



# Healthcare Technology Trends

2023



SANDS CAPITAL

# Healthcare Technology Trends for 2023

The coronavirus pandemic introduced many challenges to the U.S. healthcare industry and highlighted opportunities for innovation within all parts of the system. In 2023, startups have continued to emerge that are addressing these opportunities through the use of technology. In this review, we look back at the first half of 2023 to examine topics, such as early disease detection, chronic disease management, data analytics and insights, and generative AI. As health plans increasingly focus on value-based care and consumers gain access to more insights about their health, healthcare providers must find better ways to manage larger patient populations and generate better insights about patient health.

In the tables below, we summarize key healthcare technology themes that are reshaping the healthcare industry. We also explore how these trends influence major stakeholders, including the healthcare consumer, healthcare providers, and healthcare insurance companies.

THEME	DESCRIPTION
<b>Early Disease Detection</b>	Companies are training machine learning models to identify diseases such as cancer, heart disease, lung disease, and Alzheimer's earlier than ever before. Comprehensive data sets are required to train these models and are often difficult to obtain.
<b>Chronic Disease Management</b>	Consumer and medical devices can simplify chronic disease management by enabling patients to collect health data at home and check in with medical professionals via telehealth. New technology could enhance medication and treatment adherence and improve patient health conditions.
<b>Hybrid Care Delivery</b>	The coronavirus pandemic necessitated flexible delivery of healthcare, including telehealth and in-home care.
<b>Mental and Behavioral Health</b>	There are not enough mental health practitioners to meet the post-pandemic increased demand for mental health services. It is critical to provide ways to augment the capabilities of practitioners, including chat support and self-help tools for use outside of one-on-one sessions and new technologies, such as virtual reality (VR) and augmented reality (AR), to address specific conditions.
<b>Actionable Health Data</b>	Consumers increasingly have access to more health and fitness data through wearable technology, sensors, and other devices. Companies that can derive useful and actionable insights from the data could provide users with actionable health information that would complement traditional medical care.
<b>Virtual Reality and Augmented Reality</b>	As VR and AR devices continue to improve, physicians and patients can benefit more from real-life simulations. These include mental health applications for reducing stress and anxiety, patient education before or after surgical procedures, and physician education and training.
<b>Remote Patient Monitoring (RPM) and Population Management</b>	More healthcare systems are entering value-based-care (VBC) arrangements in which they receive payments based on the patients' treatment results instead of the quantity of service provided. These systems will need to manage larger patient populations and focus on improving service quality to decrease costs. New technology, such as RPM, can provide alerts and insights on the highest-risk patients.
<b>Generative Artificial Intelligence (AI) for Healthcare Providers</b>	Large language models could enable physicians to interact more conversationally with electronic medical records (EMRs) and other medical software.
<b>Digital Patient-Interaction and Web Portals</b>	Consumers are encountering more web portals and platforms where they deal with all medical-related issues, such as completing forms, paying bills, booking appointments, and attending telehealth sessions. As large payors and newer entrants such as Amazon and CVS build broader healthcare offerings, the ability to create a common portal for all uses will be increasingly valuable to make the experience user-friendly.
<b>AI-Driven Assessments</b>	Machine learning models could deliver more insights into disease severity by observing eye movements, facial expressions, speech, and physical motions. In some cases, these observations can be taken from a smartphone, enabling quicker and easier analysis of physical and mental illness.

# The Healthcare Consumer

## INDUSTRY TREND IN 2023

## POTENTIAL IMPLICATIONS

1

Sales of wearable devices continue to grow as consumers take control of their own health with fitness trackers, smartwatches, and other sensors and devices.



Consumers can gain key information about their health with the expanding list of wearables available, including watches, rings, skin patches and straps, smart clothing, shoe inserts, sensors, and even “hearables” (smart hearing aids). As technology companies provide better and more meaningful insights, these devices could improve outcomes and decrease overall costs to the system.

2

The coronavirus pandemic increased the prevalence of anxiety, fear, loneliness, and depression globally. More individuals are seeking mental health support than ever before, but there aren't enough providers to satisfy the demand.



Many mental health professionals have long waitlists. Healthcare companies could use technology to expand the providers' capacity. Such technology could include telehealth, text support, AI-driven communication tools, VR experiences, and self-help tools.

3

Consumers might seek more flexible healthcare offerings, including in-home care, virtual medical care, DIY testing, and even audio and text offerings.



Technology platforms can offer healthcare providers ways to increase their reach through in-person and at-home hybrid offerings. Health insurance companies and self-insured employers decide on healthcare coverage, which might influence customers' decisions on which service to use.

4

According to a 2020 study, 33 percent of Americans self-diagnose when encountering a health problem. Seventy percent consult medical information online. Now, Americans are turning to tools such as Open AI's ChatGPT and Google's Bard to answer health questions.



Startups are emerging that can provide individualized recommendations to their customers based on medical data. Some technologies have adopted a conversational interface similar to ChatGPT to deliver health solutions to their users.

5

The American population is aging. In 2020, 17 percent of the population was over the age of 65. By 2040, that is expected to reach 22 percent. These individuals live with chronic conditions such as diabetes, cancer, and obesity, and 28 percent have cognitive issues.



To allow people to stay in their homes as they age—rather than entering a care facility—and minimize healthcare costs from chronic conditions and related complications, companies will need to offer useful monitoring technologies through both tangible devices and online applications. Health insurers might cover the most effective solutions in this category to proactively address chronic conditions in their Medicare populations.

6

As insurance and healthcare companies try to engage the consumer in healthcare offerings, the number of devices, portals, and services that consumers can access is becoming overwhelming and difficult to manage.



Health insurers and pharmacy companies such as CVS and Walgreens must create online access portals to help patients access all benefits in one place. Platforms that centralized healthcare payments can also simplify the billing process for consumers and healthcare providers.

7

Drug prices continue to increase, and U.S. prescription drug prices are higher than in any other country in the world.<sup>1</sup>



Companies that provide drug pricing transparency through the EMR, health plan member portal, or their website can help consumers make informed decisions about where to purchase medications and could significantly decrease healthcare costs nationally. Health insurers and self-insured employers could make these offerings available to members and employees.

8

Health insurance premiums continue to rise, and high-deductible plans are becoming more common.<sup>2</sup>



Supplemental benefit offerings could be a low-cost way for consumers to cover themselves and their families for accidents, critical illnesses, and vision and dental benefits.

<sup>1</sup> <https://aspe.hhs.gov/sites/default/files/documents/88c547c976e915fc31fe2c6903ac0bc9/sdp-trends-prescription-drug-spending.pdf>

<sup>2</sup> <https://www.ama-assn.org/press-center/press-releases/surge-medical-liability-premiums-increases-reaches-fourth-year>

# The Healthcare Provider

## INDUSTRY TREND IN 2023

## POTENTIAL IMPLICATIONS

<p><b>1</b> In 2022, 72 percent of physicians were part of a hospital system or health insurance company (up from 62 percent in 2019). The health insurers include UnitedHealth Group and Aetna, but also newer competitors such as Amazon, Walgreens, and CVS.<sup>3</sup></p>	<p>As health insurers and hospital systems engage in VBC, they need to proactively manage growing patient populations to improve patient outcomes. RPM platforms that aggregate patient data could effectively help to monitor the population, generate high-value insights, be easy to use, and solve problems related to “alert fatigue.”</p>
<p><b>2</b> Physician groups that remain independent are operating under a fee-for-service model or shifting to alternative models, such as concierge medicine and direct primary care.<sup>4</sup></p>	<p>Independent physician groups need technology that decreases the administrative burden, such as AI scribes, automated medical coding, smart billing, and technology that enables efficient monitoring of the patient population, such as remote RPM and AI-driven analytics.</p>
<p><b>3</b> Medical professionals continue to exit the field due to burnout for many reasons, including bureaucracy, lack of respect, and too many hours on the job.<sup>5</sup></p>	<p>Hospitals and health systems continue to try to manage the same or a greater number of patients with fewer medical professionals. Tech platforms that aim to reduce hospital stays, avoid complications, and eliminate readmissions should be easy to manage along with health practitioners’ existing tasks.</p>
<p><b>4</b> More data availability creates information overload, and hospital staff are often overwhelmed by the number of displays they are required to monitor. In addition, EMRs often provide too many alerts, causing staff to dismiss them and miss critical information as part of “alert fatigue.”</p>	<p>Next-generation EMR and RPM tools that produce fewer and more relevant alerts might be more valuable than current EMR and RPM systems. These new applications require better data analytics and AI-driven insights to identify the highest-risk patients needing immediate attention.</p>
<p><b>5</b> More provider groups are entering into VBC arrangements, particularly in Medicare. Medicare’s Centers for Medicare and Medicaid Services (CMS) has developed several models for providers, such as the accountable care organization, bundled payments, and patient-centered medical homes.</p>	<p>As part of VBC, health systems and provider groups that receive bundled payments might focus on decreasing costs for all members of the patient population. Early detection tools for chronic disease can also decrease long-term care costs by enabling early treatment. Primary care physicians can administer AI-driven detection tools such as patches, smart stethoscopes, and wearable monitors at low costs. Those devices can flag patients for further testing.</p>
<p><b>6</b> More than half of U.S. hospitals had negative margins in 2022.<sup>6</sup></p>	<p>Technology companies should have a clear value proposition that increases revenue or decreases costs for hospital systems.</p>
<p><b>7</b> The pandemic worsened the ongoing difficulty of identifying and enrolling patients in clinical trials. Researchers needed to compete for funding with coronavirus trials and to comply with lockdown regulations.</p>	<p>Clinical trial recruitment platforms that enable health systems to proactively identify eligible patients can help researchers effectively identify relevant patients for research.</p>
<p><b>8</b> The pandemic and quarantine highlighted the necessity for remote physician education and digital training.</p>	<p>Companies building training and education in VR and AR can reach medical professionals globally to enable knowledge-sharing on a broader scale than ever before.</p>
<p><b>9</b> Medicare reimbursement rates have declined 20 percent from 2001 to 2021 when adjusted for inflation. Commercial reimbursement rates have also declined.<sup>7</sup></p>	<p>Technology that simplifies the prior-authorization process and automates the medical-coding process can help providers receive full reimbursement for all services they deliver. This technology could be built into existing workflows in the EMR to reduce manual work.</p>
<p><b>10</b> Chronic illness continues to become more prevalent in the United States and accounts for hundreds of billions of dollars of healthcare costs per year. In 2020, over 70 million individuals over the age of 50 had one chronic illness.<sup>8</sup></p>	<p>Technology companies that develop machine learning algorithms for early detection of chronic disease enable more patients to be screened and treated than with traditional methods. These algorithms may need less information than traditional tests (e.g., audio recordings of heart sounds) or help clinicians use imaging or other tests to identify conditions earlier.</p>

**3** [https://www.physiciansadvocacyinstitute.org/Portals/0/assets/docs/PAI-Research/PAI%20Avalere%20Physician%20Employment%20Trends%20Study%202019-21%20Final.pdf?ver=ksWkgjKXB\\_yZflmFdXlvGg%3d%3d](https://www.physiciansadvocacyinstitute.org/Portals/0/assets/docs/PAI-Research/PAI%20Avalere%20Physician%20Employment%20Trends%20Study%202019-21%20Final.pdf?ver=ksWkgjKXB_yZflmFdXlvGg%3d%3d)  
**4** <https://www.grandviewresearch.com/industry-analysis/us-concierge-medicine-market-report>  
**5** <https://www.healthgrades.com/pro/the-most-and-least-burned-out-physicians-by-specialty>  
**6** <https://www.aha.org/system/files/media/file/2022/09/The-Current-State-of-Hospital-Finances-Fall-2022-Update-KaufmanHall.pdf>  
**7** <https://www.beckershospitalreview.com/hospital-physician-relationships/the-stark-reality-of-physician-reimbursement.html>  
**8** <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9881650/#:~:text=The%20number%20of%20people%20in,to%20142.66%20million%20by%202050.>

# Insurance Companies, Medicaid, Medicare

## INDUSTRY TREND IN 2023

## POTENTIAL IMPLICATIONS

1

Payors have been increasingly contracting with CMS to offer Medicare Advantage plans. Enrollment in these plans has continued to grow and has reached 50 percent of all Medicare recipients this year.<sup>9</sup>



Supplemental benefits, including prescription drugs, dental, vision, hearing, transportation, meal delivery, and fitness, are in focus. Companies delivering these benefits for payors are operating in a fast-growing market and might need to prioritize a smooth and easy-to-use consumer experience.

2

In 2023, CMS began requiring hospitals to report on the percentage of their populations that are screened for social determinants of health (SDOH). SDOH factors include economic stability, education access, healthcare access, geographic location, and social context.<sup>10</sup>



Companies that enable underserved populations to access healthy food, healthcare services, and mental and behavioral support can help improve outcomes and are likely to be valuable to commercial and government insurers covering these lives.

3

Payors want to maintain a relationship with their members and centralize communication through their member portals.



Companies delivering technology to payors might need the ability to sell other brands' services as their own to satisfy payor demand to maintain member relationships.

4

The pandemic enabled more fraud, waste, and abuse (FWA) in medical billing. CMS doubled its budget for FWA in 2022 and requested an additional increase for 2023.<sup>11</sup>



FWA schemes continue to grow in complexity and become more difficult to detect. Novel solutions to identifying potential FWA, likely driven by AI, might help curb these costs.

5

Traditional payors and newer entrants such as CVS, Amazon, and Wal-Mart are acquiring vast networks of healthcare providers to increase oversight of healthcare costs and create operational efficiencies.



As these large entities work to create efficiencies across many healthcare provider groups, they will need technology to optimize claims management, automate payments, simplify pre-authorization, and enable efficient communication across healthcare systems.

6

As more payors enter VBC arrangements, they focus on keeping members healthy, streamlining care, and eliminating unnecessary costs.



Payors are testing wellness incentives and rewards that allow members to earn points for annual wellness exams, preventive screenings, disease management, completing online surveys, and engaging in healthy activities.

7

Payors are increasingly using AI and automation to simplify and speed up internal processes. There will be increased scrutiny of the use of this technology in healthcare, due to regulatory restrictions, HIPAA privacy restrictions, and patient rights.



Payors will need transparent and explainable AI and technology platforms, particularly when dealing with prior authorizations, medical claim analysis, and reimbursement. Automated systems that deny claims too quickly or broadly across certain categories might be scrutinized, so they will likely need clear justifications and explanations of outputs.

<sup>9</sup> <https://www.commonwealthfund.org/publications/issue-briefs/2021/feb/medicare-advantage-plans-supplemental-benefits>  
<https://www.healthcarediver.com/news/key-trends-payers-providers-2023/638102/>

<sup>10</sup> <https://remingtonreport.com/intelligence-resources/home-health/2023-providers-are-responsible-for-social-determinants-of-health-quality-measures/>

<sup>11</sup> <https://www.hmpglobelearningnetwork.com/site/ihe/commentary/only-beginning-crackdown-health-care-fraud-accelerate-wake-covid-19>



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