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2024 Global Health Care Sector Outlook

Navigating transformation

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Introduction

The global health care sector once again faces a year of unprecedented transformation and challenges. Providers worldwide continue to confront the lingering effects of the COVID-19 pandemic, which has led to widespread labor shortages and rising costs. The sector has also been buoyed by the broader adoption of technology such as artificial intelligence (AI) that can address some of those issues.

At the same time, health inequities persist that could further add to the challenges and costs the sector faces in 2024. Left unaddressed, the cost of health inequities could triple to US\$1 trillion by 2040—or about US\$3,000 a year for each person.¹

The integration of AI and machine learning technologies can play a key role in addressing these inequities, if providers work to earn patients' trust and ensure that they take steps to mitigate bias within the technology.

In 2024, AI is expected to play a pivotal role in streamlining administration, diagnosis, treatment, and patient care. From predictive analytics to automating electronic health records, AI can further enhance the precision and efficiency of health care delivery.

With the growing global awareness of environmental issues and resource constraints, sustainability has emerged as a critical aspect of the health care sector. Health care organizations are adopting sustainable practices to reduce their carbon footprint and ensure responsible use of resources. From green hospital designs to sustainable supply chain management, this report highlights the impact of sustainability on health care operations, as well as its potential for cost savings.

The use of remote technologies and telemedicine adopted during the pandemic are helping to define not just the delivery of care, but also the nature of it. Providers are

extending care beyond traditional medical services to encompass holistic social care. This shift is attributed to the growing recognition of the profound connection between the social determinants of health and overall well-being. As a result, providers and policymakers are integrating social care into public health systems to address the multifaceted needs of patients.

As health care costs continue to escalate globally, the affordability of care remains a critical concern. Governments, payers, and providers are taking measures to control costs while maintaining the quality and accessibility of health care. From value-based care models to innovative pricing structures, these evolving strategies are designed to help ensure cost-effective health care delivery.

At the same time, the health care workforce is undergoing a significant transformation, driven by evolving patient demographics, technological advancements, and changing care delivery models. Providers worldwide face deep shortages of clinicians, and are taking innovative approaches to improve pay, reduce burnout, and build trust in the health care workplace. As providers work to attract, train, and retain a skilled and more adaptable talent pool, the role of telehealth, remote monitoring, and the gig economy are all reshaping health care workforce dynamics.

The global health care sector stands at a crossroads in 2024, poised for profound changes. The future of global health care is likely to be shaped by innovation, sustainability, social care integration, cost management, and workforce adaptation.

1. Jay Bhatt, "Leaning into health equity can be good for business and society," Deloitte Health Forward Blog, August 10, 2023, <https://www2.deloitte.com/us/en/blog/health-care-blog/2023/leaning-into-health-equity-can-be-good-for-business-and-society.html>.





Transforming health care with artificial intelligence

By the numbers:

US\$360 billion—annual potential savings from artificial intelligence (AI) for the US health care system over the next five years¹

Health care generates **19 terabytes** of clinical data annually in the US²

The US market for interoperable clinical data is expected to almost double to **US\$6.2 billion** by 2026 from **US\$3.4 billion** in 2022³

US\$31.5 billion—the amount of private equity funding invested in health care AI between 2019 and 2022⁴

1,500—the number of health care AI vendors, half of which have been formed in the past seven years⁵

More than three years after the COVID-19 pandemic, many health care systems globally are still struggling with its lingering effects. The need to reduce costs and improve access to care—while still confronting a shortage of skilled workers and clinicians—has driven some health care systems to adopt emerging technology to fill the gaps.⁶

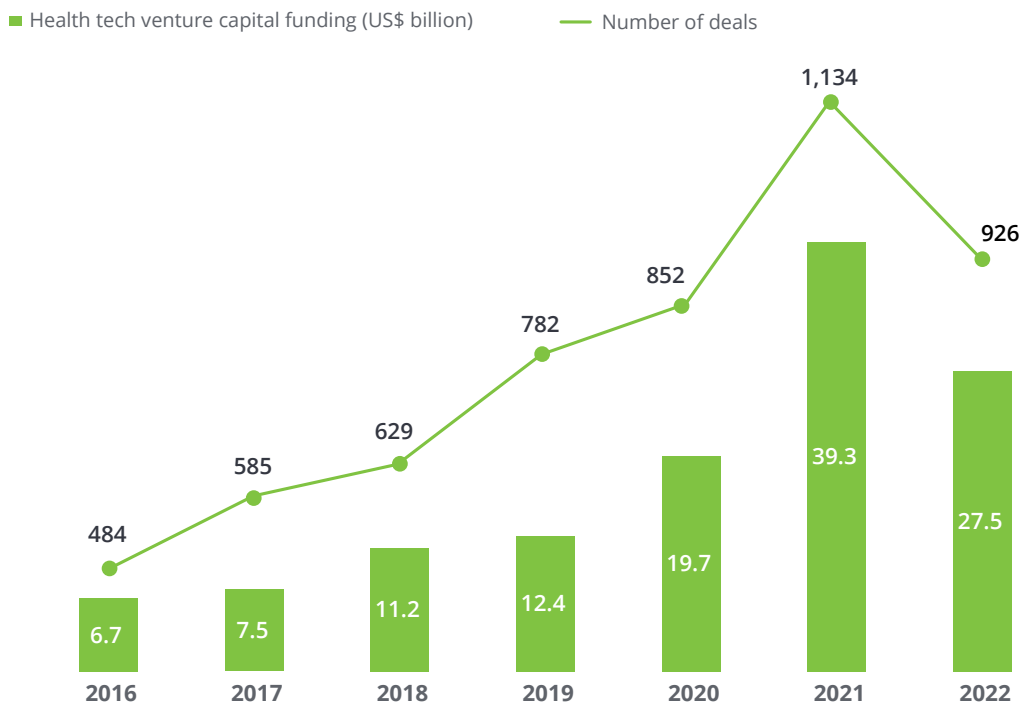
Technology offers health care organizations a chance to personalize patient interactions and treatment, taking pressures off clinicians for routine care, and enabling them to focus on the procedures that require their expertise and training.

AI and other forms of emerging technology have the potential to streamline both administrative and care processes for health care providers. Between 2019 and 2022, investors poured US\$31.5 billion in equity funding into health care AI, and the industry

has consistently been a leader in AI mergers and acquisitions.⁷ The pandemic drove an increased focus on telemedicine and online portals for acute and wellness care. For the sector and patients to continue benefitting from technology, however, providers should sustain investments in technology—much as hospital systems and operators invested in equipment and offices in the past.⁸

So far, this is happening slowly. Global funding for digital health declined by 3% in the second quarter of 2023, to US\$3 billion—the lowest in six years.⁹ Venture capital funding, which is often considered a barometer of technology investment in the industry, fell about 30% in 2022, to US\$27.5 billion from US\$39.3 billion. However, the investment levels still outpaced pre-pandemic levels, and overall funding levels continue to accelerate, excluding the boom in 2021 (Figure 1).

Figure 1: 2022 was a strong year for health tech funding



Note: Data for deals valued at US\$2 million and above.
Source: PitchBook Data, Inc.

Part of the reason for the slowing pace of investment may be that many providers may hesitate to be early adopters of new technology, especially for clinical applications. Tight margins from declining public funding, falling outpatient revenue, longer inpatient stays, and lower demand for care post-pandemic has crimped some provider margins and reduced technology investments. The median Kaufman Hall Year-To-Date Operating Margin Index, which reflects actual margins for 900 US hospitals, was -0.2% through November 2022.¹⁰ As demand for telemedicine and other tech solutions wane, many wonder if the technological advances of the past few years will be permanent.¹¹

Yet the potential for financial benefits, improved care delivery, and more efficient uses of resources is fostering newfound enthusiasm for AI. In the US, for example, wider adoption could generate savings of as much as US\$360 billion annually—roughly 10% of the country's health care spending—in the next five years. For hospitals, the savings would come largely from improvements to clinical operations, quality, and safety; for physicians, from continuity of care; and for payers, from improved claims and provider relationship management.¹²

Streamlining administrative tasks

AI's largest and most immediate impact may be its role in streamlining administrative processes and reducing expenses. Hospital CEOs face three core business challenges: margin pressure; recruitment and retention of staff; and staff burnout. AI has the potential to ease documentation burdens, handle pre-op workflows, and simplify insurance claims, for example. Some US hospitals are employing AI to review patient records and medical policies and address insurance claims denials, potentially saving providers millions of dollars. More than 60% of denied claims are recoverable, yet because of errors and limited hospital resources, only 0.2% of in-network claims are appealed, leaving millions of dollars a year written off as uncollectible.¹³ AI can also minimize errors and improve categorization of incoming claims, reducing backlogs and potential payment concerns.¹⁴

Relieving clinicians of those administrative tasks can free up time for them to spend with patients.¹⁵ In some cases, doctors in the US spend more than two-thirds of their time on administrative work. With AI-managed electronic health records (EHRs) and in-basket management, providers can reduce administrative demands on physicians, a leading cause of burnout.¹⁶

At the same time, AI has the potential to improve access to care that is designed for patients' specific needs. Finland, which began a major overhaul of its health care system in 2023, is building a digitized system that pledges to deliver services that are both personalized and cost effective by emphasizing preventive care that may keep 80% of the population healthy by 2030. That can allow for additional support for the 20% of patients who need disease treatment or other, more extensive care.¹⁷ As part of this effort, Finland anticipates that 80% of its citizens will be using digital identification by the end of the decade, and each citizen will have access to digital medical records and e-health services.¹⁸

Improving the quality of care

In addition to streamlining services, AI can help predict patient outcomes based on their unique health profiles, recommend treatment options to both patients and providers, and alert clinicians to concerns such as contraindicated medicine or allergies.¹⁹

Meanwhile, generative AI can leverage the various datasets that contribute to medical diagnoses and treatments, including EHRs, sensors, and wearable devices. This technology can play a vital role in early detection of illnesses, interpreting radiology results, and identifying patients with the most urgent needs for treatment.²⁰

Health care providers are partnering with tech companies to develop AI tools that can better predict clinical outcomes, enhance radiological imaging, and optimize sleep monitoring. NYUTron, a large language model, predicts multiple clinical outcomes such as 30-day readmission rates, in-hospital mortality rate, comorbidity index, and length of stay. The model

reported an accuracy of 79% in predicting patients' length of stay, a 12% improvement over conventional methods.²¹

Meanwhile, Subtle Medical has developed tools for generating better radiological image data and streamlining radiology workflow. The company's proprietary deep learning algorithms enable up to 60% faster PET and MRI scan times, enhancing imaging efficiency and improving the patient experience.²²

And Zepp Health has developed its Zepp Aura sleep and relaxation platform that connects with its smart wearables. The tool offers personalized sleep coaching, sleep quality analysis, and AI-generated sleep music compositions based on the user's heart rate to help improve sleep patterns.²³

Another challenge for health systems is managing growing volumes of data. The global health care sector generates 19 terabytes of clinical data annually.²⁴ AI can help it use this information more effectively. By using centralized clinical data, providers can create a more comprehensive picture of the patient, while producing more consistent results and reducing the cost of care. The market for interoperable clinical data is expected to almost double, to US\$6.2 billion by 2026 from US\$3.4 billion in 2022.²⁵

In the near term, AI can more effectively interpret and respond to queries, improving patient engagement from initial consultations to post-discharge follow ups. In addition, AI's real-time translation capabilities can improve accessibility and contribute to health equity in areas like social services. For example, after Russia's invasion of Ukraine, Deloitte Czech Republic developed a cloud-based virtual contact center called IRENA (Immediate Refugee Need Assistance), built on Amazon Connect, that used AI-enabled conversations with a virtual agent in any language patients chose.²⁶ As refugees fled across Europe in the early days of the conflict, IRENA handled 10,000 calls daily, with as many as 80% managed automatically.

Expanding access to services

It's not just providers who can benefit from AI expanded use in care delivery. AI may broaden access to care at a lower cost through retail environments. Patients can monitor their overall health and exercise patterns with smartphones and watches, increasing the focus on prevention. A large US grocery chain, with 12% market share in the US, operates 220 clinics, and companies such as Walmart, Amazon, Best Buy, and Dollar General have retail health care footprints or have tested the waters. Retailers already have customer data, they know how to use to create a high-volume low-cost environment, and can provide many basic services for less than other providers.²⁷

However, retail clinics in the US are concentrated in urban and suburban areas, and retailers have been reluctant to open clinics in rural regions because of less customer traffic. As a result, a retailer may provide patients with technological innovation, but those benefits may be limited to certain geographies.²⁸

AI could further blur the lines between humans and technology through augmented reality, smart devices, and wearables. Moreover, investment in secure data environments (SDEs) and other measures may reduce patient concerns about data security. In the future, AI has the potential to assist in three key areas of health care:

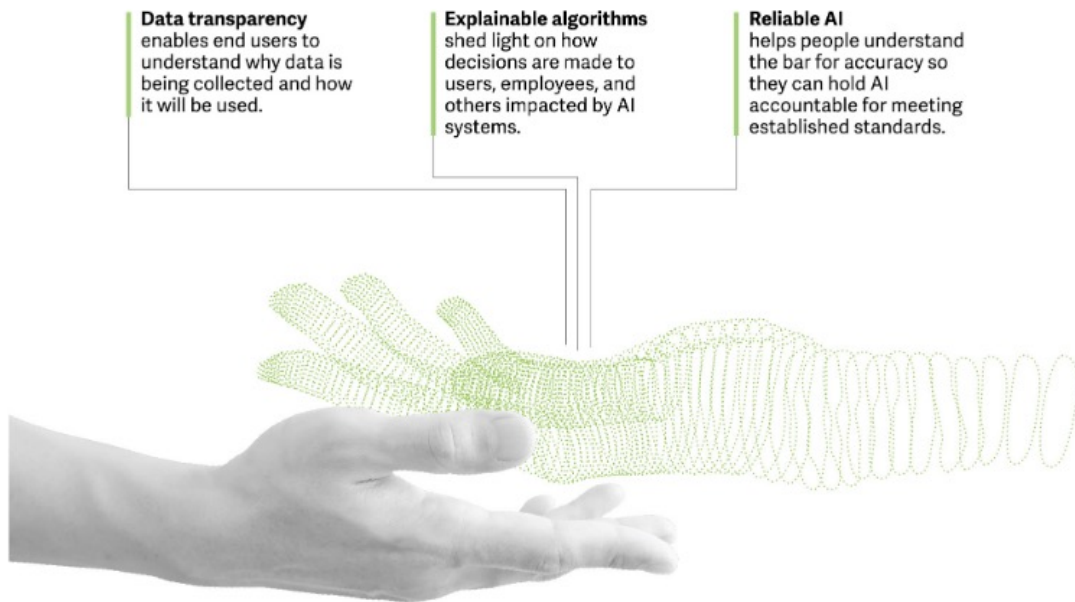
- **Intelligent diagnosis:** AI-enabled solutions could support clinicians in making precise diagnoses using inputs from in-vitro diagnostics, imaging, EHRs, patient conversations, biometrics, images, sensors, wearables, and genomics.
- **Personalized and adaptive care plans:** AI could interpret biomarker data from smart devices and wearables to generate treatment plans such as sleep analysis, dietary suggestions, and even AI-generated music for stress management. Moreover, if a patient faces challenges in adhering to a regimen, generative AI-enabled digital avatars could empathetically interact with patients to understand their barriers and offer potential solutions or alternatives.

- **Population health management:** AI could analyze large datasets and recognize patterns crucial to spotting health trends within a population. For example, by reviewing genomic, socioeconomic, and EHR data, AI could identify risk factors and predictors of diseases, such as cervical cancer. AI-enabled marketing and communications could then generate tailored audio visual or textual invitations for screening services. Responses, visits, and results could then be stored and used to build more robust models.²⁹

The essential elements of trust

Despite the transformative potential of AI in health care, adoption will likely depend on the trust and acceptance of providers, practitioners, and consumers. Health care and technology providers should prioritize responsible and safe use of this technology. To earn patients' trust, the technology should be free of bias, inaccuracies, and data breaches (Figure 2).³⁰

Figure 2: How to make AI more trusted



Source: Deloitte analysis

Currently, AI is more effective at handling administrative tasks than in dealing with predictive diagnoses or care delivery. When generative AI encounters gaps in its knowledge, it tends to fill them with plausible-sounding information that may be inaccurate. These results are often referred to as an AI hallucination or confabulation.³¹

Improving the knowledge base of generative AI requires finding quality health care data and the right foundation models—both of which may require large investments to harness the power. These investments can be essential in building public trust.³²

The Coalition for Health AI, which includes academic health systems, organizations, and expert practitioners of AI and data science, has outlined characteristics of trustworthy AI that include:

- **Safety:** AI systems should not put human life, health, property, or the environment at risk. In health care, this is fundamentally an extension of the Hippocratic Oath to “do no harm.” AI models can become unsafe for a variety of reasons, including inadequate oversight for fairness, accountability, or bias.
- **Accountability and transparency:** AI should be auditable; individuals should have access to their data that is entered into the system and the source of the information should be traceable.
- **Explainable and interpretable:** Physicians should understand how the underlying programs compile information, and the systems should produce outputs with the context in which the information is requested. In other words, health care AI can't be opaque, that is, without insight into how its results are produced.
- **Fair and equitable:** AI should not increase a specific group's risk for experiencing bias or adverse outcomes.³³

Regulatory challenges

The regulatory climate around AI in general is changing rapidly. Governments worldwide are working to establish effective regulation. The EU is leading the charge. The European Commission established a regulatory framework for AI in 2021, and final rules could be implemented as early as 2024.³⁴

The UK government in March 2023 published guidelines for regulating generative AI that include data reporting, life cycle accountability, and industry collaboration with the goal of encouraging adaptiveness and autonomy.³⁵

In Brazil, however, consensus among legal experts, academics, industry leaders, and regulators has been more difficult, and the country has yet to adopt a coherent framework for regulating the diverse applications of generative AI. In November 2022, a group of legal, academic and industry experts working with the country's National Data Protection Authority published guidelines that focused on the rights of the citizens, risk categorization, and governance measures, but the document is being debated at various levels of the Brazilian government.³⁶

The US, meanwhile, has not adopted comprehensive national regulatory legislation, resulting in a fragmented framework of state rules. To bring greater clarity, the Biden administration issued an executive order aimed at governing the risks associated with AI.^{37, 38}

The disparity in approaches to regulating and monitoring AI could pose additional challenges to health care providers.

Deploying AI responsibly in health care

AI has the potential to transform health care by optimizing both administrative functions and care delivery. It will have financial and non-financial benefits for the global health system, such as improved care quality, enhanced patient experience, and greater clinician satisfaction. Private providers may gain the greatest benefits from optimization in care, claims, and provider relationship management.

Companies that invest in AI early and identify opportunities for applying it across the value chain are likely to gain a competitive advantage and deliver more personalized care to patients in the coming year.

However, companies must take steps to ensure AI is deployed responsibly and that its use and processes are transparent and auditable. Organizations that don't build this into their AI strategy risk alienating patients and other stakeholders. For those who build trust in AI, the technology can continue to unlock new innovations for years to come.

For AI to be effective in health care, both medical professionals and patients should have confidence in the results, understand how those results are achieved, and have confidence that their confidential information will be protected.

Considerations for providers to build trust into their AI strategy

Providers that want to foster trust around their use of AI should:

- Adopt strong governance practices around AI to help ensure the organization can innovate with confidence while reducing the risks that come with complex technology.
- Prioritize patient data privacy and protection from cyber threats by addressing external, physical, and digital risks. Once the risks are assessed, organizations must determine if these risks outweigh the potential benefits.
- Establish responsibility and accountability for AI in the organization, review rules and regulations that might determine legal obligations, and ensure that AI systems are auditable.
- Promote transparency by informing consumers how AI is using their medical data to make decisions. AI's algorithms, attributes, and correlations should be open to inspection, and its decisions should be fully explainable.



Deloitte AI Dossier

How AI is transforming health care

AI is rapidly becoming a competitive necessity in the health care sector. Yet many organizations are still understanding what AI can mean for them. Deloitte created the [AI Dossier](#) to give leaders in different industries summaries of key issues and opportunities, and how AI can help achieve them.

The Dossier identified several key areas where AI can benefit the sector.

Enhancing patient engagement

Many patients struggle to book appointments, access medical records, determine which services are available to them, and get answers to simple logistical questions. AI can improve interactions between patients and providers by:

- **Simplifying complex medical information:** Natural language processing can make medical data more understandable to patients, increasing health literacy.
- **Streamlining communication among health care workers:** AI and machine learning can filter and share relevant information efficiently.
- **Accelerating database searches:** AI-enabled databases improve information retrieval and reliability.
- **Enhancing chatbots:** Chatbots can assist with patient questions, appointment scheduling, and referrals.
- **Personalizing patient engagement:** AI-driven prescriptive analytics can suggest personalized actions for patients, increasing focus on care delivery.

Automating claims management

Traditional claims management is costly, slow, and error-prone, often relying on manual data input. AI can assist by:

- **Automating claims data extraction and input:** Robotic process automation tools extract data without manual intervention.
- **Providing real-time updates and monitoring:** AI systems offer real-time status updates and claims monitoring.
- **Automating follow-ups and denials:** Repetitive tasks related to claims can be handled instantly by AI tools.
- **Analyzing claims:** AI-enabled data analysis provides real-time insights on filed claims.

Efficient and accurate diagnoses

Diagnosis often depends on complex factors, including patient history and genetics. AI can improve them by:

- **Analyzing extensive medical data:** AI can uncover complex patterns and characteristics that might be overlooked by humans.
- **Offering recommendations:** AI technologies such as deep neural networks and machine learning can enhance the analysis of patient data.

Personalized health care

Precision medicine considers an individual's genetics, environment, and lifestyle to provide tailored treatments. AI can deliver more personalized diagnoses, prevention, and treatment by:

- **Connecting various datasets:** Machine learning algorithms link treatment outcomes to diverse health datasets.
- **Analyzing and collecting vast data:** AI and machine learning enable more effective data collection and analysis.
- **Developing personalized treatments and care:** AI analytics allow health care providers to deliver personalized care.

Optimizing hospital staffing and resources

Demand for health care rises and falls in response to a complex range of factors, making it difficult for hospitals to optimally allocate their supply of critical resources such as medical equipment and staff. Predictive AI can forecast patient volumes and help hospitals adjust staffing and resources accordingly by:

- **Predicting future resource needs:** Data mining, modeling, and AI provide insights for resource allocation.
- **Analyzing detailed data:** AI and machine learning offer a comprehensive understanding of health status.
- **Identifying high-impact patterns and trends:** AI-driven analysis reveals hidden trends and potential risks.



Addressing cost and affordability

By the numbers:

3.3 billion—the number of people who live in countries that spend more on debt service than on health and education¹

47%—the percentage of health care providers who say access is worse than it has been during the past two years²

US\$12,500—the amount per capita that the US spends on health care³

80 years—the average life expectancy in Belgium, Denmark, and Finland, driving a growing need for long-term care⁴

10.3%—the amount of a recent pay increase for first-year doctors in the UK⁵

The cost of health care continues to define the quality, access, and affordability of health services worldwide. The effects of the COVID-19 pandemic increased costs in areas such as staffing, but it also increased a focus on affordability and access. Countries are confronting higher costs as inflation increases the price of drugs, consumables, and other materials. In addition, the pandemic created a backlog of demand that increased pressure on funding, and, as a result, prioritization of care. Providers increasingly are considering more affordable and efficient models for access, some of which are being delivered through technology and other innovations.

For most countries, the average cost of health care per citizen has risen since 2020. The US had the highest health expenditure per capita, rising 6% to more than US\$12,500 in 2022 from 2020—the equivalent of 17% of the country's gross domestic product (GDP). The US spends significantly more of its GDP on health costs than any other country—for example Belgium, Denmark, or Finland, which spend about 2% of their GDP on health care. US health care costs are expected to rise another 36%, to more than US\$17,000 per capita by 2027.^{7,8}

While countries such as Italy and Egypt saw per-capita costs fall as the pandemic subsides, their health expenditures resumed an upward trajectory beginning this year.

Infant mortality can serve as a barometer of a country's overall health. For every 1% increase in health expenditure, infant mortality decreases by 0.2% to 1.5%. South Africa, for example, spends US\$524 on health per capita, and has an infant mortality of 24 per 1,000 births. In contrast, Japan has US\$3,951 in health expenditure per capita and 1.9 infant deaths per 1,000 births. The US is the outlier, with health expenditures of more than US\$12,500 per capita and infant mortality of 5.1 deaths per 1,000 births.⁹

What's driving costs?

Some developed countries such as the US, Canada, and the UK are facing rising health labor costs driven, in part, by worker shortages and reliance on contract staffing firms that often raise prices in the face of surging demand. Pay increases for clinicians has not kept up with inflation, and productivity remains below pre-pandemic levels, adding to margin pressure among providers. The conflict between margin and labor costs is particularly acute in the US, which relies heavily on private health care providers.¹⁰

In the US, hospital costs per patient increased by 22.5% from before the pandemic, and a US hospital association found that the biggest percentage of that increase related to an almost 25% rise in labor costs. More than 5 million US medical workers left their jobs during the pandemic, causing industrywide staffing shortages and adding to the pressure on workers who remained in their jobs.¹¹

The increased demand has led to higher costs as providers compete for a smaller number of qualified professionals. Skilled nursing facilities offer an example of how this affects the cost of care. Full-time employees in skilled nursing facilities decreased by 18%, but labor costs still increased 30.8%.¹²

While the cost of care in the US is more pronounced because of its private health care system, other countries also face increases in labor costs. Canada, for example, saw physician spending rise by almost 11% and 6.5% in 2021 and 2022, respectively. Physician costs are now the second-largest portion of all health spending in Canada.¹³

Among the nurses who faced burnout and left Canada's health care sector in large numbers, many are coming back through private firms. This is costing the public system millions of dollars annually. Toronto's University Health Network, for example, spent C\$6.74 million on nursing agencies in its 2022 fiscal year, a significant increase from the C\$776,000 it paid in 2021.¹⁴

In the UK, health care staff costs were £66.2 billion, or 45.2% of the total National Health Service (NHS) budget. NHS recently agreed to a pay increase of more than 10% for first-year doctors in training.¹⁶

Since 2019, NHS has increased its reliance on staffing companies, which have seen their earnings increase tenfold. Medacs Healthcare, a leading health care staffing agency, recorded an 80% increase in sales to £160.9 million, between 2019 and 2021^{17,18}

While higher labor costs are a major factor in rising health care costs, widespread inflation has also played a role.

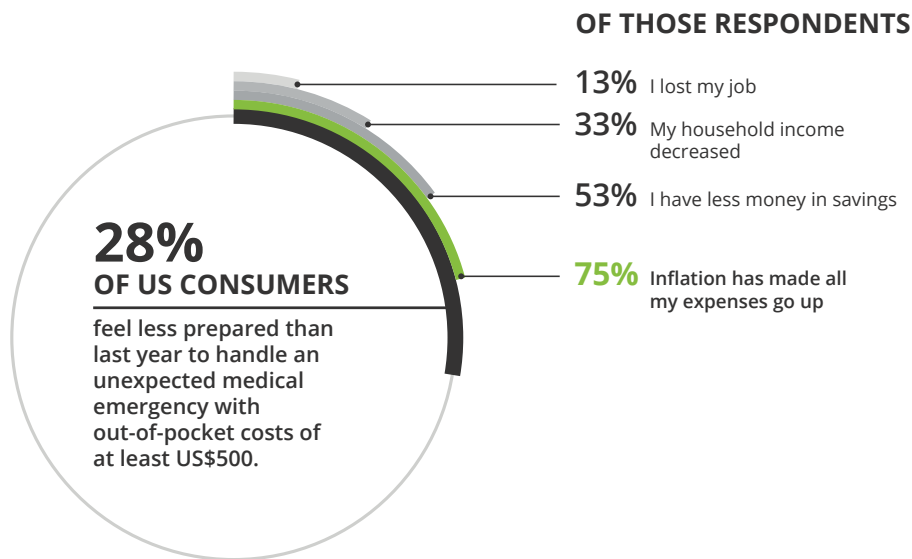
In the US, the highest inflation in 40 years compounded health care prices that historically have increased faster than rest of the economy. Health insurance premiums rose 28% in 2022 from a year earlier, more than triple the rate of inflation at the time, raising questions about how many consumers will now be able to afford health care.

A 2022 Deloitte US survey found 28% of consumers, or roughly 72 million US adults, feel less prepared to pay for unexpected medical costs than they did the previous year (Figure 1).¹⁹

Figure 1: Inflation is the No. 1 reason that nearly one in three people feel less prepared to handle health care costs in the US

Do you feel less prepared to handle health care costs compared to one year ago? If so, why do you feel less prepared?

(Respondents selected all that applied)



Note: N = 2,005.
Source: Deloitte 2022 Pulse Survey of US Consumers.

Europe has traditionally seen smaller increases in health care costs, but it is not immune to the global trends. The cost of care across the continent was expected to rise 8.6% in 2023, compared with 5.6% in 2021. In Latin America, inflation contributed to an estimated 18.9% increase in 2023, while health care costs rose 11.5% in the Middle East and Africa and 10.2% in Asia.²⁰

In the US, costs are also affected by intermediaries such as insurers, drug distributors, and pharmacy benefit managers. In 2022, the combined revenue from the nine biggest intermediaries accounted for almost 45% of US health care costs, compared with 25% in 2013.²¹ Government limits on how much revenue insurers can collect from premiums has driven them to acquire health care providers, where the limits don't apply. While the emerging vertical system can offer cost benefits, it also raises some concern that companies may raise prices with impunity or that doctors may be encouraged to provide the cheapest treatments to some patients.²²

Paying for long-term and specialized care

While workforce expenses are a major driver of rising health costs, other factors also contribute. The cost of maintaining care facilities is one factor. Germany is closing smaller hospitals in rural areas/communities in favor of clinics that provide basic care. Patients who need more specialized care would be sent to larger hospitals that offer a broader range of services.²³

Aging populations increase demand for long-term care, and with longer life comes an increase in age-related diseases such as cancer and Alzheimer's, all of which contribute to rising health care costs. Belgium, Denmark, and Finland, where the average life expectancy is about 80 years, face a growing need for long-term care to treat chronic disease.²⁴ They are among the few OECD countries that spent about 2% of their GDP on long-term care.²⁵

As the costs of long-term care increase, countries are adopting different funding models to cover the expenses. Germany and Japan finance long-term care

through social insurance, while the UK, Canada, and Australia use a means-tested system. France employs a hybrid approach that combines income-adjusted universal coverage and private insurance.²⁶

The US relies on a combination of public and private funding, including out-of-pocket expenses paid by the patient. Most funding, about US\$230 billion, comes from Medicaid and other public insurance sources such as the Veterans Health Administration and the Children's Health Insurance Program.²⁷

Health care organizations globally are beginning to implement innovative technologies such as virtual wards and AI-enabled diagnostic tools to reduce costs of age-related care. In the US, for example, the Virginia Health System implemented a hospital-at-home program to deliver remote care for patients needing acute care.²⁸ The program saves an average of US\$3,000 per patient visit, or more than US\$4 million annually for the average hospital.²⁹

In the UK, the Medway NHS Foundation Trust, which operates a hospital in Gillingham, uses remote monitoring technology for an elastomeric pump, a device for administering chemotherapy drugs. The pump allowed patients to receive treatment at home, saving approximately 496 hospital bed days in the first 10 months of use, saving almost US\$200,000.³⁰

Providers also are investing in technology to accelerate diagnoses and reduce treatment costs for chronic diseases. The China Medical University Hospital in Taiwan deployed an intelligent microbial system into clinical practice in 2022. The AI tool identified a disease-causing pathogen in lab samples in as little as one hour, compared with 72 hours for standard tests. The tool reduced antibiotic costs by 25% and patient mortality.³¹

The Sheba Medical Center in Tel Aviv is using an AI tool that quickly diagnoses heart-related issues. Using a portable ultrasound probe and a computer tablet, treatment costs between US\$2,500 to US\$6,000—far less than the cost of an echocardiography machine and reducing the need for specialty consultation only for extremely complicated cases.³²

Access to care is linked to affordability

While higher costs reduce affordability of care, affordability can also reflect the level of investment in health and health systems. As public debt has risen—reaching a record US\$92 trillion in 2022—developing countries increasingly are spending more to pay interest on their debts than they are on health care and education. The number of countries facing high debt levels rose to 59 in 2022 from 22 in 2011, and about 3.3 billion people, or roughly half of humanity, now live in countries where health care investment has taken a back seat to debt service. This holds true for some developing nations across Africa, Latin America, and Asia (excluding China).³³

In many low-income countries, as few as one in seven individuals received all doses of the COVID-19 vaccination. That compares with about three out of four in high-income countries.³⁴

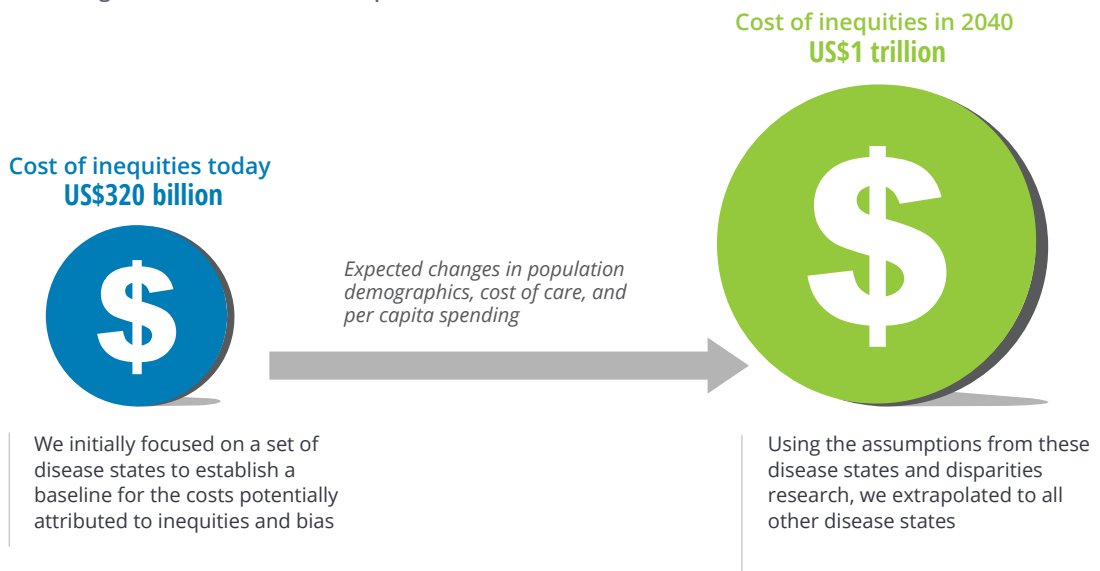
To improve access in developing regions, organizations are stepping up efforts to improve the availability of medical supplies and treatments in developing regions.

The ADB, through the Rwanda Innovation Fund, for example, is working with health tech firm Viebeg Technologies to expand access to affordable health care across Central and East Africa. The program allows health care institutions to stock medical supplies using AI to oversee shipping to warehousing, distribution, and inventory control. Using the platform, health care providers can connect directly with manufacturers, eliminating brokers and middlemen, and generating savings of as much as 40% for customers.³⁵

Even in wealthy countries efforts to improve access to care have at times fallen short. Forty-seven percent of providers in a recent Experian survey said they believe access to care is worse than it was in 2020. This may reflect providers' frustration that their investments in improving information intake, reducing cancellations, boosting patient volumes, and increasing up-front collections have so far fallen short of expectations.³⁶

Recent research by Deloitte US indicates that health care inequalities in the US cost the country roughly US\$320 billion annually. If these gaps are not bridged, that amount may increase to US\$1 trillion or more by 2040³⁷ (Figure 2).

Figure 2: Modeling the cost of US health inequalities in 2040



Note: All values are in US dollars.

Sources: Deloitte analysis.

In Europe, large investments in staffing have led to an increase in headcount, but there is a lag in productivity given higher wages, and increased investment in technology that has yet to pay off.³⁸

Politically, though, governments are reluctant to raise taxes amid high inflation and recession concerns. In the UK, for example, the NHS has embarked on a systemwide savings and efficiency drive that includes leveraging technology more aggressively, centralizing procurement, back-office functions, and reducing costs in agency nursing shifts.³⁹

Steps for reducing inequities and improving affordability and access

Worldwide, providers are working to address inequities that inhibit access to and affordability of care. Steps include:

- Collaborating to influence multiagency action, such as with integrated care systems
- Leveraging their position as an anchor institution in their vicinity or community
- Conducting quality improvement programs focused on health equity
- Promoting targeting of health care delivery to meet regional needs and explicitly aim to lessen health care inequalities
- Integrating health equity-focused approaches through advocates across initiatives

In the US, the Centers for Medicare and Medicaid Services (CMS) recently announced a framework for enhancing health outcomes for recipients of Medicare; Medicaid; CHIP; and the Health Insurance Marketplaces. The 10-year plan includes collecting standardized data, assessments, and addressing the root causes of health inequities; building workforce capacities to reduce health care disparities; providing culturally tailored services; and increasing forms of accessibility to health care coverage.⁴⁰

Meanwhile, the NHS has developed multiple strategies to promote health equity in the UK, including programs that foster collaboration among stakeholders and data monitoring over a dashboard. It is collaborating with other programs to improve access for the 20% of the population identified as the most deprived, according to the National Index of Multiple Deprivation. The program focuses on clinical areas that include maternity, mental illness, chronic respiratory disease, early cancer diagnosis, and hypertension and lipid management.⁴¹

In September 2023, the Pan American Health Organization (PAHO) signed an agreement to promote equitable access to medical diagnostic tests in Latin America and the Caribbean. The partnership will focus on expanding timely access of cost-effective medical diagnostic tests and promote early diagnosis of diseases.⁴²

The rise of medical tourism

Medical tourism has become increasingly popular among businesses and insurance providers as a means of bringing down health care costs. This is particularly true of patients in the US. More than 787,000 people were expected to leave the US for health care in 2022 alone. Cost is the overriding factor. Procedures costing more than US\$5,000 grew from 5% of US medical tourism procedures in 2017 to 22% in 2022.⁴³

Asia, India, Thailand, and Turkey have emerged as some of the top medical tourist destinations. While affordability and the presence of numerous accredited hospitals have contributed to this growth, governments have also increased efforts to promote the countries as medical hubs.^{44,45}

Globally, about 11 million people travel to other countries for medical care, and the value of the medical tourism market is projected to reach US\$43.7 billion by 2030 and grow at compounded annual growth rate of around 33% annually between 2023 and 2030. Cross-border patients pay approximately between US\$3,500 to US\$5,000 for a single consultation.⁴⁶

How providers can transform their organizations in a high-cost environment

The current cost environment requires new strategies to transform an organization. Traditional cost-cutting may no longer be enough. Instead, health care organizations should transform themselves by building new capabilities, relationships, and competencies.

To help ensure these efforts are successful, they should focus on:

- **Transforming care delivery:** Consumers tend to have rapidly changing preferences about where they receive care. Increasingly, they prefer retail clinics and urgent care centers over a hospital or physician office visit. Strategic investments in these alternative sites of care can help health care organizations improve offerings, build trust with their consumers, and secure better finances.
- **Optimizing operating models:** Keeping pace with rapidly evolving skills and technologies and uncertain supply chains can be challenging. To find the right balance between cost and benefits, some organizations may look at enhancing certain in-house

capabilities and assets and outsourcing others. In determining the proper balance, providers should consider a range of models—fixed-price, everything-as-a-service, risk-based, capability-focused, and outcome-based.

- **Prioritizing workforce investments:** To address the ongoing challenges of recruiting and retaining staff, health care organizations should prioritize investments in workforce experience and development. This may include retention bonuses for key talent, developing career paths, training, and reimagining the work, workplace, and workforce.
- **Adopting a digital strategy:** Many health care organizations still lag in investments in digitalization. To take full advantage of technology such as AI, they need a coherent digital strategy rather than simply pursuing ad hoc incremental digital initiatives. This includes making investments in digital engagement to address changing consumer needs and establishing connected platforms for all business units. As part of this broader strategy, organizations should consider how to integrate AI and other technologies to assist workforce, reduce inefficiencies, and improve patient care. As part of this effort, providers must ensure the technology is trustworthy, ethical, and secure.



Responding to the looming global shortfall in health care workers

By the numbers:

US\$10 million—the projected shortfall of health workers globally by 2030¹

87%—the percentage of US health care providers that listed staffing shortages as their biggest challenge²

960,000—the number of health and welfare workers Japan needs by 2040³

Nine in 10—the number of developed countries in which physicians feel dissatisfied or burnt out⁴

23% of US health care workers trust their leadership to do what's right for them⁵

The shortage of health care workers during the COVID-19 pandemic added a new dimension to the global public health crisis. Several factors contributed to the shortage of professionals, including burnout, high vacancy rates in health facilities driven by a limited talent pipeline, changing demographics, and increased migration rates.

Even with labor-saving technology such as artificial intelligence (AI), demand for health workers globally is expected to surge by 29%, to 84 million in 2030 from 65.1 million in 2020.⁶ Meeting that demand requires the industry to transform care models, redesign jobs, and rethink employer-employee interaction.

The challenge is profound—and global. The World Health Organization (WHO) projects a shortfall of 10 million health workers worldwide by 2030, mostly in low and lower-middle income countries.⁷ About 55 countries currently fall below the number of health workers that the WHO considers as sufficient.

Some of the biggest shortages are for nurses, especially in Southeast Asia and Africa. WHO's norm is three nurses for every 1,000 people, but India, for example, has just 1.7.⁸ The world will need nine million more by the end of the decade.^{9,10}

Even in high-income countries, shortages persist. The UK already had a shortfall of about 50,000 nurses before the 2020 pandemic. The British government has vowed to hire 50,000 new nurses by 2025, but the Health Foundation, a charitable organization that invests in health and health care, has said the government should exceed that goal if the National Health Services (NHS) is to recover from the current shortages.^{11,12}

Before the pandemic, US hospitals faced a decline in workers, and the pandemic exacerbated those trends. During the height of the Omicron COVID-19 subvariant, about 30% of US hospitals, or about 1,400 facilities, indicated they anticipated critical short-term staffing issues.¹³

A recent survey found that 87% of providers listed staffing shortages as their biggest challenge.¹⁴ And there's little relief in sight. More than 6.5 million US health care professionals are expected to leave their positions by 2026, while only 1.9 million will step in to replace them, creating a national health worker deficit of more than 4 million.¹⁵

The situation is much the same in Asia. The Japanese health ministry, for example, has forecast a shortfall of 960,000 health care and welfare employees by 2040.¹⁶ And in the UK, hospitals and clinics had more than 133,000 job vacancies as of September 2022, a 7.9% increase from the previous year. Almost 12% of those openings were in nursing.¹⁷ More broadly, the NHS is understaffed by 154,000 full-time workers, and if current trends continue, that figure could rise to 571,000 by 2036.¹⁸

The demand for health workers in developed countries is contributing to larger shortfalls in poorer countries, as workers migrate, drawn by better wages and working conditions. For example, in eight Organization for Economic Cooperation and Development (OECD) countries that already have some of the highest concentration of health care workers, the number of foreign-trained physicians increased to 36% in 2020 from 32% a decade earlier.¹⁹

Burgeoning burnout

Clinician burnout is one of the key causes of the health care sector's labor shortages. About 49% of US physicians said that they have experienced burnout in the past two years and predicted those rates could rise in 2023.²⁰ Burnout rates are highest among emergency medicine (65%), internal medicine (60%), and pediatrics (59%).²¹

It is also a widespread problem among European physicians, with 22% believing that burnout and staffing issues may worsen.²² In India, 82.7% of doctors reported experiencing work-related stress in 2023. Mental, physical, and emotional attacks on physicians are at an all-time high, according to the Indian Medical Association.²³

In nine out of 10 developed countries surveyed—Australia, Canada, France, Germany, the Netherlands, New Zealand, Sweden, Switzerland, the United Kingdom, and the United States—physicians were dissatisfied with a range of matters, including pay levels, time spent with patients, time spent on administrative work, and work-life balance. (Switzerland was the only country in which physician satisfaction was higher.)²⁴

Trust

Trust is essential for health organizations, and it is critical to effective care delivery. Yet Deloitte US research has found an erosion of trust across the health care sector, including consumers and health workers. Staff shortages have increased because of burnout since the COVID-19 pandemic, inadequate pay that has not kept up with inflation, and eroding trust in executive leadership (Figure 1).²⁵

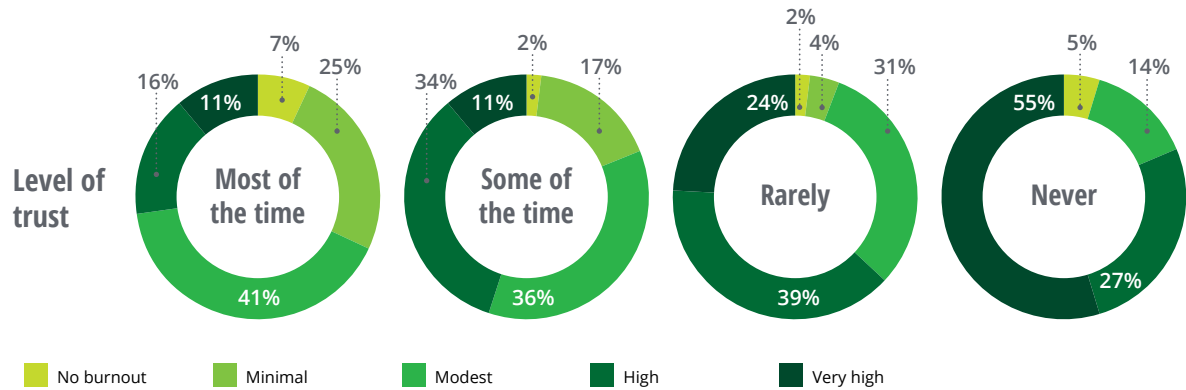
Our Deloitte US survey of health care workers found that only 45% of frontline clinicians trust their organization’s leadership to do what’s right for patients. Even fewer, 23%, trust their leadership to do what’s right for workers.²⁶ These two types of trust—to do right by patients and to do right by workers—are highly correlated and associated with significantly lower clinician burnout.

In October 2023, about 75,000 medical workers at Kaiser Permanente (KP) initiated a three-day strike against one of the largest nonprofit US health care networks. Workers were demanding higher pay, a US\$25-per-hour minimum wage for all health care workers, and a reformed bonus structure. In addition to pay issues, the union representing the workers says KP needs 10,000 more workers to fill vacancies.²⁷

Figure 1: Clinician burnout rate is highest in the US among those who have lost trust in their organization’s leadership

Survey question: Do you trust your organization's executive leadership to do what's right for the workers?

The burnout I experience today is ...



Note: N = 486 (clinicians currently in clinical practice).
Source: Deloitte 2022 Survey of US Frontline Clinicians.

In the short term, health care providers have turned to contract workers to fill the gaps in the labor force. The use of contractors in full-time positions more than doubled—rising 138.5%—between 2019 and 2022, and the median salary paid to staffing companies rose by 56.8%. During the same three-year period, the total cost of contract labor increased by almost 258%.²⁸ In a tight labor market, staffing companies often raise the hourly prices they invoice hospitals for services such as traveling nurses.²⁹

To retain and attract the clinical workforce, health care leaders have a responsibility to rebuild their trust and restore meaning, value, and purpose in their industry. Listening to frontline workers, recognizing their clinical autonomy, elevating their voice to leadership, and building an inclusive culture are some ways organizations try to achieve this. Holding leaders accountable for worker well-being—by weaving well-being metrics into their compensation and creating leadership positions focused on well-being—can further solidify leadership’s commitment to their workers.

This isn’t just the right thing to do, it’s also good for business. Workers at high-trust companies report 50% higher productivity, 76% more engagement, and 40% less burnout compared to workers at low-trust companies.³⁰

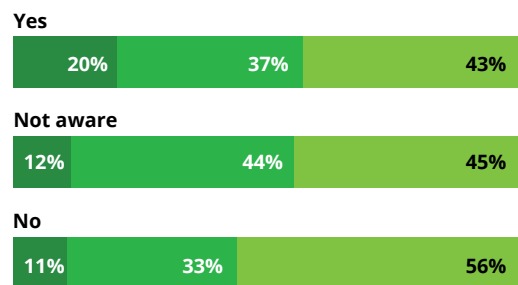
Rebuilding trust is essential as health organizations work to fill vacancies, meet rising demands for labor, and prevent skilled workers from leaving for staffing firms that may pay more. Our research has found four key areas providers should focus on to strengthen trust within their organizations:³¹

- Listen, be transparent, and involve frontline workers in decision-making.** Clinicians want to be heard and involved. An inclusive health care workforce can enrich the discussion by bringing a diversity of experiences and perspectives, creating a sense of belonging, and amplifying voices that traditionally are not heard.³² Nine in 10 of the clinicians we surveyed highlighted how important it is for health care organizations to involve frontline staff when developing programs that address workforce burnout and shortages. But only 54% said it actually happens, including just 8% who said it happens regularly.³³

- Restore meaning in a clinician’s job and elevate the humanity of health care.** The demands of today’s health care system and the heightened emphasis on the bottom line may be affecting clinicians’ joy in caring for patients. Giving time and autonomy back to clinicians allows them to focus on patient relationships.
- Involve frontline clinicians in leadership roles.** Health care organizations can engage practicing clinicians on committees or encourage them to join the leadership ranks. Evidence shows that physician-led health care organizations generally do better in terms of protecting the core values in medicine than non-physician-led organizations (Figure 2).³⁴ Some organizations appoint clinicians to serve at executive levels to ensure clinicians are engaged and involved in decision-making.
- Hold leaders accountable for health workers’ well-being.** Having supportive leaders who prioritize workers’ well-being can be critical in building trust. Some forward-looking organizations have created leadership positions like chief well-being officers to lead efforts dedicated to workers’ well-being. While such roles are uncommon, clinicians say they can boost trust and reduce burnout.

Figure 2: Clinicians who work for organizations with a leadership role dedicated to employee well-being are more optimistic

Survey question: Does your organization have leadership roles focused on employee or staff wellness?



Note: N = 486 (clinicians currently in clinical practice).

■ Optimistic
 ■ Somewhat optimistic
 ■ Not optimistic

Source: Deloitte 2022 Survey of US Frontline Clinicians.

Increasing pay

To find and retain clinicians among the labor shortages, providers have had to pay them more. The US has witnessed a growth in clinician salaries across most specialties. Average pay for physicians rose to US\$352,000 from US\$339,000 in 2022, while average pay for specialists increased to US\$382,000 from US\$368,000. Primary care physicians' average pay rose to US\$265,000 from US\$260,000.³⁵

Canada, meanwhile, developed a new payment model to promote recruitment of physicians in underserved areas. Under a three-year agreement in British Columbia, for example, a full-time family doctor should now earn about C\$385,000 annually, up from C\$250,000. The new pay scale is designed to enhance recruitment of doctors in the region.³⁶

The UK has been locked in disputes over clinician pay for most of 2023, with the NHS already offering pay increases. Regardless of how the situation is resolved, labor costs are likely to rise.^{37,38}

Increasing clinician pay and rebuilding trust can help prevent the loss of talent to staffing firms. It may also reduce providers' long-term labor expenses as staffing firms tend to increase prices during times of high demand.

Decreasing job demands through technology

In addition to building trust and paying clinicians more, technology can ease some of the biggest contributors to burnout, such as administrative tasks. AI has the potential to take over documentation burdens, handle pre-op workflows, and assist with insurance claims, for example. Relieving clinicians of those administrative tasks frees up time for them to spend with patients.³⁹

HCA Healthcare, the largest US health system, is developing AI that can convert clinician conversations with patients into medical notes that are then incorporated into patients' electronic health records (EHRs). The program is designed to mitigate documentation demands, one of the leading causes of clinician burnout.⁴⁰ Similarly, Carbon Health's hands-free charting tool uses OpenAI's GPT-4 in its proprietary EHR platform to streamline patient documentation and generate comprehensive and accurate medical notes. The tool reduced documentation time from 16 minutes to about four and increased patient volume by 30%.⁴¹

Using tools such as Nuance's Dragon Ambient eXperience Express, which reduces the time spent on documentation, clinicians have reported saving about seven minutes per patient visit, which helps enable as many as five additional appointments per day. It also could give clinicians more time to spend with each patient or have time for themselves to reduce burnout.

How providers can rebuild their workforce

Providers looking to help improve their recruitment and retention may need to consider transforming their care models and redesigning jobs. Some options to consider include:

- **Investing in technology to give time back to workers:** For instance, optimizing clinicians' workflows by removing low-value activities, such as reducing the number of EHR clicks, can be a quick win. New work modalities, such as virtual nursing, which take advantage of remote work possibilities and lessen demands on bedside nurses are longer-term investments.

- **Fundamentally rethinking where care is delivered:** As more care moves out of hospitals and into outpatient and other alternative sites of care, be innovative about staff allocation and preparation and design staff development programs accordingly.
- **Redesigning work teams:** Implement comprehensive interdisciplinary care teams that take advantage of team members' strengths, bring in more assistive clinical workers, and allow each person to operate at the top of their license.
- **Injecting flexibility into jobs:** The solutions range from flexible schedules and job-sharing to work models that formalize opportunities to intermix bedside work with other types of work.
- **Customizing retention strategies:** Listening and addressing clinicians' concerns and needs can help boost retention. Some workers may want more recognition or flexible scheduling, while others want higher pay for expertise or increased effort.
- **Expand reliance on advanced practice professionals:** Government orders during the pandemic granted many nurse practitioners expanded roles. Organizations can build on these measures by filling gaps with less traditional care providers like advanced practice professionals, social workers, pharmacists, and community health workers in lieu of primary care physicians.
- **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.
- **Integrate workforce planning and strategic planning:** Understand how emerging technologies and consumerism affect the workforce and the nature of the jobs clinicians perform. Encourage change but do it in a way that supports your workforce.⁴²





The role of social care

By the numbers:

£845 million—the UK's total proposed spending in 2024 and 2025 to improve access to adult social care¹

1.3 million—the number of new direct-care workers needed in the US by 2030 to keep up with demand from older populations and people with disabilities²

C\$23 billion—the amount of a Canadian government settlement that will compensate more than 300,000 First Nations children and their families for underfunding of on-reserve child-welfare services³

31.6%—France's spending on comprehensive social welfare as a share of GDP, making it the leading spender in social spending among Organization for Economic Co-operation and Development (OECD) nations⁴

21%—the average public social spending in OECD countries in 2022, as a share of GDP⁵

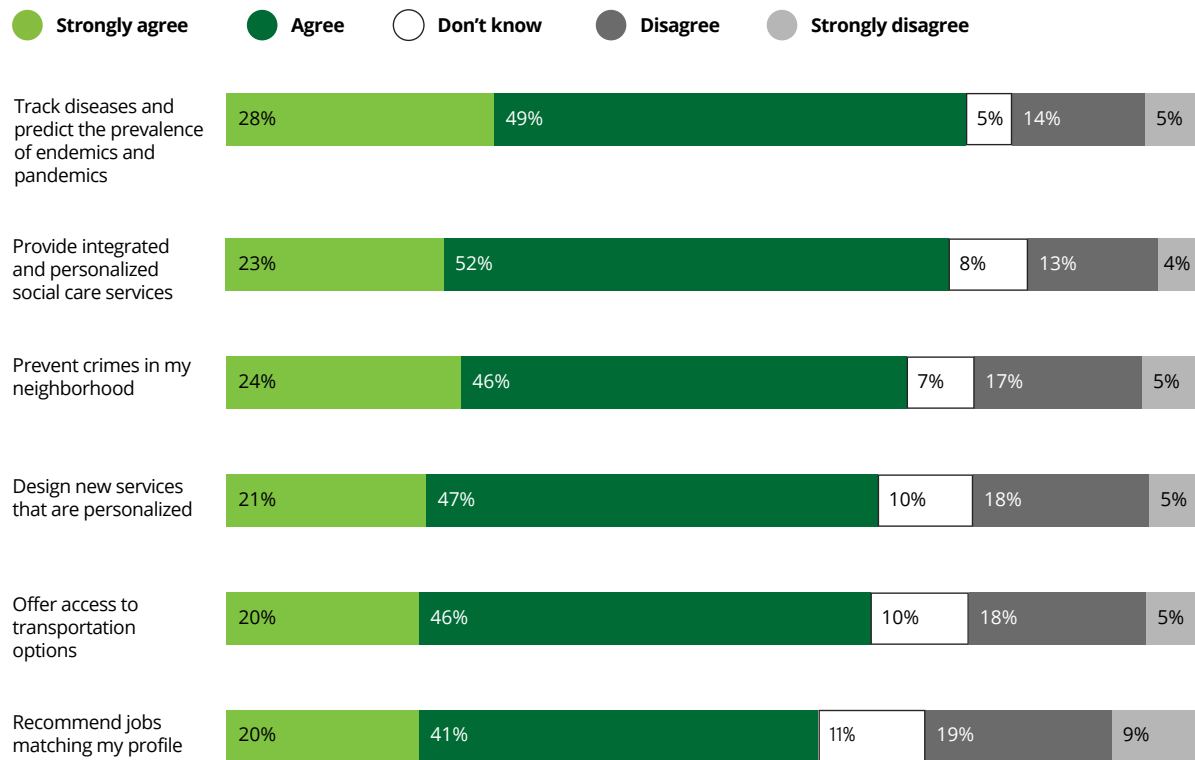
Location of residence, quality of social support networks, and exposure to stress can have powerful effects on well-being. In fact, it's estimated that 80% of health outcomes depend on behavioral, social, or environmental drivers of health.⁶

Rather than taking social determinants such as environment or economic stability into account, the global health care sector has traditionally focused on treating illnesses through medical specialists and health centers post hoc. A growing body of evidence suggests a better approach.⁷ To address rising health care costs, health care providers, governments, and stakeholders around the globe are shifting to models

that incorporate various types of care—integrating health and social care services with the private and nonprofit sectors to achieve a prevention focused, “whole health” model. It’s a restructuring of complex health care systems to focus on the non-medical determinants of illness and disease.⁸

Health care consumers generally support the shift towards integrated social and health care. A 2023 study examining how people perceive digital government services showed that 75% of respondents were comfortable with government agencies collecting personal data to provide integrated and personalized social care services (see Figure 1).⁹

Figure 1: I am comfortable with government agencies collecting personal data to ...



Note: Percentages may not add up to 100 due to rounding off.

Source: 2023 Deloitte Digital Citizen Survey.

To move to a health care system that prioritizes social determinants, a number of governments are investing in the social care workforce and deploying new, holistic service delivery models to better meet the needs of underserved communities.

Empowering social care workers

A number of countries are embarking on partnerships to build a more resilient roster of social care talent—and to increase the attractiveness of these careers. Consider that health and social care systems employ about 10% of all workers in OECD countries.¹⁰ Women account for two-thirds of that workforce—many in low-paid and unpaid roles.¹¹ To acknowledge these contributions, Sweden launched its first National Careers Strategy in 2022 to better support workers in caregiving fields, including informal, unpaid caregivers who forgo paid work to support loved ones.¹²

The US government has also introduced efforts to improve the recruitment, retention, training, and professional development of direct-care workers. Among them, grants establishing a national center to bolster the direct-care workforce through 2027. The goal is collaboration amongst government, university, and nonprofit partners to improve the recruitment, retention, training, and professional development of direct-care workers.¹³

The US is also investing in a new program, the National Health Service Corps, which offers up to US\$50,000 in tax-free student loan repayments for licensed primary care clinicians in eligible disciplines. In exchange for loan repayment, participants agree to serve at least

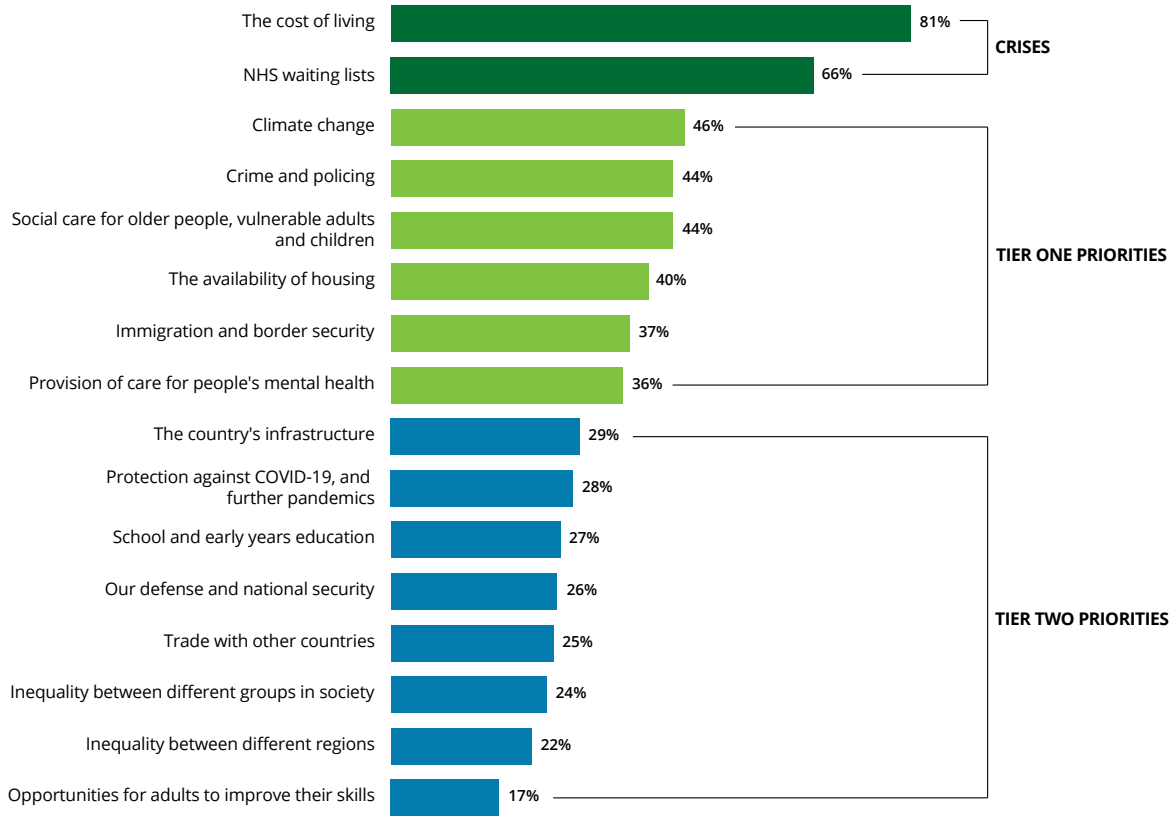
two years in the National Health Service Corps or an approved site in a Health Professional Shortage Area—a designated location that lacks primary care, dental care, or mental health care providers.¹⁴

In Canada, provincial authorities are collaborating with nonprofit organizations to better support caregivers at work. One area of focus: eliminating the disparities between the quality and availability of support across provinces or territories. For instance, the Canadian Centre for Caregiving Excellence is conducting a needs-mapping exercise with the Nunavummi Disabilities Makinnasuiqtiit Society to address potential gaps in knowledge about the unique needs of caregivers in Nunavut. The work includes First Nation-led sharing circles in Nunavut communities.¹⁵

The UK government is collaborating with the charity Skills for Care, a workforce development organization. Their goal is to create a new care workforce pathway and funding for hundreds of thousands of roles, including a new Care Certificate qualification, and is back by a £250 million investment.¹⁶

Separately, the UK government has authorized £100 million to help accelerate digitization in the social care sector so providers can have real-time information on patients receiving care. The government's £1.4 billion Market Sustainability and Improvement Fund aims to allow local authorities to increase the rates paid to social care providers and reduce waiting times.¹⁷ These initiatives reflect social care for older people, vulnerable adults, and children ranked as a Tier One priority—the same rank as crime and policing—in a Deloitte UK survey of 5,800 UK adults on attitudes about the public sector (see Figure 2).¹⁸

Figure 2: Which of the following issues, if any, do you think should be the top priorities for improvement in the UK over the next few years or so?



Source: Deloitte UK—The State of the State 2022-23 report

Supporting aging populations

Across the European Union (EU), as is the case with other regions, an aging population will likely require millions of long-term care workers in the coming decades. About 6 million people work in the sector, but some estimates suggest the EU will need another 1.6 million care workers by 2050.¹⁹

The European Care Strategy passed by the European Commission in 2022 in part sets targets to meet these needs.²⁰ One of the goals is achieving high-quality, affordable, and accessible care services with better pay and conditions for professional caregivers.

As the Commission notes, the value of hours of long-term care provided by informal caregivers is estimated

at about 2.5% of EU GDP higher than government expenditures on long-term care.²¹ The Commission also reports that improving high-quality care could ultimately mean improving gender equality, because women occupy 90% of the formal care workforce. Supporting informal caregivers through training and financial support are critical parts of the strategy.

Governments are also aware that by proactively addressing practical needs now, health systems can avoid more costly interventions in the future. For instance, the UK government has earmarked £102 million over a two-year period for home adaptations such as grab rails and ramps, small repairs, and safety and security checks, to aid people at home and ultimately avoid hospital stays.²²

Improving outcomes among underserved populations

Another focus for governments is ensuring that investments in the social determinants of health are equitably distributed across underserved populations.

An analysis of results from the Australian Bureau of Statistics (ABS) estimates that about one-third (34%) of the health gap between Indigenous and non-Indigenous Australians is because of social determinants. Among the causes: employment and hours worked, the level of schooling completed, housing adequacy, and household income. By comparison, just under one-fifth (19%) of the health gap between Indigenous and non-Indigenous populations stems from factors such as alcohol abuse, high blood pressure, poor nutrition, or physical inactivity. The remaining health gap of around 47% includes differences in access to care and other factors.²³

Adapting to digital delivery

Delivering social care services to underserved populations is a perennial challenge that was exacerbated during the pandemic. Technology can help. A number of examples show how technology can support inclusiveness while serving a broad range of populations.

- Services Australia was created in 2019 to consolidate and accelerate delivery of federal, social, and health services. One result was MyGov, an integrated online platform that organizes benefits, services, and programs by genre. MyGov now has 780,000 logins per day.²⁴

- Health Prism is a Deloitte portal that contains more than 165 models to help federal, state, and local governments identify populations at risk for more than twenty disease states and inequities, such as COVID-19, hypertension, cardiovascular disease, diabetes, housing insecurity, food insecurity, and more. It also can identify populations that might qualify but have not yet applied for benefits.²⁵
- GiveDirectly is a peer-to-peer platform that offers cash to extremely low-income households and people affected by humanitarian crises. GiveDirectly has delivered over US\$500 million to people in eleven countries, “from residents of Houston recovering from Hurricane Harvey to farmers in Kenya.”²⁶

Questions for stakeholders

Stakeholders that strive to prioritize social care as part of their commitment to deliver on whole health should:

- Establish sustainable frameworks for workforce recruitment and training.
- Determine how to include a community-based approach so that people with lived experience with key social issues are involved in the solutions.
- Prioritize data governance and data sharing so that providers can exchange vital information such as risk factors or family health history.
- Invest in preventive models that focus on social context and environmental determinants of health.
- Support social care workers with technology tools.



A sustainable future

By the numbers:

Impact to health

US\$8.1 trillion—The estimated annual global financial impact of health-related issues caused by poor air quality¹—around 7.7% of global GDP²

US\$820 billion—Annual cost of US medical bills stemming from air pollution, which leads to an estimated 107,000 premature deaths annually in the US³

Actions by systems

US\$52.5 million—Philanthropic grant to equip 25,000 health care facilities across 12 Indian states with solar power by 2026⁴

10,000—The number of electric vehicle charging points to be installed across Malaysia through a partnership between KPJ Healthcare, a private health care provider in Malaysia, and with green energy company Gentar⁵

261.5 tons—The reduction in carbon dioxide emissions over a six-month period because of energy-saving measures at an Egyptian cancer treatment center⁶

Each year, the scientific scenarios on Earth’s changing climate become clearer. If global warming intensifies beyond a 1.5°C threshold, dire consequences become more likely: devastating droughts and wildfires, rising food and water insecurity, and climate-linked migration, to name a few of the most dramatic effects.⁷

There is real momentum underway to counter many of these effects: US emissions have declined on average by 5% each year since their peak in 2007⁸, and emissions across the European Union (EU) have fallen 34% since 1990.⁹ Global agreements on methane and deforestation have progressed in recent years. In addition, countries at COP27, the 2022 United Nations Climate Change Conference, created a fund to aid global adaptation to climate impacts.

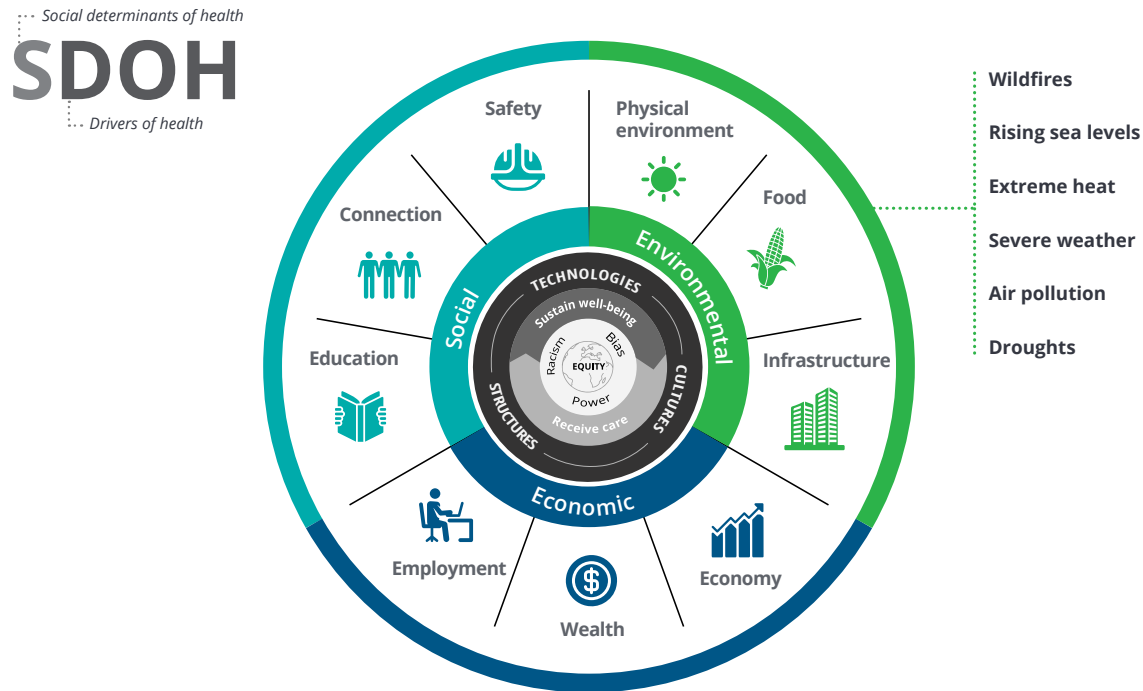
Still, these impacts are creating health inequities. Between 2030 and 2050, climate change is expected to cause approximately 250,000 additional deaths

per year, with disproportionate effects on low-income areas with poor health infrastructure.¹⁰ The World Health Organization (WHO) estimates that 99% of the disease burden from climate change occurs in these places, 88% of which occurs in children under age 5. These bleak prospects have triggered alarms for governments and businesses to take action to build a more sustainable future.¹¹

The health care sector is susceptible to many of the effects of climate change—for the patients who receive care, as well as the organizations that deliver it. Climate change can exaggerate an array of problems like economic equity, gender equity, and migrant rights, and there’s a common thread in a recently conducted Deloitte US analysis linking these social issues to health care (Figure 1). Some estimates suggest that stronger climate action could eliminate more than 100 million premature deaths globally, strengthen health outcomes, and maintain a more habitable ecosystem.¹²

Figure 1: The physical environment is a threat multiplier for overall human health¹³

Climate change disproportionately affects the health and well-being of historically under-resourced communities



Source: Deloitte analysis.

In response to these challenges, health care systems around the globe are building more sustainable operations. Some are prioritizing energy efficiency within their clinical care systems. Others have accelerated their decarbonization efforts. There's a commitment to improving visibility into supply chains.

And other systems and care providers are improving the way they share data to eliminate waste and provide more sustainable, equitable care. This can include a multi-step process to help mitigate climate change:

- Reducing the sources of greenhouse gases
- Adapting to extreme conditions to lower an organization's vulnerability to future risks
- Transforming care delivery so it's more sustainable¹⁴

Delivering sustainable care in unpredictable environments

Though health care systems and providers treat many of the same ailments and conditions irrespective of geography, the environments in which they do their work can be significantly different. Low-lying island nations and coastal areas face the threat of rising oceans. There can be severe heat crises in regions unaccustomed to dangerously high temperatures. Geopolitical conflicts have disrupted supply chains and access to critical medical equipment and goods.

One of the ways hospitals are addressing acute energy insecurities that affect the delivery of care is by building resilience into their operations.

For instance, in Luxor, Egypt, the 150-bed Shefaa Al-Orman Oncology Hospital, a cancer treatment center, faced challenges from high energy consumption that was driving up operating costs and causing negative environmental impacts. The hospital took several steps to help increase energy efficiency. Staff used timers to schedule the heating, ventilation, and air conditioning systems, setting a standard temperature of 25°C (77°F). It also used sensors for external lighting and switched to energy efficient LED lights, reducing its energy consumption by 20% in a six-month period.¹⁵

In the US, one hospital has reacted to a string of natural disasters by investing in systems to boost its resilience. In 2001, historic flooding crippled the largest medical complex in the US. Water damaged the center's emergency generator, causing a complete power outage. The hospital staff invested in a new on-site, combined heat and power plant to eliminate dependence on the city's energy grid. The system was put to the test with hurricanes in 2005, 2008, and 2017. Despite citywide flooding from Hurricane Harvey in 2017, all of the system's hospitals and emergency rooms remained operational during the emergency.¹⁶

Decarbonization investments take shape

Keeping these systems running requires resources, including heating and cooling, lighting, water, and transport from the volume of traffic to and from hospitals—producing emissions across these operations. In fact, health care contributes nearly 5% of global greenhouse gas (GHG) emissions, with G20 countries emitting more than 75% of that total.¹⁷ A 2023 report by the independent Indian think tank Observer Research Foundation reports that some of the main contributors to GHG emissions in health care are the US (27%), China (17%), the EU (12%), Japan (5%), and Russia (4%). Brazil, India, South Korea, Canada, and Australia contribute about 2% each.¹⁸

The report equates the climate crisis with a public health crisis, asserting that the health care sector should decarbonize by reducing direct emissions produced by health care facilities. Among the recommendations is guidance that countries include health and health care decarbonization plans in their national and sub-national climate policies as stipulated in the 2015 Paris Agreement. As of 2023, only 10% of these national plans refer to the health impacts of climate change.¹⁹

Some plans, like the UK's National Health Service (NHS) Carbon Footprint, take a two-part approach: For emissions the system controls directly, the UK pledges to be net-zero by 2040, while aiming to reach an 80% reduction between the years 2028 and 2032.

For emissions NHS can influence outside of its system, the goal is becoming net-zero by 2045 and reach an 80% reduction between 2036 and 2039.²⁰

Investments at the national and operator level are already addressing the matter. In 2023, the University Hospital Southampton NHS Foundation Trust (UHS), an acute hospital trust in the UK, received a US\$31.4 million grant from the Public Sector Decarbonization Scheme; the trust will install an energy-efficient heating system to meet its pledge to become Net Carbon Zero by 2045. The new system replaces 20-year-old infrastructure and provides a more comfortable environment for patients and staff, hospital leaders say.²¹

In the US, a health care system is addressing decarbonization by building its own microgrid. In 2023, Valley Children's Healthcare, a US pediatric provider, launched a new energy resilience and environmental strategy. The goal is a 50% reduction in greenhouse gas emissions by 2030, net-zero carbon emissions by 2050, and the establishment of the largest pediatric health care-based renewable energy microgrid in the country. Valley Children's anticipates that the system will be online and operational by 2025, reducing reliance on the power grid, and ensuring the complex remains operational even during power outages.²² Changes are coming in the political arena, too, as the US state of California will enact new legislation from 2026 to require big corporations to disclose their carbon footprints and climate-related financial risks.²³

And in India, Ambica Constructions and Contractors and Lifeline Hospitals Group in 2023 announced plans to invest US\$1.4 billion to develop India's first 500-bed, completely carbon-neutral hospital.²⁴

Encouraging sustainable supply chains

Another area of focus for health care sector leaders is creating supply chains that flex with environmental, social, economic, and technological changes. There are several barriers to adopting sustainable practices throughout supply chains, however. Procurement

processes in a global context are fragmented. Sustainability regulations vary from region to region. In the absence of a comprehensive supplier engagement program, standardization, or clear mandates, breaking down the barriers between purchasing and clinical care can be challenging.

The framework to categorize GHG emissions include Scope 1, which comprises facility-level emissions from service delivery; Scope 2, which includes emissions produced while using the energy purchased from external grids; and Scope 3, which covers emissions from the supply chain, including the manufacture, supply, use and disposal of health care goods and services.²⁵

In the UK, the NHS is addressing these challenges by launching a comprehensive supplier engagement program. This program sets specific targets for supply chain partners and emphasizes decarbonization across multiple scopes—working with suppliers of consumables and medical devices to reduce excessive packaging in the supply chain.²⁶

A broader, global effort with climate and sustainability targets for suppliers to reduce emissions across the value chain launched in 2023 through the Sustainable Markets Initiative Health Systems Task Force. This public-private strategic partnership of CEOs and leaders from global health care organizations, life sciences companies and institutions supports United Nations efforts to strengthen climate resilience and lower the emissions of health systems.

The following are among the targets for the private sector:

- Switch from 80% to 100% renewable power for their own operations by 2030
- Transition car fleets to zero-emission vehicles by 2030
- Jointly explore green heat solutions by 2025 to boost adoption of effective and scalable technologies²⁷

Cutting down on waste across the value chain

A closely linked issue to supply chains is how health care systems are managing waste. Consider that roughly 15% of the total health care waste produced is hazardous and can be infectious, toxic or radioactive; if not treated properly it can pose a risk to human health and the environment.²⁸ And the WHO calculates that the average amount of hazardous waste produced per bed per day is 0.5 kg in high-income countries, and 0.2 kg in low-income countries.²⁹ But less than one in three health care facilities globally possess the basic health care waste management services.³⁰

Not all of the waste is physical. One anesthetic gas, desflurane, has 20 times the environmental impact of other less harmful greenhouse gases. Per bottle it has the same global warming effect as burning 440 kg of coal. One UK hospital started a campaign with color-coded cards to urge staff to use alternative options when possible, resulting in a reduction of 30,000 kg of carbon dioxide per month.³¹

Elsewhere, clinicians are studying ways to use all items in procedure packs instead of discarding unused ones. There's opportunity to include discussions of waste in the value chain by focusing on high-value materials like electronics.

Cutting back on the massive amounts of food waste and reducing food insecurity are dual issues that one California health care system took on. Food insecurity affects 1 in 5 Californians, with greater levels of hunger affecting Black and Hispanic families. In 2020, Sutter Health began a food donation pilot program, collaborating with a logistics company to donate food from 10 hospitals to 40 nonprofit organizations within five miles of each facility, ultimately diverting food waste from landfills. The program also provided 54,000 meals to community-based organizations.³²

Here are some other ways health care organizations can help reduce waste and emissions:

- **Supply chain optimization:** Incorporate local, sustainable, and circular principles in procurement
- **Clinical innovation:** Support preventative care, and introduce new processes that help limit the volume and toxicity of waste
- **Low-carbon medicines:** Substitute high-emission products with more climate friendly alternatives, and incentivize the production of climate-smart medication
- **Transportation efficiency:** Limit transportation-related emissions via zero-emission fleets, public transport, and hybrid health care strategies³³

Measuring sustainable outcomes

Measuring environmental impact and being able to compare and learn from peers on how to minimize impact is another way the health care sector can build more sustainable systems. For instance, in 2023 the Geneva Sustainability Centre of the International Hospital Federation, in collaboration with Deloitte Switzerland, launched the [Sustainability Accelerator Tool \(SAT\)](#). The cloud-based platform measures a hospital's performance against core indicators, and compares those to other health care institutions worldwide. The dashboard includes benchmarks that are specific to the health care sector, providing a global reference alongside an organization's individual progress on sustainability. A US hospital association signed an agreement with the Geneva Sustainability Centre to promote the SAT to its network of nearly 5,000 hospitals, health systems and health care organizations in the US—helping equip hospital leaders with information to encourage the sector's transition to sustainability.³⁴

A commitment to information sharing can also influence health outcomes for populations disproportionately affected by social determinants of health. In the US, for instance, the Association for Professionals in Infection Control and Epidemiology (APIC) established the APIC Health Equity Fund to underwrite the cost of infection prevention tools and resources for underserved communities.³⁵

The ultimate goal is reducing financial strain and increasing access to quality care, thereby encouraging a sustainable future for patients of all backgrounds.

Questions for providers

- Have you thought about the ways environmental data is impacting health?
- Have you looked at the ways social vulnerability and environmental data can affect health outcomes?
- How are you measuring your environmental footprint?
- What's your capacity for adaptation and resilience in the event of an emergency? How will it affect your facilities, staffing ratios, or abilities to provide care?
- How well are you sharing data with your peers?



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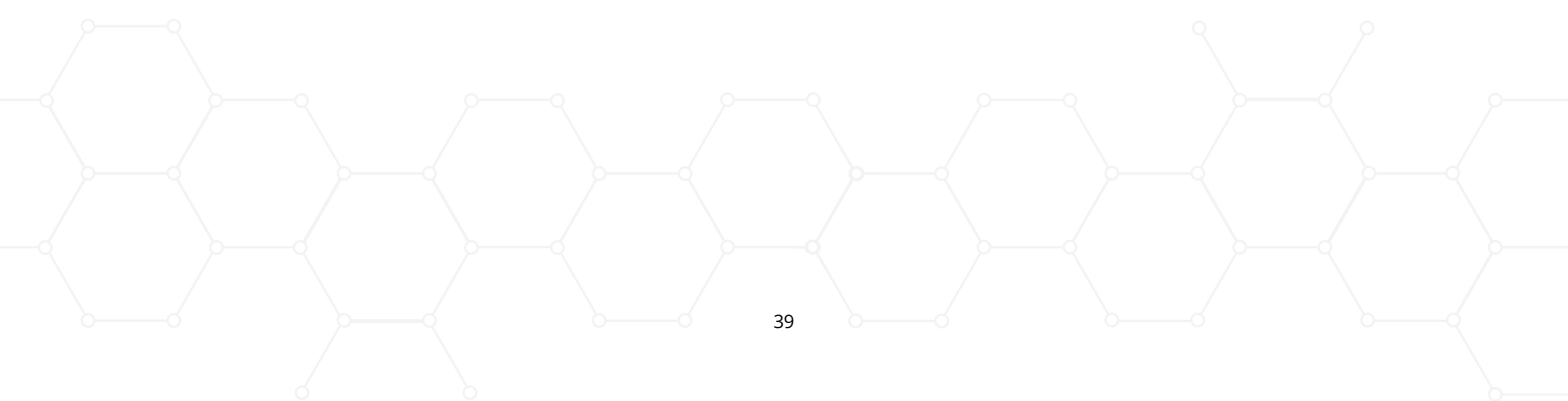
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