

CASE AND COMMENTARY: PEER-REVIEWED ARTICLE

How Should Clinicians and Health Care Organizations Respond When Civic Planning Concentrates Waste Processing in Minoritized Communities?

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Abstract

US health care is responsible for 8.5% of the country's greenhouse gas emissions, contributes to nearly 30 pounds of waste per patient per day, and uses a vast array of toxic chemicals and pharmaceuticals that pollute our air and water. Communities are not affected equally by the volume and location of this waste: historically marginalized populations are hurt first and worst. This commentary on a case considers the irony that the health sector simultaneously responds to and produces environmental damage and argues that health professionals are ethically bound to protect patients' and communities' health.

Case

Primary care physician Dr G sees long-term patient Ms T (57 years old) for follow up to a radical nephrectomy performed 2 weeks ago. Ms T has seen several family members, friends, and neighbors—mostly people of color—in her rural community succumb to cancer and experience chronic illnesses during their lifetimes. High rates of morbidity, mortality, adverse birth outcomes, and diminished life expectancy relative to residents in other areas of the state have long been suspected to be linked to airborne emission and runoff exposures from a landfill that accepts solid waste from communities throughout half the state and from a facility that processes medical and chemical waste. Both are within a few miles of Ms T's neighborhood.

Dr G and her colleagues have long considered how to best support patients like Ms T, who live and die in communities where toxic waste exposures are higher than in communities where they live.

Commentary

The US health care industry contributes to 8.5% of the nation's greenhouse gas emissions,¹ produces on average more than 29 pounds of waste per patient bed per day,² and utilizes chemicals and pharmaceuticals that leach into **drinking water** supplies.^{3,4} The health care system, which provides clinicians' paychecks, is a substantial polluter, producing nearly 5% of global greenhouse gas emissions in 2011.⁵ Furthermore, 25 years of research demonstrates that civil planning consistently places

waste management plants disproportionately in communities of people of color, resulting in disease and premature death due to toxic exposure, ie, environmental injustice.⁶

In light of her professional obligations to advocate for patients and “do no harm,”^{7,8,9,10} how can Dr G respond to environmental racism and health inequity at work *and* in the community? In this commentary on the case of Dr G and Ms T, we discuss ways that health professionals and organizations can both advance racial justice and lead environmental change in health care. As elucidated by Annalise Norling, physicians’ professional obligation extends beyond the patient’s bedside to encompass health care pollution and its impact on the community at large.¹¹ We believe health professionals and organizations can—and must—create health equity from within their institutions by moving beyond “considering” to implementing a concrete praxis based on professional and critical self-reflection. How can that course be charted? First, clinicians must educate themselves about historical environmental racism and their own unconscious bias. Second, health organizations must implement protocols, training, and advocacy to address environmental injustice. Third, and most vitally, clinicians must take practical actions to initiate professional change at work.¹²

Environmental Racism and Unconscious Bias

On the road to transformative action and praxis, all of us clinicians must each look plainly at our own unconscious bias. It is when under stress that we resort to choices based on unconscious racial bias.¹³ As clinicians, we frequently use personal discretion, and decisions made under pressure often amount to health care inequity.¹³ Owning our own bias is the first step. Once clear on our own bias—and impelled by our code of ethics—we will be able to improve professional practice, even within an imperfect system. As stated by Camisha Russell in the context of racism and bioethics: “The deepest, most lasting change is likely to come from those people doing something from right where they are in their daily lives, both personal and ... professional.”¹²

The second author (M.C.S.) relates how activism can spring from personal experience.

Despite the Twin Cities’ many decades-long record of inequitable waste management planning,¹⁴ I, a Minnesota nurse, with light-skin privilege, in the midst of the health care COVID-19 crisis—and the murder of George Floyd within 10 blocks of my house—only recently became aware of this environmental crisis in a friend’s backyard. I attended a birthday party in St Cloud, Minnesota, for the daughter of a Black nursing colleague. Lost and circling, I found myself on a dead-end street at the gates of the St Cloud waste management site. Idling and dumbfounded by the heaps of trash, the hidden corner lot marked with warning signs, I viscerally felt the inequity of its placement in her neighborhood. In Minnesota, waste management plants are located in North Minneapolis, Duluth, and St Cloud, all communities largely populated by people with low incomes and people of color.¹⁵ And, in the Twin Cities, zip codes with the largest percentage of residents of color had more than 5 times the rate of asthma emergency room visits in 2015 related to air pollution compared to areas with more White residents.¹⁴ Yet the Minnesota Department of Health’s 2017 report merely seeks to educate community members about ways to reduce their own risks of environmental contamination.¹⁶

Like Dr G, I provide care within a health care system that pollutes communities I care for. My praxis is speaking up in interdisciplinary rounds when profit and efficiency sacrifice patient care; directly soliciting information from patients to ensure the

treatment plan is based on their narrative, not a biased one; and double-checking on patients so easily overlooked when nurses are understaffed. But the problem of environmental health inequity is not only for individual clinicians to tackle; it is also for hospital leadership to address.

Responsibility for Change Extends Beyond the Clinician

Institutions. Health organizations can take responsibility for health inequity by providing antiracism educational sessions for employees and by establishing sanctioned environmental justice task forces at hospitals and clinics. They can implement health screenings for known toxic waste-related cancers, kidney diseases, and prenatal damage, as well as provide proactive care, such as free prenatal care to affected communities. Arguably, since toxic waste is an international problem, screening for toxic waste exposure should extend to all patients and become a routine assessment. Figure 1 summarizes practical steps for health systems to meaningfully address environmental health equity.

Figure 1. Health System Actions to Address Environmental Health Equity

- Partner with supply chain colleagues to increase local and sustainable purchasing.
- Engage with diverse suppliers to infuse minority-owned businesses and local economies with powerful health care dollars.
- Transition away from toxic chemicals in favor of green cleaners that still comply with infection prevention policies.
- Establish monitoring and care protocols for patients at risk for environmental exposure (eg, toxic waste-related cancers, kidney disease, prenatal and gestational harm).
- Provide antiracism educational sessions to address racial bias and educate clinicians about the impact of health care waste dumping in minoritized communities.
- Establish and maintain hospital and clinic environmental justice task forces.
- Advocate for public policy change.

We recognize that profit can come at a sacrifice. Waste is a global problem requiring new solutions. Individual clinicians and health organizations can choose—and are professionally bound—to move the needle on environmental health inequity despite loss of short-term profit.

Associations. The climate impact of the transport and disposal of goods and the generation and treatment of medical waste has gained international attention.⁵ At the national level, physician leaders inspired the American Lung Association to support policies related to impact assessment and cleanup of environmental hazardous waste in recognition of the health inequity created when civic waste is managed in poorer community areas.¹⁷ Other organizations, such as Physicians for Social Responsibility,¹⁸ WE ACT for Environmental Justice,¹⁹ and ecoAmerica,²⁰ have had success in building awareness of the environmental impact of health care and empowering health professionals to take action to promote justice.

National associations also support state-specific climate advocacy and national sustainability efforts. The Medical Society Consortium on Climate and Health website, for example, hosts a compendium of state clinician climate action groups.²¹ In 2021, the

National Academy of Medicine established the Action Collaborative on Decarbonizing the US Health Sector, which, in partnership with leaders from the health sector and the federal government, aims to decarbonize health care across Scopes 1 (direct emissions from “operations of health care facilities”), 2 (indirect emissions from “purchased sources of energy, heating, and cooling”), and 3 (indirect emissions from the “supply chain of health care services and goods”); accelerate climate-smart health care; and develop sustainability metrics for the industry.²² The Impact Purchasing Commitment partnership between the nonprofit, fee-based health care membership organizations Healthcare Anchor Network and Practice Greenhealth provides an example of sustainable procurement practices in action.^{23,24} Twelve health systems across the country representing \$1 billion of the health care economy have committed to establishing sustainable procurement policies that simultaneously reduce environmental impact and invest in the underinvested communities.^{23,24} Moreover, in December 2021, the Biden Administration launched a national initiative aimed at decarbonizing all federal facilities by 2045.²⁵ With an increasing number of state and national bodies supporting environmental action, health systems and hospitals will have more opportunities to form partnerships that combine political and grassroots energy.

Clinicians and Health Sector Sustainability

By recognizing and committing to mitigating the unjust health effects of health care pollution, clinicians can simultaneously deliver more equitable care and reduce the health sector’s impact on the environment by taking the following steps.

Practice sustainably. Every procedure, lab test, surgery, and medication draws from the earth’s natural resources and produces waste. It is estimated that the upstream and downstream emissions and waste involved in manufacturing pharmaceuticals and chemicals, rubber and plastic products, electronic equipment, and agriculture within the health care sector constitute approximately 30% of health care’s greenhouse gas footprint.⁵ By being strategic in supply utilization in patient care (in everything from assessment to treatment), health professionals can reduce the **environmental impact** of care.

Change policy. Health professionals can and should engage at a legislative level to advocate for policies that honor the right to health of every individual. There are multiple examples of effective campaigns led by health professionals that have resulted in public health policy changes; here we discuss 2 cases.

In rural Parkersburg, West Virginia, health professionals compiled medical reports and expert testimony regarding DuPont’s inappropriate disposal of C8, a polyfluoroalkyl substance (PFAS) chemical used in the water-resistant material Teflon.²⁶ PFAS are a category of “forever chemicals” that persist in water, soil, food, and other materials.²⁷ C8, which never fully degrades, is associated with increased rates of testicular and kidney cancer, ulcerative colitis, thyroid disease, and other diseases.^{28,29} The DuPont class-action lawsuit included over 3500 plaintiffs citing health impacts of PFAS; an estimated 70 000 West Virginians drank C8-contaminated water.²⁶ The class-action settlement resulted in DuPont paying for a monitoring program that screens citizens for C8-related health impacts, and, in 2015, DuPont ceased the manufacturing of the chemical³⁰; over \$700 million in settlement fees were paid by DuPont.³¹ However, DuPont continues to produce a multitude of other PFAS chemicals closely related to C8,³⁰ highlighting the need for further advocacy efforts that hold industrial manufacturers to account.

A less successful example of advocacy is the Minnesota state clinician climate action group Health Professionals for a Healthy Climate, which sought to educate the public and policymakers about health implications of fossil fuel pollution and water contamination resulting from building Line 3,³² a short-term fracking pipeline, and to advocate against it.³³ The much-contested Line 3 was given approval by the Minnesota Pollution Control Agency in 2020.³³ Despite health professionals' and many other community organizers' efforts, the pipeline now extends across marshes and waterways within Anishinaabe tribal land, violating tribal treaties and putting the community's drinking water supply, wild rice lands, and all community members' health at risk.^{32,34}

Like Ms T, individuals in these communities face dangerous health implications as a result of unethical extractive and poor waste practices. Clinicians can learn about local environmental atrocities, such as in the cases of C8 and Line 3, and become powerful advocates, fulfilling their ethical and professional responsibility to patient health and the planet. In the case of unsuccessful advocacy efforts, which are many, clinicians must learn from these attempts and reframe their approach. Advocacy and organizing—even when led by the health professional community—does not guarantee success. Figure 2 summarizes practical steps clinicians can take to address environmental health equity.

Figure 2. Clinician Actions to Address Environmental Health Equity

- Empower patients to learn about the health risks of toxic waste in their communities.
- Reduce material, pharmaceutical, and chemical waste during clinical shift.
- Participate in developing monitoring and care protocols for patients at risk for environmental exposure (eg, toxic waste-related cancers, kidney disease, prenatal and gestational harm).
- Advocate for public policy change.

Prioritize. In traditional clinical ethics, the patient comes first.⁷ In cases such as Ms T's, do local environmental justice issues take precedence over global justice issues? If local health systems expand their scope to include the environment, should they prioritize local pollution impacts over broader decarbonization efforts? In the interest of creating a win-win situation, it will be paramount to redefine *health care* so as to facilitate a deeper understanding of the health sector's environmental impacts on patient care and local communities and of national and global efforts to address health equity.

Conclusion

It's clear that the provision of health care causes significant environmental damage. It will likely take decades for our ethically complex health system to significantly address these environmental challenges, despite our knowing that health care sector emissions and waste generation disproportionately affects communities in poverty and people of color. Guided by the AMA Principles of Medical Ethics⁷—but also by broader allied health disciplines, such as nursing,⁸ pharmacy,⁹ and social work¹⁰—we, as clinicians, must reconcile environmental impacts with patient and community care. Moving forward, we must be accountable as agents not only of health, but also of inequity and pollution; we must create and distribute sustainability tools, revamp practices to clean up our health systems, and redefine what it means to provide true health care.

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