

Opinion

Physicians, Climate and Revolution: Notes on systemic approaches to climate change

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Mark Mitchell, a preventive medicine physician working at George Mason University's Program on Climate and Health, has an acronym for those wondering what health effects of the climate catastrophe to expect: HEATWAVE. HEATWAVE stands for "Heat effects; Exacerbation of preexisting heart and lung conditions; Asthma; Traumatic injury caused by climate-related severe weather; Water- and food-borne illnesses; Allergies; Vector-borne diseases, such as West Nile and Zika; and Emotional and mental health impacts from experiences like loss of property or life due to climate-related disaster."⁽¹⁾ For clinicians looking to provide symptomatic relief, this is a helpful list, even if it is not exhaustive: climate change is also likely to result in a worsening of a range of nutritional diseases, skin infections, occupational hazards and even adverse ophthalmic outcomes.^(2, 3) Such lists fail, however, to recognize both the span of climate change, and that climate change itself is a symptom of broader processes with deep clinical implications.

Climate change is not the same as weather. Climate change is the intersection of human systems with the rest of the planet's biotic and abiotic ecosystems. In the United States, for instance, 2021's Winter Storm Uri in Texas, in which snowstorms and a cold snap resulted in 246 deaths⁽⁴⁾ was not an unprecedented event in Texas meteorological history,⁽⁵⁾ though it was rendered more likely by climate change.⁽⁶⁾ The sub-zero temperatures drove a spike in demand for electricity.

Texas has, since the 1970s, developed its own regulations for electricity purchase and transmission. In order to be free of US federal jurisdiction,⁽⁷⁾ the two major US electricity grids for the east and west of the country are physically disconnected from the network overseen by the Electricity Reliability Council of Texas (ERCOT). This means that there is no federally governed inter-state commerce within the wholly state-contained Texas electricity grid, and that other states are unable to supply extra electricity to Texas. The grid normally manages spikes in demand by raising prices as an incentive for producers to bring excess capacity

online. Despite raising electricity prices from an average \$38 per megawatt hour to \$9000 per megawatt hour, a cascade of failures knocked out fossil-fuel powered generating facilities. As a result, around 69% of the state experienced blackouts with an average length of 42 hours.⁽⁸⁾ The failure cascaded into other infrastructure: water treatment plants also lost power, putting 14.5 million people under a boil notice for their water.⁽⁴⁾

While 65.4% of deaths were attributed directly to the cold, a range of other factors were relevant in those, and the other deaths. Drug and alcohol abuse were linked to around 20% of the hypothermia cases, and other causes of death ranged from fatal car accidents to carbon monoxide poisoning as a result of trying to boil water and keep warm, to burn injuries sustained using flammable energy sources in the absence of electricity, to failures in power in assisted living centers. For many in Texas, this was a climate change-related event that compounded the effects of a prior one: Hurricane Harvey. In both instances, it was the lower-income and Black communities who were disproportionately affected.⁽⁹⁾

The reason that clinicians in southern Africa might consider this example is because it points to a broader range of drivers of mortality than is often understood to be directly attributable to climate change. Specifically, the impact of extreme weather was made worse by the failure of state capitalist infrastructure. When populations respond and organize to survive such extreme weather in the absence of adequate support, further mortality and morbidity is the consequence.

A widespread failure to understand the systemic character of climate change, and its implications for medicine, have led to approaches that replicate an individual focus on mitigation and adaptation to climate change. The UK's National Health Service (NHS), for instance, recently published its reflections on climate change, "Delivering a 'Net Zero' National Health Service".⁽¹⁰⁾ Its approach is to identify point-source pollution driven by its consumption, and then understand its capacity to fight climate change as

a set of consumption decisions that progressively lower that pollution. This approach should feel familiar. The NHS has simply undertaken a very large-scale carbon footprint evaluation of the kind that many readers will have undertaken individually.

Carbon footprint calculations were developed by the fossil fuel industry.(11) For that industry, such an approach helps to push responsibility not on the producers of fossil fuels and the legislative environments that enable them, but on their consumers. Such a maneuver encourages an addressing of climate change with incremental downstream tweaks, rather than to ask how the fossil-fuel industry itself stands in the way of the more substantive social transformations required to decarbonize society.

For those looking to think systemically about medicine, the individuating urge is hard to resist. It is exemplified by the NHS's focus on the primary sources of greenhouse gas emissions from its medicines - anaesthetics and pressurized metered-dose inhalers (pMDIs). As one article puts it, "The carbon footprint from 1 pMDI (200 doses) is estimated as equivalent to a 290-km automobile ride."(12) The comparison is helpful. One solution to the carbon footprint of a car ride is to switch to an electric car. A broader view might consider asking why individual cars - and their vast energy-use implications - are preferable to electrified public transport, or indeed whether a sedimented 19th century geography of working life itself might be to blame for the need for long commutes. The analogy holds for medicine: it's certainly better to have zero greenhouse gases in pMDIs than highly potent ones. But is it enough just to treat, or is there a call to prevent asthma? Climate change will certainly make asthma worse.(13) By concentrating on the inhaler, the NHS makes the decision to wait until the disease presents in the clinic. In other areas of public health, particularly around diabetes and diseases associated with poor diet, health care systems have traced causality back to the industries that profit from it. Many governments are prepared to address, for example, the obesity crisis by tackling the manufacturers of obesogenic foods,(14) with policies often spurred by the activism of clinicians tired of medicating the symptom but never being able to treat the underlying cause.

Climate change ought to be no different yet, as Naomi Klein observes, taking climate change seriously would 'change everything'.(15) The question for clinicians is whether there is the political appetite to confront the substantial interests that profit from the current fossil-fuel-driven economy. The chances are slim. The practice of medicine is always a reflection of the prevailing political order.(16) It is only in trying to change that order that physicians have pushed, and then found the boundaries, of change in medicine. Frantz Fanon's practices as a psychiatrist in French-occupied Algeria, for instance, point to the contradictory position in which physicians find themselves, as conflicted Hippocratic oath-keepers, and state-sponsored partisans.

"In a given region, the doctor sometimes reveals himself as the most sanguinary of colonizers. His identity as a doctor no longer matters. Just as he was a doctor in addition to being a property owner, so he becomes the torturer who happens to be a doctor. The dominant authority, for that matter, has organized the over-all behavior of the doctor as it relates to the struggle for liberation. Thus, any doctor treating an Algerian whose wound appears suspicious must, on penalty of legal action, take down the name of the patient, his address, the names of those accompanying him, their address, and communicate the information to the authorities."(17)

For the luxury-car driving doctor, the inclination to upset a healthcare system that depends on lower-paid community healthcare workers and nurses is, to some extent, already been 'organized', to use Fanon's language. But structural constraints needn't be destiny (18) in the re-imagining of a system that cares not just for patients, but for the planet in which they live. Such ideas, advanced for instance by Gabriele Winker, requires a transformation not just in the hierarchies within current healthcare systems, but the extension of care into realms that are currently firmly beyond healthcare.(19,20) This is, of course, a political enterprise, and one that reimagines the possibilities of state power after capitalism.

Such ideas are hard to entertain, their scope too difficult to comprehend because their demands are so at odds with the order that we have come to accept as normal. Yet if that order is precisely the one that spawns disease, as capitalism does through the climate crisis, then is the order that is at fault. When confronting colonialism, Fanon addressed this psychological struggle directly, urging those looking to make change "at all times and in all places to make explicit, to de-mystify, and to harry the insult to mankind that exists in oneself."(21) Fanon was a psychiatrist who had no time for conversations on the couch about one's mother. Such demystification happens not in individual therapy, but in collective action for systemic change. Within systemic change, there's more scope for addressing climate change as an accumulation of infrastructural shifts, behavioural change, and systemic resilience, as the case of Cuba suggests.(22) For such transformation to happen elsewhere, physicians will need, as those in Cuba already do, to join the revolution.

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