Inova health system a model of environmental sustainability

At a special panel on Greening America’s Hospitals held in July 2012 at The White House, Inova CEO Knox Singleton explained how the health system’s successful sustainability program has evolved. “It’s moving from a statement of ‘We’re getting great at scraping the toast after it’s burned,’ to ‘How do you keep the toast from burning in the first place?’ How do you keep people from getting sick?,” Knox told senior administration officials and EPA and Department of Energy officials.

In Inova’s 2012 Sustainability Report, Knox adds, “For us, sustainability is not just about being ‘green,’ it is about our professional duty as healthcare providers to promote the healthiest future possible. From supporting healthy, local foods to decreasing pollution from energy consumption to reducing exposure to the chemicals contained in medical products, each of Inova’s sustainability strategies has a direct, positive impact on human health.”

Inova health system a model of environmental sustainability

Founding sponsor of Healthier Hospitals Initiative

In 2011, Inova was a founding sponsor of the Healthier Hospitals Initiative (HHI), a national campaign to implement a completely new approach to improving environmental health and sustainability in the healthcare sector. A year later, Inova, 12 other healthcare systems and over 700 independent hospitals recycled more than 25,000 tons of materials, diverted 61.5 million pounds of construction and demolition waste from landfills, and saved almost $32 million from single-use medical device reprocessing. Premier is a supporting partner of HHI.

SNAPSHOT

• Founding sponsor of Healthier Hospitals Initiative
• Prevented over 1,900 tons of waste from entering landfills or incinerators through massive waste reduction and recycling efforts;
• Saved nearly $3 million by avoiding over 500 tons of regulated medical waste (RMW) and nearly 30 tons of RMW through an innovative single-use device reprocessing program. (In 2012 alone, Inova reduced RMW volume by roughly 118 tons, cutting disposal costs by about $250,000.)
• Instituted systemwide aggressive environmentally preferable purchasing (EPP) programs that scrutinize nearly every product and device before it enters a facility.
• Reduced the number of surgical packs by 62% (from 138 to 97), saving nearly $250,000.
• Saved nearly $1 million on energy and water conservation projects, and pursued LEED certification on new facility construction projects;
• Sponsored an award-winning initiative with vendors and utilities that engages and rewards every employee whose environmental improvement project ideas are used;
• Has set the bar for a plethora of community sustainability outreach programs that offer everything from farmer’s markets and cooking competitions involving locally produced foods to e-waste recycling and energy audits.

More than 60 terms relating to the greening of healthcare make up a subtle watermark on the cover of the report. But Inova’s 20-year record of environmental stewardship is hardly subtle.

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The White House invitation capped a remarkable year for the five-hospital system in northern Virginia, successes of which are profiled in its 50-page sustainability report available at www.inova.org/sustainability.
20 Years of Green

1992
Inova partners with Healthcare Forum and Modern Healthcare to host landmark conference on the impact of health care on the environment
Inova facilities recycle cardboard and paper and donate surplus medical supplies and old linens

2004
Inova maps out entire waste stream of hospitals to ensure compliance with all state regulations

2006
Inova joins Virginia Hospitals for a Healthy Environment
All Inova hospitals receive Making Medicine Mercury Free awards
Inova implements battery recycling program

2008
System-level “Sustainability Engineer” position created
Green teams established at each hospital
Inova CEO Knox Singleton signs EPA Energy Star Commitment letter
Energy audits conducted at all Inova hospitals
Inova implements Green Seal-approved cleaning chemicals

2009
Inova begins to benchmark waste, water and energy usage in partnership with the EPA; hospitals recycle an average of 130 tons per month
All Inova hospitals receive Practice Greenhealth’s Partner for Change Award
Inova hosts Sustainability in Healthcare conference
Monthly farmers’ markets implemented in hospital cafeterias

2010
Inova prevents over 3.8 million pounds of waste from entering landfills or incinerators through waste reduction efforts
Preferred parking spots for carpools, vanpools and hybrids established at all Inova hospitals
Inova becomes a sponsor of the Northern Virginia chapter of Buy Fresh Buy Local
Ground is broken on Inova Fairfax Hospital’s South Patient Tower (SPT)
Inova switches 40 most popular office supplies to environmentally preferable options, saving 3,500 trees and $27,000

2011
Inova donates over 75 tons of clinical supplies, medical equipment, furniture and linens
Inova’s Double Dollars SNAP Assistance program launches at two local farmers’ markets
Inova hosts events such as RC Bus Races, Waste Carnivals, Scavenger Hunts, E-Waste Recycling, Paper Shredding and Tree Seedling Giveaways
Inova’s first-annual sustainability report is released
Inova partners with DC Fashion Week to host first Project Blue Wrap eco-fashion design competition
Inova becomes a founding sponsor of the Healthier Hospitals Initiative

2012
Inova prevents over 50,000 pounds of materials from entering landfills and saves over $1 million annually by implementing a single-use device reprocessing program
Inova partners with Volunteer Fairfax organization to provide volunteer service project for children in the community on MLK Jr. Day of Service
Employee Commuter Shuttle Bus program launches at Inova Fairfax Hospital
Inova launches Take & Bake Cooking Class series focused on healthy, local, seasonal foods; follows up with Local Food Olympics system-wide cooking competition in July
CEO Knox Singleton and Director of Sustainability Seema Wadhwa present a White House panel on Greening America’s Hospitals
Recognition for environmental leadership

Premier leads the industry, being named a “Champion for Change” award recipient from Practice Greenhealth (PGH) 11 years in a row – firmly establishing Premier and its members as leaders in healthcare and setting the bar in the industry for commitment to environmentally preferable purchasing (EPP) and sustainability best practices.

In recognition of its achievements, Inova and its hospitals have been the recipients of numerous awards from Practice Greenhealth, including:

- “Making Medicine Mercury Free” awards (from PGH) for all Inova hospitals (2006);
- “System for Change” award (2012);
- “Partner for Change” award for Inova and all of its hospitals since 2007; and
- Two “Partner for Change with Distinction” awards in 2010 and three in 2011 and 2012.

In addition, Inova was named one of the nation’s “Most Wired” health systems for the seventh time in 12 years by Hospitals & Health Networks magazine, and Inova Alexandria and Inova Fairfax hospitals earned the Environmental Protection Agency’s “Best Workplaces for Commuters” award in 2010, 2011 and 2012.

“As a peer in environmental leadership, we are proud of Inova’s long history of environmental stewardship and are honored by our affiliation with this great health system,” said Mike Alkire, chief operating officer.

Before ‘green’ was in

In 1992, Inova’s sustainability journey began, long before even the term “green” had worked its way into the healthcare lexicon. That year, Inova facilities began to recycle cardboard and paper and donate surplus medical supplies and old linens – an effort spearheaded by the system’s supply chain department.

But that same year, the system partnered with Healthcare Forum and Modern Healthcare to host a national conference on the impact of healthcare on the environment. “We had a key leader at the time who really felt sustainability was a moral issue,” Seema Wadhwa, director of sustainability, told Premier Safety Institute. “To my knowledge, this was the first-ever conference on environmental sustainability in healthcare.”

Some early successes followed, including eliminating waste incineration and the use of ethylene oxide for instrument sterilization, lighting upgrades that cut utility bills, and a pilot program to recycle IV bags. In 1995, Inova participated in the EPA’s Green Lights program, which promotes energy efficiency. Upgrades made to Inova’s lighting systems through this project generated annual savings of 1.5 million kWh and prevented 2.5 million pounds of CO2 from entering the environment.

“Things waxed and waned a bit after that through the years but it always remained a leadership priority,” Wadhwa said. The difference today is we’ve built it with metrics, and visibility across the organization in supporting policies as well.” She joined Inova just as the concept of sustainability in healthcare reached industry-wide visibility and acceptance. The year she came on board, clinicians across the system highlighted sustainability as a core value and established the system’s first sustainability committee.

“When I joined, Inova was committed, it knew it wanted to ‘go green,’ but it wasn’t very clear what that meant,” recalls Wadhwa, who came to Inova in 2008 as the system’s first director of sustainability, and today also serves as HHI director. “My gut told me we couldn’t take a programmatic approach to sustainability because it could end up being a silo.

We needed to imbue it throughout everything Inova did – from patient care, energy, water and waste to food, transportation, purchasing and construction.” In Wadhwa’s first year, Inova did a lot of benchmarking to determine how it stacked up against industry best practices.

“We were one of the original hospitals engaged in Hospitals for a Healthy Environment, the predecessor of Practice Greenhealth,” she said. “So that really helped us create a framework.”

Inova’s sustainability plan

Wadhwa came to Inova as a civil engineer, a background that served her well in the new role. “The first and foremost important value add of coming in with an engineering background was it was abundantly clear that sustainability was not about tree hugging,” she said. There was a strong business case for it. That’s always been one of my core leading drivers – helping people understand this is the right thing to do not only because there is a moral imperative in healthcare to first do no harm, not only because we have a responsibility toward the environment that impacts our community but because fiscally this is the right thing to do because inherently when you waste less you save more, which translates into dollars.”

Seema Wadhwa
director of sustainability
Indeed. In recent years, American businesses have rapidly begun realizing that the business imperative of sustainability is one of saving, rather than spending, money. According to the blog, Real World Healthcare, hard data shows that U.S. hospitals could save more than $15 billion over the next 10 years just by implementing certain green initiatives. “In this era of shrinking budgets, escalating healthcare costs, and the growing problem of medical waste, isn’t it about time that all hospitals explore these sustainable options?” one author wrote. Moreover, sustainable interventions could exceed $5.4 billion in savings over five years and $15 billion over 10 years, according to Commonwealth Fund research.

Today, sustainability is woven into the very fabric of practically everything Inova does as a healthcare provider and major employer. Virtually everything used or purchased is viewed with an eye toward recycling, reusing or eliminating or replacing with safer alternatives. Natural resources such as energy and water are conserved. And every employee and manager is engaged.

“Our organization’s leadership knows that sustainability is one of the key roles they play,” Wadhwa added. “And, executive compensation is tied to environmental sustainability. This shows that our leadership understands this is a cost reduction strategy as much as it is about patient care and community building.”

When Inova developed its first sustainability strategic plan in 2008, Wadhwa and other executives identified those functions where they could achieve the greatest impact. Every sustainability initiative since then has been tied to one or more of the following eight areas:

- Waste management;
- Energy management;
- Water management;
- Environmentally preferable purchasing;
- Sustainable foods;
- Alternative transportation;
- Green construction; and
- Health information technology.

“Every year we update our strategic plan with specific actionable items,” Wadhwa said. “The focus actually changes year to year depending on what we have achieved and where we are in terms of our organizational priorities.” Goals specific to each hospital are developed, measured and tracked on a quarterly basis. For example, 2011 goals included reducing impacts from purchasing, promoting healthier foods, improving employee transportation, reducing energy consumption and developing sustainability communications. Goals for 2012 included developing broader sustainability programming, identifying additional sustainability metrics, increasing employee ownership and accountability, broadening communication, and increasing Inova’s presence and programming in its local communities.

The Office of Sustainability oversees Inova’s systemwide efforts, as well as major programs such as the “Going Green” initiative, which provides educational tools, resources and programming for employees interested in minimizing their environmental impacts. Green Teams, Wadhwa’s office’s “eyes and ears” on the ground, act as Going Green ambassadors within their respective workplaces. Green Team members are often responsible for helping get new programs off the ground by providing the ideas and enthusiasm needed to implement and adopt them.

Inova provides a wealth of opportunities to engage its 15,000 employees and 5,000 doctors and volunteers, as well as nearby residents, on sustainability – from CEO Celebrity Chef and Local Food Employee cookoffs, a “Buy Fresh, Buy Local” food program and weekly farmer’s markets, to environmental educational fairs, rain barrel construction classes, home energy audits, waste education carnivals and seminars on carbon footprinting, electronic waste recycling and tree seedling giveaways. Over the past two years, “Project Blue Wrap” contests have been held to transform used surgical linens from Inova hospitals into apparel, highlighting finalists’ designs at Washington, DC, fashion shows.

In April 2013, Inova partnered with Premier contracted supplier Siemens and Washington Gas to develop the JustOne campaign, a call-to-action to help protect human health by improving environmental health.

The JustOne platform emphasizes how small individual actions or ideas can make a difference within a community. For example, campaign marketing materials showed that:

- If every Inova employee spent $5 per week at a farmers’ market instead of a grocery store, it would keep an extra $1.2 million a year in the local economy;
- If every Siemens employee recycled one can a day for a year, it would keep nearly 650,000 pounds of materials out of the landfill; and
- If every Washington Gas employee turned off the water while brushing their teeth, it would save over 1 million gallons of water from being wasted each year.
Sustainability success stories

Following is a brief look at recent successes Inova has posted around its eight key sustainability “verticals.”

Waste reduction
Several years ago, Inova decided to focus its waste management efforts on those waste streams with the largest potential for impact: regulated medical waste and recycling. Since 2008, Inova has had a commingled, or single-stream, recycling program in which paper, plastics, cardboard, metals and glass are all recycled in the same containers. Since 2009, Inova’s hospitals have recycled an average of 130 tons of general waste per month. Over the past five years, Inova has prevented over 1,900 tons of waste from entering landfills or incinerators through massive waste reduction and recycling efforts. In 2012 alone, Inova hospitals reduced RMW volume by roughly 118 tons, cutting disposal costs by about $250,000. The savings were reinvested in patient care improvements. To date, the system has avoided over 500 tons of RMW and nearly 30 tons of RMW through an innovative single-use device reprocessing program, saving more than $3 million.

As a result, Inova has come close to or met industry best-management standards of 25% for recycling, 10% for RMW, and 65% for municipal solid waste. In 2011, the system created an innovative waste barcode management system to track the path of RMW throughout Inova Fairfax Hospital. Each soiled holding area within the hospital is assigned a unique barcode and given sheets of stickers with that barcode on them. According to Real World Healthcare, researchers estimate that hospitals that reprocess single-use devices save about $57 per procedure. At Inova, costly devices such as harmonic scalpels, trocars and diagnostic ultrasound catheters are reused through a certified reprocessing program with an outside vendor. In 2011 and 2012, Inova’s single-use device reprocessing program prevented over 20 tons of materials from entering landfills. In 2011, Inova donated more than 75 tons of clinical supplies, medical equipment, furniture and linens to local and global charities. And in 2012, it worked with its hazardous waste disposal partner to audit and standardize the management of hazardous waste across the system.

Environmentally preferable purchasing
In 2010, Inova switched 40 of the system’s most popular office supplies to environmentally preferable options, saving 3,500 trees and $27,000. In 2011, Inova created a new purchasing policy that addressed chemical and waste minimization, energy and water conservation and expanded sourcing of local products to reduce transportation costs and emissions impacts. The policy was reviewed, adopted and implemented across Inova in 2012. That year, the system’s supply chain management (SCM) team worked closely with the Office of Sustainability to mesh EPP principles with its SCM strategy, targeting product lifecycle issues of reusability, disposability, chemical exposure and pollution. Educational resources were also developed to explain the issues in a way that helped contractors, purchasers and end users feel more confident in discussing them with suppliers. Inova also is finalizing a plan to create a “tag” in its purchasing software for those products that have EPP characteristics, allowing purchasers to easily pinpoint those products that fit its EPP strategy. Also in 2012, the system substantially reduced OR pack waste and standardized its purchasing process. By analyzing and reconfiguring the contents of 138 packs, 97 of which were used in surgery, as well as identifying un-needed items, the effort resulted in reducing the total number of packs to just 17 – a 62% reduction – yielding nearly $250,000 in savings and considerable waste reduction.

Healthy foods
Inova’s IMPACT sustainable foods strategy continuously introduces produce and other edibles by identifying best practices from leaders and experts from inside the system and across the healthcare industry. In 2011, Inova spent more than $45,000 on local produce to support the community and local farmers, increased access to fresh and healthy foods for Supplemental Nutrition Assistance Program (SNAP) benefit recipients by matching purchases as local farmers markets, and began producing an annual “Buy Fresh Buy Local” guide for Northern Virginia that includes the locations of local Farmers’ Markets. In 2012, younger patients helped plant the “Garden of Hope” to provide therapeutic activity for patients encourage discussions on healthy eating, and Inova signed the Healthy Food in Healthcare Pledge, which helps hospitals demonstrate their commitment and treat food and its production and distribution as preventive medicine.

Healthcare IT
The premise is simple: Harnessing the power of information can prevent waste and improve efficiency. One method implemented over the past two years is called “server virtualization,” which hides the number and identity of
individual physical servers, processors, and operating systems, from server users. The process has eliminated over 300 physical systems to date, saving 150 kilowatts per hour of power consumption and 45 tons of air conditioning needs. Server engineers are now “green certified,” giving them the skills necessary to implement environmentally sound techniques. Inova anticipates substantial savings in energy and paper over the coming months when it implements the EPIC electronic medical record system. In 2011, Inova switched to electronic paystubs, eliminating over 15,000 forms and envelopes normally distributed bi-monthly, the equivalent of over 3,000 pounds of paper per year.

**Green construction**

In 2011, Inova implemented a new strategy designed to create safer healing environments through evidence-based design and construction and minimize or eliminate the impact from harmful construction materials and disposal. One major outcome of that policy can be seen in Inova Fairfax Medical Campus’ newest medical facility, the South Patient Tower, an 11-story building that earned LEED Silver certification.

The tower, which is part of a three-phase campus expansion project that will add a total of 1 million square feet of space to the existing campus, features: abundant natural light, open space and views of nature; a “living roof” planted above the lobby to provide a natural habitat for birds, insects and flora; drought-resistant native plantings in landscaped areas; low or no volatile organic compound materials in paints, sealants, ceiling and floor tiles; and a white reflective roof and low-emissivity coatings or ceramic frits on windows to lower energy costs. More than 20% of materials used in the tower’s construction were recycled content and close to 40% of all construction materials were locally sourced. New LEED construction projects underway include the Inova Women’s and Children’s Hospital and Inova Cancer Center, as well as renovation projects such as the Inova Fairfax Medical Campus’ North Patient Tower.

**Energy conservation**

Inova’s energy management strategy is simple: track and understand energy performance; implement energy efficiency and conservation measures; and support new technologies that promote energy conservation and efficiency. Through benchmarking and reporting energy consumption, and participating in the EPA’s Energy Star Portfolio Manager, Inova in 2010 developed a snapshot of the overall energy consumption of each hospital, allowing it to evaluate its environmental impact. That year, Inova installed energy management systems.

Over the past few years, Inova has installed a variety of water conservation technologies, including low-flow toilets, automated faucet sensors, drip irrigation systems, and water-efficient sterilization equipment. In 2011, Inova constructed a 600-gallon cistern for collecting rainwater to reduce storm water run-off and provide landscape irrigation at one of its hospital campuses. Native, drought-resistant plants are used throughout campus landscapes to conserve irrigation water. Other water conservation measures included: High-efficiency retrofits on showerhead, faucet and toilet fixtures, which saved approximately 5 million gallons of water at one Inova facility; and upgraded sterilization equipment to a more water-efficient technology at just one Inova hospital, saving 1.2 million gallons of water over the course of one year.

Through participation in the Energy Star program, Inova in 2011 achieved a 20% reduction mark for electricity consumption from 2009 levels. In 2011, the engineering team at Inova Loudoun Hospital decided to replace fluorescent lighting with induction lighting after performing a lighting retrofit. The induction lights use up to 75% less energy and last considerably longer than fluorescent lights, offering a quick return on investment.

In 2012 Inova spent nearly $14 million on energy for its five hospitals, using over 140 million kilowatt hours of electricity and over 7.5 million therms of natural gas. That year, the system engaged an engineering firm to focus on standardizing system-wide engineering processes. One early discovery: Many electrical and mechanical systems were not operating at ideal efficiency levels. The new engineering team’s first step was to refit Inova’s building management systems (BMS) and undertake facility assessments at each operating unit, including the monitoring and evaluation of existing preventative maintenance strategies.

This approach helped set the stage for the future development of a long-term strategic energy management plan, and also helped the team identify and prioritize upcoming projects. Also in 2012, Inova hired its first energy manager and developed a standardized energy management plan covering technology procurement and management systems.

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**Alternative transportation**

Inova calculated the carbon footprint for its employee transportation in 2012 to be 19,221 metric tons of carbon dioxide, 914 metric tons of methane and 62 metric tons of nitrous oxide – the equivalent of annual energy-related emissions of nearly 1,000 homes. The major strategy here is to reduce the environmental impact of employee transportation choices, and provide alternative environmentally friendly options.

One way it is accomplishing this is through promoting shared ride arrangements, driving hybrid vehicles and using public transit or Inova’s Commuter Shuttle Bus program developed in cooperation with Fairfax County Department of Transportation.

The shuttle transports between 30 and 50 Inova employees daily. A commuter tax benefit program allows the employees to use pre-tax payroll dollars to pay for alternative transportation, resulting in savings of as much as $900 a year.

**Teachable moments**

Inova has had many, according to Wadhwa.

In its 2012 Sustainability Report, Inova notes, “By aligning sustainability principles with our core mission of protecting health, we have been able to achieve positive quadruple-bottom-line impacts on people, planet, profits and patients. We are committed to transparently documenting and sharing our progress in these efforts in order to facilitate dialogue and collaboration amongst our various stakeholder groups.”

Involving employees just may be the one thing over all else that has made Inova’s sustainability program so successful. “One of the key reasons sustainability was re-energized at Inova was employee engagement,” Wadhwa said. “That was the key driver for our CEO.”

In the end, sustainability may mean different things depending on who you engage, but the message is the same. “The story of sustainability is one that everyone can relate to in different ways,” she said.

“When I’m asked to define sustainability, I think the definition is inherently very personal. When I’m talking to a clinician, or working nurses in the OR, this really is a health issue. When I’m talking to a CFO, it becomes a cost issue. And neither of those two negate each other. They are both absolutely valid. They just have different values depending on your stakeholder.”

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