



Climate adaptation

How investment can support adaptation for health and healthcare systems

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Introduction



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In brief

- There is increasing evidence to suggest that climate change is a material risk to human health and wellbeing, and that health – and healthcare systems – can be affected by global warming in many different ways.
- Climate adaptation measures are needed to help reduce climate change risks to health, and to help healthcare systems become more resilient by pre-empting climate risks, mitigating health and economic impacts, and better managing the burden of climate change-related ill health.
- Investors have a key role to play in the support and development of climate adaptation solutions across all stages of the healthcare value chain.

The World Health Organization (WHO) describes climate change as the biggest global health threat of the 21st century, impacting society and the economy in the form of air pollution, food and water insecurity, infectious disease, extreme heat, extreme weather events, and more.¹ The negative health effects of climate change will become more severe and less manageable as global temperature rise accelerates. These climate-related health impacts will lead to increased demand for healthcare, which existing healthcare systems may struggle to meet.

At the same time as facing an increased burden of demand from climate change-related ill health, healthcare systems are themselves at risk from climate change. Climate change-related hazards already routinely stress and disrupt healthcare systems and threaten access to healthcare for many.² With

greater warming, the entire healthcare system is likely to face increased supply chain disruption, resource scarcity and infrastructure damage. This is likely to make it significantly more difficult for healthcare providers to cope with the extra demand that will be placed on them.³

The impacts of climate change on health can also lead to wider economic consequences. The WHO estimates that the direct costs to health from climate change – excluding costs to health-determining sectors, such as agriculture, and water and sanitation – will be between USD 2 billion and USD 4 billion per year by 2030.⁴ Economic damage can create greater obstacles to building healthcare system resilience and reduce capacity for adaptation.

In this paper, we explore climate change risk as it relates to healthcare systems and to the healthcare sector. As well as laying out the risks, we discuss adaptation solutions that could make health and healthcare more resilient in the face of rising temperatures. While some climate risks to health are still emerging and may not fully materialise over the investment horizon of today's investors, many negative impacts of climate change on health are already visible (**Exhibit 1**). In this context, looking at healthcare companies through a climate adaptation lens can offer insights into potential climate-related risks and opportunities within investment portfolios.

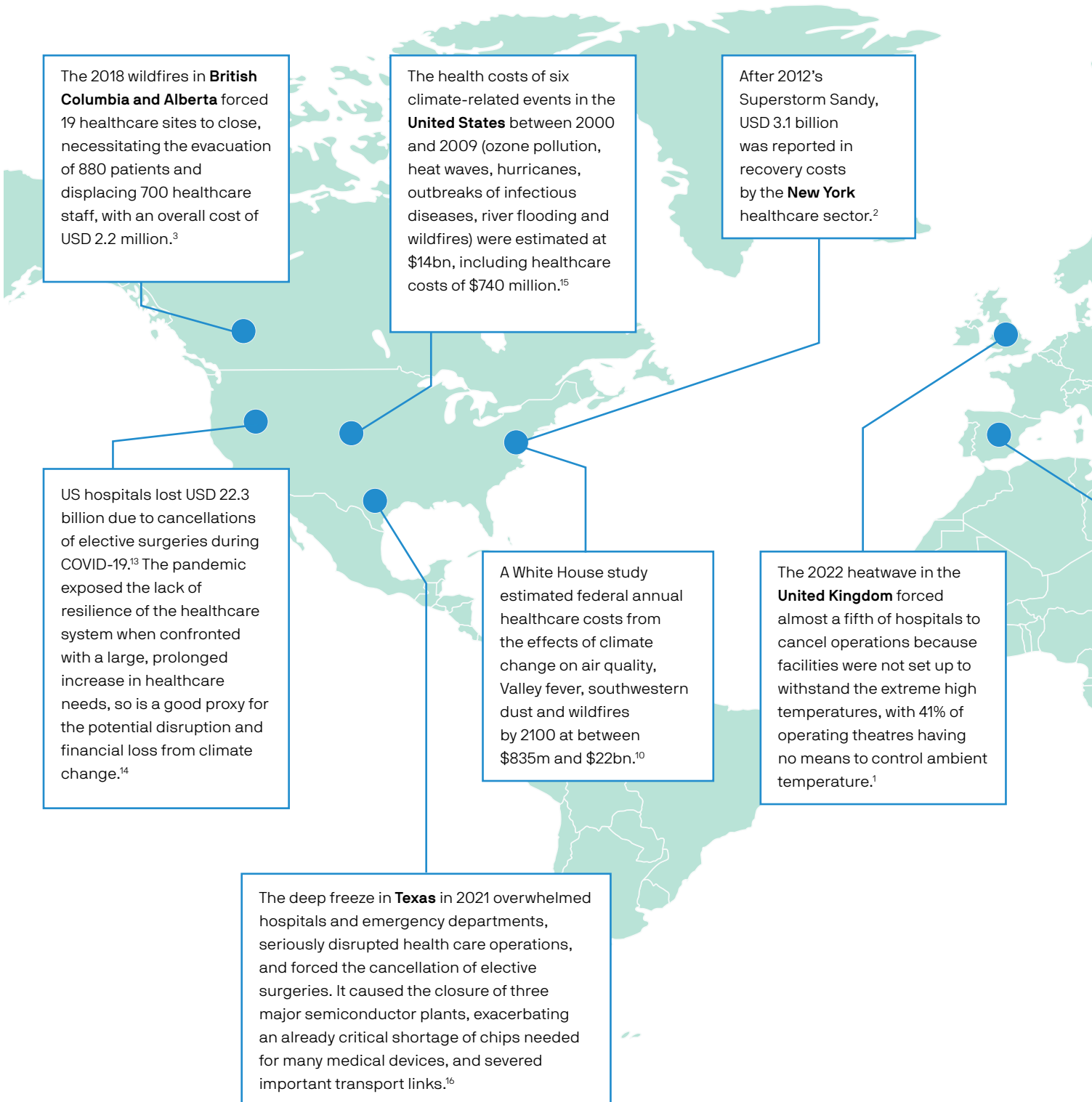
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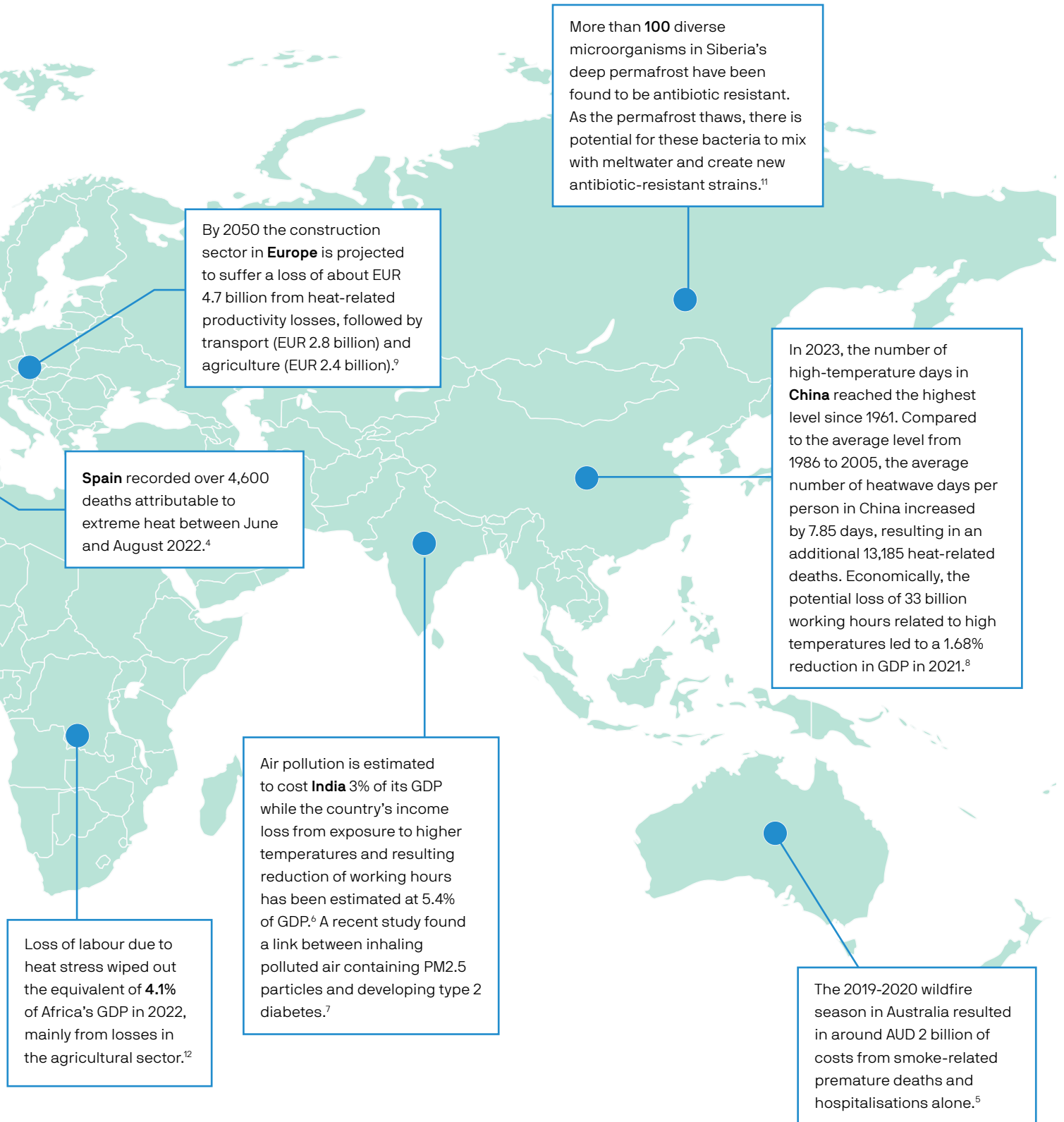
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⁴ World Health Organization: Climate Change. <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>

Exhibit 1: Impacts of climate change on health around



and the world



How climate change affects health, healthcare systems and the wider economy

Climate change affects health in many different ways, both directly and indirectly (**Exhibit 2**).⁵ It exacerbates existing health challenges at the same time as creating new ones, with outcomes typically worse in more vulnerable and marginalised populations.

By increasing exposure to health risks, climate change also increases the burden on healthcare systems.⁶ At the same time, climate change threatens the functioning of healthcare facilities and increases the risk that they will fail to deliver effective care.⁷ A recent asset-level physical risk analysis of hospital infrastructure globally found that on our current warming trajectory, by 2100 1 in 12 hospitals will likely be at high risk of total or partial shutdown from extreme weather events – a total of 16,245 hospitals, with India, China and Japan as the top three countries in terms of number of hospitals at risk.⁸ In this way, climate change could cause interruptions to normal operations and care patterns, leading to worsened health outcomes and higher costs for treatment down the line. The resulting losses could further undermine investment in efforts to adapt to climate change, creating a vicious circle. According to a survey in the 2023 report of the Lancet Countdown, a major annual study on health and climate change, 27% of global cities surveyed were concerned that their health systems could be overwhelmed by the impacts of climate change.⁹ This risk is particularly acute where adaptation measures are lacking.

Climate change's effects on health can also indirectly impact the wider economy. To date, the economic impact has been most obvious through the fallout from extreme heat, which has led to lower productivity and lost working hours. In 2022, 490 billion potential labour hours were lost globally due to extreme heat exposure according to the Lancet Countdown, with associated potential income losses of USD 863 billion.¹⁰ Overall, average annual monetised heat-related mortality losses between 2018 and 2022 have been estimated at USD 164 billion, or 0.17% of world GDP, which is equivalent to the loss of 12.8 million average incomes. These economic losses would only be expected to increase with hotter temperatures.

Ultimately, it is difficult to anticipate all the potential impacts of climate change on health, the healthcare sector and the broader economy. What is clear is that climate change can result in significant financial and social impacts to individuals, companies and countries. However, with proactive and timely adaptation, many of the risks to human health, healthcare systems and the healthcare sector could be reduced, and some risks potentially avoided.

⁵ Romanello, M., Di Napoli, C., Green, C., Kennard, H., Lampard, P., Scamman, D., et al. "The 2023 Report of the Lancet Countdown on Health and Climate Change: The Imperative for a Health-Centred Response in a World Facing Irreversible Harms", The Lancet Countdown (November 2023). [https://doi.org/10.1016/S0140-6736\(23\)01859-7](https://doi.org/10.1016/S0140-6736(23)01859-7)

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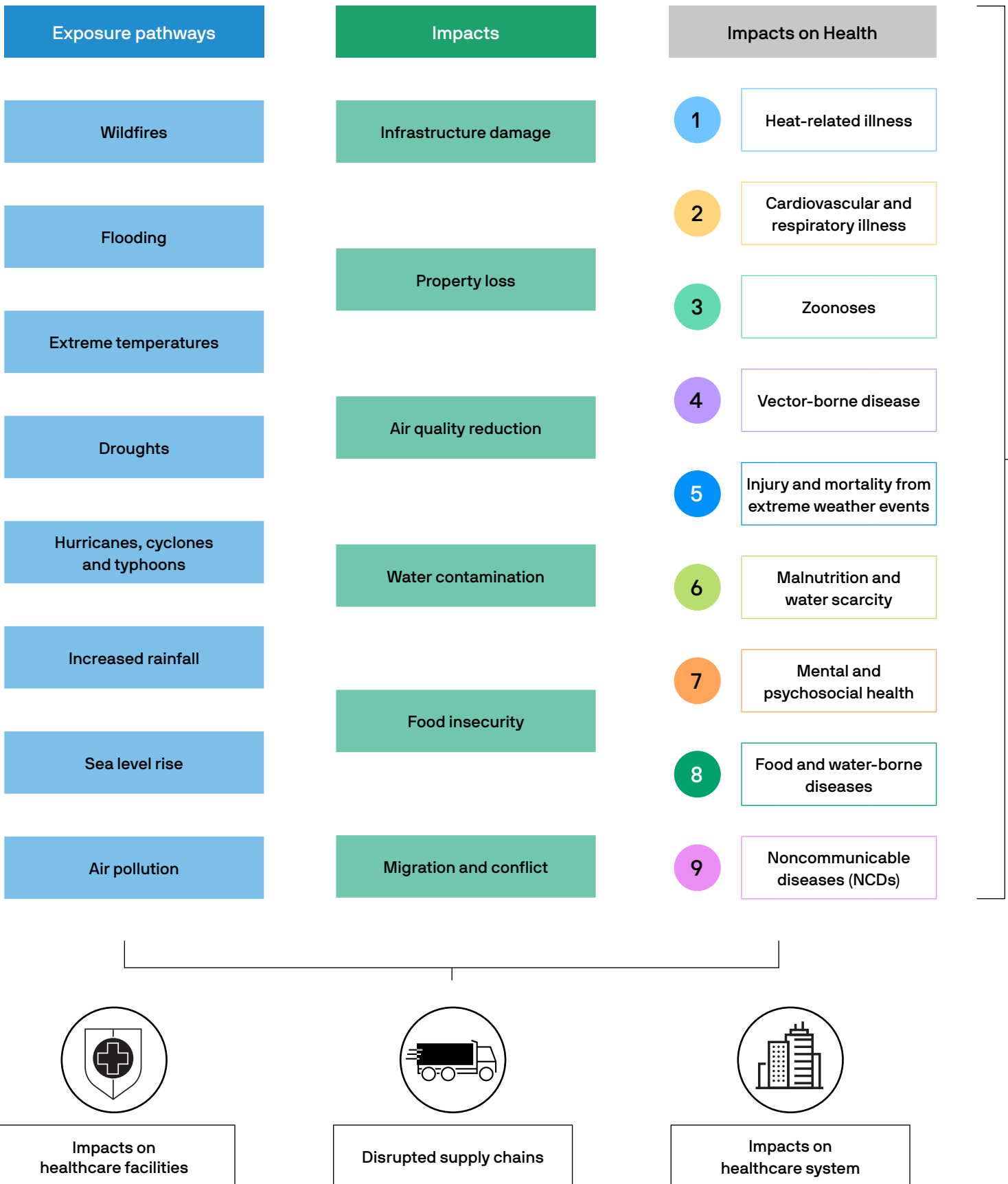
⁷ Al-Marwani, S., "Climate Change Impact on the Healthcare Provided to Patients", Bull Natl Res Cent 47, 51 (2023). <https://doi.org/10.1186/s42269-023-01026-9>

⁸ XDI, "2023 XDI Global Hospital Infrastructure Physical Risk Report" (December 2023)

⁹ Romanello, M., et al., "The 2023 Report of the Lancet Countdown on Health and Climate Change", (November 2023).

¹⁰ Ibid.

Exhibit 2: Climate change impacts on health and health



- 1
 - In 2023, the world saw the highest global temperatures in over 100,000 years and heat records were broken in all continents. Extreme heat can have direct effects such as heat stress, heat exhaustion or dehydration. Almost half the population and more than 1 billion workers are already exposed to extreme heat.¹
 - Extreme heat is particularly dangerous to vulnerable populations: heat-related mortality in people over 65 increased by 85% in 2013-2022 compared with 1991-2000.²
 - There is recent research to show that some common medications could make people more vulnerable to heatwaves by interfering with the body's internal thermostat or impairing sweating.³
 - In 2018-2022, people experienced 86 days of health-threatening high temperatures annually. 60% of these temperatures were made more than twice as likely to occur by human-caused climate change.⁴

- 2
 - Temperature and humidity extremes, dust storms, extreme precipitation and increased climate variability are all risk factors for respiratory tract infections.⁵
 - Climate change increases particulate matter levels and ground-level ozone as well as leading to more intense wildfires.
 - Higher temperatures and increased CO₂ levels lead to longer pollen seasons as well as higher pollen potency, worsening allergies.⁶
 - Increased storms, precipitation, heat and humidity promote mould growth, a common trigger for asthma and allergies.
 - Air pollution levels exceed safe values set by the WHO almost everywhere in the world (99% of population).⁷
 - In 2020, air pollution from fossil fuels was responsible for 1.2 million deaths globally.⁸

- 3
 - Greater proximity between humans and animals as habitats shift due to rising temperatures (and deforestation) can raise the likelihood of cross-species disease transmission and pandemics.⁹

- 4
 - Higher temperatures can lead to accelerated microbial growth and longer survival, greater persistence and faster transmission of pathogens. Higher temperatures will also shift the geographic and seasonal distribution of diseases, bringing them to regions where they did not previously exist, where populations have never been exposed to them and health systems are unprepared.¹⁰
 - Climate change has contributed to the spread of malaria, dengue, Lyme disease and more.
 - Between 23%-38% of areas not previously suitable for malaria transmission could become suitable in 2041-2060.¹¹
 - The likelihood of dengue transmission rose by around 28% from 1951-1960 to 2013-2022 due to increased climate suitability. Almost half of the world's population is now at risk from this disease.¹²
 - Researchers have predicted that the *Aedes aegypti* mosquito, the vector of yellow fever, dengue and Zika, might be able to reach cities such as Chicago and Shanghai by 2050 if global temperature rises by ~2.5°C.¹³

- 5
 - Extreme weather events such as floods, hurricanes and wildfires can lead directly to severe injuries or deaths, which create additional urgent healthcare demand.¹⁴
 - Human exposure to days with very- or extremely-high fire danger increased in 57% of countries from 2003-2007 to 2018-2022.¹⁵
 - There were 2.1 million deaths from disasters attributed to weather, climate and water extremes between 1970 and 2021.¹⁶
 - The lethality of floods and storms declined in 2013-2022 compared with 1990-1999, largely due to increased implementation of early warning systems.¹⁷

- 6
 - 3.1 billion people were unable to afford a healthy diet in 2021; climate change is exacerbating food insecurity and malnutrition. Climate change impacts such as drought and water scarcity are expected to threaten food production rates, food quality (including lowering nutritional content), food prices and distribution systems.¹⁸
 - Higher temperatures will encourage higher rates of microbial growth, affecting food safety.¹⁹
 - 127 million more people were reporting moderate to severe food insecurity in 2021 than on average between 1981-2010 due to a higher frequency of heatwaves and droughts.²⁰

- 7
 - Climate change impacts on health, lifestyles and livelihoods can cause mental health to suffer.²¹ For example, drought during growing season has been associated with worsening mental health among rural US farmers.²²
 - Vulnerable populations are particularly likely to suffer poor mental health in the face of climate change – for example, those displaced from their homes as a result of extreme weather. Each year since 2008, an average of more than 20 million people worldwide have been forced to move because of weather-related events.²³
 - High temperatures and heatwaves are associated with mood and behavioural disorders, including an increase in aggressive behaviour, crime and suicide risk.²⁴
 - Chronic stress from climate change or the physical health effects it causes can lead to anxiety, depression, post-traumatic stress and a loss of connection to environment or community, among other mental health issues.²⁵

- 8
 - There is a strong association between higher temperatures and increases in food- and water-borne diseases.²⁶ Climate change can also help trigger natural disasters that make these diseases more prevalent.²⁷
 - An example is cholera, which is spread by floods and disproportionately impacts the young, elderly and immunocompromised.
 - Climate change may lead to an 8%-11% increase in risk of diarrhoea in the tropics and subtropics by 2039.²⁸

- 9
 - Noncommunicable diseases (NCDs) account for 74% of all deaths globally each year. There is evidence to show that NCDs such as diabetes can be worsened by climate impacts, in particular extreme heat. The economic cost of NCDs attributable to lack of physical activity (such as obesity, diabetes, and heart disease) could reach \$27 billion annually on its current trajectory. Extreme heat and worsening air pollution could further reduce scope for physical activity and be a contributor to an increased burden of NCDs.²⁹

How investors can invest in healthcare adaptation

Finance can both help to mitigate these climate-related risks to health and healthcare systems, and reduce their economic impacts, while also helping companies to take advantage of adaptation opportunities.

Some 70% of countries cited lack of finance as a constraint to health adaptation according to the 2022 report of the Lancet Countdown – up from 56% in 2018.¹¹ This result is unsurprising given that less than 0.5% of multilateral climate adaptation funding to date has targeted the health sector.¹² Further, only 3% of all health resources are invested in prevention, which is a key element of adaptation.¹³ Companies and governments will need increased investment to evaluate climate risks and to help them start to build solutions.¹⁴

To help address the situation, investors can gain access to the healthcare adaptation theme via investment in private sector companies across the entire healthcare value chain. Institutional investors and asset managers could help to fill adaptation funding gaps through investment in specialised thematic funds, or impact funds. There is also a growing trend towards the issuance of sustainability debt in the healthcare sector, where the use of proceeds targets sustainable outcomes – while innovations such as the integration of climate resilience criteria into bond covenants could further help increase the flow of funds dedicated to health adaptation. Investors could also look to alternative assets, such as infrastructure providers constructing climate-resilient healthcare facilities, or transportation companies covering the healthcare supply chain.

It should be noted that the deployment of private capital will be encouraged by consistent, well-designed public policy. Because successful adaptation projects often benefit from a mix of public and private capital, co-operation between the public and private sectors can be useful. The potential for this co-operation has been demonstrated by a recent resurgence in industrial policy, which has in several cases been supportive to action on climate change.¹⁵

¹¹ Romanello, M., Di Napoli, C., Dummond, P., Green, C. Kennard, H., Lampard, P. et al. "The 2022 Report of the Lancet Countdown on Health and Climate Change: Health at the Mercy of Fossil Fuels", The Lancet Countdown Volume 400, Issue 10363, pp. 1619-1654 (November 2022). [https://doi.org/10.1016/S0140-6736\(22\)01540-9](https://doi.org/10.1016/S0140-6736(22)01540-9)

¹² World Health Organization, "COP24 Special Report: Health and Climate Change", WHO (3 December 2018).

¹³ Eurostat, "3% of healthcare expenditure spent on preventive care", 18 January 2021.

¹⁴ World Health Organization, "COP24 Special Report: Health and Climate Change", WHO (3 December 2018).

¹⁵ J.P. Morgan Asset Management, "2024 Long-Term Capital Market Assumptions: Time-Tested Projections to Build Stronger Portfolios", J.P. Morgan Asset Management Portfolio Insights (2023).

Opportunities for adaptation in the healthcare sector and beyond

While climate change threatens significant impacts on both individual companies and the wider economy, there are also opportunities for investors that can emerge from the interaction of climate risks with structural economic shifts. For example, an increased consumer focus on health and wellbeing is apparent in some developed countries, which are also seeing increased government spending on health as their populations age. Per capita spending on healthcare in the US is expected to increase from USD 13,000 in 2022 to USD 20,000 by 2031.¹⁶

This increase in healthcare spending can contribute to the size of the opportunity in healthcare (**Exhibit 3**). Additionally, as the effects of climate change materialise, there will be increased appetite to counter them through the development of new medical products and services.

Climate change risks to health can also be addressed from a more holistic standpoint, rather than focusing solely on the healthcare sector. Because healthier environments and lifestyles can help prevent ill health occurring in the first place, human health can be both negatively and positively impacted by the products and services provided by infrastructure, utilities and consumer goods companies, as just some examples.

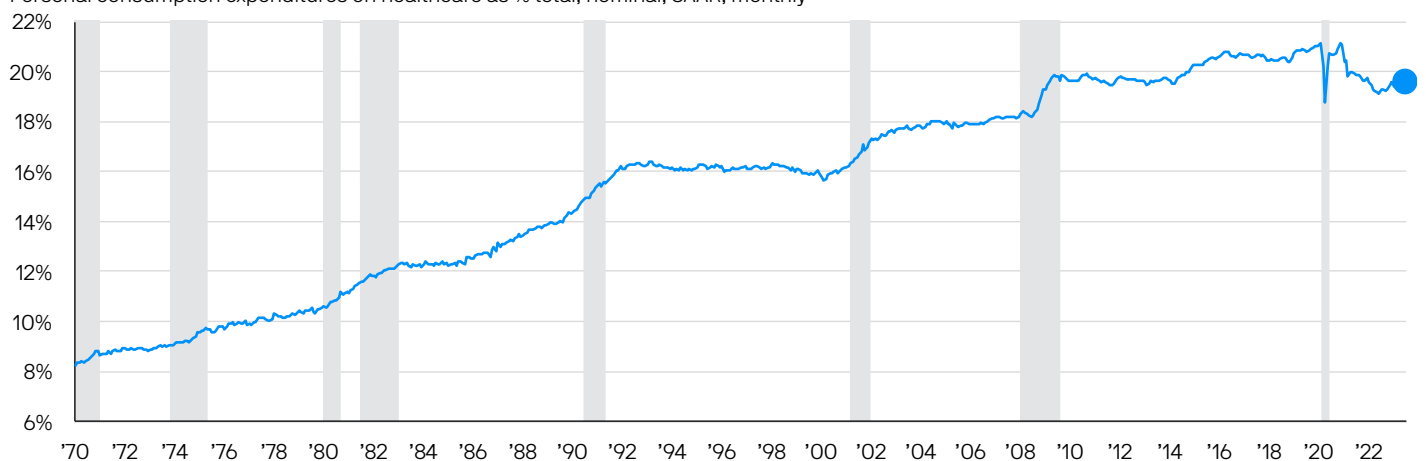
Our previous papers on climate adaptation, looking at opportunities to build **more resilient and sustainable cities** and opportunities for **helping nature adapt** in the face of climate change, explore some of the actions that can contribute to improving the general health of communities and reducing their susceptibility to climate change-related ill health. These actions include broad health education, surveillance and communication of health threats, better urban infrastructure and city redesign, the protection of nature and green spaces, improved water, sanitation and hygiene, and proactive targeting of vulnerable people to reduce inequity.

These actions span all sectors, and can reduce the burden on health systems by increasing general wellbeing and reducing population vulnerability. Products and services promoting general population health and wellbeing can also be sources of financial return and drivers of long-term value for investors.

Overall, investors with a focus on the long-term resilience of their investments to health-related climate change impacts can look to invest in companies in the healthcare sector, and beyond, that are either effectively adapting their business models to take account of climate change risk, or developing specific products and solutions to combat climate-related risks to health and healthcare systems.

Exhibit 3: US healthcare spending as percentage of total

Personal consumption expenditures on healthcare as % total, nominal, SAAR, monthly



Source: BEA, FactSet, J.P. Morgan Asset Management; data as of September 2023. SAAR = seasonally-adjusted annual rate.

¹⁶ McGough, M., Salaga, M., Cox, C., Amin, K., "How Much is Health Spending Expected to Grow?", Peterson-KFF Health System Tracker (11 October 2023).

Evolving the conversation with healthcare companies on climate adaptation

While health can be impacted by companies in many different sectors, it's the healthcare sector that has a particularly critical role to play in combating climate change-related health risks. There is evidence that some companies in the healthcare sector are now beginning to disclose risks and opportunities to do with physical climate risk, as recommended by existing frameworks such as those provided by the Task Force on Climate-related Financial Disclosures (TCFD), and CDP. Some of these disclosures include plans that companies have made to increase resilience and the active steps they have taken towards adaptation.

These disclosures are encouraging, since rising physical risk from climate change and a lack of adaptation within the healthcare sector to date means that climate adaptation may now be a financially material consideration for the healthcare sector and other related sectors. Healthcare companies that do not make efforts to understand climate risks and take adaptation measures could be left exposed to economic losses and unable to continue providing their products and services. Those that do take action could see benefits in terms of operational cost efficiencies from waste and energy use reduction, increased access to green capital and subsidies, a lower cost of debt where resilience criteria are integrated into covenants or sustainability-linked bond targets, and a stronger reputation with both internal and external stakeholders. However, given the overall level of disclosure is still relatively light, additional research is needed to help investors fully understand how healthcare companies are approaching climate adaptation and to highlight the adaptation-related risks and opportunities in portfolios.

Examples of climate-related disclosures from companies in the healthcare sector include:

- Some large pharmaceutical companies are now highlighting the pressures that healthcare is facing from climate-related nature degradation, and the need to look at interconnections between climate change, nature and health to adapt to these risks and avoid financial losses.
- One drug manufacturer disclosed that it is looking to align research with the changing burden of disease and invest in rapid response capabilities, for example developing treatments for malaria with experimental compounds and pan-serotype dengue inhibitors, or investing in treatments for non-communicable diseases (diabetes, cardiovascular diseases, respiratory diseases) that may be exacerbated

by climate change. Another drug company has disclosed that it is constantly expanding its portfolio to include more comprehensive options for diseases likely to become more prevalent as a result of climate change, such as dengue, Chikungunya, Zika, and Lyme disease.

- One global medical technology and services company acknowledges the US Center for Disease Control and Prevention's assessment that climate change may lead to an increase in respiratory and cardiovascular disease, and suggests it can contribute to managing this risk through its existing products and services. It forecasts a potential increase in patients demanding related services and an additional potential increase in revenue.
- Recent adaptation efforts disclosed by healthcare providers have included landscape design at a Colorado facility to mitigate wildfire exposure and the installation of generator power for locations in Puerto Rico with hurricane exposure.
- One pharmaceutical distributor has partnered with a third party to assess the physical climate risk exposure of its top 100 locations across the globe, which showed moderate risk exposure with wildfires the greatest source of risk. It notes that its ability to provide drug distribution services to customers could be impacted by climate change and weather events and, as a result, has designed its distribution network to provide backup for all distribution centres, including proactive planning for alternative transportation methods and delivery routes. Other distributors cite a supply chain structure with a broad geographic footprint, dual sourcing for key products and inventory management as strategies for pre-emptive climate adaptation.
- A distributor notes that the cold chain is vital for delivery of drugs. As temperatures rise, the ability for packaging to withstand heat shortens, so the company is working on new packaging solutions that can maintain temperatures throughout transit, protecting products.

Potential adaptation solutions across the healthcare value chain

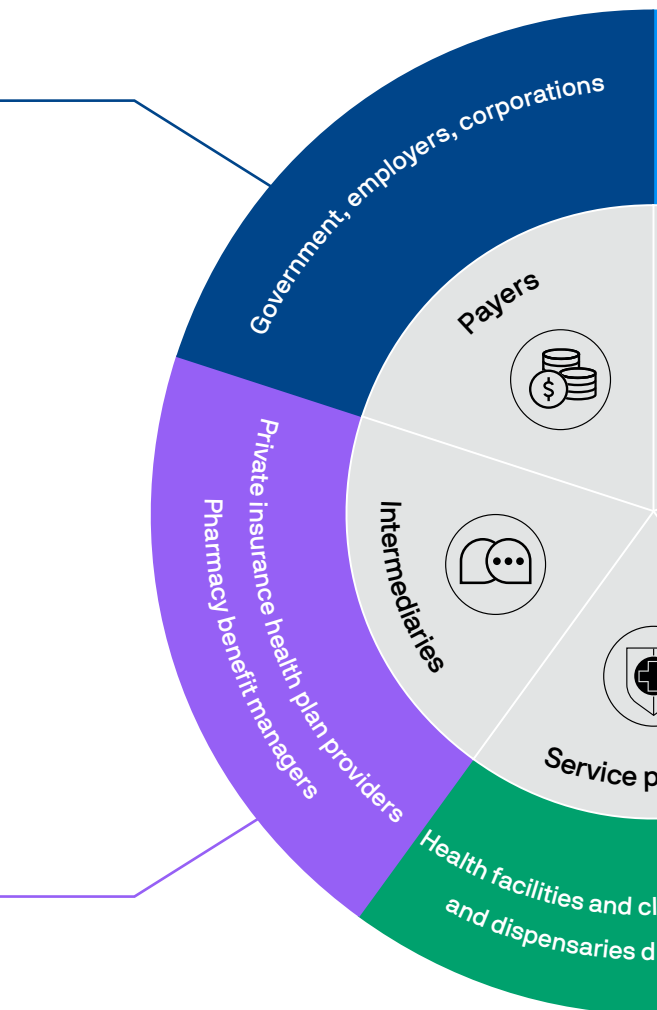
Actors across the healthcare value chain face operational and financial risks from climate shocks and stresses that will compound the growing burden of climate-related ill health by reducing the healthcare system's ability to cope. Adaptation aims both to protect healthcare companies and their consumers from these climate risks, and to allow companies and countries to take advantage of new opportunities. For these reasons, we have focused in on the healthcare sector to assess the numerous potential health adaptation solutions that healthcare companies could consider in more detail.

Overall, adaptation aims both to protect healthcare companies and their consumers from physical climate risks; and to allow companies and countries to take advantage of new opportunities. As companies look to respond to changing healthcare requirements, there are numerous potential solutions they could consider. **Exhibit 4** highlights potential adaptation solutions covering two bases. First, we look at investable solutions, via companies providing products and services that address climate risks to health. Second, we look at solutions that companies themselves could implement so that their operations become more resilient to climate change health risks.

Exhibit 4: Potential adaptation solutions across the health ecosystem

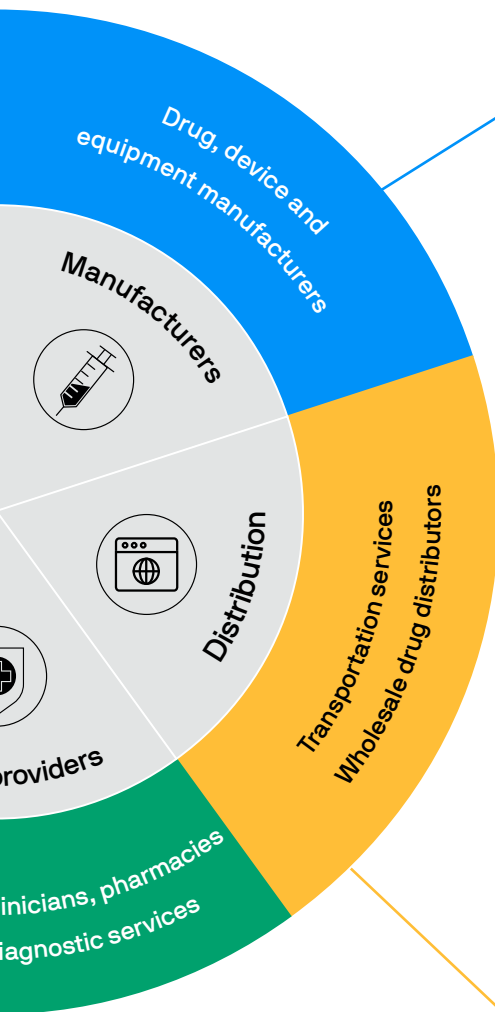
Risks	Impacted economies, communities and work forces: Climate change-related health impacts are increasingly recognised as a key risk factor for financial stability, for example in the United States' 2023 Economic Report of the President.
Opportunities	<p>Implement robust climate adaptation plans: Government budgeting and investments should factor in health risks and impacts from climate change and create national strategies, as well as hazard-specific strategies such as Heat Health Action Plans (HHAPs). Many European Union member states, for example, have submitted their adaptation plans and actions to the Climate-ADAPT database. The US recently released a National Climate Resilience Strategy which includes discussion of strategies to make healthcare more resilient. This can inform future planning to ensure funds are available for pre-emptive and reactive climate adaptation.</p> <p>Financial incentives for organisations to pursue adaptation activities: Lowering cost of capital requirements in return for evidence of adaptation planning; integrating adaptation KPIs into bond and loan covenants.</p> <p>Concessional public healthcare adaptation funding: Increasing the deployment of blended public-private finance would help provide the capital needed to implement health adaptation projects and solutions.</p>

Risks	<p>Increase in insurance claims: Climate change-related ill health could lead to a rise in health insurance claims and subsequent payouts. This issue could also impact companies via workplace health insurance schemes that see claims from increased general ill health, and even workplace-specific claims related to extreme heat and air pollution (in the case of outdoor workers).</p> <p>Operational challenges: Providers could see higher costs of capital and insurance where they do not demonstrate sufficient awareness of climate change and efforts to adapt to it in their strategy and risk management.</p>
Opportunities	<p>Insurance products that incentivise climate-related risk prevention: Integration of metrics related to the environmental sustainability of providers and patient interventions into value-based insurance contracts. Lower premiums for policyholders implementing climate related adaptation measures.</p> <p>Investing in risk management information systems and tools for stress testing: This investment can provide insurance firms with a clearer view of their exposure to climate-related hazards to better guide readiness for potential losses.</p> <p>Adapt business model and strategy: Health plan providers might wish to focus more on the impact of environmental factors on the health of their members and how these risks can be mitigated.</p>



Risks	<p>Physical damage to healthcare facilities: Hospital threats such as heatwaves, storms, flood and moments of crisis. Facilities not adapted to climate change.</p> <p>Risks to healthcare workforce: Healthcare delivery disruption of health information systems, limited staff.</p> <p>Increased demand for emergency care: Health needs from extreme weather events hurt capacity.</p> <p>Increased demand for remote care: Climate change restricted ability for patients to travel for care.</p>
Opportunities	<p>Robust disease surveillance: Tools integrating environmental data might include user-friendly interfaces to open up data.</p> <p>Robust contingency plans: Healthcare facilities during disasters and for treatment of specific conditions. Staff to be able to cope with the increase in demand.</p> <p>Analytics for tailored care: Environmental health data and targeted care. The use of this data is part of precision medicine interventions, enabled through innovations such as pre-emptively improving health and tailoring health care.</p> <p>Telemedicine and remote monitoring: Remote care help prevent climate-induced illness due to early detection.</p> <p>Reduce infrastructure disruption: Climate-proofing facilities, off-grid water / generator power if grid fails to withstand extreme heat and cold.</p>

Healthcare value chain



Risks	<p>Depletion of natural capital poses significant risks: Failure to safeguard ecosystems from climate change could lead to fewer pharmaceutical development options. Medical devices could lose efficacy: high temperatures and humidity are known to accelerate degradation of certain medical devices, especially those with sensitive components and material.</p> <p>Reliance on other climate-sensitive inputs: Pharmaceutical and medical manufacturing companies rely on inputs like water that are at risk from climate change to produce their products.</p>
Opportunities	<p>Biobanking and synthetic biology: These techniques can help to preserve and recreate important genetic material that may be lost due to climate change and nature degradation.</p> <p>Resource efficiency and waste reduction: Leveraging new processes (such as AI-enabled sensors) to minimise waste and manage resources to adapt to future resource scarcity. Investing in reusable medical equipment and medical device reprocessing.</p> <p>Accelerating vaccine development: Vaccination can support healthcare system resilience by pre-emptively reducing future demand; as well as improving general health resilience against more prevalent infectious diseases.</p> <p>Manufacture of products to mitigate climate-related health impacts: These products can include air filters, devices to check water quality, heat early warning systems, or protective equipment for exposed workers.</p> <p>Environmental health data to better predict vulnerabilities and for surveillance of viruses: This data can help predict when treatments will be needed, including more detailed climate scenario analysis and leveraging of real-time information. An example of data mapping would be overlaying data on drought risk with patient location data.</p> <p>Medical technology innovation: Redesigning devices to ensure they can function even under climate-stressed conditions.</p>

Hospitals and other critical facilities are often not adapted to cope with wildfires, which can result in electricity and water outages at key sites. Climate risks may ultimately become unusable stranded assets. Healthcare delivery can be disrupted due to workforce displacement and the resulting access to important patient records. Healthcare providers could see lower revenues as spikes in urgent care demand reduce capacity for more lucrative elective healthcare offerings. Climate change can lead to both greater demand for medical care and

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Risks	<p>Supply chain disruption: Timely deliveries are vital for medicines and medical equipment, and health and social care delivery relies on major infrastructure, road networks, utilities and information technology. Disruption to any of this infrastructure due to climate change impacts will have knock-on effects for supply chains and service delivery.</p>
Opportunities	<p>AI supply chain solutions to improve resiliency and transparency: AI could assist with demand forecasting, re-optimising delivery routes in the case of climate-related shocks, automation of data processing to speed up delivery, and enable digital twins to model impacts of changes in external conditions or internal operating parameters.</p> <p>Cold chain technology: Robust investment in cold chain logistics to ensure transportability of health products and equipment under climate-disrupted conditions and with product-specific compliance.</p> <p>Smart delivery technology: Solutions for uninterrupted delivery in the case of supply chain or access challenges, such as medical drones for drug delivery.</p> <p>Supply chain reorganisation: Backup suppliers to handle critical flows of medicines and devices throughout the supply chain. Includes localisation and diversification of supply chains.</p> <p>Reduce reliance on delivery via supply chain: An example is to increase reprocessing, or reusability of medical devices and equipment. Doing this onsite or locally would be particularly effective.</p>

Conclusion

Climate change is increasing the risks to health across the world. With many impacts already visible today and set to multiply in future, we believe it is advisable for investors to begin paying greater attention to the topic of climate change and its impacts on health and the healthcare sector. The risks that climate change poses to the healthcare sector and the broader economy may not materialise over the time horizon of some investors today, but we believe it is in the best interests of companies and their investors to be prepared.

Yet physical climate risk does not have to be solely a source of risk and economic damage: it can also be an opportunity to revolutionise the way in which healthcare is delivered, for the better. Understanding the risks that climate change poses to health, the healthcare sector and the wider economy can therefore help investors identify ways to change the existing healthcare paradigm. The evolving landscape of adaptation finance and policymaker support for adaptation, alongside the threats that climate change poses to health and the healthcare sector, highlight the growing importance of this emerging area.

References

Exhibit 1: Impacts of climate change on health around the world

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Exhibit 2: Climate change impacts on health and healthcare systems

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