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Insights

2021 global health care outlook

Accelerating industry change

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Overview and outlook

THE COVID-19 PANDEMIC is placing enormous strain on the global health care sector's workforce, infrastructure, and supply chain, and exposing social inequities in health and care. COVID-19 is also accelerating change across the ecosystem and forcing public and private health systems to adapt and innovate in a short period.

A number of foundational shifts are arising from and being exacerbated by COVID-19's spread. Examples include consumers' increasing involvement in health care decision-making; the rapid adoption of virtual health and other digital innovations; the push for interoperable data and data analytics use; and unprecedented public-private collaborations in vaccine and therapeutics development. Amid these dynamics, governments, health care providers, payers, and other stakeholders around the globe are being challenged to quickly pivot, adapt, and innovate.

We expect industry leaders to use the momentum ignited by organizational and ecosystem responses to COVID-19 to address six pressing sector issues in 2021 (figure 1).

How health care stakeholders analyze, understand, and respond to these issues will shape their ability to navigate from recovering to thriving in the postpandemic "new normal" and advance their journey along the path to the Future of Health™.

FIGURE 1

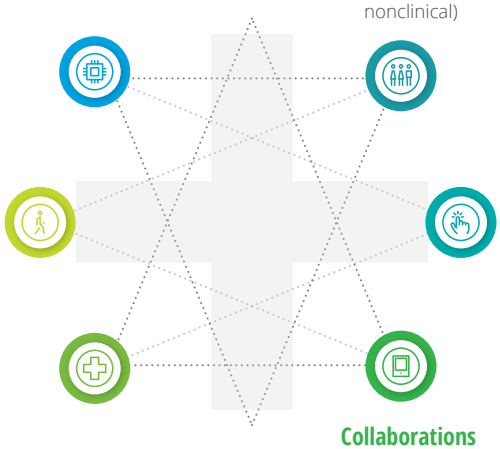
Global health care sector issues in 2021

Digital transformation and interoperable data

- Transitioning from standardized clinical protocols to personalized medicine
- Leveraging AI to provide real-time care, interventions, and nudges to change consumer behavior and patterns

Work and talent

- Introduction of new business models, exponential technology, and agile ways of working
- Capacity and demand analysis to match the pandemic's needs
- Utilization of remote staff (clinical and nonclinical)



Socioeconomic shifts

- Programs to support a person's holistic well-being
- Recognition of the need to focus on underserved populations and work with governments to modify policies and programs

Consumers and the human experience

- Consumers' increased ownership of their health and data
- Provision of clear and concise information on treatment care and cost
- Balance between virtual visits and a trusted physician's relationship

Care model innovation

- Changing focus from acute care to prevention and well-being
- Transitioning from standardized clinical protocols to personalized medicine
- Evolving payment models: value-based/ outcome-focused; universal coverage
- Making financial operation and performance improvements

Collaborations

- Ecosystems that enable real-time data and analytics and serve as centers for education, prevention, and treatment
- Ecosystems that connect consumers to virtual, home, in-person, and auxiliary care providers

Source: Deloitte analysis.

GLOBAL HEALTH CARE BY THE NUMBERS

- Combined public and private health care spending is expected to fall globally by 2.6% in 2020, due in large measure to the detrimental effects of COVID-19–related lockdowns and social distancing measures on the provision of nonemergent care and care restrictions. In most countries, nonessential surgeries and screenings were postponed for months, although outpatient care was far more affected than inpatient care or pharmaceuticals.[1]
- Fallout from the pandemic's associated global economic recession also appears to have muted health care spending in 2020. Patients reduced visits to physician offices, clinics, and emergency departments; delayed refilling drug prescriptions; and cut back on discretionary health care purchases. In some countries, job losses ate into contribution levels for employment-based health insurance, despite extensive government support.[2]
- COVID-19's global grip is likely to extend well into 2021; however, health care spending should begin to recover as governments invest heavily both to control the pandemic and to roll out COVID-19 vaccines and treatments. A recommencement of deferred surgical and diagnostic procedures and an improving economy should also boost spending.[3]
- Between 2020 and 2024, global health spending is expected to rise at a 3.9% compound annual growth rate (CAGR), considerably faster than the 2.8% recorded in 2015–2019.[4] The fastest growth will be in Asia and Australasia (5.3%) and the transition economies of Central and Eastern Europe (5.2%), and the slowest in Latin America (0.7%).[5]
- Global health care spending as a share of gross domestic product (GDP) is projected to rise to 10.4% in 2020, up from 10.2% the previous three years. The sector's GDP share should average 10.3% in 2021 and 2022.[6]
- Drivers for continued health care spending growth include population aging, increasing demand for care, countries' gradual economic recovery, clinical and technology advances, and the expansion of public health care systems. In addition, the growing international competition for health care workers may push up labor costs.[7]
- On a per-capita basis, spending will likely continue to be unevenly spread, ranging from US$12,703 in the United States to just US$37 in Pakistan in 2024. Efforts to close this gap will be hampered by higher population growth in many developing economies.[8]
- Population growth and aging's impacts on public health care systems will likely vary by region. The global population of 7.8 billion (as of November 2020) is expected to increase an average of 81 million per year, to 8 billion by 2023.[9] Asia and Africa are the fastest-growing regions. Meanwhile, life expectancy at birth continues to rise, reaching an estimated 74.1 years in 2020 and a projected 74.9 by 2024. Nigeria and Pakistan are among the countries expected to see both larger and younger populations (41% and 35%, respectively, of their populations will be 14 years or younger in 2024). Meanwhile, the populations of Japan, Venezuela, and much of Europe will be shrinking and aging.[10]
- As the pandemic has proven, communicable diseases continue to pose a threat, especially in emerging economies. Also notable is the steady increase in noncommunicable diseases (NCDs) such as heart disease, cancer, and diabetes. NCDs account for 41 million deaths a year, or 71% of the global total—and this share rises to more than 80% in the most developed markets.[11] Increasing life expectancy and lifestyle-related factors (rapid urbanization, lack of exercise, changing diets, and rising obesity levels) are primarily responsible for NCDs' increasing morbidity rates.[12]

Global health care sector issues in 2021

Consumers and the human experience

Consumers are driving—and accelerating—the pace of change in health care. Their needs and goals are driving innovation in health-related products, services, and tools. Their preferences are driving the development of digitally enabled, on-demand, and seamlessly connected clinician-patient interactions. Their demands are driving the transition to patient-centric care delivery across geographies and socioeconomic groups. And their expectations are driving industry stakeholders to elevate a transactional patient/customer health care encounter into a holistic human health experience.

COVID-19 has challenged consumers' sense of well-being and accelerated their desire and determination to become more active, engaged, and empowered in managing their health. Consumers are learning about their health risks, communicating with their doctors in new and different ways, and changing their attitudes about data privacy. They want convenience, access, and transparency around treatment care and cost. Each of these factors has a significant influence on how consumers are feeling and interacting with their health system,[13] as seen in findings from Deloitte's recent global and US health care surveys and a consumer survey during the peak of the COVID-19 crisis:[14]

- **Many consumers show greater activity and engagement.** Consumers are increasingly willing to tell their doctors when they disagree with them, are using tools to get information on costs and health issues, are tracking their health conditions and using that data to make care-related decisions, and are accessing and using their medical record data.

- **Consumers are using virtual visits more than ever before and plan to continue using them.** Since the onset of the pandemic, consumers using virtual visits rose from 15% to 19% from 2019 to early 2020; this jumped to 28% in April 2020. Even before COVID-19, consumer adoption of virtual visits has been increasing since 2018. On average, 80% are likely to have another virtual visit, even post COVID-19.

- **More consumers are using technology for health monitoring.** Growing numbers of consumers are using technology to monitor their health, measure fitness, and order prescription drug refills. More than three-quarters of those who track their health say it changes their behavior at least moderately.

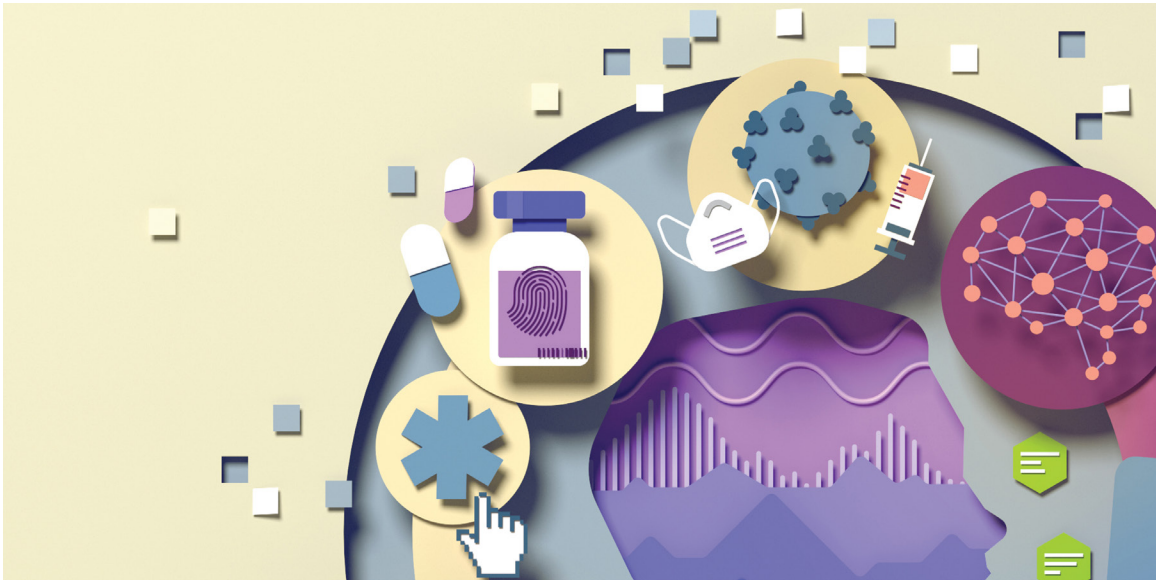
- **A trusted clinician relationship remains paramount.** The top factors for "an ideal health care experience" include doctors who listen to/care about them, who don't rush, and provide clear communication. As health systems, technology companies, and others roll out virtual

services, it is imperative to provide the same personal experience as during an in-person visit. This is particularly true for organizations that are developing tools or services for those with chronic conditions, as they are most likely to value a sustained relationship.

Focus is shifting from health care to health and well-being. More resources (time, money, and attention) are being allocated from the end of the health care value chain (treatment and aftercare) to the beginning. There will be a greater focus on promoting healthy lifestyles, vitality, and wellness; on primary and secondary prevention; and on early diagnosis.[15]

Health care organizations need to consider another trust-related issue: Although more consumers are sharing data because of COVID-19, as the public health crisis calms down, it's unknown if they will be willing to continue to do so. Organizations will need strategies to build trust to make consumers feel comfortable sharing their personal health data. One strategy is to make clear that consumers own their data. It was found that a large majority of consumers (65%) think that they should own their own health data versus those (30%) who think their doctor should own it, and even fewer who think that the government should own it.[16] In a recent Deloitte survey on human experience, consumers ranked empathy and reliability as the top two factors when seeking out a health care experience.[17]

Every person's health journey is different. Organizations along the entire health care value chain should recommit themselves to understanding consumers and creating a multifaceted strategy that speaks to where consumers are and what they need right now.



Care model innovation

Health delivery organizations (HDOs) around the world are struggling to solve long-present challenges of health care affordability, access, quality, and efficiency. However, existing care models can impede their efforts to adapt and evolve for the future, even as COVID-19 accelerates the imperative to transform (see sidebar, "COVID-19's impact on care delivery model transformation").

Health care delivery models today are oriented around the provider, primarily focused on physical health, and prioritize location and payment model over consumer needs. Experiences are fragmented, transactional, and analog, with redundancies, misalignment, and disconnected interactions common among functions and stakeholders. These characteristics can intensify existing operational and organizational headwinds pushing against efficient and effective health care delivery.

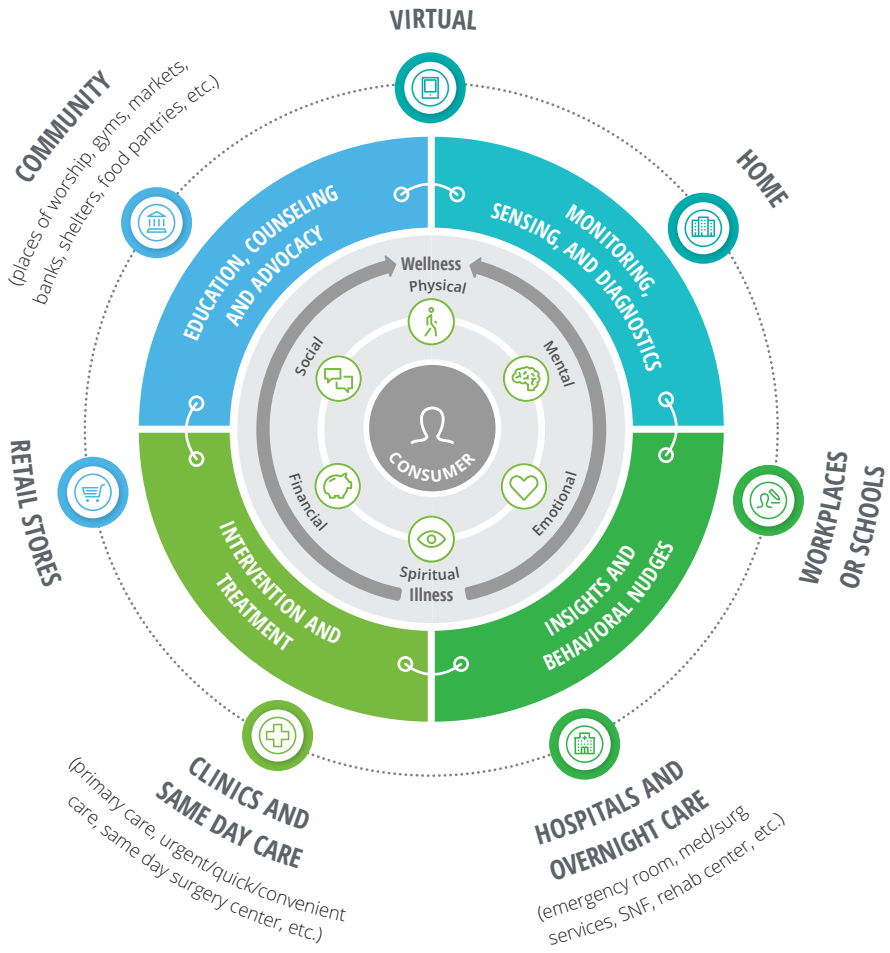
COVID-19'S IMPACT ON CARE DELIVERY MODEL TRANSFORMATION[18]

The health care delivery landscape and the behaviors of consumers it serves have pivoted dramatically amid COVID-19–driven public health and social needs. New preferences and practices are likely to remain in place postpandemic, accelerating the imperative for HDOs to transform care models to remain relevant:

- **Site of service and care transformation.** Consumers expect providers to meet them where they are and deliver care on their terms to ensure the utmost safety, security, and seamless engagement experience.
- **Ubiquitous adoption of virtual care.** Increased adoption of provider-to-patient and provider-to-provider interactions in virtual settings is making it more convenient and cost-efficient to monitor, sense, diagnose, intervene, and treat acute and chronic conditions.
- **Workforce reimagined.** Workplace dynamics and practices are changing to address capacity and demand challenges; examples include remote working and virtual delivery, multidisciplinary teaming, and increased automation to reduce administrative burdens.
- **New partnerships and markets.** Competitors are creating nontraditional and public-private partnerships to better serve the community; struggling small or boutique health organizations are merging with/being acquired by larger ones that have withstood the pandemic's economic impacts.
- **Emerging disruptors.** Giants from other industries are aggressively making moves to enter or expand in the health care space (e.g., targeting rural areas and pharmacy delivery, pursuing market dominance in remote monitoring).
- **Health equity.** Public and private health systems are addressing the remediable disparities in health between race and socioeconomic status by offering more affordable, accessible, and equitable health services.

FIGURE 2

Future-state health care delivery models



Source: Deloitte analysis.

Care model innovation can help HDOs reduce or eliminate many of the challenges arising from today's delivery models. In our view, future-state models (figure 2) will:

- Orient around the consumer (who is better educated and empowered to manage their own health).
- Broaden the definition of "health" to include its spiritual, mental, and emotional components and harmonize around meeting the holistic consumer's needs and goals.
- Place increased emphasis on the social determinants, or drivers, of health.
- Change focus from acute care to prevention and well-being.
- Transition from standardized clinical protocols to personalized medicine.

- Evolve payment models from volume-based to value-based/outcome-focused and make financial, operational, and performance improvements.

- Expand the health care ecosystem to include both incumbents and nontraditional health care players.

- Enable seamless physician-patient and physician-physician interactions; automate, align, and integrate connections among all functions and stakeholders.[19]

In addition to helping deliver a more effective and satisfying patient and clinician experience, care model innovation can assist in bending the HDO cost curve by decreasing fixed costs (property, equipment, and liability expense) by ~93–97% and variable costs (expenses for nonclinical labor, overtime, supplies per admission/visit, drugs per admission/visit, medical claims, purchased services) by 45–60%. It can also open the door to new and diversified revenue streams via targeted consumer growth and retention strategies and investments in nonacute and sustainable capabilities to compete in the "next normal."

Consumer and provider responses to recent Deloitte surveys[20] indicate their support for a transition to new care models and supporting technologies:

- Seventy-two percent of consumers understand their personal health and well-being needs and goals; 60% of physicians are prioritizing a shift to prevention and well-being.

- Seventy-five percent of consumers want to work in partnership with providers on care and health goals.

- Sixty percent of consumers feel comfortable sharing their personal health data over virtual health technology; 85% of physicians believe that radical interoperability and data-sharing will become standard practice.

Care model transformation is neither quick nor easy. It typically requires a multiyear, multistep approach in which organization leaders define the future-state delivery model; assess the gap between the enterprise's current state and desired future state; prioritize and sequence initiatives to invest in; and develop, implement, monitor, and measure each initiative. Also, cost may be an impediment to transformation: Providers, feeling the pressure to move to new care models, may be financially strained by the postponement/cancellation of nonessential surgeries and procedures during the pandemic. Despite the potential hurdles, the necessity for providers to adopt new care delivery models is growing if they want to thrive on the other side of the pandemic.

Digital transformation and interoperable data

COVID-19 has been a driver and accelerator of health care digital innovation in 2020. The pandemic concurrently has exposed a growing gap between the demand for health care and the supply of staff and other resources, and it has crystallized stakeholder awareness that widespread adoption of digital technologies is critical to help close that gap.[21] As a result, many digital initiatives that have been in the works for years are coming to fruition in mere weeks or months.

Health care organizations today are transitioning to health IT systems powered by cloud computing and data and analytics tools to enable real-time, smart digital health. They are using interoperable data and platforms supported by deep learning capabilities, "always on" biosensors, and behavioral research to shape consumer beliefs and actions. They are also applying virtual care, artificial intelligence (AI), and other technologies to personalize medicine, enable real-time care interventions, and provide behavioral nudges.

How dramatically has COVID-19 accelerated digital adoption and transformation across the health care ecosystem? Deloitte recently surveyed 1,800 doctors and nurses and interviewed key health care stakeholders in several European Union (EU) countries to assess their adoption of digital technologies, both in general and in response to the pandemic.[22] Overall, nearly 65% of survey respondents said their organization had increased its adoption of digital technologies to support clinicians' ways of working. A similar number (64.3%) reported that their organization had increased its adoption of digital technologies to provide virtual support and ways of engaging with patients.[23]

In other survey and interview findings, there is wide variation among countries in their adoption of different types of digital technologies. The most frequently used technologies across the EU were electronic health records (EHRs) and e-prescribing.[24] Survey respondents identified their top three challenges to digital transformation as bureaucracy in health care, the cost of technologies, and finding the right technologies.[25] A lack of staff training in using digital technologies also is a barrier to progress.[26]

Three technologies are playing increasingly pivotal roles in health care digital transformation around the globe—cloud computing, AI, and virtual care delivery.

TECH GIANTS' INVOLVEMENT ACCELERATES HEALTH CARE DIGITALIZATION IN CHINA

China's government is fostering the use of telehealth, mobile technologies, and other digital advances to make primary health care more convenient, accessible, and helpful to the general population. Application scenarios include digital medical platforms, online medical consultations, smart hospitals, health management, big data, and analytics. In addition, Chinese technology giants are accelerating health care digitalization in response to the COVID-19 pandemic. In 2020:

- Alibaba launched an online clinic service, a drug delivery service for chronic diseases, and an AI algorithm that can identify the image of coronavirus-infected pneumonia in 20 seconds, with an accuracy rate of 96%.[27]
- WeChat launched a national epidemic dynamic page with functions such as medical popularization, real-time epidemic statistics, and fever outpatient mapping.[28]
- Tencent launched an AI-powered symptom self-screening tool that helps users with suspected symptoms to obtain medical guidance. Tencent is also making its cloud computing, AI, and big data capabilities available as free technical support for virus mutation prediction, antiviral drug screening, and vaccine research.[29]

CLOUD COMPUTING

Many health care organizations will be exiting the pandemic under massive cost pressures: Unanticipated pandemic-related operating expenses (e.g., personal protective equipment [PPE], ventilators, therapeutics) and substantial revenue losses from deferred/cancelled surgical and diagnostic procedures have hospital and health system leaders looking for ways to concurrently increase efficiency and reduce costs. A major opportunity area is modernizing their business/technology infrastructure by accelerating the transition of computing operations from brick and mortar data centers to the cloud.

Cloud computing technology is increasingly seen as a solution to improve health systems' IT infrastructure and reduce costs, due to its ability to process and deliver data in an efficient, collaborative manner and analyze data into meaningful information. Cloud enables health care organizations to move from a highly centralized approach in which each organization acquires and maintains the requisite hardware, software, and staff, regardless of whether the resources are used at full capacity, to a decentralized approach in which they have real-time, easy-to-use, remote access to data, paying cloud service providers only for what they use—storage, applications (software-as-a-service), or infrastructure services.[30]

We are already seeing evidence of accelerated cloud adoption. Cloud spending increased by 11% in the second quarter of 2020 compared to the same period the previous year.[31] Most medium-to-large organizations have at least a nascent cloud strategy, and some are already well on their way to implementing it. They've selected their cloud providers, determined which data and workloads to migrate, and started to identify and understand interoperability issues.

Now, it's time for hospitals and health systems to put their cloud strategies into action. Initial efforts are likely to focus on migrating EHRs, enabling remote care and remote work, and producing a scalable virtual desktop. We expect more transformation work to follow, such as enabling remote call centers, integrating videoconferencing/remote care with EHRs, and configuring the appropriate tools, software, and technology to deliver and manage an IT infrastructure to power the future of health.[32]

Cybersecurity, always an important consideration for health care organizations—which have endured repeated attacks from cyber-criminals—will continue to be a front-burner issue for cloud providers and their customers. With the pandemic shifting many workers to remote locations and increasing clinician and patient use of telehealth and other virtual technologies, organizations will likely need to change the way they approach security across a more distributed network.[33] Fortunately, leading cloud providers are extremely large and have sophisticated cyber safeguards in place and typically share the responsibility of protecting their customers' data and operations, with security **in** the cloud being the customer's responsibility and security **of** the cloud the cloud provider's responsibility.

Security isn't the only concern in managing a newly distributed workforce and workplace.Organizations that migrate to the cloud will need to find new ways of working—especially in terms of core infrastructure and application development—to remove development bottlenecks and get new releases out faster.[34] As is typically the case with any new technology, the ability to execute at scale and speed may be initially challenging.

However, hospitals and health systems that move to cloud computing could see significant benefits, such as elimination of operational redundancies, improved insights into their data, and enhanced ability to govern that data. They could also build more flexible IT resource consumption models and more effectively manage costs.[35]

ARTIFICIAL INTELLIGENCE

AI is gaining traction in health care. Early use centered on automating manual processes, but the pandemic has opened doors for AI and other digital technologies to solve complex clinical and nonclinical problems.[36]

AI uses algorithms and machine learning (ML) to analyze and interpret data, deliver personalized experiences, and automate repetitive and expensive health care operations. These functions have the potential to augment the work of both operational and clinical staff in decision-making, reduce the time spent on administrative tasks, and allow humans to focus on more challenging and impactful management and clinical work.[37] For example, AI-based solutions can effectively streamline diagnostic and treatment processes by using large amounts of structured and unstructured medical data across hospitals and health systems. This can aid physicians in clinical decision-making by providing them with real-time, data-driven insights that they can alter and implement based on their personal expertise.[38]

AI-powered solutions can also assist in accurately scheduling and planning clinical staff rotation—a major challenge for health systems since the onset of the pandemic—by factoring in operational constraints such as the number of staff, availability, skills, and specific equipment required. AI can also minimize patient risk by identifying medication errors that traditional, rule-based clinical decision support systems are unable to detect, while also reducing alert fatigue and false positives—one of the reasons for physician burnout.

The ability of AI to examine large amounts of information quickly can help hospital and health plan administrators optimize performance, increase productivity, and improve resource utilization, resulting in time and cost efficiencies. Additionally, AI-enabled solutions can speed up and strengthen the insight-generation process by allowing an organization to gain the holistic picture it needs to make data-driven decisions. Finally, AI can also deliver personalized experiences by facilitating conversations with patients through virtual assistants.

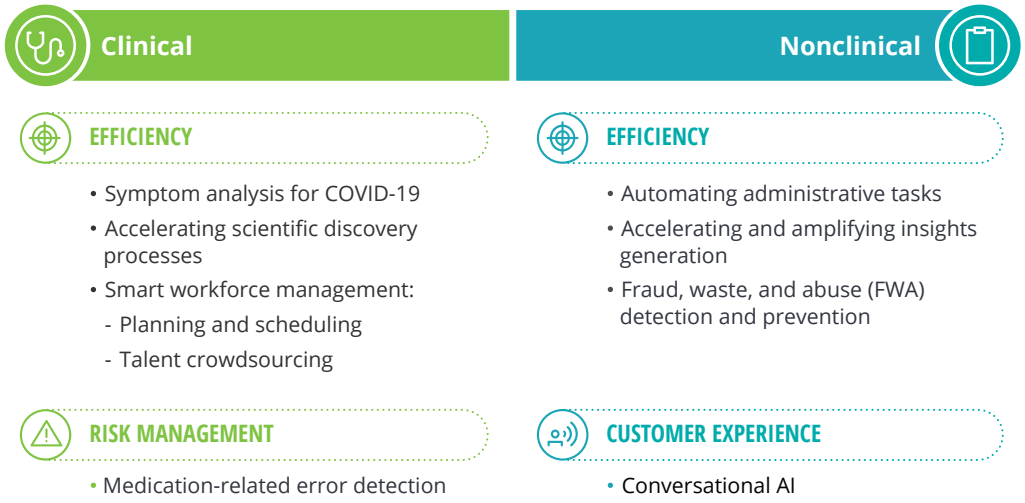
Health care AI applications vary by type of operation (figure 3).

In Chile, which has close to 5 million people with chronic conditions,[39] health management company AccuHealth is using AI-powered, real-time remote monitoring to identify high-risk individuals and those in immediate need of intervention. This enables health coaches to concentrate on those for whom the impact of monitoring is likely greatest, decreasing the cost and effort involved in managing populations.[40]

At the Sheba Medical Center, Israel's largest hospital campus, efficiencies created by AI support quality improvement by prioritizing critical cases in radiologists' workflow, reducing time to treatment and improving diagnostic accuracy.[41] Working with Aidoc, a technology startup, the hospital team focused on time-sensitive and potentially life-threatening conditions that can benefit from a quicker diagnosis, including brain, neck, chest and abdomen imaging.[42] With 96% accuracy, Aidoc's solution has been shown to reduce turnaround time by 32% for critical cases.[43]

FIGURE 3

AI applications in health care by type of operation



Source: Kumar Chebrolu, Dan Ressler, and Hemnabh Varia, Smart use of artificial intelligence in health care: Seizing opportunities in patient care and business activities, Deloitte Insights, October 22, 2020.

US-based health insurer Anthem launched a digital application called Sydney Care that includes an AI-powered symptom checker, personalized engagement features, and access to personalized health information as well as virtual health services. The app connects consumers with virtual primary care providers and lets users take a COVID-19 assessment.[44]

Many countries are exploring AI's potential in diagnostic imaging. Gangnam Severance Hospital in Seoul, South Korea, tested Samsung's S-Detect for Breast (which analyzes ultrasound images for breast lesions and provides standardized reports and classifications) to determine whether AI could improve diagnostic accuracy. For doctors with experience of four years or less, the software increased the accuracy of diagnosis from 83–87%.[45]

AI is already delivering on making aspects of health care more efficient. Over time it will likely be essential to supporting clinical and other applications that result in more insightful and effective care and operations. Enterprises that lean into AI adoption are likely to gain immediate returns through cost reduction and have a competitive advantage.[46]

VIRTUAL HEALTH

Prior to COVID-19, Deloitte estimated that broader adoption of virtual care was still three or four years away. According to our surveys, consumers were receptive to the idea of virtual care, but physicians were more skeptical. However, as the virus spread and safety concerns grew, virtual interactions became a necessity. Seemingly overnight, virtual health technologies became an essential component in care delivery, enabling clinicians and patients to stay connected via video chats, phone calls, texts, and emails when COVID-19 lockdowns and quarantines precluded in-person appointments. Similarly, telehealth, telepharmacy, and virtual-hospital-at-home programs—aided by regulatory and payer policy changes—are extending and enhancing the care continuum.

According to Deloitte survey respondents, most consumers are satisfied with their virtual visits and say they will use this type of care again. In addition, virtual visits can also help reduce care delivery costs for providers and consumers. Now that consumers and health systems have experienced the convenience and effectiveness of virtual care, it may be difficult to turn back the clock. We expect it will be the norm for numerous types of clinical interactions after the pandemic passes.[47]

The recent spurt in virtual health's growth is prompting industry stakeholders to reassess its current role as a substitute for/supplement to in-person triage, screening, monitoring, and e-visits both in and out of the hospital to its future-focused role as a digital enabler in the broader movement to rethink, reimagine, and redesign care delivery models. Still, there are questions around virtual health's staying power (figure 4).

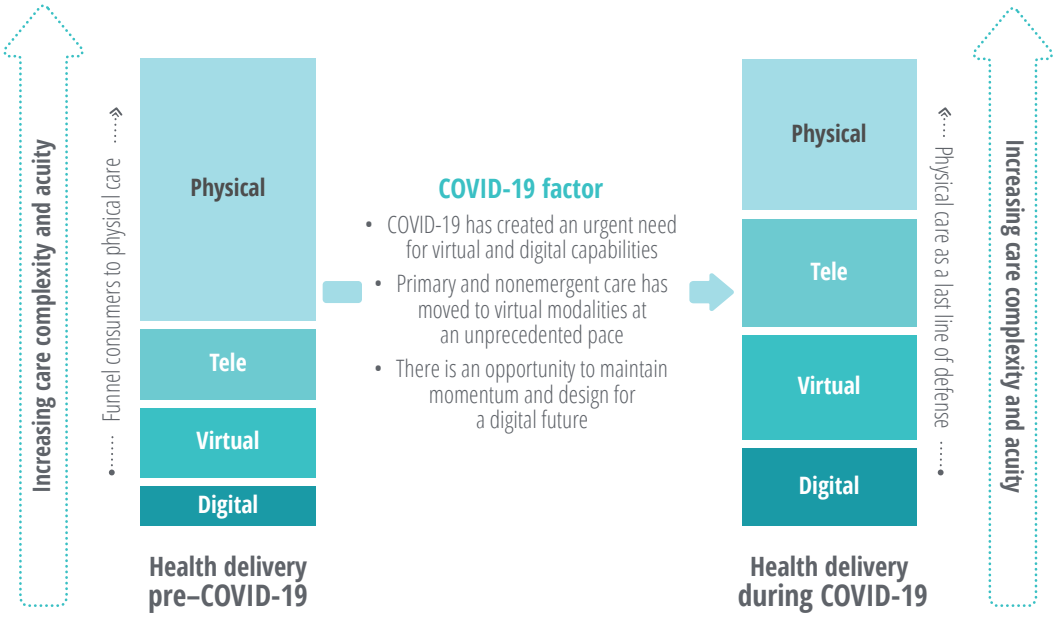
A small reversal in virtual care use is likely to occur as the pandemic eases, vaccines become widely available, and patients again feel comfortable engaging with their caregivers in person.

A virtual consultation is not always a good alternative to a physical appointment; for example, if an explanation of a complicated diagnosis or treatment is needed.[48] However, signals indicate that virtual health will be the norm for numerous

FIGURE 4

The staying power of virtual health

Many speculate whether virtual health adoption will endure after COVID-19 subsides. Continued virtual health usage in the new reality will land somewhere on the spectrum between pre–COVID-19 and outbreak levels.



Some organizations will maintain their momentum and vigorously pursue self-disruption while others will be followers. Organizations should determine where they want to play within this spectrum and then craft a strategy articulating how to win in that space.

Source: Deloitte analysis.

types of clinical interactions after the pandemic passes.[49]

COVID-19 has helped break down regulatory, financial, and behavioral barriers to allow virtual care to be widely integrated into our health care system and meet patients' needs.[50] Organizations should develop specific use cases that show how health may be managed and delivered using virtual tools in the postpandemic environment.

JAPAN FINALLY HITS "GO" ON E-VISITS

Although e-visits have been available to health care providers (HCPs) and patients in Japan since 2018, the technology has remained underutilized because regulations restricted e-visits to second and further appointments for designated diseases. Pandemic-related HCP resource shortages have prompted the government to temporarily ease the restriction, allowing e-visits beginning with the initial consultation. With the current administration trying to make the change permanent, companies providing platform services are gaining greater attention from providers and the public.

PAIRING DIGITAL TRANSFORMATION AND RADICALLY INTEROPERABLE DATA

Digital transformation can help generate significant benefits for patients, clinicians, and health systems (figure 5), especially when paired with radically interoperable data and insights.

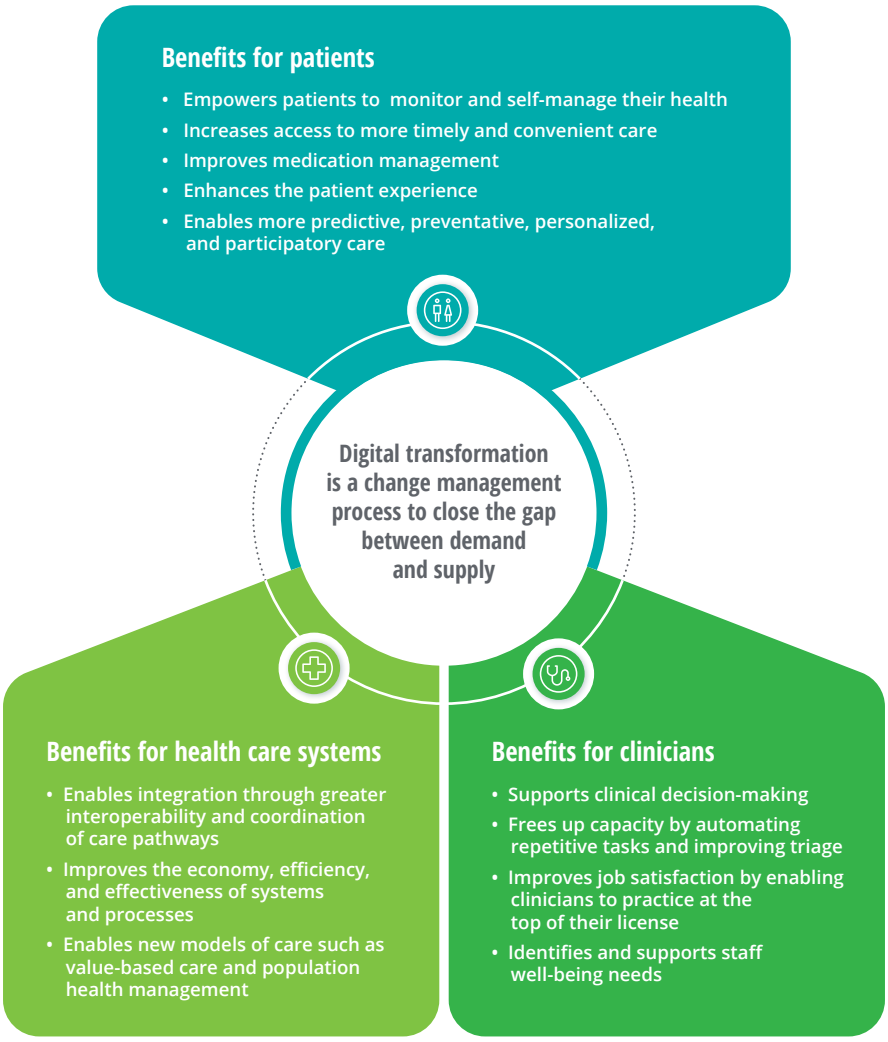
Data interoperability allows different information systems, devices, and applications to access, exchange, integrate, and cooperatively use data in a coordinated, standardized manner, within and across organizational, regional, and national boundaries.[51] It is an essential building block for a health system without walls—one that provides timely and seamless portability of information, leverages advanced analytics to generate novel insights, and optimizes the health of individuals and populations globally.[52]

Radical data interoperability is a required foundational capability to enable health care providers, insurers, and other stakeholders to deliver patient-facing programs and associated technologies. When implemented correctly, it can help greatly improve care delivery and patient empowerment[53] and provide a solid return on investment (ROI) by:

- **Reducing administrative costs** as manual processes such as quality reporting or obtaining prior authorizations are replaced or optimized by technology;
- **Increasing efficiency of care delivery** as providers can leverage technology to more efficiently treat patients through an integrated care delivery model that includes virtual settings;
- **Reducing the total cost of care** through more effective and efficient population health management techniques that use technology to lower unit costs and utilization rates; and
- **Increasing revenue and growth** through an improved patient experience, more effective patient steerage, and enhanced ability to meet quality and cost performance targets.[54]

FIGURE 5

The benefits of digital transformation



Source: Deloitte, *Shaping the future of European healthcare*, September 2020.

Finland's Kanta Services is an example of radical data interoperability in action. Launched in 2010 as the national health infrastructure and archive, Kanta Services includes electronic patient records, e-prescriptions, imaging and other test data, electronic social care documents, and personal health and well-being records. The records are always up to date and available to clinicians nationwide to add real-time information. Patients have control over the flow of their data, can view their full health records, and can request repeat prescriptions via an online service. A patient data repository allows centralized archiving of electronic patient data, as well as active data use and storage, and plays a key role in sharing information between health care providers.[55] Kanta Services provides robust data security and protection and complies with relevant legislation.[56]

Government involvement and support—through legislation, funding, and/or partnering arrangements—are crucial to scaling data interoperability across nations, regions, and the world. National health information technology (HIT) platforms in Estonia, the Netherlands, and Australia have laid the foundation for patient control over their health information and for interoperable and secure data exchange among providers.[57] To support interoperability, all three countries have implemented a system of unique IDs for patients, providers, and organizations, as well as strict authentication rules.[58]In addition, these countries have incorporated legal and technological safeguards for data privacy and security. Before connecting to a national network, providers must demonstrate that their IT systems meet technical and security requirements. Consumers can authorize and restrict access for certain providers, restrict access to portions of the record, and close the record altogether. The systems generate access logs, so consumers know who viewed or contributed to their record.[59]

In the United States, the 21st Century Cures Act and follow-on final rules are facilitating health care stakeholders' sharing of radically interoperable data. In early 2020, the US Department of Health and Human Services' (HHS) Office of the National Coordinator for Health IT (ONC) released the Cures Act Final Rule, which established exceptions to the 21st Century Cures Act's information blocking provision. Specifically, the final rule:

- Gives patients and their health care providers secure access to health information
- Aims to increase innovation and competition by fostering an ecosystem of new applications to provide patients with more choices in their health care
- Calls on the health care industry to adopt standardized application programming interfaces (APIs), allowing individuals to securely and easily access structured electronic health information (EHI) using smartphone applications
- Includes a provision requiring that patients be allowed electronic access to all of their structured and/or unstructured EHI at no cost.[60]

Responding to public health threats posed by the pandemic, the ONC in October released an interim final rule with a comment period that extends the compliance dates and timeframes necessary to meet certain requirements related to information blocking and conditions and maintenance of the certification requirements.[61]

Individuals' willingness to share data is important for developing the interoperable data platforms necessary to drive innovation and discovery. The increasing inclination of Canada's citizens to share personal health data, along with growing adoption of digital solutions within Canada's health sector, is creating a significant opportunity for an interoperable, data-driven approach to monitoring and improving population health. While foundational data collection capabilities are continuing to advance in silos, the next stage of maturity involves the integration of clinical and nonclinical data sets to make them interoperable and able to "talk to each other," with the goal of improving health outcomes and promoting proactive health and well-being management.[62]

A new value chain is emerging around health data. Individuals are experiencing a data explosion through wearables and growing numbers of "always on" sensors in the home, at work, and in the medical environment. This data will increasingly be used for personalized insights and interventions, and primarily aimed at vitality, prevention and early diagnosis. This will create a new data value chain, offering opportunities for existing players and new entrants in data collection, data analysis, translating analyses to personalized insights and interventions for patients, and accessing these insights through a user-friendly visual interface.[63]

With COVID-19 as an accelerator, the confluence of governments, health care organizations, and consumers interested in and willing to share information is tipping the balance in favor of increased health data interoperability. Yet to be settled is the thorny issue of data ownership; in the United States, data is patient-owned; in other countries, it's government- or health system-owned. The intersession of standards bodies to set global parameters around privacy and data security should help to mitigate concerns.

Socioeconomic shifts

Only part of an individual's health status depends on his or her behavior and choice.[64] Some studies say that up to 80% of health outcomes are affected by social, economic, and environmental factors:[65] social determinants of health that include physical environment, food, infrastructure, economy, wealth, employment, education, social connections, and safety.[66] An increasing demographic of underserved consumers and communities is leading to **health inequities**—systematic disparities in the opportunities groups have to achieve optimal health, leading to unfair and avoidable differences in health outcomes.[67]

We already see strong disparities based on race and income for most diseases—from diabetes to heart disease to mental health issues. Now COVID-19 has thrust health equity into the spotlight and is magnifying the profound impact that systemic racism has on the health and well-being of individuals and their communities. Numerous studies have shown that COVID-19 disproportionately impacts low-income populations and communities of color.[68]
In the United States:

- Among racial and ethnic groups, Blacks have had the highest COVID-19–related hospitalization rate, with 465 per 100,000, which is nearly four times the rate of white Americans (123/100,000).[69]

- Black residents of a community are three times as likely as their white neighbors to become infected with COVID-19 and are more than twice as likely to die from it.[70] Black Americans are more likely to be employed in front-line, essential jobs—and are more likely burdened with chronic disease—because of the drivers of health. If infected, the mortality rate from COVID-19 is higher for Black people because of delays in or limited access to testing and treatment.[71]

- More than 60% of US Hispanic and 44% of Black households have experienced a job or wage loss due to COVID-19, compared to 38% of white households.[72]

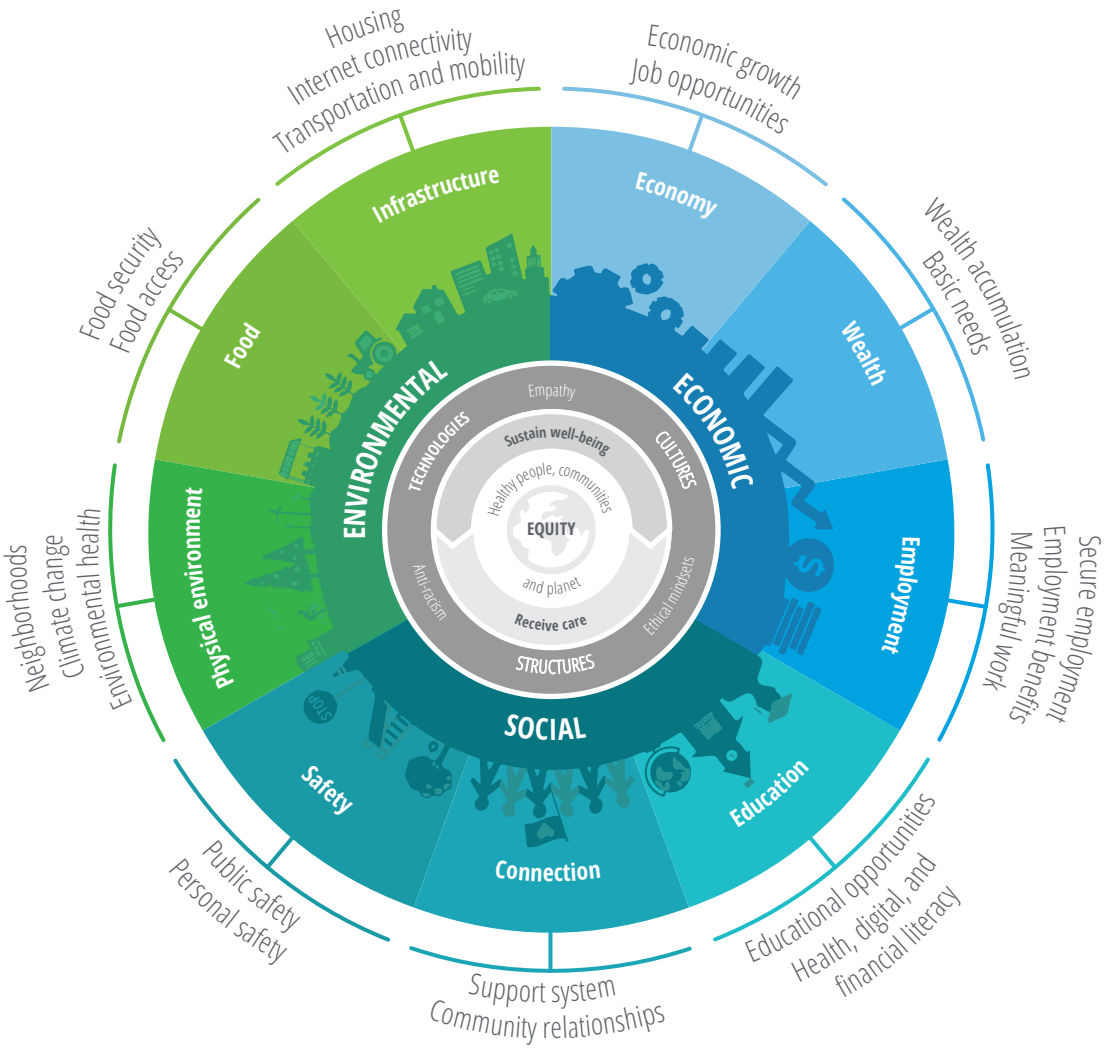
The higher mortality rate for COVID-19 among nonwhite racial groups in the United States and the pandemic's health and economic impacts on other countries' lower-income populations illustrate the pervasive and systemic health care access issues inherent in many markets.[73] For example, COVID-19 has exposed capacity and capability issues in China's tiered health care system, including limited inpatient capacity of Class III hospitals; insufficient diagnosis and treatment capabilities and infrastructure in Class II and below hospitals.[74] In addition, the pandemic has undermined vaccination programs in fragile health systems in Africa and other underdeveloped regions. The United Nations warns that this could put 80 million children at risk from preventable diseases such as malaria, tuberculosis, and measles across 45 countries.[75] Also, the World Bank's *Global Economic Prospects Report 2020* estimates that COVID-19 will push another 71 million people into extreme poverty under its baseline scenario and 100 million in its downside scenario. The worst-affected countries will be those in South Asia and Sub-Saharan Africa, where rates of poverty are already high.[76]

What can health care stakeholders do to make health more equitable? A growing number of professional associations, health care organizations, and community-focused ecosystems of clinical and non-clinical stakeholders have used social media and their public platforms to decry the impact of racism on health status.[77] Another approach involves quantifying the impacts of racial and economic disparities and then designing proactive organizational strategies to alter the trajectory. This process starts by placing equity at the center and expanding from there. Deloitte's health equity framework (figure 6) outlines the foundation for this work, giving specificity to the issues and opportunities that should be addressed to achieve this broader goal.[78]

Some populations suffer from far greater disparities in health than others. Policies that foster inequities at all levels (from organization to community to county, state, and nation) are critical drivers of structural inequities;[79] however, such inequities can be mitigated by social policies that can shape health in powerful ways.[80] Case in point: The Chinese government's upcoming 14th 5-Year Plan, expected to be finalized by mid-March, 2021, is likely to highlight the central government's areas of particular attention to remedy the uneven distribution of resources in the public service sector and the ill-prepared emergency response mechanism, especially in the field of public health.[81]

FIGURE 6

Health equity framework



Source: Deloitte analysis.

THE MENTAL WELL-BEING AND BEHAVIORAL HEALTH IMPERATIVE

The pandemic, with its companion economic and social justice crises and uncertainty around vaccine production and distribution, has produced spikes in anxiety, depression, and other mental and behavioral health challenges. Prolonged isolation and physical distancing measures are demonstrating how social connection contributes to physical health as well as mental and emotional well-being.[82] Isolation can have significant impacts on health outcomes, with the long-term effects of loneliness similar to those caused by smoking or obesity.[83] Studies show that people who do not feel connected to others are more likely to catch a cold, experience depression, develop heart disease, have lower cognitive function, and live a shorter life.[84]

These pandemic-related spikes are extensions of long-simmering issues in global behavioral health:

- One in four people will be affected by a mental or neurological disorder at some point during their lifetime.[85]
- Approximately 10% of the world's population is affected by mental, neurological and/or substance use disorders (MNS),[86] making mental health a leading cause of ill health and disability.
- Globally, it is estimated 264 million people suffer from depression.[87]
- Dementia affects upwards of 50 million people globally. With the rise in global geriatric population and lack of treatments available, the number of people suffering with dementia is set to grow significantly in the future.[88]

The burden of mental health conditions is increasing for countries and regions due to unhealthy lifestyle practices, socioeconomic factors, and genetic predispositions. One study estimated a US$210.5 billion cost to the global economy each year from major depression alone.[89] The direct and indirect costs of behavioral illness are estimated to total up to 4% of global gross domestic product (GDP),[90] exceeding the burden of cancer, diabetes, and respiratory disease combined.[91] Mental health disorders could cost the global economy up to US$16 trillion between 2010 and 2030 if a collective failure to respond is not addressed.[92] Yet countries currently spend less than 1% of their total health expenditure on mental health services[93] and only 1% of the global health workforce is working in mental health.[94] Meanwhile, public and private care providers and social care services are experiencing new levels of utilization and pressure amid burgeoning demand for mental and behavioral health support.

There is an enormous need for governments and organizations across the world to address mental and behavioral health issues. For insurers, acute behavioral health issues are among the greatest drivers of need for medical care and associated costs. Public and private health system providers have clinical and business imperatives to address their patients' needs. For employers, behavioral health issues limit employees' ability to work at their highest level and, in extreme cases, drive absenteeism.[95]

Unfortunately, industry stakeholders face considerable challenges in addressing the large scope of the behavioral health crisis, among them:

- **Gaps in clinical and scientific knowledge.** Research into understanding behavioral health disorders is still in an emerging phase. Even well-defined disorders can be difficult to categorize, diagnose, and treat. For example, research suggests that 70% of people with bipolar disorder are initially misdiagnosed.[96]
- **Stigma and drivers of health.** In many parts of the world, individuals with mental and behavioral health problems face stigma, which is less common for physical health problems.[97] This can make them less willing to seek treatment or to share their personal information with others, including clinicians. Meanwhile, social drivers of health, such as access to nourishing food, a steady income, and a place to live, can contribute to the illness, make it harder to provide effective care, and undermine overall health.[98]
- **Inadequate, inaccessible, and unaffordable care systems.** The general challenge of providing mental and behavioral health services is made more difficult, in part, by a shortage of behavioral health specialists: The number of behavioral health workers in

low-income countries can be as low as two per 100,000 people.[99] The challenge is also a problem in high-income countries: In the United States, over 100 million people live in communities designated as "health professional shortage areas" for behavioral health professionals.[100] Although telehealth and app-based access to behavioral health support is expanding, diagnosis and care need to be more readily accessible, affordable, and integrated with other medical and social services.

- **Siloed health care data management.** The sources for behavioral health information frequently are not interoperable to support clinical decision-making and other insights. And even when there is data-sharing, it is not necessarily usable by everyone because data is not interoperable across users and systems. Finally, because of the associated stigma, behavioral health challenges may be underreported even when data is available.[101]

We see six disruptive factors driving meaningful, global change in mental and behavioral health. First, cultural and behavioral transformation, boosted by increased government investment and employer emphasis, will reduce the stigma associated with behavioral health issues. Second, advances in genetics, neuroscience, endocrinology, and associated fields will lead to a more thorough knowledge of behavioral health and effective treatments. Third, widespread adoption of virtual care and use of AI to deliver more customized solutions will increase consumer access to care. Fourth, data-sharing at scale across health systems will facilitate proactive identification of behavioral health issues. Fifth, interoperable data will support sharing of diverse data types to better tailor treatments. Sixth, empowered and informed consumers will have greater choice of behavioral health providers and treatments, and a higher-quality care experience.[102]

Several health technology companies are already developing analytics platforms to aggregate information from diverse data sets and generating actionable insights, which can be used to improve patient care, provider management, and overall mental and behavioral health outcomes. Companies such as Innovacer, VirtualHealth, and NowPoW are supplying interoperable, multipurpose care platforms to provide population health-based solutions for behavioral health.[103] Cerner's integrated EHR combines patient health data with behavioral health data to provide real-time insights; Arcadia provides behavioral health solutions that are compatible with a wider range of EHR vendors; and Optum Performance Analytics integrates clinical and claims data with social determinants of health indices and behavioral and patient-reported data.[104]

Collaboration

One legacy of the pandemic is likely to be a renewed focus on collaboration across the health ecosystem. Already, we have seen new relationship paradigms to drive clinical innovation and widespread knowledge and resource-sharing even among traditional competitors, as well as heightened levels of trust. Traditional boundaries have become more porous or even erased, creating opportunities for new health care behaviors, new business and funding models, and more effective stakeholder collaborations, leading to novel combinations of products and services from incumbents and new entrants.[105]

COLLABORATION CAN STRENGTHEN THE HEALTH CARE SUPPLY CHAIN

The health care supply chain's brittleness, global interdependencies, and vulnerability to shock became painfully apparent during the early stages of the pandemic. It wasn't just about whether or not hospitals and health systems had access to ventilators and durable medical equipment; supply shortages across personal protective equipment (PPE), medical devices, and pharmaceuticals resulted in a volatile marketplace further complicated by price gouging, fraud, and low-quality suppliers.[106] Providers are likely to continue to struggle with supply chain issues in 2021 as COVID-19 outbreaks possibly surge, recede, and surge again. Fortunately, providers, along with manufacturers and other suppliers tested by COVID-19, have learned first-hand how collaboration can strengthen the health care supply chain.

Health care supply chains for many years have been optimized for cost; in the process, the system has lost a significant amount of resilience, which became apparent when manufacturers and their customers could not flex capacity at the rate necessary to respond to escalating COVID-19 cases and hospitalizations. The pandemic has also highlighted some challenges in the way hospitals and health systems manage their inventory. Over the past decade, most facilities have been using a just-in-time (JIT) system to manage their supplies, which means medical inventory is intentionally limited. While JIT is effective most of the time, this experience has taught us that health facilities should have a system to respond to unexpected surges in demand.[107]

A "control tower" approach can help health company leaders to proactively manage their end-to-end supply chains in real time, offering them a way to recognize the extraordinary cases and identify the right triage and solutions. However, effectively managing both the short- and long-term implications of an evolving health care supply chain will require new skills, business processes, relationships, and advanced technologies.[108]

Enhanced manufacturer-distributor-customer collaboration can help strengthen the health care supply chain by enabling the right level of resilience and redundancy in the system and boosting providers' ability to overcome challenges similar to those encountered earlier—and throughout—the pandemic. Providers must evaluate their current critical supply stock, determine what is necessary for scheduled care, and plan for any existing supply gaps by engaging with the vendors directly and/or sourcing from alternate suppliers. And they must step up conservation, security, and preservation efforts, including storage facilities and sterilization methods.[109]

Today's supply chain challenges pale in comparison to the huge task ahead in getting lifesaving COVID-19 vaccines to people around the world, in record time, to halt the virus's spread. Importantly, this will have to be done while maintaining production, distribution, and administration of other therapies, including the seasonal flu shots, and other essential medicinal products. Lessons learned about the importance of collaboration will be crucial to help governments as well as pharma and logistics companies prepare manufacturing and worldwide distribution of COVID-19 vaccines.[110]

Provider-manufacturer-supplier collaboration was key to shoring up a vulnerable health care supply chain during the onset of the pandemic (see sidebar, "Collaboration can strengthen the health care supply chain") and is at the center of COVID-19 vaccine development and distribution. Other examples of health care collaboration include:

- Building data platforms and exchanges that integrate real-time health, social, and environmental data

- Leveraging data analytics to improve health education, prevention, and treatment for consumers

- Forging alliances between health care incumbents and disruptive entrants (companies in the food industry, retail, financial services, and technology) to generate insights and develop solutions for the improvement of wellness, vitality, and prevention, with health data being an important binding factor[111]

- Establishing new or expanding public-private partnerships to ensure health and health care are available to all

- Establishing ecosystems that enable real-time data and analytics; serve as centers for education, prevention, and treatment; and connect consumers to virtual, home, in-person, and auxiliary care providers

- Using "health systems as a platform" to transform the delivery of care and leveraging their presence in the community to address issues of health inequity

Novel collaborations are being employed in health systems around the globe:

- **Accelerating scientific discovery in the United States and Canada.** US and Canadian hospitals are collaborating with AI health care company Imagia to accelerate health care discoveries through the company's EVIDENS platform. The platform empowers clinicians to structure data from live hospital systems by enabling automated data segmenting and labeling. It transforms unstructured clinical patient data into outcome-based structured information, thus scaling up traditional scientific discovery processes. The hospitals are working in collaboration to improve medical outcomes for lung cancer patients by analyzing treatments and results with the EVIDENS platform.[112]

- **Building resiliency into NYC's health system.** Partnership for New York City, a business group representing some of New York City's largest private-sector employers, in collaboration with Deloitte, recently published *Toward a resilient system of health*, a report that proposes updates in health care planning, finance and delivery, and cross-sector approaches that will contribute to the city's recovery from COVID-19 and to achieving a more equitable and resilient society.[113] The report concludes that just as the different challenges of COVID-19 are interconnected so are the solutions: an effective and resilient health care ecosystem will require a collaborative, multisector approach that deals with all the factors that make populations more vulnerable to disease.[114]

- **Assessing COVID-19's impact on patients' lungs in Italy.** Collaboration between Vimercate Hospital and Fujifilm on an AI-enabled platform called REiLI supported hospital radiologists in assessing the impact of COVID-19 on patients' lungs. During its first five days of operation, the platform worked on more than 600 images. From February 23 to May 15, 2020, more than 900 people were found to be COVID-19 positive, with an average of 80 chest X-rays per day. REiLI was also used to automatically process over 8,000 chest X-rays executed from January 1 to March 31 to analyze the evolution of the pandemic and to start a retrospective study of the lung disease.[115]

Do these and similar partnerships portend the transition to a new era in health care collaboration? Certainly, the urgency to respond to COVID-19 has opened the door to various partnering arrangements. What remains unknown is whether or not organizations will revert to a traditional "go it alone" mindset once the pandemic is in their rearview mirror. Also, efforts to establish or expand collaborations—especially cross-border arrangements—can present a host of challenges, including different government pricing mechanisms, drug approval and procurement processes, and data-sharing and ownership regulations. Ultimately, the pursuit of game-changing solutions to persistent and emerging health threats should overcome any lingering reservations to collaboration.

Future of work and talent

COVID-19 has become the catalyst to a future of work and talent in health care that might otherwise have taken years to attain. The pandemic has overwhelmed many countries' hospitals and health systems and highlighted gaps in the health care workforce. It has also changed workplace dynamics, introducing digitally enabled agile ways of working—such as using remote clinical and nonclinical staff—to address capacity and demand challenges, and new robotic processes to help support service delivery. Providers are increasingly using data analytics and automated dashboards to ensure staff can work more efficiently and effectively. Crucial enablers include the expansive use of connected care solutions, such as telehealth and remote patient monitoring, and technology-enabled ways of diagnosing, monitoring, and treating patients.[116] Several trending developments hold both short- and long-term implications for the health care workforce:

Sourcing medical staff. Waves of COVID-19 patients are exacerbating hospitals' and health systems' need for clinical and nonclinical staff. With travel bans making it more difficult to recruit foreign health care workers, governments have tried to fill gaps by encouraging retired doctors and nurses to assist with COVID-19 care and accelerating medical trainees' placement in hospitals. While these moves are expected to increase the ratio of doctors per 1,000 population from 1.9 in 2019 to over 2.0 in 2024,[117] countries' reliance on foreign medical workers is likely to continue. Italy passed an emergency decree in 2020 to award licenses to migrant medical workers as it struggled to contain the pandemic. Several US states, France, the United Kingdom, and the United Arab Emirates enacted similar legislation.[118] Meanwhile, developing countries that supply health care workers are stepping up efforts to limit the "brain drain." In the Philippines, the 2018 Universal Healthcare Law requires students who received state scholarships to serve in the country for three years. In other countries, governments have approved large pay rises for medical workers to persuade them not to emigrate.[119]

Adapting to the virtual workplace. Few people will return to the workplace they knew pre–COVID-19. Even front-line clinicians—who never left their physical workplaces—have watched their jobs change in countless ways. With people unable or unwilling to leave their homes for health or safety reasons, health care organizations and their workforces have had to adapt to accommodate their customers/patients. For instance, nearly double the number of consumers used telehealth or virtual health in the past year, now at 28%, according to a recent Deloitte survey of more than 1,500 consumers. As more physician-patient interactions happen virtually, this percentage will likely rise.[120]

When considering a transition to a hybrid/virtual workplace, leaders should consider the potential impacts on recruiting and identifying talent, funding technology infrastructure improvements, updating organization and operating models to accommodate onsite and remote workers, and building inter- and intra-organizational relationships and a cohesive corporate culture.[121]

Reskilling and upskilling. Health care organizations' urgency to upgrade workforce skills and capabilities—and provide clinicians with the training and tools they need to practice at the top of their license—is increasing. Seventy-four percent of respondents to Deloitte's *2020 Global Human Capital Trends* survey said that reskilling the workforce is important or very important for their success over the next 12–18 months; however, only 10% said they are very ready to address this trend.[122] Identifying future skills needs and training requirements is another organizational imperative; one made more difficult by clinicians' rapidly evolving roles in a dynamic health care ecosystem; for example, physicians providing care in virtual settings may need training to polish their "webside" manner. Scenario planning and projections can provide some clarity by identifying the "theme" of a future need within a broad view of where the organization is heading. Such insights can help leaders engage in strategic workforce planning to balance individual and team skills needs and provide workers with adequate time to participate in learning opportunities.

Blending human-technology capabilities. Advances in clinical process automation, care virtualization, genomics, and behavioral science have reduced demand for some present-day health care jobs and skill sets and raised concerns that machines may one day replace human workers. Far from being substitutes for each other, however, human and machine intelligence are fundamentally complementary in nature. Bringing together teams of humans and technology can generate new, more productive ways to solve problems, gain insights, and create greater clinical and business value.[123] We are beginning to see signs that health care organizations are expanding their view of human-technology combinations to identify new roles and synergies and move toward points of augmentation and collaboration. Changing workforce roles and functions are likely to require specialist education and training in genomics, AI/ML, and natural language processing; enhanced diagnostic, data analysis, and critical judgment skills; and proficiency in interpreting reports and risk scores.

Diversity and inclusion. Concurrent with the need to reskill/upskill the existing workforce for a transformed future is the growing imperative to promote workplace diversity and inclusion. We are seeing organizations experiment with different teaming strategies—leveraging team member diversity and trialing new people-technology roles—to solve specific business problems. Diversity of identity gives a team the ability to tap into different viewpoints and experiences—tacit knowledge that can greatly enhance effectiveness in working with a diverse set of internal and external stakeholders.[124]

The health care workforce has been significantly and uniquely impacted by the COVID-19 crisis. How health care organizations respond and recover to support their employees—who in turn serve their patients and members—will rely in no small part on rethinking the strategies for rapidly rewired workforces.

Questions/actions health care leaders should consider for 2021

How can our organization tune our services to meet consumers' immediate health care needs and goals and support their journey to the Future of Health?

The health care consumer of the future is arriving faster than anticipated, fueled by the COVID-19 pandemic. Yet every person's health journey is different. Health care organizations should acknowledge this fact and tune their services to elevate each encounter into a personalized health experience. Among potential actions:

- **Deploy new tools and services.** New digital tools can play an important role in the future of care—from monitoring a person's health, to helping individuals get access to more convenient care, to giving caregivers peace of mind, and helping older adults remain in their homes rather than move to institutional care. When organizations deploy them optimally, these tools have the potential to increase consumer satisfaction, improve medication adherence, and help consumers track and monitor their health.[125]
- **Explore ways to benefit consumers through data interoperability.** While consumers are more willing to share their data, organizations should ensure that the data serves consumer needs through adequate interoperability. Younger consumers are most likely to say they will use digital tools for their health but are also the most frustrated with the inconvenience of their data spread across various channels. Today, some organizations and developers are working together to give consumers one-stop access to their medical information and control over how the data is shared. But this will likely require interoperability between the various organizations that currently own or store the data.[126]
- **Earn consumer trust through empathy and reliability.** To maintain or even re-earn the trust of consumers, health care organizations should demonstrate reliability, transparency, and most importantly, a sense of empathy in how they operate. As consumers consider their current and future care options, health organizations could instill in them a sense of control that helps reduce uncertainty and enables the right connections to help consumers get the resources they need.[127]

How can pandemic-related disruptions inform and guide our care model innovation efforts?

The global health care sector's problems of escalating demand, budget pressures, and caregiver shortages existed long before COVID-19. However, the current crisis has disrupted both the nature and the timeline of industry transformation. As organizations rethink the types of services provided and the locations where they are performed, they must also rethink the current parameters of care delivery models and be ready to transform at the enterprise level—not just optimize select pieces of the ecosystem within existing constructs.[128]

- **Redefine types of services.** The current situation is a catalyst for redefining what health services are. It's shifting the long-held assumption that health care is "sick care" for the physical body and expanding it to include consumers' mind, spirit, and body. Providers should focus on integrating goals and consumer preferences into the design of services they provide and the channels/locations through which they provide services.[129]

- **Expand the definition of location.** It's unlikely that health care will revert to a time when virtual or automated care was not part of normal operating procedure. More than ever, consumers will expect care to be available when and how it's most convenient and safe for them via their phones, fitness trackers, or computers, at their home or in their frequented retail settings. This includes virtual care (virtual visits, remote monitoring), at-home prescription delivery (mail order or even drones), remote monitoring, digital diagnostics and decision support, and self-service applications for education, behavior modification, and social support, among other options.[130]

- **Evaluate new service and financial models.** What COVID-19–related disruptions lay bare is that it's time for the health care industry to put the consumer at the center of all business decisions and commit to elevating the human experience in health. Defining products and market offerings and building care models that serve consumers' needs and goals will require seamless connectivity and personalization. It will demand unconventional and unexpected partnerships across competitors, niche players, and nontraditional competitors. Even at this challenging time, organizations must be willing to invest in optimizing or replacing foundational structures, technologies, and workforce processes, and consider emerging financial models such as value-based care, health care services, and capitated payments that put patient needs and cost-management concerns front and center.[131]

What actions can help our organization accelerate digital transformation and enable radically interoperable data?

Digital transformation can help individual health care organizations and the wider public and private health ecosystem improve ways of working, expand access to services, and deliver a more effective patient and clinician experience. The following are among supportive actions to bridge capabilities gaps and deliver digital health care at scale:

- **Create a robust health IT infrastructure.** Consider a cloud-based solution that includes reliable connectivity, safe and sufficient data storage, consented access to health data, and data-sharing. Also, implement accessible and integrated EHR systems and basic digital technologies that accelerate digitalization.[132]

- **Invest in virtual health technology and train clinicians in its use.** Improve telehealth capabilities and design a process whereby consumers can access their own physicians instead of third-party services; this could help organizations streamline and maximize the benefits of virtual health. Our surveys show that while consumers are keen on future virtual visits, it is not only access that matters: They are still not completely satisfied with their interactions with the doctor or clinician. Training personnel in building virtual interpersonal relationships can be a major step toward improving consumers' virtual visit experience. Organizations should also support physicians in sustaining their use of virtual health, instead of returning to traditional in-person visits.[133]

- **Address the challenge of data interoperability.** Underpin data-sharing with interoperable health data built on universal standards and carried on a personal, longitudinal life record. Standardize health platforms and EHRs to enable the aggregation of data lakes to which organizations can apply AI and predict, for example, early onset of behavioral disorders, and recommend interventions to improve behavioral health outcomes. The more data sources that come together because of interoperability, the better.[134]

- **Establish a robust governance framework** to support change management and a culture of digital transformation, including clarity over data ownership, cybersecurity, patient consent, and patient education.[135]

- **Develop digital leadership skills** and improve the digital literacy of both clinical and nonclinical staff; provide learning opportunities for staff and patients.[136]

How can we better address the socioeconomic, mental well-being, and behavioral health issues that impact health access and equity?

Today's socioeconomic, mental, and behavioral health crises have made it clear that players across the health care landscape—including but not limited to both private and public insurers, care providers, employers, and government policymakers—need to innovate to better serve the whole-health needs of people across the world. The following suggested steps can help improve health and wellness, create business value, and build stronger, more resilient societies:

- **Intervene earlier.** Low-income families and people of color tend to be less healthy than other members of the population and are more likely to have more than one chronic condition. This impacts life expectancy, quality of life, even earning potential. Earlier prevention (including addressing underlying factors) should be the goal for supporting and sustaining well-being.[137]

- **Create more access points to help improve drivers of health.** Consider creating more access points deep into communities that address the drivers of health, enabling better access to traditional care as well as access to food, educational resources, connections to other social services agencies, and information.[138]

- **Combine the power of disruptive technologies with ecosystems to create change**. Use digital technologies and social media platforms to grow social consciousness and awareness and increase empathy. Adopt an ecosystem approach to create change by encouraging national and local governments, community-based organizations, and private

industry to use data to meaningfully improve health outcomes, empower individuals to proactively manage their health and well-being, and foster a sense of community and belonging.[139]

- **Develop a framework of actions and commitments.** Analyze existing policies and practices that either contribute to or enable movement within each dimension of the social, environmental, and economic factors that contribute to inequities. Develop a framework of specific actions and commitments that can enable everyone to attain their best health and reach their fullest potential.[140]

How can we collaborate for new solutions and improved outcomes?

COVID-19 ignited unprecedented collaboration across organizations, industries, academia, and governments and irrefutably demonstrated the value of partnering to deliver new solutions and improved outcomes. As health care stakeholders contemplate how to build and/or expand ecosystem and nontraditional alliances for future value creation, they should consider the following:

- **Leverage each partner's strengths.** Interesting alliances are expected to arise between health care incumbents and technology giants, with each bringing distinct strengths to the arrangement. Tech companies typically provide digital expertise, data analytics and customer experience insights, and large investment budgets. Health care entities bring clinical expertise, market knowledge, and consumer trust.[141]

- **Identify ambitions.** Consider how, why, and where a potential partner will add value. Where do the synergies lie? In which areas of the health care value chain will the alliance operate? Who pays for the value-added solution that the alliance will offer? Many of the tech-health care alliances described above are based on creating value by combining and analyzing data sets and converting these into interventions that save costs or improve quality and the user experience.[142]

How can we address the health care workforce impacts of COVID-19 and build future adaptability and resilience?

Addressing near-term workforce challenges arising from COVID-19—in particular, safeguarding front-line staff's safety and well-being—while also building future workforce adaptability and resilience will require data-driven, human-centric solutions that allow organizations to move quickly to support evolving employee needs.[143] Companies can consider implementing the following strategies:

- **Identify and adopt the technology that enables the work of each team and function.** Cloud technologies, remote-work platforms, shared services, and AI can enable organizations to extend remote work arrangements they established during the pandemic well into the future. In preparation, organizations should prioritize spending on cloud security and governance tools, virtual-desktop infrastructure, and other key instances that can securely support their remote workforce.[144]

- **Reimagine physical and remote spaces using analytics and smart-building technology.** Some health organizations are examining how employees may use office spaces in the future. With more people working virtually, can they reduce their real estate footprint? Should facilities have fewer dedicated individual workstations and offices

and more meeting rooms? Organizations should consider using analytics and smart-building technologies to think through real estate needs and reimagine their long-term plan to optimize the workplace.[145]

- **Use data science and predictive analytics to explore and improve networks and collaboration.** Data on how individuals and teams interact and collaborate can help organizations look beyond the traditional organizational chart to strengthen and expand networks and collaborations, nurture new ideas, and help foster a culture of inclusion and belonging. This data is especially powerful when paired with performance and productivity metrics, as well as pulse surveys or assessments that allow organizations to hear directly from employees.[146]

- **Prioritize DE&I as a core enabler of culture and organizational performance.** Organizations should be deliberate about fostering diversity, equity and inclusion (DE&I), engaging employees in their work and in the mission of the organization, and offering opportunities for training, development, and growth. Specifically, organizations should conduct assessments to find out who in the organization needs what to feel included, be productive, and grow in their role.[147]

- **Develop enduring human skills that make for a more resilient organization.** Nurturing human capabilities is different from skills training. Employees should still acquire basic knowledge and tactical, context-specific skills, but they should also hone enduring capabilities, such as creative problem-solving, collaboration, and critical thinking, which can be best developed through real-life application and practice. This shift can require organizations to revisit traditional notions of training.[148]

Global health care sector stakeholders are likely to face considerable challenges in 2021; first and foremost, ramping up production and coordinating the distribution of COVID-19 vaccines. Yet, even as they join forces against the pandemic's immediate crises, organizations also need to understand, analyze, and respond to the trends that are propelling them toward the future of health. For 2021, these include consumers and the human experience, care model innovation, digital transformation and interoperable data, socioeconomic shifts, collaboration, and the future of work and talent.

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SHORT TAKE

2021 global health care outlook

Accelerating industry change

THE COVID-19 PANDEMIC is placing enormous strain on the global health care sector's workforce, infrastructure, and supply chain, and exposing social inequities in health and care. COVID-19 is also accelerating change across the ecosystem and forcing public and private health systems to adapt and innovate in a short period.

How health care stakeholders analyze, understand, and respond to the issues arising in 2021 will shape their ability to navigate from recovering to thriving in the postpandemic "new normal" and advance their journey along the path to the Future of Health™. Some of the areas that are likely to stand out in the near future are:

Consumers and the human experience

Consumers are driving—and accelerating—the pace of change in health care. Their needs and goals are driving innovation in health-related products, services, and tools. Their preferences are driving the development of digitally enabled, on-demand, and seamlessly connected clinician-patient interactions. Their demands are driving the transition to patient-centric care delivery across geographies and socioeconomic groups. And their expectations are driving industry stakeholders to elevate a transactional patient/customer health care encounter into a holistic human health experience.

Care model innovation

Health delivery organizations around the world are struggling to solve the long-present challenges of health care affordability, access, quality, and efficiency. However, existing care models can impede their efforts to adapt and evolve for the future, even as COVID-19 accelerates the imperative to transform. Care model innovation can help health delivery organizations to reduce or eliminate many of the challenges arising from today's delivery models.

Digital transformation and interoperable data

Digital transformation can help individual health care organizations and the wider health ecosystem improve ways of working, expand access to services, and deliver a more effective patient and clinician experience. Three technologies are playing increasingly pivotal roles around the globe—cloud computing, artificial intelligence (AI), and virtual care delivery.

Socioeconomic shifts

Some studies say that up to 80% of health outcomes are affected by social, economic, and environmental factors:[1] social determinants of health that include physical environment, food, infrastructure, economy, wealth, employment, education, social connections, and safety.[2] An increasing demographic of underserved consumers and communities is leading to health inequities—systematic disparities in the opportunities groups have to achieve optimal health, leading to unfair and avoidable differences in health outcomes.[3]

What can health care stakeholders do to make health more equitable? Today's socioeconomic, mental, and behavioral health crises have made it clear that players across the health care landscape need to innovate to better serve the whole-health needs of people across the world.

Collaboration

One legacy of the pandemic is likely to be a renewed focus on collaboration across the health ecosystem. Already, we have seen new relationship paradigms to drive clinical innovation and widespread knowledge and resource-sharing even among traditional competitors, as well as heightened levels of trust. Traditional boundaries have become more porous or even erased, creating opportunities for new health care behaviors, new business and funding models, and more effective stakeholder collaborations, leading to novel combinations of products and services from incumbents and new entrants.[4]

Future of work and talent

COVID-19 has become the catalyst to a future of work and talent in health care that might otherwise have taken years to attain. The pandemic has overwhelmed many countries' hospitals and health systems and highlighted gaps in the health care workforce. It has also changed workplace dynamics, introducing digitally enabled agile ways of working—such as using remote clinical and nonclinical staff—to address capacity and demand challenges, and new robotic processes to help support service delivery. Providers are increasingly using data analytics and automated dashboards to ensure staff can work more efficiently and effectively. Crucial enablers include the expansive use of connected care solutions, such as telehealth and remote patient monitoring, and technology-enabled ways of diagnosing, monitoring, and treating patients.

Global health care sector stakeholders are likely to face considerable challenges in 2021; first and foremost, ramping up production and coordinating the distribution of COVID-19 vaccines. Yet even as they join forces against the pandemic's immediate crises, organizations also need to understand, analyze, and respond to the trends that are propelling them toward the Future of Health.

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Endnotes

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