



# Creating a Culture of Sustainability

Leadership, Coordination and Performance Measurement Decisions in Healthcare

APRIL 2012

AUTHOR:

Tonya Boone, Ph.D.



Health Care Without Harm has initiated a research collaborative 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, aimed at stimulating collaborative research around health and safety improvements in health care. The Research Collaborative is designed to increase the evidence base concerning the impacts of sustainable design, construction, organization, operations, and materials and chemicals choices in the health care sector on patient, worker and environmental safety.

This paper is the eighth in a series of papers in which the Collaborative provides research and analysis of factors influencing patient, worker and environmental safety and sustainability in the healthcare sector. The editors of this series are Peter Orris, MD, MPH and Susan Kaplan, JD.

# TABLE OF CONTENTS

Foreword .....	3
Executive Summary .....	4
<b>I. Introduction.....</b>	<b>5</b>
Sustainability in Healthcare .....	5
Key Components of Organizational Structure .....	6
Method.....	7
<b>II. Case Studies.....</b>	<b>8</b>
University of Maryland Medical Center .....	8
Dignity Health .....	9
Cleveland Clinic .....	11
Providence Health & Services .....	12
Spectrum Health.....	13
Kaiser Permanente .....	15
Bon Secours Health System.....	16
Gundersen Lutheran Health System .....	18
<b>III. Key Elements of Organizational Structure.....</b>	<b>20</b>
Leadership.....	20
Coordinating Mechanisms.....	22
Standardization of Organizational Norms through a Sustainability Vision.....	22
Direct Supervision .....	23
Mutual Adjustment.....	24
Standardized Routines .....	24
Performance Measurement .....	24
<b>IV. Conclusion.....</b>	<b>26</b>
The Future of Sustainability .....	27
References .....	28

# Acknowledgements

The author wishes to thank all the participants and their organizations:

- Christina Vernon, Cleveland Clinic
- Mary Ellen Leciejewski, Dignity Health
- Denise Choiniere, University of Maryland Medical Center
- Josh Miller, Spectrum Health
- Tom Thompson, Gundersen Lutheran
- David McCombs, Bon Secours Health System
- Richard Beam and Michael Geller, Providence Health & Services
- Joe Bialowitz, Kaiser Permanente

This paper was generously funded from the Pioneer Portfolio of the Robert Wood Johnson Foundation, by BD (Becton, Dickinson and Company), and 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 author and not necessarily those of The Commonwealth Fund, its directors, officers, or staff.

Design & Layout by Kieran Daly & Parisa Damian of Winking Fish.

# FOREWORD

We are pleased to present this study by Professor Tonya Boone of the Mason School of Business, College of William & Mary. This is the eighth paper in the Health Care Research Collaborative's monograph series providing research and analysis of factors influencing patient, worker and environmental safety and sustainability in the health care sector. The Research Collaborative was initiated by Health Care Without Harm, 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 Research Collaborative's mission is to stimulate the development, coordination and dissemination of research focused on the impact of the health care built environment, operations and organization on patient, worker and environmental safety and sustainability.

We asked Professor Boone to write this report because we had observed that hospitals that have changed their institutional culture to incorporate a commitment to sustainability at all levels are reporting additional benefits, including significant cost savings. As a few examples of cost savings among the hospitals and health systems included in this report, Gundersen Lutheran Health System achieved more than \$1 million in annual savings by implementing a number of low- and no-cost measures to improve efficiency and reduce energy demand.<sup>1</sup> In 2010, Kaiser Permanente's environmentally preferable purchasing program delivered projects projected to result in \$26 million in annual savings.<sup>2</sup> Dignity Health saved \$5.4 million in 2010 by increasing purchases of reusable products through reprocessing.<sup>3</sup> And many additional hospitals and health systems are finding that implementing sustainability initiatives may not only not cost more, but can save money, as well as leading to additional benefits to the hospitals, workers, patients, and community.

How are these hospitals implementing this commitment to sustainability through their leadership, organization, and measurement decisions? These case studies explore this question and the benefits that can result from such a commitment. As Professor Boone notes in her conclusion, there is still more to study in this area, such as the potential for organizing for sustainability to lead to further improvements in quality performance and to increased organizational and operational effectiveness in health care.

We hope you find this paper informative. We also invite you to read the other papers in the Research Collaborative's monograph series, available at [http://www.noharm.org/us\\_canada/reports/researchcollaborative.php](http://www.noharm.org/us_canada/reports/researchcollaborative.php) or by contacting us.

Peter Orris, MD, MPH, FACP, FACOEM  
Professor and Chair  
[porris@uic.edu](mailto:porris@uic.edu)

Susan Kaplan, JD  
Director  
[kaplans@uic.edu](mailto:kaplans@uic.edu)

Health Care Without Harm  
Research Collaborative  
University of Illinois at Chicago  
School of Public Health  
c/o OHSI  
UIC Medical Center  
835 S. Wolcott, (MC684)  
Chicago, Illinois 60612  
Phone 312-413-0105, Fax 312-413-8485

# EXECUTIVE SUMMARY

Sustainability is fast becoming a business megatrend, essential for organizations to address in order to maintain their competitive positions. Sustainability seeks to balance and simultaneously optimize environmental, social and financial concerns. Sustainability in healthcare represents a particularly challenging undertaking as it necessarily encompasses the wide variety of facilities, operations and activities in a typical healthcare organization. This exploratory study examines the organizational approaches of eight healthcare systems with relatively successful sustainability initiatives. The hope is that by providing a better understanding of the successes and limitations of current efforts, managers in other healthcare organizations will be better able to guide their efforts.

The organizations studied have embraced sustainability as a core organizational value, and consequently have committed significant resources and personnel to support their sustainability efforts. Nonetheless, they have realized significant financial benefits from the efforts. Environmental resource management — especially energy and waste — serves as the initial and often central focus of many sustainability initiatives. Improving energy efficiency is associated with reduced operating costs, as is increasing recycling and more carefully managing all waste streams. Managing energy and waste more sustainably was, for these health care organizations, critical for building organizational capabilities that could be applied to other areas, such as environmentally responsible purchasing and food management. Most of the organizations created new positions or hired new people to help manage and coordinate the sustainability initiatives. The sustainability coordinators are charged with identifying focus areas, developing sustainability-related goals, tracking performance, integrating environmental and social concerns into organizational processes, identifying significant external resources and helping to build important sustainability-related organizational capabilities.

This study identified several key organizational elements that support the effectiveness of the sustainability initiatives.

**First**, there must be an executive champion who advocates for sustainability to important stakeholders. An executive-level champion is essential in helping to define sustainability for the organizational context, securing resources for sustainability, advocating for sustainability within the organization, linking the sustainability activities to high-level strategy, and working with a sustainability coordinator who oversees day-to-day activities.

Sustainability coordinators have a variety of backgrounds. Critical coordinator capabilities include familiarity with environmental management systems, communication skills, process analysis and management skills and a strong commitment to ongoing learning. They utilize a variety of means, including best practices and processes, information technology networks, and green teams to assure flexible systems, communication, and commonality of approach at all levels.

**Second**, the values of the sustainability initiative must be reflected in the organization's high-level mission, vision or values. Linking to the high-level mission helps to underscore the relationship between sustainable operations and patient care. This also defines organizational norms and helps guide decisionmaking.

**Finally**, performance measurement systems are used to monitor and guide sustainability activities. The organizations studied regularly track a number of key sustainability performance indicators. These are monitored at the highest organizational levels. Performance management systems are also used to align individual, department and facility level activities with strategic goals around sustainability.

# I. INTRODUCTION

Sustainability is emerging as a competitive imperative for many organizations. Lubin and Esty identify sustainability as the newest business megatrend that will transform the competitive landscape for many industries.<sup>4</sup> Sustainability balances the economic, environmental and social impacts of an organization's operations. Environmental impacts typically refer to an organization's relation to the natural earth systems, including consumption of non-renewable resources. The social component of sustainability can be more difficult to define. According to the recently crafted ISO 26000 standard on social responsibility,<sup>5</sup> social sustainability addresses a business organization's relationship to the communities and societies where it operates. It includes activities around human rights, labor practices, fair operating practices, consumer support, health and safety, and community involvement and development. The challenge for most organizations is how to organize the wide-ranging efforts that support environmental and social sustainability, and effectively integrate them into ongoing operations. This study examines how eight healthcare systems organize their sustainability efforts.

---

## Sustainability in Healthcare

---

While manufacturing firms were among the first to adopt sustainability initiatives, service industries such as healthcare have begun to more aggressively embrace sustainability. Healthcare, as one of the largest service industries, represents a significant opportunity for dramatically affecting economy-wide sustainability performance. The \$2.5 trillion U.S. healthcare industry represents more than 17% of gross domestic product,<sup>6</sup> and its environmental footprint is large and multi-faceted. Healthcare facilities consume enormous amounts of energy. The average hospital uses more total energy than any other commercial building type, and is second only to retail food establishments in energy use per square foot. In 2009, according to the U.S. Department of Energy, the healthcare industry spent over \$6.5 billion on energy — surpassing every

service industry except transportation.<sup>7</sup> In addition, a 2007 study estimated that healthcare accounted for eight percent of all U.S. greenhouse gases and seven percent of all carbon dioxide emissions.<sup>8</sup> Healthcare facilities use a multitude of cleaning chemicals, which result in potentially hazardous wastewater effluents. The hazardous chemicals used for anesthetics are often vented, creating potentially hazardous air emissions. Finally, U.S. healthcare facilities collectively generate an estimated 5 million tons of solid waste per year. Five percent of this is hazardous.

Hospitals also have significant social impact in their communities. First, hospital employees directly impact their communities. The United States has more than 5,000 hospitals and 595,800 total healthcare facilities, employing 14.3 million people.<sup>9</sup> They are the largest employers in many communities. Next, accessibility to healthcare is important for community health. Healthcare provides services that support community wellness, disease prevention and emergency preparedness.<sup>10</sup> Consequently, proximity to and density of healthcare services is a significant indicator of community attractiveness and quality of life. Finally, hospitals offer a range of services that have significant spillover effects on the surrounding communities, including attracting businesses, skilled workers and new residents.

The scope and size of healthcare's social and environmental impact represent tremendous opportunities for the industry. Nevertheless, effectively implementing sustainability in healthcare organizations presents a unique challenge. Healthcare is one of the most complex and rapidly changing industries. Healthcare is continually transformed by new techniques, technologies, pharmaceuticals and delivery systems.<sup>11</sup> Healthcare system managers are under pressure to simultaneously improve cost efficiencies, patient safety and quality. Sustainability in healthcare must address a wide variety of activities while maintaining — or even improving — quality of care. This report examines eight health care systems that have introduced sustainability initiatives and achieved noteworthy results. We examine how these

organizations have organized their sustainability initiatives in order to achieve superior performance.

Ray Anderson, a pioneer in business sustainability, characterizes sustainability as a journey, “a long commitment that fundamentally changes an organization.” The eight healthcare organizations examined in this study are at different places in their sustainability journeys. Their stories show that there is no single journey that best fits every context. There are insights that we can gain from their experiences. The organizations in this study have developed sustainability initiatives that have reduced their organizations’ environmental impact while enhancing the social impact of their activities. They have leveraged sustainability to improve efficiency or reduce costs while maintaining or improving patient quality.

The next section provides an overview of relevant background research on organizational governance. Following that is a description of the study methodology. Next are brief descriptions and case studies of the healthcare organizations participating in the study. The paper concludes with a discussion of the major findings and their implications.

This study uses case study research methods to examine in depth the approaches to leadership, organizational coordination and performance measurement adopted by each system. The organizations are all not-for-profit, and vary in size and geographic location. All are headquartered in the United States.

---

## Key Components of Organizational Structure

---

Effective organizational structures align organizational, departmental and individual activities around strategic goals. The key components of organizational structure, examined in this study, include leadership, performance measurement and coordinating mechanisms. This study examines how organizations lead, coordinate and measure the performance of their sustainability efforts. The salient leadership, performance measurement, and coordinating and organizing structures associated with the various sustainability initiatives at each of the organizations in the study are identified.

This study examines three leadership characteristics that potentially affect leadership effectiveness. These include the leader’s background and training; leader autonomy; and position formality. Background and training refer to the leader’s professional experiences, training and education. Leaders with a high degree of autonomy have a lot of discretion to make decisions about their day-to-day activities, as well as the shape of the sustainability initiative. Low autonomy means that activities are closely monitored and the leader must get approval for most decisions. More autonomy is generally associated with more flexibility and creativity in problem-solving and decisionmaking. Formality specifies the degree to which rules, policies and procedures govern a leader’s activities.<sup>12</sup> High formality indicates that the leader complies with prescribed processes in carrying out their work.

Mintzberg’s synthesis of organizational design research identifies six basic coordinating mechanisms. These mechanisms comprise the ways that organizations integrate the work in the organization.<sup>13</sup> Coordination of sustainability efforts may be carried out using one or more of the following mechanisms: 1) mutual adjustment, which is the informal communication among employees; 2) direct supervision, or one person coordinating and monitoring the work of employees throughout the organization; 3) training and education to standardize employee skills; 4) standardization of routines and processes through specified rules and guidelines; 5) standardization of output goals through performance measurement and control systems; and 6) standardization of organizational norms and values via a common mission or vision. Coordinating mechanisms ideally promote intra-organizational collaboration and knowledge sharing. They help to guide and shape employees’ interactions.

Performance measurement indicates how organizations measure, analyze and review their performance. It comprises what data is collected, how metrics are identified, and how performance is tracked, reviewed, and used to improve organizational performance. This study examines the performance measurement of the sustainability initiatives. It investigates how sustainability metrics are developed, where they are applied, and how they are used by managers and workers throughout the organizations to promote and improve sustainability performance.



This study does not seek to prescribe the optimal organizational structure choices. Sustainability leadership and coordination will be contingent on the organizational context, e.g. type of hospitals, history, norms, etc. Hence, the study describes the leadership, performance measurement and coordinating decisions made by these healthcare organizations, along with their organizational contexts. The analysis examines the specific choices in order to identify common factors and establish a framework for decisionmaking and future research.

---

## Method

---

This study employs case studies to investigate the organizational structures described above. Case study research is used to investigate the practices of high-performing healthcare organizations. Case study methodology excels when trying to understand complex phenomena in real-world contexts. Working with experts from Practice Greenhealth and Health Care Without Harm, a sample of high-performing hospitals was identified. We focus on organizations that are making significant progress with their sustainability programs and have achieved notable environmental performance within the last three years. Eight organizations agreed to be included in the study. A principal informant was identified for each organization and contacted requesting project participation. The principal informants are leaders in the sustainability efforts at their organizations - the sustainability director or coordinator. In-depth interviews with sustainability directors at the hospitals were conducted during November and December 2010.

The interviews were guided by a protocol developed from an extensive review of the research literature. A wide range of literature was reviewed, including work on leadership, coordination, sustainability management and high-performing organizations. The protocol consists of three sections: (1) leadership structure and the background of the primary sustainability leadership, (2) mechanisms for coordinating the sustainability initiative across departments and integrating the activities into overall organization processes, and (3) sustainability performance measurement systems. Additional information was collected through archival data and company documents.

# II. CASE STUDIES

## University of Maryland Medical Center

The University of Maryland Medical Center (UMMC) is the central facility for the University of Maryland Medical System, a network of hospitals located throughout Maryland. UMMC is a teaching hospital with 6,800 employees and 731 beds. The hospital provides comprehensive care for West Baltimore.

The formal environmental program at UMMC started with the actions of a few individuals. In 2006, Denise Choiniere, at the time a cardiac critical care unit nurse, began collecting alkaline batteries for recycling. Soon afterwards, she met the Vice President for Facilities, Leonard Taylor, who was also interested in recycling. They collaborated to create

a pilot alkaline battery recycling program. At the same time, the UMMC directors were beginning to explore sustainability's potential for reducing costs. They formed a committee to investigate opportunities in energy management, waste management and facilities improvements. The two efforts combined and, according to Choiniere, "From there it just kind of kept going. We developed sustainability principles, which the executive office approved."

The first green team was created in 2007. Following some initial successes and demonstrated financial benefits, the green team grew in size and scope. The green team is now developing programs in green cleaners,

*Farmers' Market at University of Maryland Medical Center*



purchasing, food, waste reduction, energy conservation and building design. In 2009, UMMC won the Trailblazer Award for the Environmental Protection Agency Region 3 for starting a farmers' market. In 2010, UMMC was again recognized as a Trailblazer, from Maryland Hospitals for a Healthy Environment, for its pharmaceutical waste management program. UMMC has also been recognized by Practice Greenhealth, receiving Making Medicine Mercury Free and Partner for Change awards in 2010, and in 2011 receiving the Partner for Change with Distinction Award.

## Sustainability Leadership and Coordination

Sustainability efforts are coordinated by Choiniere, who is now the UMMC sustainability manager. Choiniere reports to the Vice President for Facilities. He in turn reports to the Chief Operating Officer. Choiniere also has a reporting relationship to the Chief Nursing Officer. Choiniere believes her

background and training as a nurse helps her to make the connection between sustainability and patient care. "We are taught environmental health in school ... that patient outcomes are influenced by your environment," she notes. That is the message she uses to recruit involvement in the green team.

The cross-functional green teams have membership from almost every UMMC department. The green team identifies environmentally sustainable opportunities, and develops awareness-building programs and devises projects for improving environmental performance.

## Performance Management

Choiniere reports performance metrics on waste and energy to the Vice President for Facilities and Environment of Care Committee monthly. Energy metrics are a part of the annual operations plan, so they are monitored at a high level.

# Dignity Health

Dignity Health (DH) is a system of hospitals, clinics and physicians throughout California, Arizona and Nevada. More than 60,000 employees work in the system of 40 hospitals and almost 200 care centers. DH is co-sponsored by six congregations of religious women located throughout the US.

The sustainability initiative is a reflection of DH's mission to deliver "compassionate, high quality, affordable health services; serving and advocating for ... poor and disenfranchised; and partnering with others in the community to improve the quality of life." In 1996, DH became the first health care system in the U.S. to endorse the Ceres Principles.<sup>14</sup> The initial catalyst was that workers who were recycling at home wanted to be able to recycle at work, and advocated for environmental initiatives within the system. The second catalyst was a shareholder advocacy team that was asking corporations DH worked with to join Ceres, while DH itself had not yet joined. And the third driver was the Sisters who brought their hospitals together to form DH. Each had phrases in their strategic mission, vision and values that emphasized care for creation. All of this grabbed the attention of leadership, and it became a formal initiative.

Since that time, DH has issued annual social responsibility reports which detail sustainability performance, and also recently incorporating components of the Global Reporting Initiative Standards for Sustainability Reporting.<sup>15</sup>

The environmental performance of DH hospitals has been recognized by several organizations, including Practice Greenhealth, the State of California waste reduction program, and the American Heart Association.

## Sustainability Leadership and Coordination

Ceres endorsement requires accountability for environmental and social performance at the highest organizational levels. Much of the coordination of sustainability-related activities is conducted by Sister Mary Ellen Leciejewski, the DH ecology program coordinator. She reports to the director of community health, who oversees community benefits, ecology and alternative investments. Sister Leciejewski coordinates and implements the sustainability initiatives. She also monitors the environmental programs through visits



*Baling cardboard for recycling, Dominican Hospital, Dignity Health*

to all the facilities. During the visits, she evaluates implementation of system-wide environmental policy and the status of environmental action committees. In addition, she collects environmental performance data and identifies goals. She visits about one-third of the facilities annually.

Sr. Leciejewski works with a council of “eco-contacts” to implement programs and share best practices. The eco-contacts are employees, appointed by their hospital presidents, who lead the cross-functional environmental action committees at each facility. The committees meet regularly to implement environmental initiatives and evaluate environmental issues at their respective hospitals. They develop plans to meet strategic goals and monitor and report performance to their hospital management teams.

## Performance Measurement

DH is committed to increasing efficiency and eliminating waste. These activities improve environmental performance while reducing operating costs. Each year, the board of directors establishes goals for social and environmental performance, patient care and employee

satisfaction. Managers develop department- and facility-based metrics from these goals. Performance is benchmarked using a variety of external datasets, such as Stericycle’s Integrated Waste Stream Solutions Program for waste and Energy Star for energy management. Performance baselines are established and monitored. Progress toward goals is reviewed annually by the board, and affects management’s compensation. It is also reported in the annual social responsibility report.

Each facility audits performance at least twice a year. Audit reports are reviewed and performance tracked by department managers. Management closely examines the cost savings and environmental or social impact trade-off in making investments. For example, several years ago, the organization faced a decision about transitioning to PVC/DEHP-free intravenous bags and tubing. However, there was indication that they would be much more expensive than conventional bags. According to Sister Leciejewski, “We took it through an ethical decisionmaking process, and as a result of that process decided to change.” She estimates that this decision has removed more than 800 tons of the toxic material from the waste stream.

## Cleveland Clinic

Cleveland Clinic is an academic medical network based in northeast Ohio. In addition to the teaching hospital on the main campus, the network has 17 clinics throughout the Cleveland metro area, nine regional hospitals, and facilities in Florida, Las Vegas, Toronto and Abu Dhabi. The system has over 40,000 employees.

The coordinated sustainability program started in January 2007 with the Chief Executive Officer, Toby Cosgrove, who, according to Christina Vernon, who heads up Cleveland Clinic's Office for a Healthy Environment, "had an epiphany about the relationships between environmental health and human health and climate change." Prior to that time, there were pockets of sustainability activity. One of the regional hospitals had a very active green team that was seeing some tangible successes. The Office for a Healthy Environment (OHE) was established in mid-2007. It has been led since its creation by Vernon, an architect who had been the lead medical planner in the construction office. The OHE created a

broad recycling program that captured consumer, clinical and construction waste. Other early initiatives included energy management, a purchasing program, greener cleaning and a green building program.

### Sustainability Leadership and Coordination

Vernon, whose title is Senior Director for Sustainability and Environmental Strategy, reports directly to the Chief Operating Officer (COO). Vernon sits in on the COO's weekly staff meetings, which include the executive directors of different operational areas. This meeting includes an update on ongoing activities and issues, and provides an opportunity for coordination. According to Vernon, "A lot of the leadership actually happens in that environment where we're just given an opportunity to be treated the same way as we would in any other part of our efforts. That's a very strong message ... it's just another part of what we do."

*Cleveland Clinic caregivers celebrate energy conservation at the Solon Family Health Center.*



Vernon also leads the system green team, which identifies best practices, updates progress, rolls out new programs, and establishes priorities and goals. These goals are communicated to 26 green teams, which represent different locations, departments and functions. The chairs of each of these local green teams report to the system's green team, which meets monthly. The local teams made up of volunteers are required to meet regularly, although a schedule is not specified. The local green teams have proven most valuable at planning and implementing employee engagement activities.

Green teams are not always used to implement sustainability initiatives. Generally, to implement functional or departmental programs, Vernon or her staff work directly with the appropriate manager. "If I want to do a project on fleet management, I go to the person who is responsible for fleet management and talk to him about how they work and see if there's a way to improve it," she says. There are four employees in the OHE; they work together to provide knowledge, benchmarks and bring in appropriate resources to facilitate implementation.

## Performance Management

The CEO set a handful of very aggressive key goals. They establish guidelines for the other departments. To develop annual department or regional goals, Vernon meets with the appropriate managers and directors. They review the previous year's performance and then set a stretch goal for the coming year. Performance is updated and reported to the COO. He selects a handful to report to the CEO. And sustainability metrics are included in the COO's monthly report to other senior leadership. Says Vernon, "When we didn't have a metric available to us that we thought was robust, we did a collaborative process for developing the metric."

They capture several metrics around, waste, energy, water, food, and buildings. The Practice Greenhealth Greenhealth Tracker (which OHE helped develop) is used to track waste. The metrics must tie into the key goals and targets developed at the higher organizational levels. In the end, sustainability investments must be economically feasible. According to Vernon, "If it does not pass the economy test, it doesn't pass the test."

## Providence Health & Services

Providence Health & Services in Oregon is a network of hospitals, clinics and offices throughout the state. They are a unit of the Providence Health & Services spread across five states in the West. The network includes eight hospitals, with 1,679 licensed beds and 17,292 employees. Providence is a Catholic health care ministry sponsored by the Sisters of Providence religious community.

Caring for the earth and local communities has been a part of the organization's culture from its beginnings in 1856. Sustainability and environmental stewardship are considered a manifestation of the system's core values of "respect, compassion, justice, excellence, stewardship."

The sustainability coordinator's history with Providence mirrors the growth of its contemporary sustainability program. Mike Geller started at Providence in 2004 as the recycling coordinator at one hospital. Recycling had been ongoing in the Portland area for several years. He then became a recycling and waste management supervisor, and in 2007 was placed in charge of



*Green Team members at an Earth Day event at a Providence Health & Services hospital*

the environmental initiatives for four hospitals in the Portland area. Geller is now the regional sustainability manager, with responsibility for all eight Oregon hospitals. The initiative includes Environmentally Preferred Purchasing (EPP), waste and energy management, food service, and an electric car-charging station.

The network has received several awards for quality and service. Hospitals in the system have received the Energy Star Partner of the Year Award for Excellence in Energy Management. A system hospital was the first hospital to receive LEED gold certification.

## Sustainability Leadership and Coordination

The CEO of delivery systems is the executive sponsor of the sustainability initiative, championing the environmental programs at the strategic level of the organization. A sustainability council consists of hospital administrators who are passionate and interested. The council develops system-wide ideas, goals and projects. Seven hospital-based green teams work with the council. According to Geller, “Information goes in both directions. The green teams at the hospitals and business campuses come up with ideas or goals they want to achieve, projects they want to work on, and that filters up through the council for buy-in and approval, and then it goes back to the green teams to actually get the work done.” The teams are multi-functional and

comprised of volunteers from a variety of backgrounds and experience.

## Performance Measurement

Goals are set annually around waste and energy management. Each of the hospitals has a waste-tracking database which is continuously updated. Information on dollars saved by waste and energy management programs is shared with administrators of each hospital. Geller benchmarks performance against other health-care facilities using Practice Greenhealth data and U.S. EPA’s Energy Star. Providence has worked with the U.S. EPA since 1997 to manage and monitor energy usage.

Many of the environmental projects accrue significant cost savings or operational efficiencies. The environmental message is reinforced by communicating the environmental impact of the project rather than the cost savings. Geller says, “So, we’re trying to really push the environmental message rather than the cost saving.” This reduces the expectation that every sustainability-related investment will have a quick financial payoff.

## Spectrum Health

Spectrum Health is a not-for-profit network of hospitals and healthcare providers located in Michigan. The network is comprised of nine hospitals and 170 clinics and offices. It is the largest employer in west Michigan, with 18,000 staff and physicians. Spectrum also provides a health insurance plan that has approximately 600,000 members. Spectrum’s mission is “to improve the health of the communities we serve.”

Green initiatives started in 2006 with the establishment of recycling programs at Butterworth and Blodgett Hospitals. In early 2007, Joshua Miller was hired as sustainability coordinator. Miller was initially responsible for establishing and managing the recycling program. Once the recycling program had baseline metrics and was running successfully, other programs were added. The first focused on waste management. The success of that program fueled others. “I was working in the waste stream and we noticed that there could be quite a significant cost savings and

waste reduction related to switching our sharps containers to reusable,” Miller says. “So then that led into some purchasing initiatives.” Success in purchasing, in turn, has led to energy, water and facilities management initiatives.

## Sustainability Leadership and Coordination

In 2008, the Spectrum Health Regional Hospital Network sustainability committee was created to oversee sustainability initiatives at a network level. The committee developed an environmental commitment statement which connects the environment, human health, and overall organizational mission. It states: “Our mission — to improve the health of the communities we serve — includes a commitment to sustainability efforts. Sustainability refers to meeting present needs without compromising the ability of future generations to meet their own needs.”



*Recycling in the Operating Room at Spectrum Health*

Miller leads and coordinates the sustainability efforts. He reports to the facility manager, who reports to the director of facilities, who in turn reports to the Vice President of Facilities. The Vice President reports to the Chief Operating Officer who then reports to the president of the hospital group. Miller also has working relationships with the Vice President of Facilities, Chief Financial Officer and Chief Nursing Officer.

Miller works with the network sustainability committee and local green teams. Each of the hospitals has a green team. The hospital-level green teams work on implementing various sustainability initiatives in their respective facilities. Ad hoc committees are also formed to focus on specific functional or departmental issues, e.g. pharmaceuticals. An occasional energy summit brings together all of the facility directors to share knowledge about energy programs and develop system level energy management plans.

## **Performance measurement**

Miller has helped to establish baseline metrics for all of the sustainability projects. Waste, energy and water are tracked at all hospitals. A system-wide dashboard is used to track system-wide performance of these metrics. The hospitals use benchmarking tools from the EPA Energy Star program for benchmarking. In addition to basic usage metrics, they also track implementation costs, project costs, and ROI. The dashboard has been shared with the Spectrum Health leadership group, which includes the COO and all the Vice Presidents.



## Kaiser Permanente

Kaiser Permanente (KP) is a nationwide provider of healthcare, including a health insurance plan, a network of 35 hospitals, 454 medical office buildings, and over 15,000 physicians. The health plan serves more than 8.8 million members throughout the U.S. KP employs more than 164,000 employees nationwide. KP is one of the largest non-profit health plans in the country.

Environmental stewardship has been a value of KP since its inception. In 1963, KP physicians were addressed by biologist Rachel Carson.<sup>16</sup> Green teams have been in place in a few of the hospitals since the 1990s. The values of sustainability are reflected in the

overall mission —“to provide high-quality, affordable health care services and to improve the health of our members and the communities we serve.” KP was one of the first systems to collaborate with Health Care Without Harm, an international coalition of hospitals and health care systems, community groups, environmental health organizations and others working to implement ecologically sound and healthy health care practices.

KP's environmental performance and programs have been recognized by the U.S. EPA, Practice Greenhealth, the Green Electronics Council, and Breathe California, among others.

*Packing up blue wrap for donation to an animal shelter at Kaiser Permanente's Ontario (CA) Surgery Center*



## Sustainability Leadership and Coordination

Sustainability efforts take place throughout KP, and are coordinated through the Environmental Stewardship department. This department is sponsored at the senior executive level by the Senior Vice President for Community Benefit, Research and Health Policy, Ray Baxter. He chairs an Environmental Stewardship Council composed of a cross-section of executives that includes Kathy Gerwig, the Vice President of Workplace Safety and Environmental Stewardship Officer. The Council is responsible for establishing national-level sustainability goals and priorities that maximize KP's ability to reduce health risks associated with environmental factors. Joe Bialowitz, the Senior Environmental Stewardship Consultant, works with Gerwig to carry out the "planning, promoting, monitoring, reviewing and reporting [of our] consensus-based strategic efforts around sustainability," he says. The Environmental Stewardship department identifies and shares best practices throughout the organization, measures and reports environmental performance, and convenes the Environmental Stewardship Council's Working Group, composed of key leaders from diverse functional units.

Much of the coordination and implementation takes place in the Environmental Stewardship Council's Working Group. The members of the working group are leading efforts in their respective units, which may be a functional department, a region, a service area within a region, or a medical center. The working

group meets monthly to coordinate efforts, share knowledge and monitor progress. Most of the medical centers have green teams, and the working group has inspired some of the functional areas, such as the research division and the information technology division, to establish green teams as well.

## Performance Measurement

The priorities and goals set by the Environmental Stewardship Council are translated into measurable metrics and targets. These are tracked and reported quarterly, and updated annually as necessary. Much early effort has been devoted to establishing baselines and targets for the key metrics of waste and greenhouse gas emissions. These, in turn, influence the targets for each organizational unit. For the most part, compensation of frontline employees is not tied to performance on these targets. There are, however, employees who are devoted to sustainability full-time and are accountable for performance on relevant measures. For example, there is a Chief Energy Officer, as well as an environmental supply chain manager and a sustainable food program manager. The performance of facilities services managers is also assessed on some environmental metrics, while procurement specialists are encouraged and enabled to identify environmental opportunities within the product categories for which they have responsibility. In 2010, KP implemented a sustainability scorecard for systematically assessing the environmental performance of suppliers of approximately \$1 billion worth of medical equipment and products.

## Bon Secours Health System

Bon Secours Health System is a non-profit network of hospitals, nursing facilities, retirement communities and hospice care providers. The network employs more than 21,000 at 50 facilities throughout seven eastern states. The system is overseen by the Sisters of Bon Secours, which was founded 175 years ago with a mission of caring for the ill, the dying and the disadvantaged. The health system is a part of fulfilling that mission.

In 2008, the Sisters of Bon Secours extended their mission to include care of the earth and the communities they serve: "To bring good help to those who are poor and dying ... and to help bring people and

communities to health and wholeness as part of the healing ministry of Jesus through the sustainable use of natural resources and reduction in the use of toxic chemicals and materials."

At that time, a three-year action plan was developed to implement the environmental stewardship vision. A system-wide green team was established to oversee the initiative. The team developed an environmental vision statement and guiding principles, and selected three areas for system-wide focus during the initial stages — waste, energy and food. According to David McCombs, Vice President of ERP/Supply Chain Operations and a



*Demonstrating worm composting at Bon Secours St. Francis Health System*

member of the green team, “We selected waste because we could literally get our hands around it, and energy. The third one, food, we are currently doing in our waste component, but we are actually looking at nutritional value, organic food, free trade ... community and patient outcomes related to food products, even down to pesticides.” The focus has widened to include mercury elimination, pharmaceutical waste management and water conservation.

## Sustainability Leadership and Coordination

A formal sustainability coordinating and reporting structure was developed within the action plan. This plan calls for Sister Rosemary to provide strategic level leadership for the program. David McCombs develops and leads the business infrastructure to implement the strategic goals. They work together to develop goals and identify critical operational capabilities. McCombs has a Master’s degree in hospital and health administration and has worked in healthcare for 24 years.

Sustainability activities are coordinated through a system of local green teams that represent the different operational regions. The system-wide green team conducts high-level planning and communicates that to the local green teams. It assesses capabilities and provides the resources for local green teams to carry out their work.

According to McCombs, success hinges in part on clear and formal processes of decisionmaking and accountability, as well as incorporating sustainability-related activities into core work processes rather than as voluntary or add-on activities.

## Performance Measurement

A large part of coordination is carried out through the performance measurement system. Based on current capabilities, the system-wide green team establishes organizational targets and measures around the focus areas. For example, initial targets focused on waste and energy management. These are then used by the local green teams to develop annual environmental performance objectives.

In addition, each local system performed a baseline assessment on the focus areas using the Eco-Checklist from Practice Greenhealth. All local green teams had completed the initial baseline assessments by late 2008. In addition, they make use of the EPA Energy Star program’s comprehensive energy metrics for energy management. Progress toward goals is tracked monthly for each facility local green team and for the system-wide green team.

## Gundersen Lutheran Health System

Gundersen Lutheran Health System is a non-profit system operating in Wisconsin, Iowa and Minnesota. The Gundersen Lutheran system comprises a teaching hospital with 325 beds, a Level Two trauma center, two affiliated hospitals, four affiliated nursing homes and 41 clinics. The system employs over 6,000 workers.

Gundersen's environmental program, called Envision<sup>®</sup>, is the vision of the CEO, Dr. Jeffrey Thompson. The program had its beginnings in energy efficiency efforts that started in late 2006. A number of people were hired — including an environmental coordinator — to improve operational efficiency. As they started exploring sustainability and environmental stewardship in healthcare, they realized there were a lot of opportunities for improving energy management and overall environmental performance. In 2007, in response to dramatically increasing energy costs, an energy audit was performed. The results were the impetus for a system-wide energy conservation program and a

broader sustainability strategy. Key roles were created throughout the organization, including two engineering leaders, to manage the technical projects. Tom Thompson was hired as sustainability coordinator. The Envision<sup>®</sup> program was established with the following goals: (1) For the health system to be energy independent by 2014, (2) to commit to environmentally and economically sustainable business practices, and (3) to use the Envision<sup>®</sup> program to reduce the cost of patient care. Gundersen managers have found that the projects in the Envision<sup>®</sup> program have reduced annual operating costs. For example, the recycling program saved approximately \$69,000 in 2010.

While the Envision<sup>®</sup> program is primarily environmentally-focused, social and community focused sustainability activities are reflected in the system's overall mission: "We will distinguish ourselves through excellence in patient care, education, research and through improved health in the communities we serve."

*Gundersen Lutheran installed solar panels on the roof of its Child Care Center as part of a solar hot water heater project.*



## Sustainability Leadership and Coordination

The sustainability initiatives are directly connected to the leadership structure. The sustainability coordinator reports directly to the executive director in charge of all facilities, who is “just a couple of layers below the CEO, but I’m also on the leadership team for facility operations,” says Mr. Thompson. “So we work with construction and design, facilities, environmental services, infection control, safety, and comprehensive waste. We are all represented within our leadership group, which meets weekly.”

As sustainability coordinator, Thompson is responsible for coordinating the sustainability initiatives. He translates the strategic goals into operational plans. His work encompasses a broad set of activities, including, but not limited to, identifying and prioritizing operational opportunities, developing solutions, connecting people with resources to achieve their sustainability goals, and serving as an internal sustainability consultant.

The sustainability work is primarily carried out by green teams. As opportunities or problems are identified, teams of employees from the appropriate departments or locations are pulled together. A lot of work happens on functional area teams, but according to Thompson, “we pull in people for their expertise as needed.” A core group of volunteers helps departments establish their targets and analyze processes. But ultimately, according to Thompson, it is important for the functional areas to have ownership of their sustainability programs and engage all affected employees.

## Performance Measurement

Gundersen uses a variety of metrics to track performance on energy and waste management. Some basic measures were developed using the U.S. EPA’s Energy Star program. Given the system’s goal to provide 100% of its own energy through renewable resources, it has established its own internal measurement system, which is tracked weekly.

Developing metrics to capture some of the intangible aspects of the sustainability program has proven more difficult, and is an ongoing project.

# III. KEY ELEMENTS OF ORGANIZATIONAL STRUCTURE

The study organizations have adopted a variety of structures for leading, coordinating and measuring the performance of their sustainability initiatives. These approaches are reflective of the differing contexts of the organizations. The following discussion examines the leadership choices, coordinating mechanisms and performance measurement systems more closely, highlighting similarities and differences in the study set.

---

## Leadership

---

The sustainability initiative at each of the organizations relies on a senior-level executive to champion or sponsor sustainability. The executive level champion was often essential in initiating the sustainability initiative or increasing the importance of pre-existing sustainability-related activities. According to Vernon, at Cleveland Clinic, “the real catalyst was CEO Dr. Toby Cosgrove, who had his own epiphany about relationships between environmental health, human health and our contribution to climate change.” According to Choiniere at UMMC, a vice president’s concern for environmental stewardship was critical for increasing the scale of their initiative. According to David McCombs, “Sisters of Bon Secours made a decision in 2008 that ... care of the earth is really part of their ministry.” At Gunderson, according to Tom Thompson, “The Envision® program is really the vision of our CEO, Dr. Jeffrey Thompson. He’s a pediatrician and a neonatologist and he has a passion for the environment and connecting the environment to health care. Really, the whole program is his vision and that is driven from the top.”

The executive level champion is essential for: 1) securing resources for sustainability activities, 2) advocating for sustainability within and outside of the organization, 3) removing any institutional barriers to sustainability, and 4) overseeing the activities of the sustainability director. The champion and sustainability director work in tandem to lead the sustainability programs.

The sustainability directors are responsible for developing and implementing programs to support high-level sustainability goals and coordinating sustainability activities. The sustainability director is responsible for day-to-day leadership and management of the sustainability initiative. All of the directors have formal position descriptions that specify their activities. Formally defining a sustainability director or manager position was typically a major step in developing the sustainability initiative. In many cases, the directors helped to define the position. At the same time, the directors vary in the degree to which their activities are routinized. DH has the highest degree of routinization as the director’s activities are defined, in part, to align with and support the CERES and GRI guidelines.

While the directors all have formal goals and performance targets, they are granted relatively high levels of autonomy in achieving their objectives and carrying out their day-to-day activities. This may be due to the dynamic nature of sustainability and the need for organizations to support flexibility and creativity in identifying relevant issues and supporting ongoing improvements.

One of the major issues surrounding a healthcare sustainability director's background is whether the sustainability leader must have a clinical background. The results achieved by these systems show no observed association between the medical background of the leader and the effectiveness of the sustainability initiatives. As shown in Table 1, the leaders come from a variety of backgrounds, including architecture, supply chain and humanities. Most of them, however, do have experience working in healthcare organizations. Those that did not indicated that they felt the need to quickly orient themselves to the industry and the organization. The UMMC is the exception in that the sustainability director position must be filled by a nurse.

The sustainability director's background, however, did affect the initial focus and the trajectory of the sustainability initiative. Directors with a facilities-related background and training were more likely to focus the initial sustainability activities on the facilities. But the sustainability initiatives do not appear to be constrained by the coordinators' backgrounds, and often benefited from them.

Many of the respondents have training or experience with environmental management systems such as ISO 14001. This seemed to be a critical element, as well as the willingness to engage in ongoing learning with respect to environmental issues. Environmental and social management issues, tools and techniques are constantly emerging, and staying on top of the new knowledge seems to be a critical skill. Most of the managers are involved in a variety of sustainability related business groups, such as Practice Greenhealth and EPA partnership programs.

The participants were also asked what skills they considered essential to successfully leading sustainability in healthcare. To a person, they indicated that communication skills were the most important. First, the sustainability leader must be able to effectively build a strong case for a variety of sustainability initiatives to senior management and external stakeholders. The sustainability coordinator is critical to building that support. Some of the participants were involved in the birth of their respective sustainability initiatives and had to sell the idea to senior management. In addition, sustainability coordinators are often called upon to make a strong case for sustainability investments, particularly when there are no cost benefits or the return-on-investment time frame is relatively long. Sustainability coordinators also need to solicit involvement of employees from all organizational departments. Consequently, they must be able to communicate effectively with highly skilled physicians as well as lower-skilled workers. Finally, coordinators often are the public face of their organization's sustainability program. Thus, they need to be able to communicate with the press and with representatives of local communities.

Several of the participants indicated that process analysis and management skills are an important skill for the leadership role. Geller, for example, brought process analysis skills from the electronics industry to his role as the sustainability director at Providence. A number of the participants, especially those with business training, use process tools, such as the plan-do-check-act cycle, for problem identification and improvement. This highlights the importance of process improvement in managing social and environmental performance.

**Table 1. Backgrounds of Sustainability Managers/Directors**

System	Director	Background
Bon Secours Health System	McCombs	Masters in Hospital and Healthcare Administration
Providence Health & Services	Geller	General manager in electronics industry
Dignity Health	Leciejewski	BS Ecology
Cleveland Clinic	Vernon	Architect
Gundersen Lutheran	Thompson	Environmental educator, biological field station manager, deputy director of transitional housing shelter
University of Maryland Medical Center	Choiniere	MS, RN
Spectrum Health	Miller	BS Sustainable Business and Environmental Studies
Kaiser Permanente	Bialowitz	MS Environmental Management

## Coordinating Mechanisms

The initiation and development of sustainability at each of these organizations has been unique. The shape of the initiative is defined by its leadership, coordinating mechanisms, and the organizational context, i.e. its history, size, culture, complexity, and norms. This section describes the coordinating mechanisms used and their implications. None of the organizations rely on organization-wide training and education to coordinate their sustainability initiatives. As a result, the discussion focuses on standardization of organization norms through a common vision, direct supervision, mutual adjustment and standardized outputs.

## Standardization of Organizational Norms Through a Sustainability Vision

The environmental stewardship and social responsibility values of sustainability are reflected in the missions of the participating organizations. (See Table 2.) In addition, many of the systems have developed environmental vision statements that articulate an organizational commitment to sustainability. These statements underscore the relationship between hospital operations and patient care. Hospitals, by their physical presence, directly affect the environmental and social health of their surrounding communities. Socially and environmentally healthier communities potentially result in patients who come in with fewer and less severe problems, and they provide positive support to patients discharged to those communities.

**Table 2. Healthcare System Mission or Values Statements**

Healthcare system	Mission or Values Statement	Values
Bon Secours Health System	To bring compassion to healthcare and to be good help to those in need, especially those who are poor and dying.	Respect, quality, justice, compassion, stewardship, integrity, growth and innovation.
Providence Health & Services	As People of Providence we reveal God's love for all, especially the poor and vulnerable, through our compassionate service.	Respect, compassion, justice, excellence, stewardship.
Dignity Health	Delivering compassionate, high-quality, affordable health services; serving and advocating for our sisters and brothers who are poor and disenfranchised; and partnering with others in the community to improve the quality of life.	Dignity, collaboration, justice, stewardship, excellence.
Cleveland Clinic	To provide compassionate healthcare of the highest quality in a setting of education and research.	
Gundersen Lutheran	We distinguish ourselves through excellence in patient care, education, research and through improved health in the communities we serve.	Integrity, excellence, respect, innovation, compassion.
University of Maryland Medical Center	To serve the state and region as a tertiary/quaternary care center, to serve the local community with a full range of care options, to educate and train the next generation of health care providers, and to be a site for world-class clinical research.	Quality of care, excellence in service, respect for the individual, quality in education and research, cost effectiveness.
Spectrum Health	To improve the health of the communities we serve.	Excellence, integrity, compassion, teamwork, respect.
Kaiser Permanente	To provide high-quality, affordable health care services and to improve the health of our members and the communities we serve.	



Linking sustainability to strategic values has a number of important consequences for coordinating and motivating sustainability-related activities within the organizations. First, strategic values provide a standard for intra-organizational behavioral and cultural norms. High-level values guide employee decisionmaking and activity prioritization. This helps to motivate activities and performance toward common goals.

A mission is also public affirmation about how the organization defines itself. Public promotion of an organization's sustainability must be carefully managed. On the one hand, sustainability may help to bolster the organization's brand and reputation. Research has indicated that intangible assets such as reputation may provide a more enduring competitive advantage than other business assets and support long-term success.<sup>17</sup> Signaling the strategic value of sustainability conveys a powerful message to communities and customers. A reputation for sustainability backed up by demonstrated environmentally and socially responsible behavior and performance may convey a powerful competitive advantage.

On the other hand, healthcare organizations must be careful that their environmentally friendly activities do not undermine perceptions of patient safety and care. In this case, the public's perception of environmentally friendly products and services presents a quandary. A number of studies have found that the public generally perceives such products and services as inferior quality or not as effective as conventional products<sup>18</sup> — although this perception is changing. At the same time, sustainability is often seen as a costly endeavor,<sup>19</sup> more like a “luxury” that cost-efficient hospitals dare not indulge in. The reputational effects and public perceptions about sustainability represent a delicate balancing act for healthcare.

A sustainability initiative may help to attract and retain top talent. According to Choiniere at UMMC, their sustainability initiative made them more attractive to potential new hires, especially nurses. A 2009 survey by Kelly Services confirms that workers are more likely to work for socially and environmentally responsible organizations. The survey also indicated that an organization's reputation is very important to workers in all age groups.<sup>20</sup>

The reputational benefits of sustainability are likely to vary across the sample as different geographic regions vary in the level of environmental awareness, which will affect the relative importance of those values to the population. The organizations for the most part do not aggressively promote their sustainability programs and their benefits. One, DH, has an annual corporate social responsibility report. KP, Spectrum and Gundersen report on their sustainability performance and activities on their websites. The others provide basic information on “green” sections of their websites.

## Direct Supervision

The organizations all use a sustainability director to oversee sustainability activities and ensure connection to strategic goals. There are many benefits associated with using a central office to coordinate sustainability. The organizations have a wide variety of environmental and social activities spread through many departments and often spread over geographic regions as well. A centralized coordinator serves as a single point of accountability for sustainability efforts. The director can consolidate sustainability knowledge and may serve as an internal consultant for sustainability efforts. The director can identify and deploy internal and external resources to help solve problems. The director brings appropriate people and resources to the tasks and facilitates communication and knowledge sharing. Finally, a director may prevent duplication of effort.

On the other hand, a centralized sustainability director may allow for uneven adoption of a sustainability mindset throughout the organization. Some employees may opt out of sustainability initiatives, and it may be seen as extra work. Indeed, for most of the study organizations, except for a few positions, participation in sustainability initiatives is voluntary. Bon Secours mitigates this possibility by formally integrating sustainability into the position descriptions of managers throughout the organization. KP also is beginning to integrate environmental objectives, such as measurable reductions in building energy use, into the pay-for-performance goals of some facility managers.

## Mutual Adjustment

Mutual adjustment refers to coordination via formal and informal communication networks among workers. Much of the communication around sustainability takes place through the green teams that help coordinate and carry out sustainability tasks. Teams allow workers to share knowledge and coordinate sustainability activities directly. They increase worker-to-worker communication and interaction around sustainability.

The teams are used in a variety of ways — generally guided by the sustainability director. Green teams at some of the organizations identify environmental or social problems and develop and implement solutions. Other green teams primarily plan environmental programs and activities, such as Earth Day celebrations and recycling events. While these activities are important, some participants acknowledge that these events do not always lead to improved performance or support strategically important goals. Functional and cross-functional teams are used. Functional teams are useful as many of the environmental issues are focused in regional or departmental areas. Cross-functional teams are useful in identifying and addressing system-wide or boundary-crossing environmental issues.

Many of the organizations also use intranets, newsletters, list serves or message boards to facilitate organizational communication. Goals, accomplishments and best practices are shared throughout the organization. The technology is also used as a means of getting new people involved in the green teams and soliciting opportunities and suggestions from workers. Nevertheless, diffusion of sustainability's value and cultural transformation remains a challenge.

## Standardized Routines

Standardized routines are formal procedures for integrating the work among different organizational units or departments. This may involve formal plans, schedules, rules, policies and standardized information-sharing systems. Bon Secours is notable in that the emphasis is on working to “move from just knowledge sharing and collaboration to standardizing and operating a model of sustainability,” according to McCombs. All of the facilities have a formal policy with respect to energy, waste and water management. This promotes the diffusion of sustainability throughout all levels of the organization. “No one has an opt out, or no one can and does their

own thing ... all of our facilities and programs are fully involved and engaged by policy,” says McCombs.

Moreover, according to McCombs, the routines are specifically linked to the organization's mission:

“ ... one of the key things, the program number one is based as a fundamental part of our mission, the reason we exist. So it's not just a program or a campaign or an initiative, it's a fundamental part of our mission which drives our goals and objectives and then secondly, we've moved from sort of a collaborative approach to what I would call an operating model. We have moved it into a formal operating model - formalized by policy, by organization and by business structure with measures and accountability around all of those things. “

---

## Performance Measurement

---

Performance measurement systems are used to monitor and control the sustainability initiatives. All of the organizations rely on direct measures to assess the effectiveness of their sustainability initiatives. A number of measures are routinely reviewed by senior management; usually, the executive champion monitors performance most closely. The organizations have generally realized cost savings from their sustainability activities, especially those focused on sustainable resource management.

For the most part, these measures focus on resource management and controlling effluents. Energy measures dominate as they are relatively easier to capture and the cost benefits are quickly realized. Many facilities are sub-metered and energy used for different systems, such as HVAC and lighting, are continuously monitored. The organizations also capture a lot of data surrounding waste management systems. Pounds or percentages of regulated, conventional and recycled waste are tracked closely, almost continuously, at most of the facilities. Many of the metrics were developed with the help of Practice Greenhealth and the EPA Energy Star program. Some were already being captured because of regulatory requirements. Increasing recycling and more closely tracking all waste streams were associated with reduced costs.

In general, managing resources for sustainability helped the organizations develop critical operational capabilities which could then be applied to other areas.

Bon Secours, DH and Spectrum embed sustainability reporting within a balanced scorecard-type approach to align the strategic objectives with key organizational processes.<sup>21</sup> Balanced scorecards help organizations translate strategy into operational tactics. In this approach, high-level performance measures signal organizational values and priorities. Departmental and sub-unit measures and objectives are then defined to align with organizational strategy. The organizations establish baselines and use internal benchmarks to monitor progress toward goals and identify problem areas. Missed targets are opportunities for organizational learning. Performance measurement is an important component of strategy execution. Developing a robust set of indicators that measure what is strategically important communicates strategic values throughout the organization and helps to bring processes into alignment.

Hospitals in the study were willing to accept longer payback periods for sustainability investments that support strategic goals. Renewable energy investments typically have longer payback timeframes than conventional systems. Gundersen Lutheran, for example, has invested in solar, biogas and wind turbine systems to help achieve its strategic goal of 100% energy self-sufficiency by 2014.

Sustainability compels organizations to move beyond resource and waste management measures. The social- and community-based benefits often require a longer term to realize benefits. Often these performance benefits may be intangible and difficult to measure.

As a result, community and social impacts often go unmeasured. Generally, the respondents felt that performance metrics were an area for ongoing innovation and refinement.

Nonetheless, cost performance pressures dominate the measurement concerns. The U.S. healthcare system is under tremendous pressure to reduce costs. Healthcare costs have increased 300% over the last 20 years, and federal and local governments, as well as consumer advocacy groups, are exerting pressure to contain and control costs. This means that hospitals must understand and communicate how sustainability lowers costs and enhances the quality of care. Sustainable food service, greener cleaners and pharmaceutical programs were most often seen as effectively demonstrating the association between quality, cost and sustainable performance.

# IV.

## CONCLUSION

An increasing number of healthcare organizations are implementing sustainability programs. These programs have increasingly become a competitive necessity for and financially beneficial to the institutions that have adopted them as part of their core vision and important organizational value. This study examines eight organizations that have relatively successful sustainability initiatives, in order to describe how they have organized and integrated the variety of sustainability activities. While the study is exploratory, it provides several insights into the prerequisites for advancing sustainability in healthcare organizations. First, an executive champion is essential for the establishment and growth of the sustainability initiative. A champion secures resources and helps to remove institutional obstacles. Next, a sustainability director serves as the hub of sustainability activities — identifying opportunities, bringing workers together, sharing knowledge and enacting tactics to meet sustainability performance targets. The sustainability directors are given a fair amount of discretion in directing and defining the still-evolving sustainability initiatives. The sustainability director and green teams are the primary coordinating mechanisms for these organizations. Other coordinating mechanisms adopted by the organizations include sustainability reflected in the high-level corporate strategy, standardized routines and work processes, and performance measurement systems. Finally, a few of the systems use balanced scorecard performance measurement systems to coordinate sustainability activities, align them with strategic goals, and diffuse sustainability responsibilities throughout the organization.

This study also highlights some opportunities to help organizations promote sustainability. Most employee participation in green teams and other activities is voluntary. As a result, participation takes away from required work activities or is undertaken on the employees' own time. According to Bialowitz at KP,

“Volunteerism needs to be linked with corporate objectives such as environmental stewardship. People in the health care industry tend to be remarkably altruistic, so the easy part is inspiring

them. But then you need to make the most of their limited time. The key is removing barriers and directing their energy toward projects that specifically reduce health risks associated with environmental factors. As our CEO often says, ‘Make the right thing easy to do.’”

Incorporating relevant sustainability activities into position descriptions throughout the organization would further legitimize the work and help to diffuse sustainability throughout the organization. Intra-organizational diffusion is cited as one of the biggest challenges facing these respondents.

There is opportunity to integrate sustainability with other production management approaches, such as Lean and SixSigma. All are based on a systems view of the organization, and require analytics to continuously improve performance. Healthcare managers have traditionally been reluctant to adopt approaches that originated in manufacturing. They must be carefully adapted for the healthcare environment. However, organizations that have done so have seen tremendous performance, cost and quality improvements. (For example, see *Going Lean in Healthcare* at [www.entnet.org](http://www.entnet.org).) Managers are starting to recognize opportunities for leveraging the analytical synergies among these systems to simultaneously improve cost, quality and sustainability performance. As an example, some manufacturing organizations simultaneously analyze cost, quality, waste and sustainability in their Value Stream Mapping exercises. And the Baldrige National Quality Program now includes sustainability in its assessment criteria.

Quality and Lean management systems rely on formal, functionally-based teams with trained employees to identify performance improvement opportunities and solve problems. Employees who know their respective processes best are empowered to innovate and improve their areas. Training employees in problem-solving techniques with an environmental and social stewardship focus could accelerate sustainability performance.

The study findings also suggest opportunities for future research. This is a small, exploratory study that sampled only hospitals with well-performing sustainability initiatives. A larger sample could incorporate a broader range of types of hospitals at differing levels of performance. Larger studies could test the associations proposed by the results of this study, such as the associations among leadership choices, coordinating mechanisms and sustainability performance. A larger study could also evaluate the relationship between sustainability and quality performance. As indicated above, quality and sustainability rely on process management. Sustainability and quality performance would be reflective of process management capabilities and competence, and may lead to a positive association between the two.

of your organization, the core values, but if you don't have that component then you're seeing the wheels come off a lot of sustainability plans and a lot of sustainability efforts because peoples' hearts just aren't in it. They couldn't connect it to their kids, or their grandkids, or what it means to them potentially on a spiritual level. Whatever it means to you. It is what motivates you from your heart to do this good, hard work — to do the right thing.”

People want meaning in their work. Sustainability offers a way to connect employers with their employees and communities in a powerful way.

---

## The Future of Sustainability

---

A number of hospitals in the study are moving significantly beyond cost- and efficiency- driven sustainability efforts. They are identifying opportunities to improve community health and quality of life. They extend the triple bottom line to incorporate personal values. Tom Thompson defines sustainability in a way that provides meaning to peoples' work lives:

“The sustainability model that most people recognize has the social aspect, and the environmental, and the economic. I've always felt that those three were good and solid; however, it was missing something. It was missing what I felt to be a very important part, so I've incorporated it into our sustainability model, which has environmental, social, economic, and then the fourth one I call spiritual/core values. That is the part within you that really guides you to do all of this. Real sustainability - it's hard work. You must have an inner drive, whatever that is, and be able to tie it right back to the values

# REFERENCES

- 1 Gundersen Lutheran, Envision website, <http://www.gundluth.org/?id=4651&sid=1>, accessed July 18, 2011.
- 2 Practice Greenhealth, "{Past Event}-Kaiser Permanente's Sustainability Scorecard for Medical Products — Generation II," <http://practicegreenhealth.org/webinars/kaiser-permanente%E2%80%99s-sustainability-scorecard-medical-products-generation-ii-0>, accessed July 18, 2011.
- 3 Dignity Health, "An Enduring Mission: Social Responsibility Report 2010," [http://www.chwhealth.org/stellent/groups/public/@xinternet\\_con\\_sys/documents/webcontent/stgss045842.pdf](http://www.chwhealth.org/stellent/groups/public/@xinternet_con_sys/documents/webcontent/stgss045842.pdf), accessed July 18, 2011.
- 4 Lubin, D. A. and D. C. Esty, "The Sustainability Imperative," *Harvard Business Review*, May 2010, vol. 88, no. 5, 42-50.
- 5 [http://www.iso.org/iso/iso\\_catalogue/management\\_and\\_leadership\\_standards/social\\_responsibility/sr\\_discovering\\_iso26000.htm](http://www.iso.org/iso/iso_catalogue/management_and_leadership_standards/social_responsibility/sr_discovering_iso26000.htm) accessed March 20, 2011.
- 6 Truffer et al. "Health Spending Projections Through 2019: The Recession Continues," *Health Affairs Journal*, March 2010, vol. 29, no. 3, 522-529.
- 7 Commercial Buildings Sector Energy Intensities: 1992-2003 and Transportation Energy Consumption Surveys [http://www.eia.doe.gov/emeu/efficiency/cbecstrends/cbecs\\_tables\\_list.htm](http://www.eia.doe.gov/emeu/efficiency/cbecstrends/cbecs_tables_list.htm), accessed December 28, 2010.
- 8 Chung, J. W. and Meltzer, D. O., *Journal of the American Medical Association*, November 2009, vol. 302, no. 18, 1970-1972.
- 9 Bureau of Labor Statistics Career Guide to Industries, 2010-2011 Edition [www.bls.gov](http://www.bls.gov), accessed January 2, 2011.
- 10 [http://www.hanys.org/communications/publications/2010/2010-09\\_hanys\\_economic\\_benefit\\_report.pdf](http://www.hanys.org/communications/publications/2010/2010-09_hanys_economic_benefit_report.pdf), accessed March 20, 2011.
- 11 Bernstein AB, Hing E, Moss AJ, Allen KF, Siller AB, Tiggler RB. "Health care in America: Trends in utilization." Hyattsville, Maryland: National Center for Health Statistics. 2003.
- 12 Tatikonda, M. and M. Motoya-Weiss, "Integrating Operations and Marketing Perspectives of Product Innovation: The Influence of Organizational Process Factors and Capabilities on Development Performance," *Management Science*, 2001, vol. 47, no. 1, 151-172.
- 13 Mintzberg, H. "Structure in 5's: A Synthesis of the Research on Organization Design." *Management Science* March 1980 vol. 26 no. 322-341
- 14 The Ceres Principles are a 10-point code of corporate environmental conduct. Endorsing the Ceres Principles means committing the organization to a process of continuous improvement around sustainability, and comprehensive public reporting of environmental and social performance. [www.ceres.org](http://www.ceres.org).
- 15 See [www.globalreporting.org](http://www.globalreporting.org) for more information.
- 16 Rachel Carson's work is viewed in favorable terms now. At the release of her book, however, business organizations were working aggressively to discredit her and her message.
- 17 Fombrun, G. J. *Reputation: Realizing Value from the Corporate Image*. Harvard Business School Press, 1996.
- 18 Wong, V., Turner, W. and Stoneman, P. "Marketing Strategies and Market Prospects for Environmentally-Friendly Consumer Products," *British Journal of Management*, 1996, vol. 7, no. 3, 263-281.
- 19 Natural Marketing Institute 2007 LOHAS Consumer Trends Database, Natural Marketing Institute, 2008.
- 20 Kelly Global Workforce Index at [www.kellyservices.com](http://www.kellyservices.com) accessed January 13, 2011.
- 21 Balanced scorecard is a performance measurement framework that combines financial and non-financial metrics in order to provide a more realistic view of organizational performance. The scorecard measures attributes of customer satisfaction, internal processes and organizational learning. Kaplan, R.S. and Norton, D.P., *The Strategy-Focused Organization: How Balanced Score Card Companies Thrive*, Harvard Business School Publishing, 2001.



Health Care Without Harm ([www.noharm.org](http://www.noharm.org))  
Healthier Hospitals Initiative ([www.healthierhospitals.org](http://www.healthierhospitals.org))  
Practice Greenhealth ([www.practicegreenhealth.org](http://www.practicegreenhealth.org))  
12355 Sunrise Valley Dr., Suite 680  
Reston, VA 20191

Environmental and Occupational Health Sciences  
University of Illinois at Chicago School of Public Health  
835 S. Wolcott, Suite E-144, MC 684  
Chicago, IL 60612