



# The art of medicine

## Climate disasters and global social medicine

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Henry suffered a stroke in 2008, 3 years after Hurricane Katrina destroyed his home in New Orleans's Lower 9th Ward, a historic Black community. His diabetes had worsened in the aftermath of Katrina as he struggled to find pharmacies with insulin and other necessary supplies. His wife, Gladys, blamed the stroke on the receipt of a second denial-of-funds letter from the Road Home Program; without that assistance, they could not rebuild their home. The stroke left him paralysed. Gladys did her best to care for him, but she saw Katrina as the disaster that never ended. The couple tried to remain optimistic in their small Federal Emergency Management Agency (FEMA) trailer, but in 2009 depression became another of their medical problems.

For Charles and Yvonne the problem was not flood but fire. Yvonne has diabetes, osteoporosis, hemiplegia, and post-traumatic stress disorder, the last two the result of a gunshot injury years earlier. They survived on disability payments and income Charles received as Yvonne's caregiver. They fled their home in Paradise, CA, USA, when a forest fire destroyed the community. In a matter of minutes, they had become refugees in their own land: they lost everything apart from their car, their dog, and Yvonne's wheelchair. The couple discovered that most shelters could not care for people with disabilities. They found vacancies in motels, but the beds were too high for Yvonne to navigate on her own. Without her usual bandages and medications, her pressure sores worsened. She struggled to travel to the FEMA station to apply for grants. Relatives eventually found them a new home, but Charles had already developed stress, hypertension, and depression.

Such stories are becoming more common as the challenges of living with disability and chronic disease are exacerbated

by the disasters induced by the climate crisis. The fires, floods, heatwaves, polar vortices, and hurricanes will only get worse, inevitable consequences of anthropogenic global warming. Paradise burned in 2018, in what was then the worst California fire season on record; 2020 was worse. New Orleans flooded in 2005, in what had been the most active hurricane season in Atlantic history; 2020 was worse. Similar problems occur the world over, from massive fires in Australia and Brazil in 2019 and 2020, to unprecedented typhoons in the Pacific and Indian Oceans. Environmental disasters will impact everyone on the planet, but their risks are unevenly distributed. Disaster medicine has focused attention on the acute response to provide immediate relief to victims. An environment-focused global social medicine approach to climate change disasters calls for something more.

First, an environment-focused global social medicine approach recognises that the growing risks are unevenly distributed. While the climate crisis renders life everywhere increasingly precarious, some people are more at risk than others. Those living in communities marginalised by racism and poverty are at increased risk. These pre-existing vulnerabilities shape the outcomes of disasters. The linkages between vulnerability and outcome are most visible in low-income countries with insufficient resources to invest in resilience. But even in high-income countries that have ample resources, the investments are not equally available to all. As Meyers and Rose Hunt have argued, there is "the other global South", the deprived and less visible communities that are exposed to segregation, discrimination, under-investment, and environmental racism. Structural racism and segregated development in the USA have disproportionately exposed Black, Latinx, and Indigenous populations to flood-prone neighbourhoods, heat islands, air pollution, industrial chemicals, and other toxic threats. These exposures, alongside many other factors, contribute to chronic diseases that make recovery much harder, and mortality more likely, after a disaster. Clinicians should attend to these patterns of environmental exposure by thinking about which patients are most at risk from living next to oil refineries, waste incinerators, or congested roadways, and whose pre-existing chronic disorders will need treatment. Disasters worsen exposures, whether by spilling industrial pollutants into floods and smoke, or by disrupting the fragile subsistence on which many poor people rely. As long as inequality, economic precarity, and environmental racism persist, we must take these factors into account before our efforts at disaster relief and response can succeed.

Second, we need to direct attention to caregiving. Many people with chronic disease require networks of care that bridge family, community, and medical resources and



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involve various arrangements of human and technological care. These networks require the stable functioning of banks, pharmacies, and power grids and can be fragile. When disasters strike, patients with chronic conditions face disruptions that can last months, even years. These impacts may generate more deaths than the immediate disaster itself. As with the risk of disease, the risk of medical vulnerability is not distributed evenly. The risk falls hardest on people with the fewest resources and often follows divisions of race and class. Attending to the fragility of informal networks of family and community care can reveal the many kinds of preparedness that are required to mitigate the effects of climate change and natural disasters in settings of poverty and environmental racism. Targeting areas with known exposure to environmental toxins and climate risks may help locate patients with chronic illness who will require care in the aftermath of disaster. Disaster planning and mitigation need to focus not only on survival, but also on caregiving that endures.

Third, we need to expand the conceptual timeframe of disaster response. Relief efforts after fires, floods, and other disasters generally focus on the acute phase: property destroyed, people killed, and the suffering experienced by countless others. These problems are dramatic and demand an urgent response. They are also susceptible to time-limited interventions that can provide gratifying results. Food, water, and clothing can be sent. Temporary shelters can be built. Medical relief teams can fly in to provide acute care. But the acute drama of a disaster can obscure the chronic problems that existed before it and cause suffering and deaths long after the disaster and relief efforts have ended. An environment-focused global social medicine approach takes seriously the challenge of caregiving and demands a different temporal framing of preparedness, response, and remedy. This approach requires appreciation of chronicity, toxic exposures, pre-existing chronic disease, ongoing care needs, and the racial, ethnic, and class disparities that helped forge them. The crisis began not with the disaster, but when social structures began to produce medical and environmental vulnerabilities. Nor does the crisis end when disaster aid winds down. The crisis extends far beyond to include efforts to reconstitute life amid the burdens of poverty, racism, and disease. Disaster events, therefore, demand accountability for both the vulnerability that has been long in the making, and the efforts to provide rescue and relief over the recovery that follows.

Fourth, this reorientation towards caregiving over time and beyond the clinic reveals the need for physicians to connect with local organisations, led by people who represent their community, to learn how to help mitigate the health effects of climate crises. This expansion of clinical care beyond prevention to advocacy is something that practitioners of social medicine have historically always aspired to do. Yet this advocacy needs to target

the structural racism and other inequities that put some people at increased risk. One path is for physicians to work alongside environmental and climate justice organisations led by people of colour. One example is WE ACT for Environmental Justice. In its work in New York City, this organisation receives funds that non-profit hospitals must invest for the benefit of their communities (to avoid tax penalties) and spends them on preventive efforts that address the fundamental causes of health inequities, including diet, stress, and air quality. Beyond this direct engagement with hospitals, WE ACT undertakes research to inform policy at the state and federal levels, supports the formation of a clean energy cooperative in northern Manhattan, and trains its members to advocate for improvements in air conditioning infrastructure to mitigate the growing problem of heat emergencies. To create the sustained community investments needed to address environmental injustices and their health consequences, physician-led efforts to address the climate crisis must ally with local community groups and work in solidarity with them. Broad-based efforts can mount collaborative advocacy against the interconnected problems of poverty, racism, and environmental injustice.

Social, economic, environmental, and political contexts amplify disasters, structure their impact, and shape our responses. We must recognise both the human contribution to so-called natural disasters and the social construction of vulnerability, especially the disastrous structures of social inequality and systemic racism that influence our relationships with environmental risk. Analyses grounded in environment-focused global social medicine can help to map who is at risk of both disease and disrupted caregiving. They can enable efforts—when political will is marshalled—to mitigate that vulnerability before and after the immediate disaster. A healthy recovery requires thinking about disaster as a time-extended problem. Physicians can intervene through care, planning, prevention, and advocacy efforts that are in synergy with what local, community-led environmental health organisations are already doing. Only through thoughtful analysis and determined political action will we be able to address the complex ways that floods, fires, epidemics, and other climate-change-related events will have an increasingly dire toll in the decades to come.

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All names in this essay are pseudonyms based on real persons whose stories are told here with permission.

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