

Pharmaceuticals & Medical Products Practice

# Healthtech in the fast lane: What is fueling investor excitement?

As adoption of healthcare technology accelerates, it's a good time for healthcare companies to consider investing in digital among nine potential "value pools."

*by Daniel Cohen, Amy Hung, Eli Weinberg, and Dandi Zhu*



**Digital technology** has enabled healthcare players to provide more targeted and effective interventions to patients worldwide. As the COVID-19 crisis continues to shape the next normal, it is crucial that stakeholders in the healthcare industry understand the digital health landscape. The first half of 2020 has seen unprecedented digital health activity: record levels of venture funding of \$5.4 billion<sup>1</sup>; megadeals, such as Teladoc Health's \$18.5 billion acquisition of Livongo; and accelerated virtual care delivery, such as telehealth and remote monitoring. In this article, we provide an overview of the digital health market and its growth potential, including perspectives on how investors, patients, and incumbent healthcare players are interacting with the ecosystem. We also examine

the impact of COVID-19 on digital health and provide strategic guidance for companies considering an entry into the healthcare sector.

### Digital health technologies can broadly be categorized into nine 'value pools'

Broadly, digital health can be defined as the application of digital technology to improve health or care delivery. Our extensive experience in business building and healthcare has enabled us to categorize digital health technologies into nine "value pools" across five main categories: R&D, wellness and disease prevention, screening and diagnosis, care delivery, and finance and operations (Exhibit 1).

Exhibit 1

## Nine healthcare value pools are ripe for technological innovation.

Examples of innovations in nine value pools across five categories

<p><b>Research and development</b></p> <p>Enhance drug R&amp;D process</p> <p>Artificial-intelligence and machine-learning drug discovery, siteless trials, protocol optimization, trial site operations, and patient engagement</p> <p><b>1</b></p>	<p><b>Screening and diagnosis</b></p> <p>Intercept diseases through screening</p> <p>Genomics and omics</p> <p><b>3</b></p>	<p><b>Finance and operations</b></p> <p>Optimize the financial model</p> <p>Value-based care arrangements, population health management, benefits administration</p> <p><b>5</b></p>
<p><b>Wellness and disease prevention</b></p> <p>Improve wellness and prevent disease</p> <p>Sleep-tracking, meditation and fitness, and disease-prevention tools</p> <p><b>2</b></p>	<p><b>Screening and diagnosis</b></p> <p>Identify the right patient</p> <p>Digital at-home diagnostics</p> <p>Imaging diagnostics based on artificial intelligence and machine learning</p> <p><b>4</b></p>	<p><b>Finance and operations</b></p> <p>Increase operational efficiency</p> <p>Back-office simplifiers (ePrescribe)</p> <p>Nonclinical workflow support for providers</p> <p><b>6</b></p>
<p><b>Care Delivery</b></p> <p>Provide more effective therapies</p> <p>CDS,<sup>1</sup> adherence solutions, disease management, digital therapies,<sup>2</sup> EMR<sup>3</sup> and claims data analysis, ePROs<sup>4</sup></p> <p><b>7</b></p>	<p><b>Care Delivery</b></p> <p>Provide remote patient support</p> <p>Telehealth, remote monitoring, digital information, digital communities, logistics and care-navigation support</p> <p><b>8</b></p>	<p><b>Care Delivery</b></p> <p>Supply therapies to patients</p> <p>Rx onboarding, digital pharmacies, supply-chain solutions for medical supplies</p> <p><b>9</b></p>

<sup>1</sup>Clinical-decision support. <sup>2</sup>For example, cognitive games and cognitive behavioral therapy. <sup>3</sup>Electronic medical records. <sup>4</sup>Electronic patient-reported outcomes. Source: Rock Health; McKinsey analysis

<sup>1</sup> Nina Chiu, Alex Kramer, and Aditya Shah, 2020 midyear digital health market update: Unprecedented funding in an unprecedented time, Rock Health, July 2020, rockhealth.com.

With these value pools in mind, we have identified the following five questions that are commonly asked by CXOs and executives interested in entering the digital health market:

1. What are the largest and fastest-growing digital health markets?
2. How do digital health companies typically demonstrate value?
3. Which value pools are investors most excited about?
4. Which value pools are patients most excited about?
5. What impact has the COVID-19 pandemic had on digital health value pools?

Examining each of these questions in detail helps provide a comprehensive understanding of the digital health market.

#### **What are the largest and fastest-growing digital health markets?**

As of 2019, digital health represented a global market of approximately \$350 billion with many opportunities to compete across multiple subcategories; moreover, the markets for technologies in every value pool are

expected to grow by at least 8 percent per annum (Exhibit 2). Understandably, the bulk of digital health players develop technologies that have a direct impact on patient care. About 49 percent of the digital health companies we studied fall into the care-delivery category (that is, offering more effective therapies, providing remote patient support, or supplying therapies to patients)—a \$157 billion market (as of 2019) comprising 45 percent of the overall digital health market. Companies in this category either provide novel therapeutic solutions enabled by digital technologies—such as Livongo for diabetes—or use technology to broaden patient access to healthcare solutions, for example, telemedicine company Teladoc (offering remote patient support) or online pharmacy PillPack (supplying therapies to patients). Notably, every value pool in this category is expected to grow by at least 10 percent per annum through 2024.

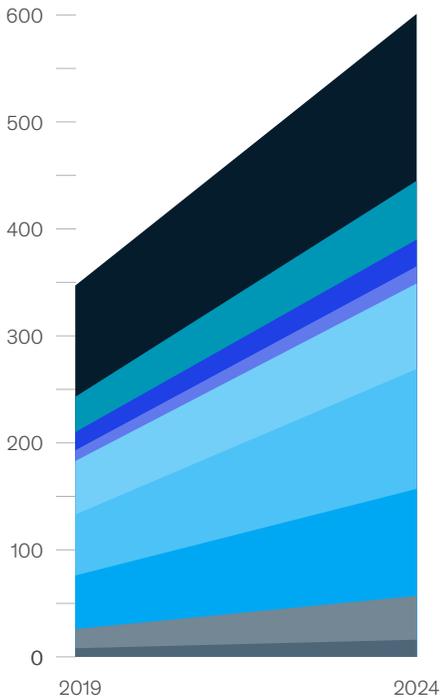
The combination of large market size and high growth rates makes competing in care-delivery value pools an attractive proposition for companies interested in entering digital health, but patient care is not the only potentially promising opportunity available for digital health entrants. Bolstered by strong interest from large pharmaceutical companies, the R&D category represents the single largest value pool by market size (\$109 billion in 2019). Many companies in this value pool provide

**As of 2019, digital health represented a global market of approximately \$350 billion with many opportunities to compete across multiple subcategories.**

Exhibit 2

**All digital health value pools are expected to grow by at least 8 percent annually through 2024.**

Estimated global market size, \$ billion



CAGR, <sup>1</sup> %	Category	Value pool	Technologies
8	Research and development	Enhance drug R&D processes	Precision medicine
11	Wellness and disease prevention	Improve wellness and stop disease	Wearable activity trackers
8		Intercept disease by screening	Genomics, other omics
11	Care delivery	Identify the right patient	Digital diagnostics
10		Provide more effective therapies	CDS, <sup>2</sup> disease management
14		Provide remote patient support	Telemedicine, monitoring
15	Finance operations	Supply therapies to patients	Digital pharmacies
18		Optimize the financial model	VBC, <sup>3</sup> population health management
15		Increase operational efficiency	Back-office automation

<sup>1</sup>Compound annual growth rate. <sup>2</sup>Clinical-decision support. <sup>3</sup>Value-based care. Source: BCC Research; BIS Research; Fior Markets; Global Market Insights; Grand View Research; McKinsey Healthcare Systems & Services Practice research; PitchBook Data; Rock Health; Technavio

precision-medicine solutions that are aimed at enabling faster drug discovery (for instance, Tempus) or AI-enabled patient recruitment and decentralized- or virtual-trial solutions to improve the efficiency of clinical trials (for example, Medable and TrialSpark). This market, however, is relatively mature compared to other digital health areas and is expected to grow at a slower rate of 8 percent per annum compared with other value pools, which are typically growing at 10 percent or more per annum.

An emerging opportunity, nevertheless, exists in value pools in the finance and operations category. Companies here include Progyny, which structures fertility-benefits packages for employers, and CoverMyMeds, which is focused on increasing operational efficiency by providing back-office

solutions to automate the prior-authorization process. Not only do the two value pools within this category command the highest compound annual growth rates (CAGRs) observed in digital health (the “optimize the financial model” value pool has an estimated CAGR of 18 percent, and the “increase operational efficiency” value pool has a CAGR of 15 percent per annum), but companies in both value pools tend to receive some of the highest valuations on average. As of 2019, the finance and operations category represented an estimated market size of \$26 billion, which was 7 percent of digital health overall, even though a mere 12 percent of digital health companies compete in this category. That said, this growing market may be a good fit for nontraditional digital health entrants with a strong value proposition to improve financial outcomes.

**How do digital health companies typically demonstrate value?**

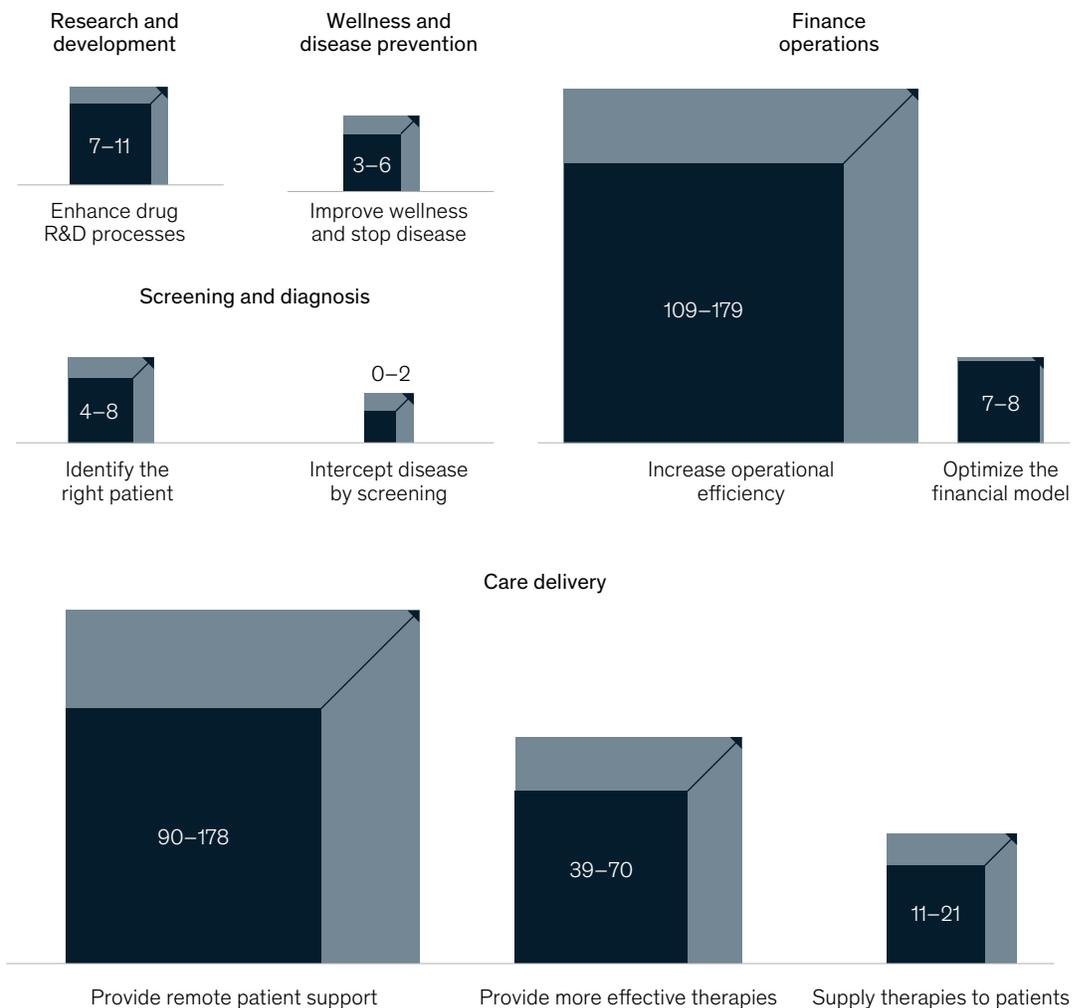
One of the primary value propositions offered by digital health technologies is healthcare cost reduction. Based on 2018 healthcare spend information, we estimate that digital health interventions alone have the potential to save the US healthcare system nearly \$500 billion if fully adopted (Exhibit 3). However, while many solutions have the potential to make a significant impact on the cost of care, some value pools have a more direct, measurable link to cost savings than others.

The three value pools in the care-delivery category—providing more effective therapies, providing remote patient support, and supplying therapies to patients—have the greatest measurable cost-savings potential, approximately \$270 billion in total for the United States. Technologies in these value pools (for example, remote care, digital therapies, and disease-management solutions) provide lower cost modalities to deliver or manage care. As such, both payers and patients benefit from reduced costs associated with care-delivery technologies.

Exhibit 3

**Care-delivery value pools represent approximately 55 percent of the direct cost-savings potential associated with digital technologies.**

Potential US healthcare system cost savings,<sup>1</sup> \$ billion



<sup>1</sup>Direct impact from value pool based on 2018 US spend only; downstream cost savings not included. Cost savings derived by extrapolating analysis of German healthcare system to the US market. Source: CMS US Healthcare Spend Data (2018); McKinsey PMP Benchmarks; Prior McKinsey HTN analysis; various scientific research reports (eg, *BMJ*, *PLoS*)

Similarly, within the finance and operations category, technologies (such as workflow automation and care-coordination tools) that increase operational efficiency can directly improve productivity for healthcare stakeholders, potentially reducing US healthcare costs by about \$180 billion. The cost savings achieved by companies in the operational efficiency value pool are more likely to be the result of technical advancements than new clinical developments, which may explain why about half of CEOs we have observed in that value pool come from industries outside of healthcare—most typically from the technology sector (Exhibit 4).

Other value pools upstream from care delivery, such as those in the wellness and disease prevention and screening and diagnosis categories, may not be able to directly measure their cost-savings potential prediagnosis. Because the cost impact of these technologies is typically more indirect than

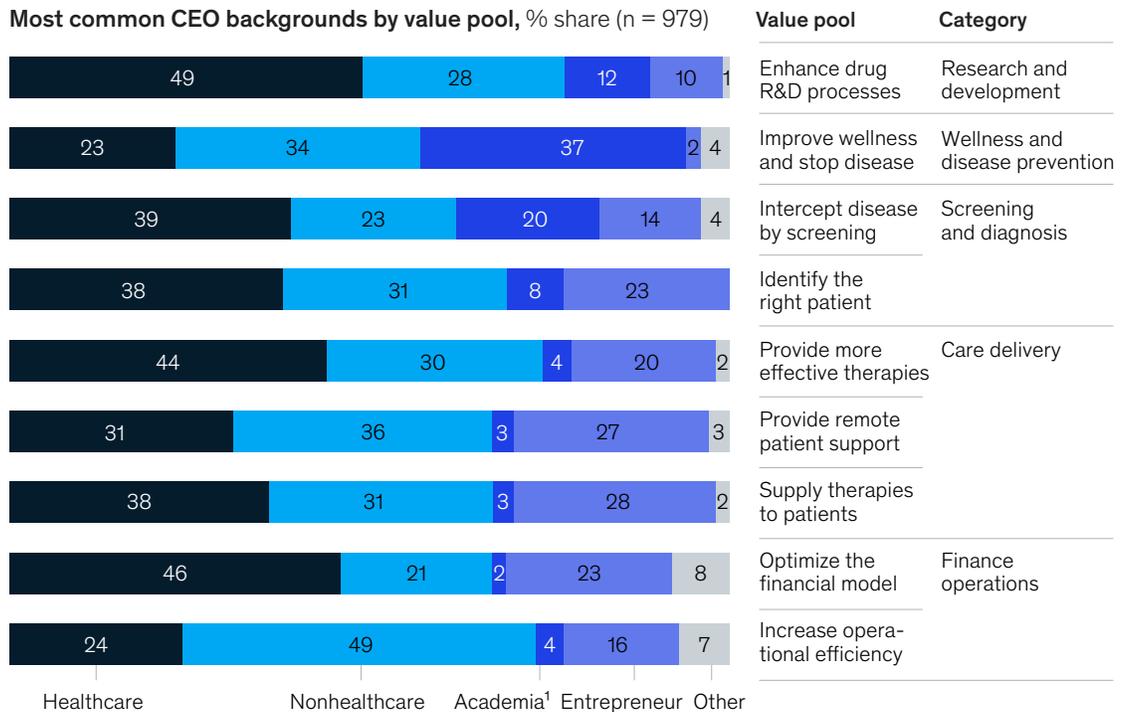
that of care-delivery technologies, wellness and disease-prevention companies and screening and diagnosis companies adopt one of two approaches to demonstrating value and credibility: publishing research or obtaining patents for innovative technologies and processes (Exhibit 5).

Screening and diagnosis companies use academic publications to establish credibility and advertise the impact of their solutions on clinical outcomes. On average, companies in the “intercept diseases through screening” value pool have approximately 27 publications in academic journals—about double the average for digital health companies overall. For the top ten disease-screening companies by funding, the average jumps to nearly 49 publications.<sup>2</sup> Companies in value pools within the screening and diagnosis category are also markedly more likely to have a CEO with an academic or research-oriented background than other value pools—nearly

Exhibit 4

**Most value pools tend to favor CEOs with prior healthcare experience, with a few notable exceptions.**

Most common CEO backgrounds by value pool, % share (n = 979)



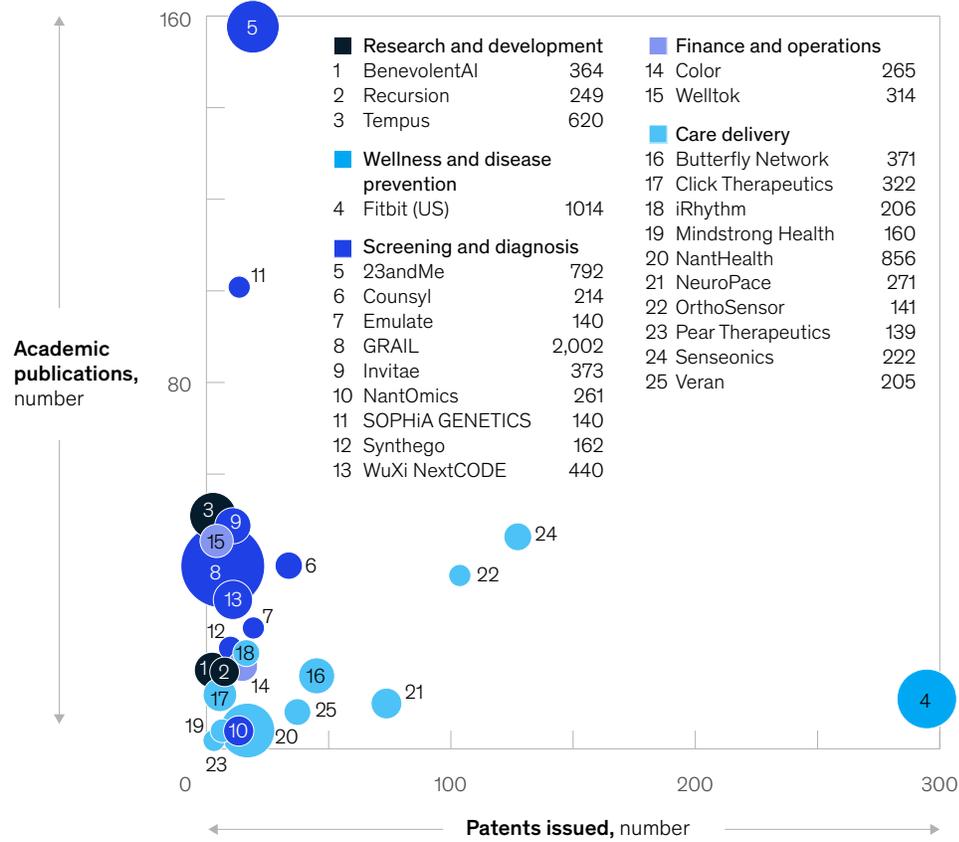
<sup>1</sup>Includes private-healthcare-related research.  
Source: PitchBook Data; Rock Health; McKinsey analysis

<sup>2</sup>Digital Health Funding Database, Rock Health, July 4, 2020, rockhealth.com; PitchBook Data, July 4, 2020, pitchbook.com.

Exhibit 5

**Incumbents in noncare-delivery value pools tend to demonstrate value through publications, while care-delivery firms file patents.**

**Publications vs patents issued for top 25 digital health businesses,<sup>1</sup> circle size = \$ millions in funding**



<sup>1</sup>Top 25 digital health companies by total funding to date, represents companies with >0 patents and >0 publications. Source: PitchBook Data; Rock Health; United States Patent and Trademark Office

20 percent of CEOs in the category have that background compared with about 5 percent for digital health overall.

Wellness and disease-prevention firms, on the other hand, often employ a direct-to-consumer strategy and rely on patents to safeguard value. On average, wellness companies file and receive approximately 15 patents, compared with ten to 11 filings in the overall digital health market. Moreover, the top ten wellness companies by total funding nearly triple that figure, commanding 43 patents on average per company. The consumer-oriented focus may explain why nearly 40 percent of CEOs from

wellness and disease-prevention companies have entrepreneurial backgrounds, with many having founded or led multiple companies previously.

With these trends in mind, healthcare leaders and entrepreneurs interested in building businesses in either the screening and diagnosis category or the wellness and disease-prevention category would be well advised to build strong in-house capabilities for developing publications and patents. Meanwhile, demonstrating value and credibility for other value-pool areas may be more straightforward, as time and cost savings can be more readily assessed through real-world use.

**Which value pools are investors most excited about?**

Digital health entrants seeking investor funds can rest assured that venture interest has been steadily increasing over the past decade. Since 2011, total funding and average deal sizes have consistently increased, while the total number of deals per year has remained largely similar since 2016. It appears that the COVID-19 crisis has not dampened investor interest either; based on 2020 deals to date, the digital health venture fund Rock Health predicts a record-breaking \$10.2 billion in digital health funding by year’s end.<sup>3</sup> What has shifted, however, is the mix of funding across value pools, which may

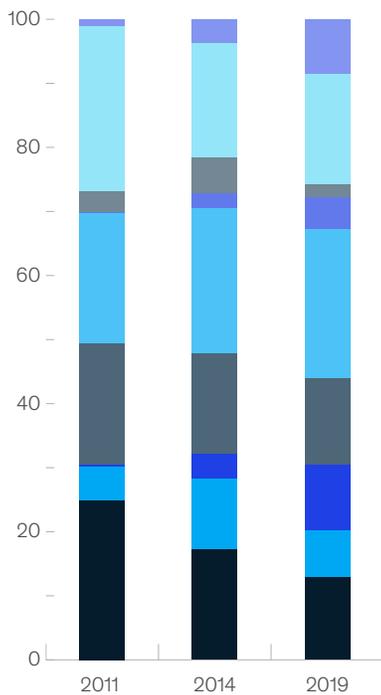
provide healthcare stakeholders the incentive to seek venture funds to pursue different value pools depending on their strategies (Exhibit 6).

Digital health players with strong clinical capabilities are likely to find a favorable funding environment in the care-delivery category. Care-delivery value pools represented 47 percent of digital health funding in 2019, up from approximately 42 percent in 2015. In 2019, digital pharmacy Capsule and medical-product delivery service Zipline led funding in this category, receiving \$200 million and \$190 million in funding, respectively.<sup>4</sup>

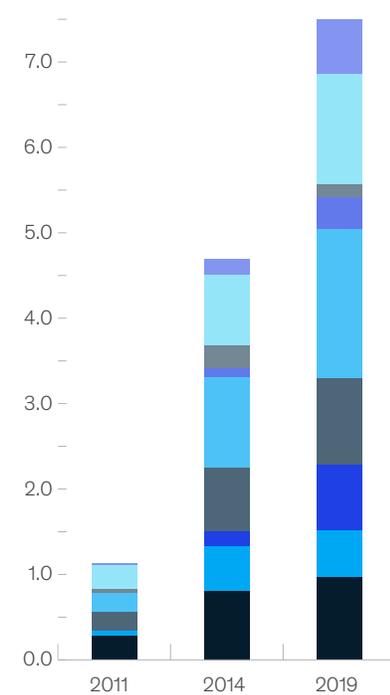
Exhibit 6

**Funding breakdowns across value pools in the United States continue to evolve over time.**

US digital health venture funding, by value pool 2011–20, %



US digital health venture funding, by value pool 2011–20, \$ billion



**Value pool**

- Enhance drug R&D processes
- Improve wellness and stop disease
- Intercept disease by screening
- Identify the right patient
- Provide more effective therapies
- Provide remote patient support
- Supply therapies to patients
- Optimize the financial model
- Increase operational efficiency

Source: Rock Health

<sup>3</sup> Nina Chiu, Alex Kramer, Aditya Shah, 2020 midyear digital health market update: Unprecedented funding in an unprecedented time, Rock Health, July 2020, rockhealth.com.

<sup>4</sup> Digital Health Funding Database, Rock Health, July 4, 2020, rockhealth.com; PitchBook Data, July 4, 2020, pitchbook.com.

The increase in care-delivery funding has come largely at the expense of two categories: the wellness and disease-prevention category, which posted a nine-percentage-point drop in share of total digital health funding in 2019 as compared with 2011; and the finance and operations category, which saw a ten-percentage-point lower share of total funding at the end of the decade. These trends may suggest greater venture capital appetite for the often payer-oriented business models adopted by care-delivery companies versus the consumer-oriented focus of wellness and disease-prevention firms, as well as a broader shift in investor interest toward technologies that directly impact patient care.

New disrupters should take special note of the growing appetite for solutions that help identify the right patient (such as at-home diagnostic tools), enhance drug R&D processes (such as precision medicine and clinical-trial solutions), and supply therapies to patients (for example, digital pharmacies). The share of total funding these three value pools have received has grown substantially over the last decade, starting with minimal funding in 2011 and rising to 5 percent, 9 percent, and 10 percent of total funding for digital health, respectively, by 2019.

Healthcare incumbents and players seeking to develop more capital-intensive products and services can look to value pools in two categories that are most likely to reward successful entrants with high deal sizes: the R&D category (with the value pool of enhancing drug R&D processes) and the screening and diagnosis category (with value pools of intercepting diseases through screening and identifying the right patient) typically had larger deal sizes on average than other categories. Both saw average deal sizes of about \$30 million in 2019—about a third larger than the average deal size in the overall digital health market (which was approximately \$19.53 million). Notably, wellness and disease-prevention companies also received high average funding deal sizes (\$28.42 million)

despite experiencing a declining share of overall funding. Most notable were the deals for fitness platforms iFit (\$200 million) and Gympass (\$300 million), which may suggest that wellness funding is progressively consolidating around a few major competitors.

The global pandemic may cause digital health investment trends to shift, however. Funding for technologies that provide remote patient support has grown significantly in 2020 due to COVID-19, with \$926 million in funding already channeled to the value pool this year, according to Rock Health.<sup>5</sup> Understandably, this substantial increase in investment could cause a decrease in investment available to companies in other value pools.

### **Which value pools are patients most excited about?**

Patients have long used the internet to search for health-related information, and there is evidence to suggest that some value pools have experienced greater patient interest than others. Based on an analysis of representative search terms for each value pool, it appears that patients and consumers have historically been most interested in searching for screening and diagnostic tools—most notably, online symptom checkers. Searches for online prescriptions and clinical trials have also been common, with the majority of searches focused on cancer drugs and treatment.

These search trends may indicate that companies in value pools in the screening and diagnosis and the R&D categories could increase patient engagement by conducting digital marketing campaigns. Patient interest also appears to have a seasonality component: searches for wellness and fitness tools (such as fitness trackers) tend to peak around the holiday season (November–January) before fading away during the middle months of the year. Similar to gyms and other personal-health-related businesses, wellness companies may benefit from large end-of-year digital campaigns.

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<sup>5</sup> Ibid.

Successful digital campaigns can provide a competitive advantage. Patient searches often begin by searching for flagship products or brands in digital health directly (such as WebMD for symptom checkers and Teladoc or Amwell for telemedicine). Thus, particularly for more patient-facing products and services, a clear go-to-market strategy that harnesses digital engagement is crucial.

Although historical trends in Google results have remained largely stable over time, one value pool stands out as a recent anomaly. The value pool for remote patient support saw the largest spike in interest during March, when quarantines began for COVID-19—in no small part due to the increased attention given to telemedicine solutions. Since then, interest has abated but remains relatively higher than all other value pools.

#### **What impact has the COVID-19 pandemic likely had on digital health value pools?**

As discussed, solutions that provide remote patient support have experienced heightened investor and patient interest likely due to the COVID-19 pandemic; however, the crisis is likely to affect each healthcare stakeholder differently and affect the usage of digital health solutions in other value pools too. For example, while telehealth may improve connectivity, patients may still face affordability challenges given the economic slowdowns that have been attributed to the COVID-19 pandemic. As such, solutions that optimize the financial model may be promising for patient-facing digital health incumbents to explore.

Providers, too, face significant pressures to cut costs and improve workflows to meet new demands. Nationwide, providers have reported capacity issues and supply shortages attributed to influxes of COVID-19 patients, infected staff, and absences (for health-related reasons such as caregiver needs

and health conditions). Accordingly, companies with solutions that supply therapies to patients more efficiently or increase operational efficiency are likely to experience tailwinds. Tools that identify the right patient for therapeutic interventions are also considered necessary as providers seek to move quickly and efficiently diagnose patients.

Pharmaceutical companies are most likely to be affected by disruptions and delays in clinical trials, particularly in areas heavily affected by COVID-19 cases. Therefore, tools that enhance drug R&D processes by providing virtual trial support or real-world evidence collection are likely to be highly sought after.

Payers, however, are already contending with high cost burdens related to supporting long, high-volume inpatient stays, as well as logistical challenges related to ensuring patient access to care. Consequently, solutions that optimize the financial model and intercept diseases through screening may provide the most support for payers managing large patient populations. Companies that supply therapies to patients are also expected to receive renewed interest from payers seeking to keep healthcare costs down.

#### **Now may be the time to harness the potential of digital health**

With a growing body of evidence (for example, peer-reviewed publications) that digital interventions can improve health outcomes across a range of therapeutic areas (such as diabetes,<sup>6</sup> asthma,<sup>7</sup> and coronary disease<sup>8</sup>), companies are considering the current moment to be an opportune time to enter, invest, and collaborate in the digital health market. In planning for the next normal, investors, established healthcare players, and new entrants alike should keep in mind the three following considerations:

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<sup>6</sup> Fang Chen et al., "Clinical and economic impact of a digital, remotely-delivered intensive behavioral counseling program on Medicare beneficiaries at risk for diabetes and cardiovascular disease," *PLOS One*, October 2016, Volume 11, Number 10, journals.plos.org.

<sup>7</sup> Rubina Inamdar, Rajan K. Merchant, and Robert C. Quade, "Effectiveness of population health management using the Propeller Health Asthma Platform: A randomized clinical trial," *The Journal of Allergy and Clinical Immunology: In Practice*, 2016, Volume 4, Number 3, pp. 455–63, jaci-inpractice.org.

<sup>8</sup> R. Jay Widmer et al., "Digital health intervention during cardiac rehabilitation: A randomized controlled trial," *American Heart Journal*, June 2017, Volume 188, pp. 65–72.

- **Continually refresh and evolve value definition.** The COVID-19 crisis has driven many of the rapid shifts in healthcare systems, with changes in regulation and behaviors happening every week. In light of this, digital health innovators, investors, and established healthcare players should consider continually reflecting, refreshing, and evolving their definition of these value pools and potentially reevaluating where to play. As a digital health innovator, it is considered paramount to have a clear definition of how value is being created (for example, improved clinical outcomes or reduced total cost of care) and for whom. Over time, as the external environment evolves, value propositions may need to evolve as well. Trends such as greater digitization and consumerization of healthcare will inform digital health investors where to invest to capture value in this space. In this dynamic environment, a willingness to continually evolve may be critical to success.
  
- **Don't go it alone: pursue M&A and partnerships.** Data from past crises show that companies that adopt and accelerate a through-cycle M&A mindset in the wake of the COVID-19 pandemic can position themselves for greater success in the next normal. In digital health, companies have increasingly shifted from a competitive mindset to a collaborative one, recognizing the potential to unlock value via complementary capabilities and operational efficiencies through M&A activity, joint ventures (JVs), alliances, and partnerships. For example, Teladoc Health's \$18.5 billion acquisition of Livongo illustrates a digital health company's desire to provide an integrated offering to patients, health systems, and employers for virtual care services across care settings. Together, the combined entity can create value by delivering "whole person" care and capture synergies through cross-selling, international expansion, and improved member engagement.

Although the most frequent acquirers of digital health companies are other digital health companies, established healthcare players and technology companies are becoming increasingly active—as evidenced by Google's 2019 acquisition of Fitbit for \$2.1 billion—M&A, JVs, alliances, and partnerships are likely to, and should, remain a big part of healthcare players' strategies to achieve greater impact more quickly. In "A new prescription for M&A in pharma," we discuss the rationale for M&A as a core lever for value creation and strategies for companies to bolster M&A capabilities in further detail.

- **Commit and take action.** To succeed in digital health, players must be nimble, flexible, and fast. In current times, where external disruption has players from all corners reevaluating how they can add or find value, the ability to act quickly and decisively is considered even more important. Whether you are an investor, the CEO of a large healthcare company, or a digital health start-up, committed investment in digital innovation, organization-wide support, and execution readiness will be key to the next normal.

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Digital health innovations are helping achieve a long-sought-after healthcare industry objective: cutting healthcare costs while improving patient outcomes simultaneously—an outcome that is especially important given the impact of the COVID-19 pandemic. By decisively selecting which value pools and strategies to prioritize, healthcare investors and companies can effectively thrive in the fast-growing digital health space and improve healthcare for patients worldwide.

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The authors wish to thank Ajay Dhankhar, Sari Kaganoff, Tobias Silberzahn, and Shreyas Tirumala for their contributions to this article.

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