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Study Finds Hospital Environmental Sustainability Efforts Could Save Health Care Sector $15B over 10 Years

Savings of Hospitals Already Making Changes Shows Greening Works To Meet “Triple Aim” of Interventions Good for Patient, Community Health, and Bottom Line

(Washington, D.C.) Efforts by hospitals to develop “greener,” or more environmentally sustainable operations result in significant savings rather than incur additional costs, according to a study of nine hospitals/health systems that underwent such changes in their operations over the last five years. A new Health Care Research Collaborative study, “Can Sustainable Hospitals Help Bend the Health Care Cost Curve?,” sponsored by the Healthier Hospitals Initiative (HHI) and Health Care Without Harm through grants from The Commonwealth Fund and The Robert Wood Johnson Foundation, was published today by the Commonwealth Fund. The study’s authors concluded that the total savings to the health care sector, if it adopted similar changes, could exceed $5.4 billion over five years, and $15 billion over 10 years.

Each of the nine health systems and hospitals in the study documented their savings in a number of areas, including waste management, energy use reduction, and changes in their Operating Room (OR) supply procurement. Each hospital found significant savings, even those that made initial investments to adopt the programs. The savings were projected to last five years or more.

“This study turns on its head the belief that introducing environmental sustainability measures increases operating costs,” said Blair L. Sadler, J.D., senior fellow at the Institute for Healthcare Improvement, one of the study authors and former CEO of Rady Children’s Hospital, San Diego, CA. “In fact, it is just the opposite. 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.”

Study authors said the implication for hospital CEOs and CFOs is clear. Given the return on investment, all hospitals should adopt sustainability programs. The authors noted that where capital investments are required, governments should provide loans or grants, particularly to safety-net hospitals. Because environmental sustainability interventions are intended to reduce harm to
patients from chemicals and other environmental pollutants, their implementation helps meet the Triple Aim of health care by providing benefits to patients, by “upstream” prevention of disease in the community and through reduced health care costs.

“These cost reductions result in tremendous savings in hospital operations,” stated Mary Ellen Leciejewski, O.P., Dignity Health Ecology Program Coordinator. “Hospitals can redirect these savings to increased patient care and community wellness programs that will improve overall public health.”

Below are specific highlights from the study, illustrating the specific approaches cost savings realized by the study hospitals, and projected savings for the entire health care sector.

**Waste**

*Approach:* Streamline waste disposal processes to include recycling, reducing package and trash, such as paper, food refuse, and non-infectious garbage that is inadvertently mixed with medical waste.

*Savings:* The studied hospitals found savings of $0.397 per adjusted patient day by making these changes. Nationwide adoption of these waste management changes would net $0.71 billion in savings over five years.

**Operating Rooms**

ORS account for about 33 percent of all hospital supply costs, and have large costs for energy use and waste management.

*Approach:* Address wasteful OR practices such as using disposable products.

Seven hospitals in the study contracted with a service that collected used single-use medical devices (SUDs), determined which could be reused, cleaned and sterilized, then sold them back to the hospitals at a reduced price compared with new multi-use devices.

*Savings:* The average annual net savings per procedure realized by hospitals as a result of the SUD utilization activities was $12.04/procedure, which does not include waste disposal savings that may have resulted. The authors stated that if hospitals throughout the U.S. were to adopt the SUD utilization changes, the cost savings would be $0.54 billion annually from decreased new device purchasing alone. Over five years, the savings would total $2.7 billion.

*Approach:* Staff examined OR packs that had been pre-formulated for specific procedures, identified items in them that were often not used and thrown away after the packs were opened, and asked their suppliers to leave those items out.
**Savings:** The average net cost savings realized by the two hospitals as a result of the OR kit reformulation activities was $4.33 per procedure in the year of the reformulation. If hospitals throughout the U.S. were to adopt the changes to reformulate OR packs implemented by the exemplar hospitals, the cost savings would be $0.19 billion in year one and $1.02 billion over five years, the study authors found, based on approximately 45,000,000 surgical cases a year.

**Energy**

**Approach:** Hospitals reporting energy savings employed interventions like lighting upgrades; installing high-efficiency electric motors, occupancy sensors for public areas, high-efficiency boilers, central plant chiller replacement, solar film on windows; reducing air changes and temperature in the ORs, using steam insulating jackets and off-hours shutdown.

**Savings:** The total five-year net cost savings realized as a result of these activities resulted in a savings of $0.72 per square foot. Nationwide adoption of these changes would results in an estimated five-year net cost savings of $0.98 billion.

“These findings should encourage hospitals who have not started sustainability programs or who are tentative about making sustainability investments,” stated John Messervy, AIA, director of capital and facility planning, Partners Healthcare, Boston, MA, and chair of HHI. “As an additional incentive, HHI has developed a [free, web-based introductory program](https://www.healthierhospitals.org) for hospitals that want to adopt environmental sustainability initiatives in six areas of hospital operations, including the three areas that were part of this study.”

Hospitals and health systems that contributed data to the study are:

- Metro Health Hospital, Wyoming, MI
- UC Health Cincinnati, OH
- Providence Health & Services, Renton, WA
- Advocate Health Care, Chicago, IL
- Partners HealthCare, Boston, MA
- University of Minnesota Medical Center, Fairview, MN
- Kaiser Permanente, Oakland, CA
- Dominican Hospital (part of Dignity Health) Santa Cruz, CA
- Gundersen Lutheran Health System, La Crosse, WI

While the hospitals shared actual data, costs and savings to the study authors, in most cases, they preferred that this data appear in the report in aggregate to protect their privacy. Not all hospitals participated in all three segments of the study. The hospitals were chosen with input from HHI, HCWH and Practice Greenhealth to identify hospitals that have made significant strides in environmental sustainability.
The Commonwealth Fund also published two commentaries to accompany the study, written by Jeffrey Thompson, M.D., CEO of Gundersen Lutheran Health System and George Halvorson, chairman and CEO of Kaiser Permanente. Study author Susan Kaplan, JD, discusses the study and the need for additional research in a blog post for Health Care Without Harm.

Study authors include Susan Kaplan, J.D., Research Assistant Professor at the University of Illinois at Chicago School of Health and Director of the Health Care Research Collaborative; Blair Sadler, J.D., Senior Fellow, Institute for Healthcare Improvement; Kevin Little, Ph.D., Principal of Informing Ecological Design, LLC; Calvin Franz, Ph.D., Senior Economist with Eastern Research Group, Inc.; and Peter Orris, M.D., M.P.H., Professor and Chief of Service, Occupational and Environmental Medicine, University of Illinois Hospital and Health Science System and Chair of the Health Care Research Collaborative.

The report was supported by The Commonwealth Fund, a national, private foundation based in New York City that supports independent research on health care issues and makes grants to improve health care practice and policy. The views presented here are those of the authors and not necessarily those of The Commonwealth Fund, its directors, officers, or staff.

The Research Collaborative was initiated by Health Care Without Harm (HCWH), an international nonprofit coalition that promotes environmental responsibility in health care, and is coordinated by faculty of the University of Illinois at Chicago School of Public Health, with support from the Pioneer Portfolio of the Robert Wood Johnson Foundation. The Collaborative also interacts closely with the Healthier Hospitals Initiative (HHI). The editors of this series are Peter Orris, M.D., M.P.H., and Susan Kaplan, J.D.

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About the Healthier Hospitals Initiative
The Healthier Hospitals Initiative (HHI) is a national campaign to implement a completely new approach to improving environmental health and sustainability in the health care sector. Eleven of the largest, most influential U.S. health systems, comprising over 500 hospitals with more than $20 billion in purchasing power, worked with Health Care Without Harm (HCWH), the Center for Health Design, and Practice Greenhealth to create HHI as a guide for hospitals to improve sustainability in six key areas: engaged leadership, healthier foods, leaner energy, less waste, safer chemicals, and smarter purchasing. Sponsoring health systems include Advocate Health Care, Bon Secours Health System, Catholic Health Initiatives, Dignity Health (formerly Catholic Healthcare West), Hospital Corporation of America, Inova Health System, Kaiser Permanente, MedStar Health, Partners HealthCare, Tenet Health Systems, and Vanguard
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