

Stanford SOCIAL INNOVATION Review

Informing and inspiring leaders of social change

HEALTH

Greening Health Care: How Hospitals Can Heal the Planet

The following is an excerpt from the book.

By [Kathy Gerwig](#) | Sep. 15, 2014

The relationship between hospitals and the environment is defined by a glaring contradiction: as health care facilities deliver care at any cost, their environmental footprint -- pollution, waste production, unsustainable food services -- contributes to harming community health. Greening Health Care examines the intersections of health care and environmental health, both in terms of traditional failures and the revolution underway to fix them. Authored by one of the pioneers in health care's green movement, it presents practical solutions for health care organizations and clinicians to improve their environments and the health of their communities. As environmental protection grows into an imperative for all aspects of society, Greening Health Care offers an historical and practical approach to sustainable health care delivery.

The following is an excerpt from the book.

Can environmental sustainability strategies in health care



coexist with today's constant pressures on cost structures? For many health care organizations, that question lies at the heart of the viability of the greening of health care movement. Is it affordable? How do we tally the costs and benefits?

Greening Health Care: How Hospitals Can Heal the Planet

Kathy Gerwig

280 pages, Oxford University Press, 2014

[Buy the book »](#)

Fortunately, there is a preponderance of evidence that a greener health care enterprise is not only affordable but that in most cases it results in an improved cost structure. The latest comprehensive examination of the question estimates that if the health care industry conserved energy, reduced waste, and more efficiently purchased operating supplies, it could save more than \$15 billion over 10 years.¹

Efforts by hospitals to develop greener, more environmentally sustainable operations result in significant savings rather than incur additional costs, according to the study of nine hospitals/health systems that undertook a range of initiatives, including improvements in waste management, energy reduction, and operating room supply procurement, over a 5-year period. The study's authors concluded that if similar changes were adopted throughout the US health care sector, the total savings could exceed \$5.4 billion over 5 years, and \$15 billion over 10 years.

"This study turns on its head the belief that introducing environmental sustainability measures increases operating costs," said Blair L. Sadler, JD, senior fellow at the Institute for Healthcare Improvement, one of the study authors, and former CEO of Rady Children's Hospital, San Diego, California. "In fact, it is just the opposite," he says. "With little or no capital investments, significant operating savings can be realized. It is good for patients and staff, and is a better strategy than having to lay off valuable personnel or closing effective programs that lose money."²

From 2009 to 2012, Kaiser Permanente pursued environmentally preferable product and service contracts have yielded savings of \$63 million. Our contract savings often result from standardization and efficiencies by our expert procurement team, and they do not always reflect a less expensive product.

In the beginning of Kaiser Permanente's environmental stewardship efforts, our cost structure was less of a driver than our health care mission, so long as our program was cost neutral in the long run. Actually, what we had in the early days was not so much a stewardship "program" as a shared understanding about the link between environmental health and human health and a belief that, as a major health care provider, we had a great opportunity, and a responsibility, to act on that link. We understood that the health and sustainability of the environment—the natural environment, the built environment, and even the social environment—is a necessary condition for human health and well-being. We think of our mission in terms of what we call "total health," which has multiple,

interrelated dimensions. It includes the physical, emotional, and spiritual health of every individual, supported and sustained by the health of our total environment—our families, neighborhoods, workplaces, cities, the air we breathe, the food and water we consume, and all the delicate ecological balances that sustain life on this planet. While medical care is typically focused on the physical health of patients and members, our approach to health and wellness must support this larger reality.

Besides this shared ethos, we also had organizational leadership that was deeply committed to the total health vision and designated a single point person (which turned out to be me) to identify and coordinate the various green projects that were sprouting throughout the organization into a more focused and strategic effort. From the beginning, we took a “distributed accountability” approach to the work. We embedded environmental stewardship into the operations of the organization and created an Environmental Stewardship Council. We had three priority areas: sustainable purchasing, sustainable operations, and sustainable buildings. The operations team agreed on a plan to prioritize waste reduction—one of the lowest hanging fruits in health care—as our first major project. We formed the Waste Minimization Team, and we developed a toolkit that our hospital managers could use to conduct waste assessments. It demonstrated the potential savings and environmental benefits that could result from something as simple as segregating regular trash, which costs about 3 to 8 cents a pound to process, from biohazardous and regulated medical waste, which costs up to \$2 per pound to process. At the same time, we also acted on the emerging evidence about the hazardous nature of polyvinyl chlorides (PVCs) by working to remove PVC-containing materials from the waste stream.

From there, we moved quickly to the elimination of mercury, a powerful neurotoxin. While hospitals were not the main source of mercury pollution, the incineration of medical wastes nonetheless contributed nearly 16 tons of the toxin into the atmosphere every year, about 10 percent of all the nation’s mercury air emissions.³ In the atmosphere, it could travel anywhere from a few hundred feet to thousands of miles away from its original source, making it possible for an incinerator in Nebraska to contaminate cod in the Atlantic.

Eliminating mercury taught us the value of evaluating products on the basis of “total cost of ownership.” A unit-by-unit cost comparison showed that most alternatives to mercury-containing devices, such as electronic, battery-operated thermometers, were more expensive than the mercury-containing devices that our hospitals already owned. In the end, we were able to show that the combined cost of spill kits and the expense of closing down an exam room after a mercury spill—an infrequent but not a rare event—was in fact much higher than switching to mercury-free devices. We documented that when hazardous waste disposal, staff training, and the like are taken into account, the total cost of ownership per unit of a mercury-free blood pressure device is about one third that of a mercury-containing device.

Within a few years, digital thermometers were the norm throughout our hospitals and clinics, and all

purchases of new blood pressure cuffs were required to be mercury-free. We also implemented recycling of all the mercury in fluorescent bulbs and required our vendors to itemize any mercury in their products and to provide nontoxic alternatives. By 2008, Kaiser Permanente was virtually mercury-free, along with a growing number of other health systems that had signed on to Health Care Without Harm's Mercury-Free Pledge. In 2007, the estimated cost savings to our organization in avoiding mercury safety equipment, which included mercury cleanup kits and special vacuums, was \$500,000. Other cost savings included reduced hazardous spill cleanup costs (at least \$2,500 each) and uncalculated costs of clinic closure due to a spill.

The success of those first two projects, waste minimization and eliminating mercury-containing devices, clearly demonstrated that we could achieve significant environmental benefits while also making our facilities safer for our patients and our employees. And we could save money—or at least not create new costs—in the bargain. In fact, those three objectives—patient and staff health and safety, responsible environmental stewardship, and cost savings—became the principal criteria by which we evaluated all future ideas. Any proposal that met all three criteria shot to the top of our project list. Even if some projects, such as switching to safer cleaning products, involved short-term excess costs, those would make the agenda, as well, so long as they delivered significant health and environmental benefits that in the long run would make them cost-effective.

The Triple Bottom Line

Our three requirements for taking on a green project turned out to be closely in tune with thinking that was emerging among environmental activists, economists, biologists, and future-oriented entrepreneurs about the sustainability of living systems and the laws that govern commercial economic activity. Over the next decade, these ideas would have a major impact on attitudes about how businesses of all kinds define successful performance, as well as the responsibilities that organizations bear toward their shareholders and stakeholders.

The concepts developed and popularized have come to constitute a persuasive and widely embraced rationale, or business case, for the greening of business operations, in investor-owned and nonprofit entities, and for the broader movement of environmental sustainability that links humanity's social and economic well-being to the long-term resilience of life on earth. The arguments provided are worth examining, at least briefly, for they answer the question of why a growing vanguard of large and small businesses, nonprofits, and even governments have embraced values, beliefs, and codes of conduct that would have been almost unthinkable in most executive suites less than two decades ago.

Our business case for greening projects—the health of our patients, staff, and communities; the health of the environment, locally and globally; and our financial health—was not fundamentally different from an emerging theory known as the “triple bottom line.” This is a concept first articulated in 1994 by John Elkington, the founder of a British consulting firm called Sustain Ability, who expanded on

the theory in his book *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*.⁴ Elkington proposed that in an era of increasingly constrained natural resources and growing environmental degradation, a new framework was needed to measure the performance of a business or an entire economy that could look beyond the traditional bottom line of profitability and return on investment to include environmental and social costs and benefits. Only by measuring and accounting for the total sum of the interrelated investments and out-comes along the dimensions of people, profit, and planet—the 3Ps—could an enterprise evaluate its true-cost performance and sustainability. The triple bottom line concept, says business writer Andrew Savitz, “captures the essence of sustainability by measuring the impact of an organization’s activities on the world . . . including both its profitability and shareholder values and its social, human, and environmental capital.”⁵

The addition of social and environmental capital to the financial balance sheet was an important acknowledgment that, just as all types of businesses depends on financial capital in the form of investments and equipment, they also depend on the capital, or services, provided by a healthy society and a healthy environment. Social capital comes in the form of loyal, skilled employees; supportive communities; loyal customers; suppliers; investors; and the legal and governmental institutions of civil society. The environment contributes sources of energy, forests for wood products, arable land for agriculture, clean air and plentiful clean water, minerals, chemicals, plants and animals, and the like. Basically, healthy societies and environments provide the raw materials for virtually all the services and goods of the consumer society, in addition to protection from the sun’s radiation, medicines, recycling of wastes, erosion control, and a host of other natural services that sustain life on earth and enable economic growth.

To ignore the value of this social and environmental capital in the overall performance of a business, a government, or a nonprofit organization is to court bankruptcy, because what we do not assign a true value to we are prone to take for granted and waste. In the case of critical natural resources, we have been spending down vast sums of nonrenewable capital for generations. The US Environmental Protection Agency (EPA) reports that humans have consumed more natural resources in the last 50 years than in all previous history. A century ago, 41 percent of the raw materials used in the United States were renewable (agriculture, fisheries, and forest products). By the end of the twentieth century, only 6 percent of the materials we consumed were renewable; the rest consisted of finite resources, such as minerals, metals, and products derived from fossil fuels.⁶

As the environmental writer and business entrepreneur Paul Hawken put it in an influential article, “Commercial institutions do not see that healthy living systems—clean air and water, healthy soil, stable climates— are integral to a functioning economy. As our living systems deteriorate, traditional forecasting and business economics become the equivalent of house rules on a sinking ship.”⁷

Over the past 15 years, the triple bottom line framework and its implications have served as powerful

drivers behind a major shift in the strategic outlook of a growing number of commercial enterprises, including nonprofits for which bottom line profitability, or return on investment (ROI), was never the sole arbiter of success. The embrace of sustainability as a business model has been such that an entire industry has grown up around the ranking of the “sustainability performance” of companies, led by the Dow Jones Sustainability Index, launched in 1999. It evaluates the largest 2,500 companies listed on the Dow Jones for specific measures of their financial, social, and environmental operations. Its annual rankings have become the key reference point for another industry, that of sustainability or corporate responsibility investing, in which investors seek out companies with high scores in assessments of economic, social, and environmental asset management as the best candidates for long-term profitability and sustainability.

As John Prestbo, the president of Dow Jones Indexes, says, “Sustainability has become a proxy for enlightened and disciplined management, which just happens to be the most important factor that investors do and should consider in deciding where to buy a stock.”⁸

It's All About Health

But what about health care, an industry that many would argue is fundamentally different from either the normal Main Street or Wall Street models of capitalist enterprise? Can the same sort of accounting standards apply?

Roughly 60 percent of all hospitals in the United States today, and 86 percent of all “hospital assets,” are nonprofit—a share that has been declining for several decades.⁹ But this does not mean that the health care sector does not need to focus on the bottom line, which nonprofits define as “margin” rather than profit. Nonprofit health care executives often quote the phrase “no margin, no mission” to emphasize the fact that if costs exceed revenues, the organization’s social mission is likely to suffer. Most nonprofit health care organizations have a mission statement that commits them to providing high-quality care to their community of the interests of healthier patients, staff, communities, and hospital margins. What we needed then to move it to a new level were commitments from our senior leaders, staff coordination of our efforts, strategy, and especially evidence that what we were doing was making a positive difference that was consistent with our mission to provide quality affordable health care. Over the past 15 years, Kaiser Permanente and HHI’s other founding health systems, with the help of the key nonprofit advocacy groups, have managed to realize many of our objectives while building, piece by piece, a robust business case for our own green initiatives.

The challenge for health care leaders today is to provide that same mix of leadership, strategy, coordination, and evidence with the objective of transforming not just a single hospital or health system, but the entire US health sector to a deep and healthy shade of green.

*SSIR readers may purchase **Greening Health Care at a discounted price** through the publisher.*

Notes

¹Susan Kaplan, Blair Sadler, Kevin Little, et al., “Can Sustainable Hospitals Help Bend the Health Care Cost Curve?” The Commonwealth Fund, November 2012, <http://www.commonwealthfund.org/Publications/Issue-Briefs/2012/Nov/Sustainable-Hospitals.aspx>

²Healthier Hospitals Initiative, “Study Finds Hospital Environmental Sustainability Efforts Could Save Health Care Sector \$15B over 10 Years,” press release, November 2, 2012.

³US EPA, Office of Air Quality Planning & Standards and Office of Research and Development, “Mercury Study Report to Congress: Volume I: Executive Summary,” EPA-452/R-97-003, December 1997.

⁴John Elkington, “Towards the Sustainable Corporation: Win-Win-Win Business Strategies for Sustainable Development,” *California Management Review* 36, no. 2 (1994): 90–100; John Elkington, *Cannibals with Forks: The Triple Bottom Line of 21st Century Business* (Philadelphia: New Society, 1998).

⁵Andrew W. Savitz, *The Triple Bottom Line* (San Francisco: John Wiley and Sons, 2006), xiii.

⁶US EPA, “Sustainable Materials Management: The Road Ahead, 2020,” Executive Summary (June 2009), <http://www.epa.gov/epawaste/conserve/smm/pdf/vision2.pdf>

⁷Paul Hawken, “Natural Capitalism,” *Mother Jones* (March/April 1997), <http://www.motherjones.com/politics/1997/03/natural-capitalism>

⁸Savitz, *The Triple Bottom Line*, 31.

⁹Network for Public Health Law, “Issue Brief: New Requirements for Nonprofit Hospitals Provide Opportunities for Health Department Collaboration” (2011), http://www.networkforphl.org/_asset/fqmqr/CHNAFINAL.pdf



Kathy Gerwig is Vice President of Employee Safety, Health and Wellness, and Environmental Stewardship Officer for Kaiser Permanente, one of America's leading not-for-profit providers of health care. Ms. Gerwig is also Kaiser Permanente's national leader for Employee Safety, Health and Wellness, responsible for eliminating workplace injuries, promoting healthy lifestyle choices, and reducing health risks for the organization's 174,000 employees and nearly 17,000 physicians.

Tags

Health Care, Sustainability

Copyright © 2014

If you like this article enough to print it, be sure to subscribe to SSIR!