 275 executives who took part in the *HIMSS Analytics Telemedicine Study*, the move toward telemedicine is picking up steam. Just 23.3 percent of hospitals had a telemedicine solution in place in 2011, while 43.7 percent had one in place by the close of 2015. Now, healthcare organizations, in fact, are using a wide variety of telemedicine solutions, such as two-way video/webcam (69.6 percent), patient portals (58.6 percent), email (46.1 percent), and image-sharing technology (45.3 percent).

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Brendan FitzGerald
Director of Research
HIMSS Analytics

"These technologies fall in line with the most used telemedicine models by healthcare organizations – the hub-and-spoke model and patient portal or application-based patient engagement," FitzGerald noted. "Increased impact will occur when concierge services – eVisits, online consults, consumer-oriented consults – and remote patient monitoring into the home are more widely adopted by consumers."

The decision to implement telemedicine technology appears to be driven by a need to fill gaps in patient care. Because patient engagement and empowerment movements are taking shape simultaneously, along with the reorientation of care to provide on-demand access, there is a growing need for providers to embrace multiple approaches to deploying telemedicine technology.

"Telemedicine services are leading to a shift in the way consumers interact with the healthcare system. Telemedicine consults for routine illness take less time than face-to-face visits, and can be delivered at a lower cost to both the patient and the provider," Schiller added. "These consults also allow for on-demand care, meaning that patients may likely receive treatment diagnosis information faster than if they had to schedule an appointment or wait for hours in a walk-in clinic."

Though video visits are proving to be the most-adopted telemedicine solution, patient portals and applications are also seeing quick growth. Launching patient portals, in fact, has become the first step many organizations take in creating strategies around telemedicine and patient engagement, according to the results of the study.

Telemedicine services are becoming a significant facet of patient care and the patient experience. The five-year outlook on telemedicine, as supported by the research in this study, indicates a strong need for provider organizations to use telemedicine services and solutions to expand the level of specialized care they offer and to improve real-time communication across the organization on multiple levels.

Clinical and business intelligence

Connecting with patients and collecting data is just the start for organizations looking to achieve value via technology. To truly move forward, organizations need to better leverage data. As such, the use of clinical and business intelligence is hitting a watershed moment, as adoption of these solutions has moved from 46.2 percent in 2013 to 52.1 percent in 2015, according to responses from the nearly 200 healthcare executives surveyed in HIMSS Analytics' *Clinical & Business Intelligence Study*.

"Organizations have been on a solution adoption run and are still figuring out the best ways to use those solutions," FitzGerald explained. "Now with EHRs in place, the second phase of adoption, version 2.0, will be EHR enhancement. This is when emerging digital platforms will come into play."

Interestingly, many leaders who participated in the survey see themselves as moving up the ladder in terms of their business-intelligence utilization. However, they reported to be only moderately satisfied with the tools available to them. To help healthcare organizations adeptly leverage clinical and business intelligence, technologies will need to continue to mature and be adopted at scale, according to Beckland.

DIGITAL TOOLS DEFINED

Digital health: Connected devices, apps and wearables patients use to manage their conditions and communicate with their care providers.

Telemedicine: Bi-directional communication between a patient and a healthcare provider.

Population Health: A paradigm whereby analysis of data contributed by or collected on a large group informs large-scale efforts that decrease individual community member's health risk or improve the quality of their lives.

Remote monitoring: Collecting data from patients while they are physically outside of the health system in order to ensure they are compliant and their treatment is having the desired effect.

"One of the challenges we consistently hear about is that doctors – the people who are working directly with patients, seven minutes at a time, patient after patient, all day long – are saying that they are getting massive amounts of data, but they are not getting any information that they can actually use to improve care," Beckland pointed out. "What they need is a technology that can take all of the data and pull out information that's relevant to a particular patient and a particular time so that the physicians can improve a clinical outcome for that patient."

The current and projected growth trajectories of clinical and business intelligence software reflect a growing market adoption and utilization. According to the report, clinical and business intelligence tools will become more prevalent throughout the market as organizations continue to prove the value of harnessing data for both clinical and financial purposes. As data increases its role and relevance in addressing critical patient engagement and care management efficiencies, clinical and business intelligence solutions will continue to grow in use for predictive modeling and optimization, as well as descriptive personalized analytics and reporting.

Technology and the transition to value-based care – moving forward with new tools

Technology is the single most influential accelerant of the transition to value-based care. It is powering efficient personalized and population-level approaches to care delivery. It offers new connection points with patients via video, phone and messaging. It offers the infrastructure needed to remotely monitor patients and integrate and analyze real-time patient data. But, most importantly to the move to value-based care, technology is powering access to patients, access to care and access to new data insights.

Ultimately, healthcare organizations will need to tap into a group of technology platforms and services that enable them to effectively leverage data; a digital health platform to integrate and analyze remote patient health data; a patient portal to display this data back to a patient; an EHR to store and create a history of the data; and so on. These organizations, in turn, can fuel initiatives that will result in enhanced care experiences, improved outcomes, and reduced costs - all needed to reach the goals associated with success under value-based care models.

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About Validic

Validic provides the industry's leading data connectivity platform enabling access to personal health data from hundreds of in-home clinical devices, wearables and consumer health applications. Validic was awarded Frost & Sullivan's "Best Value in Healthcare Information Interoperability," "Top 10 Healthcare Innovating Disruptor," and "Visionary Innovation Leadership" awards. To learn more about Validic, please visit www.validic.com/contact.

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