Deloitte.

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 education[1]

47%—the percentage of health care providers who say access is worse than it has been during the past two years[2]

US$12,500—the amount per capita that the US spends on health care[3]

80 years—the average life expectancy in Belgium, Denmark, and Finland, driving a growing need for long-term care[4]

10.3%—the amount of a recent pay increase for first-year doctors in the UK[5]

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.

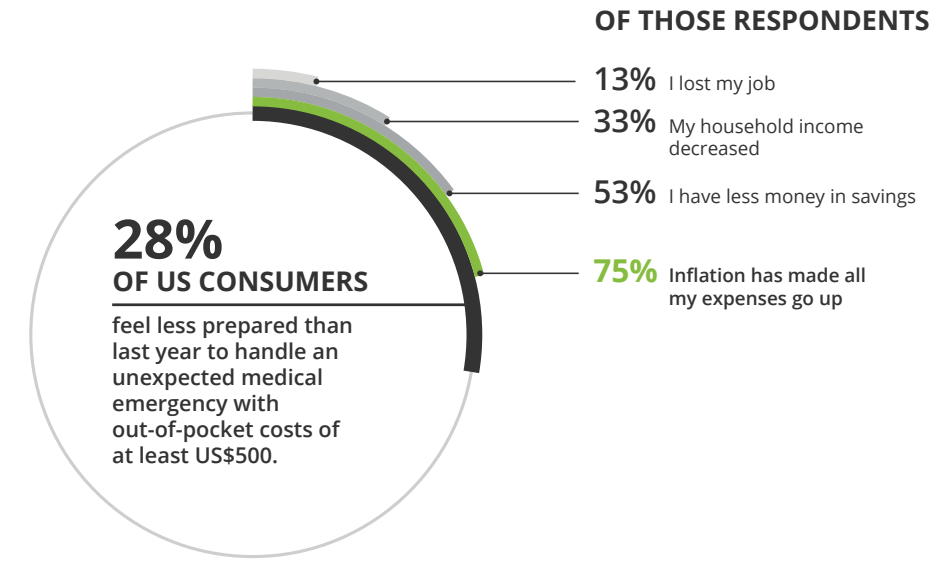
In the US, the highest inflation in 40 years compounded health care prices that historically have increased faster than rest of the economy. Health insurance premiums rose 28% in 2022 from a year earlier, more than triple the rate of inflation at the time, raising questions about how many consumers will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

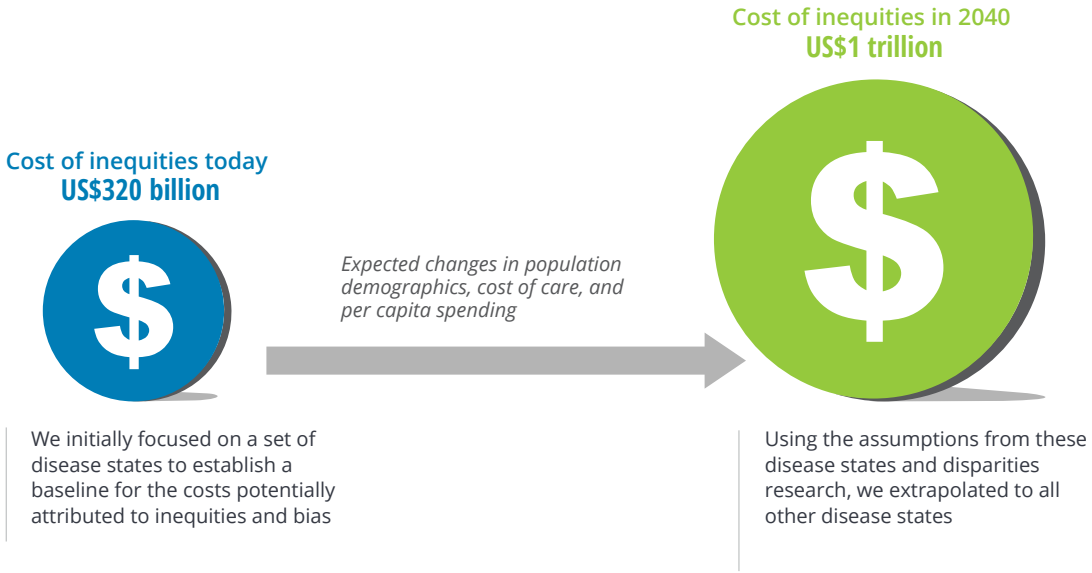
In many low-income countries, as few as one in seven individuals received all doses of the COVID-19 vaccination. That compares with about three out of four in high-income countries.[34]

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 2040[37] (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.

Contacts

Luke Baxby
Partner
Deloitte Australia
lbaxby@deloitte.com.au

Liz May
Partner
Deloitte United Kingdom
lmay@deloitte.co.uk

Viswanathan Nagarajan
Director
Deloitte Canada
vnagarajan@deloitte.ca

Debbie Young
Partner
Deloitte United Kingdom
deyoung@deloitte.co.uk

Minni Sarkka-Hietala
Partner
Deloitte Finland
Minni.Sarkka-Hietala@deloitte.fi

Gus Miah
Partner
Deloitte United Kingdom
gmaih@deloitte.co.uk

Ibo Teuber
Partner
Deloitte Germany
iteuber@deloitte.de

Interested in learning more about **addressing cost and affordability** and its impact on global health care? Check out these Deloitte publications:

How employers can spark a movement to help us live longer and healthier lives

How CFOs can help transform health care organizations amid an uncertain economic environment

One-stop shop: Where healthcare meets retail

Biomedical innovation

Endnotes

1. "Nations where 3.3 bln live spend more on debt than health, schools," Al Jazeera, July 13, 2023, https://www.aljazeera.com/news/2023/7/13/nations-where-3-3bn-live-spend-more-on-debt-than-health-schools.
2. "State of Patient Access: 2023," Experian Health, https://www.experian.com/healthcare/resources-insights/thought-leadership/white-papers-insights/state-of-patient-access-survey-2
3. Economist Intelligence Healthcare spending report.
4. "Life Expectancy of the World Population," Worldometer, https://www.worldometers.info/demographics/life-expectancy/
5. "Spending on long-term care," OCED, November 2020, https://www.oecd.org/health/health-systems/Spending-on-long-term-care-Brief-November-2020.pdf
6. Gareth Iacobucci, "Doctors strikes: Government agrees to hold talks with consultants," The BMJ, October 18, 2023, https://www.bmj.com/content/383/bmj.p2420
7. Economist Intelligence Healthcare spending report.
8. "Who profits most from America's baffling health-care system?" The Economist, October 8, 2023, https://www.bmj.com/content/383/bmj.p2420 https://www.economist.com/business/2023/10/08/who-profits-most-from-americas-baffling-health-care-system.
9. Economist Intelligence Infant Mortality report.
10. Stacey Hughes, "Industry voices-Facing unprecedented challenges, American's hospitals and health systems need help now," Fierce Healthcare, August 26, 2022, https://www.fiercehealthcare.com/hospitals/industry-voices-facing-unprecedented-challenges-americas-hospitals-and-health-systems.ndustry Voices—Facing unprecedented s
11. Leroy Leo and Bhanvi Satija, "Explainer: Why are Kaiser Permanente healthcare workers on strike?" Reuters, October 5, 2023, https://www.reuters.com/business/healthcare-pharmaceuticals/why-are-kaiser-permanente-healthcare-workers-strike-2023-10-05/.
12. Jeff Lagasse, "Hospitals' labor costs increased 258% over the last three years," Healthcare Finance, March 10, 2023, https://www.healthcarefinancenews.com/news/hospitals-labor-costs-increased-258-over-last-three-years
13. "National health expenditure trends, 2002 — Snapshot," Canadian Institute for Health Information, November 3, 2022, https://www.cihi.ca/en/national-health-expenditure-trends-2022-snapshot#refiii.
14. Bethany Lindsay, "Nursing agencies are staffing hospitals at 'huge cost' to health-care system, experts say," CBC, May 12, 2023, https://www.cbc.ca/news/health/cost-nursing-agencies-1.6839273.
15. Ryan Patrick Jones, "Ontario Liberal MPP introduces bill to address 'price gouging' by temporary nursing agencies," CBC, February 23, 2023, https://www.cbc.ca/news/canada/toronto/liberal-bill-temp-nursing-agencies-1.6756253.
16. "Key facts and figures about the NHS," The King's Fund, May 4, 2023, https://www.kingsfund.org.uk/audio-video/key-facts-figures-nhs.
17. Maureen Medlock, Eileen Radis, Ken Abrams, and Jay Bhatt, "Addressing health care's talent emergency," Deloitte Insights, November 15, 2022, https://www2.deloitte.com/uk/en/insights/industry/health-care/healthcare-workforce-shortage-solutions.html.
18. Hugh Pym and Caroline Alton, "Record revenue for staff agencies supplying NHS," BBC News, March 24, 2023, https://www.bbc.com/news/health-65042658.
19. Asif Dhar, Leslie Korenda, Jay Bhatt, Wendy Gerhardt, "Inflation signals unrest ahead for health care," Deloitte Insights, November 1, 2022, https://www2.deloitte.com/us/en/insights/industry/health-care/health-care-affordability-inflation.html.
20. "Global healthcare benefit costs projected to jump 10% in 2023, WTW survey finds," Press release, WTW, October 13, 2022, https://www.wtwco.com/en-us/news/2022/10/global-healthcare-benefit-costs-projected-to-jump-10-percentage-in-2023-wtw-survey-finds#:~:text=The%202023%20Global%20Medical%20Trends,high%20global%20average%20of%2010%25.
21. "Who profits most from America's baffling health-care system?" The Economist, October 8, 2023, https://www.economist.com/business/2023/10/08/who-profits-most-from-americas-baffling-health-care-system.
22. Ibid.
23. Oliver Pieper, "Germany's small hospitals are disappearing," Deutsche Welle, December 18, 2022, https://www.dw.com/en/germanys-small-hospitals-are-disappearing/a-64128586.
24. "Life Expectancy of the World Population," Worldometer, https://www.worldometers.info/demographics/life-expectancy/
25. "Spending on long-term care," OCED, November 2020, https://www.oecd.org/health/health-systems/Spending-on-long-term-care-Brief-November-2020.pdf
26. Tariq Siddiqi, "Eight Reasons For Rising Healthcare Costs Globally," William Russell, April 2, 2022, https://www.william-russell.com/blog/reasons-rising-healthcare-costs-globally/ .
27. Celli Horstman, Evan D. Gumas, Gretchen Jacobson, "U.S. and Global Approaches to Financing Long-Term Care: Understanding the Patchwork," The Commonwealth Fund, February 16, 2023, https://www.commonwealthfund.org/publications/issue-briefs/2023/feb/us-global-financing-long-term-care-patchwork.

28. Mark Melchionna, "Virginia Health System Creates Hospital-At-Home Program," Remote Monitoring News, January 24, 2023, https://mhealthintelligence.com/news/virginia-health-system-creates-hospital-at-homeprogram.
29. "The Value in Hospital Care at Home," Guidehouse, January 13, 2023, https://guidehouse.com/insights/healthcare/2022/blogs/acute-hospital-care.
30. Cora Lydon," Medway virtual ward strategy enables drug administration at home," Digital Health, May 18, 2023, https://www.digitalhealth.net/2023/05/medway-virtual-ward-strategy-enables-drug-administration-at-home/.
31. Jake Siegel, "Inside Taiwan's 'AI hospital of the future,'" Microsoft, February 3, 2023, https://news.microsoft.com/apac/features/inside-taiwans-ai-hospital-of-the-future/.
32. "Innovative medical developed in Israel uses AI to diagnose cardiac problems," All Israel News, July 17, 2023, https://allisrael.com/innovative-medical-device-developed-in-israel-uses-ai-to-diagnose-cardiac-problems.
33. "Nations where 3.3 bln live spend more on debt than health, schools," Al Jazeera, July 13, 2023, https://www.aljazeera.com/news/2023/7/13/nations-where-3-3bn-live-spend-more-on-debt-than-health-schools.
34. Andrew Gregory, "Only 14% of promised Covid vaccine doses reach poorest nations," The Guardian, October 21, 2021, https://www.theguardian.com/society/2021/oct/21/only-14-of-promised-covid-vaccine-doses-reach-poorest-nations.
35. "How Rwanda is using Artificial Intelligence to improve healthcare," African Development Bank Group, October 6 2022, https://www.afdb.org/en/success-stories/how-rwanda-using-artificial-intelligence-improve-healthcare-55309.
36. "State of Patient Access: 2023," Experian Health, https://www.experian.com/healthcare/resources-insights/thought-leadership/white-papers-insights/state-of-patient-access-survey-2.
37. Andy Davis, Neal Batra, Asif Dhar, and Jay Bhatt, "US health care can't afford health inequities," Deloitte Insights, June 22, 2023, https://www2.deloitte.com/us/en/insights/industry/health-care/economic-cost-of-health-disparities.html.
38. "NHS doctors to receive pay raise this month," Press release, Department of Health and Social Care, Gov.UK, September 3, 2023, https://www.gov.uk/government/news/nhs-doctors-to-receive-pay-rise-this-month.
39. "Making the Most of the Money: Efficiency and the Long-Term Plan," NHS Providers, https://nhsproviders.org/making-the-most-of-the-money-efficiency-and-the-long-term-plan.
40. CMS Framework for Health Equity 2022-2032, https://www.cms.gov/files/document/cms-framework-health-equity-2022.pdf.
41. "National Healthcare Inequalities Improvement Programme," NHS, https://www.england.nhs.uk/about/equality/equality-hub/national-healthcare-inequalities-improvement-programme/.
42. "PAHO and FIND sign agreement to improve access to diagnostics in Latin America and the Caribbean," Pan American Health Organization, September 20, 2023, https://www.paho.org/en/news/20-9-2023-paho-and-find-sign-agreement-improve-access-diagnostics-latin-america-and-caribbean.
43. Dan Grunebaum, "Medical Travel Soars Past Pre-Pandemic Numbers," Healthcare.com, September 6, 2022, https://www.healthcare.com/medical-travel-soars-past-pre-pandemic-numbers-119300.
44. "50+ Medical Tourism Statistics & Facts," Shortlister, https://www.myshortlister.com/insights/medical-tourism-statistics.
45. Shripad Naik, "Over 1.4 mn medical tourists visited India in 2022," Travel World, April 18, 2023, https://travel.economictimes.indiatimes.com/news/ministry/over-1-4-mn-medical-tourists-visited-india-in-2022-shripad-naik/99576687.
46. "Medical Tourism Market Size & Share to Surpass $43.7 Billion by 2030," Yahoo Finance, September 5, 2023, https://finance.yahoo.com/news/medical-tourism-market-size-share-090000836.html.

Deloitte.

About Deloitte's Global Health Care Sector Group

Together, evolving health

Creating a health care ecosystem that provides quality, accessible care for all takes innovative leaders. Challenging the status quo requires guidance from a trusted team equally committed to health equity and transformation. Deloitte Health Care stands alongside those who stand for better, improving individual lives and the health of society. We help redefine the care journey by engineering digital strategies based on our deep experience and insights. We help accelerate action and create connections that empower a digitally enabled, equitable future of health.

About Deloitte

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited ("DTTL"),its global network of member firms, and their related entities(collectively, the "Deloitte organization").DTTL(also referred to as "Deloitte Global") and each of its member firms and related entities are legally separate and independent entities, which cannot obligate or bind each other in respect of third parties. DTTL and each DTTL member firm and related entity is liable only for its own acts and omissions, and not those of each other. DTTL does not provide services to clients. Please see www.deloitte.com/about to learn more.

Deloitte provides industry-leading audit and assurance, tax and legal, consulting, financial advisory, and risk advisory services to nearly 90% of the Fortune Global 500® and thousands of private companies. Our professionals deliver measurable and lasting results that help reinforce public trust in capital markets, enable clients to transform and thrive, and lead the way toward a stronger economy, a more equitable society, and a sustainable world. Building on its 175-plus year history, Deloitte spans more than 150 countries and territories. Learn how Deloitte's approximately 415,000 people worldwide make an impact that matters at www.deloitte.com.