Healthcare needs a digital transformation. Is it ready?

Our take on how healthcare can become digitally enabled

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Healthcare is behind nearly all other industries on digital transformation. Covid-19 created an opening for change— purchaser demand for digital care skyrocketed and the unsustainability of the industry's digital-averse business models were exposed. Venture investment dollars have flowed freely ever since. Innovators are capitalizing by advancing technologies that could help enable more scalable, proactive, and holistic care. In doing so, they could reshape how we approach existing and emerging challenges to healthcare's business models, including health equity, senior care, and value-based care.

In other words, the ambition is large, and the stakes are high. Meanwhile, the barriers are many. The vast majority of organizations' incentives run counter to the goals of the most innovative industry players. Industry leaders looking to make healthcare more digitally enabled will be poor served by focusing narrowly on their own patients or piece of the care journey. Making healthcare truly digitally enabled will require changing the incentives that underly industry dynamics altogether.

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What is digitally enabled healthcare?

An end-to-end, omnichannel healthcare experience that relies on technology- and data-driven resources to facilitate proactive and holistic interventions and management at scale. Digitally enabled healthcare inherently advances adjacent goals business leaders across the healthcare industry share.

The conventional wisdom

Many healthcare leaders believe Covid-19 created opportunity for healthcare to become digitally enabled by changing legacy incentives that limited health technology adoption and creation. Their arguments are twofold:

- **Purchasers have seen how convenient and cost-effective healthcare can be. They will continue to shop for providers and partners that excel digitally.** These purchasers include both consumers—65% of which intend to continue using telehealth after the pandemic is over—and employers—90% of which say they increased their focus on virtual medicine since the pandemic.

- **The pandemic's disruptive impact on legacy business models, including staffing and payment, will open more organizations to the idea of digital innovation as a solution to these growing challenges.** Many large health systems increasingly view virtual healthcare companies and large tech companies as risks to their core business: 82% of health systems view virtual care companies as top competitors—nearly as high as the 87% that view other health systems as top competitors.

Many leaders believe this shifting adoption landscape creates a large and growing market for new digital health companies to increase their market share in care delivery. Investors clearly agree, pouring $29.1B into digital health companies in 2021, compared to just $8.2B in 2019. Sustained funding at these levels, they believe, will increase the stock of innovative virtual care tools that come to market, furthering healthcare's trend toward digital enablement. In time, healthcare will transform to become a digitally enabled enterprise.

Sources: "2021 year-end digital health funding: Seismic shifts beneath the surface," Krasniansky, et al., *Rock Health*, January 10, 2022.; "The race toward digital transformation: 2022 health system survey," *The Chartis Group,* March 2022.; "How Americans feel about telehealth: one year later," *Skyes,* March 2021.

Our take

Innovators in digital health indeed are enjoying newfound tailwinds supporting demand for their products. And many have provided a proof-of-concept for what digitally enabled healthcare could look like. **Nonetheless, we believe it is dangerous for industry leaders to view current trends in digital health investment and adoption as a true victory in the pursuit of holistic, equitable, and cost-effective digital care for the majority of patients.**

Excessive optimism is dangerous because the stakes are high. As Covid-19 helped demonstrate, healthcare business models, from staffing to payment to site of care distribution, are strained. Shifting from legacy business models to digitally enabled ones could enable sustainability where traditional approaches have failed. Three challenges particularly stand out to us for the role digital innovation could play in addressing them:

1. **Promoting health equity:** How can digital health help reduce disparities in care delivery, and ultimately, outcomes?

2. **Caring for an aging population:** What technologies can help reduce cost of care for the Baby Boomer generation as it ages into Medicare?

3. **Advancing value-based care:** What tools do clinical and operational leaders need to succeed under risk-based payment models?

OUR TAKE (CONT.)

We believe addressing these and other challenges require creation and adoption of digital tools that meet two requirements:

1. In their *design*, they are scalable, holistic, and targeted at the most complex, high need patients; and

2. In their *adoption*, they are widespread enough to be accessed by a large majority of patients.

Innovative organizations indeed are designing digital tools that satisfy the first requirement. Asynchronous monitoring and care management platforms, for example, enable clinicians to make smarter and faster patient care decisions without needing to see each patient in real time. Yet scalable innovations like asynchronous care are not representative of all emerging digital health tools. Many organizations continue to advance tools that fall short in three ways:

We too often…	Rather than…	Resulting in…
Digitize legacy, in-person processes and pathways	Reinventing them at scale	A stranglehold of the doctor-patient visit that limits adoption of asynchronous care
Solve for low-risk, low-impact challenges	Tackling complex, high-risk patients' challenges	Wasted investment in low-leverage solutions that exacerbate care disparities
Create reactive point solutions to narrow problems	Designing holistic and integrate-able ones	Fragmented patient journey and healthcare data

OUR TAKE (CONT.)

Assess the incentives most provider organizations (which care for most patients) operate on, and these shortcomings make sense: value from digital investments is elusive under fee-for-service (FFS) payment because many of the processes and services they aim to eliminate are incremental revenue generators. As a result, many digital innovators design products that fit their customers' FFS-driven business models.

This leaves adoption of the highest leverage digital innovations limited to two groups that combining to own the care of only a small share of patients.

First, large, progressive health systems with payer arms or significant revenue at risk have invested heavily because they reap outsized value from tools that reduce cost of care through early or preventative intervention. Nonetheless, they represent just the upper echelon of health systems. Second, direct-to-consumer digital health providers are eagerly seeking to steal market share from traditional providers by differentiating on a more efficient, consumer-friendly digital care model. But they have won little market share to date. Case in point: 78% of patients receiving virtual care do so from their own provider, compared to just 2% using an app or online service they found.

This innovation and adoption trajectory is unlikely to generate the impact digital-optimist leaders want and the industry needs. On our industry's current path, holistic, scalable, and equitable digital care tools will continue to advance. But those digital tools that are adopted at scale—and therefore, accessible to most patients—will remain focused on supporting, rather than reinventing, the legacy business models under which most organizations continue to operate. The result will be a missed opportunity to transform patient care at scale and further fragmentation of patient care and data across a widening range of uncoordinated provider organizations.

OUR TAKE (CONT.)

Industry leaders instead must advance business models, partnerships, and strategies that align incentives—including those of traditional market players— around adoption of the truly innovative technologies that put us all closer to achieving shared priorities. This will ensure that the benefits of digital health are engrained in the traditional care delivery system, rather than at its edges for only few patients to use.

If the industry embraces digitally enabled healthcare as such, it can reap outsized benefit in solving challenges that all sectors face. This includes, but is not limited to, the priorities discussed earlier: promoting health equity, caring for an aging population, and advancing value-based care.

The following three sections identify select, high-leverage examples for how digitally enabled healthcare could help the industry pursue these cross-industry goals. These examples are far from exhaustive. But they are instructive of how making healthcare more digitally enabled is not a goal unto itself—but rather a tool in our industry's toolbox as it pursues solutions to its greatest challenges.

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01 Promoting health equity

Collecting and analyzing non-clinical data to target interventions

Covid-19 invited much-needed interest among executives in tackling systemic care disparities so they can promote more equitable health outcomes. Health equity interventions must be targeted to a specific patient population or identified disparity likely to meaningfully impact outcomes.

Yet Covid-19 also exposed how much our traditional lack of data collection on health disparities masked our health equity problem. We now know the industry has far less data on social determinants of health than it needs to make process. The root cause problem is that few organizations universally screen for non-clinical needs or stratify their data along demographic lines.

General best practices exist but are blunt tools. Organizations have limited resources, meaning they must collect and analyze data to determine which disparities to target to have an outsized impact for their specific patient populations. Digital tools like electronic health records and virtual touchpoints can help organizations track non-clinical data that can support analyses to uncover disparities at specific organizations.

Start by collecting REGAL data:

- **R**ace
- **E**thnicity
- **G**ender and sexual orientation
- **A**ge
- **L**anguage

Then expand collection to more detailed domains:

- Disability status
- Geography
- Highest level of education attainment
- Insurance status
- Religion
- Socioeconomic status
- Veteran status
- ZIP code

Using machine learning to make treatment pathways more precise and equitable

Progressive organizations are beginning to use their rich, non-clinical data to power machine learning models that identify and address care disparities. For example, a group of researchers used a machine learning algorithm to prove that traditional radiographic severity measures were missing certain knee pain features of Black patients—who experienced 75% worse knee pain than non-Black patients, at the median. The researchers trained their model to identify patients with severe pain based on radiographic imaging that was missed by traditional grading systems. The model helped prevent Black patients from being overlooked as candidates for surgery—22% of Black patients were eligible for surgery based on the researchers' model, compared to 11% using traditional grading.

Adoption of machine learning models for health equity use cases are limited currently but can begin to generate outsized impact as their developers overcome legacy barriers like training data availability and representativeness.

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02 Caring for an aging population

Industry leaders have long been concerned about how sustainable our legacy senior care model—often viewed as costly and unprofitable—will be as the Baby Boomer generation ages into Medicare. With each passing year, population aging becomes a more acute problem—the 85+ age group will nearly double as a share of the population between 2025 and 2050, according to MedPAC. This growth will only exacerbate rising spending and the looming insolvency of the Medicare Trust Fund, which is projected to occur in 2026.

An opportunity is emerging for digital health tools to drive outsized impact on this challenge by bending this cost curve and helping seniors fulfill their growing desire to age at home. Two types of digital tools could have especially high leverage in helping industry leaders achieve these goals:

Tools that enable remote patient monitoring

Most simplistically, virtual visits can help physicians monitor their patients without them needing to travel to the office or hospital site. Wearable devices (e.g., smart blood pressure monitors), meanwhile, can impact chronic condition management by enabling providers to track their patients' key health metrics on an ongoing basis. This allows for more targeted, and ideally, preventative, interventions.

Virtual visits and remote monitoring are especially impactful under hospital at home models, which have grown significantly in the last few years. For hospital at home care, telemedicine and remote monitoring give the care team insight into the patient's condition without requiring their physical presence in the patient's home.

Source: "Report to Congress: Medicare and the health care delivery system," *MedPAC*, June 2015.

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2. CARING FOR AN AGING POPULATION

Tools that enable aging in place

Seniors overwhelmingly prefer to age at home—90% of seniors prefer to remain in their homes instead of moving to an assisted living facility. Doing so safely and effectively currently requires significant caregiver support. Technology can help offload certain caregiver tasks to make it more accessible. A variety of technologies can play a role:

- **Non-clinical tools:** tools that ensure the home is safe for seniors, such as apps and devices that can turn off your stove or alert caregivers that help is needed.

- **Clinical tools:** tools that ensure adherence to medication use and care protocols, such as pill boxes that remind seniors to take their medicine.

- **Social tools:** tools that connect seniors to social services that can provide additional, non-clinical support.

Source: "Seniors' desire to age in place remains overwhelmingly popular," Joyce, Famakinwa, *Home Health Care News*, September 27, 2021.

03 Advancing value-based care

Success in risk-based payment models can improve quality and reduce cost—but only if providers have access to the data and tools they need to identify and act upon opportunities for quality improvement and savings. Digitally enabled healthcare can support this effort by improving patient risk stratification and creating data clinicians can use to make more proactive care decisions for their patients.

Risk stratification

Risk stratification helps providers identify how to allocate resources across different subgroups of patients with similar complexity and needs, enabling rightsized care and lower overall cost. To stratify risk, provider must have access to longitudinal and comprehensive data on their patient populations. This process is most effective when providers standardize their data collection to ease analysis with tools like electronic health records and when they partner with other industry sectors to access new datasets (e.g., pharmacy claims) or combine their datasets (e.g., medical claims and clinical records).

Some progressive organizations are even bolstering risk stratification by incorporating non-clinical data—like credit reports and social determinants of health data—that add depth to patients' future likelihood of requiring services. Using non-traditional data to achieve predictive risk stratification, in turn, enables providers to provide preventative care that prevents health challenges before they arise.

3. ADVANCING VALUE-BASED CARE

Digital health-enabled data for clinical decision making

Wearable devices can help clinicians make more proactive and accurate care decisions by providing an ongoing look at the patient's condition. This can allow clinicians to adapt patients' care plans in real time to meet their current needs, rather than needing to rely on data reflecting a snapshot of the patient's condition at the time of a visit. In turn, this smarter care management can improve quality and reduce cost of treating chronic diseases under value-based payment.

Parting thoughts

Allowing new market entrants to drive digital innovation while many traditional organizations maintain legacy models will generate a true cost: further fragmentation of an already complex care delivery landscape. Today, it is increasingly the patient's responsibility to navigate this landscape despite a growing number of providers and organization owning different pieces of their care journey. This could exacerbate care disparities between those with the resources to effectively navigate the market and those without. At the same time, it will inhibit collection of comprehensive, longitudinal patient datasets that are needed to power many of the digital health and risk stratification models many industry sectors rely on.

The full range of healthcare organizations must be incentivized to adopt scalable digital tools for healthcare to become truly digitally enabled. To achieve this reality, leaders advancing digital solutions to healthcare challenges must ask themselves two questions:

1. Does our core business model accommodate the realities that drive adoption decisions for the full range of customer and partner organizations?

2. Does our solution maintain a focus on scalable, efficient, and cost-effective support for high need patients in the process?

Not every digital health solution will or should satisfy both ideals—but the more that do will further our industry's progress toward reaping the benefits that digitally enabled healthcare offers. ◣

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