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Fellowship Capstone | Policy Brief

Climate Health Literacy: Building a Resilient and Informed Healthcare System in the Face of Climate Change

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I. Executive summary

Climate change poses escalating threats to public health, including increased heat-related illnesses, respiratory conditions, and mental health challenges. Despite these risks, climate-health education remains insufficient in medical training and public health outreach. This brief advocates for integrating climate health literacy into healthcare education and community programs to enhance preparedness, reduce health disparities, and foster resilient communities.

II. Overview

The intersection of climate change and health is increasingly evident through rising temperatures, deteriorating air quality, and the spread of vector-borne diseases. However, many healthcare professionals lack the training necessary to recognize and manage the health consequences of these environmental changes. Institutions such as the Global Consortium on Climate and Health Education have called for urgent curricular reform to close this knowledge gap. Despite growing consensus, implementation remains inconsistent due to institutional inaction, limited accreditation requirements, and political polarization surrounding climate discourse. To build a resilient healthcare system, it is essential to embed climate health literacy into the education of physicians, nurses, and public health professionals, as well as broader public engagement strategies that empower communities to respond to climate-driven health risks.

A. Relevance

The health impacts of climate change are already measurable and rapidly worsening. Heat-related mortality in the U.S. increased by 117% between 1999 and 2023, with 2,325 deaths recorded in 2023 alone, marking the deadliest year on record. In parallel, air pollution, exacerbated by higher temperatures and wildfires, has intensified respiratory diseases such as asthma and COPD, especially in children and the elderly. Mental health impacts are also substantial—one global study published in *The Lancet Planetary Health* revealed that 59% of youth surveyed reported feeling very or extremely worried about climate change, and more than 45% said their anxiety affected their daily life and functioning. These effects are not evenly distributed; historically marginalized and low-income populations face the highest exposure and the fewest resources to adapt. Communities of color, especially in urban areas, are more likely to live in "heat islands" and areas with poor air quality. Without intentional integration of climate health education into healthcare delivery and public policy, these inequities will deepen, and healthcare systems will

remain ill-equipped to meet the emerging demands of a changing climate.

III. History

A. Current Stances

The recognition of climate change as a health issue has expanded steadily over the past two decades, catalyzed by research linking global environmental changes to rising disease burdens. The Centers for Disease Control and Prevention (CDC) launched the Climate-Ready States and Cities Initiative in 2010 to help public health departments build resilience to climate-related threats. Academic institutions have also started to respond. Emory University, the University of California San Francisco (UCSF), and Columbia University have developed climate-health curricula or electives for medical students and public health trainees. In 2021, the American Medical Association declared climate change a public health crisis and urged the integration of climate education in medical schools and continuing education programs. Despite these efforts, a 2020 study in *JAMA Network Open* found that only 15% of U.S. medical schools incorporated climate change into their core curriculum, and even fewer offered hands-on, case-based instruction. Indigenous health frameworks and traditional ecological knowledge have long emphasized the relationship between environmental balance and human health, providing a culturally rich foundation for future-oriented, sustainable health practices. Integrating these frameworks into mainstream education could deepen the relevance and inclusivity of climate health literacy efforts. As climate instability accelerates, the need for robust, standardized climate-health education becomes increasingly urgent to safeguard both population health and healthcare system sustainability.

IV. Policy Problem

A. Stakeholders

The key stakeholders in advancing climate health literacy include medical schools, nursing programs, and public health institutions responsible for shaping curriculum and professional development. Healthcare professionals such as physicians, nurses, and public health workers, must be equipped with the tools and knowledge to identify and respond to climate-related health risks. Accrediting bodies and government agencies like the CDC and HHS play a pivotal role in standard-setting and funding educational reforms. State and local policymakers also influence the integration of climate-health content through public education mandates and healthcare legislation. Nonprofit organizations, community health advocates, and environmental justice groups support outreach efforts, particularly in underserved communities disproportionately affected by climate change. Collaborative action among these stakeholders is essential to ensure that climate health literacy becomes a standard, not a supplement, in healthcare education and delivery.

B. Risks of Indifference

Ignoring the call for climate health literacy risks compounding existing health disparities and weakening our national healthcare infrastructure. As temperatures rise and extreme weather events grow more frequent, healthcare professionals lacking climate education may misdiagnose or overlook climate-driven illnesses, leading to preventable health complications and deaths. Without systematic integration of climate

knowledge, public health campaigns may fall short in educating at-risk communities, leaving them unprepared to mitigate or respond to disasters such as heat waves, flooding, or poor air quality.

Inaction also imposes economic strain. Climate-related health issues already cost the U.S. billions annually through hospital admissions, lost labor productivity, and disaster response efforts. According to a 2021 report in *GeoHealth*, health-related costs of climate change could exceed $820 billion per year by 2100 if trends continue. Additionally, failing to prepare a climate-literate healthcare workforce undermines the adaptability and trustworthiness of the medical field in times of crisis. Public confidence in science and health authorities, already under strain during the COVID-19 pandemic, may erode further, especially among underserved communities who suffer the greatest losses.

C. Nonpartisan Reasoning

Climate health literacy is a nonpartisan imperative rooted in public safety, economic stability, and evidence-based medical practice. Regardless of political ideology, protecting population health from environmental threats aligns with core values of national security, economic prudence, and community resilience. Ensuring that healthcare professionals are equipped to recognize, treat, and prevent climate-related illnesses is not about political rhetoric, but clinical competence and ethical responsibility.

Embedding climate education into medical and public health training can prevent costly health emergencies and support better outcomes across all demographics. It also promotes interdisciplinary collaboration, drawing on environmental science, epidemiology, and social justice to foster more holistic and equitable care systems. In short, climate health literacy ensures the healthcare field can meet the demands of today's climate realities and tomorrow's emergencies.

V. Tried Policy

Efforts to address climate change in the health sector have emerged in fragmented but promising forms. The Climate-Ready States and Cities Initiative provided funding and technical assistance to public health departments in more than 18 states to assess climate vulnerabilities and implement adaptive strategies. While this initiative established valuable frameworks, its reach has been limited by inconsistent funding and lack of nationwide adoption. Furthermore, few of its projects focused explicitly on educating frontline medical providers.

In higher education, universities like Harvard, Columbia, and Emory have pioneered climate and health curriculum, offering electives and certificate programs to medical and public health students. However, these programs remain optional and underutilized. A 2020 JAMA Network Open study revealed that only 15% of U.S. medical schools incorporated any form of climate change education into their core requirements. Without standardized guidelines from accreditation bodies such as the Liaison Committee on Medical Education (LCME), uptake remains low and uneven.

A more community-centered model can be seen in the Navajo Nation's integration of traditional ecological knowledge (TEK) into health promotion. Programs led by Indigenous health organizations have used TEK to connect environmental changes with community well-being, offering a culturally grounded, prevention-first approach. These efforts demonstrate the value of incorporating diverse epistemologies into climate-health solutions. However, without federal support and institutional backing, such initiatives often struggle with scale and sustainability.

VI. Policy Options

1. Mandate Climate Health Literacy Standards in Medical and Public Health Education. Establishing national climate health education requirements through medical accreditation bodies (LCME, ACGME, CEPH) would ensure uniform integration of climate-related content in core curriculum. This could include case-based learning on heat illness, climate-induced migration, disaster response, and environmental justice. Institutions could also receive federal funding or performance-based grants for implementing comprehensive training programs, including continuing education for current professionals.

2. Expand Community-Based Climate Health Outreach Develop federally supported, locally executed climate-health education programs targeting high-risk communities. These programs could train community health workers to educate residents about environmental exposures, emergency preparedness, and protective measures. Partnerships with schools, libraries, and faith-based organizations could further disseminate accurate information. Such initiatives could be modeled after successful programs like the CDC's REACH (Racial and Ethnic Approaches to Community Health) initiative, with added climate components.

3. Establish a National Climate Health Corps Create a service corps of trained early-career professionals to work in underserved areas, promoting environmental health awareness and assisting with local resilience planning. This corps would function similarly to the National Health Service Corps but with an added focus on climate adaptation. It would offer incentives such as student loan forgiveness and stipends, and it would help close healthcare workforce gaps while building public health capacity.

VII. Conclusions

Climate change is a public health emergency, and our healthcare system must evolve to meet this challenge. Integrating climate health literacy into medical and public health education is a strategic, cost-effective, and urgently needed reform that supports clinical preparedness, public safety, and environmental justice. The risks of ignoring climate-driven health threats are steep: rising mortality, widening disparities, and overburdened health infrastructure. But with bold, coordinated policy action, we can equip healthcare professionals and communities with the knowledge they need to respond effectively.

Mandating climate-health education, expanding outreach efforts, and investing in service-based climate health careers are not just solutions, they are prerequisites for a resilient, equitable future. As environmental instability accelerates, the path forward is clear: educate, empower, and prepare.

Only then can we ensure that our healthcare system remains not only reactive but resilient in the face of climate change.

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