



Feeling the heat: How healthcare providers can meet the climate challenge

KEY TAKEAWAYS

1 Climate change is one of the biggest threats to human health in the 21st century and poses increasingly visible and intensifying challenges. Besides growing disease burden and costs, healthcare providers face operational, financial, and supply chain disruptions due to climate shocks and stresses. Healthcare is also a significant contributor to climate change, with 4.4% of annual global greenhouse gas emissions.

2 Climate change is also an ESG risk multiplier, directly and indirectly aggravating many pressing social issues for healthcare providers including workforce burnout and health disparities. Healthcare providers need to understand and act on climate risks now, before unforeseen shocks turn this issue into a burning platform.

3 Standardized frameworks are essential tools for healthcare providers to understand, assess, and disclose climate risks and opportunities. Applying and potentially adapting the Task Force on Climate-Related Financial Disclosures (TCFD) can help to map the implications of a changing climate and to communicate them to internal and external stakeholders.

4 Provider preparedness involves embedding both climate risk mitigation and resilience efforts into enterprise risk management, strategy, and reporting. Addressing the physical and transition risks to a low-carbon economy can unlock opportunities such as access to green capital, energy and cost efficiencies, talent retention, and improved trust and reputation.

5 Effective responses to climate risks and opportunities require board and executive buy-in and strategic investments across business functions, rather than sporadic initiatives in times of crisis. The right incentives and metrics — along with clinician involvement in sustainability teams — can spur action.

6 Healthcare providers can deliver more impactful climate action by collaborating with a range of stakeholders and surrounding communities. Building community resilience lowers populations' vulnerability to climate impacts and supports positive "social" outcomes such as health equity and employee well-being.

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The essential “E” in healthcare’s ESG agenda



Climate change is one of the biggest health threats of the 21st century¹, and its effects on health and healthcare will intensify. Healthcare providers need to take action now to understand and prepare for climate-related risks and opportunities

Stakeholder expectations are growing for healthcare organizations to take a step beyond the traditional metrics of clinical service delivery on which they are judged and to become broadly positive forces in their communities along environmental, social, and governance (ESG) lines. As healthcare providers across the world seek to recover from the COVID-19 pandemic, social factors — such as employee well-being, diversity and inclusion, and health equity — remain pressing priorities for healthcare leadership and boards. At the same time, environmental issues are becoming ever more important, with climate change exacerbating existing challenges such as extreme weather, air quality, water scarcity, and waste disposal.²

Healthcare operations and supply chains contribute to climate change through greenhouse gas (GHG) emissions. Meanwhile, the effects of a changing climate on people's health and on healthcare providers are already visible — as in the disasters of summer 2021³ — and will intensify with complex impacts, including unpredictable care needs and delivery disruptions.⁴ As the pandemic demonstrated, a shock can turn a backburner issue into a burning platform, and unprepared providers risk lurching from one emergency to the next. A more resilient and sustainable approach requires healthcare providers to understand the climate-related risks and opportunities that they face,

build resilience to climate impacts (“adaptation”), and reduce their contribution to climate change (“mitigation”).

Five benefits should galvanize healthcare providers — whether publicly or privately owned, not-for-profit or for-profit — to act now:

1. Reduce infrastructure disruption

Climate impacts are already straining care delivery, damaging facilities, and fracturing supply chains, just as care needs surge. Superstorm Sandy in 2012 caused the evacuation of 6,500 patients from hospitals and care facilities in New York and New Jersey.⁵ Wildfires in 2017 and 2019 forced Kaiser Permanente to close one hospital in Northern California for weeks to clean and restock, while 200 employees lost their homes and surrounding communities struggled with smoke-related illness and other medical needs.⁶ Hurricane Harvey in 2017 led to increased risk of cholera and other infectious diseases from toxic chemicals, sewage, and waste-contaminated water in Houston.⁷ Even distant climate events can impact healthcare providers: Hurricane Maria in Puerto Rico in 2017 damaged intravenous fluids and medications manufacturing plants, resulting in months-long critical shortages across the US.⁸

\$3.1 billion

Recovery costs reported by the New York healthcare sector after Superstorm Sandy⁹

£7 million

Travel costs for NHS Cumbria's community health teams after 2009 floods in the UK closed roads and bridges — exceeded the trust's total spending on health facilities in the previous year¹⁰

A\$2 billion

Health costs from smoke-related premature deaths and hospitalizations triggered by the 2019-2020 wildfire season in Australia¹¹

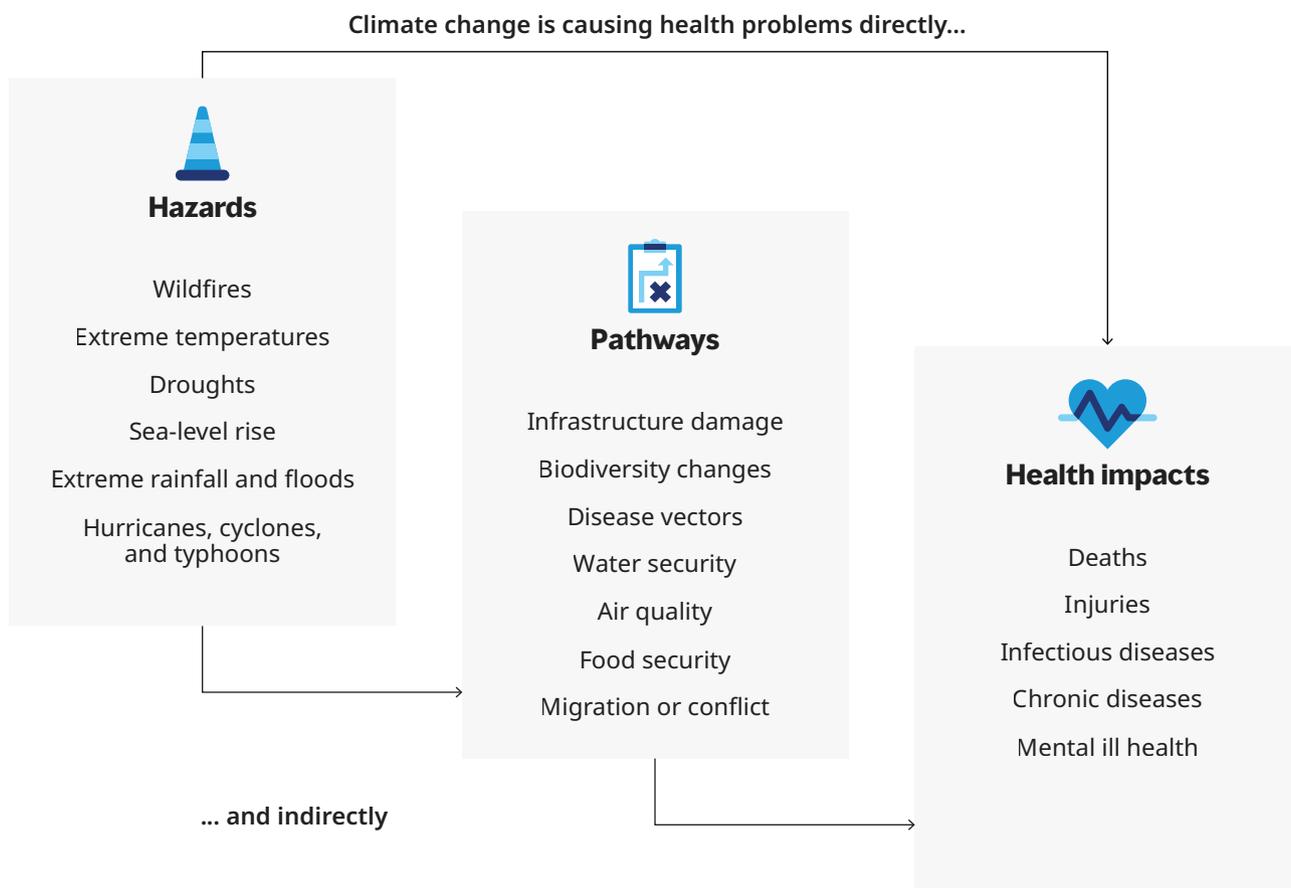
2. Respond to changing healthcare needs

Climate hazards are increasing disease burden, straining healthcare providers' capacity and finances. Extreme weather and rising temperatures and sea levels are expected to increase malnutrition, injuries, infectious and chronic disease, and mental ill health (see Exhibit 1). For example, the changing distribution of pathogens and hosts will increase the prevalence of infectious diseases like dengue and Zika in some parts of the world¹², while smoke from wildfires

can aggravate the risks and costs of respiratory and cardiovascular disease.¹³ Climate change can trigger unmanageable spikes in healthcare utilization during crises: For example, people with pre-existing conditions whose medications (such as commonly used psychiatric drugs, antihistamines, and beta-blocker drugs) make them less able to tolerate heat.¹⁴ Spikes in urgent care needs can hurt elective care capacity and revenue: For example, UK hospitals overwhelmed during COVID-19 waves are still struggling with backlogs of patients seeking non-emergency care.¹⁵

Exhibit 1: Climate change is worsening health risks and costs

Climate change is causing health problems directly and indirectly through complex, interdependent pathways. Health impacts vary by geography as well as by race, age, gender, and socioeconomic status¹⁶



Note: To explore how climate change affects people's health — both recent examples and future scenarios — visit Marsh McLennan's interactive [Climate Health Threat Illustrator](#). This exhibit is intended for illustrative purposes only and does not claim to represent all the complex climate, meteorological, hydrological, or societal processes, interactions, or their impacts on health.

Source: Marsh McLennan Advantage

3. Support health equity

Environmental and social factors are interlinked: Social inequities increase patients' and employees' vulnerability to climate shocks and stresses, which in turn exacerbate health and socioeconomic disparities within the community. Sub-optimal living conditions — such as shoddy building materials that trap heat or lack of cooling — put poorer and marginalized people more at risk of heatstroke and heart attacks during heatwaves.¹⁷ At the same time, extreme heat disproportionately reduces the productivity and income of already low-paid workers in insecure jobs, such as day laborers and migrant workers.¹⁸

4. Attract employees and consumers

As societal expectations shift, patients and talent will increasingly screen for ESG performance. This is already a source of competitive advantage in attracting and retaining talent¹⁹: 93% of healthcare employees expect their employer to pursue a sustainability agenda.²⁰ While consumer decision-making still plays a relatively limited role in the healthcare journey, the trend is towards more consumer choice that may favor healthcare

providers that pursue climate and sustainability initiatives²¹: 60% of patients in one poll said green initiatives are an important factor when choosing a hospital, and 55% believe sustainable choices help improve healthcare outcomes.²²

5. Improve access to capital and contracts

ESG metrics are increasingly a factor in decisions and terms from banks, investors, insurers, and governments. For instance, the Canadian government tied COVID-19 relief funds to climate-related disclosures²³, and many institutional investors are putting climate and sustainability at the center of investment strategies, with ESG-based assets on track to reach \$53 trillion by 2025 (more than a third of total assets under management).²⁴ For publicly listed healthcare providers, mandatory disclosure of climate-related risks is either already in place (as in the UK²⁵) or on the horizon (as in the US²⁶). Although climate disclosures may not be a requirement for not-for-profit healthcare providers, failing to account for climate-related exposures such as their carbon footprint may result in third parties undertaking their own assessments — with impacts on lending terms, insurance premiums, or even access to contracts.

Healthcare providers worldwide face the accelerating impacts of climate change and the growing importance of ESG factors to their performance, brand, and reputation. To respond effectively, they must begin by better understanding their climate-related risks and opportunities.

Navigate climate risks and opportunities



Healthcare providers need a systematic approach to better understand how an evolving climate context impacts their assets and operations. A comprehensive analysis of threats and shifts is critical for mapping and prioritizing risks and embracing new opportunities

While all healthcare providers face climate impacts, risk materiality will differ depending on factors such as time horizon, geography, types of assets and operations, underlying vulnerabilities of the broader healthcare system and communities, and uncertainties around future climate change. Most healthcare providers will have identified some relevant risks, opportunities, and their drivers as part of their risk management and strategic planning processes. Systematic approaches can help uncover a more complete, dynamic picture of climate risks, opportunities, and impacts, and help providers tell their evolving ESG stories.

1. Choose a reporting framework

Some healthcare providers have devised their own climate-reporting frameworks that reflect the issues that matter most to them and that build on existing data and processes. Many providers may benefit from using a standardized framework instead, to better navigate a complex path that goes beyond their core skill sets. Using a standardized framework helps develop a systematic understanding of the drivers of an evolving climate context, structure the analysis of risks and opportunities, and consistently communicate results to stakeholders

such as regulators, investors, lenders, and insurers. Healthcare providers face a vast range of climate impacts — from hazards such as a hurricane to evolving standards such as for ESG compliance. Frameworks categorize the factors driving climate risks, making them applicable in a range of scenarios and more manageable for incorporation into existing risk management and strategic planning processes. The process can also help healthcare providers uncover previously unrecognized opportunities.

No such framework has yet been developed specifically for healthcare or life sciences, but TCFD is rapidly emerging as the leading climate-reporting framework thanks to the adaptability of its recommendations to different sectors and geographies and its relative simplicity, which allows providers to leverage existing resources if they switch to it. By applying TCFD, healthcare providers can quantify the potential impacts of physical risks driven by changes in climate and weather, and of transition risks linked to the transition to a low-carbon economy (*see Exhibit 2 on the next page*). TCFD also allows organizations to understand climate-related opportunities. For publicly listed healthcare providers, alignment with TCFD recommendations can improve their ability to meet evolving disclosure requirements by reporting material information in financial filings.²⁷

What is TCFD?

Established by the Financial Stability Board in 2015, the Task Force on Climate-Related Financial Disclosures (TCFD) aims to enable stakeholders across sectors to better understand their concentration of carbon-related financial assets and exposure to climate risks.²⁸ Its 11 disclosure recommendations are grouped into four areas: Governance, strategy, risk management, and metrics and targets.

TCFD is emerging as the leading climate reporting framework. It is increasingly part of regulatory frameworks as governments like the UK, Switzerland, and New Zealand shift towards compulsory climate reporting for all sectors of

the economy using TCFD.²⁹ The US Securities and Exchange Commission (SEC) recently proposed climate disclosure requirements for publicly traded companies based on TCFD.³⁰

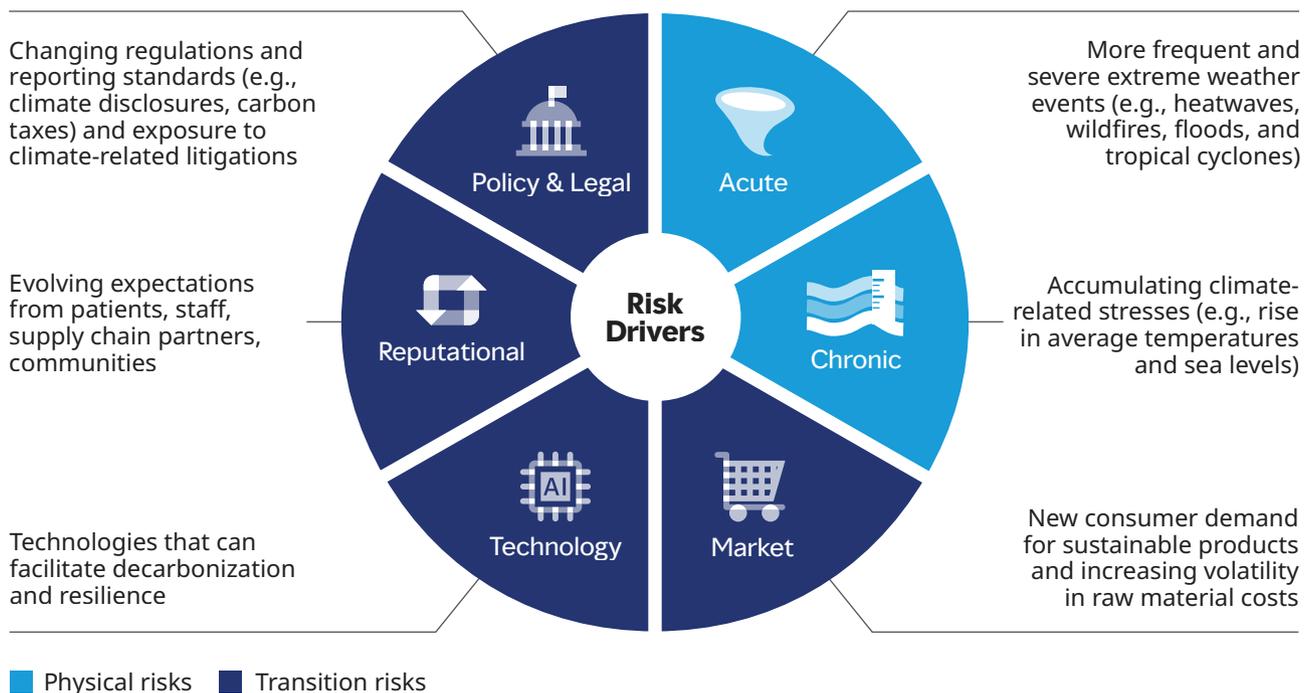
>3,300

publicly listed, private, and government organizations support TCFD as of May 2022³¹

49

supporters are from the healthcare sector (pharmaceuticals, biotechnology, life sciences, healthcare equipment, and services)

Exhibit 2: Climate-related risk drivers as classified by TCFD



Source: Marsh McLennan Advantage

Thanks to its flexibility, TCFD may be also complemented by other frameworks, for example, to assess an organization’s emission footprint or to define a clear decarbonization path (see Exhibit 3).

2. Identify risks and opportunities

With a climate reporting framework that best fits their unique needs and resources, healthcare providers can identify the climate risks and opportunities most relevant to them. A phased approach may facilitate a healthcare provider’s climate journey, with the chosen framework first applied to one geographical area or to understand a specific driver of risk. Starting with a particular issue or hotspot — such as a location where climate threats would have a significant impact and where affordable mitigations may exist — can help providers understand the complexities of climate threats and progressively expand the scope of the analysis. For example, an increasingly relevant risk driver is extreme weather, which can cause immediate disruption or lasting damage, besides potentially triggering cascading consequences. Healthcare

providers can expect multiple impacts, such as disruptions or restrictions of key resources, spikes or shifts in healthcare needs, and strain on hospital capacity. In the aftermath of the 2020 hurricanes Eta and Iota in Central America, widespread water contamination in Honduras increased incidence of water-borne illnesses and skin disease — all while hospitals were overwhelmed.³⁷

It is evident that the same drivers can be sources of both climate-related risks and opportunities (see Exhibit 4 on the next page). For example, if not acted upon, regulators and financial institutions’ enhanced expectations with regard to climate performance can restrict access to capital. Conversely, proactively measuring and reporting on climate performance — with a clear roadmap for making progress — can result in greater trust from lenders, stakeholders, and patients. Some healthcare providers are starting to tap into ESG and sustainability-linked opportunities, including reduced expenditure on energy and natural resources, greater access to green subsidies and capital, increased patient and workforce trust and engagement, and enhanced community resilience.

Exhibit 3: Frameworks complementing TCFD

CDP ³²	An international non-profit maintaining a framework for companies, investors, and governments to disclose their climate change, forest, and water impacts. CDP has the world’s largest and most comprehensive dataset on environmental action.
SUSTAINABILITY ACCOUNTING STANDARDS BOARD (SASB) ³³	Designed a set of industry-specific sustainability accounting standards for communication by companies to investors.
GLOBAL REPORTING INITIATIVE (GRI) ³⁴	Developed the most established global standards for sustainability reporting, focusing on the impact of business on sustainability issues including climate change and human rights.
SCIENCE BASED TARGET INITIATIVE (SBTI) ³⁵	Guides companies in setting science-based targets and boost competitive advantage in transitioning to the low-carbon economy. Independently assesses and approves companies’ targets.
GREENHOUSE GAS (GHG) PROTOCOL ³⁶	Provides global standards, tools and training for businesses and government to measure and manage climate-warming emissions, including for compliance with other frameworks.

Source: Marsh McLennan Advantage

Exhibit 4: Examples of risks and opportunities arising from climate change

The following include climate risks and opportunities as reported by healthcare providers

PHYSICAL RISKS	<p>Service and supply-chain disruptions due to damage or interruptions to facilities and utilities as well as employee displacement</p> <p>Stress on capacity and care quality as care needs and costs spike during climate shocks and swell due to stresses</p> <p>Delays or loss of elective care causing strain on revenue and resources</p> <p>Implications for business continuity, bodily injury, workers' compensation, professional and D&O liability, revenue, reputational risks</p>
TRANSITION RISKS	<p>Increasing compliance costs as regulations change on climate risk disclosure (reporting), mitigation (reducing emissions), and resilience (adapting to actual and expected climate impacts)</p> <p>Increasing barriers to, or costs of, capital and insurance</p> <p>Stranded assets, including facilities and infrastructure</p> <p>Reputational and D&O liability risks of slow or insufficient climate action</p>
OPPORTUNITIES	<p>Improved resilience through climate-proof infrastructure, supply chains, and care models such as digital and home-based care, staff support and capabilities. Related improvements in care quality, outcomes, and costs</p> <p>Lower operational costs from energy efficiency and waste reduction</p> <p>Increased access to capital and subsidies (e.g., green finance, favorable tax treatment of decarbonization and resilience measures)</p> <p>Improved attraction and retention of consumers and talent, especially issue-driven Millennial and Generation Z cohorts</p> <p>Stronger reputation and trust with external stakeholders</p> <p>Improved liability risk management for healthcare providers' directors and officers</p> <p>Improved health equity and social determinants of health, reducing vulnerability to climate health impacts and strengthening well-being overall</p>

Note: Healthcare providers included in the analysis consist of large hospital networks and clinics, some within a country and others with an international presence across North America, Europe, the Middle East, Australia, and South Africa.

Source: Marsh McLennan Advantage

3. Assess impacts

Once climate risks and opportunities are identified, it is critical for healthcare providers to decide on their materiality, ranging from operational and financial impacts to reputational repercussions. Leveraging readily available data sets and tools can facilitate the assessment of physical shocks and stresses under different global warming levels, reveal how facilities and operations' location exposes them to climate threats (like flood risk or water stress), and support the creation of scenarios for climate stress testing (see Exhibit 5). Assessing the potential impacts of transition risks requires healthcare providers to keep abreast of evolving global and regional climate regulations and initiatives. Related regulations include but are not limited to carbon taxes, changing energy efficiency requirements, and mandatory climate disclosures.

An ongoing challenge with impact assessment is that tools to quantify climate risks beyond property damage are still in their infancy, and there are few built specifically for the healthcare sector. By coordinating with public agencies, joining forces with peers, or engaging in coalitions such as Health Care Without Harm, healthcare providers can improve their understanding of climate impacts and obtain real-time information that can be leveraged to improve understanding of impacts. Scenario analysis^{38, 39} can also facilitate the process and help organizations identify which risks may be most material to them.

There remains a lot of work to do around quantifying risks and their mitigation (quantifying risk-adjusted impact and the cost of transferring risks) into a common currency that includes climate-related risks, in order to address them efficiently.

Exhibit 5: Publicly available resources to identify and map climate risks

WORLD BANK'S CLIMATE & DISASTER RISK SCREENING TOOLS ⁴⁰	A repository of resources that provide information and tool kits on climate data, climate change impacts and adaptation, and other information that can help better understand climate and disaster risks.
GFDRR'S THINKHAZARD! ⁴¹	A web-based tool providing a global overview of natural catastrophe risk for a broad range of perils and offering guidance on how to build resilience.
MARSH MCLENNAN FLOOD RISK INDEX ⁴²	A tool to help organizations assess their exposure and vulnerability to more frequent and severe flooding. The index measures the potential impact of flooding on populations and economic assets in 188 countries.
CLIMATE INFORMATION PLATFORM FOR COPERNICUS (CLIPC) ⁴³	In Europe, CLIPC provides access to climate information including data from satellite and in-situ observations, climate models, data re-analyses, and a climate impact tool kit that enables impact assessments of climate change.
NOAA'S CLIMATE RESILIENCE TOOLKIT ⁴⁴	A US-specific repository of tools for climate vulnerability assessment and development of adaptation plans. The toolkit covers a wide range of risk drivers.
CMCC'S G20 CLIMATE RISK ATLAS ⁴⁵	The tool provides information on future climate change outcomes for G20 countries across different dimensions, including climate extremes, health, water, and energy.
WWF WATER RISK FILTER 6.0 ⁴⁶	A screening tool to assess and respond to physical and transition water-related risks globally.

Note: Availability on information and level of granularity substantially vary across countries.

Source: Marsh McLennan Advantage

The overview below illustrates some ways in which climate risks affect healthcare providers.

Climate hazards disrupt care. Hospital buildings and infrastructure are often not designed or adapted to cope with heatwaves, storms, floods, and wildfires — and extreme weather events can strain even those that are. For example, hospitals can be disrupted by electricity and water outages, medical equipment failure and damage, medicine shortages⁴⁷, leaking roofs and flooding floors, and lack of access to patient records.⁴⁸ Limited functionality at a time of heightened need can require the evacuation of patients: During the record-breaking 2021 Pacific Northwest heat wave, hospitals were forced to transfer some patients amid an air conditioner outage⁴⁹, meanwhile 2018 wildfires in the Canadian provinces of British Columbia and Alberta forced 19 healthcare sites to close, caused the evacuation of 880 patients, and displaced 700 healthcare staff — costing US\$2.2 million.⁵⁰ Recovery and repair of facilities and infrastructure can take months or even years.

Climate shocks and stresses strain resources and increase costs. Ballooning care needs — whether long-term health impacts of climate shocks or more gradually accumulating effects of climate stresses such as rising temperatures — can reduce healthcare providers' capacity and care quality. Increasing healthcare utilization and demands placed on healthcare workers cause delays or loss of care. They can also constrain healthcare providers' ability to tackle overlapping crises: When hurricanes Eta and Iota in Honduras damaged 10 hospitals and more than 400 healthcare facilities in 2020, the health system struggled to cope with COVID-19 and other healthcare needs.⁵¹ Hospitals also face financial strain from climate shocks and stresses. In a twofold setback, healthcare providers may see their revenues decline even as costs rise. For example, limited capacity to meet spiking urgent care needs as well as infrastructure and equipment damage can mean lost revenue — such as from elective care — during and after a crisis while repairs take place.⁵² Care costs surge during crises and

disasters often forcing healthcare providers to run at a loss⁵³, and some have gone bankrupt in the process. Hurricane Michael forced five hospitals, five nursing homes, and 15 assisted-living facilities in Florida to close.⁵⁴ Wrecked by Superstorm Sandy in 2012, Long Beach Medical Center in New York filed for bankruptcy in 2014 despite spending millions of dollars on repairs.⁵⁵

Changing decarbonization requirements and regulations increase costs and liability risks.

The healthcare sector contributes two gigatons of carbon dioxide each year, or 4.4% of global net emissions.⁵⁶ Regulations on climate mitigation — such as those on carbon pricing, energy standards, and disclosure of climate risks — are likely to target the sector.⁵⁷ Rising energy prices and additional regulations for the construction and renovation of hospital buildings will increase healthcare providers' costs.⁵⁸ These requirements add to the existing regulations including standards for energy efficiency, waste disposal, and water resource management, which require significant financial and manpower investment.^{59, 60} Insufficient climate preparedness — such as being unprepared in the face of a disaster — may trigger liability risks. Following Hurricane Katrina, New Orleans' Memorial Medical Center faced a class-action lawsuit from patients' families, who claimed that the hospital had not been ready to deliver care under such emergency conditions and that there had not been a valid plan to evacuate patients.⁶¹ Around 2,000 patients and medical workers were stranded at the hospital after the 2005 storm.⁶² Also, lending costs, insurance premiums, and penalties are rising for “dirty” operations and assets. In the US, the Office of Climate Change and Health Equity plans to collaborate with hospital leaders to implement new sustainability standards — and intends to use financial penalties for noncompliance.⁶³

Lending costs, insurance premiums, and penalties are rising for “dirty” operations and assets.

On the flipside, climate risk drivers can provide opportunities for healthcare providers.

Decarbonization and adaptation investments make infrastructure climate-proof and lower operational costs in the longer run. Investing in climate resilience by reducing energy consumption and managing resources more efficiently is a win-win solution: It lowers operational costs while reducing a healthcare provider's carbon footprint. For example, the Gundersen Health System in the northeast of the US reports US\$3 million in annual savings from energy efficiency initiatives.⁶⁴ Following prolonged drought in the Western Cape in South Africa, Mediclinic installed off-grid water collection and treatment plants in its hospitals for improved resilience and independence from municipal water supplies.⁶⁵ Beyond better resource management, investments in hazard management can significantly reduce the costs incurred during an extreme weather event.⁶⁶ Retrofitting non-structural items such as moveable carts and trays can cost as little as 1% of a hospital's value to protect up to 90% of the hospital's assets.⁶⁷

Technology investments can help healthcare providers boost resilience and efficiency. Telemedicine and remote monitoring can maintain care provision when healthcare facilities are interrupted or overwhelmed, and reduce carbon emissions and air pollution related to travel and transportation. For example, virtual visits for primary care and chronic condition management in the US soared from 5% and 6% pre-pandemic, respectively, to 41% and 45% of total visits during the last eight months of 2020.⁶⁸ Also, telecare has the potential to replace approximately 11 million home visits by nurses, cutting travel by 120mn km and associated greenhouse gas emissions by 33.22 tonnes.⁶⁹ Medical drones already deliver blood and essential medicines to rural health

facilities in Rwanda⁷⁰, tuberculosis test samples from remote mountainous settlements in Nepal⁷¹, and personal protective equipment to US hospitals.⁷² Drones can bolster last-mile access and supply-chain resilience by transporting medical and essential supplies in response to health emergencies, for example, when critical infrastructure such as roads are damaged during extreme weather or in generally poor condition.

The rapid rise of green incentives and capital presents enhanced access to funding opportunities. With ESG metrics increasingly important in lending and spending decisions, many providers are benefiting from green incentives or subsidies and sustainability-linked bonds: Royal Adelaide Hospital in Australia secured one of the largest sustainability loans in the healthcare sector (US\$1.63 billion) from a consortium of 18 banks in 2021 for ESG-related projects⁷³, and the Farrer Park Company obtained an \$87 million green loan from UOB in 2020, the first such loan for a healthcare facility in Singapore, tied to the hospital's energy and water consumption as well as lower carbon footprint.⁷⁴ Another benefit is favorable tax treatment: For example, Providence Newburg Medical Center in Oregon leveraged over US\$350,000 in grants and US\$141,000 in tax incentives for energy efficiency.⁷⁵

ESG-related activities lower insurance costs and expand coverage. Perceived to have a lower risk profile, healthcare providers taking action on climate risks are negotiating more affordable insurance premiums and securing full reimbursement of property and casualty insurance claims.⁷⁶ The coverage they can access is also enhanced by their focus on mitigating and adapting to climate risks. For instance, specialist insurer Beazley has started to offer additional capacity to businesses, including healthcare firms, that perform well against ESG metrics.⁷⁷

Sustainability initiatives help attract talent and boost workforce morale. Environmentally sound, green, and wellness-oriented facilities as well as disclosure of waste and emissions data are of such importance to staff that they can be a primary motivator for healthcare providers to develop a sustainability strategy. Fresenius Medical Care reports that its sustainability management system helps maintain its reputation and acceptance in society, while also meeting increased demand for sustainable business operations, resulting in “opportunities to present itself as a reliable, efficient partner and an attractive employer.”⁷⁸ Meanwhile, Boston Medical Center noted how candidates routinely cite the hospital’s sustainability work during the recruitment process.⁷⁹ Enhanced confidence and trust among staff as well as patients and consumers translate into increased demand for care and patient satisfaction in healthcare systems where patients can choose a healthcare provider.

Improved community resilience makes climate-driven care needs more manageable. Climate change is a threat multiplier for health and exacerbates disparities in health outcomes, access, and social determinants.⁸⁰ For example, extreme heat disproportionately endangers the elderly, poor, and patients with pre-existing conditions.⁸¹ Sustainability projects undertaken by healthcare providers can simultaneously meet community needs and improve their resilience to climate impacts. Cleveland Clinic, for example, has invested in sustainability projects which improve the neighborhood’s stormwater management, clean energy, and local food production.⁸² Communities that are able to recover more quickly can minimize displacing people and jobs, and such resilient economies can create a more stable environment for healthcare providers, particularly in systems reliant on employer-provided health insurance or out-of-pocket expenditure.⁸³

€1.7 billion

In 2021, French hospital operator Elsan secured an ESG-linked loan with the margin based on patient satisfaction, medical waste reduction, and employee quality of work life⁸⁴

\$1.5 billion

In Australia and the UK, Ramsay Health Care’s sustainability-linked loan will require the provider to meet sustainability targets, including on the mental health and wellbeing of staff, efforts to reduce emissions, and responsible sourcing within medical supply chains⁸⁵

A thorough assessment of the evolving climate context in which healthcare providers operate is critical for both mitigation and adaptation to climate change. Better understanding climate risks and opportunities should not only be regarded as a compliance exercise, but as a means to shape healthcare providers’ strategy.

Develop strategies for resilience



Aligning strategy with the climate agenda can accelerate decarbonization efforts while building operational and financial resilience to physical and transition risks. Some interventions will further decarbonization and resilience-building goals simultaneously. Preparing for physical risks and the transition to a low-carbon economy can unlock new opportunities for healthcare providers

1. Align strategy with the climate agenda

Preparing and responding effectively to climate risks requires embedding mitigation (reducing greenhouse gas emissions) and adaptation (building resilience to a changing climate) efforts in organizational strategy. Healthcare providers can significantly reduce their climate impacts and bolster resilience through major changes as well as incremental improvements; some efforts might support both risk mitigation and resilience goals.

Climate mitigation

Emissions reductions can come from major investments such as building new facilities that meet superior emissions or broader environmental standards, as well as incremental improvements such as refurbishing existing facilities. Asklepios Kliniken, a German private hospital operator, uses combined heat and power plants in new construction and renovation projects to improve supply efficiencies of energy and heat to their hospitals.⁸⁶ Quick wins can come from approaching repairs, upgrades, and usage — such as cooling equipment or water consumption — with a climate lens. For example, the Cleveland Clinic in Ohio saved \$2.5 million a year by switching from fluorescent lights to LEDs, and a further \$2.5 million by efficiently adjusting air exchanges in operating rooms without increasing infection risk.⁸⁷

With approximately 70% of the healthcare sector's emissions attributed to the supply chain, healthcare providers can also measure suppliers' environmental

impacts and practice responsible purchasing.⁸⁸

The right partners can help healthcare providers reduce emissions, such as from anesthetic gases — which account for about 5% of a UK National Health Service trust's carbon footprint⁸⁹ — and navigate trade-offs, such as between sustainability and safety for disposable medical devices and supplies.

Operational resilience

To continue operating essential services in the event of climate shocks and to return quickly to business-as-usual operations, healthcare providers need clear business continuity, crisis management, and disaster recovery plans that take into account the overlaps and interplay of different threats — such as one or more extreme weather events coinciding with a pandemic and geopolitical crisis. Healthcare providers will benefit from a range of contingency plans to counter different crisis scenarios of varying scale and magnitude, including their second- and third-order effects (risk cascades). For example, hospitals can determine thresholds, processes, resources, and partnerships to evacuate patients in the event of power outages or infrastructure damage. A diversified supplier base and localized emergency stocks will help healthcare providers better manage inventory and sustain access to vital medicines, equipment, and consumables in the event of supply chain disruptions.

Operational resilience requires adapting to gradual shifts as well, such as sea-level rise and rising temperatures. Healthcare providers can consider investing further in digitally delivered and home-based care, making just-in-case arrangements to shelter affected people in the community, climate-proofing facilities and equipment to withstand high winds and flooding, and procuring cooling and heating systems that can withstand extreme heat and cold — for example, after Hurricane Sandy in 2012, NYU Langone invested \$1.5 billion in repairs and fortifications to increase power-generation capacity and raise flood barriers.⁹⁰ Providers will also need to train and support staff to cope with evolving risks.

Financial resilience

Healthcare providers must also plan to protect their finances in the face of unpredictable and potentially unmanageable climate impacts. Access to pre- and post-disaster recovery or resilience funds can make a difference in a hospital's ability to recover after a crisis, in addition to technical assistance and policy support to ensure business continuity.

Looking ahead, climate change is likely to shift disease burdens and amplify care needs in a context of already high healthcare costs.

Healthcare delivery and reimbursement models will have to evolve in ways that prevent disease and reduce underlying vulnerabilities, cut costs such as by shifting care to digital platforms (which furthers both decarbonization and climate resilience goals) and lower-cost settings, and equip staff and patients with the skills, knowledge, and technologies to make the new models work.

Technological innovation

Healthcare providers can leverage increasingly sophisticated analytical tools and technologies

to shape, implement, and monitor mitigation and adaptation measures. Smart buildings and electricity grids can reduce emissions and minimize energy and water consumption, while tracking energy use and costs can help reveal where switching to renewables and green grids will make the most impact. Machine learning can help scrape and interpret data from varied sources (e.g., utility invoices) to measure climate impacts such as energy usage and emissions — and help healthcare providers set and reach energy efficiency and decarbonization goals. Companies are also starting to leverage monitoring technologies to quantify indirect emissions along value chains (Scope 3 emissions). Healthcare providers can identify carbon hotspots in their supply chain and strengthen relationships with vendors that commit to reduce their emissions.

New technologies and tools for risk management and transfer are proliferating, such as software to simplify and automate data gathering and reporting on customized metrics for various frameworks, including TCFD.^{91, 92} Given the pace of innovation, fragmentation, and lack of regulatory or quality standards in this space, healthcare providers may benefit from external expertise to assess and manage vendors, identify appropriate tools and technologies, and integrate them into their enterprise risk management frameworks.

The business case for investing in resilience may be more challenging to make because returns are less immediately visible than with greenhouse gas emissions reduction. Healthcare providers can identify subsidies, sustainability-linked debt, and other green capital opportunities to support adaptation investments. In the short term, healthcare providers may also have to balance resilience and climate mitigation imperatives — for example, some measures such as stockpiling supplies and deploying supplemental power sources may present trade-offs.

2. Shape governance to integrate climate-related risks and opportunities

Healthcare providers that are leading their peers on climate efforts have two things in common: Leadership alignment, and commitment to the trajectory, goals, and initiatives for building resilience and mitigating environmental impacts. With buy-in from leaders, boards, and investors, executive compensation and incentives linked to sustainability metrics can help improve climate outcomes and elevate them to similar levels of importance as health outcomes and financial metrics. Providers can utilize both short-term and long-term incentives to reward management efforts in achieving milestones and major outcomes.⁹³

Sustaining executive interest can be challenging given the range of pressing challenges that healthcare providers face. Assigning and clarifying roles and responsibilities will help cascade green goals through the organization, and embed climate considerations into decision-making and performance assessment. One approach is to create a green team or steering committee. Involving clinicians in sustainability teams can help raise their profile and position sustainability as a core agenda, as they can identify and advocate for policies that have both environmental and clinical impact. Another approach is for regional teams on the front-line of managing climate risks to share resources. Cross-departmental teams can leverage existing workforce capabilities — from risk managers, ESG officers, and real estate departments, to procurement and supply-chain managers.

It is essential for healthcare providers to integrate climate risks and opportunities into enterprise risk management, financial reporting, and strategic

planning.⁹⁴ A good place to start is by aligning strategic and financial goals with climate priorities — by using KPIs that focus on green loans and sustainability-linked bonds, and by switching to integrated reporting that covers financial and non-financial issues (including assessing all risks and mitigations against one common currency). For one large healthcare provider in the US, integrating climate concerns with strategic priorities has accelerated progress, putting climate issues on a par with clinical and business priorities.

Healthcare providers should plan for net zero by setting foundational targets and KPIs linked to financial and operational goals, such as energy intensity and greenhouse emissions. Sustainability metrics need to be science-based, clear, ambitious, measurable, and achievable. Healthcare providers may need to tailor metrics to their context rather than benchmarking against leading peers. They should keep track of progress made on their sustainability journey and communicate improvements to relevant stakeholders.

3. Communicate and collaborate with stakeholders

Healthcare providers can gain a competitive advantage by communicating their climate strategies and goals to internal and external stakeholders — from the workforce⁹⁵ to regulators and financial institutions. Publishing sustainability plans and targets signals commitment and is a great means of engaging with employees. Healthcare providers should report on their climate risk exposure, opportunities, and related efforts even when they are not mandatory, as several providers have done with Scope 3 emissions.⁹⁶

Healthcare providers' climate strategies can deliver impact by informing and supporting efforts in the broader health ecosystem and surrounding communities. For example, healthcare providers can use their purchasing power to set new climate-related standards for third-party vendors, partners, and suppliers. In the face of disasters, sharing staff or equipment with partners and peers can help healthcare providers recover from a crisis.

Also, provider efforts to improve community resilience advance both health equity as well as sustainability by reducing population vulnerability to climate shocks and stresses.

One US healthcare provider has combined public health data with their electronic health records to understand the environmental determinants of health for their addressable populations, and how their hospitals and clinics can improve health outcomes. Community resilience initiatives from healthcare providers across the world include partnering with schools for a more sustainable food system, investing in home environmental

audits to check for children's exposure to toxins, working with local communities on landscaping and water conservation, and co-investing with community partners in green grids when redesigning hospital facilities for renewable energy.

An unintended consequence of disclosing climate resilience plans may be the scrutiny of gaps and execution failures by external stakeholders. To mitigate this risk, healthcare providers can develop and communicate phased roadmaps, pre-emptively identify and manage risks that are likely to remain in various phases, and articulate the milestones achieved, scope for the future, as well as complexities and trade-offs inherent in climate resilience plans. Limited ambition, lack of a coherent strategy, or failure to follow up on communicated plans and goals may bring activist scrutiny and spark accusations of greenwashing and reputational risks, particularly in nascent ESG markets. Healthcare providers will need to understand expectations of various stakeholders, and refine their organizational efforts to address areas of weakness relative to expectations.

To future-proof their assets and operations, healthcare providers need to rethink their approach to decarbonization and resilience. A cross-cutting agenda integrating climate considerations in enterprise risk management and strategy is essential to prepare for responding to climate impacts as well as evolving standards of corporate social responsibility and ESG disclosures.

Acknowledgements

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Endnotes

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