



Urgency-Driven Innovation in Healthcare

Pandemic spurs hybrid care and cloud technology momentum for a more resilient future

The healthcare industry continues to fight the COVID-19 pandemic with innovation and grit. Many organizations pivoted to allow nonessential workers to work remotely. They erected field hospitals in parking lots and converted nonclinical spaces into auxiliary ICUs to provide care to sick patients. Physicians turned to virtual visits to continue providing care. They sought out alternative suppliers for essential personal protective equipment. In a turbulent environment, a host of ingenious solutions surfaced to help bolster the healthcare system itself.

While the pandemic continues to surge in some areas, the healthcare industry is drawing invaluable lessons from these early encounters in a continuing crisis environment. Healthcare organizations must be able to withstand and become more agile for today's needs, and for the future, as the demand for critical interventions and emergency services continue to outstrip resources in many communities.

At the same time, healthcare organizations have implemented new workflows and technologies to help them better reach their communities and workers to provide care and keep them safe. From the crisis, these innovations have accelerated digital reinvention efforts, highlighting the following three critical areas as the industry seeks to gain new ground and meet any new challenges that may lie ahead:

- Providing tools patients need to understand and manage their own health
- Sharing data with trusted partners and expanding access to care
- Collaborating across the healthcare ecosystem to drive better outcomes, improve efficiencies and prepare for the next disruption

Investing in patient-centric care

While a crisis of this proportion has not been seen before, its effects tend to magnify weaknesses already inherent in today's systems of care. Kate Huey, who leads IBM's Global Healthcare Transformation team, explains how COVID-19 has amplified:

- Existing gaps in healthcare delivery
- The shortcomings of pre-pandemic investment priorities
- The need for new patient-centric models of care

"While digital innovation has been on the minds of healthcare providers for a decade, it was positioned as a pilot or proof-of-concept investment," she said. "Digital reinvention wasn't being implemented wholesale."

"Transformation was slower than many would have liked," agreed Ryan Hodgin, CTO, Global Healthcare and Life Sciences, IBM. "Where IT funding was historically allocated, the focus was on maintaining the existing environment, the centralized infrastructure and systems, on what was established."

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KATE HUEY | Global Healthcare Transformation Partner | IBM

But necessity intervened. When those established systems were unable to respond to the pandemic’s impact and deluge of patient and consumer inquiries, healthcare organizations quickly embraced virtual visits, artificial intelligence (AI)-infused chatbots, enhanced portals and COVID-19 risk assessments that used machine learning and advanced algorithms. Such technologies provided a roadmap for patients to play a pivotal role in their own care during the crisis.

“Physicians and providers were standing up in weeks and months processes and technologies that once took years to even consider, because the imperative was there,” Huey explained. “Industry leaders had to provide healthcare in a virtual setting to care for patients while also protecting clinicians who were dealing with a global pandemic.”

The difference wasn’t that new patient-centric, digital technology had suddenly arrived. It was that digital alternatives were being adopted as viable solutions to meet increasing care demands. The classic example is the explosion in telemedicine, which was advanced by the need for remote care during lockdown. Its convenience was embraced by consumers and, with a surprising acceptance by clinicians, proved telehealth solutions may be here to stay. With subsequent policy and reimbursement changes, it highlighted the opportunity for technology-enabled innovations to coexist within existing care paradigms.

“There was fear that any move away from traditional care toward digital channels would result in fewer in-person interactions and reduced quality,” Hodgin admitted. “But the industry learned that digital reinvention creates opportunities for more frequent interactions. Patients embraced this because it gave them more control, enabling them to initiate interactions, request care or seek advice more easily.”

The change is likely to persist. A June 2021 McKinsey Consumer Health Insights survey found 40% of consumers plan to use telehealth going forward, as opposed to just 10% prior to the pandemic. And the survey reported that “between 40% and 60% of consumers express interest in a set of broader virtual health solutions, such as a ‘digital front door’ or lower-cost virtual-first health plan.”¹

Physician acceptance of virtual and digital health mirrors the patient experience. The American Medical Association reports that 68% of physicians are “personally motivated” to increase the use of telehealth. When the pandemic ends, 73% of physicians plan to use telehealth for chronic disease management, 64% for medical management, 60% for care coordination and 53% for preventative care.²

“While we’re enabling the consumer to direct their care, we, as an industry, also need to ensure we are deploying technologies that assist healthcare professionals,” Huey said. “How to help a radiologist as he’s looking at images? How to provide him with a virtual assistant – a second set of eyes – to make his job easier? How to help emergency room staff who have been on double shifts for the last 18 months? How to enable them to use predictive technologies to optimize staffing plans and resources?”

Digital reinvention can be transformational as it empowers patients, extends the capabilities of clinicians and maximizes scarce resources, as the healthcare industry has seen in the current crisis. Its potential for extending the boundaries of care,

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while easing the burden on care providers, patients and their families, will help define more resilient and agile health systems and systems of care to better face future challenges.

Closing gaps in access and equity through sharing data

The COVID-19 pandemic highlighted the vast health inequities that exist within our systems of care. While healthcare organizations showed readiness to use new digital solutions, consumer access to healthcare – traditional or virtual – has not been distributed equitably.

“Many did not have access to high-speed internet and/or belonged to vulnerable and at-risk populations that we [in the healthcare industry] need to really think about,” Huey noted. “How can providers use predictive insights to be able to determine who is most at risk? And how do they determine the right models for engagement?”

Hodgin believes that new technologies can unlock the answers to Huey’s questions using existing data – but only if disparate data sources are integrated, used securely and deployed ethically.

“Prior to the pandemic, providers knew the people they regularly cared for because they were registered within their systems,” he said. “But the pandemic forced them to reach out to people they didn’t previously care for. To do so, they had to work with local governments and community-based organizations, and this meant incorporating different data sets and different views of individuals across different organizations.”

While the healthcare industry has made efforts on interoperability within healthcare systems, the pandemic exposed a lack of common data standards and interfaces to the world of trusted others within the health ecosystem. The lesson? “True digital reinvention requires a combination of data standards and a robust set of APIs to integrate data sets from across organizations and domains,” said Hodgin, “and [work] meaningfully with the results.”

But he warns that technology alone will not suffice. Digital solutions built with integrated data must earn patients’ and clinicians’ trust by ensuring explainability, fairness, robustness, transparency and privacy.³

“If you look at what’s happened during the pandemic, you can’t underestimate the importance of trust,” he said. “Whether that’s speaking to a clinician, calling into a call center or checking a website to learn what to do, trust is fundamental to helping patients.”

It’s especially true in the context of AI. Today, more than 90% of organizations say the ability to explain how AI makes decisions is critical to its adoption.⁴ So eliminating both bias and “black boxes” in AI-infused applications will be critical in the post-pandemic world.

Collaborating around a new normal

The third lesson to be drawn from the pandemic experience is that no organization is an island. New partnerships among providers, payers and vendors; between patients and clinicians; and across both private and public sectors were formed during the battle against COVID-19. Such collaborations will generate more durable solutions, best utilize scarce resources and create the most effective experiences for patients.

“The future of healthcare is about enabling the success of healthcare patients and providers,” Huey said. “It’s a shift from vendors selling proprietary solutions to co-creating them with partners – a change that is really going to transform an industry while meeting clients where they are on their digital reinvention journey.”

According to Hodgin, collaborative “hybrid care” is best founded on hybrid technologies that enable wider interoperability. Among the key elements:

- Hybrid cloud and edge computing that enable applications to run where they can best serve users
- APIs to share data across applications, organizations and domains
- AI and machine learning applications that utilize a hybrid data fabric that securely integrates data across many disparate sources and locations

Together, these technologies enabled rapid application development amid the crisis. For example, in partnership with IBM, Highmark Health developed a model to identify high-risk



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patients for sepsis based on existing claims data in a period of several days.⁵ Similar pandemic-era partnerships among governments, vendors and providers launched a pneumonia diagnostic solution in 14 hours and an application that enabled medical staff to follow up with people reporting COVID-19 symptoms in two days.⁶

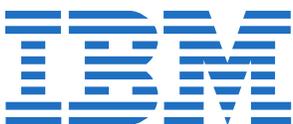
“The pandemic accelerated a significant shift to the cloud,” Hodgin said. “Scalability and rapid development – enabled by hybrid cloud – are two of the enduring changes that we’ve seen.”

“The silver lining of the global pandemic is the innovation it spawned: what was learned, how it was implemented, and now, how it can be sustained going forward,” said Huey. “Because the reality is that all the things that have been put into place are going to provide a better experience for the patient, caregivers, clinicians, the healthcare system and for healthier communities. It now has to become a part of the DNA of our industry.”

IBM is providing innovative capabilities and solutions for the healthcare industry. Learn more [here](#).

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