DIGITAL HEALTH INNOVATION: Five Lessons from the Pandemic

The COVID-19 pandemic demonstrates the ongoing importance of digital health innovation in healthcare

Digital health innovation is important to hospitals and health systems, but competing priorities can shift an organization's attention and resources away from innovation. Unfortunately, that can leave healthcare organizations with gaps in their connectivity infrastructure — just when they need it the most. The COVID-19 pandemic has highlighted how important it is for healthcare organizations to have an infrastructure in place that supports innovation.

HIMSS, in collaboration with Spectrum Enterprise, conducted a three-part research series titled *Anatomy of Innovation*.[1] The purpose of the research was to identify the foundations and challenges of digital health innovation in hospitals and health systems. HIMSS conducted online surveys of more than 600 individuals employed at U.S. hospitals or health systems with 26 or more beds. Respondents were employed in a mix of IT, business/administrative and clinical functions in management or staff-level roles.

While eight of 10 respondents (79 percent) reported being engaged in digital health innovation at some level — ranging from "experimenting" and "pilot testing" to "scaling out" initiatives — fewer than one of 10 (8 percent) reported having "fully executed" on digital health innovation initiatives. Less than one-third (29 percent) said they have scaled out these initiatives enterprisewide.

These figures take on additional significance in the context of the COVID-19 pandemic: Healthcare organizations need to be ready to respond quickly in a crisis. But if the appropriate infrastructure is not in place, innovative responses to a crisis can be challenging to implement.

It's not too late for healthcare organizations to assess where they are with respect to digital health innovation and to address gaps in connectivity infrastructure. The following five lessons that emerged from the *Anatomy of Innovation* research can help organizations position themselves to meet both current and future challenges.

Lesson 1: A strong connectivity infrastructure supports innovative responses in a crisis

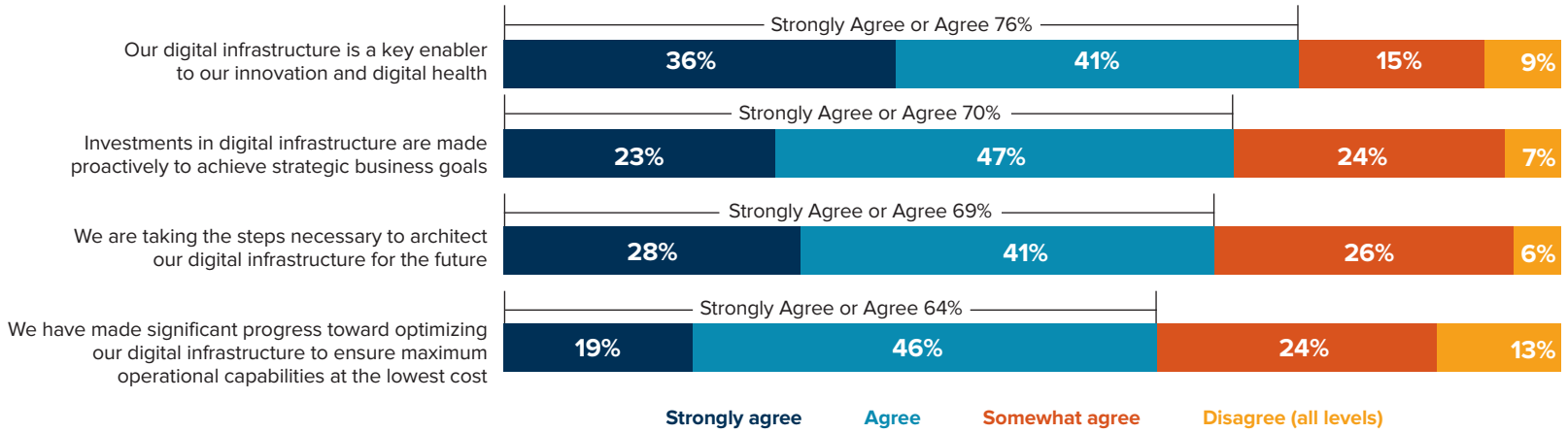
Hospitals and health systems had to make a quick pivot to telehealth services when the COVID-19 pandemic emerged.[2] One large health system experienced a 4,345 percent increase in non-urgent virtual visits between early March 2020 (94.7 virtual health visits per day) and mid-April 2020 (4,209.3 virtual health visits per day).[3]

Healthcare organizations with a strong connectivity infrastructure already in place were in a better position to shift rapidly to care delivery methods that protected patients and staff. The *Anatomy of Innovation* research found that 76 percent of organizations identified digital infrastructure as a key enabler of innovation and digital health initiatives. Yet fewer than one in three (28 percent) strongly agreed that their organization is taking the steps necessary to architect a digital infrastructure that would carry them into the future (Figure 1).

Many experts believe that patients' whole-hearted embrace of telehealth services is here to stay and will persist long after the pandemic is under control. "We will never go back to 50 [telehealth] visits a day," said one physician. "That genie's out of the bottle."[4] The implication for post-pandemic healthcare delivery is that the "new normal" will require even more types of digital health innovation and connected methods of care than existed pre-pandemic.

Hospitals and health systems that want to remain competitive in a healthcare environment that emphasizes connectivity will need to ensure their connectivity infrastructure can support a new baseline of activity. An IT project manager said, "As our technology needs rapidly increase, we are evaluating [infrastructure] scenarios to innovate more quickly."

Figure 1. Organizations are architecting for the future of digital health innovation
Please rate your level of agreement with each of the following statements as it relates to your organization.



Source: *Anatomy of Innovation: Advancing an Innovation Agenda,* conducted by HIMSS Media and sponsored by Spectrum Enterprise, August/September/October 2019.

Percentages are rounded to the nearest whole number and may not equal 100 percent.

Lesson 2: Be open to using a broad array of tools

Telehealth has been front and center as a key strategy during the pandemic. Organizations that had access to the right infrastructure and tools used a variety of strategies to deliver audiovisual telehealth services. For example, one Minnesota provider leveraged Internet connectivity to deploy web conferencing software, enabling telehealth services.[5]

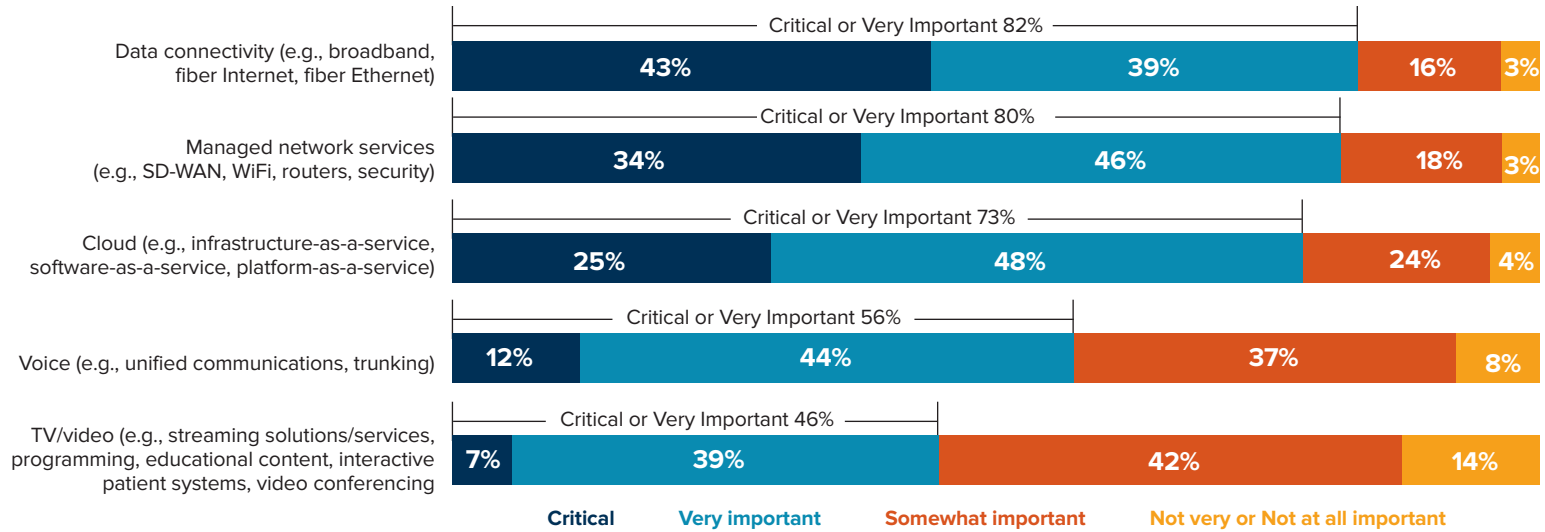
But other types of connectivity tools have come into play as well. The Occupational Safety and Health Administration (OSHA) issued guidance that suggested healthcare workers "use closed-circuit television systems to communicate with patients in an isolation area when a worker does not need to be physically present."[6] The Centers for Medicare and Medicaid Services (CMS) also issued regulatory waivers and rule changes enabling more flexibility for providers in care delivery. For example, CMS expanded Medicare coverage to include audio-only services between patients and their doctors or other clinicians.[7]

The lesson here is that having a broad range of connectivity solutions available gives organizations more agility when responding to challenges. HIMSS survey respondents identified five different types of solutions as being "critical" or "very important" to digital health innovation (Figure 2). Those solutions included: data connectivity (82 percent); managed network services (80 percent); cloud (73 percent); voice (56 percent); and TV/Video (46 percent).

Healthcare organizations that address connectivity across the entire digital ecosystem, rather than focusing on one component, are in a better position to innovate when a crisis strikes. Organizations may also benefit from working with a single vendor who offers a range of connectivity solutions. Then, when challenges emerge, organizations don't have to struggle with the additional administrative complications of coordinating innovations across multiple vendors.

Figure 2. A breadth of solutions are important to advancing digital innovation

How important are these connectivity solutions to the advancement of your digital health innovation initiatives?



Source: *Anatomy of Innovation: Advancing an Innovation Agenda,* conducted by HIMSS Media and sponsored by Spectrum Enterprise, August/September/October 2019.
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Lesson 3: Identify and address your connectivity challenges

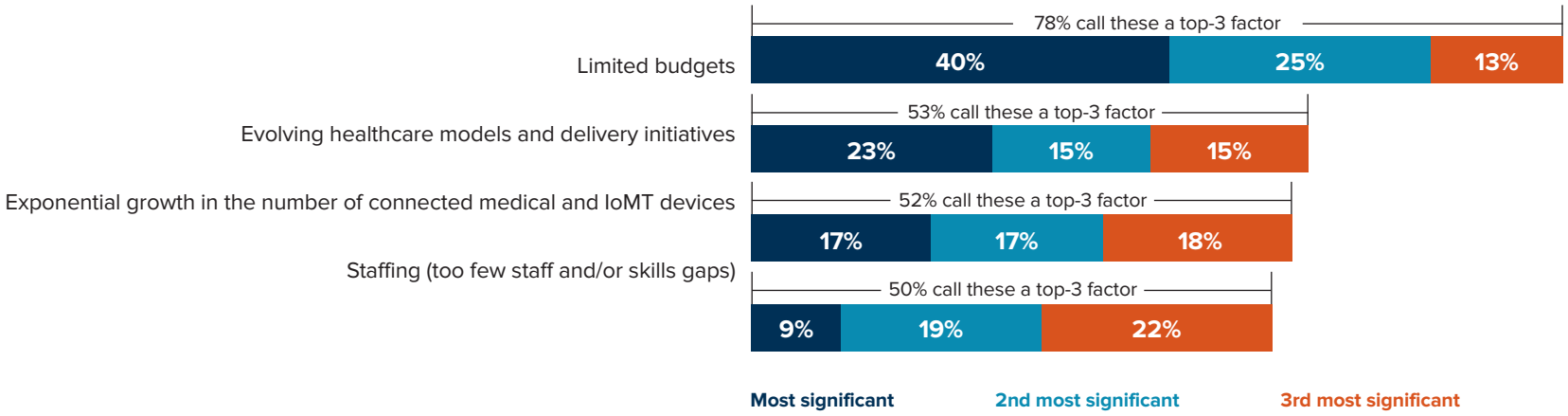
The HIMSS research found that organizations face many challenges in advancing their digital infrastructure (Figure 3). The top challenges cited by respondents included limited budgets, evolving healthcare models and delivery initiatives, exponential growth in the number of connected medical and IoMT devices and staffing (two few staff and/or skills gaps).

Many of these challenges were exacerbated by the pandemic. For example, budgets have been stretched thin as hospitals focused resources on dealing with a higher than usual volume of critical patients. At the same time, revenue-generating elective surgeries and procedures were cancelled to prevent patients from being exposed to the new coronavirus. This compounded the negative impact on hospital budgets.[8] The pandemic also fast-tracked the evolution of new healthcare models and delivery initiatives. The onset of the pandemic eliminated the possibility of deliberate, incremental change by requiring urgently needed innovation.

In an ideal world, hospitals and health systems would identify and address connectivity challenges before a crisis occurs. That's because in the middle of a crisis, short-term solutions may take precedence over strategic initiatives. As a CFO said, "The pressure of a crisis limits strategic thinking." But as the crisis eases, it will be important for healthcare organizations to proactively address digital health innovation challenges so they'll be prepared for whatever issue arises.

For some organizations, that might mean course corrections, i.e., evaluating previous plans for rolling out or updating connectivity infrastructure and making sure those plans are still relevant. Others may find themselves in "catch-up" mode: they'll need to review infrastructure changes made "in the moment" to ensure they're sustainable going forward. In either case, the right connectivity partner can be helpful in evaluating what changes need to be made.

Figure 3. Organizations are facing multiple infrastructure challenges
Which factors are the most significant contributors to your digital infrastructure challenges?



Source: *Anatomy of Innovation: Advancing an Innovation Agenda,* conducted by HIMSS Media and sponsored by Spectrum Enterprise, August/September/October 2019.

Lesson 4: Enlist the right partners

As hospitals and health systems rise to meet the challenges of the COVID-19 pandemic, they have found that engaging with the right partners is critical to success. One example at the national level is the COVID-19 Healthcare Coalition, a private-sector partnership made up of healthcare organizations, technology firms, nonprofits, academia and startups. Working together, the Coalition members are leveraging their collective expertise, capabilities, data and insights to "preserve the healthcare delivery system and help protect U.S. populations."[9]

But partnerships don't have to be only at the national level to be effective. An American Hospital Association (AHA) case study on early responses to the pandemic stated, "Getting your own hospital to think about partnerships locally, statewide and nationally is critical to the success of surviving this global pandemic and ensuring patients get the care they need."[10]

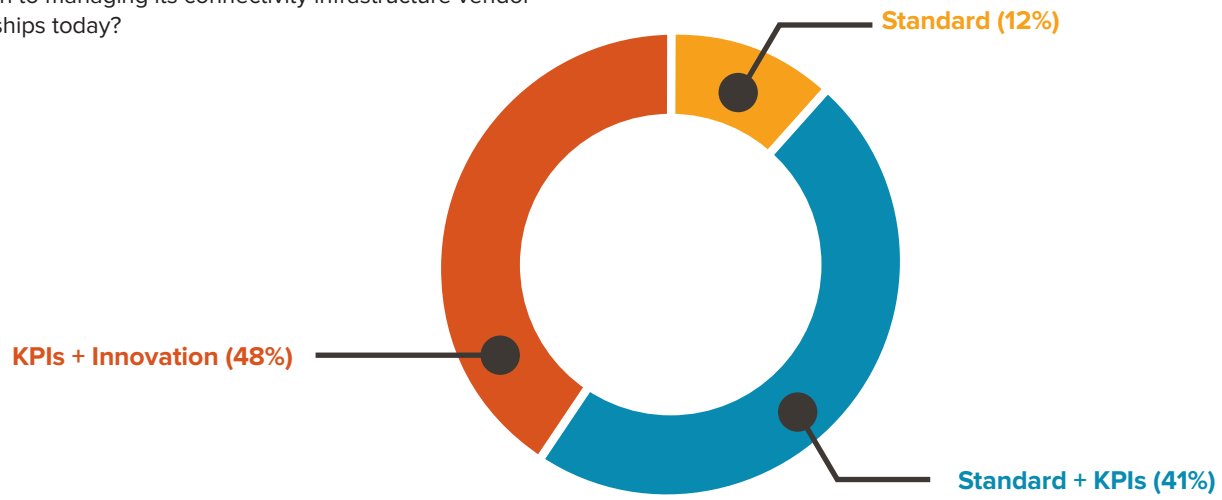
As hospitals and health systems navigate the impact of the pandemic on their connectivity infrastructures, they may find it useful to partner with a connectivity vendor.

The right connectivity partner can help healthcare organizations evaluate what types of solutions would best meet their needs not only during the pandemic, but post-pandemic as well.

In fact, the HIMSS research found that nearly half (48 percent) of healthcare organizations desire an innovation partnership with their connectivity vendor. They want a partnership that goes beyond a basic service level agreement (SLA) and includes a role for the vendor as a catalyst for innovation within the organization (Figure 4).

Figure 4. Ideal connectivity vendor relationship

What is the current reality with respect to your organization's approach to managing its connectivity infrastructure vendor relationships today?



STANDARD: Standard service level agreements (SLA) with quantitative service targets (e.g., network availability).

STANDARD + KPIs: Standard SLAs with key performance indicators (KPIs) tied to business goals.

KPIs + INNOVATION: Standard SLAs plus KPIs plus vendor also act as a catalyst for innovation within the organization.

Source: *Anatomy of Innovation: Optimizing Technology Partnerships,* conducted by HIMSS Media and sponsored by Spectrum Enterprise, October 2019.

Percentages are rounded to the nearest whole number and may not equal 100 percent.

Lesson 5: The time to invest in a strong connectivity infrastructure is now

Prior to the onset of the pandemic, hospitals and health systems were aware of the importance of digital health innovation. Seven of 10 respondents "strongly agreed" or "agreed" that investments in digital infrastructure are made proactively to achieve strategic business goals. At the same time, however, 64 percent of organizations said they were spending "too little" on connectivity solutions and services to successfully support digital health innovation initiatives (Figure 5).

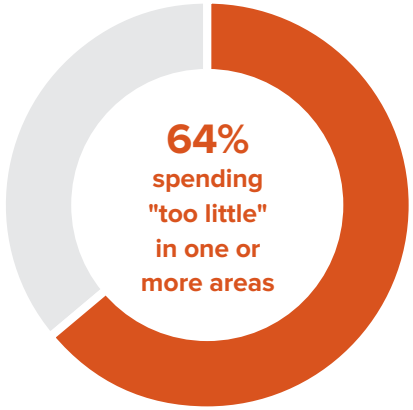
The research shows a disconnect between the perceived importance of investment in digital health innovation versus the reality of actual investment in the connectivity infrastructure that enables innovation. One of the reasons behind this disconnect is that infrastructure investments are made in the context of multiple competing IT priorities. Consequently, healthcare organizations defer investment in connectivity to address other goals.

Delaying strategic investments in connectivity infrastructure can leave an organization wanting when a crisis emerges. In the case of the COVID-19 pandemic, organizations that had a clear vision of their connectivity goals — and supported that vision with infrastructure investments — were in a better position to deploy digital health innovations to respond to the challenges brought on by the crisis.

The right connectivity partner can help organizations design and deploy reliable, cost-effective infrastructure solutions that address multiple competing priorities. That means investment in digital health innovation doesn't have to be a zero-sum game: it can be a win-win, that provides a reliable, secure, high-performance infrastructure that supports innovation priorities across the organization.

Figure 5. Organizations spend "too little" on connectivity solutions and services

How would you characterize your spending on specific connectivity solutions/services in order to successfully support digital health innovation initiatives?



Source: *Anatomy of Innovation: Advancing an Innovation Agenda,* conducted by HIMSS Media and sponsored by Spectrum Enterprise, August/September/October 2019.

Digital health innovation is more important now than ever

The COVID-19 crisis accelerated a trend that has been true in healthcare for some time: Digital health innovation is a critical strategic priority for hospitals and health systems. Even before the onset of the pandemic, healthcare organizations were leveraging digital infrastructure to improve patient outcomes, retain and attract patients, and improve the patient experience.

The rollout of connectivity initiatives in response to the pandemic has heightened the significance of these digital innovation benefits. Digital health innovation has been central to improving patient outcomes, for example, by enabling patients not infected with COVID-19 to access care safely and remotely.

With respect to retaining and attracting patients, it's likely that healthcare organizations able to demonstrate digital innovation competence will emerge from the pandemic with a competitive edge. Hundreds of thousands of patients who may previously have been reluctant to participate in innovation initiatives have now been exposed, as a matter of necessity, to innovations such as virtual visits. As a result, they'll continue to expect connectivity-based innovations as part of the patient experience.

As healthcare organizations move forward, they'll need to consider how they'll meet the challenges and opportunities of the post-pandemic healthcare world. The right connectivity partner can help hospitals and health systems prepare for the best – and worst – of times by designing and implementing a connectivity infrastructure that supports digital health innovation and ensures the organization is prepared to meet present and future challenges.

Visit Spectrum Enterprise to explore more ways your connectivity vendor can serve as your digital health innovation partner.

This report summarizes the key findings of Anatomy of Innovation, a three-part research series conducted by HIMSS, in collaboration with Spectrum Enterprise, to uncover what differentiates innovation-ready healthcare organizations from organizations that are struggling to innovate.

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