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Transforming the Healthcare System

Transforming the healthcare system to become more efficient is a formidable task due to complex regulatory requirements, poorly incentivized payment systems, and a conservative and risk averse culture. The healthcare institution can appear to be a black box that is so complex that efforts to change it are met with "learned helplessness" or the sense of powerlessness. But the opportunities for improvement are so ubiquitous that a global effort is necessary, especially with government intervention. During my internship in 2020, I learned the valuable lesson of rejecting "learned helplessness" in order to create meaningful change. While performing research at Santa Clara Valley Medical Center, one of the largest hospitals in the United States, I learned about the impact of unnecessary hospital admissions and the inefficiencies around patient-care and waste management. There, I co-authored a publication of a scientific abstract in the Journal Society of Hospital Medicine. This abstract demonstrated the effectiveness of a new cardiac blood test in ruling out a heart attack in half the standard time and highlighted the importance of increased efficiency in health care. We found that this new practice saved over $1.2 million dollars per year and reduced unnecessary overnight hospital admissions for chest pain by 80 percent, preventing a daily average of 440 pounds of healthcare generated waste per person. However, without government help, this practice cannot be utilized by hospitals across the country. It was then that I realized the untapped potential opportunities between healthcare, cost-efficiency, sustainability, and government intervention.

The healthcare system is responsible for some of the most dirty pollutants in the world. Hospitals and labs emit 4.4% of the world's greenhouse gas emissions and are responsible for 5 million tons of waste a year. Without action on the policy front, there are predictions from the Association of American Medical Colleges that global emissions from healthcare will reach six gigatons by 2050 or the equivalent to emissions from over 1.26 billion cars. It is appalling that in the effort to heal, we are creating harm. Essential government intervention will require making efficiency changes in care delivery, better waste management practices, and decarbonizing power generation. Given the glacial speed which change in the healthcare system moves at, external pressures are necessary to promote sustainability.

A social innovation that will increase trust in the government is mandating all hospitals to join the health sector pledge, which commits individual hospitals to reducing organizational emissions by 50% by 2030 and achieving net-zero by 2050, while publicly accounting for

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progress on this goal every year. The pledge also promises to designate an executive-level lead for their work on reducing emissions, conducting an inventory of Scope 3 (supply chain) emissions, and releasing a climate resilience plan for continuous operations that anticipates the needs of at-risk communities. To adhere to this oath, hospitals will have to increase efficiency and reduce unnecessary care, substantially decrease waste, and include better education and mandatory reporting. Therefore, mandating this pledge will demonstrate government commitment to public health and safety, solidify their sustainability initiatives, and allow them to become more transparent with their citizens.

This government-backed pledge would demonstrate a higher commitment to public health by increasing hospital efficiency and reducing overtreatment or unnecessary care. Hospital efficiency is an area of high value to reduce costs and emissions and improve access and equity to health care. The Lancet Medical Journal explains that unnecessary care or overuse accounts for 29 percent of total spending, with countless admissions being avoidable. By implementing this pledge through government intervention, hospitals could explore innovative solutions to reduce the length of stay and alleviate overcrowding, thereby enhancing accessibility of care and freeing up beds for at-risk communities. Hospitals could also reduce the waste that each admission generates including but not limited to commonly known plastic IV tubing, latex gloves, and medications.

By mandating the health-sector pledge and decreasing waste generated, the government illustrates a commitment to both citizens and the planet. Hospitals generate over 5 million tons of waste each year, from everyday trash to regulated medical waste such as blood-saturated items and objects. In order to create better waste management practices and effectively adhere to the health pledge, hospitals should commit to the 5 R's of waste reduction- refuse, reduce, reuse, repurpose, recycle. This means selecting alternatives with lower impact as well as using less water, energy, paper, and plastic. For instance, the National Library of Medicine explains that metered dose inhalers used for common respiratory conditions have a large impact on clean air and produce the equivalent greenhouse gas of 500,000 cars driven annually. As a solution, alternative lower emission inhalers should be administered instead such as the dry powder inhaler and soft-mist inhaler. Red bag waste full of blood-saturated items are a high yield target for greenhouse gas emission reduction as well. Regular waste is often accidentally mixed in with this, increasing GHG emissions and money spent, so enacting better protocol is crucial. Several

hospitals have already successfully implemented waste management strategies, including the University of California at San Diego Health, where they expanded recycling programs as well as educational efforts for staff, physicians, and patients. In 2018, UCSD hospitals successfully recycled over 2,200 tons according to the Association of American Medical Colleges. With the help of the government and regulatory requirements, these best practices can be scaled and adopted by other institutions at a quicker rate.

By mandating the health-sector pledge, which includes better education and mandatory public reporting of emissions, the government will become more transparent with their citizens. Education of patients and clinicians is crucial in effectively implementing this health pledge as it fosters an understanding of the environmental impact of healthcare practices among stakeholders, including healthcare professionals, administrators, and the public. Government-backed training programs and informational campaigns can highlight the importance of sustainability in the context of healthcare and allow professionals to be well-versed in environmental practices. In alignment with education, healthcare systems should also be required to measure and report greenhouse gas emissions with plans for reductions, requiring a unified and systematic reporting structure tracking over time. According to the Health Affairs Journal, numerous environmental reporting frameworks such as the Global Reporting Initiative and the Carbon Disclosure Project, are widely used by private, public, and governmental organizations and have set precedent for measuring and sharing organizational sustainability performance. Government mandated reporting would require further steps including designation of an oversight body with regulatory authority, determination of appropriate key environmental metrics, and a timeline with a centralized data repository.

To successfully achieve these goals, not only are policy changes required but partnerships between healthcare leaders and regulators, sustainability consultants, and government leaders will be crucial to effectively implement the health sector pledge. A paradox exists in health care where in the effort to heal we are creating harm. As the Director General of the World Health Organization, Tedros Adhanom Ghebreyesus, stated "Places of healing should be leading the way, not contributing to the burden of disease." We must begin by globally expanding the health sector pledge, substantially reducing emissions and improving patient care. This will bring a renewed trust of the government from its citizens.

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