Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

The Journal of Climate Change and Health 5 (2022) 100092

Contents lists available at ScienceDirect

The Journal of Climate Change and Health

journal homepage: www.elsevier.com/joclim

Editorial

COVID-19 and climate change: Crises of structural racism

ARTICLE INFO

Keywords:
Climate change
Structural racism
COVID-19

Over the past year, as the United States raced and stumbled to address the COVID-19 pandemic, the climate crisis hummed and roared. In September 2020, we saw Californians don face coverings against the backdrop of a burning orange sky. Masks that were to provide protection against SARS-CoV-2, also blocked out the smog from a historic wildfire season. In February 2021, we watched as countless Texans were left homeless from an unseasonal freeze and inadequate infrastructure. With pipes blown, electricity lost, and houses flooded, a disproportionate number of families of color were forced to cram into emergency shelters with minimal social distancing. As these crises converged and even contributed to each other, a much older crisis reemerged: structural racism and the policy stagnation that refuses to address it. And, so we asked, what are the obligations of our healthcare community lying at the epicenter of such crises?

For generations, policies of structural racism have systematically undervalued and removed opportunity from non-White communities [1]. From the Black Hills of South Dakota to Boston's formerly redlined communities of Chelsea and Dorchester, such structural racism has limited medical access for communities of color, created cascades of comorbidities, and eroded social safety nets. Therefore, when SARS-CoV-2 landed on our shores, this systematic removal of resources saw Black, Indigenous, and persons of color experience twice the death rate from COVID-19 as White individuals [2]. As healthcare professionals, it is critical that we understand how such a historical removal of opportunity has led to these health inequities. Such an understanding is foundational to achieving the truly equitable solutions that we so desperately need.

The Black Hills in South Dakota tower over the Pine Ridge Reservation and the 35,000 Oglala Lakota who call the reservation home. These sacred granite cathedrals represent generations of Indigenous heritage and centuries of government atrocities, false promises, and negligence. Since the Fort Laramie Treaty of 1868, the Black Hills and the tribal nation of Pine Ridge have been legally recognized as belonging to the Lakota. Yet, despite this treaty and a 1980 Supreme Court ruling affirming Indigenous land rights, the Black Hills are still in federal and state ownership following their illegal annexation for gold mining in 1876. This history of government negligence continued in August 2020 when Governor Kristi Noem encouraged the 400,000-person, weeklong Sturgis Motor Rally to take place restriction-free in the Black Hills. The rally, which took place on the doorstep of Pine Ridge, would lead to widespread transmission in neighboring states and on the reservation itself. While for Pine Ridge, months of reservation wide lock downs, testing campaigns, and border control would be sabotaged [3].

Tackling such ingrained inequity requires righting past wrongs and being bold in our pursuit of justice. For Pine Ridge and the other 572 federally recognized Indigenous nations across the US a first step would be the honoring of federal Indigenous treaties. Honoring these 370 signed treaties, such as the Fort Laramie treaty, would have profound effects. They would finally return legally allotted land boundaries to Indigenous communities and require the federal government to guarantee adequate education and healthcare. For tribal nations, whose Indian Health Services clinics have faced a historical inadequacy of resources, such a commitment could profoundly improve their emergency healthcare response. But following through on centuries-old commitments, is only the first step. We must work with and learn from Indigenous communities to create systems and societies in better harmony with the land. Doing so must begin with a commitment to reinvest in the infrastructural backbone of these communities. As pandemic water shortages on Pine Ridge worryingly show, the climate crisis is here and urgently calls for investments in resilient infrastructure.

As we look towards the climate crisis, we must learn from and avoid the many shortcomings of the US COVID-19 response. Our attempts at buying our way out of social accountability with record breaking vaccine production and mandated masks played into these historic inequities. During the depths of the pandemic in 2020, those who have historically had resources and opportunity could much more easily achieve social distancing and safe pandemic practices. By repeating such a surface level approach for the climate crisis we will assuredly ruin our chances of providing adequate resiliency to frontline communities.

For the climate crisis, we must be skeptical of solutions that rely solely upon innovation and individualism. Climate change related increases in infectious disease incidence may require vaccine development and wildfire smog may require mask advisories. However, such innovation and individualism will only constitute a partial climate-health resiliency plan. We need systemic resiliency, adaptation, and mitigation plans if we are to protect our patients and the planet. When discussing climate related innovation, it is easy to get enamored by technocratic solutions especially when geo-solar engineering or carbon capture inspire the same euphoria as mRNA vaccine development. However, these technologies remain untested or underdeveloped and we must accept that it is not possible to immunize the atmosphere. For individual efforts, we should be similarly skeptical.

https://doi.org/10.1016/j.joclim.2021.100092
2667-2782/© 2021 The Authors. Published by Elsevier Masson SAS. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/)

Breaking individual cycles of carbon emission are nowhere near as effective as breaking cycles of COVID-19 transmission. Last year, Americans flew and drove less than any time since WWII and still US emissions dropped only 10.3%. To achieve a 50% reduction in emissions by 2030, as the scientific consensus recommends, it would be ill-fated to rely on such seismic shifts in individual behavior.

To achieve equitable climate solutions, we must look inward to successfully move forward. We must look critically at our institutions of healthcare and government if we want to achieve long-lasting, equitable progress. As structural racism has historically disempowered millions in this country and made so many communities disproportionally vulnerable to climate change, then our healthcare solutions must be centered upon empowerment. We recommend three categories of healthcare solutions for the climate crisis: healthcare accessibility that is grounded in the needs of under-resourced communities, changes to the US healthcare industry that are grounded in environmental justice, and health practitioner advocacy.

Like the Black Hills, the communities of Chelsea and Dorchester have long faced limited healthcare access due to a history of discriminatory federal policies. Since the New Deal in 1934, these historically non-White communities, have witnessed a systematic diversion and disinvestment of resources and infrastructure. The process known as redlining, has starved these communities and countless others across the US of amenities and subjected them to pollution from industrial plants and dumps which are more common in these neighborhoods. By extension these red lined neighborhoods experience disproportionately high air pollution levels and record levels of extreme heat. Boston Children's Hospital recognized this disparity and the resulting higher levels of childhood asthma in these communities and helped develop a community identification initiative that has reduced asthma-related hospitalizations by 79% and reduced missed school days by 45% [4]. To go further, healthcare institutions must also advocate for improved housing infrastructure that addresses indoor air pollution disparities. We recommend this partnership model of community centered care as the starting point for all healthcare intuitions.

If we are to systemically address environmental health disparities we must address the emissions of the US healthcare sector—a footprint that makes up 8.5% of the nation's greenhouse gas emissions [5]. The contribution of healthcare industry emissions to environmental health inequities is a sobering contradiction to our "do no harm" oath. We must power our healthcare infrastructure on renewable energy and use low carbon medical alternatives. We must push our healthcare institutions to divest from fossil fuel investments and remove the social license of an industry who is propagating this crisis. And we must encourage other healthcare institutions to match the significant momentum of nonprofit hospital systems in setting ambitious climate goals. However, healthcare is just one of many US sectors, and if we are to half US emissions by 2030, we must be willing to advocate for federal policy shifts.

Doing right by marginalized communities across this country will mean prioritizing policy that undoes structurally racist policies, builds community resilience through infrastructure, and mitigates US emissions through revitalizing our energy infrastructure and cutting our emissions in half by 2030. To achieve such systemic change, our united action will be essential. Actions that pressure our own healthcare institutions to electrify medical transportation fleets or institutionalize education on anti-racism and environmental justice are a reasonable start. However, we must also be willing to march towards city halls or statehouses, and pressure our elected officials to pass policies that will protect our patients. This may require us to dawn our scrubs or state our profession when speaking with elected representatives. As when the lives of vulnerable communities are on the line, we must view advocacy and collective action as a means to bring about equitable health outcomes.

In their scathing report on the global response to COVID-19 the Independent Panel for Pandemic Preparedness and Response denounced our societal "unwillingness to tackle inequality." Let us heed that advice and end this perpetual structure of racial inequity. Let us show that we have learnt from COVID-19 and that we are serious about tackling the climate crisis.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

[1] Jones CP. Confronting institutionalized racism. Phylon (1960) 2002;50(1/2):7–22. doi: 10.2307/4149999.
[2] CDC. Risk for COVID-19 infection, hospitalization, and death by race/ethnicity. https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html; 2021 [accessed 15 August 2021].
[3] Carter RJ, et al. Widespread SARS-CoV-2 transmission among attendees at a large motorcycle rally and their contacts, 30 US jurisdictions, August–September 2020. Clin Infect Dis 2021;73:S106–9. doi: 10.1093/cid/ciab321.
[4] Woods ER, et al. Community asthma initiative to improve health outcomes and reduce disparities among children with asthma. MMWR 2016;65:11–20 Suppl. doi: 10.15585/mmwr.su6501a4.
[5] Eckelman MJ, et al. Health care pollution and public health damage in the United States: an update. Health Aff 2020;39:2071–9. doi: 10.1377/hlthaff.2020.01247.

James P. Healy[a,*]
Anpotowin Jensen[b]
Maria Belen Power[c]
Bill McKibben[d,e]
Gary Cohen[f]
Gaurab Basu[g,h]
[a] *Department of Environmental Health and Epidemiology, Harvard T.H. Chan School of Public Health, 401 Park Drive, Landmark Center, Boston, MA 02115, USA*
[b] *Stanford School of Engineering, Stanford University, 530 Escondido Mall #40, Stanford, CA 94305, USA*
[c] *GreenRoots, 227 Marginal Street, Suite 1, Chelsea, MA 02150, USA*
[d] *350.org, PO Box 843004, Boston, MA 02284-3004, USA*
[e] *Middlebury College, Middlebury, VT 05766, USA*
[f] *Health Care Without Harm, Boston, MA 02130, USA*
[g] *Cambridge Health Alliance, Center for Health Equity Education and Advocacy, 1493 Cambridge Street, Cambridge, MA 02138, USA*
[h] *Instructor Medicine, Department of Global Health and Social Medicine, Harvard Medical School, 25 Shattuck St, Boston, MA 02115, USA*

*Corresponding author.
E-mail address: jameshealy@hsph.harvard.edu (J.P. Healy).

Received 28 September 2021
Accepted 29 October 2021
Available online 2 November 2021