

Building resilient health systems: adapting to climate change

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Introduction:

Climate change presents a profound threat to human health, creating new challenges and increasing the demand for resilient health systems. The frequency of climate-related events such as heatwaves, wildfires, droughts, floods, and storms is rising, leading to a broad range of health impacts. These include heat-related illnesses, injuries, mental health challenges, vector-borne diseases, food- and water-borne illnesses, as well as cardiovascular, respiratory, and renal conditions. This leads to rising service demands, strained infrastructure, disrupted supply chains, and increasing costs, requiring healthcare systems to enhance their resilience to adapt to climate change.

Shifting to climate-resilient healthcare systems is critical

The World Health Organization (WHO) defines climate-resilient and environmentally sustainable healthcare facilities as those that can anticipate, respond to, cope with, recover from, and adapt to climate-related shocks and stresses. These facilities should also minimise their negative environmental impact and take advantage of opportunities to improve it, which would ensure sustainable healthcare for targeted populations and protect the well-being of future generations.

Investing in healthcare systems is essential; the WHO estimates an additional 250,000 deaths annually between 2030 and 2050 due to climate-related issues like undernutrition and heat stress.

At an Economist Impact meeting held in September 2024, experts highlighted the importance of enhancing health resilience by improving patient outcomes and sustainability at multiple levels. They stressed that resilient healthcare facilities must remain operational during emergencies and integrate with existing public infrastructure, such as shared energy grids. Additionally, communities need to build their own climate resilience to effectively address vulnerabilities before crises arise. A resilient supply chain and a healthcare workforce aware of climate hazards are crucial, alongside financial resilience in an under-invested sector. The WHO framework calls for a sufficient number of skilled staff empowered and informed to respond to these challenges.

Attention needs to focus on the vulnerable

Experts agree that those most vulnerable to the impacts of climate change are socially isolated individuals, especially older people, those living with disabilities or mental health issues, and children. The WHO also identifies high-risk groups such as those living in poverty, women, indigenous peoples, outdoor workers, and those with pre-existing medical conditions. Healthcare systems must ensure that they can continue to provide quality care, while simultaneously implementing climate adaptation strategies. Additionally, the sector must mitigate its growing carbon footprint, which contributes 4-4.9% of global greenhouse gases, thus worsening health outcomes.



Nations with weak healthcare infrastructure, particularly in developing countries in Africa and Asia, will struggle to cope with climate change. Experts note these countries often face multiple crises such as famine and drought, hindering their ability to provide even basic health services, let alone adapt to unfolding climate risks. The World Bank estimates that by 2050, Sub-Saharan Africa will bear 80% of global health costs related to climate change-driven increases in malaria and diarrheal diseases.

The cost of inaction is substantial. A 2024 report predicts climate change will cause 14.5m deaths and \$12.5trn in economic losses by 2050. In the United States, health costs related to climate impacts exceed \$1 trillion per year, disproportionately affecting the vulnerable. Globally, inaction could push 40 million people into extreme poverty by 2030, further straining healthcare systems.

Gaps abound in financing and resource allocation

To address the costs of inaction, funding gaps must be bridged. The United Nations Framework Convention on Climate Change (UNFCCC) estimates that global health adaptation will

require up to \$29.4bn annually by 2050, yet less than 5% of development assistance targets health, with health-specific projects receiving only about 0.5%. Health and climate financing often operate in silos, leading to missed opportunities for integrated funding.

Investing in health systems can yield significant financial returns by cutting costs tied with climate impacts and improving patient outcomes. For instance, experts suggest that for every dollar spent on resilience, there is a return of \$4 to \$5. This drives innovation; for example Northwell Health's resiliency plan outlined strategies to enhance its infrastructure with emergency generators, hybrid energy solutions, and renewable energy. By the end of 2021, New York's largest healthcare provider had reduced emissions by 28.5% and electricity usage by 4.5%, and sourced 12.7% of its power from renewables.

These investments not only lower the carbon footprint but also enhance overall health outcomes. Strengthening facilities' resilience allows healthcare providers to better prepare for climate threats like heatwaves and flooding, which leads to improved disease management and fewer hospitalisations. This proactive approach ensures the continuity of affordable quality care and mitigates the negative impacts of health emergencies on vulnerable populations.

Since patient care accounts for over 40% of healthcare emissions, establishing a well-funded climate-literate healthcare workforce is essential. Experts agreed that integrating training on sustainability and climate resilience into healthcare curricula will enable clinicians to understand their environmental impact on product life cycles and carbon footprints. For example, switching to carton-less packaging for one order of 200 flasks of antiretroviral treatments for Venezuela saved \$89,132, and reduced carbon emissions by 2,193 tonnes. Educating staff on climate change also enables them to respond to emergencies and address patient concerns more effectively.

Experts Acknowledge that Grassroots Action is Key

Investing in local grassroots communities is also crucial for enhancing climate resilience. In the United States, such investments could save up to \$18 billion annually. Experts said that during climate shocks, patients should have access to care outside of hospitals, allowing them to stay in place and avoid extreme impacts. For example, a pilot program in San Francisco installed air filters in recreation centres during wildfires or times of poor air quality, allowing vulnerable people to stay indoors safely. Other initiatives cited by roundtable experts include partnering with local organisations for food security and implementing 'power solutions' like microgrids that power hospitals and support underserved communities. One consultant said the St. Elizabeths' microgrid in Washington D.C. could save over \$100m over the next ten years.

Similarly, nations in the Global South, such as Vietnam, are taking proactive steps within communities to enhance healthcare resilience. The government has collaborated with the UN and institutions like the World Bank to set up solar-powered and battery-backed community

health centres in highly vulnerable coastal areas and the Mekong Delta. These centres provide essential health services and feature telehealth rooms that allow patients to consult with healthcare providers remotely, ensuring continuity of care during disasters. Furthermore, Vietnam is digitising various parts of its healthcare system – including procurement of health supplies, waste management, and early warning systems for infectious disease outbreaks – to build resilience and efficiency.

Innovative financing could be scaled up

There is a pressing need for innovative financing solutions to support such initiatives. Experts suggest that a hybrid financing approach could mitigate long-term project risks and ensure sustainable healthcare solutions, especially in the face of significant funding shortfalls. An approach that combines private, public, and philanthropic funds enables both affluent and resource-poor countries to transition to cleaner health systems. Panellists discussed options such as social impact bonds, green banks, government grants, and philanthropy to support community-focused adaptation projects.



Exemplifying such a hybrid financing model is the Green Climate Fund, which has partnered with the UN and WHO to create a climate and health co-investment facility that aims to support 14 countries across Africa, Asia, and Southeastern Europe in reducing health-related vulnerabilities and emissions, leveraging both public and private capital. In Asia, the UN is working to incorporate climate risks into health planning, enhance surveillance and early warning systems, and promote regional knowledge-sharing.

To further attract investments in climate-resilient infrastructure, tax incentives and subsidies are being used. For instance, Boston Medical Center's clean power prescription program uses solar energy to provide power credits to energy-insecure patients, funded through tax credits and philanthropic contributions. Evaluating these initiatives will help identify which programmes are most effective for scaling up.

There is a need for standardised metrics

Experts emphasise the need for standardised metrics and tools to integrate innovative financing and climate change considerations into healthcare systems. This requires collaborating with stakeholders, including those at senior policy levels, to generate datasets that identify population risks and predict the impacts of severe climate events. To enhance these efforts globally, accreditation and technical guidance are essential for accessing climate funds and addressing issues related to poor policy implementation and evaluation.

Community involvement is crucial for scaling interventions, especially in vulnerable areas where outdoor workers, particularly rural women, face extreme heat during the day and indoor air pollution from cooking at night. Aligning data standards with environmental health determinants in these areas, like heat and air quality, can help forecast disruptions from climate-sensitive threats. Additionally, risk alerts can inform individuals about their vulnerabilities to heat and air quality issues.

A recent survey shows 90% of people want more investment in protecting their health from climate change, especially in the Global South, where it is seen as a greater threat than wars and geopolitical instability. Ahmedabad, India serves as an example of how to use climate finance to implement tailored heat action plans that enhance preparedness and reduce impacts for those most at risk. The city runs public awareness campaigns on heat dangers and trains staff to recognise and respond to heat-related illnesses. It has established cooling centres and specialised heat stroke wards, as well as a colour-coded heat alert system that provides up to five days' notice of high temperatures. This system facilitates agencies to work together so that residents, city officials, and health services are well prepared.





Conclusion

In summary, experts highlighted the pressing need to enhance health system resilience in the face of climate change, particularly for vulnerable populations such as isolated communities and those in developing countries. Investing in health systems by improving healthcare infrastructure, optimizing supply chain and waste management, and advancing the development and use of innovative medical devices can significantly reduce carbon emissions, enhance patient outcomes, and substantially offer financial returns in the long run. A coordinated, community-led effort is essential to align data systems with innovative financing, ultimately strengthening infrastructure, innovation, supply chains, and workforce skills for a better global healthcare system.

This article is based on a roundtable discussion organized by Economist Impact Events on 25 September 2024 during Climate Week. The roundtable, which involved stakeholders across the healthcare spectrum, was moderated by Latifat Okara, Principal and Americas Regional Lead, Health Policy and Insights, Economist Impact. Bayer AG sponsored the event.

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