

## ETHICS CASE

### Are Physicians Obligated to Lead Environmental Sustainability Efforts in Health Care Organizations?

Commentary by Cheryl C. Macpherson, PhD, and Jonathan Hill

#### Abstract

Climate change threatens health, health care, and the industries and resources upon which these depend. The growing prevalence and severity of its health consequences and economic costs are alarming health professionals and organizations as their professional obligations, grounded in the core value of health, include protecting against these harms. One means of fulfilling these obligations is to lead or support sustainability initiatives that are built upon current, reliable, accurate, and unbiased evidence and collaboratively tailored to meet specific needs and respond to specific contexts. We consider why and how health professionals and organizations should lead or support such initiatives.

#### Case

At an international conference on the impact of climate change on human health, Dr. Patel attends lectures given by physicians in a variety of specialties and by global public health experts. Over the course of the conference, Dr. Patel learns that the devastating effects of climate change on human health include infectious disease, flooding, drought, food insecurity, and extreme heat. One thing Dr. Patel hears over and over at the conference is the importance of physician leadership in responding to climate change. In particular, she learns that physicians can make a positive impact by leading sustainability initiatives at their organizations, especially hospitals, which are major commercial consumers of energy in the United States. In 2003, large hospitals (i.e., more than 200,000 square feet) made up less than 1 percent of all commercial buildings but used up 4.3 percent of all commercial energy consumed in the US [1]. In 2007, US hospitals produced the equivalent, in terms of global warming potential, of about 215 million metric tons of carbon dioxide [2].

One conference speaker, who works at a large health care network, explains that recently she's been spearheading a sustainability initiative. "We've made a lot of changes," she continues, "including some updates to our infrastructure and equipment. Our energy expenditure and waste have already decreased significantly. Plus, the communities where we have hospitals and offices have really rallied around these efforts, with many of those communities' members expressing appreciation for our

efforts to protect their future health and the health of people around the world.” Other speakers at the conference emphasized the importance of physician leadership as necessary for modeling to students and younger clinicians not only how to respond to the health hazards of climate change and reduce the carbon footprint of the health care sector, but also how to draw upon the social and cultural authority of medicine to prompt health care organizations and other industries to take action.

After the conference, Dr. Patel prepares to pitch a sustainability initiative to her organization’s senior leadership. Her main worry is that upfront financial costs of such an initiative could stifle support for it. Although there is limited data available on upfront cost and return on investment for such initiatives, Dr. Patel knows that some studies have found that capital cost premiums on LEED-certified hospital renovations total up to 5 percent but that well-planned initiatives can have a positive return on investment [3, 4]. Even with support from the organization’s senior leadership, upfront costs could be passed along to patients, some of whom already struggle to pay their health care bills. While Dr. Patel seeks to draw upon her status as a physician to advocate for patients’ and others’ health now and in the future, she worries about doing so at the expense of current patients and wonders how short- and long-term health costs and benefits should be considered from ethical, clinical, social, and fiscal points of view.

### **Commentary**

Health professionals are troubled by the increasingly visible and harmful health consequences of climate change [5-7]. The growing prevalence and severity of these consequences over the past decade often involve extreme weather, challenging those positioned to care for the consequent injuries and infectious, respiratory, gastrointestinal, mental, vector-borne, and waterborne illnesses [8-10]. These health consequences are documented in many fields and highlighted on the websites of prominent health organizations [11-14], including the Centers for Disease Control and Prevention, whose website outlines its commitment to energy efficiency and informing health professionals of climate effects on health [11]. Dr. Patel’s sustainability pitch to her organization is one means of fulfilling her obligation to protect health. This commentary elucidates obligations of physicians and health organizations to protect health and examines proposals for sustainable business models, which suggest that organizations, rather than patients, should bear the associated costs. It also discusses different types of sustainability initiatives and strategies that Dr. Patel, and others like her, might use to successfully promote sustainability.

### **Professional Obligations**

Protecting health is a professional obligation of physicians and health organizations. The strategies they adopt in doing so will vary with the nature of the health problem and the social and environmental contexts in which it emerges, increases, persists, decreases, or disappears over time. The health consequences of climate change are visible, often

measurable, pose serious threats everywhere, and offer opportunities to significantly improve health everywhere [8]. Embracing sustainability—at the individual or organizational level—thus helps to fulfill the professional obligation to protect health.

*Physicians.* Physicians accept an obligation to fulfill the goals of medicine when they join the profession. While these goals and approaches to meeting them vary with time and place, they broadly involve protecting health, alleviating suffering, improving knowledge and management of disease, educating new physicians, and upholding [public trust](#) [15]. Individually or collectively, physicians fulfill these goals by applying their knowledge and expertise to patient care, public health, research or scholarly work, education, public and policy dialogue, and so on. Individual and collective choices about which areas and actions to pursue, and when and how to become involved, vary with physician expertise and circumstances. Some choose to apply their professional influence to improve social or environmental conditions that affect health, such as climate change.

Physicians' socially and culturally privileged and influential position deepens their obligation to combat prevalent, severe, and preventable health threats, including climate change. Having attended the conference on climate and health, Dr. Patel's knowledge about the value and means of championing sustainability in health care make her more qualified than many physicians to pursue her plan and more aware of these obligations and opportunities. Recognizing that the scope of these obligations vary with temporal, social, and physical contexts, we apply seven criteria featured elsewhere in this issue [16] to illustrate the strength of Dr. Patel's obligation to pursue her plan: she has *expertise* in treating injuries, infections, and diseases caused or worsened by climate change; *proximity* to organizational leaders and those needing care; knowledge that makes her more *effective* than others; the ability to act without unreasonable *cost or risk* to herself; *unique* influence on health care; insight into the *severity* of the health consequences of doing nothing; and a duty to uphold *public trust*. These criteria are perhaps equally applicable to health organizations given their obligation to protect health.

*Organizations.* Health organizations are employers and consumers of large volumes of goods, services, and space, with considerable social and economic influence. Their missions and strategic plans typically center on patient health and sometimes broader goals like community service, public health, patient education, or environmental health. Mount Sinai Hospital in New York City, for example, recognizes the influences of its research, education, and patient care "on the environment, and the health and safety of patients, employees, students and the public. Mount Sinai values the people, land and natural resources that are part of the institution and the surrounding community" [17]; and it integrates sustainability into its housekeeping, transportation, and other services [18]. Such a [commitment to sustainability](#) stems from an organization's obligation to protect patient, staff, and community health; their socioeconomic influence and health-

oriented missions; and the community and environmental contexts in which they are embedded [19, 20]. Organizations can fulfill the commitment to protect health through energy-efficient operations, facilitating healthy choices in nutrition (e.g., increasing access to fresh locally produced food), exercise (e.g., establishing walking paths to and around their facilities), and other means.

An organization's commitment to embracing sustainability may increase proportionally to the probable health improvements of doing so, the decline in suffering of those affected, and the economic costs of failing to do so. Sustainability benefits organizations by reducing expenditures through [energy efficiency](#), generating publicity and marketing opportunities, and protecting against environmental disruptions that limit access to operational resources, increase costs, and reduce profits [18, 21]. England's National Health Service (NHS), for example, employs over 1.3 million people, is a major economic driver and consumer, emits 21 million tons of greenhouse gases annually, and is Europe's largest public sector contributor to climate change [21]. The NHS fulfills its obligation to protect health through its Sustainable Development Unit (SDU), which reduces emissions, saves money, and improves health through initiatives involving energy, travel, waste, procurement, water, infrastructure, and more [21]. Smaller British organizations, networks, and medical specialties also embrace sustainability [22, 23].

Unlike in the United Kingdom, health organizations in the US are either nonprofit or for-profit. Nonprofits tend to be privately and charitably funded, whereas for-profits are funded through fee-for-service and aim to provide patient care while earning commercial profit. Both nonprofit and for-profit organizations are obligated to manage resources in ways that fulfill their missions. Nonprofits have altruistic missions focused on providing patient and community care; they typically minimize costs—to patients and, to make resources go further, to themselves. The missions of for-profits focus on providing health care and generating profit. This dual goal poses conflicts of interest for organizational leaders who must weigh short- and long-term economic goals and outcomes against patient, staff, and community health initiatives requiring upfront expenditures.

### **Sustainable Business Models**

Concerned that costs may be passed on to patients who cannot afford them, Dr. Patel wonders "how short- and long-term health costs and benefits should be considered from ethical, clinical, social, and fiscal points of view." In the absence of standards for determining what time frames to consider (e.g., weekly, quarterly, annually, or longer intervals), what costs (e.g., damaged or depleted natural resources) and benefits (e.g., health, well-being, averted suffering, morbidity, or mortality) to quantify and how to do so, and who to hold accountable for what, scholarly and policy deliberations provide no straightforward answers to Dr. Patel's questions.

In support of sustainability, the economist Juliet Schor documents and quantifies damages of economic growth to natural environments (e.g., through manufacturing, transportation, energy), proposing that prioritizing social and ecological well-being over economic growth will make individuals and populations “rich in the things that matter to us most, and the wealth that is available in our relations with one another” [24]. Similarly, the ethicist Dale Jamieson [25] asserts that instead of economic growth, organizations and governments should prioritize goals that integrate sustainability into international development; protect terrestrial carbon sinks; calculate costs by taking “into account the entire life cycle of producing and consuming a unit of energy” [26]; and design “new forms of decision-making, institutionalized in different ways, that will give us the flexibility to deal with change while enhancing our ability to commit to projects that extend far into the future” [27].

These proposals for sustainable business models and lifestyles also support the view that health organizations, given their resources and capacity, should absorb at least some upfront costs of sustainability and avoid transferring these costs to patients. Physicians and organizations should explore different types of sustainability initiatives and undertake only those most likely to succeed within their social and environmental contexts [20].

### **Types of Sustainability Initiatives**

Before designing an initiative, Dr. Patel (and others like her) should anticipate likely costs to the organization, the types and durations of benefits to all stakeholders, and the probability of the organization adopting it. This type of planning would require her to examine architectural design or behavioral approaches used elsewhere or described in peer-reviewed journals and to consult relevant scientific and technical experts such as veterinarians, engineers, educators, and others [28, 29].

*Design changes.* Using architectural design to increase proximity of patients and staff to green spaces can accelerate recovery; reduce pain, aggression, mental fatigue, staff burnout, and health care costs; and increase cognitive function [30-33]. Other sustainability initiatives safely and effectively reduce large amounts of energy and landfill waste by modifying procedures for hospital-based cannulation and intravenous antibiotic preparation [31] and for disposal of unused pharmaceuticals [32] and medical devices, which, when replaced with reprocessed devices, saved over 24 million pounds of waste and \$1 billion over 20 years at 1,700 health care facilities nationwide [34]. Energy efficiencies saved one health system \$47 million over five years, and requisition of energy-efficient computers saved another health system \$4 million annually [35]. Still other initiatives facilitate [recycling](#) [36] or procuring environmentally friendly housekeeping supplies [18]. Sustainability initiatives in hospitals are fiscally sound, support their missions, create healthier environments, lower operational costs, and can

maximize benefits “by combining multiple projects and taking advantage of the wide range of sustainability opportunities” [37].

*Behavior changes.* Initiatives involving education or behavior changes may require little upfront expenditure. Given their social and cultural authority, physicians are visible and influential role models for patients, students, colleagues, and the public. They can, at no cost, highlight the value of embracing sustainability. One approach is to motivate patients with cardiovascular disease risk factors to reduce dietary consumption of red and processed meats, thereby reducing both their risk and agriculturally generated greenhouse gases [38]. Other educational and behavioral approaches have been used in medical practice, education, research, policy, and public health [29, 39-45].

### **Which Type of Initiative Should Dr. Patel Pursue?**

The success of any sustainability initiative depends on its grounding in accurate and objective evidence and models and its contextual relevance to the organization implementing it. Dr. Patel and other physicians have the capacity to access evidence about health consequences of climate change, assess their magnitude and severity, and highlight the value of sustainability to the organizations and local communities they serve. They are positioned to obtain expert opinions across disciplines, serve as consultants themselves, and, at the very least, reduce their own carbon footprint and encourage their organizations and colleagues to do the same. Dr. Patel has commendably gone further by planning an initiative and pitch.

She also should have consulted with colleagues, community members, and organizational administrators about how best to proceed and, in partnership with them, explored initiatives and publications like the Green Guide for Health Care™. This guide describes how sustainable hospital design, construction, and operations improve profits, health, and patient satisfaction while helping attract and retain staff and reducing climate change impacts [46]. Collective efforts are needed to obtain a breadth of information and perspectives and to develop an approach appropriate to an organization’s mission and context. A team might decide to target its medical boards, associations, or specialties instead of, or in addition to, its organization.

Dr. Patel should identify and focus her team on an initiative that is feasible and compatible with her organization’s mission, anticipating organizational objections. Objections might be overcome by highlighting her partners’ and others’ support for the initiative; its advantages in terms of probable financial gain and growth in patient satisfaction, staff productivity, and organizational publicity; and its health benefits to staff, patients, and local and global communities. Highlighting examples of other organizations’ sustainability initiatives might help win the organization’s support and willingness to absorb at least some upfront costs and would maximize chances of success.

### Suggestions for Physicians

Physicians and health organizations have obligations to use their influence, expertise, and resources to protect health, which include promoting sustainability. Successful sustainability initiatives are designed in consultation and partnership with a range of stakeholders, grounded in accurate information, aligned with an organization's mission, and responsive to organizational, community, and environmental needs and contexts. Physicians and organizations can promote sustainability by organizing multidisciplinary teams charged with:

- Obtaining information about successful initiatives in contexts similar to their own;
- Consulting their communities about needs and priorities;
- Designing initiatives that address community needs, include mechanisms for auditing and reporting climate change-related health consequences and outcomes, and align with the organization's mission;
- Anticipating costs, benefits, and probable objections; and
- Developing arguments with which to counter objections.

By catalyzing dialogue about sustainability within organizations and communities and among health professionals, physicians can further fulfill their obligation to protect health.

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