

Making an Impact for the Future

Inova Health System
2012 Sustainability Report





Environmental Mission Statement

Inova Health System is committed to establishing an environmental program that is safer and healthier for our patients, employees and community.

Welcome

Inova Health System is committed to creating an environmental program that contributes to a safer and healthier environment for our patients, employees and community.

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.

Inova's 2012 Sustainability Report was developed to help achieve this goal. It shares the sustainability goals and impacts of each of Inova's five main hospital campuses (operating units): Inova Alexandria Hospital, Inova Fair Oaks Hospital, Inova Fairfax Medical Campus, Inova Loudoun Hospital and Inova Mount Vernon Hospital. This report covers the period between January 1, 2012 and December 31, 2012, and expands on the themes and content presented in Inova's 2010 and 2011 Sustainability Reports.

The information contained in this report is reported in aggregate across all five hospitals, with specific case studies where relevant. We have also included data showing trends over multiple years when available. Though the reported data relates only to Inova's five main operating units, the broader goals and objectives of our sustainability program described within this report apply to all facilities throughout the health system. This includes medical and support offices that we are currently unable to collect environmental data for, though we are working to develop the tracking mechanisms necessary to do so.

Inova's 2012 Sustainability Report meets Level C requirements of the internationally recognized Global Reporting Initiative's (GRI) G3 Guidelines. It is intended to be used as an informational resource in conjunction with Inova's 2012 Report to the Community and other publicly available information.

We look forward to sharing future reports annually as we continue expanding our efforts to become a safer, healthier, more sustainable Inova.

Report Application Level		C	C+	B	B+	A	A+
Standard Disclosures	G3 Profit Disclosures OUTPUT	Report on: 1.1 2.1 - 2.10 3.1 - 3.8, 3.10 - 3.12 4.1 - 4.4, 4.14 - 4.15		Report on all criteria listed for Level C plus: 1.2 3.9, 3.13 4.5 - 4.13, 4.16 - 4.17		Same as requirement for Level B	
	G3 Management Approach Disclosures OUTPUT	Not Required	Report Externally Assured	Management Approach Disclosures for each Indicator Category	Report Externally Assured	Management Approach Disclosures for each Indicator Category	Report Externally Assured
	G3 Performance Indicators & Sector Supplement Performance Indicators OUTPUT	Report on a minimum of 10 Performance Indicators, including at least one from each of: Economic, Social and Environmental.	Report Externally Assured	Report on a minimum of 20 Performance Indicators, at least one from each of Economic, Environmental, Human rights, Labor, Society, Product Responsibility.	Report Externally Assured	Report on each core G3 and "Sector Supplement" indicator with due regard to the Materiality Principle by either: a) reporting on the indicator or b) explaining the reason for its omission.	Report Externally Assured

*Sector supplement in final version

Contents

Message from the CEO	1
Message from the COO	2
Sharing Our Journey	
20 Years of Green	5
Sustainability Goals	6
<i>Econversations: Inova at the White House</i>	8
Addressing Our Impacts	
Defining Our Impacts	12
Sustainability Focus: Waste	14
Sustainability Focus: Energy	16
Sustainability Focus: Water	17
Sustainability Focus: Purchasing	18
Sustainability Focus: Food	20
Sustainability Focus: Transportation	22
Sustainability Focus: Buildings	24
Sustainability Focus: Healthcare IT	26
Making an Impact	
Making an Impact at Inova	28
Making an Impact in Our Community	32
<i>Econversations: Physician Perspectives on Sustainability</i>	34
Sustainability Partnerships	36
Awards & Recognition	37
Envisioning Our Future	
Joining the Future of Health	39
Environmental Risks, In Context	40
Invitation for Feedback	41
GRI Disclosures & Content Index	42



From the CEO



I am proud to present Inova's 2012 Sustainability Report, *Making an Impact for the Future*. This report summarizes Inova's key 2012 sustainability highlights, impacts and lessons learned. It also includes a discussion of challenges faced and strategies developed for addressing them moving forward.

Inova is committed to sustainability as a key business strategy because of individual and community health. We recognize that the health of our environment directly impacts the health of our communities, and that to protect human health we must protect environmental health. Our efforts to understand, target and minimize our environmental impacts are an essential part of our mission to protect the health of the diverse community we serve.

Sustainability is also a key business strategy for Inova because it makes financial sense. As a non-profit health care organization, our financial successes allow us to continue providing world-class care to our patients and community. Millions of dollars in sustainability-related financial savings – in 2012 and previous years – have been crucial in helping Inova counter the financial challenges associated with an evolving US health care landscape. The implementation of sustainability practices has led to the elimination of financial and other waste throughout Inova, helping us to become a leaner, more streamlined organization.

As Inova moves into the future, we must continue to develop strategies to maximize the environmental, financial and health benefits of our sustainability program. We must consider our own environmental performance and think outside the box to develop innovative ways to target our impacts. We must inspire our leaders to fuel a commitment to sustainability within their own teams. We must harness the power of our team members to create change from within, and of our communities to create change from the outside. We must create environments that contribute to healing instead of harm. And above all, we must join the future of health.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Knox Singleton". The signature is fluid and cursive, written over a white background.

J. Knox Singleton
CEO, Inova Health System



Sustainability in the Context of Healthcare



Inova faces several challenges in light of a rapidly changing US healthcare industry. As the regulatory environment pushes healthcare organizations towards a more streamlined and efficient model of care delivery, other broad-scale changes are also taking place. Population demographics are shifting, public health is worsening, consumers are demanding increased transparency and accountability from the businesses within their communities, and employees are raising their expectations about the companies they work for.

Inova has developed a variety of strategies to ensure continued excellence and growth in the face of these changes and challenges. As we work to build the future of health, we advance our mission by implementing initiatives that make an impact in the way we deliver care within both our facilities and our communities.

Sustainability is a key contributor to this vision for the future and has a large role in helping Inova meet the growing health and information needs of our stakeholders. Triple-bottom-line sustainability principles align with and support our existing business goals, and also help to shape the development of our vision for the future.

This 2012 Sustainability Report shares more detail on not just why but how our sustainability program supports continued progress in these areas. I invite you to read on to learn more about how Inova is using sustainability as a tool to optimize the health and well-being of each individual we serve.

Sincerely,
Mark Stauder, President and COO, Inova Health System



Issue: Shifting industry landscape

Healthcare organizations across the country are facing unprecedented financial challenges and changing incentives, while the mission of healthcare is shifting from a focus on treatment to a focus on prediction and prevention.

Sustainability as a solution

Implementing sustainable practices is a way for Inova to achieve significant financial savings without having to cut positions or programs. Sustainability is also a preventative health strategy that targets reductions in environmental risk factors that contribute to a range of negative health impacts.



Issue: Decreasing population health

The health of our population is not sustainable. The diet and lifestyle choices of many Americans are contributing to serious health issues including drastic increases in chronic disease rates and an obesity epidemic that is sweeping the nation.

Sustainability as a solution

Inova acts as a role model for our patients, employees and community by promoting healthy, sustainable habits and behaviors. By making the food we serve, the transportation options we offer and the community programs we provide more sustainable, we are helping to improve the health of our local populations.



Issue: Environmental health impacting human health

The mix of emissions, pollutants and chemicals that humans release into the environment reduces air quality and increases exposure to toxic chemicals. Every human on Earth is exposed to these pollutants, which can lead to a variety of health impacts including cancer, heart disease, and negative outcomes to the neurological, endocrine and reproductive systems.

Sustainability as a solution

Inova's sustainability program reduces these harmful health consequences by targeting our emissions and impacts in eight major focus areas: waste, energy, water, purchasing, transportation, food, building and information technology.



Issue: Changing business landscape

Sustainability is recognized by business leaders across the globe as a significant competitive strategy – one that will become increasingly important in the resource-constrained world of the future. Looking forward, the businesses that fail to adopt sustainable strategies will not remain competitive amongst their peers who have integrated sustainability principles into their business practices.

Sustainability as a solution

Sustainability helps Inova streamline our organization to allow for maximum efficiency with minimal inputs. It successfully aligns with other key business strategies such as LEAN process improvement and provides closer control over operational performance.



Issue: Changing population demographics

In the coming years, the health care industry will be faced with the task of managing the health of an aging population with an increasing life expectancy. This means healthcare organizations will be managing the health of more people with more chronic health problems for a longer period of time.

Sustainability as a solution

By targeting our sustainability impacts now, we are not only ensuring that our organization will be healthy enough in the future to treat an aging patient population, but also that the resources required to treat them will be available. Inova's efforts to reduce our environmental impacts additionally target reductions in the numbers of environment-related chronic health problems faced by this population.



Issue: Employee shortages

The healthcare industry will also face increased competition to fill open positions with quality workers. Healthcare professionals entering the workforce will have the luxury of choosing which organizations they work for, and many will expect their future employers to be actively engaged in sustainability efforts.

Sustainability as a solution

As a world-class leader in health care, Inova acknowledges the value of our expert team of health care professionals and support staff. Sustainability is a point of differentiation for Inova, providing potential employees one more reason to choose to work for us rather than our competitors. It will be key in helping us maintain the size and quality of our workforce moving into the future.



Issue: Changing technology trends

The rise in the use and speed of technology has created an increasingly digital world where information can be shared globally within seconds. This has led to increased consumer expectations of corporate transparency, especially around environmental sustainability and social responsibility. It also means that much of this information can be readily accessed online, even for organizations that have chosen not to share it.

Sustainability as a solution

Inova prefers to engage in an active dialogue with stakeholders as part of a broader digital conversation. Our sustainability communication forums help us share our perspectives and provide a context for our efforts, while also helping us proactively manage and address any concerns identified before they become major business issues.



Sharing Our Journey



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

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

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

1994

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

1995

Inova participates in Environmental Protection Agency's (EPA) Green Lights program

2007

System-level Environmental Oversight Committee established

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

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 on a White House panel on Greening America's Hospitals

2012 Sustainability Goals & Outcomes

Goal 1: Develop programming focused on educating and engaging patients, visitors and local communities in Inova's sustainability program.

Progress: In 2012 Inova hosted a variety of fun, interesting sustainability-themed events open to all of our stakeholder groups. We also produced a broad mix of educational signage and in-services targeted at specific sustainability focus areas and participated in community forums and presentations about Inova's sustainability program and how it supports our mission to protect the health of our community. More details about all of these efforts are included in this sustainability report.

Goal 2: Identify and baseline additional sustainability metrics.

Progress: Inova's Food Services team conducted audits in each of Inova's cafeterias, focusing on establishing a baseline for healthfulness, marketing and education. We also conducted lighting audits at several hospitals, allowing us to better track our carbon footprint and identify specific opportunities to reduce it. Another major effort was our Going Green employee survey, which asked employees to provide feedback on Inova's sustainability program and created a benchmark for employee engagement in sustainability programming.

Goal 3: Revamp organizational structure to encourage employee ownership of and accountability for sustainability program.

Progress: Inova has moved away from the traditional Green Team organizational model to a model that encourages more accountability and makes engagement opportunities more relevant for employees. While some of our operating units still hold monthly Green Team meetings, the new structure focuses on identifying one or two sustainability champions at the leadership level in each facility. These champions act as the points of contact for coordinating Going Green activities and initiatives within their facilities.

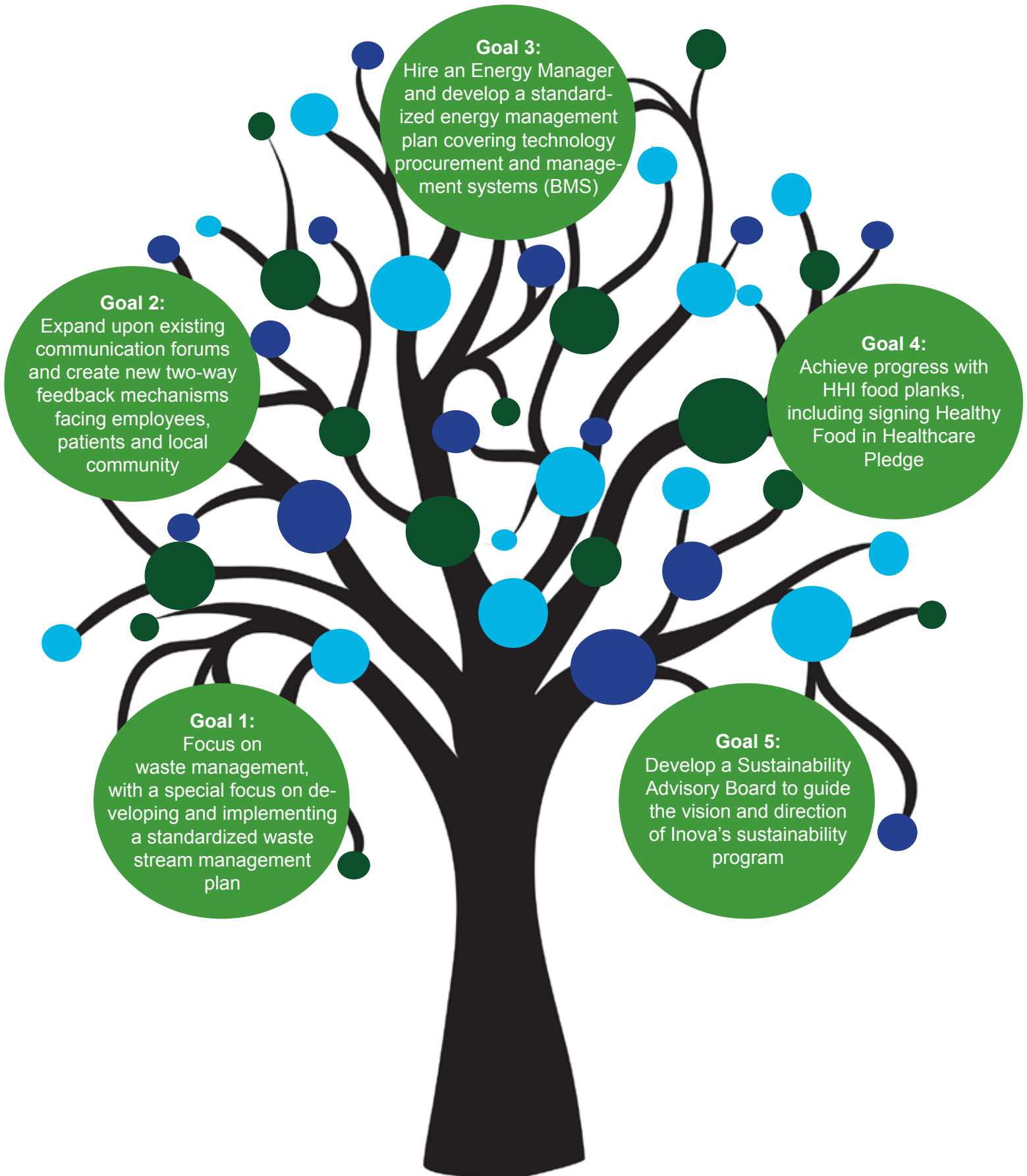
Goal 4: Create additional two-way communication forums to encourage free-flowing dialogue and idea sharing with both internal and external stakeholders.

Progress: In 2012 our Office of Sustainability partnered with Inova's communications and marketing teams to strategize how to best promote sustainability programming and achievements. We have fully integrated Going Green communications with Inova's internal communications platform, and have also greatly increased our social media presence by sending Going Green updates to Inova's social media manager. We also conducted a landmark going green survey across the system and participated in a series of roundtable meetings on sustainability with our vendor partners.

Goal 5: Increase Inova's presence and programming in our local communities.

Progress: In 2012 Inova expanded our SNAP Food Stamp Enhancement Program ("Double Dollars") at local farmers' markets, more than doubling the amount matched in 2011. In January we partnered with the Volunteer Fairfax organization for their annual Give Together event in which local organizations provide child-friendly service projects for kids to participate in on MLK Day of Service. We also once again partnered with DC Fashion Week to support both their Spring and Fall 2012 Eco-Fashion shows, featuring blue wrap fashion designs from across the country as well as the mixed designs of professional eco-minded designers.

2013 Sustainability Goals



Econversations



Inova at the White House

On July 24, 2012, Inova CEO Knox Singleton and Director of Sustainability Seema Wadhwa were invited to Washington, D.C. to participate in a White House panel entitled *Greening America's Hospitals*.

Speaking alongside leaders in health care sustainability from across the country, Mr. Singleton and Ms. Wadhwa explained how sustainability has grown to become one of Inova's key business strategies and why it will remain a priority moving forward into the future.

Key excerpts from that dialogue appear below. The entire panel presentation may be viewed online at <http://www.youtube.com/watch?v=u5LWxKf2BBA>.

Moderator: *Each of you has played a leadership role in transforming your hospital into a more sustainable healthcare system. Where did that come from? What were the largest obstacles and solutions that you saw? What drove you to make these greener practices part of what your organization is doing?*

Knox: For Inova, the “why” of sustainability goes back to our vision for the future. We needed to think about the future of health and what could help differentiate Inova as a leader. That thought process led to a belief that the future of health will require a shift from our historical mission of restoring health once folks are already sick to focusing on prediction and prevention.

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? How do you optimize the health of each individual?

The core notion that's embedded in this new philosophy is really a question of how to make health more sustainable. So many folks' health statuses are not sustainable because of what they eat, because of their lifestyle, their exercise, their work, their relationships. Sustainability from an individual health point of view is core.

If we are going to impact health, we also need to impact a lot more than the people within our institutions, including those who work for us and those who visit us as patients. Much of Inova's future lies in our community, and in the realization that the future of health predominantly lies outside the walls of our institutions.

So, in some ways, this notion of optimizing the health and sustainability of individuals, of our organization, and then of the communities that it is our mission to serve, is a different organizing concept that calls for a future-oriented culture. It calls for a different mindset with respect to the way we treat the environment, the way we relate to energy, the way we think about our facilities, the way that we engineer the human experience.

It all comes down to education and engagement, or awareness and access. It's all about the connection between not just knowing better, but being able to do better. To answer the “why” question: we re-thought the future of health, and that inspired the sustainability dimension of our vision and our purpose.

Seema: We've heard a lot of compelling reasons as to why sustainability is important. But fundamental to all of those reasons is culture, and the root of being able to make these impacts is developing a culture that is based on sustainability. Sustainability means giving something the ability to withstand on its own over time, and developing a sustainable organization doesn't happen until it's built into the way that you operate and the way that you present yourself.

I think the opportunity is most unique for healthcare systems because hospitals are often the largest employers in their community and are home to many well-respected professionals. Looking at how unsustainable our society currently is, hospitals and the healthcare industry – and most specifically, the leaders within those organizations – have the opportunity to change what it is that we focus on and how we're able to move forward.



“We re-thought the future of health, and that inspired the sustainability dimension of our vision and our purpose.”

In terms of where challenges lie, culture change doesn't happen overnight. It definitely takes time. Understanding the drivers of everyone engaged is also important because different things motivate different people, whether you are a CFO focused on ROI or a CEO who is considering things like employee engagement, keeping physicians happy and addressing staffing issues.

Sustainability really is one of the things that will help the industry or your organization stand out and be the place to work. It shows that you understand the values of community and understand that you have a role to play in maintaining them. We are actively working to promote this culture of sustainability at Inova.

***Moderator:** How do you turn this philosophy and vision into real action? What are some real concrete examples of what you've done, the benefits they've provided, perhaps how you overcame some obstacles that stood in the way? What is something you're very proud that you were able to do despite barriers?*

Knox: The power that we have – often as the largest employer, the largest energy consumer, the largest economic impact, the principal economic source of vitality in our communities – is strong. Inova's focus has been on leveraging the reach of our employees and other community connections; to outplay our own potential by empowering our network.

Our principal focus really has been on this notion of building awareness and engaging with our own, which is done by role modeling and being visible and simply talking about how this is an important issue. In Inova's case we have 15,000 employees and another 5,000 doctors, volunteers and other folks associated with our institution. If we can engage them and start impacting the way they think about the role of sustainability in the mission of health, then we suddenly have 20,000 people who are doing 20,000 times more than before on any given day.

The question is how do we engage our 20,000 family members? Awareness alone isn't enough; engagement is the currency of culture change.

A lot of our focus at Inova has been on building a sustainable culture and engaging folks with things like the Blue Wrap Fashion Show that we sponsor, or our Local Food Olympics where employees throughout the system compete in a cooking competition using local, sustainable foods that are also healthy from a dietary point of view.

We also take it into the community with programs like our SNAP Double Dollars program at local farmers' markets, which helps low-income food stamp recipients afford healthier foods. Knowing about healthy food is great, but having a farmers' market nearby doesn't help at all if they



“Hospitals and the healthcare industry have the opportunity to change what it is that we focus on and how we're able to move forward.”

can't afford to buy from it. They have awareness but they don't have access to the actual healthy behavior, and our program aims to fix that.

So it's all about thinking through how to engage folks and change the culture. And from that, we'll grow a whole set of behaviors that frankly you couldn't invent or conceive in advance. I'm proudest of that strategy of engagement and culture change in terms of our efforts.

Seema: I think what drives me really varies on scale. Some of my proudest moments are when employees or people who are personally affected by the programming reach out. Whether it is getting email responses about how our Commuter Shuttle Bus is impacting the daily lives of employees, or hearing employees talk about how they learned to recycle at work and it's actually impacted what they do at home – that really drives me to know that every little bit is making a difference and this is something real for people.

Going on to the next scale, to see and engage with an organization's leadership and help them understand that this is not about hugging trees, that this is one of the key roles they play – and then to have that built into the system, with executive compensation tied to environmental sustainability – that is such an indicator that this work is being built into the values and the strategic plans of our organization. It shows that they understand this really is a cost reduction strategy as much as it is about patient care and community building.

Taking it up one more level, to get the attention of mainstream media and to be here at the White House – it shows that people realize this is an important issue nationally, regardless of their beliefs about environmental sustainability. It shows that people are realizing this is the way we will need to move forward within our health systems to be more sustainable.



Moderator: *Humans don't like to change. Was there someone who was hard to convince to change? How did you ultimately convince them, their organization or that part of your community to really drive change? To do exactly what you said, Knox, which is to engage them to begin that path towards sustainable behavior and culture change?*

Seema: It's an ongoing journey and a constant challenge in terms of getting buy-in from different individuals. I think we're best able to overcome getting people on board by creating a sustainability framework. By taking the time to understand what motivates them, and then helping them view sustainability as part of their existing priorities rather than one more thing they need to do. So really understanding what Inova and its employees are already trying to do, and then positioning sustainability within that framework.

Knox: I'm convinced that for healthcare leaders, the biggest problem is the Pogo Principal at work: where we have met the enemy and he is us. When you look at the biggest barrier to greater engagement and more assertive, creative leadership, it's – surprise – the leaders.

A lot of the folks who are leading today have, to some degree, led through a career where the defining mission has been an inward mission focused on restoration and not prevention. It's been about acute care, not chronic disease. It's been about scraping the toast, not keeping it from getting burnt. And a culture has been built around that. Leaders are culture drivers at their most fundamental, and the more senior experienced leaders, the more, usually, they impact that culture.



“Awareness alone isn't enough. Engagement is the currency of culture change.”

So I am convinced that biggest barrier that I face in many respects is me. I have had to relearn and sort of re-conceptualize how a leader leads and how to drive a culture in this milieu.

The biggest challenge - what is it is it Gandhi said, “be the change that you want to see?” Well, leaders at some level have to become the change that they are trying to drive behaviorally into the organization. It's almost independent of age, but it is the biggest challenge.

Moderator: *A lot of the hospitals that we work with are challenged in trying to do this with their own leadership. How do leaders best receive information from other leaders in the organization? How did they convince you, Knox?*

Knox: I think it has to respond to the value system of whoever you're talking to. If it is the CFO and you can't talk about cost and return on investment, you are probably wasting your time. If you can't talk about the impact on clinical quality or the patient experience to the nurses and the physicians – safety, again that's their agenda. For a community volunteer who's in a governing position, talking about community engagement and healthy communities is what is going to resonate with them.

The collateral difficulty, though, is that often it's not an issue of whether sustainability is valuable. The issue is whether it is seen as valuable enough to make it a priority given all the other demands for resources. I think that's the bigger challenge. It's what I would call the “portfolio” issue: how do we get sustainability into the organization-wide portfolio of priorities?

I suspect this question is premised a bit on how do I get the attention of the senior leaders, and that often is the biggest challenge. It can also be the hardest sale, but I do believe that that is the probably the most important sale.

There aren't many horizontal strategies that contribute as powerfully as sustainability to so many of the vertical growth and success drivers of the organization. I think that's probably the most powerful argument, but you have to make a global argument. Because you can appeal to each piece and never get home with the executive leaders until they see the gestalt or the power of the whole thing.



Addressing Our Impacts



Defining Our Impacts

Inova's mission is to protect the health of the diverse community we serve. But in doing so, we create a variety of downstream health impacts stemming from the resources we use, the products we purchase and the waste we create.

The energy we consume and the vehicles our employees drive contribute to decreased air quality in our local communities. The products and packaging that we use often ends up in landfills or incinerators that can leach contaminants into the environment. The food we serve travels long distances to reach us and may use pesticides and other harmful chemicals in the production process. The chemicals contained in our cleaning supplies, building materials and furnishings can make it harder for patients and employees to breathe.

Inova's efforts to better control the resources, products and chemicals used within our facilities not only help improve the patient experience, but also help keep patients out of our facilities in the first place by contributing to a healthier community. At Inova, we continuously analyze our operations to understand our largest impacts and explore opportunities to minimize or eliminate them.

In this section, we discuss eight specific sustainability focus areas that offer the greatest opportunity for improvement. They have been identified as key sustainability opportunities based on their potential for positive economic, environmental, social and health impacts, and also according to their identification by Inova's stakeholders as a priority issue.

In addition to these efforts, all Inova hospitals are Joint Commission Accredited, which means they have implemented state-of-the-art performance improvement strategies that focus on continuously improving patient safety and quality of care throughout their operations. Joint Commission Accreditation involves not only preparing for a survey conducted by Joint Commission surveyors from a variety of healthcare backgrounds, but also maintaining a high level of quality and compliance with the latest standards. It can reduce the risk of error and adds additional oversight to the quality of the patient services we provide.

Sustainability Focus: Waste

Waste Strategy	Progress
Strategy 1: Reuse and repurpose materials before throwing away	<ul style="list-style-type: none"> • Single-use device reprocessing program • Selection of reusable products & materials • Further development of medical supply donation program • Blue wrap repurposing
Strategy 2: Reduce amount of regulated medical waste (RMW) produced by Inova hospitals (goal: 8-9% RMW rate)	<ul style="list-style-type: none"> • Standardized waste bins • Monthly RMW audits • Oscar (the Grouch) Awards • Employee education • Leadership prioritization as cost-saving strategy • Enrollment in Healthier Hospital Initiative's Less Waste Challenge
Strategy 3: Divert waste from landfill through recycling, source reduction and other strategies (goal: 25% - 30% recycling rate)	<ul style="list-style-type: none"> • Commingled (single-stream) recycling program • Specialized materials recycling • Specialized areas recycling (ORs, kitchens) • One-off waste reduction efforts

In 2012, Inova hospitals generated over 7,978 tons of waste – the weight of over 6,300 hippos. This waste not only contributes to full landfills and rising disposal costs, but its transport and disposal all have environmental impacts of their own. These environmental impacts create associated health impacts including reduced air quality and potential environmental contamination with harmful chemicals.

The way Inova separates our waste while it's still in our facilities plays a large role in how it is ultimately disposed of, as well as the resulting environmental impacts. We combine waste prevention efforts with a program to manage the impacts of the waste we do produce, targeting our waste streams with the largest potential for impact: regulated medical waste (RMW) and recycling.

Regulated medical waste is one of Inova's most expensive and environmentally-impactful waste streams, while recycling

is the least costly and environmentally harmful. We have implemented a variety of waste reduction programs targeting these two waste streams.

These waste management efforts paid off, and Inova hospitals recycled more than three million pounds of materials in 2012, while reducing the amount of (RMW) produced by over 237,000 pounds. These efforts reduced Inova's waste disposal costs by more than \$250,000, allowing us to reinvest these savings in improving patient care.

Inova's waste management programs have been developed to match what current industry leaders in waste management are achieving within their facilities. They will evolve over time as healthcare organizations explore innovative new ways to eliminate and manage waste. As they evolve, so too will we continue to push forward with them.

Waste Type	2010 Total Lbs	2010 %	2011 Total Lbs	2011%	2012 Total Lbs	2012%	Target %
Solid Waste	10,025,300	59.3%	10,643,335	62.6%	9,735,115	64.7%	60% - 65%
Recycling	3,202,820	19%	3,091,738	18.2%	3,203,262	21.1%	25% - 30%
Regulated Medical Waste	3,618,104	21.4%	3,179,883	18.7%	2,942,348	13.7%	10%
Haz Waste	52,961*	0.3%	90,271	0.5%	76,983	0.5%	0.5%

Waste Reduction Strategies

Regulated Medical Waste Audits



Inova's RMW disposal partner conducts monthly system-wide RMW audits. Sample red bags from areas around each hospital are collected and the contents audited for compliance with Inova's policies. This practice helps us provide customized feedback to employees and leadership on what they are doing right and where there are additional opportunities for improvement.

Oscar (the Grouch) Awards



The results of Inova's monthly waste audits are used to select the winner of the Oscar (the Grouch) Award, presented monthly at each hospital to the unit with the most compliant RMW stream. Pictures of the audit findings – both good and bad – are shared with management teams when the Oscar is awarded to provide direct feedback and establish accountability for performance.

Single Stream Recycling



Since 2008 Inova has had a commingled, or single-stream, recycling program. Throughout our facilities, paper, plastics, cardboard, metals and glass are all recycled in the same containers. We have also implemented specialized recycling programs to capture specific materials in areas such as operating rooms and construction sites.

Reuse



We reuse pallets and delivery totes in Inova's warehouses, and a portion of the surgical gowns, towels and basins in our operating rooms are also reusable. We also feature designs made from clean surgical blue wrap in DC Fashion Week's Eco-Fashion Shows, hosted in partnership with DC Fashion Week in both February and September 2012.

Single-Use Device Reprocessing



Inova's single-use device reprocessing program helped keep over 20,000 pounds of waste out of the landfill in 2012. It also helped Inova save millions of dollars, which we were then able to reinvest in improving patient care.

Medical Donations



Inova donates over 75 tons of medical supplies, medical equipment, furniture and other objects annually to organizations within and outside the US.

Haz Waste Management



In 2012 we worked with our hazardous waste disposal partner to audit and standardize the management of hazardous waste across Inova. Our partner representatives conducted mock audits across the system to identify opportunities for improvement. From there we developed a strategy for managing, tracking and reporting on Inova's hazardous waste in a more standardized way.

Waste Education



Inova offers a variety of educational tools to help employees learn correct waste sorting practices. These include comprehensive "Know Where to Throw" guides as well as materials tailored to specific clinical areas. We were also able to integrate waste education into the HealthStream employee education system in 2012, and held several days of RMW education in-services.

One-Off Efforts



Many improvement initiatives undertaken by Inova also have a side benefit of associated waste savings. These include efforts such as installing high-efficiency hand dryers, switching to electronic paystubs, implementing the EPIC electronic medical records system and various other paper reduction efforts headed by Inova's IT department.

Sustainability Focus: Energy

Energy Strategy	Progress
Strategy 1: Track and understand energy performance	<ul style="list-style-type: none"> All 2012 energy data entered into Energy Star Portfolio Manager New engineering firm hired System-level Energy Manager hired Enrolled in Healthier Hospitals Initiative's Leaner Energy Challenge
Strategy 2: Implement energy efficiency and conservation measures	<ul style="list-style-type: none"> Retuned building management systems Evaluated preventative maintenance strategies
Strategy 3: Support new technologies which promote energy conservation and efficiency	<ul style="list-style-type: none"> Installed magnetic bearing chillers at Inova Mount Vernon Hospital Implemented Trane Building Logix operational dashboards and system diagnostics Supported energy-saving technologies including motion and daylight sensors, LED and induction lighting and solar panels Supported the procurement of Energy Star- and EPEAT-rated desktop electronics and other appliances

Each year, Inova's hospitals use enormous quantities of energy to power our life-saving medical equipment and mechanical support systems. In 2012 we spent nearly \$14 million on energy for our five main hospitals, using over 140 million kilowatt hours of electricity and over 7.5 million therms of natural gas. This amount of energy is enough to power 7,260 single-family homes for a year. Our associated carbon dioxide emissions are roughly equivalent to the annual emissions of 29,380 passenger vehicles.

The majority of the energy we use to power our healthcare facilities comes from non-renewable fuel sources which create pollution when they are extracted, transported, stored and burned. The pollution from these energy sources can lead to a wide range of health issues including decreased respiratory function and environmental exposure to toxic heavy metals such as mercury, arsenic and lead.

In 2012, Inova brought on a new engineering firm to focus

on the standardization of all engineering processes across the system. A system-level Energy Manager was also hired to develop a broad-scale approach to energy management and oversee coordination of energy initiatives across all Inova hospitals.

"I believe with the right motivation we can cut our energy usage, saving money and making an impact environmentally."

- Employee feedback, Going Green survey

Once these teams started work, they discovered that many electrical and mechanical systems were not operating at ideal efficiency levels. The new engineering team's first step was to retune Inova's building management systems (BMS) and undertake facility assessments at each operating unit, including the monitoring and evaluation of existing preventative maintenance (PM) strategies. This approach helped set the stage for the future development of a long-term strategic energy management plan (SEMP), and also helped the team identify and prioritize upcoming projects.

As we move into the future, we will continue to streamline our energy consumption and reduce our impacts.

2012 Energy Impacts

Inova Energy Consumption			
Year	Electricity (kWh)	Natural Gas (therms)	Total Costs
2011	141,122,710	7,631,781	\$14,754,108
2012	141,814,170	8,199,507	\$13,950,708
Change	+416,342	+2,930,384	-\$803,400

Associated GHG Emissions (metric tons)		
	2011	2012
Carbon Dioxide	137,728	141,055
Methane	6,559	6,717
Nitrous Oxide	444	455
Hydrofluoro-carbon gases	11.8	12.1
Perfluoro-carbon gases	21.2	21.7
Sulfur hexafluoride	5.8	5.9

Sustainability Focus: Water

Water Strategy	Progress
Strategy 1: Implement water efficiency and conservation measures	<ul style="list-style-type: none"> • Motion sensor faucets • Low-flow restroom fixtures
Strategy 2: Utilize grounds management practices which reduce water consumption	<ul style="list-style-type: none"> • Native planting and xeriscaping principles in landscaping • Drip irrigation systems • Well water for irrigation
Strategy 3: Support new technologies which promote water conservation and efficiency	<ul style="list-style-type: none"> • Water-efficient sterilization equipment • Rain cistern in Inova Fairfax Medical Campus' new South Patient Tower

Hospitals are generally one of the largest consumers of water within their local communities. When more water is used, more energy is spent on its transport and treatment. This generally leads to the increased consumption of fossil fuels as an energy source, creating a variety of environmental and health impacts such as air pollution, water pollution and exposure to toxic chemicals.

Inova aims to minimize our water consumption by supporting water-efficient technologies and streamlining water-consuming processes such as landscape management, cleaning, and even handwashing. By analyzing our most water-intensive areas – such as sanitary systems, HVAC, medical processes and food services – we are able to identify specific opportunities for reduction in each.

Since 2008 we have tracked our water consumption through Energy Star's Portfolio Manager. When we switched from an in-house to a contracted engineering services provider in mid-2012, this tracking system became disrupted and some of our data for the year was lost. This unfortunately means that we have an incomplete data set for Inova's water usage in the 2012 calendar year. We look forward to once again reporting in full on this metric in 2013 and beyond as Inova's new engineering team absorbs accountability for tracking and entering our water data.



Understanding the Water-Energy Nexus

The water-energy nexus highlights the close connection between water and energy.

The water Inova uses at our facilities must be extracted, treated, pumped, heated or cooled, and then treated again before it can be returned to its natural source. The more water we use, the higher our energy-related emissions rise.

At the same time, the production of energy requires water in almost every phase of the process, and power generation accounts for a high percentage of America's freshwater withdrawals. As we use more water, we also use more energy.

Case Study: Magnetic Bearing Chillers



As Inova's new engineering team analyzed opportunities throughout the organization, they honed in on the chillers at Inova Mount Vernon Hospital. The existing chillers were becoming costly to maintain and were scheduled for replacement, so the project team and designers made the decision to replace the old chillers with magnetic bearing chillers. These highly efficient chillers had low maintenance requirements and a low kilowatt per ton, and were proven reliable.

Magnetic chillers are called "frictionless" because there is no oil between the compressor drive and bearing surface, which allows the compressor drive to float using magnetic attraction and repulsion instead of an oil film. Switching from the previous chillers created a savings by eliminating the oil cooling requirement, reducing heat transfer due to friction and reducing resistance. The Variable Speed Compressors helps manage cooling capacity more efficiently, which decreases energy use significantly over the previous method.

Sustainability Focus: Purchasing

Purchasing Strategy	Progress
Strategy 1: Understand and minimize lifecycle impacts of the products used in Inova hospitals	<ul style="list-style-type: none"> Environmentally preferable purchasing (EPP) strategy Integration of EPP into Supply Chain strategy Value-add for EPP in vendor business review Lifecycle impact minimization (mercury elimination, PVC/DEHP-free products, green cleaning products, integrated pest management)
Strategy 2: Develop strategies to help purchasers identify environmentally preferable products	<ul style="list-style-type: none"> Easy-to-understand guides to chemicals of concern commonly found in healthcare products Enrolled in Healthier Hospitals Initiative's Smarter Purchasing and Safer Chemicals Challenges
Strategy 3: Work with suppliers to develop and support new, environmentally preferable products	<ul style="list-style-type: none"> Held and attended EPP meetings with Inova's supplier partners OR kit reformulation process Presentations at CleanMed and other venues on Inova's EPP progress

“Inova’s commitment to sustainability and EPP has resulted in a culture that appreciates the benefits of using products and services that are safe for our patients, end-users and environment.”

-- Charles E. Neikam, Vice President of Supply Chain

Inova spends over \$1 billion each year on the supplies, equipment and services required to provide the highest level of care to our patients. Each of these products and services contributes a range of environmental and health impacts throughout its lifecycle, from the initial extraction of raw materials through the use and disposal of the finished product.

Given these impacts and their potential for harming human health, Inova has a responsibility to wield our purchasing power wisely.

Inova’s Supply Chain Management (SCM) department is the front door to all of the products and services used in our hospitals. Our Supply Chain team worked closely with our Sustainability team throughout 2012 to build environmentally preferable purchasing (EPP) principles into the SCM strategy, targeting product lifecycle issues of reusability, disposability, chemical exposure and pollution.

The two groups worked together to establish five key goals for incorporating sustainability and EPP principles into the department’s strategy. 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 our suppliers.

Inova also works directly with our supplier partners to create a market for healthier products. We include environmental considerations in our vendor review process, and worked in 2012 to build them into Inova’s initial vendor evaluation process. We also met with our suppliers periodically throughout the year to discuss Inova’s EPP strategy and what challenges and opportunities it created for our business partnership.

Specifically defining what environmentally preferable characteristics we are looking for makes it easier for Inova’s supplier partners to provide the healthier, more environmentally sound products and service we desire. It not only helps guide their development of these healthier new products and services, but also allows them to help Inova more closely track the purchase of products that meet our own EPP requirements.

Supply Chain Goals Identified in 2012

Goal 1

Develop a system to implement existing policies (mercury, chemicals, etc.) at point of purchase

Goal 2

Re-evaluate and adopt Inova EPP Policy

Goal 3

Implement a standardized EPP product questionnaire for vendors

Goal 4

Get more information from suppliers about what their companies are doing to reduce environmental impacts

Goal 5

Host a vendor fair highlighting products with environmentally preferable characteristics

Case Study: OR Pack Reformulation



As Inova's sustainability program has matured, the focus has extended from managing our waste to preventing waste from being created in the first place. By targeting the products we purchase, we can minimize financial and physical waste

throughout our supply chain. One major area of opportunity for waste reduction has been Inova's operating rooms (ORs) – our most waste-intensive areas.

Surgical supplies often come bundled together in a customized package which contains all the different supplies needed for each surgery. When used correctly these OR packs can save significant time and money, but they can also lead to physical and financial waste when used inefficiently.

In 2012, Inova attempted to eliminate this waste and standardize our purchasing process by conducting a review of all surgical packs used in the ORs. At the time there were 138 different types of packs in use across the system, 97 of which were used in the ORs. A review team was formed to analyze and review the contents of each pack and to reconfigure them when waste was identified.

By the end of 2012, the committee had reviewed 61 of the 97 OR packs in its charge and consolidated them into a set of 17 packs total. This yielded over \$225,000 in cost savings and a 62% reduction in the total number of packs in use at Inova.



“Green purchasing is significant because it shows leadership’s commitment and proactively reduces the hospital’s carbon footprint.”

-- Employee feedback, Going Green survey

**E
P
P
S
T
R
A
T
E
G
I
E
S**

Chemical Minimization

Products should reduce the quantity and potential negative impacts of the chemicals they contain, including:

- | | |
|---|-----------------------------------|
| Mercury | PVC/vinyl |
| Lead | Flame retardants |
| PBTs (persistent bioaccumulative toxics) | BPA (bisphenol A) |
| DEHP and other phthalates | VOCs (volatile organic compounds) |
| Carcinogens, mutagens & reproductive toxins | Latex |

Waste Minimization

Products should assist in reducing the amount of waste Inova generates and/or reduce overall lifecycle impacts through:

- | | |
|-------------------|--|
| Recycled content | Biobased material content |
| Recyclability | Biodegradable content |
| Reusability | Compostable content |
| Reduced materials | Increased durability/length of service |

Energy & Water Conservation

Products should have characteristics that either reduce demand for or increase the efficiency of the energy and/or water required for use.

Local Purchasing

Products should preferably contain content that is extracted, processed and manufactured regionally (defined as within a 250-mile radius).

Sustainability Focus: Food

Food Strategy	Progress
Strategy 1: Provide a variety of fresh, healthy food options to patients, employees and visitors	<ul style="list-style-type: none"> • Contract update • Cafeteria audits • Repositioning and/or removal of unhealthy foods • Added daily vegetarian entrée options • Cafeteria produce stands • Enrolled in Healthier Hospitals Initiative's Healthier Foods Challenge
Strategy 2: Minimize the environmental impact of food purchases while supporting local farmers	<ul style="list-style-type: none"> • Tracking of local food purchases • Team to improve local food procurement strategy • CEO and hospitals support of Buy Local Challenge • Food wrapping station • Development of Inova IMPACT sustainable foods strategy
Strategy 3: Promote wellness by increasing access to and knowledge of healthy food choices	<ul style="list-style-type: none"> • Take & Bake Cooking Classes • Cafeteria signage • Local Food Olympics • Double Dollars SNAP Benefits program • Buy Fresh Buy Local partnership & dissemination of resources

Inova recognizes that food has a direct, measurable impact on human health. We also acknowledge that the current global food production system in the US is unhealthy for both humans and the environment.

Highly processed, calorie-laden junk foods have become easier and cheaper to access than natural, nutrient-rich food items. Antibiotics are used as a growth stimulator rather than to treat illness in livestock. Crops and livestock are grown using practices that pollute our water, air and land. The majority of our food is produced in a way that sacrifices long-term well-being for instant profits.

“Your support in providing healthy fruits and vegetables to underserved communities is instrumental in addressing future health issues.”

- Edward Avalos, USDA Undersecretary

Inova does our best to combat these issues by ensuring patients, visitors and employees access to fresh, nutritious, health-promoting foods while within our facilities. We also aim to extend the mission of healthy eating to the members of our community, using our sustainable foods program to spark a broader dialogue on issues of nutrition, health and wellness.

In 2012, we developed the Inova IMPACT platform to guide our broader sustainable foods strategy. Its three major branches – healthfulness, sustainability and connectivity – were identified after analyzing sustainable foods best practices from leaders and experts across the health care industry, including those of Inova’s food services provider and those recommended by the internationally-recognized Health Care Without Harm organization. All of our sustainable foods efforts fall within one of these three categories.

Case Study: Double Dollars SNAP Benefits



In 2011, Inova’s Community Affairs Department through the Inova Health System Foundation initiated the Double Dollars Program, an initiative to provide an incentive to Supplemental Nutrition Assistance Program (Food Stamp) recipients to purchase fresh, local foods.

Through this effort, Inova matched the first \$10 in SNAP purchases at four local farmers’ markets, as well as at a Mobile Farm Market.

For the May to October 2012 market season, Inova matched \$3,472 in SNAP transactions – more than double the \$1,494 that was matched in the program’s first year.

The response to this program was very positive, with the coordinator at one of the farmers’ markets reporting that “the majority of those queried said they would not use the farmers’ market without this program” and that “all have said that they increased the amount of fresh fruits and vegetables under the program.”

Inova IMPACT Sustainable Foods Platform

Healthfulness



Healthfulness targets the nutritional content of the food we offer to our patients and in our cafeterias. We aim to increase the variety of healthy, nutritious food options while decreasing the amount of high-fat, high-sugar, highly processed foods we serve.

In 2012 Inova's Food Services team conducted cafeteria audits across the system to establish baseline levels of healthfulness. They used the results to inform changes such as the repositioning of less healthy food items, the installation of weekly produce stands in cafeterias, and the switch from fried to baked for certain popular grill items. At least one daily vegetarian option was added to the hot food station, and many unhealthy snacks were replaced with healthier options or eliminated entirely.

Other healthfulness goals include:

- More nutritionally dense foods
- Reduced unhealthy fats
- Reduced fried foods
- Reduced sweetened beverages
- More vegetarian options
- More variety of fruits & vegetables
- More vending & catering options
- Focus on fresh, seasonal produce
- Fewer processed foods
- Fewer artificial colors & flavors

Sustainability



Sustainability addresses the manner in which the food we serve was produced. By reducing the harmful impacts of food production, we are contributing to a healthier environment and reduced secondary health impacts from food production. This helps us prevent potential health issues before they ever become a problem.

Inova supported this agenda in 2012 in a variety of ways. In addition to tracking local produce procurement at all of our hospitals, we formed a team to focus on increasing local food purchases. Each of our hospitals also signed on to July's Buy Local Challenge, as did several members of leadership throughout Inova.

Other sustainability goals include:

- Procurement of food that is locally produced or processed (within 250 miles)
- Labels for seafood, meat, dairy, poultry, produce and coffee
- Packaging that is recyclable, compostable, made from recycled content or uses reduced materials
- Food waste management that includes recycling, composting and donation

Connectivity



Connectivity promotes healthy food as a lifestyle rather than a choice at mealtime. We offer various programs designed to help our patients, visitors, employees and community members improve their food knowledge and gain increased access to fresh, healthy foods.

In 2012 Inova hosted Take & Bake Cooking Classes which taught participants about delicious and healthy ingredients and cooking techniques. We increased signage to highlight local and seasonal options, and also hosted a Local Food Olympics to draw attention to Inova's sustainable foods platform. Within our community, we distributed thousands of Buy Fresh Buy Local guides and continued our support of Inova's Double Dollars SNAP Assistance program.

Other connectivity goals include:

- Creating engagement opportunities including events, programming and promotional campaigns
- Developing & supporting additional internal and external access opportunities such as farmers' markets, community supported agriculture & community partnerships
- Providing educational materials, events & support tools to increase healthy foods knowledge

"I love the Going Green ideas that you've incorporated into the cafeteria! Incorporating sustainable, local foods and proper waste management/ recycling is awesome! Thank you!"

- Employee feedback, Going Green survey



Sustainability Focus: Transportation

Transportation Strategy	Progress
Strategy 1: Reduce environmental impact of Inova employees' transportation choices	<ul style="list-style-type: none"> • On-campus bike racks • On-campus shuttles (Inova Fairfax Medical Campus & System Office) • Shuttle to metro (Inova Fairfax Medical Campus & System Office) • Proximity to public bus stops • Alternative Transit Fairs • Information about public transportation options provided at each hospital • Survey to understand commuter habits and preferences (Inova Fairfax Medical Campus)
Strategy 2: Increase availability and visibility of alternative transportation options for employees	<ul style="list-style-type: none"> • Additional bike rack signage in high-visibility locations • Commuter Shuttle Bus program (Inova Fairfax Medical Campus) • Bike to Work Day commuter fair • Remote control "Inova Going Green" bus races
Strategy 3: Develop incentive programs to promote use of alternative modes of transportation	<ul style="list-style-type: none"> • WageWorks pre-tax benefits program • MetroCheck incentives program (Inova Alexandria Hospital) • Additional preferred parking spaces for carpools, vanpools & hybrids

Each year, Inova employees drive thousands of miles in their personal vehicles traveling to and from work, releasing enough emissions to power nearly 1,000 single-family homes for a year.

Our alternative transportation strategy aims to minimize these impacts by providing viable alternative transportation options for employees. By helping to remove vehicles from the road, we are reducing the vehicle-related emissions of greenhouse gases and other air pollutants, contributing to healthier air quality and fewer pollution-related respiratory illnesses within our local communities. These efforts also help to reduce traffic congestion on the crowded roadways of Northern Virginia.

In addition to providing bike racks at all Inova hospitals, we have incentivized the use of carpools and hybrid vehicles by creating preferred parking spaces for them in employee parking areas. Depending on the location of the hospital, we also offer a variety of options to support public transit, including public transit accessibility, a Metro Shuttle Bus at Inova Fairfax Medical Campus, and a monthly public transportation stipend at Inova Alexandria Hospital.

All Inova employees may additionally participate in a Com-

muter Tax Benefit Program which allows commuters to pay for a portion of their commuting expenses with pre-tax dollars. This can result in annual tax savings of more than \$900.

In 2012, we extended the reach of our alternative transportation options. We worked closely with the Fairfax County DOT to conduct a commuter survey and launch a Commuter

Shuttle Bus program. We also increased signage relating to Inova's bike-to-work options and installed additional preferred parking spaces for carpools and hybrids.

As a result of these efforts, several Inova hospitals received recognition as Best Workplaces for Commuters and in the Race to Excellence program sponsored by the same group.

Inova Fairfax Medical Campus was also acknowledged by the Fairfax County Board of Supervisors for its efforts in offering and promoting transportation demand management options to employees.

We look forward to expanding these ride reduction programs and other efforts in 2013 and beyond, with an additional focus on managing the impacts of our own fleet of vehicles.

Transportation-Related GHG Emissions (metric tons)	
Carbon Dioxide	19,221
Methane	914
Nitrous Oxide	62

“Inova Transportation Management and Sustainability Teams have implemented a wide variety of industry-leading, employee-friendly trip reduction and sustainability programs. These ongoing efforts directly impact the quality of life in Fairfax County by reducing congestion and improving air quality”.

- Glenn Hiner, Transportation Planner II, Fairfax County Department of Transportation



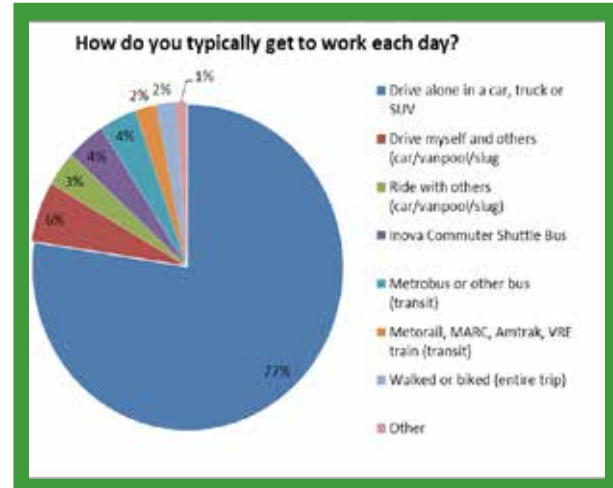
Case Study: Alternative Transportation at Inova Fairfax Medical Campus

Inova Fairfax Medical Campus is located in close proximity to 495 Express Lanes construction zones, one of the most complicated and large-scale Virginia Megaprojects. Inova has worked closely with both Virginia Megaprojects and the Fairfax County Department of Transportation (DOT) on initiatives to better understand and reduce the impact of our employees' commuting habits.

Transportation Survey

In November 2012, Inova Fairfax Medical Campus conducted a survey to better understand how employees were traveling to and from work. Employees were asked to report how they had commuted during the previous seven days, and also answered questions related to alternative transportation to help guide the Inova's ride reduction efforts.

The electronic survey link was emailed to all employees, and bilingual (English, Spanish) copies of the survey were distributed to departments with little computer access. More than 1,200 employees responded.



The drive alone rate is 77%, which means 23% take other modes of transportation to work



Carpooling is the second most popular option, with 6% of rides and an additional 44% who would consider using an Inova-sponsored carpooling program.



The average round-trip commute time is 62 minutes, with a range of 5 minutes to 8 hours

Employee Commuter Shuttle Bus



“The I-95 shuttle is the best!!! Thank you so much for this initiative!”

- Employee feedback, Going Green survey



At the beginning of 2012, Inova Fairfax Medical Campus implemented a Commuter Shuttle Bus program for employees as part of a partnership between Inova, Virginia Megaprojects and the Fairfax County Department of Transportation.

One of the major obstacles to this effort was the selection of a schedule for the daily shuttle, given the varying positions, start times and shift lengths within Inova. The team addressed this challenge by conducting several rounds of live surveys where employees were asked to share their work schedules, zip codes, and information about their daily commuting habits. This allowed Inova to identify the best possible locations and schedule for Inova's commuter buses.

Two shuttles were piloted during the first six months of 2012 - one driving out Route 66 West and the other down I-95 South. Each shuttle accommodate up to 25 people, and the program transports between 30 and 50 employees daily Monday through Friday except weekends and holidays. The six-month pilot program was approved for continued operations in June 2012.

Sustainability Focus: Buildings

Buildings Strategy	Progress
Strategy 1: Create safer healing environments through evidence-based design and green construction	<ul style="list-style-type: none"> • LEED Silver South Patient Tower (Inova Fairfax Medical Campus) • Construction of other LEED new build and renovation projects
Strategy 2: Reduce environmental impacts of materials used during facility construction and maintenance	<ul style="list-style-type: none"> • Recycling of C&D waste • Responsible disposal of items from areas under renovation
Strategy 3: Develop a consistent, low-impact approach to the maintenance of Inova facilities	<ul style="list-style-type: none"> • Integrated pest management practices • Water-efficient and pest-resistant native landscaping practices • Water-efficient irrigation systems

The products and processes used to build and maintain Inova’s hospital facilities have a tremendous impact on health. Products such as paint, particle board fixtures, carpets and cleaners can all contain chemicals that contribute to indoor air pollution within our hospitals, while construction equipment pollutes the outside air with exhaust containing over 40 toxic contaminants. Virtually every product used in a hospital additionally requires energy to produce, transport and dispose of, which leads to increased air pollution in communities around the globe.

Inova has developed several strategies for minimizing health impacts related to our facilities. In addition to utilizing Green Guide for Health Care guidelines, we are in the process of designing and building several new Inova facilities to achieve LEED certification. LEED (Leadership in Energy & Environmental Design) requirements target the environmental and health impacts of the entire construction process, and have helped Inova take great strides in reducing them.

In 2012, we were proud to complete construction of Inova

Fairfax Medical Campus’ South Patient Tower – our first LEED-rated hospital building. As part of this process, Inova invited representatives from the US Green Building Council, which operates the LEED program, to discuss challenges and opportunities related to the use of LEED in healthcare.

In addition to the South Patient Tower, Inova also has several other new build and renovation projects underway which will aim to achieve LEED certification. These include the new construction projects such as the Inova Women’s and Children’s Hospital and Inova Cancer Center, as well as renovation projects like Inova Fairfax Medical Campus’ North Patient Tower.

Once we have designed and constructed these healthier healing environments, also have a duty to maintain and operate them in a way that is consistent with healthy building management principles. We strive to maintain improved indoor air quality and toxic reduction strategies through practices such as integrated pest management, green cleaning and the use of native, pest-resistant plant species in our landscaping efforts.



Understanding Evidence-Based Design

Evidence-based design (EBD) is an innovative approach to environmental design (architectural, interior, and landscape) that bases design decisions on documented research and well-established best practices, with the aim of improving outcomes. The ideal is to create a therapeutic environment that is supportive, restorative and efficient for both patients and staff.

Healthcare environments that take an evidence-based design approach are paving the way for improved patient safety, stress reduction, increased care delivery effectiveness and enhanced quality care. These objectives are linked to the overall improvement of the patient, staff and organizational experiences. By incorporating EBD principles, Inova is creating safer environments, reducing the environmental impact of the materials used, and developing a consistent approach to managing the environmental impacts of our healthcare facilities. In the coming years, the inclusion of evidence-based design practices will be a necessary component of upholding the Hippocratic Oath to “first do no harm.”

Case Study: South Patient Tower Goes LEED Silver



In 2012, construction was completed on Inova Fairfax Medical Campus' newest medical facility, the South Patient Tower (SPT). The SPT is an 11-story building designed to earn LEED Silver certification, and is the first phase of a three-phase campus expansion project which will add a total of a million square feet of space to the existing campus.

The South Patient Tower's eight stories of inpatient units allow Inova to continue to implement single-bed patient rooms for adult and geriatric patients. Information from evidence-based design research was utilized in the design of these rooms, influencing factors such as the size and location of exterior windows and family waiting areas.

LEED, short for Leadership in Energy and Environmental Design, is a building rating system developed by the US Green Building Council (USGBC). It provides a framework for identifying and implementing practical and measurable green building design, construction and operations solutions. There are six key areas for which facilities can earn credits towards becoming LEED certified. The SPT includes features in each area.

Sustainable Sites

Erosion and sedimentation control from silt fencing and gutter buddies

Alternative transportation options including four bus lines and on-site bike racks and showers

Installation of a 4,000 square foot vegetated roof system, or "green roof," that mitigates stormwater runoff and provides views to nature from adjacent patient rooms and future buildings

Water Efficiency

Landscaping plan uses small planting of drought-tolerant grass

Installation of a 600-gallon rain barrel that collects rain water from several roof drains for use in watering plantings

Achieved over 25% water savings by using low-flow toilets, showers and kitchen sinks

Energy & Atmosphere

Reduced the amount of energy used by mechanical systems by completing a fundamental commissioning process of mechanical, electrical and associated controls, lighting controls, daylighting controls and domestic hot water systems.

Utilized zero chlorofluorocarbon (CFC)-based refrigerants in the building HVAC&R systems

Materials & Resources

Achieved 86% diversion of waste materials

Used over 20% of building materials containing recycled content

Sourced 37% of all materials from within 500 miles of the facility, with concrete building structure and precast exterior wall system all sourced from within 100 miles

Over 70% of wood sourced from sustainably managed forests as indicated by Forest Sustainability Council

Indoor Environmental Quality

Used top-of-the-line paint products, low-emission flooring and wood that is free of added urea-formaldehyde

Adopted Inova's universal no-smoking policy for entire campus

Provided individual lighting controls for 90% of building occupants, including individual task lighting, multiple zones of light and dimming controls

Innovation in Design

Earned Exemplary Performance credits in three credit areas: Alternative Transportation, Open Space and Regional Materials

Committed to using this building project to educate others in the healthcare community on sustainable building through building tours and case studies

Included several LEED accredited professionals throughout the process

Sustainability Focus: Healthcare IT

Healthcare IT Strategy	Progress
Strategy 1: Support technologies which streamline processes and deliver improved outcomes	<ul style="list-style-type: none"> • Transition to EpicCare electronic medical records • HealthStream electronic education program • Use of E-Profile by Human Resources department
Strategy 2: Use HIT technologies as a tool to promote waste and energy reduction	<ul style="list-style-type: none"> • EPEAT-rated computers • Energy Star-rated electronics • Paper-saving efforts in Inova Career Center recruitment process and on-boarding of new employees • Virtualization of servers at Inova data centers
Strategy 3: Communicate the environmental co-benefits of HIT technologies	<ul style="list-style-type: none"> • Meetings with IT leadership to discuss outcomes of previous efforts • Paperless savings communicated at Inova Leadership Institute • Inclusion of environmental topics in IT team member continuing education

Modern hospitals rely on technology to provide the best care and pursue the most cutting-edge research possible. Unfortunately, these technologies generally do not do much to reduce the paper waste from old, outdated systems and at times may even lead to the creation of additional paper waste.

The production and disposal of most paper – including recycled paper – are environmentally-intensive processes that use large quantities of energy and can lead to the release of harmful chemicals into the atmosphere. At the same time, the technologies used in HIT consume energy which also contributes to air pollution that can impact health.

An EPIC Undertaking: Implementing Electronic Medical Records



Inova spent the majority of 2012 preparing for the implementation of the EpicCare electronic medical record system, scheduled to go live at all of our operating units in the first half of 2013. This

software will help Inova take better care of patients by improving outcomes, enhancing the patient's experience and supporting research. It also supports Inova's continuous quest for increased efficiency and improved performance.

With Epic, clinicians will be able to easily access patient records, share information with other medical professionals, track trends in a patient's health history, and receive alerts on best practices and reminders for health services. Epic increases the efficiency of our practitioners by having all the information they need for their patients in one place.

From a different perspective, millions of patients and healthcare employees travel to medical offices and hospitals each day to meet with their care providers. Many of these visits are simple check-ups or medical consultations, and yet many patients who don't necessarily require an in-person visit are spending valuable time commuting to and from their appointments. This contributes to increased local traffic congestion and air pollution, requires that larger parking facilities be built to hold the peak number of cars expected to be on-site in a given day, and wastes the valuable time of patients and their care providers.

Inova uses Health Information Technology, or HIT, to improve our services and reduce our environmental impact. In addition to purchasing Energy Star- and EPEAT-rated desktop office equipment, we have virtualized the servers at Inova's data centers. This process has eliminated over 300 physical systems to date, saving 150 kilowatts per hour of power consumption and 45 tons of air conditioning needs.

HIT has also spurred innovation in healthcare delivery via the advancement of electronic medical records (EMR). These electronic systems give care providers a way to connect remotely with patients and with each other, allowing them to share best practices and patient information throughout the healthcare network while streamlining systems and eliminating waste. Inova has spent the past several years in preparation for the implementation of the EpicCare electronic medical records system in our hospitals and medical offices.

In 2012 much time was additionally focused on finding ways to reduce paper forms. In addition to the significant paper savings expected to be realized once EpicCare has been implemented, other paper-reduction projects included the use of electronic paystubs and the HealthStream electronic education program. Paper-saving efforts were also implemented in the Inova Career Center recruitment process and during the on-boarding of new employees, and Inova's Human Resources department started using the digital E-Profile to aid in employee management. Inova also launched an E-ICU in 2012, and will provide more information on this initiative in the coming years.



Making an Impact



Making an Impact at Inova

With a family of nearly 20,000 employees, volunteers and affiliated professionals, Inova is one of the Northern Virginia region's largest employers. Many of these team members are also residents of Inova's local community, meaning they spend much of their time within or just outside our walls. Our environmental, financial and community performance affect them significantly.

At the same time, Inova also recognizes this group's tremendous power to impact our own operations – particularly, to contribute to the reduction of our environmental footprint. Each team member's actions while at work are key in deciding the outcomes of efforts such as recycling, RMW reduction, single-use device reprocessing, energy and water conservation, green purchasing and reducing transportation-related emissions.

The success of Inova's sustainability program relies on the commitment and participation of this diverse group of individuals. Its structure was designed to provide the resources and support needed to fully realize its potential.

Office of Sustainability

The Office of Sustainability oversees Inova's system-wide sustainability efforts, focusing on operational impacts, stakeholder engagement and strategic planning. It identifies opportunities for sustainable environmental improvements and then facilitates their implementation. It is also tasked with managing Inova's "Going Green" initiative, which provides educational tools, resources and programming for employees interested in minimizing their environmental impacts.

The Office of Sustainability meets with the leadership teams of each Inova hospital throughout the year to review progress and discuss strategies. The results of key sustainability metrics are also shared on an annual basis with Inova's executive leadership team.

Green Teams

Inova's Green Teams are the Office of Sustainability's "eyes and ears" on the ground, acting 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.

Going Green in Action



Blue Wrap Fashion Show

In 2012, Inova continued our partnership with DC Fashion Week as a way to help redefine waste and encourage participants to reconsider the potential of the everyday items around them.

For the Spring 2012 fashion show, we provided sheets of blue wrap to professional eco-friendly fashion designers. Each designer created beautiful works of art out of this clean plastic fabric used in hospitals to protect sterilized surgical instruments. In Fall 2012 we took a more active role in the Eco-Fashion Show, hosting our second annual Project Blue Wrap design competition. Amateur participants from within Inova and across the country were challenged to get imaginative with eco-friendly fashion by reusing blue wrap, transforming it from an OR staple to a fashion inspiration. The winning designs were displayed alongside those of professional designers on the runways of DC Fashion Week.



Local Food Olympics

Inova hosted its first ever Local Food Olympics in July 2012 to promote local, seasonal, healthy foods. In this three-round event, employees and administrators competed to see who could make the best use of the fresh fruits and vegetables found in Virginia in the summer.



In the Bronze Round, employees at each participating hospital prepared dishes of their own and served them to a panel of judges. The winners selected in this round advanced to the Silver Round, where they competed against their hospital's CEO. Inova's Food Services team prepared recipes submitted by each contestant, and cafeteria visitors voted for their favorite after tasting samples. For the final Gold Round, the winners of each hospital's Silver Round competition convened to face off against each other – and Inova CEO Knox Singleton – for the grand prize. Recipes for each dish, as well as some of the ingredients used to make them, were available on-site.



Earth Day Fairs

Inova has hosted Earth Day fairs at each of our hospitals since 2009. Since then, we have distributed over 5,000 native tree seedlings to employees and community members through our partnership with the Fairfax Releaf organization.



In 2012, Inova's Earth Day fairs once again included tree seedling giveaways and ceremonial tree plantings by members of each hospital's leadership team. In addition, we held a drawing for a rain barrel, distributed Energy Star information on improving energy efficiency at home and at work, and gave away free vermicompost sets that had been assembled by local children as a volunteer project on MLK Jr. Day of Service in January.



Take & Bake Cooking Classes

Inova Fairfax Medical Campus offered several Take & Bake Cooking Classes for employees and community members in 2012. Participants were invited to learn about preparing healthy, flavorful meals from a team of Inova chefs and nutritionists. Class instructors reviewed food preparation and cooking techniques and discussed ingredient selection and nutrition. The participants then prepared and assembled their own dishes, leaving the class with a take-home meal for four and insights into healthier cooking.

Case Study: Going Green Employee Survey

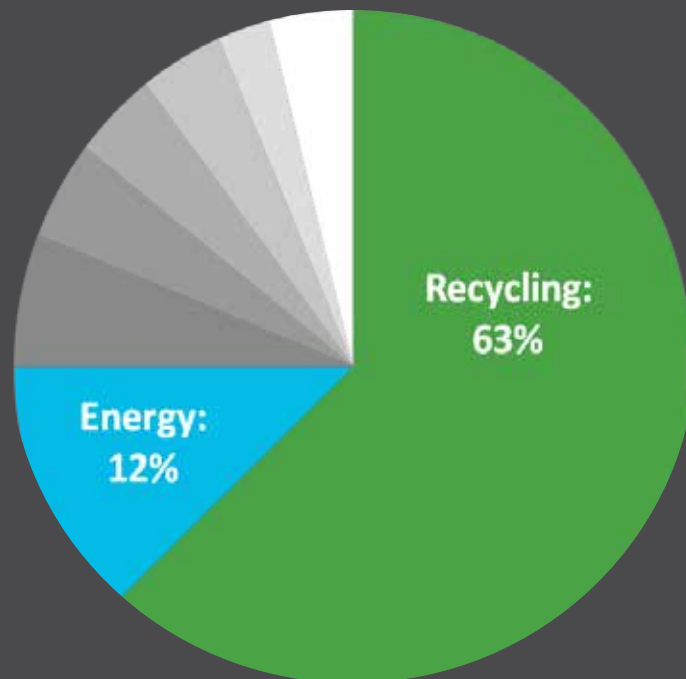
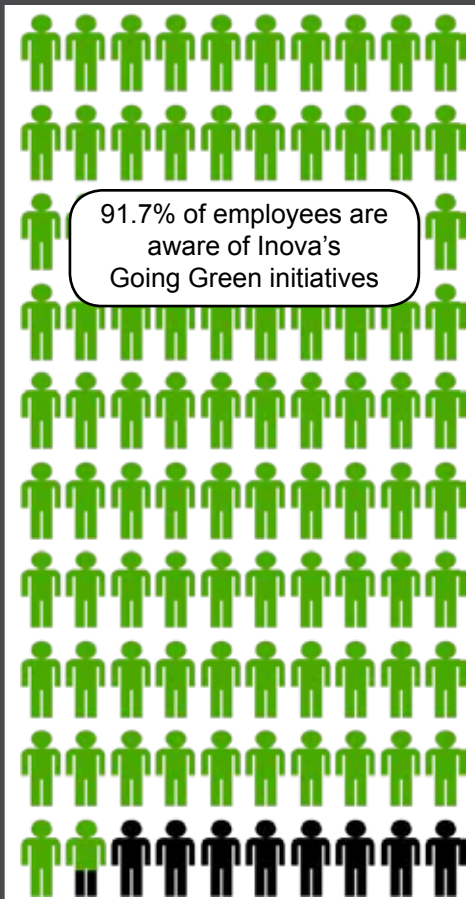
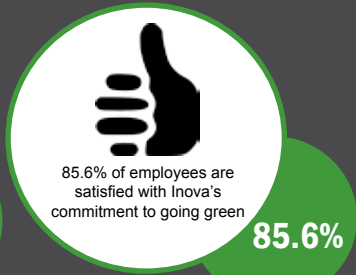
From April through November 2012, Inova conducted a survey across our five hospitals to gauge employee interest and engagement in environmental sustainability. The survey was designed to collect ideas and feedback on how to make Inova's sustainability program more effective, appealing and reachable for employees.

Though Inova's sustainability program has been in place since 2008, a formal effort had never been made to measure employee interest and participation in our sustainability programming. One of the main drivers of this survey was to develop an initial benchmark for these factors so we can track progress moving forward.

Another key driver for the survey was gathering employee feedback about and ideas for Inova's sustainability program. In a hospital, it can be very difficult to reach employees due to the sheer size of the population and facility. This survey added an additional feedback-gathering mechanism while also helping to fulfill part of Inova's Global Reporting Initiative requirements for stakeholder dialogue and engagement.

One thousand two hundred and thirty-nine Inova employees responded to this inaugural Going Green survey. Of those, 67% indicated that they work in clinical areas, while the rest work in non-clinical and support areas.

Key Findings



The Going Green focus area that is most important to me is:

- Recycling: 63%
- Energy: 12%
- Building: 6%
- Foods: 4.5%
- Transportation: 4%
- Purchasing: 4%
- Healthcare IT: 2.5%
- Water: 4%

Survey Feedback

Sharing Achievements

"I collect and bring home the white plastic container that our IV flushes come in. My family has had fun coming up with 101 uses for the container."

"I share with my patients the reason that I now bike to work: reduced stress due to traffic, predictable commute time compared to driving, health benefits on my own diabetes, improved clarity and focus."

"There are reports that print up automatically that we don't use on the units, and that is a lot of unused paper. We recycle it by cutting it up into smaller pieces and using it as scrap paper for telephone messages, to-do lists, etc."

"In the clinical area, we have identified the items that can be recycled as opposed to going in the red bag waste. Staff is taking part in an effort to place items in the right bags."

"I try to reuse the back of paper that doesn't have PHI info on it."

"The PACU's have been recycling pulse oximeters for about a year. We would like to have a program to recycle SCD Stockings."

"I'm from the lab and we have a department champion to discuss going green initiatives during our safety huddles/ staff meetings."

Sharing Support

"I feel like it is important for Inova to be actively involved in the welfare of the community, not just in medical health but in sustainability as well."

"Going green is important for our environment and health."

"Long overdue."

"I think we are making great steps to going green and I value that very highly in Inova."

"Working in clean environment around hospital premises feels so comfortable."

"I am proud of Inova's attention to helping our environment."

"I'm happy to work for a company that takes environmental issues seriously. Seeing Knox at the White House discussing ways that Inova is going green was wonderful."

"I continue to be amazed and impressed by the practical and creative ways Going Green is implemented at Inova."

"I really like reading about the effects that the going green changes have made to the environment and the organization."

Sharing Ideas

"We need green champions in every department. They need to speak up and out at staff meetings, conversations with staff, post bits of information. Small amounts of information add up after a while."

"I would like to see better options for salad containers and utensils. Soooo many employees use these every day. Is there a greener option to replace all that plastic?"

"I love the recycle containers on our floor but I don't think staff are that aware of what to place in the containers – perhaps additional education on what is recyclable? It would be helpful if someone from the green team could come to our unit to assess what we can actually recycle."

"In my department having an efficient scanner would be a good resource for saving paper."

"It would be nice if the Going Green had a way to help employees find other employees to commute to and from work with."

"Off-site facilities need assistance finding vendors who can help with Green initiatives."

"Work with Inova Central Lab to create a lab-centered Green project."

Making an Impact in Our Community

Inova is closely integrated with our local and global communities. The health of these communities and the health of our organization are closely intertwined.

Making an Impact in Our Local Community

The health of Inova's local community is directly impacted by our operations. The emissions from our employees' personal vehicles reduce local air quality. The energy we use to power life-saving equipment pollutes the environment with greenhouse gases. The waste we produce ends up in local landfills or waste-to-energy incinerators, where it has the opportunity to leach chemicals that are harmful to human health into the environment.

As an organization whose mission is to protect the health of the diverse community we serve, Inova has a unique duty to minimize the harmful impacts of our own operations.

Making an Impact in Our Global Community

In addition to targeting the health of our local community, Inova also has a significant opportunity to impact health on a broader scale – to reach beyond our walls and impact our global community. The emissions and pollution from our operations contribute to global environmental problems. Since we have accepted it as our duty to try to minimize these environmental impacts, it follows that our mission also extends to influencing other organizations who are contributing to these problems to do the same.

Inova pursued a variety of ways to engage our peers, suppliers and the broader public in the sustainability dialogue in 2012. We presented several webinars and lectures about Inova's sustainability program for local and national industry groups, including Practice Greenhealth, Maryland Hospitals for a Healthier Environment, the Bipartisan Policy Council and the Piedmont Environmental Council.

At the same time, we also extend our mission of health by providing community outreach and programming to promote healthier behavior and habits. Increasing access to healthcare and offering community events, health screenings and health-related educational programs allows us to target harmful health and lifestyle habits before they lead to more severe health consequences.

In 2012, Inova also conducted a Community Health Needs Assessment to better understand the specific health needs of the local communities in which we operate.

We also shared our sustainability story with the public in several forums, including social media, press releases, case studies, an annual report and our public website. Inova CEO Knox Singleton and Director of Sustainability Seema Wadhwa were additionally able to share Inova's story and motivate others to join the sustainable healthcare movement in a July 2012 White House panel on Greening America's Hospitals.

Inova also frequently reaches out to our network of connections at hospitals across the country to share sustainability best practices and help troubleshoot sustainability roadblocks. In 2012, we mentored a local hospital on opportunities for greening their operating rooms and held meetings with several of our business partners to communicate our sustainability needs and understand the challenges and opportunities of their own sustainability efforts.



Case Study: Giving Together

In January 2012, Inova partnered with the local Volunteer Fairfax organization to provide kid-friendly volunteer projects for children and families in the community to complete on MLK Jr. Day of Service. Each year, Volunteer Fairfax selects 10 – 20 community service projects for this event and offers a small grant to fund the supplies. Inova's idea to use common hospital supplies to create compost bins was selected to be included as part of the 2012 event.



On MLK Jr. Day of Service, over 400 people, children and their families gathered at George Mason University to volunteer by completing a set of small service projects. When the children arrived at Inova's project station, they were asked to assemble and decorate the materials necessary to make a vermicompost system. By doing this, the kids were not only volunteering but also learning about their environment and the importance of reducing waste.

Opportunities like these are truly the definition of "sustainable" community partnerships. The Volunteer Fairfax group relies on community organizations for the ideas and staff to support these projects, while Inova relies on organizations like Volunteer Fairfax to spread awareness and provide an interested volunteer pool to help complete this type of project.

The Healthier Hospitals Initiative: One Year Later



HHI Challenges Enrolled In



Engaged Leadership

Level 1: Implement 3 activities from the reference list
Level 2: Implement 6 activities from the reference list
Level 3: Implement 10 activities from the reference list



Healthier Foods

Level 1: Local/Sustainable Food Challenge



Leaner Energy

Level 1: Decrease metered energy use by 3% from baseline
Level 2: Decrease metered energy use by 5% from baseline
Level 3: Decrease metered energy use by 10% from baseline



Less Waste

Level 1: Regulated Medical Waste Reduction Challenge
Level 2: Recycling Challenge



Safer Chemicals

Level 1: Green Cleaning Challenge



Smarter Purchasing

Level 1: Surgical Kit Review Challenge
Level 2: Single-Use Device Reprocessing Challenge
Level 3: EPEAT Challenge

In 2011, Inova became a Founding Sponsor of the Healthier Hospitals Initiative (HHI), a national movement to implement a sector-wide approach to environmental health and sustainability within health-care.

During the ramp-up of this initiative in early 2012, Inova contributed a variety of experiences and insights to HHI's set of resources and tools, including How-To Guides, case studies and leadership insights. These resources were designed to help guide the adoption and implementation of sustainable practices in healthcare facilities across the country, and Inova is proud to have been able to share our lessons and experiences to support this mission.

The official launch of the Healthier Hospitals Initiative occurred at a Washington, DC press event in April 2012. At this event, Inova committed to pursuing goals in all six of HHI's Challenge Areas: Engaged Leadership, Healthier Foods, Leaner Energy, Less Waste, Safer Chemicals & Smarter Purchasing. Each of these Challenge Areas was identified by the HHI team as a priority target due to its specific health impacts. Inova CEO Knox Singleton emphasized at the event that Inova's key motivation in signing onto these Challenges was to support the mission to protect health (a motivation which he later emphasized in a White House panel on Greening America's Hospitals).

Inova is committed to developing the internal culture and support infrastructure necessary to achieve the goals set forth in the HHI Challenges we have enrolled in. As part of this effort, we have committed to reporting on our progress annually by sharing select environmental metrics with HHI – a move which will help them tell a quantitative story of the impact achieved across the industry over the course of the three-year initiative. Some of these metrics are easy for us to measure, while others are more challenging to collect data for.

At the end of 2012, Inova shared the metrics we were able to collect with HHI for use in their annual *Milestone Report*, highlighting the achievements of enrolled hospitals during the HHI's first year. We continue to work on establishing a tracking and reporting process for those metrics that we were unable to collect data for, and look forward to sharing them in the future.

HHI-Associated Media Coverage



Econversations



Physician Perspectives on Sustainability

Physicians hold a powerful role in pushing the healthcare industry towards more sustainable practices. They are often viewed as trusted leaders within their workplaces and communities, and their professional commitment to “first doing no harm” gives them a unique credibility to speak on the health impacts of sustainability. When a physician says environmental sustainability is a health issue, people take it seriously.

In this Econversation, Inova’s Office of Sustainability sat down with Dr. Ravindra Gupta and Dr. Homan Wai – both champions of sustainability at Inova – to gain their insights on why sustainability matters from the physician’s perspective.

Moderator: How do you define sustainability?

Dr. Wai: It’s essentially a way to utilize our resources in a way that’s smart and responsible—and also in a way where resources can be regenerated so that we can have them for generations to come.

Dr. Gupta: I would agree with that definition, and I would say that it’s a cradle to cradle process. A process where you reuse or reprocess supplies and where there would be no waste.

Moderator: What is your personal journey with sustainability? Why is it important to you?

Dr. Wai: I think it starts out gradually as I get more aware of how things work around the world – how we process the resources that we use, the waste that we generate. I do not see a future if we continue on this path— we won’t have enough resources for future generations, and even current generations, if we continue with the waste and pollution. It definitely affects our lives, and this becomes more evident as time goes on.

Dr. Gupta: And for me, personally, I’ve had experiences in an international setting – both medically and through travel in developing countries – and I’ve seen in certain places the lack of resources and then in other places the overuse of resources. It makes you realize the things you have, the things you take for granted, and the things that are important. And then you think in the future about your kids and their children, and what kind of planet you want to leave for them.

So that all interplays in my thought process. It’s trying to create a sustainable environment so that you leave this place - as you had it - for other generations.

Moderator: What was your “a-ha!” moment with sustainability that made you want to take action, and be a part of the movement?

Dr. Wai: There was never really an “a-ha!” moment for me. I really can’t think back and remember whether it was during college or med school, or even before, where I became more aware and engaged, but I think it’s a been gradual process for me. It’s natural for me as a person to think that if I acquire something, that I want to use it over and over and over and over again before I throw it away. It makes sense that sense that if I cause changes in the world, they



“The more we can do things in a sustainable fashion because of the health impact or economic impact—hopefully we will be followed by example.”

are going to have an effect that on its own seems small but collectively may be big. So it's a gradual process—just knowing more, reading more, watching documentaries and following science and the news to become more aware and engaged.

Dr. Gupta: I grew up in an environment where we would reuse. That was just part of our upbringing, we wouldn't waste. But the “a-ha!” moment came when I was part of a National Geographic trek – part of the staff for this multiple month journey into public lands. It was very interesting, and we'd have these fireside chats and we would be outdoors constantly. We talked a lot about the environment and I saw it and experienced it day in and day out, and it really changed my viewpoint on the importance of maintaining certain environmental standards and environmental stewardship.

Moderator: Looking specifically at healthcare, what do you see as the role of sustainability? How can sustainability be used as a tool to promote health?

Dr. Wai: I think that's a two-part response. One part would be the healthcare industry, and what we utilize given that we're a huge customer for multiple industries and use so many supplies and resources. We leave a large footprint in terms of what we use and the way that we use them can have an impact.

Separate from that are the health consequences of climate change and doing things in a non-sustainable way, which can affect a lot of things – for example chronic diseases like asthma and emphysema. It worsens health standards.

Dr. Gupta: A hospital is an incredible user of energy and resources—the second most intensive building next to food industry for energy usage, and a tremendous user of products and producer of waste. So making a hospital as sustainable as it can be is obviously important in that regard.

Also, the community sees a hospital as an entity to follow and they look at what a hospital is doing and potentially emulate that. They see physicians and clinicians as people that they respect and they try to emulate the behaviors. So from that aspect, that's important.

And then from a health perspective, emitting byproducts of natural resources and incinerating waste that causes toxins and pollution to be released can also affect health. Plus, climate change—throwing that into the mix, and how it affects

Moderator: What is the physician's role in making healthcare more sustainable?

Dr. Wai: We are part of the health care setting in the hospital and one of the deciders in terms of what resources to utilize. Dr. Gupta has worked on initiatives in terms of reducing lab draws, for example, and reducing unnecessary testing, which can save money but also at the same time saves resources.



“Sustainability in healthcare can mean better quality and lowers costs. That's the big driver—the reason why physicians should practice it.”

I think that we are, as Dr. Gupta mentioned, role models that people look up to within the entire framework, so the more we can do things in a sustainable fashion because of the health impact or economic impact—hopefully we will be followed by example.

Dr. Gupta: And as Homan was saying, sustainability in healthcare can mean better quality and lowers costs. That's the big driver—the reason why physicians should practice sustainability in healthcare. For example, if someone comes to the ED and they order a bunch of radiographs, CT scans, et cetera, and it's unnecessary, it would obviously up the patient's cost, it would expose them potentially to radiation that they don't need to be exposed to, medications and things of that sort will leach into the environment once they're used and disposed of. There are environmental aspects, cost aspects and quality aspects that are all interrelated. That's why it's important for physicians to look at this perspective.

Moderator: If you were speaking with a physician who was new to sustainability and interested in getting involved in their own facility, what is the one piece of advice you would tell them?

Dr. Gupta: I would say that just being a physician gives you a lot of say in how the healthcare system operates, so talking to the leadership directly – which is what we did in the beginning – and then explaining your reasons behind wanting to pursue this goal is the first way to do it.

And also keep in mind that there are tremendous cost savings that are involved in this type of program. Not only is it better for the environment, it's better for the bottom line. Recycling, the reprocessing of waste, reducing energy use – these all translate to the bottom line. So I would recommend starting with that, and you can build from there.

Dr. Wai: I agree. I think leadership is the most important aspect. So having a champion for your cause and getting buy-in from the higher-ups to make some substantial changes.

Sustainability Partnerships





2012 Awards & Recognition

Throughout the years, Inova has strived to develop an environmental sustainability program that contributes to a healthier future for our patients, employees and community. We take great pride in the awards and recognition we have received for this effort, and look forward to adding to this list as our program continues to grow.



Practice Greenhealth System for Change Award

Inova Health System



Practice Greenhealth Partner for Change with Distinction Award

Inova Fair Oaks Hospital
Inova Loudoun Hospital
Inova Mount Vernon Hospital



Practice Greenhealth Partner for Change Award

Inova Alexandria Hospital
Inova Fairfax Medical Campus



Loudoun County Green Business Challenge Gold Level Recognition

Inova Loudoun Hospital



Best Workplace for Commuters Award & Race to Excellence Gold Medal

Inova Alexandria Hospital
Inova Fairfax Medical Campus



Virginia Sustainable Building Network Crystal Award

Inova Health System



Envisioning Our Future



Joining the Future of Health

As Inova's Office of Sustainability sat down in January 2013 to plan the production of this 2012 Sustainability Report, Inova also hosted our very first Sustainability Advisory Board meeting. The Board was tasked with guiding Inova's high-level sustainability strategy, and the group held a visioning session to imagine what "the future of health" at Inova might look like.

Though this meeting fell slightly outside the 2012 calendar year, its outcomes have been included in this report because they offer significant insight into Inova's vision for the future in the upcoming year and beyond – one where sustainability helps to support and maximize the outcomes of Inova's existing business strategies.

In addition to providing input on the sustainability issues that are most relevant and material to Inova, participants in this visioning session considered how sustainability might fit into all aspects of our operations. Leaders from both clinical and non-clinical areas shared their own personal visions for the future of health:

Not one more than needed

Impacting personal lives

Stewardship of all supplies

Permanent society

Modeling the behavior

Smaller buildings

Less handling

See everything

Eliminate waste and shipping cardboard

Doing the right things for the right reasons

Sharing of demand

Less = more

Knowing the metrics

"Way of being"

Leading the culture

Healthcare teaching the community what is "right"

Research

Improving the health of the community

People don't see it as a program

Helping people remember to do the right thing

Part of value set

Cradle-to-cradle

Finding the right options

Cycle of a tree

Making it thoughtless

All leaders doing the right things

Working externally with others

Good clinical guidelines

Healthcare worker = healthier person

Talking to vendors about waste and packaging

Disposable is a "bad word"

Source of truth between fact and fiction

Central control station

Courses for leadership

Real time

Environmental Risks, In Context

The world we live in and the ways in which our environment is changing create a variety of potential risks and environment-related impacts that Inova must carefully consider and manage moving into the future. Some of these are longer-term risks, while others have already affected our operations and those of other healthcare organizations across the country.

Supply Risk

Energy. Fossil fuels are in limited supply. As those supplies get harder and more expensive to source, increases in energy costs and price volatility are to be expected.

Water. Climate scientists predict droughts of increasing frequency and severity will occur as global weather and precipitation patterns shift. Though Inova is in a region where water availability has not historically been a critical business issue, these changes could potentially impact the future availability and cost of water.

Food. Drought, flooding, pests and disease all pose a risk to the national and global food supply. This risk will grow as warmer, wetter regions extend into the world's more temperate farmlands. As food becomes scarcer, it will increase in price.

Regulatory Risk

Environmental impact regulations. The U.S. government regulates air emissions and pollution, water pollution and quality standards and the management of hazardous waste. There is a chance that additional regulations related to environmental impacts could be enacted in coming years as the global effort to combat climate change continues.

Environmental taxes. Though there is currently no U.S. tax on carbon emissions, several states and municipalities have started taxing business based on tons of carbon dioxide emitted.

De-subsidization of water. Most businesses and individuals do not currently pay the full cost of the water they use. Local governments in some U.S. cities have started changing water pricing structures to charge higher rates for the largest consumers.

Weather Risk

Extreme heat waves. Scientists predict future weather patterns will include increasingly extreme heat waves, potentially affecting the number of heat-related illnesses and deaths within our local communities. The associated increases in electricity demand during summer months could also lead to higher energy costs and even create the potential for local blackout or brownout situations.

Extreme weather events. Global increases in temperature are expected to affect both the frequency and intensity of extreme precipitation events in the coming years, as well as the severity of tropical storms. Recent experiences of hospitals in areas such as New Orleans (Hurricane Katrina) and New York/New Jersey (Hurricane Sandy) have shown the breadth of challenges faced by health care institutions in preparing for and mitigating the growing risks associated with extreme weather events.

Health Risk

Easier for disease to spread. Temperature increases and changes in rainfall patterns will contribute to increasingly longer summers, allowing disease-carrying vectors to remain active for longer seasons and in wider areas.

Reduced air quality. Researchers project that warmer temperatures from climate change will increase ground-level ozone, which can damage lung tissue, reduce lung function and inflame airways. It could also worsen the severity of allergies by lengthening the spring pollen season.

Environmental contamination. Toxic chemicals are now ubiquitous in the global environment. A wide mix of chemicals has been found both in healthcare workers and in the patients we have vowed to protect. Very few studies have been conducted on the long-term health effects of exposure to this mix of chemicals, but emerging scientific research has raised concerns over the connection between environmental chemical exposure and harm to human health.

Help Inova Shape the Future

Inova is committed to engaging with members of our internal, local and global communities around issues of sustainability. Questions, comments or ideas about this report may be directed to Inova's Office of Sustainability at gogreen@inova.org.

Inova is also inviting our stakeholders and community members to share their thoughts, comments, questions and ideas in our first-ever Sustainability Feedback Forum on October 3, 2013. The forum may be attended live or electronically, and will be used to identify, discuss and prioritize material sustainability issues in preparation for Inova's 2013 Sustainability Report.

For more information about the Sustainability Feedback Forum and Inova's other sustainability programs, visit www.inova.org/sustainability.

GRI Disclosures & Content Index

Stakeholder Engagement

Inova values the input of internal and external stakeholders in the development of our sustainability strategy and initiatives. Feedback from these groups helps us prioritize our focus and identify opportunities that might have otherwise gone unnoticed. It also helps us build ongoing relationships with key partners within our community.

We interact regularly with our stakeholders, including the Inova family, visitors, suppliers, local communities, government and peer organizations. These groups have been targeted for engagement based on their interest in, closeness to, relationship with, and ability to materially impact our organization. Most engagement takes place as part of our existing feedback collection processes, but several communication tools have also been developed to capture sustainability-specific feedback.

Materiality

The issues included in this report were identified as most important to Inova's stakeholders based on the feedback collected through these processes in 2012. They have been further prioritized according to their relevance to Inova's ongoing operations by team a sustainability advisory team. We will continue to engage with our stakeholders to identify and prioritize Inova's most material sustainability and business issues. The issues identified through this process will inform our future programming and reporting efforts.

Data Measurement & External Assurance

Much of the waste and energy usage data is reported directly by our vendor partners. Our transportation footprint was calculated using self-reported data from employees. GHG emissions from energy and transportation were calculated online through the Environmental Protection Agency's [Greenhouse Gas Equivalencies Calculator](#), while general survey results and project outcome measures were measured internally using widely accepted practices.

The data and information contained within Inova's 2012 Sustainability Report was derived from a variety of sources, both internal and external. Though this report has not been externally assured, we are confident in the accuracy of our reporting practices. Questions about calculations or data measurement practices may be directed to Inova's Office of Sustainability at gogreen@inova.org.

Disclosure	Description	2012 Reporting
Strategy & Analysis		
1.1	Statement from the most senior decision-maker of the organization about the relevance of sustainability to the organization and its strategy	CEO Letter White House Interview
1.2	Description of key impacts, risks, and opportunities	Addressing Our Impacts Imagining the Future of Health Environmental Risks, In Context
Organizational Profile		
2.1	Name of the organization	Inova Health System
2.2	Primary brands, products and/or services	Inova website
2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures	Inova website
2.4	Location of organization's headquarters	Falls Church, Virginia
2.5	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report	United States
2.6	Nature of ownership and legal form	Non-profit
2.7	Markets served	Inova website
2.8	Scale of the reporting organization	Inova website 2012 Report to the Community
2.9	Significant changes during the reporting period regarding size, structure, or ownership	n/a
2.10	Awards received in the reporting period	Recognizing Our Achievements 2012 Report to the Community
Report Parameters		
3.1	Reporting period for information provided	Welcome Message
3.2	Date of most recent previous report (if any)	Welcome Message
3.3	Reporting cycle	Welcome Message
3.4	Contact point for questions regarding the report or its contents	Invitation for Feedback
3.5	Process for defining report content	GRI Disclosures
3.6	Boundary of Report	Welcome Message
3.7	State any specific limitations on the scope or boundary of the report	Welcome Message

Report Parameters, Cont.

3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations	Welcome Message
3.9	Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report	GRI Disclosures
3.10	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement	n/a
3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report	n/a
3.12	Table identifying the location of the Standard Disclosures in the report	GRI Disclosures & Content Index
3.13	Policy and current practice with regard to seeking external assurance for the report	GRI Disclosures & Content Index

Governance, Commitments & Engagements

4.1	Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight	Inova website
4.2	Indicate whether the Chair of the highest governance body is also an executive officer	Inova website
4.3	For organizations that have a unitary board structure, state the number of members of the highest governance body that are independent and/or non-executive members	Inova website
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body	Inova website
4.14	List of stakeholder groups engaged by the organization	GRI Disclosures & Content Index
4.15	Basis for identification and selection of stakeholders with whom to engage	GRI Disclosures & Content Index

Environmental Performance Indicators

EN3	Direct energy consumption by primary energy source	Addressing Our Impacts: Energy
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives	Addressing Our Impacts: Energy
EN7	Initiatives to reduce indirect energy consumption and reductions achieved	Addressing Our Impacts: Transportation
EN16	Total direct and indirect greenhouse gas emissions by weight	Addressing Our Impacts: Energy, Transportation
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved	Addressing Our Impacts: Energy, Transportation
EN20	NOx, SOx, and other significant air emissions by type and weight	Addressing Our Impacts: Energy, Transportation
EN22	Total weight of waste by type and disposal method	Addressing Our Impacts: Waste
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation	Addressing Our Impacts

Society Performance Indicators

SO1	Percentage of operations with implemented local community engagement, impacts assessments, and development programs	Addressing Our Impacts 2012 Report to the Community
SO9	Operations with significant potential or actual negative impacts on local communities	Addressing Our Impacts
SO10	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local community.	Addressing Our Impacts (Joint Commission) Making an Impact in Our Community

Economic Performance Indicators

EC1	Economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments	2012 Report to the Community
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	Environmental Risks, In Context
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement	2012 Report to the Community

References

Several sections within this report relied on the use of outside information from the following sources:

The Water-Energy Nexus

"The Water-Energy Nexus." River Network. River Network. Web. 11 June 2013. <http://www.rivernetwork.org/water-energy-nexus>.

Understanding Evidence-Based Design

Geboy, Lyn, Phd. "The Evidence-based Design Wheel." Health Care Design Magazine. 1 Mar. 2007. Web. 11 June 2013. <http://www.healthcaredesignmagazine.com/node/1442?page=0>.

Levin, Debra. "Supporting Safe, Efficient, Effective Care Environments." Supporting Safe, Efficient, Effective Care Environments. Health Care Design Magazine, 13 Mar. 2013. Web. 11 June 2013. <http://www.healthcaredesignmagazine.com/article/supporting-safe-efficient-effective-care-environments>.

Malkin, Jain, CID, AAHID, EDAC, and Rosalyn Cama, FASID, EDAC. "The Next Generation of Interior Healing Environments." The Next Generation of Interior Healing Environments. Health Care Design Magazine, 30 June 2010. Web. 11 June 2013. <http://www.healthcaredesignmagazine.com/article/next-generation-interior-healing-environments>.

Environmental Risks, In Context

Bernick, Libby. "True Cost." GreenBiz.com. Green Biz Group, Inc., 29 Apr. 2013. Web. 11 June 2013. <http://www.greenbiz.com/blog/2013/04/29/true-cost-water>.

"Carbon Tax Center." Carbon Tax Center. Carbon Tax Center. Web. 11 June 2013. <http://www.carbontax.org/>.

De Moor, A.P.G. "Perverse Incentives: Subsidies and Sustainable Development." Diss. Institute for Research on Public Expenditure, The Netherlands. Perverse Incentives: Subsidies and Sustainable Development. Web. 11 June 2013. <http://www.worldpolicy.newschool.edu/wpi/globalrights/environment/subsidies.html>.

Miller, John. "Should the U.S. Implement a Carbon Tax?" Theenergycollective.com. Social Media Today LLC, 29 Apr. 2013. Web. 11 June 2013. <http://theenergycollective.com/jemillerep/218116/should-us-implement-carbon-tax>.

Miller, John. "Which Government Policies and Other Factors Have Reduced U.S. Carbon Emissions?" RSS. Social Media Today LLC, 17 Apr. 2013. Web. 11 June 2013. <http://theenergycollective.com/jemillerep/211171/government-policies-and-other-factors-have-reduced-us-carbon-emissions>.

"National Environmental Law Center." National Environmental Law Center. National Environmental Law Center. Web. 11 June 2013. <http://www.nelconline.org/>.

"Water Rates." Water Rates. Cary Town Hall. Web. 11 June 2013. http://www.townofcary.org/Departments/Public_Works_and_Uilities/Conservation/Water_Conservation/Water_Rates.htm.

All photographs of Inova's South Patient Tower (pages vi, 24, 25) courtesy of Michael Dersin Photography.





Inova Health System is a not-for-profit healthcare system based in Northern Virginia that consists of hospitals and other health services, including emergency- and urgent-care centers, home care, nursing homes, mental health and blood donor services, and wellness classes. Governed by a voluntary board of community members, Inova's mission is to improve the health of the diverse community it serves through excellence in patient care, education and research. Inova provides a healthy environment for its patients, families, visitors, staff and physicians by prohibiting tobacco use on its campuses.