



2023 Global health care outlook

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Overview & Outlook

The COVID-19 pandemic permanently changed global health care, from accelerating the adoption of new technology and care delivery models to increasing the focus on sustainability and resiliency. At the same time, it accentuated existing workforce challenges and the global disparities of health equity.

With more than 70 percent of the world's population having received at least one COVID-19 vaccine, the sector now faces critical questions that will shape its future in 2023 and beyond. In the coming year, health care providers, other sector participants, governments, and regulators must ask themselves how they can:

- Translate lessons about virtual health delivery during the pandemic into improved access and treatment.
- Leverage technology to reduce costs and demands on health workers while improving care for patients.
- Reduce their carbon footprint and thereby help to mitigate some of the environmental threats to public health.
- Ease the burdens on an increasingly stressed workforce by reshaping the scope of job requirements, allowing more remote work, and providing better support such as mental health services.
- Better prepare facilities, supply chains, and partnerships for future pandemics, public health events, or natural disasters.

COVID-19 has not disappeared from the global stage, but public health professionals are increasingly optimistic that the pandemic is becoming endemic, meaning that while the virus is still present, it is becoming more manageable and predictable — more like the seasonal flu.

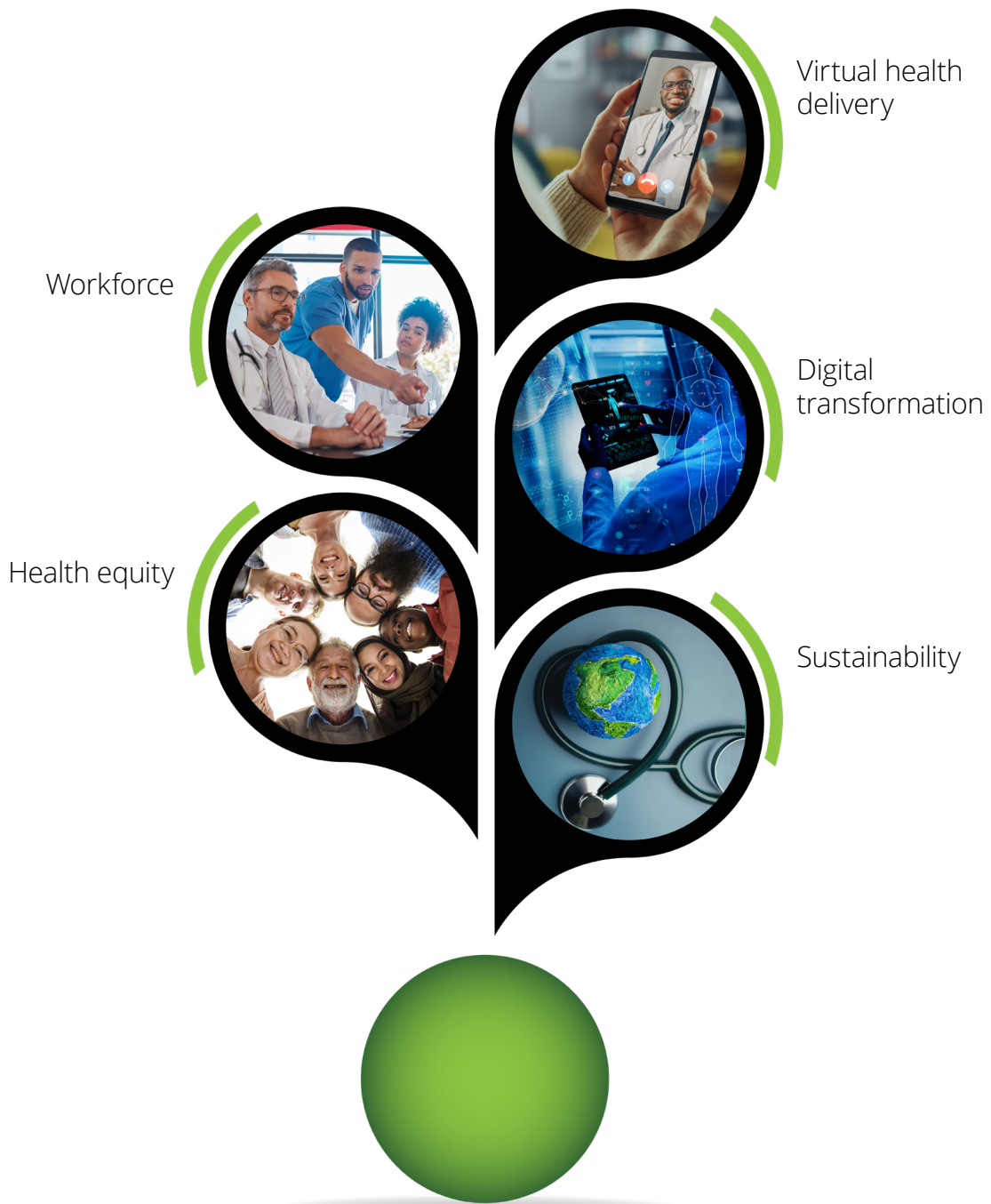
While several hundred thousand new infections — and hundreds of deaths — were being reported daily worldwide at the end of 2022, new vaccines have reduced the number of deaths dramatically. During 2022, no new strains were declared a “variant of concern” by the World Health Organization.

Health care stakeholders should remain alert, nimble, flexible, and prepared for spikes and valleys in COVID-19 cases as well as other communicable diseases.

At the same time, COVID taught health professionals how to adapt to remote working, virtual doctor visits and shortages of medical supplies, personnel, and services. Indeed, the lasting impact of COVID-19 may be one of opportunity in which the health sector has a chance to reinvent itself and capitalize on trends that were emerging even before the pandemic, such as shifting consumer preferences, changes in patient behaviours, and rapidly evolving technology. The sector also should continue to explore clinical innovation and new care delivery models — some of which, like telemedicine, were successfully used on a widespread basis during the pandemic.

If the health sector takes advantage of these opportunities, it could transform care delivery, the patient experience, and ways of working at hospitals and other facilities, while also reducing inequities and boosting resiliency. In this 2023 outlook, we review the five key areas that are critical to this transformation, and we pose questions and suggest actions that professional can take to lead this transformation.

2023 Global Health Care Sector Outlook





Virtual health delivery

COVID-19 raised new concerns about the sustainability of current health care models, particularly fee-for-service systems. By its nature, fee-for-service means waiting for patients to get sick, which can be expensive for providers and potentially harmful for patients. The pandemic revealed how quickly fee-for-service systems can be overwhelmed.

At the same time, the pandemic demonstrated new ways that remote interactions can improve patient care and lower costs for providers — in both everyday care and potentially during the next health crisis. Virtual health offerings — which range from technology that enhances care coordination and patient education to telehealth and care-at-home — incorporate digital capabilities that address a range of challenges confronting the health care ecosystem, including health equity, the rising cost of care, and workforce shortages. In addition, virtual health capabilities have the potential to transform care delivery worldwide.¹

More importantly, COVID-19 has accelerated the health care sector's interest in — and the public's acceptance of — virtual health, largely out of necessity. Mental health is a good example. The pandemic pushed many mental health treatments to virtual settings, and it turned out many patients preferred that.

In the future, interconnected systems and always-on data collection will enhance collaboration among health care participants, and treatments will become more precise yet less complex, less invasive, and less expensive.²

Investment in this new future of health care has already begun. Spending on virtual health was expected to rise by 39 percent in 2022, based on a survey of industry CIOs and technology executives, as providers look to focus health care on outcomes and value.³

While patients' appetite for virtual health tools has increased steadily in recent years, some physicians are unsure about how to best use the technology in a clinical setting. Others worry about losing the human connection that is integral to in-person care and patient-doctor relationships. Quite simply, virtual health has the potential to inform, personalize, accelerate, and augment people's ability to care for one another.

Virtual health can only be effective if it retains a human element to care delivery. Patients must see it as an enhancement to care, rather than an impersonal impediment. Striking this balance will require input from physicians, frontline clinicians, and patients.⁴

The potential of virtual health

Virtual health delivery care goes beyond simply enabling video visits or teleconferencing appointments. It can complement or even substitute for, in-person care. Its primary goals are to expand patient and physician access to critical health services, improve clinical outcomes, increase consumer engagement, enhance care coordination, reduce costs, and improve efficiency across the continuum of care.

These can include direct interactions between providers and patients (direct-to-patient care) and technology such as telestroke, e-ICU, and specialist consultations in which information is shared among providers (provider-to-provider care).⁵

One of the first steps toward embracing virtual health is the adoption of electronic health records (EHR), which can provide a more comprehensive picture of population — as well as individual — health.

However, the health care sector must build on this foundation and leverage additional technologies to improve health care delivery and drive innovation. Virtual health offers the potential to provide patients with better access and preventive care that can keep them from getting sick.

In addition to improving delivery and patient health, virtual health solutions have the potential to address some of the biggest challenges facing health care, including:

- **Health equity.** Virtual health can be intentionally designed to offer more equitable access to diagnosis and treatment for vulnerable and underserved groups.
- **Cost of care.** Remote monitoring for prevention and early intervention can slow or reverse mounting care costs.
- **Environmental impact.** A virtual setup can reduce the need for single-use products. Virtual health has the potential to adapt to changing environmental circumstances while providing optimal care. By reducing the need to transport patients to different locations, it can reduce waste and pollution.
- **Workforce.** Highly skilled clinicians and specialists can reach a broader base of patients and operate at the top of license by allowing them to focus on care and shed administrative duties. In the short-term, virtual health can address clinician burnout. Remote work can allow providers to diagnose and treat many conditions in a work-from-home environment, which can reduce job-related stress. In the future, hospitals can provide care via remote clinical and non-clinical staff.
- **Regulatory.** Virtual health and emerging technologies can improve regulatory outcomes, such as the vaccination monitoring used by regulators during the COVID-19 pandemic. At the same time, the digitalization in health care facilities and the shift to EHRs will come with increased scrutiny. In the US, data storage vendors must demonstrate a specified level of latency and responsiveness. Other countries require that patient data cannot be stored beyond their sovereign borders.

The benefits of virtual health

The virtualization of care has both changed the nature of care delivery itself and attracted new market participants. Larger providers have been investing in small health firms. The Mayo Clinic and Kaiser Permanente invested \$110 million into Medically Home Group, a hospital-at-home venture company.⁶

At the same time, virtual health has drawn the attention of technology and retail giants, including consumer electronics retailer Best Buy, which in November 2021 paid \$400 million for Current Health, a virtual care solutions provider.⁷ Apple⁸ collaborated with Zimmer Biomet to develop remote sensors that work with smartphones and smart watches to track patients' recovery from knee replacement surgery.⁹

As more digital health technology is incorporated into clinical processes through cloud computing, machine learning, and internet-connected devices, it can significantly reduce care costs. In one study, an insurer found that digital health technology reduced emergency-room utilization by 9 percent and inpatient admissions by 17 percent, resulting in overall savings of \$641 per member each month.¹⁰

In addition, technology offers a solution to the shortage of critical care physicians. Japan's Showa University Hospital, for example, is using e-ICU intensive care units with remote care centers via on-demand, two-way, audio-visual communication. The connection allows patients' bedside care team to consult with the e-ICU clinical team.¹¹

Similarly, in 2021, Deloitte collaborated with Haryana's Karnal district located in India to reduce the burden on the health system through an "extend the hospital ward" program that provided virtual, in-home care facilities for people in rural areas who demonstrated mild COVID-19 symptoms.¹²

Technology also creates greater flexibility. Patients and providers can choose a hybrid delivery model that combines the attributes of in-person and at-home care. In an innovative primary care model, an advanced care team of clinicians with two or three medical assistants conduct in-person patient visits, which allows providers to use clinicians more efficiently. In early demonstrations, patient, staff, and physician satisfaction has increased.¹³

In Switzerland, where home care is well established, providers are experimenting with the next level of remote care: Hospital at Home. Under this model, patients with an illness that usually requires hospitalization are treated at home. They receive round-the-clock monitoring and supervision through wearable sensors and devices, doctors communicate via telemedicine technology, and specializing nursing staff provides in-person visits as needed.

Hospital-at-Home technology also can complement existing treatment, such as major surgery that still must be done in a conventional hospital (Figure 1). By offering patients the option of recovering from major surgeries at home, the service improves the healing process for patients and reduces the cost of long hospital stays for providers.¹⁴ The entire process is conducted in collaboration with pharmacies, insurers, and other stakeholders.

Figure 1. Climate change is a universal comorbidity

Hospital at Home is an extension of standard home care: Patients with an illness that usually requires hospitalization are treated in their home environment. The decentralized concept places the patient at the center and requires cooperation between different stakeholders such as hospitals, doctors, pharmacies, and insurance companies.



Source: Deloitte analysis.

At-home monitoring systems may also help curtail a flood of demand from an aging global population. For instance, linking technologies such as smartwatches to remote sensors and monitors could allow this population to age in place, helping reduce ER visits and improve patients’ mental health and quality of care. As a result, the global market for remote monitoring devices is expected to grow to more than \$101 billion in 2028 from about \$30 billion in 2021, or 18.9 percent annually.¹⁵

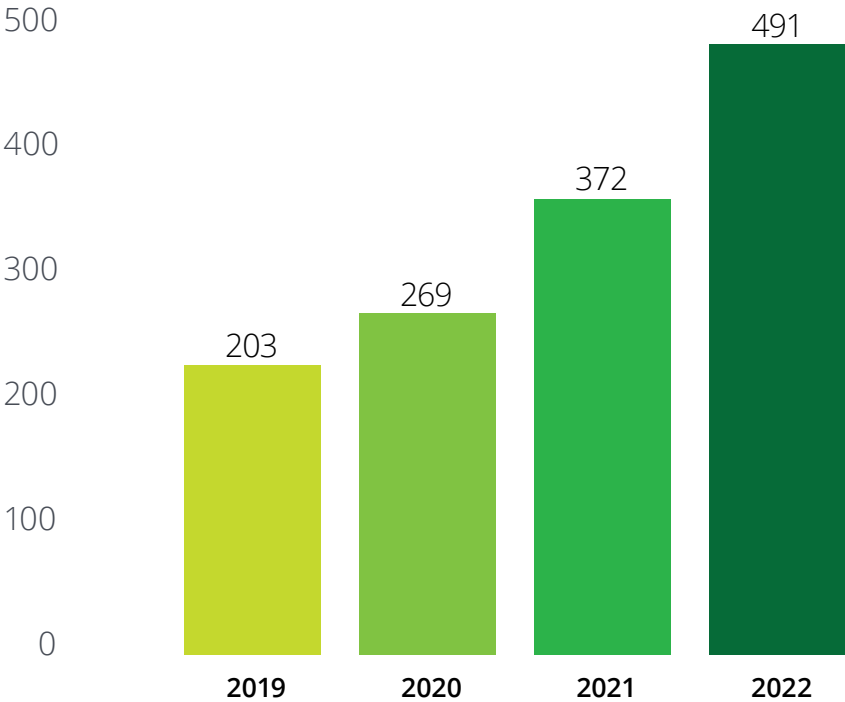
By 2024, Deloitte predicts that almost 440 million consumer health and wellness wearable devices will ship worldwide – as health care providers become more comfortable using them. These numbers include both smartwatches, which are marketed to and purchased by consumers, and medical-grade wearables—typically called “smart patches”— that are both prescribed by health care professionals and available off the shelf.¹⁶

While mental health services were seen at the forefront of virtual health during the pandemic, they also are finding a growing following among mobile users.¹⁷ Apps are seen helping to manage mental health conditions such as anxiety or depression, and they can work in conjunction with more traditional therapies by providing a channel for accessing support from a mental health professional through live chat, video, or telephone. These apps also help improve general well-being by encouraging behavior change, such as practicing mindfulness and meditation.

As many as 20,000 mental health apps currently are available, and many mental health app developers are launching collaborations with other online services and apps, such as Snapchat and Bumble, which will expand their reach with consumers.¹⁸

Deloitte predicts that global spending on mobile mental health applications, which surged 32 percent annually — to \$269 million in the in the first 10 months of 2020 from \$203 million for the same period in 2019 — will continue to increase at about 20 percent a year (Figure 2).¹⁹

Figure 2. Global Spending on mental health and well-being mobile apps, 2019-2022, US\$ millions



Note: Spend estimates for 2021 and 2022 are predictions.

Source: SensorTower, Mobile Wellness Market Trends 2021.

Implementing virtual health

Before the industry can fully embrace the benefits of virtual health, however, it must better assess overall population health and improve collaboration among institutions to build and share data more quickly. Part of the reason for the delay of this fundamental step is a lack of agreement on who should lead the efforts — government agencies, insurers, or private companies?

In addition, providers must have the incentives to make the necessary investments, which will require them to determine additional revenue from those investments. In addition, if virtual health is going to transform how care is delivered, it must be developed with input from clinicians. Virtual health must be more than just a tool, it must represent a new, interactive, comprehensive, and expansive approach to care delivery.

However, there is one ingredient that essential to any form of digital engagement, and it's vital for virtual health: trust. The health care industry has historically struggled to achieve a consistently high level of trust, especially among racially and ethnically diverse populations. Providers can enhance trust in virtual health by partnering with community organization to ensure care delivery is meeting the needs of local populations. Care delivery should be designed with input from diverse populations, and it should rely on delivery channels that can reach those populations.²⁰

In the future, these emerging technologies will combine into a tier-based system of care, with each level designed to address different degrees of medical acuity.

Questions for providers

Assessing where providers stand today in terms of embracing virtual health is essential in building predictive tools to define and investment to fund future capabilities. Executives must ask themselves key questions, such as:

- How do we best integrate with EHR companies?
- How can virtual health needs integrate with the patient record and the patient and clinician experience?
- Is patient choice the correct strategy? What if patients never want to come back to the doctor?
- Can we use second opinion choice to expand internal care offerings?

Questions for health leaders to consider in adopting virtual health delivery

Virtual health delivery is not a substitute for traditional care. Instead, it offers new ways of care delivery that were not possible in the past. In adopting virtual health, organizations should consider the following steps:

- Educate, support, and equip physicians to infuse the human element of care in virtual health encounters
- Rethink existing care models and assess how to prioritize virtual health investments for future care models
- Ensure virtual health is accessible to, and meets the needs of, all patient populations
- Develop a thorough understanding of the human experience of receiving and providing care, apply a thoughtful approach to workflow redesign, technology applications, and the use of care teams, and follow a careful change management plan
- Involve physicians, patients, and other care team members, and value their input while designing and implementing human-centered virtual health offerings and workflow processes
- Consider regulatory and policy issues that may impact your model, advocate for flexibility in virtual health design, and support associated adequate reimbursement



Digital transformation

The COVID-19 pandemic overwhelmed health care systems worldwide, resulting in a surge in the number of patients, increased health care demands, labor shortages, and supply chain issues. Providers turned to technology as one solution to help address these challenges.

Providers who had been slow to embrace technologies such as telemedicine and electronic health records (EHRs), are now accelerating adoption of new technology as they attempt to reduce costs, deal more effectively with the changing patterns of demand, address a shrinking clinical workforce, and prepare better for the next global health crisis.

At the same time, one in three adults worldwide have chronic conditions that increase the burden on health care systems, one in four will experience mental illness during their lifetime and more than 75 percent of health consumers expect more accessible personalized care.¹ The cost of this care will be significant — for mental health alone the cumulative loss in economic output over a 20-year period ending in 2030 is projected to be US\$16.3 trillion.²

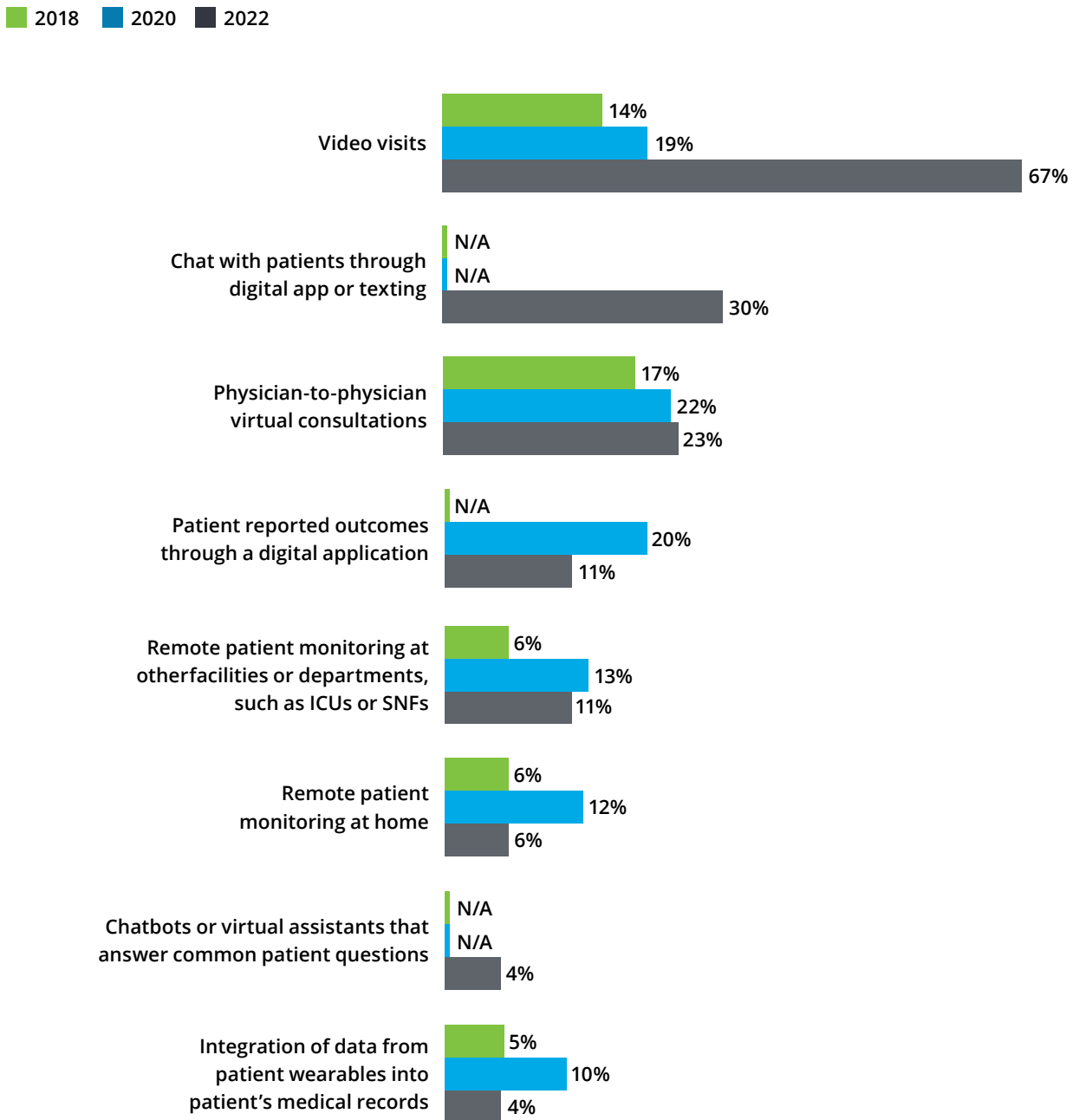
But health care capacity remains constrained by fragmented funding and reimbursement practices, outdated treatment models, excessive administration, inefficient processes, and labor shortages.

As much as US\$935 billion, or 25 percent of all US health care expenditure, is wasted, primarily on administrative complexity, pricing failures, and poor care delivery.³ In addition, 42 percent of physicians report feeling burned out, and health care providers face a global deficit of 12.1 million skilled professionals by 2035.⁴ As a result, more providers are looking to digital technology to boost efficiencies and lower the cost of care.

Deloitte US consumer surveys show that during the past five years, patients' appetite for virtual and digital health tools has steadily increased, but adoption rate among physicians is mixed (Figure 1). Some are unsure how to best use virtual health in a clinical setting while others are concerned about losing the human connection that is an integral part of in-person care.⁵

Figure 1. Adoption of video visits increased, but adoption of other virtual health modalities stalled.

Which of the following virtual health approaches have you implemented at your primary work setting? (respondents selected all that applied.)



Notes: Skilled nursing facilities (SNFs); wearables (where the data is collected passively from fitness, sleep quality, basic heart-rate activity and other consumer health-tracking devices); physician -to-physician virtual consultations (virtual communication tools or portals for physicians to consult with each other about a patient); patient-reported outcomes (where the patient actively submits the data through a digital app or text messages). N(2018) = 624; N(2022) = 660

Source: Deloitte survey of US Physicians conducted in 2018, 2020 and 2022.

One of the silver linings of COVID-19 was that it accelerated advances in digitization and telemedicine that previously were hard to be accepted by either patients or clinicians.

For example, in the UK, efforts to develop a framework for virtual consultations, which had languished for years, have advanced because of COVID-19-related staff shortages and Brexit work restrictions. The National Health Service (NHS) plans to have 40 to 50 virtual ward beds per 100,000 people by 2023.⁶

Even as lockdowns and other restrictions have lifted in many parts of the world, the use of telehealth remains above its pre-pandemic levels. For example, Kaiser Permanente found that 15 percent of its members in the US used virtual consultants before the pandemic. After reaching a peak of 80 percent during the outbreak, it is now about 35 percent. Similar patterns have emerged in Europe and Asia. The European Parliament recently announced the EU4Health program, which encourages the sharing of EHRs, e-prescriptions and telehealth. Saudi Arabia is adopting a system that uses smartphone applications to connect patients in remote areas with primary care centers and hospitals.⁷

For some specialties, notably mental health, virtual care remains popular because of its convenience, flexibility and user experience for both clinicians and patients alike. Eighty-nine percent of mental health consultations are conducted virtually, and well-designed virtual care models have been found to have comparable clinical efficacy to face-to-face contact — in some cases delivering superior outcomes and patient satisfaction.

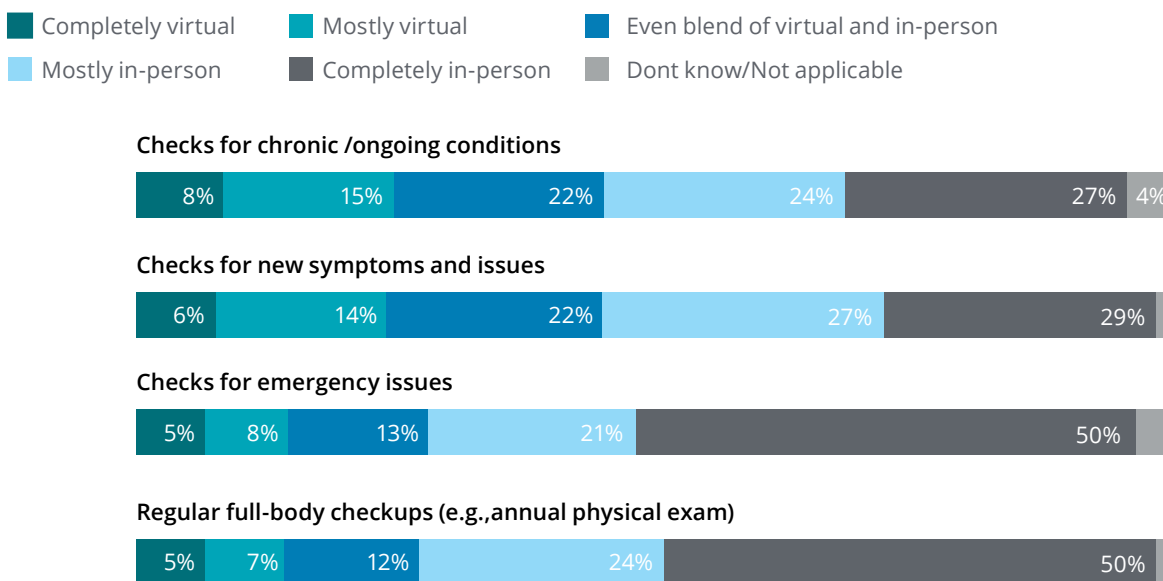
Patients in many countries have become more comfortable with managing their own pathways to care. The widespread use of home COVID-19 tests and vaccination scheduling and reporting has made many people more comfortable with self-testing for other types of diagnostics and screenings as well.

In this post-pandemic era, more than 40 percent of patients have expressed a desire to continue to use telehealth (Figure 2).⁸ This demand will encourage health care providers to invest in digital transformation to connect patients with personalized services that suit their needs and preferences.

These interconnected systems can enable patient choice and control, improve health delivery, increase greater access, make administration faster and more efficient, and lower costs.

Figure 2. Consumers who have had virtual health care visits over the past year intend to keep using virtual or hybrid options for some future health care needs.

When the COVID-19 pandemic eases what would be your preferred way to attend appointments for the following?



Notes: Respondents represent people who attended at least one virtual health care appointment (as a patient or with a patient) in the last year.

Source: 2022 Connectivity and Mobile Trends, 3rd edition.

Understanding depths of digital transformation

Many countries are making progress in adopting EHRs. The NHS, for example, plans to adopt electronic health records (EHRs) at all hospitals and community practices in the UK by 2025.⁹ While this provides a strong digital backbone, the challenge in many countries is interoperability — getting related hospital systems to link with each other — and extending those connections to external services such as primary care centers.

In addition, the quality and comparability of the data is inconsistent. Unstructured or “dirty” patient data can provide an incomplete picture of a patient’s health. Most organizations are adopting standard data sets, building data “lakes” to combine data, and using the latest artificial intelligence (AI) tools to develop meaningful insights.

Despite this, in many countries, vital medical information is still stored on paper. When information or images are shared, it is often done by fax, mail, social messaging applications, or patients themselves, who carry their physical documents from one provider to the next.

The advent of Health Information Exchanges (HIEs), in which health care organizations can exchange electronic health information, is growing rapidly. New payment and reimbursement approaches are increasing the focus on care coordination. For example, HIEs can help providers avoid unnecessary readmissions and medication errors, improve diagnoses, and decrease duplicate testing.¹⁰ The exchanges are standardizing technology to allow providers and patients to connect more effectively and allow care to be distributed more broadly across multiple care pathways, care settings, and geographical regions.

Finland, for example, has already established a process for sharing EHRs on a regional basis. The gold standard for digital health, however, is Estonia. Estonia’s health service has been digital for 12 years, and more than 99 percent of the data generated by doctors and hospitals is electronic. Residents can access their medical records via online portals, and video consultations and e-prescriptions are common practice. Not only do patients renew their prescriptions without visiting a doctor in person, but they also don’t have to go to the pharmacy, either. Most prescriptions are delivered to patients’ homes.¹¹

Meanwhile, the US Department of Health and Human Services is calling for a nationwide, interoperable health IT ecosystem by 2024 that would provide health data across products and organizations in a way that could be more meaningfully used by recipients. The system would be continuously updated and give consumers the ability to share information securely with their providers of choice. It is designed to lower costs, improve population health, drive innovation, and empower consumers.¹²

Heading to the cloud

Financial pressures are a double-edged sword in the digital transformation of health care. On the one hand, technology can improve efficiency and reduce costs. On the other, the expense of moving systems to new digital platforms can slow the adoption of cloud solutions.

In the UK and Scandinavian countries, concerns about margin pressure are driving digitization, yet in the US and Australia we see margin preservation restricting the adoption of new technology. In response, pricing is becoming subscription- or usage-based and is moving from capital to operating expenditures. Deloitte, for example, has formed a partnership with Amazon Web Services (AWS) to use third-party data in the cloud to create an efficient, robust, and secure health care data ecosystem that can improve population health, reimbursement and provide other real-world insights.¹³

Nevertheless, most health executives recognize the longer-term benefits of digitization. A survey of almost 400 health executives across six countries found that two-thirds of respondents expect to move their IT infrastructure to the cloud within a year, and 96 percent expect to do so within three years.¹⁴

Much of the focus around digitization has been on operations — specifically, the managing and delivery of care — but, technology, and specifically automation, is also reducing costs and improving back-office processes such as clinical coding, billing, scheduling, payroll, and procurement.

COVID-19 accelerated the shift to cloud-based technologies designed to strengthen business operations and drive more customer interactions into the digital realm. This trend is forcing the large EHR providers to migrate their products and services to the cloud and develop partnerships with Customer Relationship Management (CRM) and Enterprise Resource Planning (ERP) providers.

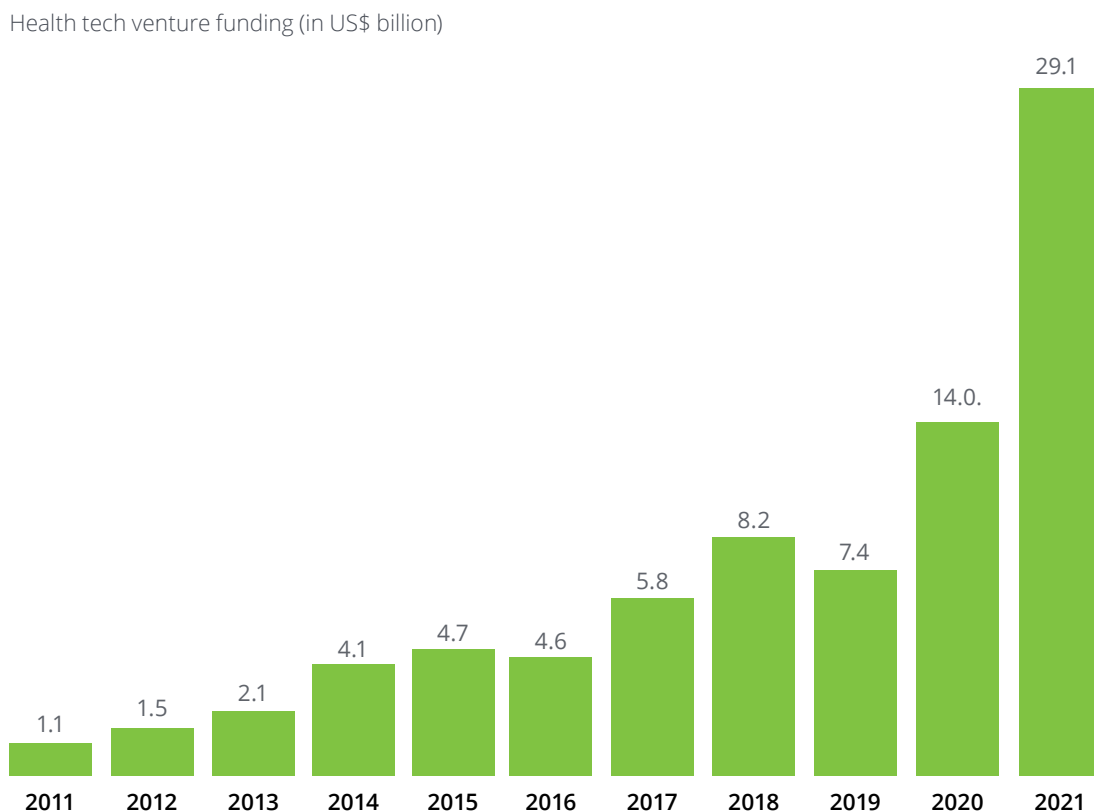
In June 2022, for example, Oracle completed its acquisition of Cerner with plans to expand Oracle's cloud business in the hospital and health system market, both in the US and internationally. Oracle said the acquisition will enable it to provide a new generation of information to health professionals that will improve treatment decisions and patient outcomes while lower providers' administrative workload, enhancing patient privacy and reducing costs.¹⁵

CVS Health and Microsoft announced a new strategic alliance in December 2021 to develop innovative solutions that will help consumers improve their health. The collaboration is designed to allow CVS Health to provide a data-driven and personalized customer experience to clients.

Cigna began using the cloud platform from Majesco's L&A Group for its supplemental health solutions product suite in July 2022 after partnering with Majesco a year earlier to accelerate its digital transformation.¹⁶

In addition, many venture capitalists, private equity firms, and health care organizations are investing in startup platforms. Globally, health-tech investments in 2021 topped \$44 billion, double the previous year (Figure 3).¹⁷ Large tech-enabled platform companies could help hospitals and health systems improve efficiencies and scale quickly by modernizing existing systems and delivery models, addressing health-equity through a platform approach.¹⁸

Figure 3. Health tech investments continue to grow at an unprecedented pace



Source: Deloitte analysis of Rock Health Digital Health Funding Database

However, migrating to the cloud can raise environmental concerns. Some estimates show that cloud-based computing generates a larger carbon footprint than the airline industry—and that a single data center can consume as much energy as 50,000 homes.¹⁹ As more companies assess their indirect, or Scope 3, emissions, they must gauge the carbon footprints for partners, suppliers, vendors, and other third parties. AWS, Google Cloud, and Microsoft Azure all have introduced tools to help customers assess their carbon footprints and take steps to reduce them.²⁰

Deloitte is collaborating with the International Hospital Federation to develop a dashboard for health care organizations to assess their carbon footprints. The Sustainability Accelerator Tool has been released in a beta version. Learn more about the tool in the Sustainability section of the outlook report.

Emerging technologies

Emerging technologies such as AI, telehealth, blockchain, and monitoring devices, such as sensors, wearable and ingestibles, are providing real-time and continuous data about our health and our environment. This is redefining the future of health care and health delivery. Health care companies can use these innovations to provide more accurate diagnoses, deliver personalized treatment and predict risk or deterioration and intervene early.

Telehealth became widely accepted during the pandemic, and it continues to evolve, incorporating patient portals, telemedicine, mobile health, video conferencing, and remote patient monitoring. Already, patients are frequently using portals to schedule appointments and receive test results via their smartphones, and telehealth applications are expected to expand during the next five to 10 years.

Almost half of consumers said they attended at least one virtual medical appointment in 2021. While many cited avoiding COVID-19 as a primary reason for embracing the technology, they also found it more convenient because they could choose an appointment time that better fit their schedules. Ninety-two percent of those who used virtual appointments said they were satisfied with them, and 48 percent said they were very satisfied.²¹

AI can work in conjunction with data such as EHRs stored on the cloud to develop a system of proactive continuous care designed to keep people well rather than episodic care delivered retrospectively when they are already sick. A new AI-empowered system at Johns Hopkins Health System scours medical records and clinical notes to identify patients who might be at risk of infection before symptoms develop. A study conducted by the health system found that patients are 20 percent less likely to die of sepsis because of the new tool.²²

AI4HealthCro, a not-for-profit public-private consortium based in Croatia, is developing AI technologies for the European Union that it estimates will free up as much as 1,944 man hours annually, save as many as 403,000 lives, and reduce health care costs by as much as €212.4 billion.²³

Not all health conditions or concerns require an in-person consultation with a clinical professional. AI is increasing patients' options for receiving health care. Algorithms can diagnose and provide personalized advice and support to patients in automated channels such as call centers, text messaging, chat bots, and video consultations. According to Kaiser Permanente, 75 percent of enquiries are resolved in one visit using these remote channels.

One study, conducted in an urgent care setting in Sao Paulo, Brazil, during the pandemic, found that the implementation of an AI registration system cut down wait times by an average of 12 minutes and saved more than 2,500 hours a year in employee time.²⁴

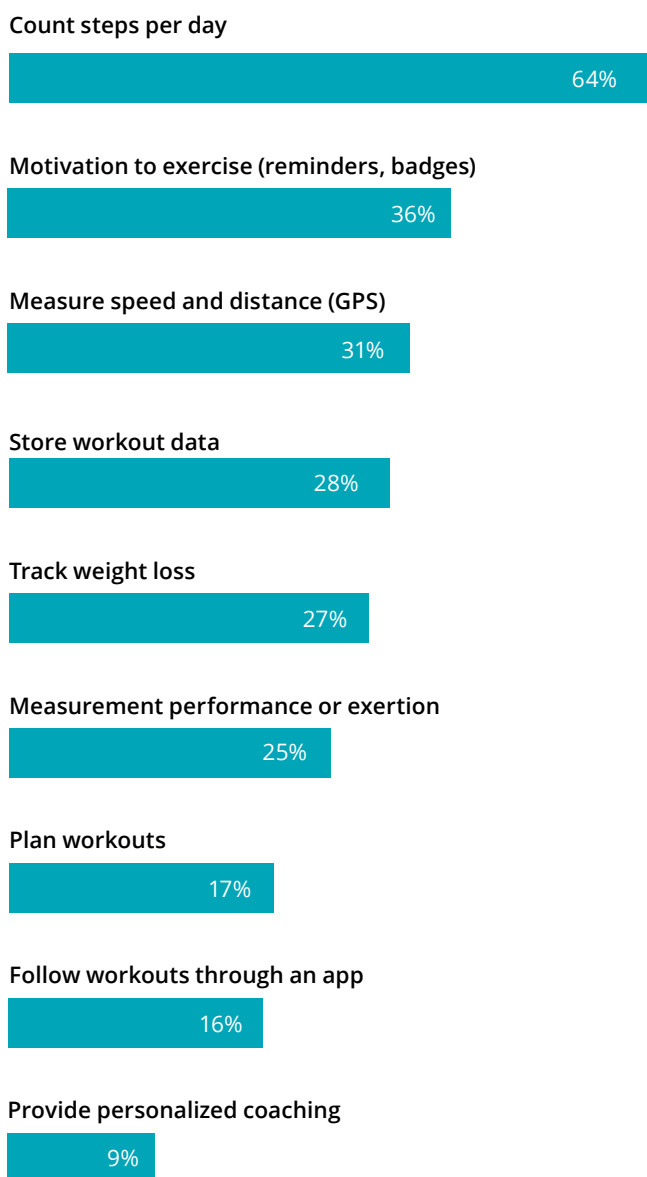
AI already is being used to improve diagnostics and make predictive medicine more accurate. Researchers at Google's DeepMind Health designed an AI algorithm that could identify factors for when someone was at risk for advanced kidney failure — and predict it 48 hours in advance. Overall, the algorithm had an accuracy rate of 55.8 percent, but in cases severe enough to later require dialysis, its prediction were accurate 90.2 percent of the time.²⁵

Whilst these new channels of advice and treatment have the potential to increase patient access, operate around the clock, and reduce the workload on already stretched clinical teams, careful testing and implementation is essential. The quality of the experience can be hampered by poor data quality, low data point counts, and lack of trained personnel for handling these technologies. Moreover, these channels must be synchronous so patients can move freely between them with one record being continuously updated and maintained. The risk is that often, when new technologies are added, they are implemented piecemeal rather than integrated throughout an organization or across a patient journey.²⁶

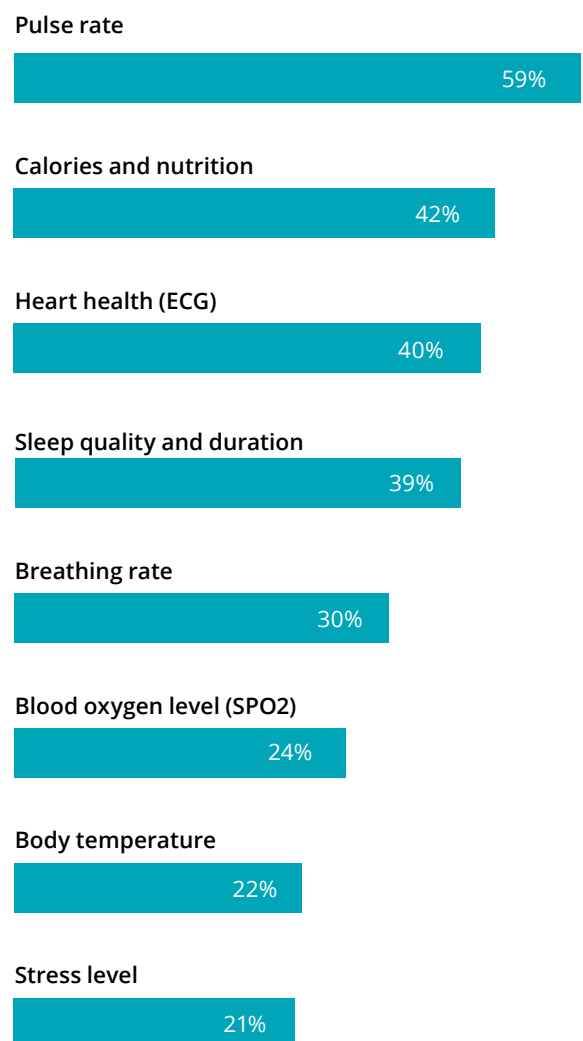
Health care providers who use wearable technology to monitor chronic health conditions and to track vitals, sleep quality, and medications are finding the technology helpful. However, for large-scale adoption clinicians must agree on the parameters for alerts, appropriate clinical governance arrangements, and efficient work flows alongside effective reimbursement models for devices and data. Data accuracy and privacy, as well as cyberthreats, will also act as headwinds to adoption.³⁷

Figure 2. Consumers are using their smartwatches, fitness trackers to measure physical activity and health indicators

In which of the following ways do you use your smartwatch/fitness tracker for your fitness?



Which of the following health metrics do you use your smartwatch/fitness tracker to monitor?



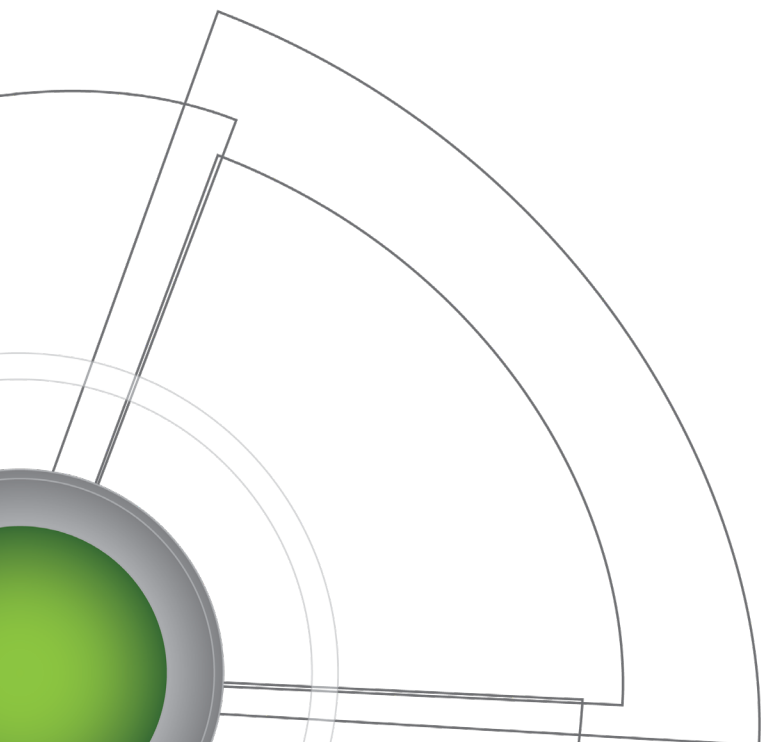
Notes: Respondents represent consumers who personally own a smartwatch and /or fitness tracker and use it for and/or fitness monitoring

Source: 2022 Connectivity and Mobile Trends, 3rd edition.

Questions for providers to consider in approaching the digital transition

Answering these questions will help providers prepare for transformative technologies that are coming in the next five to 10 years. These include:

- Digital front door— As the primary point of digital engagement, the digital front door consists of multi-channel communications platforms, including web portals, mobile applications, and SMS messaging. It provides multiple stakeholders with access to providers' digital and analog services.
- Autonomous monitoring — Enables patient surveillance through video and sensor technology and deploys AI and behavioral analytics to provide real-time insights and timely medical intervention.
- Digital clinical encounters — Offers semi-automated patient interactions with clinical protocols, algorithms, and AI for assessing symptoms, issuing prescriptions and other functions. By using evidence-based clinical knowledge, it reduces clinicians' direct involvement
- Digital health platforms — Allows providers to offer value-based, hassle-free virtual care to patients by addressing health issues through cloud-based platforms and services.





Health equity

Social determinants of health

Great disparities based on age, location, gender, income, race, ethnicity, religion, and sexual orientation persist in the global health ecosystem despite significant efforts to eliminate them by health care providers, insurers, government agencies, aid organizations, and others.

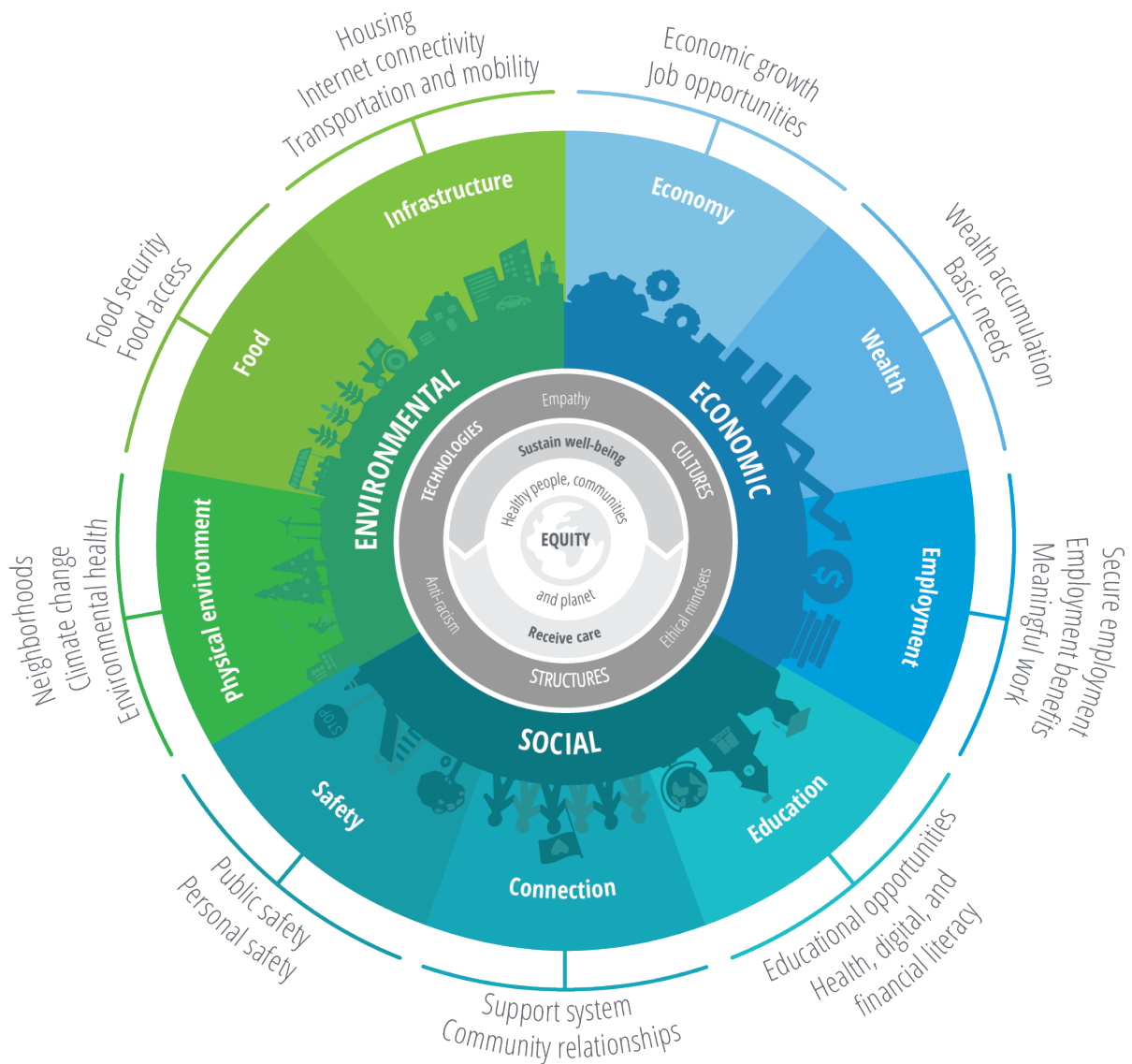
More than a quarter of the world's population has no access to essential medicines, and for more than 2 billion people worldwide, medicines may be unaffordable, unavailable, inaccessible, or of poor or unregulated quality.¹

Income, education, and living and working conditions can shape physical and behavioral health. In many cases, individuals may have little or no control over factors that can directly or indirectly affect their health — such as living in proximity to lead paint, polluted air and water, scarce food sources, dangerous neighborhoods, and few outlets for physical activity.

Characteristics such as secure housing, age, ethnicity, gender, and economic resources often correlate to differences in access to medical facilities and services and variation in the rates of disabilities and disease occurrence (Figure 1).

Figure 1. The broad social and economic circumstances that together determine the quality of the health of the population are known as the ‘drivers of health’

Health care organizations can impact DOH for their patients and members, employee populations, and in their larger communities



Source: Deloitte analysis.

These social, economic, and environmental “drivers of health,” or social determinants of health, can have a greater impact on health outcomes than the care provided by clinicians — accounting for about 80 percent of health outcomes.²

The problems are not new. Five decades ago, public health organizations in the US began documenting maternal mortality disparities between white and Black women. In the ensuing decades, research has developed many other links between these nonclinical factors and long-term health outcomes.

For example, children who experience stressful circumstances, especially on a daily basis, are more likely later in life to adopt—and less likely to discontinue—risky health behaviors like smoking and drug and/or alcohol abuse that may function as coping mechanisms.³ Studies also have found that depriving infants of a loving environment causes lasting damage to their emotional well-being, intelligence, and development capacity.⁴

Yet efforts to systemically reduce or eliminate these disparities have proven difficult. This is largely because they require a coordinated approach not only across government agencies but also across the commercial sector. Early programs such as the Total Place initiatives in the UK, which was designed to tackle seemingly intractable issues such as teenage pregnancy, did not necessarily benefit those with the greatest need. Nor was it effective in addressing the root causes of health inequity.⁵

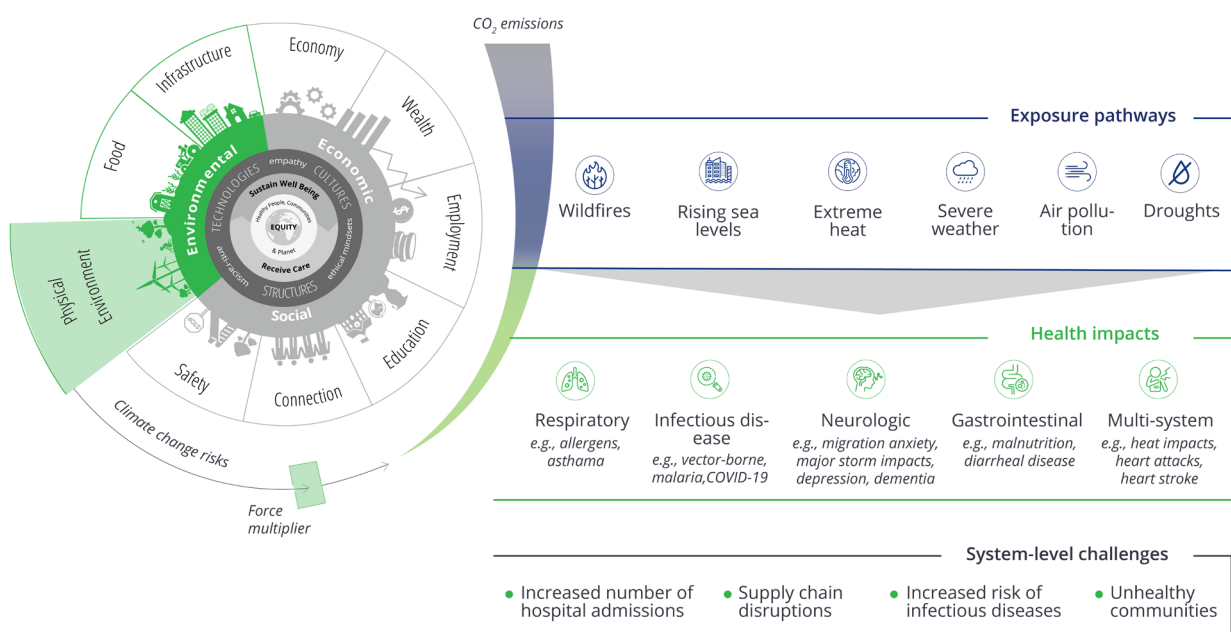
Many of the disparities such as Total Place and others like it attempted to address have causes that extend far beyond the health care system, requiring changes in environmental policies, employment practices, training schemes, tax laws, regulations, and civil rights legislation. They also require breaking down institutional discrimination and prejudices.

The COVID-19 pandemic underscored the pervasiveness of health inequity. The virus disproportionately affected the most vulnerable groups, and focused public attention on how communities are only as strong as their most compromised members. As a result, many health organizations are rethinking how to address health inequity.

The growing impact of climate change could further amplify global health inequities by putting clean air, safe drinking water, adequate food supplies and secure shelter in jeopardy. Rising temperatures are expected to cause about a quarter million more deaths worldwide from malnutrition, malaria, diarrhea, and heat stress between 2030 and 2050 (Figure 2).⁶

Figure 2. Rising temperatures multiply the risk to human health

As CO2 emissions rise, the impacts on the physical environment exacerbate the other social determinants of health.



Source: Deloitte analysis.

Longevity equity

A key measure of health equity is life expectancy. If people living in the same geographical areas have significant differences in the life expectancies, it can spotlight the drivers of health inequities.

Ethiopia, for example, has an average life expectancy of 65.6 years, about three years longer than neighboring Kenya.⁷ In recent years, Ethiopia has adopted community-based health strategies, improved access to safe water, and expanded female education and gender empowerment. Similarly, Brazil has an average life expectancy of 73.4 years, compared with 64.9 for neighboring Bolivia and 70.5 for Paraguay. Brazil has reduced inequality improved female education and health care coverage and expanded political participation.⁸

Perhaps most alarming, life expectancy in the US has fallen for the past three years — to an average of 76.1 years from 78.8 in 2019.⁹ In some regions, lower life expectancies can vary by postcode and correspond with higher instances of certain diseases. Environmental factors in these areas can have a significant impact on longevity. For instance, air pollution causes about 7 million premature deaths every year.¹⁰ Twenty-three million US homes—the majority of which are in impoverished and marginalized communities of color—contain lead-based hazards.¹¹

Worldwide, household air pollution (HAP) — primarily from a lack of clean energy such as electricity or natural gas for cooking and heating — causes 4.3 million premature deaths annually. HAP contributes to higher levels of strokes, heart disease, lung cancer, and chronic obstructive pulmonary disease in low- and middle-income countries.¹²

These environmental hazards, combined with limited access to health services are among the reasons that life expectancy in low-income counties can be almost 20 years less than in high-income ones.¹³ In urban areas, life expectancy can differ by city blocks or neighborhoods, with variance in life expectancy of as many as 25 years. Similar gaps exist in infant mortality, obesity, violence, and chronic disease.¹⁴ Quite simply, where a person lives will determine how long they live.

Health equity disparities often follow other social and economic divides, especially among racial lines. As of 2020, white Chicagoans were living as much as 10 years longer than Black Chicagoans, and the gap widened from 8.8 years in 2017. For the first time in decades, life expectancy for Black residents of Chicago fell below 70 years.

In Australia, the burden of disease for Aboriginal and Torres Strait Islander people is 2.3 times that of non-indigenous Australians. Rates of psychological distress and chronic disease are higher, and health access is lower because of cost and lack of available services.¹⁵

The same is true in Canada, where indigenous people have a life expectancy that is 14 years less than non-indigenous Canadians. Twenty-five percent of indigenous Canadians suffer from addiction, compared with 17 percent for the general population. Suicide rates among indigenous youth are six times higher.¹⁶

The pandemic added to the health equity divide, affecting access to food, childcare, stable housing, and income. Fifty-nine percent of Black US residents and 50 percent of Latinos held jobs requiring them to work in person at the height of the pandemic when vaccines were not yet available.¹⁷ What's more, two-thirds of low-wage US workers still lack access to paid sick days.¹⁸

At the same time, many of these communities have historically been under-diagnosed in terms of common life-threatening diseases such as cardiovascular illness, and many don't have access to basic care or screenings for heart attacks, cancer, obesity-related health issues, and other ailments.

Half of US adults with lower income don't get needed care because it's too costly — they often skip visits, recommended tests, treatments, follow-up visits, or prescription medications. In contrast, the number was 12 percent to 15 percent for lower-income adults in Germany, the UK, Norway, and France.¹⁹

Indeed, the limited social safety net, market-based health care, limited public health regulation, and increases in health inequity have caused average US life expectancy to fall by almost 3 years.²⁰

Globally, 94 percent of all maternal deaths occur in low-and-middle income countries, but at a time when maternal mortality has been declining globally, the US was one of only two countries (the Dominican Republic was the other) in which it rose.²¹ The US maternal mortality ratio of 17.4 per 100,000 pregnancies is the highest among industrialized nations.²²

In the UK, poor diet and obesity are two of the main contributors to premature death. Those living in deprived areas often face significant barriers to accessing affordable nutritious food.²³ In India, where longevity is defined by factors such as caste, religion, and indigenous identity, the poorest households have a life expectancy of 65.1 years, compared with 72.7 years for the wealthiest.²⁴

Health justice

Access and care delivery disparities are part of a larger system of prejudice, racism, and bias that pervades the health ecosystem at many levels. In the summer of 2020, for example, 75 percent of new COVID-19 cases in Saudi Arabia and 95 percent of those in Singapore were migrant workers. This follows a pattern seen in other disease outbreaks in which abuse and discrimination toward migrants or other nationalities reinforce barriers to health care access.²⁵

Health inequity also influences where facilities are located and gaps in physician training and diversity. Care coordination algorithms may direct resources to those using the most services, who are disproportionately higher income. This disparity highlights the health conundrum between health need and health demand.

Unnecessary health care spending from structural inequities and biases is well documented. Research shows that spending tends to be higher among certain populations because of delayed care, access challenges, missed diagnoses, and limited access to the latest scientific advances as well as proper preventive services.

Racism and bias also threaten the adoption of new technologies that could provide better care delivery to these underserved populations. Telemedicine is a key component of the digital transformation of health care since the COVID-19 pandemic, but it hasn't been adopted by all populations equally.

In the US, Blacks and Hispanics are 35 percent and 51 percent less likely, respectively, than whites to use telemedicine. Again, economic and environmental issues come into play. Poorer households are more likely to lack the technology to access telemedicine. Only one in four families earning \$30,000 or less have a smartphone, tablet, or laptop computer, compared with almost three in four for families earning \$100,000 or more. In addition, only 66 percent of Black and 61 percent of Hispanic households have access to broadband internet, compared with 79 percent of white households.²⁶ In this case, the digital divide begets a health services divide.

These inequities are not just a public health or social problem, they are also an economic one, potentially adding to cycles of poverty that reinforce additional health inequities. More than 30 percent of direct medical costs faced by Blacks, Hispanics, and Asian-Americans in the US can be linked to health inequities.²⁷

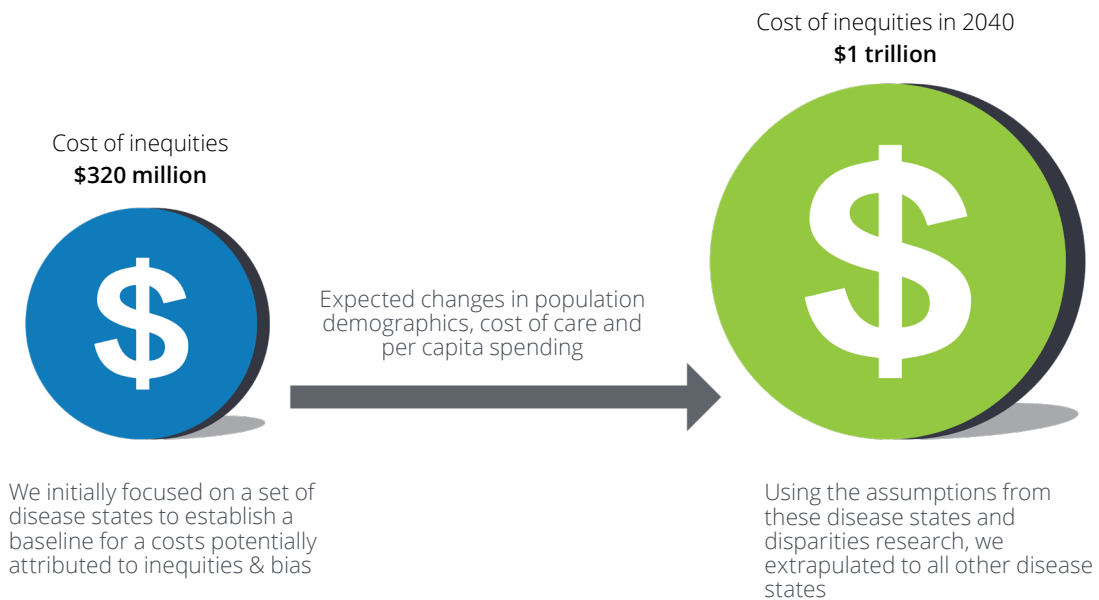
Inequity also falls disproportionately on other underserved groups, such as the elderly, mentally ill, and disabled. Worldwide, disabled people face lower economic participation, higher poverty rates, and increased dependency. Across the 27 countries in the Organization for Economic Co-operation and Development (OECD), average employment for the disabled was 44 percent, compared with 75 percent for non-disabled people. Worldwide, the disabled face greater food insecurity, poor housing, and a lack of access to clean water and sanitation. This is especially true in low-income countries, where the disabled are 50 percent more likely to experience catastrophic health expenditures than non-disabled people.²⁸

The cost of health inequities

Inequities across the health ecosystem limit underserved people’s access to affordable, high-quality care, create avoidable costs and financial waste that span society, and impact every individual’s potential to achieve health and well-being.

In the US health system, for example, inequities cost about \$320 billion and could exceed \$1 trillion in annual spending by 2040 if left unaddressed (Figure 3). This projected rise in health care spending could cost the average American at least \$3,000 annually, up from current costs of \$1,000 per year.²⁹

Figure 3: Modeling the cost of US health inequities in 2040



Note: All values are in US dollars.

Source: Deloitte analysis.

Meanwhile, the European Parliament estimated that health inequities in the European Union cost about 1.4 percent of GDP each year, almost matching defense spending of 1.6 percent of GDP.³⁰

The pressure to reduce costs

Globally, the health care sector is under pressure to reduce health care spending while increasing quality of care. Persistent health inequities have a substantial impact on health outcomes and spending. However, the industry hasn’t yet found systemic and sustainable solutions to address this complex challenge.

To address these disparities, health organizations must work outside of the traditional health care system and address the social, economic, and environmental factors that lead to healthy or unhealthy outcomes.

There is some light ahead. There are several global initiatives that are committed to making a change.

For example, Google is working with several health care organizations to develop a health equity tracker that can be used to create actionable, evidence-based policy changes to help disproportionately impacted communities receive equitable.

The tracker has several key features:

- Highlight the impact of COVID-19 and other diseases on the Black, Indigenous, Latin, Asian, Pacific Islander, and other vulnerable and marginalized communities
- Record COVID-19 cases, deaths, and hospitalizations across race and ethnicity, sex, and age
- Measure comorbidities associated with COVID-19, including COPD, diabetes, and social and political determinants of health, including uninsured and poverty rates

The companies are working to expand the tracker's ability to include additional conditions such as mental and behavioral health, and social and political determinants of health that impact vulnerable communities, including LGBTQ+ individuals and people with disabilities and lower socioeconomic status.

In the future, the tracker will also be able to ingest multiple data sets ranging from social and political determinants of health, demographics, and other variables, creating a novel, comparative approach to assessing and conceptualizing health and social inequities.³¹

Some European and Asian experts are taking a more fundamental approach to addressing health equity. In October 2022, experts from nine countries — Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, the Republic of Moldova, Tajikistan, Ukraine and Uzbekistan — met in Tbilisi, Georgia, to examine the level of financial hardship from catastrophic or impoverishing medical expenses and discuss protections. The group established guidelines for the scope and qualifications of public benefit packages and processes for countries to identify gaps in health coverage that can lead to financial hardship.³²

Addressing health inequity

Achieving health equity requires leaders to design and build systems that advance health equity as an outcome from the outset and not as an afterthought. To bring greater equity to health care, organization should:

- Dismantle the racism and bias built into the foundation of the health care system over centuries
- Expand access to coverage and care for communities and populations that have historically lacked it
- Look outside of the traditional health care system to address the social, economic, and environmental factors that lead to healthy or unhealthy outcomes.

In the past few years, health care companies announced various initiatives to mitigate health and social inequities and provide quality treatment to every individual irrespective of race, ethnicity, socioeconomic status, gender identity, sexual orientation, or cultural background.

But despite well-intentioned efforts, trust remains an issue. In the past, health organizations often made assumptions on what their communities needed and wanted, instead of asking. In light of the imperative for health equity, they now have an opportunity to build trust based on a wide range of perspectives in their communities and direct input from consumers. Organizations must understand what experiences led to the loss of trust, how they might re-earn it, and how they can prevent those events from happening again.³³

In January 2022, the National Committee for Quality Assurance launched its Health Equity Accreditation Plus evaluation initiative. The program establishes processes and cross-sector partnerships that identify and address social risk factors in their communities and the social needs of the people they serve.³⁴

Similarly, the health maintenance organization Oscar announced its Culturally Competent Care Grant program in May 2021. The grants are focused on providing care to patients with diverse values, beliefs, and behaviors, including tailoring delivery to meet patients' social, cultural, and linguistic needs.³⁵

For organizations, addressing biases and advancing health equity is not merely a moral imperative but also a competitive advantage. Proving the business case and using this as a point of competitive advantage will be critical to sustainable focus and scale.

By targeting these issues, employers can attract and retain the best talent and elevate their brand and reputation in the market. What's more, healthier workers have fewer sick days, are more productive on the job, and have lower medical care costs.

Every organization should plan to address health inequities by designing and enabling the future of health care around people and equity. Health care incumbents, industry disruptors, community organizations, and government agencies each have a role to play in removing the barriers that lead to health inequities and turning unaffordable costs into opportunities.

As companies develop products and services, invest in their communities, partner with others, and improve the diversity, equity, and inclusion of their workforce, they should consider designing for equitable health. This can help ensure the health and well-being of all individuals and provide access to affordable, high-quality care in all communities.

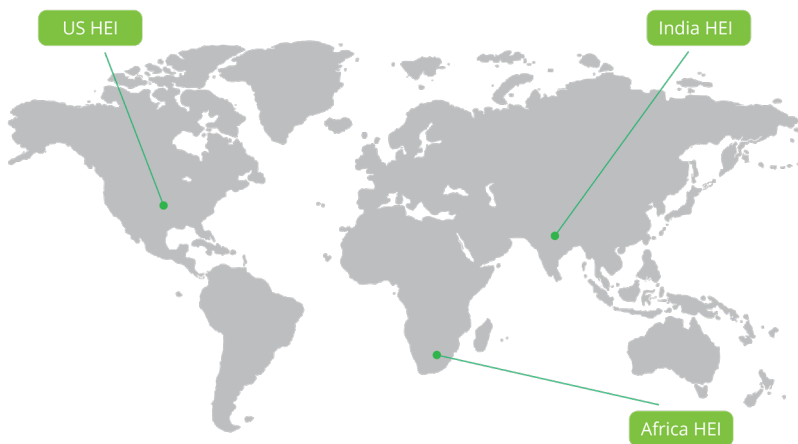
Addressing social and health equity is one of the greatest challenges of our time. We are in the midst of a social, political, and economic movement that can see the value and moral imperative to do so. Health care companies must take a leadership role and abide by the Hippocratic oath of “first do no harm.” However, only a coordinated effort among policy makers, industry executives, government officials, social influencers, and community organizers to close the widening global health equity gap.

The Deloitte Health Equity Institutes

Deloitte has established The Deloitte Health Equity Institutes (DHEIs) to advance health equity through cross-border collaboration, philanthropic investment, and research activity. The three institutes — located in the United States, India, and Africa — share Deloitte’s commitment to tackling the unique forces that create health inequities in each region. (Figure 4).

Figure 4: Health equity institutes

We have established 3 **Deloitte Health Equity Institutes (DHEIs)**...



Our DHEIs are looking to address **three root causes** that prevent equitable health outcomes:

1. Racial, socioeconomic, gender & other **biases**
2. Disparate circumstances in **drivers of health**
3. Inadequately designed **health care systems**

...to drive through 3 key reinforcing capabilities



Action & Impact

Pro bono consulting service to support with health equity initiatives or hard dollar donation to key collaborators



Knowledge & Evidence

Publicly-available eminence and playbooks to assist both public and private sector efforts to address gaps in health equity



Data & Analytics

Combining data on health disparities and our data equity to enable insights to inform impactful action

The DHEIs collaborate with local and national organizations across the public, private, and social sectors to advance health equity and achieve better health outcomes. The following are examples of recent projects that DHEIs are conducting in each region:

United States: The DHEI is collaborating with New Profit, a national venture philanthropy organization, to support the Catalyze Cohort program for social entrepreneurs focused on mental health equity. The program, launched in 2022, supports early-stage organizations with funding and technical assistance. Members receive \$100,000 in unrestricted funds and capacity-building and strategy support over the course of a year. A second Catalyze Cohort will launch in 2023 to address the mental and behavioral health crisis in the US.

Africa: The DHEI implemented the Expand the Ward initiative to assist local government health departments with addressing the worst effects of the COVID-19 pandemic. We leveraged Deloitte technology assets, logistics expertise, and project management experience to assist healthcare workers in monitoring and tracking patients in remote, under-resourced communities. In addition, we monitored worker capacity at healthcare facilities.

As the pandemic shifts to endemic stage, the DHEI is working with local health departments to apply the technology and processes developed for COVID-19 to support other treatment areas, such as mental health. The DHEI is piloting a program at a district healthcare facility to provide the tools to monitor and track medication adherence. In addition, we are supporting collaboration among the government, pharmaceuticals and medical devices sectors, patient advocacy groups, and funders to ensure the sustainability of patient access to innovative treatment under the National Health Insurance (NHI) program in South Africa. We facilitate round tables on critical areas of policy such as the impact of the implementation of the NHI on the current healthcare system; its effect on access to affordable innovative treatment; and how treatment will be funded under the new policy.

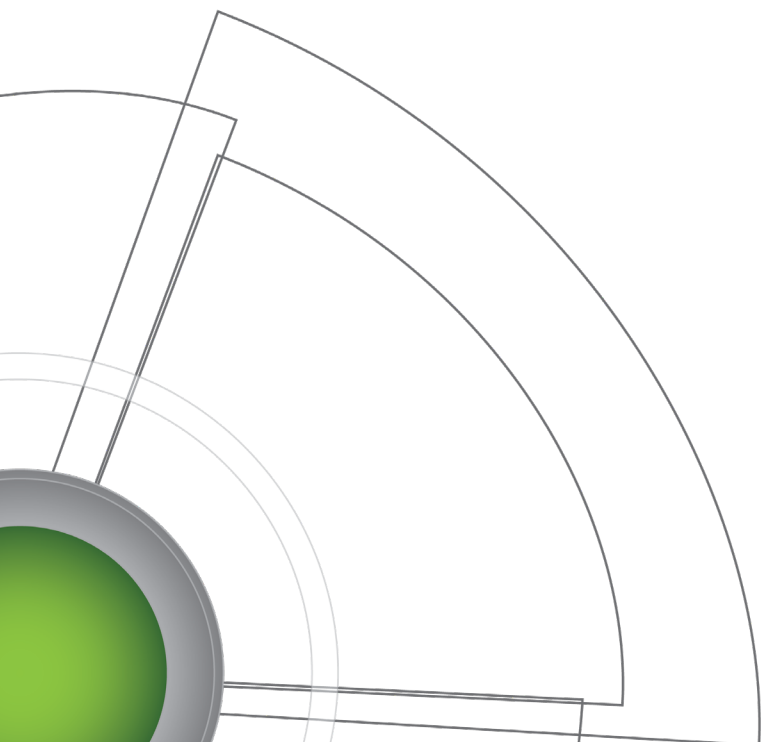
India: To understand the mental well-being of corporate employees in India and determine how to mitigate issues, the DHEI conducted a quantitative survey of about 4,000 employees across 12 sectors and performed more than 60 interviews with human resource executives, and mental health experts. The study found that more than 80 percent of employees suffer from one or more mental health symptoms, with workplace and financial stress being the leading causes. Most said they have not sought professional help. About 39 percent said they had taken no steps to manage their mental health issues either because of the associated stigma or lack of awareness and access to resources. Fifty-six percent said they were unwilling to discuss mental health with HR or team leaders, and most are either not aware of workplace resources or do not find them highly effective. Also, few employers have in-house or third-party resources to manage employee mental health, and the efficacy of these programs continues to be limited.

The study found that unresolved mental health issues among employees costs employers as much as \$14 billion annually in lost productivity, absenteeism, and employee turnover. Given the scale of the problem, the DHEI determined that employers should create a comprehensive workplace mental health policy that addresses the need for both curative and preventative interventions.

Here are five underlying mechanisms that health care leaders should consider in addressing health inequity: ³⁶

1. **Be intentional:** Stakeholders across the health care ecosystem should approach health care's future with intentionality and engage in continuous thinking on health equity. Infusing equity-centered thinking into business choices now is something that should be prioritized to build wellness-focused, outcomes-driven prevention and delivery systems that serve everyone, regardless of race, ethnicity, and socio-economic status.
2. **Form cross-sector partnerships:** The current set of health care stakeholders can't solve for this on their own because the magnitude and complexity of the problem is too significant. To truly enable health equity, organizations should form partnerships across the industry. It likely will require current actors, new participants, and the government to collectively make a change. Health care organizations should collaborate with agencies, non-governmental organizations, and coalitions that work on initiatives to address the root causes of health inequities.
3. **Measure progress:** Accessible, platform-agnostic, and inclusive data and technology infrastructure paired with representative data collection, key performance indicators, and ongoing evaluation will be necessary to define and track progress in tackling health equity.

1. Address individual and community-level barriers: Addressing the social determinants of health by removing barriers to access and creating healthy environments will require investments in data, technology, and public health infrastructure at the federal, state, and local levels.
2. Build trust: Trust across the system, from individual practitioners to institutions and in data and technology, is crucial. It will be important to rebuild trust with people and communities intentionally by understanding needs, improving experiences, and building a more diverse and inclusive workforce.





Workforce

The COVID-19 pandemic has exacerbated existing workforce challenges in health care and resulted in fundamental changes to how work gets done — who does what and where they do it may have changed permanently.¹

In some ways, the global demographic shifts in health care that are occurring post-pandemic have always existed. But COVID-19 has compounded them. For example, US providers have been recruiting nurses internationally for years, but in the wake of the pandemic, as providers experience global labor shortages, demand for nurses has become more competitive.

Health care workers are primarily challenged by heavy workloads, technological hindrances, collaborative and administrative inefficiencies, and inadequate compensation. While many providers have increased pay and benefits in recognition of these challenges, the health care workforce remains in transition as it prepares to meet the demands of the future.

By 2030, the global health care sector will need an estimated 80 million more workers to meet demand, and about 18 million of those will be needed for low-income countries. Eighty-three countries — across sub-Saharan Africa, Southeast Asia, South Asia, and Oceania — currently fail to meet the most basic standards of 23 skilled health professionals per 10,000 people.²

Yet even as the demand for clinicians mounts, doctors and nurses increasingly say they plan to reduce their work hours. One in four US physicians and two in five nurses say they intend to leave the practice of medicine.³ In the UK, the exodus already may be underway: In 2021, the attrition rate for hospital workers rose to 26 percent from 18 percent, and in 2019, about 16 percent of hospitals had reported critical staffing shortages.^{4,5}

Globally, nurses represent the largest segment of the health care workforce, and about 90 percent of international nurse associations are concerned that heavy workloads, resource shortages, burnout, and stress related to the pandemic will drive more nurses to leave the profession.⁶

Clinician burnout

Clinician burnout is prevalent internationally and causes a high degree of emotional exhaustion, the perception of being undervalued, and a sense of reduced personal accomplishment. Burnout often results in reduced job performance, and it contributes to high turnover rates. In addition to the stress and uncertainty brought on by COVID-19, primary contributors to burnout include administrative or clerical burdens, insufficient compensation, heavy workloads, inadequate resources, and technological hindrances and demands.

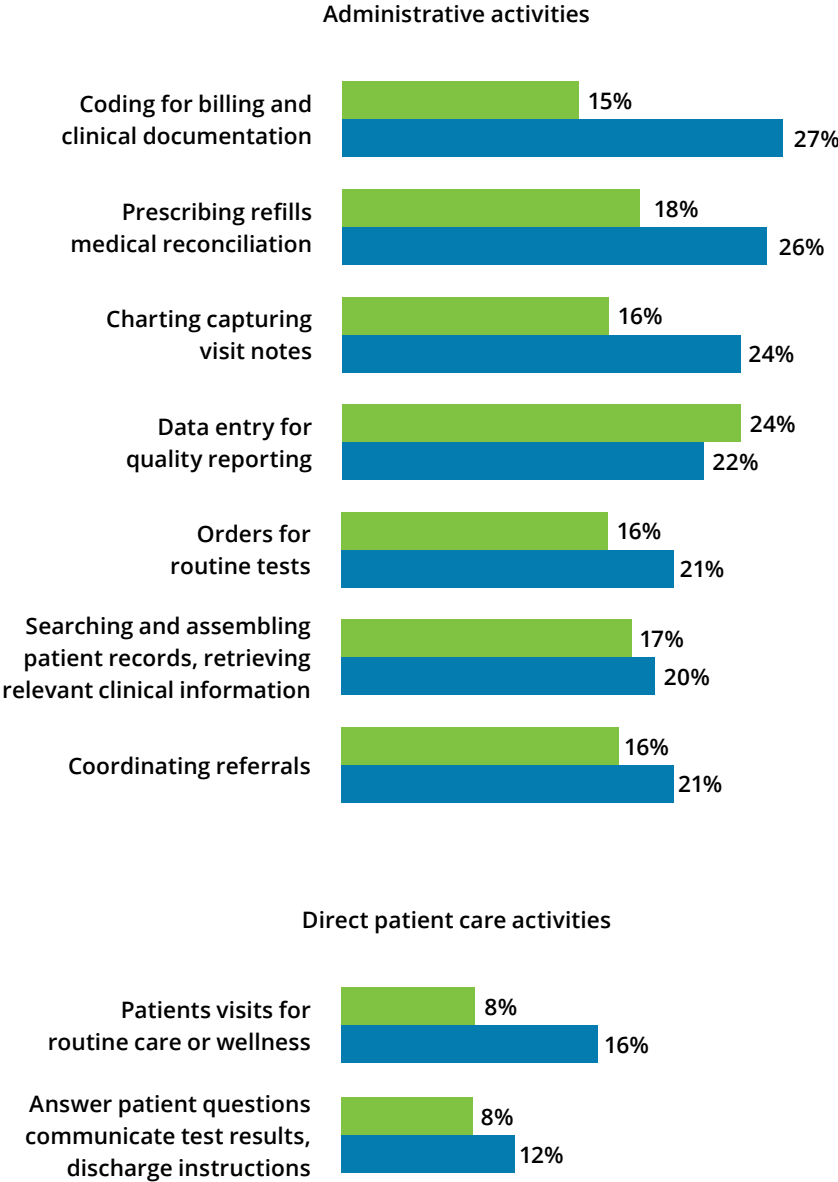
One of the biggest causes of burnout cited by health care workers comprise the very tools that are driving the future of health care: electronic health records and digital transformation. Like many technological advances, perceived efficiencies often belie time-consuming demands such as data entry (Figure 1).

To help address these concerns, Cerner, a health IT company, assembled a group of 12 US-based clients to review the data their organization collected. They found that anywhere from 194 to 984 pieces of data were collected for every intake. The clients were asked to prioritize the most critical elements, which were then compared across all 12 participating organizations. If eight or more clients had those data elements and they were documented 60 percent of the time, then the element was flagged as essential data. (Elements that were evidenced-based or required to meet US regulatory requirements were also included.) The process identified 87 common elements that made up an “essential clinical dataset” (ECD) for nursing admission documentation.

By reducing the amount of data collected for each intake, documentation content declined by an average of 48.5 percent, and the time to document data fell by an average of 30.6 percent. The average number of clicks required to complete an admission document dropped by 32 percent.⁷

Figure 1. Automation is higher for administrative than for direct patient care activities

2020 2022



Source: Deloitte 2022 Survey of US Physicians

However, automating administrative tasks alone isn't enough. Organizations must embrace the concepts of human-centered design in the interactions with patients. To be effective, technology must improve workflows and reduce administrative tasks in a manner that allows physicians more time to focus on patients and their care.⁸

Technology also can improve how health organizations recruit and retain talent. HR leaders are turning to digitization and automation for some aspects of the recruiting and hiring process, allowing them to identify and recruit new hires—and get them out in the field—more quickly. Artificial intelligence is another way that HR leaders could identify talent—even practitioners who may not be actively looking for new opportunities.⁹

Turning to technology

Amid a tightening job market, burnout from the pandemic, and changing worker demands, health organizations increasingly rely on innovation for recruiting and retaining workers. Most of these innovations involve digitizing processes, adapting to future care needs, and customizing employee compensation and benefits, such as offering student loan repayments, childcare stipends, and down payment assistance for workers buying homes.¹⁰

As a result, the nature of health care work itself has become more data-driven and distributed. That, in turn, has created a mismatch between the skills that are needed for certain jobs, and the skills that are available. Increasingly, providers are asking themselves what work needs to be done internally and what can be found externally. They also are focusing on what tasks must be performed by caregivers and which ones can be automated or handled by non-clinical workers.

The skills shortage, combined with mounting margin pressure, has prompted many health organizations to turn to technology and new approaches — such as telemedicine and “hospitals from home”—to address the gap and drive greater cost efficiencies. Telemedicine may allow organizations to reduce clinician burnout by sharing the workload for diagnoses and wellness checks, for example, across a broader workforce, many of whom may themselves work remotely. However, telemedicine has yet to live up to its potential. Sixty-eight percent of physicians surveyed by the Deloitte US Center for Health Solutions said they collaborate well during virtual visits, compared with 90 percent for in-person visits.¹¹

Digital transformation can enable organizations to reduce reliance on scarce resources or professionals with the most specialized skills. As a result, organizations are no longer bound by the historical perception that they must source talent exclusively from the communities they serve.

In the past, for example, hospitals may have been reluctant to reduce jobs because of the community impact. Now, with the talent crisis and with the mounting cost pressures, they’re recognizing that to improve the patient experience they must weigh the costs of keeping those jobs against the efficiencies of moving those jobs elsewhere. For example, rather than maintaining in-house IT staffs or call center personnel, some organizations are considering consolidating, automating, or outsourcing those functions.

In most cases, an outsourcing relationship would enable providers to rely on partners for modernizing internal processes and technology. Strategic management of the workforce, in other words, can drive a broader strategy that improves service offerings, lowers costs, and allows the provider to concentrate investments on enhancing care.

Changing workplace demands

Health organizations aren’t immune to the same workplace issues confronting other industries since the pandemic. Many workers have grown accustomed to remote work and no longer want to be in the office five days a week.

As a result, more providers are creating more appealing and sustainable work environments by focusing on improving workplace culture and communications, as well as prioritizing mental health services for employees and patients alike.

They also are adopting custom retention strategies, such as tailoring employee compensation and benefits to individual needs, as well as offering more schedule flexibility, same day pay, and diversity, equity, and inclusion (DEI) initiatives that appeal to younger health workers.

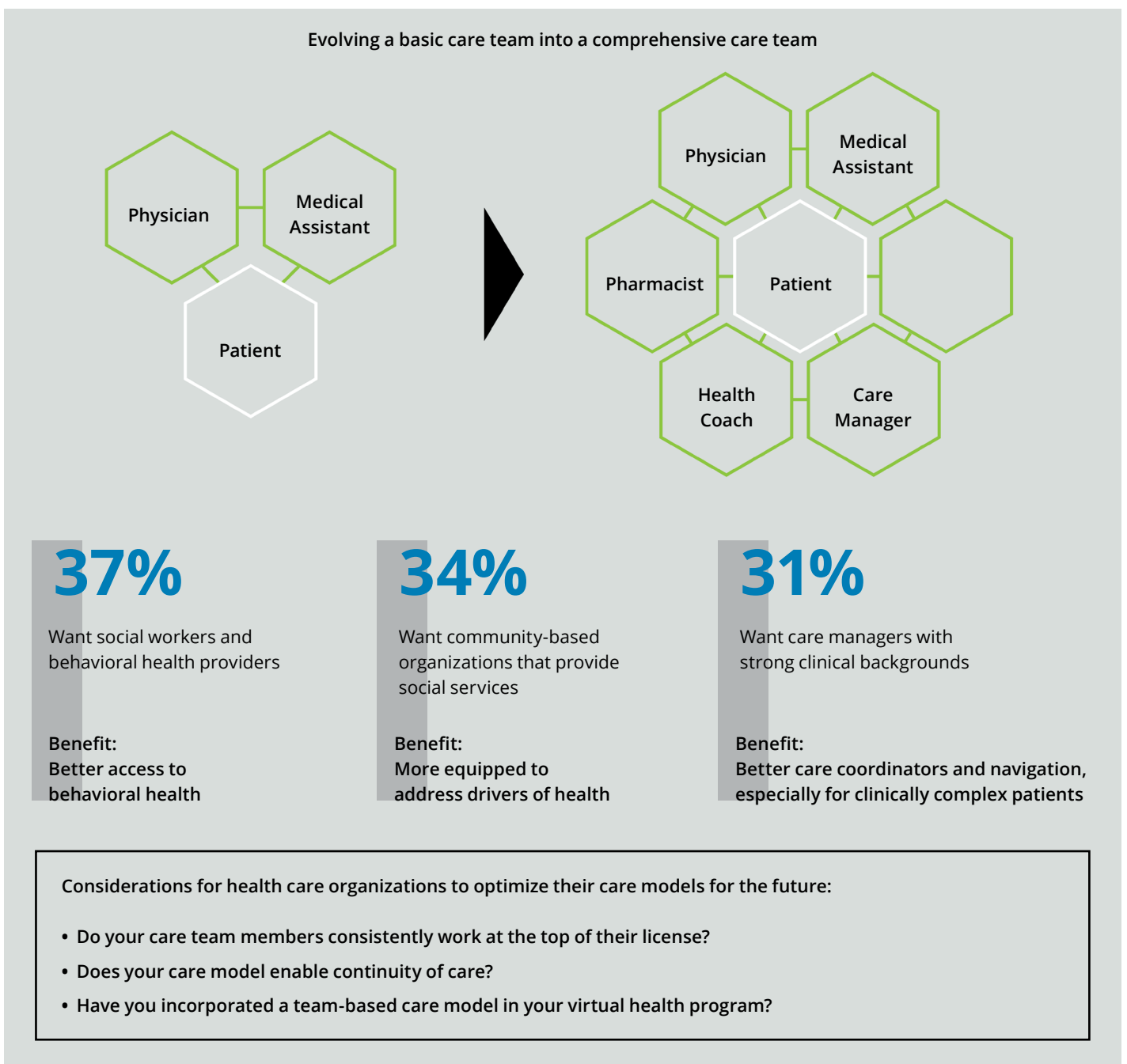
Physicians surveyed in recent years said that retention factors included increased pay, additional time off, reduced on-call hours, and paid sabbaticals. Increased autonomy, more face time with key leaders, and more formal recognition for job performance also were considered important to job satisfaction.¹²

But increasing time off and limiting on-call hours for physicians means others must fill the gap. In addition, patients often require more complex treatment options or increased specialization. As a result, organizations are looking at new models such as a comprehensive care team that brings together multiple disciplines—advanced practice professionals, rehabilitation therapists, clinical pharmacists, social workers, health coaches, and specialized care managers—to improve chronic condition management, care transitions, access to behavioral health, and navigating community resources.¹³

Other professionals, such as pharmacists, can play a broader role in improving the care provided to patients. Today's pharmacists fulfill a product-based role, dispensing medicine to patients. However, by moving the profession toward clinical services, supplement or extend primary care and wellness services, specialty support in areas such as oncology, and support for digital health by providing access to point-in-care diagnostics and helping customers identify digital health tools for their specific needs (Figure 2).

Denmark, for example, reduced the number of hospitals in the country to 32 from 98 between 2009 and 2019, and shifted more the services that hospitals provided to primary care, health centers, outpatient clinics. Hospitals are now reserved for specialized care.¹⁴

Figure 2. Opportunities to expand the use of comprehensive care teams



Source: Deloitte 2022 Survey of US Physicians.

Providers also are addressing labor shortages by hiring clinicians and nurses from other countries, such as the Philippines. However, even hiring practitioners from abroad may not be enough to backfill critical shortages. In Australia, providers typically hire 260 nurses a year from Ireland and Malaysia, selected from about 1,000 applicants. In 2022, they had only 25 applicants.

As the shortage persists, providers are reconsidering licensing and credential requirements. For example, in the US, providers who in the past hired only registered nurses (RNs) are now considering whether licensed vocational nurses (LVNs) or licensed practical nurses (LPNs) can be used for some roles.

However, if hospitals step up hiring in these areas, it could lead to shortages among skilled nursing facilities and home health care providers.

Hospitals also can review procedures to identify areas that could improve patient care while also reducing demands on the workforce. For example, higher patient loads have led to hurried and often incomplete discharge orders. Many patients receive no written discharge orders or don't understand them, which can lead to relapses or return hospital visits. Improving discharge orders and communicating with primary care physicians and home services for follow ups, can reduce undesirable patient outcomes by half.¹⁵

Building a more sustainable workforce

While these efforts have slowed labor challenges in the short term, providers still must make such practices sustainable. For example, because many retention issues occur at the lower end of the pay scale, many organizations have focused their retention efforts on employees with tenures of 15 years or less.

This creates inequities in the system over the long term because it devalues longevity. Simply adding flexible work schedules or increasing hourly pay may not be enough to build a resilient workforce for the future.

Some providers have begun to develop learning programs within their organizations and are creating partnerships to attract workers earlier in the educational process. Rather than simply recruiting from different nursing schools, for example, providers might build a development program in which students receive hands-on experience to encourage them to pursue health care careers.

In 1999, Children's Hospital of Colorado launched its Medical Career Collaborative (MC2), a two-year program that gives low-income high school students hands-on training in a variety of roles with workshops, field trips, and a paid internship. Since the initiative began, the hospital has filled more than 90 jobs — including physicians, physician assistants, nurse practitioners, radiology technicians and others — with students who started in the program. Hundreds more have gone on to pursue health care careers with other facilities. In the past few years, the program and others like it have become vital in meeting the sector's workforce challenges.^{16,17}

Some organizations are trying to lure back recently retired professionals. The Cleveland Clinic launched its Nightingale program in 2018 to offer newly retired nurses a flexible, part-time positions in the unit from which they retired. The nurses can work as much or as little as they want — provided they meet a minimum of 80 hours a year — and they aren't required to work weekends or holidays or be on-call unless they choose to be.¹⁸

In some countries, community health workers play a vital role in care delivery. Following this example, some US providers are identifying care roles that don't require clinical training. Many urban hospitals, for example, are developing cohorts of community care workers to not only improve care but strengthen ties with the communities in which they operate.

URC, which works globally to improve health care, is leading several studies about community health workers, including one to assess the social return on investments in Ethiopia's health extension program, and another on the benefits of community-based workers in Kenya and South Africa.¹⁹

Addressing workforce shortages

Organizations need new thinking about the workforce and how its structured. Old hierarchies no longer work. Licensed professionals need more support from both automation and other clinicians — from nurses to pharmacists. These new models will help to make health care more sustainable and effective for the workforce and produce better outcomes for patients.

Rising investments to address worker shortages and attrition indicates a growing recognition of challenges that providers and other industry participants face. Globally, billions of dollars from both the public and the private sectors are being devoted to the issue.

For example, in 2022 alone:

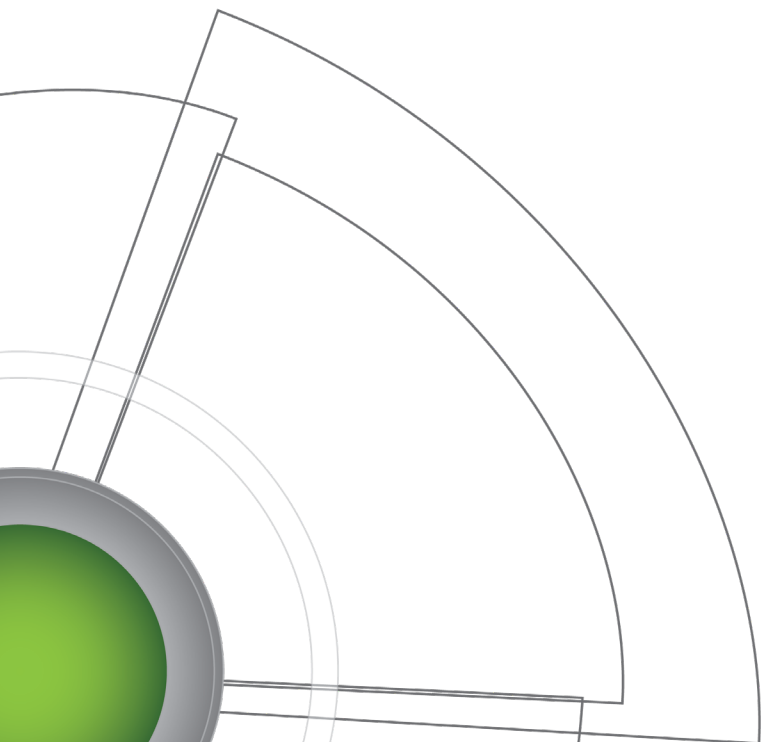
- The US administration said it would invest \$1.5 billion to increase the number of health workers in underserved communities by offering scholarships and loan repayments for students in health care who pledge to serve those communities.²⁰
- UnitedHealth, the largest US health insurer, allocated \$100 million to diversifying the health care workforce and addressing clinician shortages during the next 10 years.²¹
- A consortium of 24 partners from 11 European countries, led by the European Health Management Association (EHMA), unveiled BeWell — Blueprint Alliance for a Future Health Workforce Strategy on Digital and Green Skills. The four-year program focuses on developing the skills strategy to modernize the health workforce to cope with future challenges and evolving social expectations.²³
- New Zealand's ministry of health established an International Recruitment Service to retain overseas care workers, launched an initiative to expand unregulated non-clinical roles, and introduced new training models. The government will spend NZ\$10,000 per nurse to reduce licensing costs and NZ\$5,000 for every non-practicing nurse who re-registers.
- The African Union launched an initiative to strengthen and expand the continent's health workforce; it aims to help sustain universal health coverage. The project was started with a \$2.5 million grant by Serum Institute of India, the world's largest vaccine manufacturer.²⁴
- The Indian government is expanding medical college seats and starting special courses for rural health services. It also is launching innovative schemes to attract the health workforce to community service.
- Continued investment, and an efficient use of capital, are essential to ensure the health industry continues to meet rising global demand. It also is essential for improving health care delivery in rural and impoverished areas and reducing clinician burnout.

Preparing for the workforce of the future

As health care executives struggle to meet the demands of this new labor market, they should consider six key areas to position their organizations for the future.

1. Can you customize your retention strategies? Listening to what clinicians want and need and tailoring solutions appropriately can help boost retention. Some workers may want more recognition, while others want higher pay for expertise or increased effort. Still others value flexible scheduling, more frequent breaks to recharge, strong management support, open lines of communication, input into decision-making, accessibility to mental health and well-being resources to cope with job-related stress and help with child or eldercare. What can you do to assess and addressing these varying needs?
2. Can you expand your reliance on advanced practice professionals? State orders during the pandemic granted many nurse practitioners expanded roles. How can your organization build on those measures? Fully leverage care team-based models, filling gaps with less traditional care providers like advanced practice professionals, social workers, pharmacists, community health workers to address the shortage of primary care physicians.
3. How can you appeal to Millennials and Gen Z workers? New clinicians can be more selective about where they work and what kind of organization they work for. How can you tailor you job offerings to appeal to their concerns? By developing unique career pathways you can give entry-level workers opportunities for growth. Sharing your mission, values and DE&I goals can be critical to Gen Z employees who often value cultural fit over traditional benefits.

1. How can you best leverage experienced clinicians? Design jobs that allow them to use their expertise, reduce physical demands, give them flexibility in their schedules, and allow remote work when appropriate. Retirement can be a gradual transition if workers choose.
2. How can you integrate workforce planning and strategic planning? You need to understand how emerging technologies and consumerism affect the workforce and the nature of the jobs clinicians perform. Encourage change but do so in a way that supports your workforce. Develop processes for retraining as skills and capabilities shift, be prepared to retrain your existing workforce, and strengthen your talent pipeline with new professional development pathways and partnerships. Create career growth opportunities inside your organizations.
3. How can you encourage innovative thinking within your organization? Some providers are building their own internal supply of clinicians who can be reassigned temporarily during times of peak demand. Even before the pandemic, CommonSpirit Health, one of the largest nonprofit health systems in the US, created an internal nurse-staffing agency. Having an internal staffing agency allows nurses to travel and gives them more flexibility while remaining in the organization and keeping their seniority.²⁵ What do you do to foster organic solutions within your organization?





Sustainability

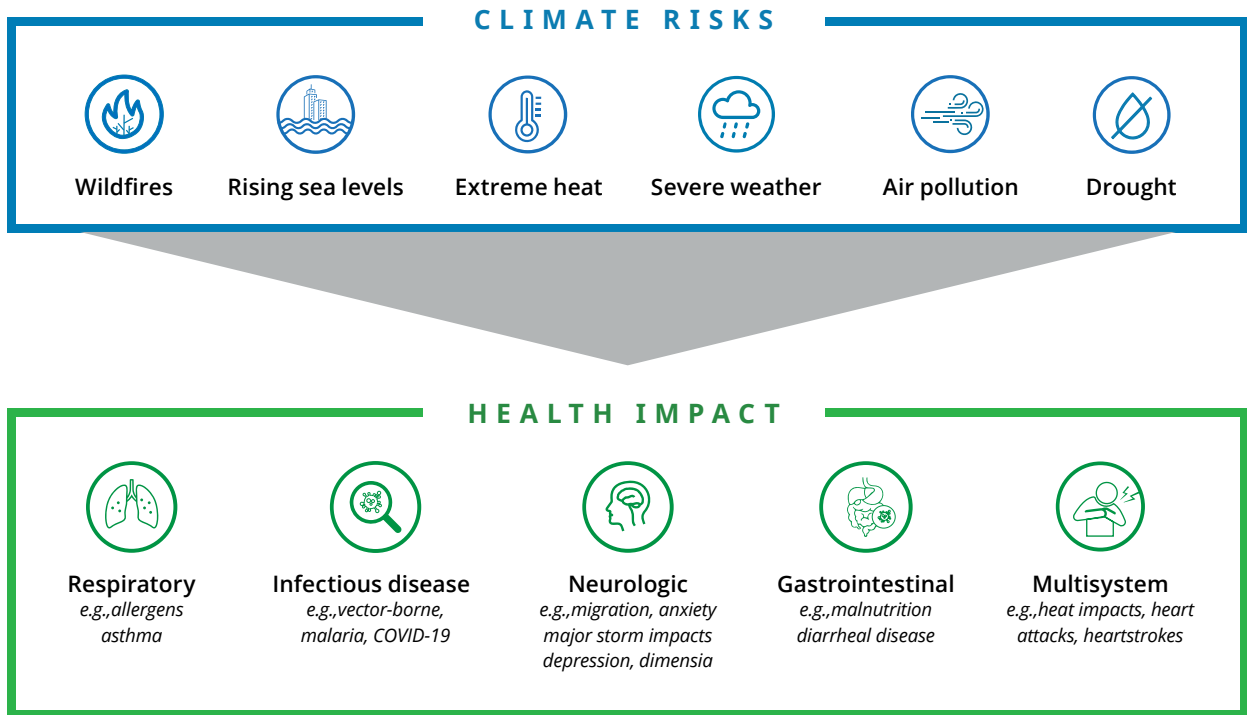
Climate change represents humanity's single greatest health threat, putting clean air, safe drinking water, adequate food supplies and secure shelter at risk on a global scale. Between 2000 and 2016, the number of people worldwide exposed to extreme heat increased by about 125 million. Heatwaves strain health and emergency services, water and energy supplies, and transportation services. Food and livelihood security may also be compromised if people lose their crops or livestock because of extreme heat.¹

Long-term consequences are even more severe. Rising temperatures are expected to cause about a quarter million more deaths worldwide from malnutrition, malaria, diarrhea, and heat stress between 2030 and 2050.²

In addition, higher emissions can trigger weather and environmental issues that, in turn, influence health, such as a greater frequency of drought, wildfires, severe weather, air pollution, extreme heat, and rising sea levels. These, in turn, can lead to an increase in allergens, respiratory distress, and infectious diseases (Figure 1). More than 90 percent of the world breathes unhealthy air, causing 13 million deaths from environmental effects every year.³ It also poses threats to health equity and mental health.⁴ Heat waves, for example, have been linked with increased rates of hospital admissions for mental disorders.

Figure 1. Climate change is a universal risk to human health and well-being

The concentration of carbon dioxide in the atmosphere is the highest in human history. The last nine years all rank among the ten warmest on record according to the National Oceanic and Atmospheric Administration.



Source: Deloitte analysis of scientific studies and IPCC reports.

The cost of these heightened public health risks is estimated to run between USD\$2 billion and USD\$4 billion annually by 2030.⁵ Making matters worse, residents in areas most severely affected by these events often lack the income to move or deal with the consequences of a warming climate.

Responding to these threats requires health systems that are more resilient and sustainable. Health organizations must be prepared to provide care in the wake of natural disasters, ensure the supply of medicine amid weather-related disease outbreaks, and adopt practices that reduce waste.

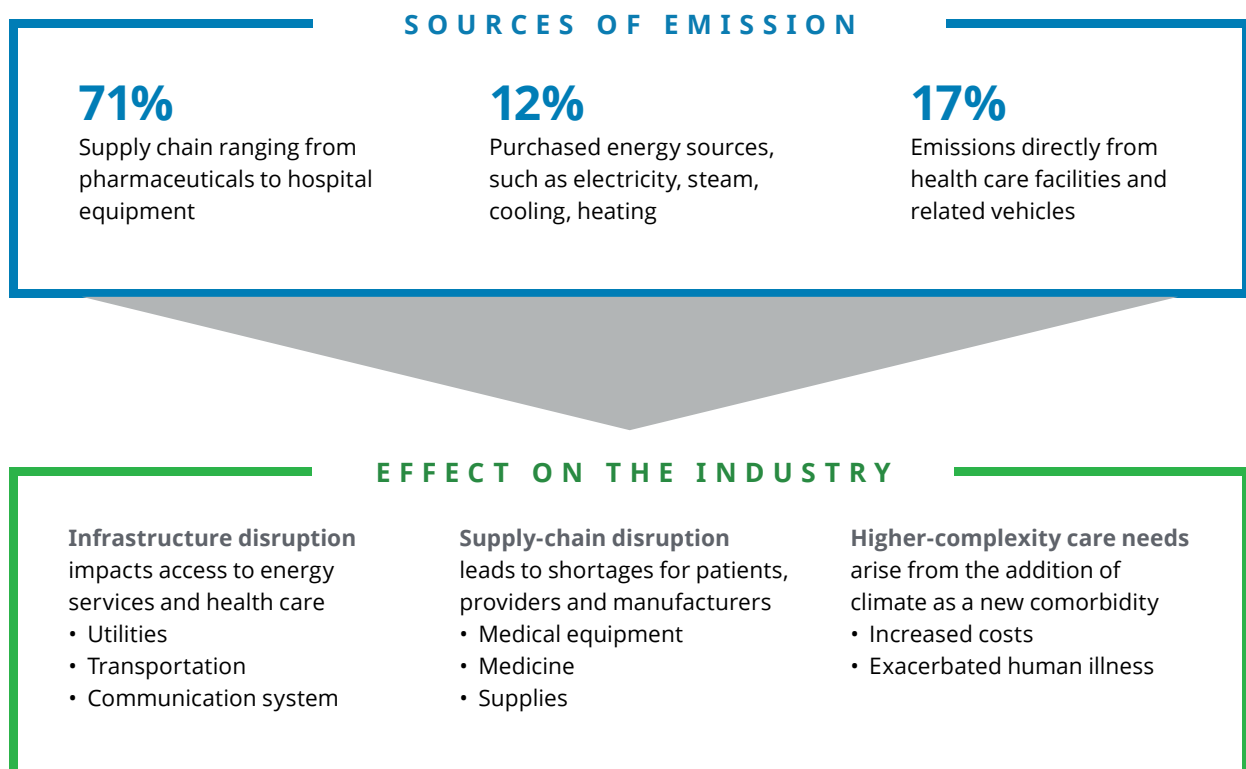
While health organizations bear the burdens of treating the rising number of ailments related to climate change, the impact also affects health care workers themselves. Extreme weather can disrupt operations at hospitals and other facilities through power outages, flooding, and other conditions that inhibit access to care. In addition, health care professionals are likely to experience the physical and mental health demands of climate change more acutely than the general population. As witnessed during the COVID-19 pandemic, rising demand on health care facilities can make their jobs more challenging.⁶

At the same time, the health care sector is examining its own operations, re-evaluating its processes, and adopting goals to reduce its own contribution to a changing climate.

Contributing to rising carbon levels

While treating the health consequences of climate change falls to the global health care sector, they are also a contributor to the rising carbon levels driving climate change. If the global health sector was a country, it would be the fifth-largest global emitter of greenhouse gases, accounting for as much as 5 percent of emissions (Figure 2).⁷

Figure 2. Where US health care firms contribute 8%-10% of total US-based GHG emissions, globally, the sector contributes to 5% of worldwide emissions



Source: Deloitte analysis

About 70 percent of all health care emissions come from supply chains, ranging from pharmaceuticals to hospital equipment. These can be difficult to address because they often result from third parties and involve chemicals, medical devices, and food.⁸ While emissions remain one of the biggest challenges, health care facilities also are looking for ways to reduce waste and boost sustainability. In the US alone, hospitals produce about 6 million tons of waste annually.⁹

COVID-19 also underscored the waste issue. Widespread use of personal protective equipment (PPE) strained health care waste management systems. Almost one-third of PPE could not be safely bagged or stored because of a lack of biohazard bags. The global health care sector generated almost 96 million tons of waste — including more than 28,000 tons of non-hazardous and 67,000 tons of biohazard waste — in its pandemic response.¹⁰

At the same time, supply chains also are vulnerable to disruptions caused by extreme weather or disease outbreaks that can put strains on health care supplies. Making supply chains more sustainable took on added urgency during the COVID-19 pandemic, when clinicians had to reuse masks and gowns, often relying on protocols that hadn't been fully tested, because of supply shortages.¹¹

More providers are adopting recycling and waste management programs, substituting single-use materials with reusable ones where practical and adopting local suppliers where possible to minimize supply disruptions. For example, the Cleveland Clinic procures about 30 percent of its food from local and sustainable sources, and it evaluates its purchases and suppliers for environmental sustainability. It also hopes to divert all its non-hazardous waste from landfills by 2027. Intermountain Healthcare adopted a closed-loop product delivery system that relies on reusable pallets and crates. It also has centralized courier and fleet operations that improve the transportation efficiency to reduce its carbon footprint.¹³

While supply chains represent by far the biggest issues for emissions and sustainability, health care facilities and the power to run them also play a role in health care's carbon footprint.

American hospitals account for about 7 percent of all commercial water consumption and about 10 percent of the total energy used in commercial buildings, at a cost of USD\$8 billion a year.^{14,15} Some have adopted green building standards, installed on-site solar power, boosted energy efficiency, or adopted renewable power purchase agreements.

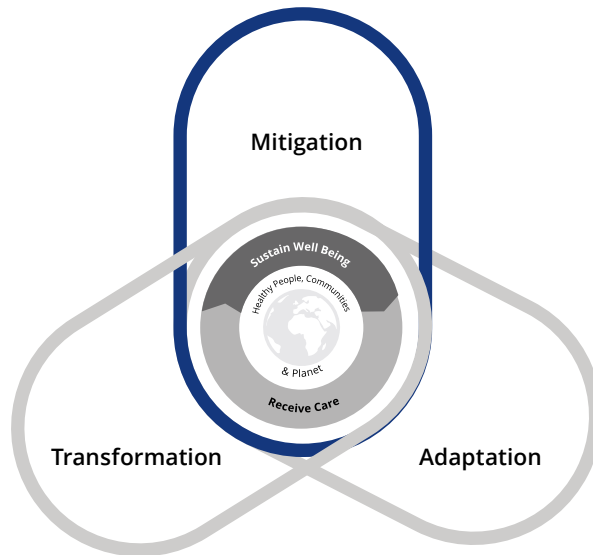
In 2020, Kaiser Permanente became the first US health provider to achieve carbon neutrality by improving the energy efficiency of its buildings, adding on-site solar power, and entering into long-term power-purchase agreements (PPAs) for renewable energy.¹⁶

Other facilities are looking at changes that go beyond energy consumption. Stanford University Medical Center, for example, eliminated 1,200 tons of greenhouse gas emissions by replacing the anesthesia drug desflurane with alternatives such as sevoflurane.¹⁷ Desflurane has more than 3,700 times the global warming potential of carbon dioxide, compared with 350 times for sevoflurane.¹⁸

Likewise, aerosol-propelled asthma inhalers emit 10 to 37 times more carbon than dry-powder alternatives, and currently contribute an estimated 3.9 percent of the carbon footprint of the UK's National Health Service (NHS). Researchers there found that moving to dry powder inhalers would reduce carbon dioxide equivalent emissions by 58 kilotons.¹⁹

Care providers also are looking for improvements in delivery methods, such as virtual care, to reduce emissions from ambulances and private cars traveling to appointments and protect sensitive patients from exposure to air pollutants and allergens (Figure 3). In 2021, CommonSpirit Health reported that its 1.5 million virtual visits conducted during COVID-19 reduced fuel consumption by 1.7 million gallons and reduced emissions by about 15,000 tons.²⁰

Figure 3. Mitigation strategies to reduce operational risks and climate emissions



Providers	Pharma & Medtech	Plans
<p>Low-carbon local urban planning: Design community based care centers to reduce or eliminate carbon-intensive transportation</p> <p>Recycling and waste management: Implement a program to recycle medical waste safely and efficiently.</p> <p>Virtual and digital care delivery: Increase access to virtual appointments and remote monitoring to reduce transit</p>	<p>Low-emissions manufacturing: Introduce changes to manufacturing processes to efficiency and lower emissions. Explore and implement abatement technologies that can lower emissions footprint of operations.</p> <p>Recycling and waste management: Implement a program to recycle medical waste safely and efficiently, reducing both waste and energy requirements for production.</p> <p>Design sustainable reusable packaging: Partner with pharmacies to reduce the use of plastic packaging associated with drug distribution and creation of packaging return/reuse programs</p>	<p>Virtual and digital care delivery/ incentives: Incentivize members (e.g., through value based contract terms) to make use of virtual appointments and remote monitoring</p> <p>Evaluate sustainability standards for providers: Establish contracts with provider networks that incentivize sustainability and emission-reduction standards in their facilities and operations</p> <p>hybrid operating models: Design hybrid operating models that balance in-person and virtual work and collaboration between employees to minimize transit and reduce physical footprint</p>

Source: Deloitte analysis of Rock Health Digital Health Funding Database

A lack of policy support

Policy makers are just beginning to support efforts addressing health care emissions. Forty-five countries have committed to reducing health care-related carbon output and making their health systems more sustainable as part of the World Health Organization's COP26 Health Program. Fourteen of the participating countries set a net-zero target date of on or before 2050.²¹

The UK's NHS has reduced emissions by 30 percent since 2010 and has committed to achieving net zero for direct emissions by 2040.²² In 2022, it became the first health organization to embed net zero in legislation, creating a roadmap for other health organizations to follow.²³ It also has been the first organization of its kind to track indirect emissions and develop plans for reducing them, such as relying on virtual care to reduce ambulance use.

While health systems in other countries support climate action, few are following through with coordinated plans. Without policy and regulatory support, bolstered by additional research, effective responses and policy are likely to remain slow. Taking a page from NHS, the Royal Australian College of Physicians recently called for provisions that include a dedicated climate change health resilience fund to support research and innovation, a process for developing climate risk assessments and locally led disaster planning, and a commitment for delivering net zero across the country's health care system by 2040.²⁴

At the COP27 climate change conference in November 2022, the US and NHS announced they would collaborate on procurement requirements to reduce the climate impact of health care supply chains in both countries.²⁵

However, few priorities are being set globally, and still lacking is a comprehensive policy to address the disproportionate impact on people who are already the most vulnerable to climate risks.

Without broad policy requirements, companies and organizations are charting their own courses. In some cases, health leaders are championing internal policies for emission reductions and greater sustainability, thereby making the policies more visible for both health care workers and patients. Massachusetts General Hospital, for example, founded the Center for the Environment and Health, the first health institution-based center aimed at incorporating sustainability into all aspects of the hospital.²⁶

But the challenge to building greater resiliency and sustainability into global health care systems remain. As climate risks mount, providers face the challenge of maintaining the quality of care in the face of mounting financial pressure. What's more, a changing climate requires greater disaster preparedness, especially in economically disadvantaged regions, whether it's ensuring medicine can get to affected areas or mitigating the effects of rising temperatures on the workforce.

Tracking progress on sustainability

Deloitte established a strategic partnership with the Geneva Sustainability Centre and the International Hospital Federation to improve sustainability in the health care sector.

As part of this effort, we built the Sustainability Accelerator Tool, which is designed for health care leaders to track their progress toward delivering low-carbon and resilient care in an equitable manner.

The tool has three domains: (1) environmental impact, (2) health, equity, and wellbeing, and (3) leadership and governance

Figure 4: Sustainability Accelerator Tool



1) Environmental Impact

Efforts to:

- **Reduce the environmental footprint** of your organization and ecosystem.
- **Build resilience** to climate change impacts
- **Transform to low carbon care** through operational services and clinical practice



2) Health, Equity and Wellbeing

Efforts to:

- **Assess the vulnerabilities in communities** to better target services
- **Deliver health and prevention services** in an equity-based way that support mental and physical well-being
- **Prevent ill health** and positively **influence environmental and social determinants** of health



3) Leadership and governance

Efforts to:

- **Ensures structures and practices** are in place to promote leadership **accountability and reporting**
- **Engage and empower employees** to act on sustainability issues
- **Act collaboratively** across the communities and with relevant stakeholders

Each domain has a series of questions that have been carefully selected for health care organizations to:

- assess strengths of current position,
- understand what low, medium, and high maturity means,
- track progress,
- compare themselves to peer hospitals through international benchmarking,
- share and collaborate with other organizations to learn quickly,
- develop a globally consistent way of describing and measuring progress, and
- provide robust data for accreditation.

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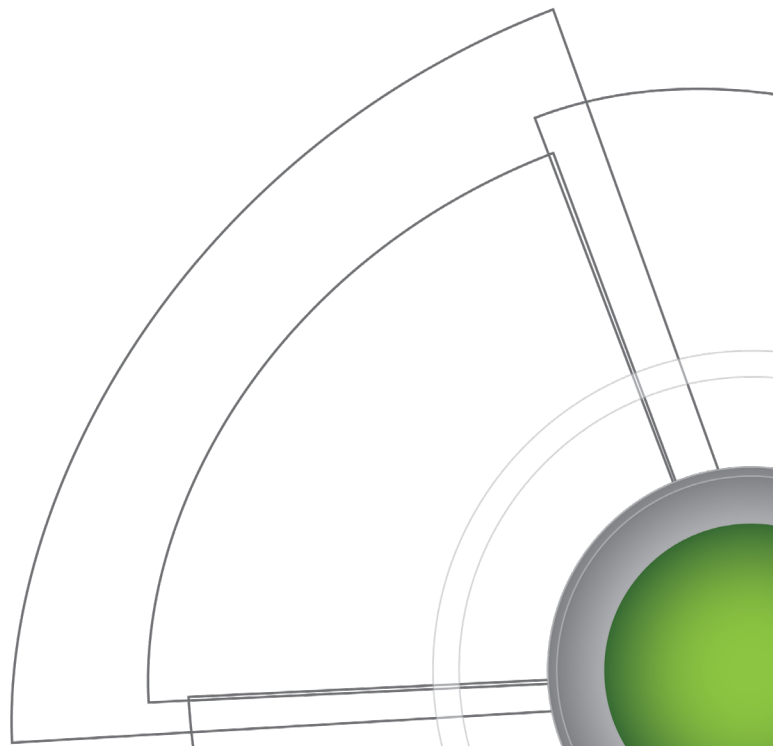
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- [Why climate resilience is key to building the health care organization of the future?](#)
- [Building Climate Resilience](#)

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