Crossing the Decarbonization Chasm

A Call to Action for Hospital and Health System Leaders to Reduce Their Greenhouse Gas Emissions

Hardeep Singh, MD, MPH, Center for Innovations in Quality, Effectiveness
Michael E. DeBakey VA Medical Center and Baylor College of Medicine; **
JD, LLM, Mazzetti; **Terri Scannell, MBA,** OhioHealth; and **Kathy Gerw**
Without Harm

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Introduction

Human activity is warming the climate in unprecedented ways. Climate change is intensifying existing health problems and leading to the emergence of new health threats (Romanello et al., 2023). These impacts include increased respiratory and cardiovascular disease, injuries and premature deaths related to extreme weather events, air pollution and heat waves, changes in the prevalence and geographical distribution of foodborne and waterborne illnesses and other infectious diseases, and negative impacts on mental health (Watts et al., 2020; USGCRP, 2016). The World Health Organization (WHO) has declared climate change to be the defining public health issue of our time, while the United Nations (UN) Secretary-General has called the climate crisis a "code red for humanity" (UN, 2021). The Intergovernmental P Cimate cCange

avoid the very worst" impacts (Pörtner et al., 2022). Certain populations are being disproportionately affected, including those who belong to historically marginalized communities, such as communities of color, low-income communities, and older adults (Romanello et al., 2022).

All sectors of society must take urgent action to address this threat. The 28th UN Conference of the Parties (COP 28) will host the first-ever dedicated Health Day on December 3, 2023 and is expected to launch a critical call to action, which includes a Declaration on Climate and Health and calls to increase climate financing for health (Ghebreyesus et al., 2023). Within health care, hospital and health care

be costly or burdensome. However, evidence increasingly suggests positive impacts on financial and business performance, cost savings, risk reduction, and improved corporate performance (Dancey and Mendiluce, 2023; Senay et al., 2022). Reporting on ESG or emissions may not remain optional anymore, given the increasing external pressures from several stakeholders and rapidly evolving climate crisis. For instance, in December 2021, President Biden signed an Executive Order (EO 14057 Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability) requiring all federal agencies to reduce their impact on the environment and to reduce the impact of climate change (The White House, 2021). Federal agencies were tasked to lead the nation on a path to net-zero emissions by 2050, and all federal health systems—including the Department of Veterans Affairs (VA) that delivers care to nearly 10 million veterans—are impacted. Because there are no such goals or current mandates for private U.S. health care, this call to action lays out a compelling case below for all health care leaders on why they should set similar goals and begin their decarbonization journey (see *Figure 1*).

High-Value Care

Reduction of GHGs is a fundamental aspect of improving care quality and is often conceived as the seventh dimension of quality, adding to the six domains proposed by the Institute of Medicine (now National Academy of Medicine)—patient safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity (Sherman and Singh, 2023). About one-third of U.S. health care spending is of low value or wasteful, providing a compelling rationale to act (Cafarella Lallemand, 2012).

Many strategies to reduce GHG emissions from hospitals and health systems align with improving quality and are the basis for the delivery of high-value care. For example, several actions to promote decarbonization can potentially reduce the cost of care delivery but also optimize resource consumption, minimize environmental impact, improve patient experience, and improve population health. Examples include placing a greater emphasis on disease prevention and chronic disease management to avoid more complex care that is expensive and environmentally harmful; delivering care in the least energy- or waste-intensive setting, such as using telehealth, primary care, or ambulatory care when appropriate vs. emergency or inpatient care; and minimizing low-value tests, procedures, and treatments that are not only costly but can harm patients.

Societal Benefit

Climate change-related preventable harms to our patients and broadly to the public are now clear. In fact, health damages from U.S. health care pollution were estimated at 388,000 disability-

in those requirements which are contrary to the best interests of the patient" (AMA, 2001). By extension, hospitals and health systems have a duty to protect the overall health of their patients and have a moral imperative to act collectively to protect and improve human health. Public health crises, such as climate change, are no exception. In addition, health care leaders employ some of society's most trusted and respected professionals. Their actions will benefit not only the health of their patients and staff but also surrounding communities and the broader society (AMA, 2022).

In addition, by reducing climate-related morbidity and mortality, there are substantial cost savings to society due to unnecessary health care costs avoided, lost productivity, and human capital benefits. For example, the WHO indicates that climate change impacts globally will cause up to $4 billion in direct health impacts (not including costs of damage due to effects on agriculture, water, and sanitation) annually by 2030 (WHO, 2023). In the United States alone, one report suggests that health costs of air pollution and climate change exceed $800 billion per year and will be higher if there is not a stronger societal response (NRDC, 2021). These costs include doctor visits (for conditions such as heat stress, heat stroke, cardiovascular disease, and respiratory ailments), prescriptions, emergency room visits, physical therapy, allergy treatments, mental health care, and premature death.

According to another recent report, heat event days may lead to almost 235,000 emergency department visits and more than 56,000 hospital admissions for heat-related or heat-adjacent illness, costing health care about $1 billion each summer (Woolf et al., 2023). Climate change also results in additional costs from downstream human capital impacts, such as lost productivity and wages, as well as non-monetary costs, such as pain or suffering and inconvenience to families and others (Ebi et al., 2017). Thus, health care leaders are obligated to mitigate the climate crisis, including addressing their carbon footprint.

Health Equity

Health equity is the first pillar of the Centers for Medicare & Medicaid Services (CMS) Strategic Plan, and other private stakeholders, such as The Joint Commission (TJC), are also making similar commitments. CMS recently finalized a health equity-focused measure for all care settings and all hospitals (CMS, 2022). Health systems are already working on health equity initiatives. Climate change disproportionately affects members of communities of color; low-income communities; people with chronic diseases or disabilities; people with outdoor jobs, such as farm workers; and women, children, and older adults (Phillips, 2022; Romanello et al., 2021). The U.S. Environmental Protection Agency (EPA) found that "Black and African American individuals are 34% more likely to live in areas with the highest projected increases in childhood asthma diagnoses due to climate-driven changes in particulate air pollution. Hispanic and Latino individuals are 43% more likely than non-Hispanic and non-Latino individuals to currently live in areas with the highest projected labor hour losses in weather-exposed industries due to climate-driven increases in high-temperature days," (EPA, 2021). Additionally, research indicates that pregnant individuals exposed to high temperatures or air pollution are more likely to have children who are premature, underweight, or stillborn. In this case, Black and African American mothers and babies are harmed at a much higher rate than the population at large (EPA, 2021). Residents of rural areas may also be more susceptible to water contamination and power outages after heavy precipitation (Ebi and Hess, 2020; Health Care Without Harm and Arup 2019; Nunn et al., 2019). Thus, activities to reduce the impact of climate change by reducing GHGs are directly in line with the equity mission of hospitals and health systems.

Economic Benefit

While hospitals and health systems may have a responsibility to their patients and communities to take climate action, it is important to recognize the economics that will influence their behavior. Concerns about financial stability are especially salient in the current environment as theTEMC-5sa-0 TeduciN Tw 10 an2 Tw 10 0 0 10

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Reputation and Reputational Risk

While some decarbonization efforts may not be cost saving, they are important to undertake. In particular, hospitals and health systems known for their transparent and significant decarbonization and sustainability practices might be able to enhance their reputation and build trust with their patients, employees, and communities. Transparent reporting of emissions and disclosure of decarbonization initiatives would usher in a new era of public accountability (CDP, 2023). This could potentially lead to increased patient loyalty, better community relations, increased ability to attract funding, and more positive media coverage.

Conversely, failure to take climate action can put hospitals and health systems at a disadvantage. Notably, organizations may face the risk of reduced access to financing and capital as investors increasingly look to ESG performance, risk assessments, and opportunities (Senay et al., 2023; Boyd et al., 2022; Hut, 2022). Protection of physical and social infrastructure requires assessing and addressing risks related to climate change; access to capital, insurance, and finances may be impacted in the absence of these steps (TCFD, 2023). For example, in 2012, after Superstorm Sandy, Moody's put a medical center's A3 credit rating under review, citing concerns about delayed recovery of funds from insurers, FEMA, and philanthropists and the potential for decreased patient volume. This would have affected over $750 million in rated debt (Moody's, 2012). The industry trends are evolving rapidly in this area and will inevitably impact health care. For instance, the International Sustainability Standards Board issued its inaugural standards for 2024, which would bring about a new era of sustainability-related disclosures in capital markets worldwide (IFRS, 2023).

External Motivators and Incentives to Promote Action

Hospitals and care systems around the country are increasingly saving resources by taking action to decarbonize, operate more sustainably, and conduct resilience planning from climate effects. However, it is important to recognize that each health care organization's unique set of characteristics and context influences why and how it might address climate change. Different states have different energy sources, local policies, and climate-related conditions that will impact whether hospitals in that state decide to prioritize certain actions. For example, use of renewable energy may depend on its accessibility and cost.

For climate action to occur at scale in hospitals and health systems, many extrinsic motivators and incentives will be needed. These include financial and payment incentives to promote essential decarbonization activities, policies and regulations to ensure accountability, new standards, and community-benefit obligations. Additional actions are needed to reduce transportation, health care consumption, and supply chain-related emissions, which constitute the majority of health care emissions (Eckelman et al., 2020).

Recent developments and emerging trends point to the growing importance of external pressures to ensure climate action. The Inflation Reduction Act of 2022 (IRA) could drive change—the IRA greatly expanded tax credits for companies that adopt energy-saving renewable technologies and, importantly, made these credits available to nonprofit organizations, which would include about half of the nation's hospitals (IRS, 2023). The Bipartisan Policy Center recently released a report outlining several recommendations and federal actions to help hospitals reduce their emissions. It specifically calls on federal agencies such as CMS, CDC, and the Government Accountability Office to implement certain actions (Cristrup et al., 2023).

CMS could play a key role in driving change. As the largest payer in the nation, CMS could incentivize or issue requirements for hospitals and health systems to measure and report emissions and implement emission reduction plans as part of Medicare or Medicaid requirements (Eckelman et al., 2020). CMS influence is already underway. In April 2023, CMS issued a categorical waiver for health care microgrid systems allowing health systems to use clean energy microgrid systems for emergency power generation instead of relying on fossil fuel-powered sources (CMS, 2023). Further, TJC recently launched a voluntary Sustainable Healthcare Certification program for the Hospital and Critical Access Hospital programs to address leadership, measurement, actions, and evaluation related to sustainability (TJC, 2023).

Requirements at the state level include a new law in California, SB 253, which "requires businesses, including hospitals and health care providers, with annual revenue in excess of $1 billion to publicly disclose their direct greenhouse gas emissions and indirect emissions related to electricity, heating, and cooling annually to the California Air Resources Board starting in 2026. Other upstream and downstream indirect emissions need to be reported starting in 2027," (California Hospital Association, n.d.). Emissions must be reported using the Greenhouse Gas Protocol standards and guidance (Senate Bill No. 253, 2023). Washington State's Clean Buildings law requires owners of large commercial buildings, including hospitals, to implement energy efficiency measures, determine a compliance pathway, and report to the state in accordance with their compliance schedule (Streeter, 2022).

While nonprofits may not be directly impacted, possible regulatory changes by the U.S. Securities and Exchange Commission (SEC) center around a renewed ESG focus. In June 2022, the SEC proposed a new rule aimed at strengthening climate disclosure requirements for publicly traded companies (SEC, 2022, Senay 2023).

While some of these extrinsic motivators and pressures are still evolving, hospitals and health systems that take action now may be at an advantage over their peers, benefiting from the ability to chart a more comprehensive and pioneering pathway for their institution to address climate change.

Next Steps for Hospital and Health System Leaders

C-suite leaders and governing board members of hospitals and health systems are critical in implementing decarbonization initiatives. Achieving real progress will require recognition of barriers to such efforts within health care organizations. These include competing priorities, lack of capital to make up-front investments, lack of staff expertise or capacity to implement decarbonization efforts, and cultural barriers (e.g., resistance to change). However, best practices in this space are now available, and to accelerate decarbonization, health care leaders need to help cross

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