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SUMMER 2017

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Greenhealth

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We Hear You




At Practice Greenhealth, we're listening, and we're launching. In order to best support you, our members, our team pays attention to your challenges, questions, needs, and ideas. Then, we seek out the best ways to help you address those challenges, in order to better serve you in meeting those needs.

When members expressed an interest in connecting with other hospital sustainability leaders, our member engagement manager, Hermine Levey Weston, coordinated regular calls among the hospital leaders with whom she works. They came together to candidly discuss struggles and share solutions. These calls were so popular and productive that we've developed an interactive initiative to offer these cohort groups to our members. You can learn more about how they'll work and the topics that will be covered on page 6.

We also know that employee retention and recruitment are vital to you. Employees who have the opportunity to make a direct social and environmental impact through their jobs report higher satisfaction levels by a 2:1 ratio. That's why we've launched a new toolkit called Green Employee Benefits (see page 5). It features step-by-step tips on how to begin offering benefits — such as solar panel and electric bike discounts, access to local produce, and green retirement options — to excite and engage your team and incentivize employment at your hospital.

To help you further protect the health of patients and staff, we'll also be inviting you to participate in our Hand Soaps Challenge in the fall. Read about the science behind this effort and how some member hospitals have already substituted healthier soaps on page 12. And stay tuned for guidance on how your hospital can phase out hand soaps containing triclosan and triclocarban in favor of safer, effective alternatives.

We hope you'll take advantage of these opportunities to engage with other hospital leaders, your employees, communities, and with us as we endeavor together to make health care healthier. 

Sarah Manwell

SARAH MANWELL
Chief Membership Officer
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Health Care Responds to Paris Agreement Withdrawal

In an administration that's already had its share of shock waves, President Donald Trump stirred the waters even further with this announcement in June: The United States will withdraw from the global Paris Agreement.

This latest decision of the Trump presidency brought forward a strong response from supporters of action against climate change worldwide, including health care. "As an organization committed to promoting the health of people and the environment, Health Care Without Harm disagrees in the strongest possible terms with President Trump's decision to withdraw the United States from the global Paris Agreement," said Gary Cohen, co-founder and president.

"The Paris Agreement is a historic and monumental achievement," he continued. "The result of over two decades of diplomatic negotiations, the climate accord includes participation by nearly every country on the planet. The pledge of member nations to work together to limit global warming to well below 2 degrees Celsius is necessary to avoid the worst impacts of climate change and to prevent a global health crisis. U.S. leadership is critical to successful implementation of the agreement, and the decision to withdraw threatens to undermine the agreement's effectiveness in solving the climate crisis."

Because climate change and pollution from coal-fired power plants pose serious threats to

human health, physicians who work with Health Care Without Harm also responded to Trump's announcement with concern.

"For people with respiratory conditions such as asthma and chronic obstructive pulmonary disease and those with cardiovascular diseases, the quality of the air they breathe is critical to their survival," said Emily Senay, MD, assistant professor of Preventive Medicine at the Icahn School of Medicine at Mount Sinai Hospital. "To save lives from natural disasters such as hurricanes, floods, and heat, and to protect our children from the consequences of a warming planet, we must do all we can to move away from fossil fuels. The United States must take the lead to create a future that is cleaner and healthier, and therefore must remain in the Paris Climate Agreement. Our health depends on the health of our air and water, and our actions have immediate consequences — and as physicians, we must do all we can to protect our environment."

With Trump's decision, it becomes more important than ever for health care systems to continue to reduce their own greenhouse gas emissions and work with local and state leaders to advance the progress that has already been made.

"Trump's rejection of the Paris Agreement demonstrates his fundamental defense of the fossil-fuel industry and places the United States alone and in opposition to the defense of our children and

the future health of the planet," said Cohen. "The good news is that progress on climate solutions will continue to accelerate as cities, hospitals, schools, and businesses are increasingly showing the way toward a low-carbon future."

Health care systems are stepping up their leadership. For example, recognizing the dangers of coal to human health, Dignity Health, one of the nation's largest health systems, has restricted investments in coal and expanded investments in sustainable assets. Last year, Virginia Mason Health System in Seattle hosted a workshop on climate-resilient health care and led the creation of the Washington Climate Declaration, which has been signed by 250 businesses. And through greater energy efficiency and investments in renewable energy, Partners Health and Boston Medical Center are on track to reduce their greenhouse gas emissions by 47 percent compared to "business as usual."

"Addressing the climate crisis is integral to advancing the health care sector's healing mission," said Cohen. "While the Trump Administration rolls back U.S. climate leadership in the global community, it is crucial that the health sector continues to take action on mitigation efforts, planning for adaptation, and building community resilience, and be the trusted messenger on the intersection of climate and health." 🌱

Boston Medical Center Joins Health Care Climate Council

Displaying continued commitment to the health of its patients, colleagues, and community, Boston Medical Center (BMC) has signed on as the newest member of the Health Care Climate Council.

Located in Boston's historic South End, BMC is the largest safety-net hospital and busiest emergency services center in New England. It has earned a reputation for providing state-of-the-art care, while demonstrating bold leadership in environmental sustainability.

BMC's focus on greenhouse gas (GHG) emissions reduction is a key component of its efforts to make Boston the healthiest urban population in the world. So far, the medical center has reduced its energy use by 19.4 percent since 2011, and it is projecting

to be net-zero for GHG emissions by 2020. BMC recently partnered with Massachusetts Institute of Technology and the Post Office Square Garage to enter into the largest-ever collaborative renewable power purchase agreement in the United States.

"Boston Medical Center is proud to join the Health Care Climate Council, which is leading the health care sector's urgent response to climate change," said Kate Walsh, BMC Health System's president and CEO. "Our bottom-line goal is to help people lead healthy and happy lives. Working to make BMC the greenest hospital in our city furthers our mission and supports our patients and community."

Established by Health Care Without Harm, the Health Care Climate Council is a leadership network

of hospitals committed to strengthening the health sector's response to climate change. Together, the 19 member systems represent over \$165 billion in annual revenue, employ nearly 1 million employees, and operate more than 500 hospitals throughout the United States. By leveraging its collective influence, the council's mission is to amplify public and private responses to climate change by accelerating investment in renewable energy and energy efficiency; scale the health sector's adoption of climate change mitigation and resiliency programs; and advocate for local, state, and national policies that ensure a sustainable and healthy future that is consistent with the collective vision for healthy individuals and communities. 🌱

World Bank Report Calls for Health Sector Leadership on Climate

In partnership with Health Care Without Harm, the World Bank Group's health and climate directors have released a report establishing a new framework for health systems in every country to become leaders in addressing climate change. Released at the World Health Assembly in May, *Climate-Smart Healthcare* outlines low-carbon and resilience strategies designed for the development community, ministries of health, and hospitals and health systems to deploy while addressing the health impacts of climate change.

"Ultimately, climate-smart health care will strengthen health sectors and communities by

ensuring access to clean and independent energy, safe water, clean transport, and clean waste disposal mechanisms," said Timothy Bouley, health and climate specialist at the World Bank. "It will stimulate the development and supply of sustainable products, while also preparing the sector for a future of known and unknown health-related climate hazards."

The report makes a rough, first-ever estimate of health care's global emissions. It conservatively finds that health care generates 5 percent of worldwide greenhouse gas emissions, amounting to 2.6 billion metric tons of carbon dioxide equivalent in 2011. The report also reviews more specific benefits of a

climate focus in health care and the finances behind these strategies.

"By reducing their emissions and becoming more resilient, health systems in every country can become leaders in contributing to both health and climate solutions," said Josh Karliner, international director at Health Care Without Harm and one of the report's authors. ●

FIND YOUR CLIMATE STRATEGY

To access *Climate-Smart Healthcare*, visit: noharm.org/worldbankreportmay2017

Green Benefits Can Further Engage Hospital Employees

It's a fact: Employees who have the opportunity to make a direct social and environmental impact through their jobs report higher satisfaction levels than those who don't by a 2:1 ratio.

That's according to a study by Net Impact and Rutgers University, and it forms the basis behind a new Practice Greenhealth toolkit, Green Employee Benefits, that outlines how health systems can boost job satisfaction by engaging employees in climate solutions.

"Green Employee Benefits are easy, fun, and, most importantly, low- or no-cost ways to engage employees," said Lauren Kleinman Koch, outreach and engagement specialist at Practice Greenhealth.

The current menu of offerings for the Green Employee Benefits program provides details on how to structure discounts for employees who purchase and install solar panels for their homes; provide access to locally grown fruit and vegetables through participation in community supported agriculture programs; promote "green retirement" options that don't invest in fossil fuels

such as coal, oil, and gas; and structure discounts for purchasing electric bicycles.

The toolkit includes resource guides, fact sheets, downloadable flyers, and sample email text.

"Providing incentives and programming to employees to improve the health of their homes, families, and friends is a way to extend the culture of caring beyond the walls of the organization," said Koch. "Green Employee Benefits can also facilitate behavior changes with results that employees can see, and that also measurably benefit the environment." ●

WANT MORE SATISFIED EMPLOYEES? SIGN UP HERE

To learn more about Green Employee Benefits or to schedule a virtual presentation, contact Lauren Kleinman Koch at lkoch@PracticeGreenhealth.org or Eric Lerner at elerner@PracticeGreenhealth.org.



Challenges Accepted

Practice Greenhealth announces a new benefit: peer-to-peer learning through small groups.

BY JANET HOWARD
PRACTICE GREENHEALTH
MEMBER ENGAGEMENT DIRECTOR



Practice Greenhealth's Member Engagement team gathered at CleanMed in May. Back row, from left: Stan Cahill, Christopher Bodkin, Janet Howard, Cecilia DeLoach Lynn, and Iqbal Mian. Front row, from left: Beth Eckl, Hermine Levey Weston, Lauren Kleinman Koch, Peggy Rademaker, Kaeleigh Sheehan, and Julie Moyle.

IMAGINE YOUR morning office routine: Coffee poured, computer on, and email loading as you settle in and contemplate the day ahead. A nagging issue pops up — one that would benefit from some discussion. But who has time for that when there are so many things to do? Are other organizations facing a similar challenge? Have they found solutions? Is there a way to tap into the community's experience?

Practice Greenhealth understands that our members value group learning, networking, and information sharing. So we're pleased to announce a new membership benefit: cohort groups.

Starting this summer, the member engagement team is hosting small-group discussions to help members connect over a shared interest area. The goal is to help member organizations move further along their unique trajectories, learn from each other, and enjoy the connection — all within one hour. The periodic calls are facilitated by a Practice Greenhealth member engagement liaison with a question to frame each call's discussion or to tackle a specific area of focus. This informal structure offers a fun way











to share challenges, obstacles, and strategies for success. Practice Greenhealth convenes the calls, facilitates the discussion, and posts key takeaways after the call on its website.

Connecting Made Easy

The new cohort calls, designed to connect members with peers and practical solutions, are modeled after a tool that Hermine Levey Weston, member engagement manager, put into place for her portfolio of hospitals.

"I support many of Practice Greenhealth's top-performing hospitals, and I recognized a common theme in my discussions with the sustainability leaders. These top performers have much of the basic environmental stewardship processes in place. They were seeking a dialogic process where they could experience group learning framed around some high-level questions about leadership and outcomes of the work," she said. "So I set up what I called 'Hermine's Small Cohort Group.' The group chooses a question to be discussed at least one month in advance. Sometimes

PRACTICE GREENHEALTH MEMBER ENGAGEMENT COHORT GROUPS

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there are best practices to share, and sometimes the conversation is more philosophical. The calls are always dynamic and interactive in the best way.”

The beauty of the calls is that they don’t require any preparation by attendees, other than being present for the call. They are an informal way to share information to help others and to identify barriers. We received such an enthusiastic response from Weston’s efforts that we are expanding cohort calls with the goal of each member being in at least one group.

Which Group Is Right for You?

For system or facility members at the partner level, a variety of cohort groups are being established, based on membership portfolios and requests from the community. For example, having a common theme such as academic

medical centers helps convene a conversation for those members who understand the opportunities and challenges of working in a research and learning environment.

Cohort discussion topics might include how to connect with your board of directors, patient satisfaction impacts from sustainability programming, communicating your hospital’s environmental success, Earth Day activities, green building as a staff retention strategy, environmental dashboards, new employee orientation, establishing funding for healing gardens, or purchasing cubicle curtains with safer chemicals. Topics will be set by cohort participants depending on their areas of interest.

The cohorts will meet on a regular basis for a year to 18 months, depending on the group. Over time, groups will be refreshed, participants moved, and new cohorts established.

The first round of cohorts is already underway, and topic suggestions are being accepted for the next round.

The highlights and associated documents will be shared at www.PracticeGreenhealth.org/cohorts for all Practice Greenhealth members.

Now back to that morning cup of coffee and contemplation of the day — and issues — ahead. Remember, Practice Greenhealth cohort groups are on the calendar to help take on those challenges. So start a list of your barriers, and bring them to the call. Chances are, if it’s a challenge for you, it’s a challenge for others. You can ease into your day, knowing you can engage with a community of peers who share your challenges, opportunities, and enthusiasm. **🌱**

The Metrics on Plastic Waste Matter



Hospitals in the U.S. produce approximately 16,000 tons of waste per day; 30% from the O.R.¹ Much of it single-use disposable products made with plastic. Plastic pollution is a major problem threatening our environment.

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¹Practice Greenhealth ²Based on comparison to like product made with plastic.

An Eye on Anesthesia

Greenhouse gas reduction and patient health go hand in hand.

BY KAELEIGH SHEEHAN
PRACTICE GREENHEALTH
MEMBER ENGAGEMENT MANAGER
GREENING THE OR INITIATIVE



THE BUSINESS case for environmental stewardship in the surgical department is a compelling one, with the potential to save more than \$123,000 annually per operating room.

As health threats posed by climate change become more prevalent, health care leaders are looking beyond dollar signs and paying attention to greenhouse gas reduction opportunities as a means to mitigate those health impacts for their patients, staff, and communities. Operating rooms represent “low-hanging fruit” as health systems work to quantify their emissions and commit to reduction goals.

Anesthesia impacts a hospital’s bottom line and its greenhouse gas footprint alike. Only about 5 percent of anesthetic gases are actually metabolized by the patient, while the other 95 percent are exhaled, scavenged out of the surrounding operating room space, and vented off the hospital roof, causing these waste anesthetic gases to be considered a Scope 1 or direct emission by U.S. Environmental Protection Agency standards.

It’s estimated that the health care sector represents 8 percent of U.S. greenhouse gas emissions, with conservative estimates suggesting anesthetic gases makes up 5 percent of that footprint. Strategies to mitigate that impact while providing exceptional patient care are becoming an increasing focus, with a series of recommendations based upon practice and peer-reviewed literature published by the Green Initiatives Task Force, a committee of the American Society of Anesthesiologists.

Anesthesia providers have been championing the research and recommendations for years.

Due to the clinical and direct impact on patient care, there is an even stronger need for clinicians and anesthesia providers to lead this work at their hospitals. In 2016, all Greening the OR Circle of Excellence Award winners and 43 percent of all Practice Greenhealth award winners offered staff and clinician education around the environmental impact of anesthesia, pointing to an increasing awareness around the need to re-examine current anesthesia practice.

The main anesthetic gases used by anesthesia providers are desflurane, sevoflurane, isoflurane, and nitrous oxide — all of which are greenhouse gases. (Desflurane and nitrous oxide have the highest global warming potential.) Peer-reviewed literature highlighting the global warming potential of these gases can be eye-opening and can help clinicians make adjustments to the gases they choose, in an effort to reduce their greenhouse gas footprint. In 2016, 80 percent of the Greening the OR Circle of Excellence Award winners had removed desflurane vaporizers, and 60 percent had removed desflurane from the formulary, with the other facilities investigating or in the process of implementing these strategies.

Members of the anesthesia department at Virginia Mason Hospital & Medical Center in Seattle reviewed the literature and worked with the entire department to identify which, if any, cases required desflurane, and which cases could use another anesthetic gas. They agreed that desflurane was required for only one type of case, so they removed the vaporizers from the operating rooms and made them available

by request only. Educating and engaging the Virginia Mason anesthesia department helped the organization reduce desflurane use by more than 90 percent in one year.

Anesthesia providers should also review the fresh gas flow rates used after induction and during the maintenance phase. Once a patient is under, the fresh gas flow can be reduced, although this requires more careful monitoring by the anesthesia provider. This strategy can help the organization not only reduce its waste anesthetic gases, but also help save money by not consuming unnecessary amounts of anesthetic gases. Additionally, some newer anesthesia machines can help clinicians monitor fresh gas flow rates.

In 2016, the clinical engineering department at Harborview Medical Center purchased 37 new anesthesia machines. These machines have no flow of gas until a case starts, and they help to monitor fresh gas flow rates while in use. As a result, Harborview saw a 17 percent overall reduction in the purchase of volatile anesthetic agents and a 52 percent reduction in nitrous oxide purchases. The medical center also reduced its greenhouse gas emissions from anesthesia by 42 percent.

There is growing momentum toward more environmentally responsible patient care and reducing the greenhouse gas footprint of the operating room. This year, all Greening the OR Circle of Excellence Award winners tracked their anesthetic gas purchases, and almost 50 percent of all award winners included anesthetic data on their award applications. Organizations understand this is one department where these strategies need to include — and are more successful when led by — clinicians and broad stakeholder representation. Reviewing the research together, assessing current practice, and measuring and tracking performance to highlight the impact of this work are critical steps to greening the operating room.

*For more information, visit the American Society of Anesthesiologists website, ASAHQ.org, click on “Resources,” then “From ASA Committees” and select “Environmental Sustainability” to view *Greening the Operating Room and information about the Inhaled Anesthetics 2020 Challenge.**

THE CASE FOR GREENING THE OR

Throughout the past seven years, Practice Greenhealth members and the broader health care community have focused on strategies to reduce waste and inefficiency and realize financial and environmental savings. Conservative estimates based on the 2016 Practice Greenhealth Sustainability Benchmark Report suggest that adopting just five strategies could result in \$24,650 saved per operating room per year:

- Fluid management systems
- Reusable sterilization containers
- Reformulation of OR kits
- Medical device reprocessing
- HVAC setbacks

The 2017 Greening the OR Circle of Excellence winners took it even further. Together, the 10 award-winning hospitals:

- Diverted more than 563 tons of waste
- Reduced energy consumption by 5.6 million kWh
- Achieved more than \$3 million (or \$123,900 per OR annually) in cost savings

These are conservative figures, given how briefly some of these programs have been in effect.

2017 GREENING THE OR CIRCLE OF EXCELLENCE AWARDS

The following facilities were honored for their commitment to environmental stewardship, clinical leadership, and innovation within their surgical departments:

- Cleveland Clinic
- Gundersen Health System
- Harborview Medical Center
- Kaiser Permanente Vacaville Medical Center
- Memorial Sloan-Kettering Cancer Center
- Providence Hood River Memorial Hospital
- VHA 21 VA Southern Nevada Healthcare System No. 593
- VHA 23 Minneapolis VA Health Care System No. 618
- VHA 23 St. Cloud VA Healthcare System No. 656
- Virginia Mason Medical Center

Each of the 2017 winners, recognized during CleanMed in May, is tracking and working toward more environmentally responsible anesthesia care.



Washing Away Antimicrobials

Following a scientific statement against commonly used antimicrobials, Practice Greenhealth and Health Care Without Harm are supporting members with the Hand Soaps Challenge.

BY K.F. MITCHELL



ANTIMICROBIALS HAVE proven effective in preventing and controlling infection, especially in the hospital environment. However, questions regarding the safety and effectiveness of certain chemicals in antimicrobial soaps have culminated in a strong call for greener and more health-conscious alternatives.

Industry and governmental guidelines suggest that protocols eliminating the antimicrobial agents triclosan and triclocarban from hand soaps used for general handwashing would better protect patients and health care workers — and early adopters say it could also cut costs. Practice Greenhealth and Health Care Without Harm are developing a Hand Soaps Challenge dedicated to helping members follow suit.

Rallying the Health Care Industry

The effort to eliminate these antimicrobials from routine handwashing was spurred by the scientific community after questions were raised about the health and environmental impact of triclosan and triclocarban, typically used as antiseptics in hand soaps and lotions.

“Concerns about triclosan and triclocarban have been growing for many years,” explained Ted Schettler, MD, science director for the Science & Environmental Health Network and Health Care Without Harm adviser. “We know from published data that these two products or their byproducts are widely found throughout the environment. There is a lot of wildlife and aquatic life exposure, and humans are exposed mostly through consumer products.”

Efforts by Schettler and others, spearheaded by the Green Science Policy Institute in Berkeley, California, and working in concert with many other institutions, have led to the development of a consensus paper, known as the *Florence Statement on Triclosan and Triclocarban*, which was published in June and outlines the scientific rationale for eliminating these chemicals.

“These kinds of scientific statements are increasingly common for chemical substances around which there is clear evidence of concern,” said Rachel Gibson, Safer Chemicals Program director for Health Care Without Harm.

The U.S. Food and Drug Administration issued a statement last September banning

certain chemicals in consumer antibacterial soaps, including triclosan, triclocarban, and 17 other antiseptic compounds. (The FDA's ban of these agents from consumer products does not obligate hospitals to eliminate these chemicals from the supply chain, but it is telling that the consumer and hospital industries have coinciding goals to eliminate these chemicals of concern.) Its ruling, which goes into effect Sept. 6, 2017, states that these compounds are misbranded due to a lack of evidence proving their efficacy compared to regular handwashing, but that's not the biggest concern.

"We know from animal studies and laboratory studies that triclosan can interfere with both the estrogen and androgen systems, and it also disrupts thyroid function," said Schettler. "That's particularly concerning, because normal thyroid hormone levels are really important during fetal brain development."

Additionally, the FDA statement pointed to the role that inappropriate antimicrobial use could potentially be playing in bacterial resistance, such as in the case of methicillin-resistant staphylococcus aureus (MRSA).

Exceptions and Alternatives

Antimicrobials are not to be demonized. They remain an important ingredient in health care hygiene. There may even be some instances that call for the use of triclosan — such as in a toothpaste for patients with gingivitis, noted Schettler. However, the use of these chemicals needs to be backed by evidence.

Areas where antimicrobial hand soaps may stay are operating rooms and neonatal intensive care units. However, early adopters have also adapted their supply chains with alternative products that have been deemed appropriate. Chlorhexidine gluconate is just one of the alternatives being used in place of antimicrobial soaps with triclosan. According to the U.S. Centers for Disease Control and Prevention, chlorhexidine gluconate has long-lasting antimicrobial activity with a solid safety record and little to no absorption. Other possible alternatives are iodine and chloroxylenol.

In addition, according to CDC guidelines released in partnership with the Society for

Healthcare Epidemiology of America, the Association for Professionals in Infection Control and Epidemiology, and the Infectious Diseases Society of America, alcohol-based antimicrobial solutions are more effective than soap and water alone in all studies, and they are more effective in reducing bacterial counts than antimicrobial soaps in a majority of investigations.

Leading by Example

As an early adopter of the movement to eliminate antimicrobials, the Mayo Clinic successfully phased out triclosan from its hand hygiene products in 2010.

"We took a more opportunistic approach to eliminating antimicrobial hand soaps," said Amanda Holloway, sustainability project leader for the Mayo Clinic in Rochester, Minnesota. "Our product supply chain had launched a hand hygiene initiative to essentially review the products used in patient rooms and public areas. The original goal was to standardize products across our enterprise, reduce expenses, and create some efficiencies. In that process, we pulled together key stakeholders from the infection prevention and control group, and we had a physician champion who said, 'If you are going to be looking at purchasing, then let's look at products that contain antimicrobials,' and environmental services had a similarly opportunistic take on it."

This allied task force identified products of concern and began a detailed review process for new purchases. Each potential product was trialed by employees and verified for green certification and U.S. Department of Agriculture bio-based formulation, and all were required to be fragrance- and dye-free. After overhauling and streamlining the purchasing and supply of new hand hygiene products, the team found that it was saving the institution \$200,000 a year by going green and moving away from antimicrobials.

"There isn't necessarily just one way to do it," said Holloway. "We saw the train leaving the station, and we all jumped on together."

Advocate Health Care, the largest health care network in Illinois, was another early adopter. Advocate has been working for a number of years to eliminate chemicals of concern, including

"We know from animal studies and laboratory studies that triclosan can interfere with both the estrogen and androgen systems."

— TED SCHETTLER, MD, SCIENCE DIRECTOR, SCIENCE & ENVIRONMENTAL HEALTH NETWORK

triclosan, which it successfully removed from its hand soaps throughout the organization last year.

"As much as possible, we work to reduce chemicals of concern throughout our health care environment, and removing triclosan from our hand soap is a great example of that. As an organization dedicated to the health of the communities we are privileged to serve, we see this work as an integral part of that overall mission of health," said Advocate Health Care Sustainability Manager Katie Wickman, who spoke on the topic at Practice Greenhealth's CleanMed in Minneapolis in May.

Meeting the Challenge

Practice Greenhealth and Health Care Without Harm are rolling out a Hand Soaps Challenge for Practice Greenhealth members this fall to help light a clear path toward the elimination of these chemicals from health care industry supply chains. The challenge will include a toolkit, webinars, and other resources.

The challenge will borrow from past supply chain successes such as the effort to eliminate flame retardants from furnishings and fabrics. Much science and product-specific work will be going into vetting new products. Organizations such as Greenhealth Exchange (www.greenhealthexchange.com) can also help members do this intricate work.

"The goal is to eliminate antimicrobial hand soaps containing triclosan and triclocarban throughout health care facilities — everywhere," said Gibson. 🌱

Against a Changing Future

BOSTON HOSPITALS ARE PREPARING FOR TOMORROW'S
CHALLENGES BY CUTTING GREENHOUSE GASES TODAY.

BY ERIC JOHNSON



Superstorm Sandy, the hurricane that pummeled the Northeast in fall 2012 and caused more than \$75 billion in overall damage, was a wake-up call for many hospitals and health systems across the nation, but particularly those in the Boston area. According to a study by the World Bank, Boston is the eighth-most vulnerable city in the world for coastal flooding and the fourth-most vulnerable in the United States by property value.

“It’s only a matter of time before the next big hurricane comes ashore here, and we need to be prepared,” said Paul Lipke, senior adviser for energy and buildings at Health Care Without Harm.

But while Sandy may have increased the sense of urgency for environmental resiliency, the Boston area has long been a hub of progressive, pro-environment thinking. Now, with the release of a new report from Health Care Without Harm, it’s clear that Boston health care has put its money where its mouth is.

“Boston hospitals are leading other sectors in the city and pacesetting the entire health care industry, demonstrating they can provide exceptional patient care, protect public health, and dramatically reduce greenhouse emissions,”

said Gary Cohen, co-founder and president of Health Care Without Harm.

OVERACHIEVING IN BEANTOWN

Developed for the Boston Green Ribbon Commission’s Health Care Working Group, the report found that Boston hospitals top the nation in greenhouse gas reductions. While Boston and the state of Massachusetts have mandated an aggressive timetable for greenhouse gas emission cuts — 25 percent by 2020 and 100 percent by 2050 — Boston-area hospitals already cut their energy greenhouse gas emissions by 29 percent between 2011 and 2015, and they are on track for a 33 percent reduction by 2020. That’s a 47 percent reduction in greenhouse gases compared to “business as usual” by 2020, and it is equivalent to eliminating the annual greenhouse gas emissions of 42,000 passenger vehicles.

“Health Care Without Harm has been working with Boston hospital facility leaders for over 20 years,” Lipke said. “Starting in 2010, we got them all to agree to put energy data from 2008 onward into EPA’s Portfolio Manager and share it with us to create a sector profile. So when the city subsequently sought to create an energy reporting and disclosure ordinance,

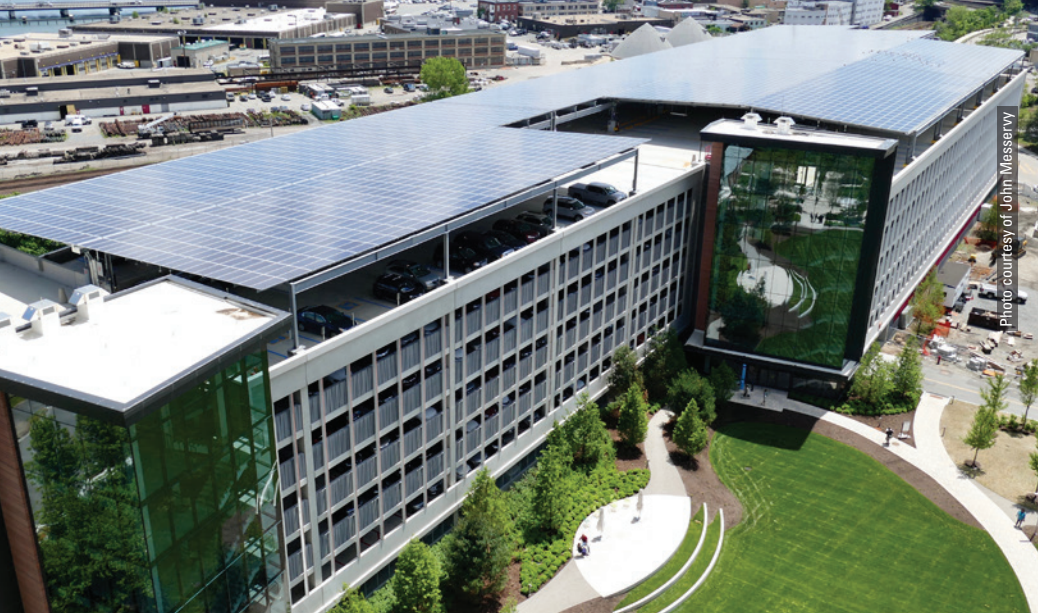
as others around the country have done since, our hospitals were way ahead — and strongly supported it.”

One result of that work, Lipke said, is the first and probably only metro-wide health care greenhouse gas and energy assessment anywhere in the United States, accounting for how much energy is being used and from what sources. But the leadership doesn’t stop there.

“Massachusetts, the city of Boston, and its Green Ribbon Commission are all deeply committed to understanding, mitigating, and reducing the region’s climate vulnerabilities,” Lipke said. “When we combine that with our concentration of world-famous hospitals and biomedical research facilities committed to their communities, you get a potent combination. It helps explain why we also got 115 leaders to spend a day analyzing how hospitals can best help anchor their community’s health and climate resilience.”

The Green Ribbon Commission comprises 35 CEOs, including Partners HealthCare’s David Torchiana, MD, and Boston Medical Center’s (BMC) Kate Walsh, who support implementation of the city’s Climate Action Plan. The effort helps the city, businesses,





The solar panel installation on top of the parking garage in Partners HealthCare's new corporate office complex in Somerville, Massachusetts, is one of the largest — if not the largest — installations of its kind in the Northeast. Its rated capacity is 1,250 kilowatts, and it will produce the equivalent of 15 percent of the complex's total electricity consumption.

institutions, and residents reduce their greenhouse gas emissions, use renewable energy, and prepare for the effects of climate change.

It's important work, and given Boston's vulnerability, the specter of Sandy is never far from people's minds.

"We can't ignore what happened down in New York and the impact [Sandy] had on the health care delivery system," said John Messervy, corporate director of design and construction at Partners HealthCare, Massachusetts' largest health care facility, with hospitals and affiliates across much of the state. "We have 19 million square feet, and half of that is in areas that have been identified as prone to flooding from either extreme precipitation or from sea-level rise combined with storm surge."

Bob Biggio, senior vice president of facilities and support services at BMC, shares the same concerns. "When you look at the locations of most of the large Boston hospitals, we're one of the most vulnerable hospitals, so it's definitely an area that we've been focused on," he said. "And I think our position as a safety-net hospital really makes it incumbent on us to be able to protect that population if a major disaster were to happen."

But working on ways to reduce their impact on climate change doesn't just help them meet the area's health care needs in times of crisis; it also helps protect patients' health at any time.

"I think as a health care organization, we're seeing the impact of climate change — particularly emissions and air quality — on our patients, especially with increasing cases of emphysema, of cardiac conditions, of asthma," Messervy said. "Put simply, as a health care organization, we don't want to be contributing

to the problems that we are treating our patients for."

PARTNERS HEALTHCARE: RESPONDING TO THE CHALLENGE

In 2010, Partners HealthCare formulated a three-pronged strategy to reduce its carbon footprint: Reduce energy consumption by 30 percent, deploy on-site generation, and move strategically in the direction of greening the energy supply.

According to Messervy, energy reduction efforts have already yielded a 21 percent reduction through 2016, though some individual hospitals have been able to boost the reductions to over 30 percent.

"If you're really focused on reducing energy, there are opportunities," Messervy said. "And although it's not without investment, the paybacks we are finding on those capital investments are on the order of two to four years."

The ongoing challenge, he said, is maintaining those reductions.

"You can't walk away from the management of the building operations and expect those reductions to stick," he said. "It takes active management on a daily basis to continue to realize those savings."

Like many urban hospitals, the roofs of the buildings are pretty much completely occupied by mechanical equipment and emergency generators, so the opportunities for on-site power generation are fairly limited. However, Partners has utilized parking garages at three different locations to deploy photovoltaic (PV) arrays, and at Spaulding Rehabilitation Hospital Cape Cod, the organization has also deployed an on-ground PV array as well as carport-mounted PVs over the parking lot.

"So between these installations, we're able to generate about six megawatts of power, which is a small amount compared to our overall demand. But nevertheless, it helps, and it's a statement of our intent and our values," Messervy said.

A lot of attention has also been paid to Partners' commitment to greening its energy supply, particularly the move to purchase 75 percent (around 22.6 megawatts) of the output of a New Hampshire wind farm. It is reportedly the largest, direct-delivery renewable energy purchase made in the Northeast.

Scheduled to be completed in 2019, the \$54 million Antrim Wind project is expected to equate to the removal of more than 10,000 cars from the road.

Through TransCanada, Partners' wholesale energy provider, the system is also able to source 100 percent non-carbon-based fuels for the balance of its power supply, with the exception of one hospital tied into a district energy plant.

Furthermore, Partners is also taking advantage of a holdover from the Industrial Revolution — New England's longstanding mill tradition — to harness low-impact hydropower from small turbines deployed along the rivers. Unlike large-scale hydro projects, these small turbines do not interfere with water flow or inhibit fish passage.

"Those turbine installations are still in place, so there's been a lot of work done by private developers and property owners to refurbish or replace those turbines with more efficient turbines and continue to generate power from the river flows," Messervy said.

BOSTON MEDICAL CENTER: 'IF YOU DON'T START, YOU'LL NEVER FINISH'

When BMC decided to pursue a resiliency and energy efficiency program, it was coming off a couple of years of very large losses. Yet, even on the brink of receivership, the move had support not only from the top but also from within.

"I think the fact that we are a safety-net hospital helped us look at it more closely," Biggio said. "When you talk to our staff and our clinicians, it really is embedded in their DNA."

Having good intentions and being able to afford to see them through are two different things, however. So Biggio began by focusing on energy efficiency and driving down energy costs.

"I think having that be the first area of focus aligned with the financial struggles we were having by being able to reduce our energy bills and therefore help us through that challenge," Biggio said. "Then to be able to use some of those investments and the wins from that process



Boston Medical Center's new rooftop farm project has transformed the once-barren roof of its power plant building, further exemplifying the hospital's sustainability efforts.

[and] make further investments — that perhaps might not have had quite as big a payback, and maybe had a bit more risk associated with them — helped us continue our successes in reducing the carbon footprint of the organization.”

That approach allowed Biggio to evaluate the infrastructure of all of BMC’s buildings and consider how he could interconnect them to better utilize the more advanced technologies used in the newer buildings. By doing that, Biggio said, the hospital was able to achieve efficiency without having to make as large a capital investment as might otherwise have been required.

Case in point: BMC actually had bids in hand of approximately \$5.25 million to install new emergency generators and a cooling tower in the power plant. But by stepping back and looking at ways to cross-connect buildings and better leverage the existing technology in some of the buildings, the organization was able to take the project down to about \$750,000 while saving \$250,000 a year in energy costs.

Finding these kinds of efficiencies has proved particularly important to BMC, which is the product of the 1996 merger of Boston City Hospital and Boston University Hospital. The two hospitals were located just a block away from one another and had several redundancies. In 2012, the board approved a consolidation plan.

“We developed a plan that would help us consolidate the campuses into a single footprint, and then we could essentially sell off the excess real estate in the campus we vacated to help us pay for the consolidated campus,” Biggio said. “In doing so, we were able to reduce the

footprint of the hospital by about 400,000 square feet while simultaneously expanding our capacity to see patients.”

Biggio said that 400,000 square feet equates to about \$3.75 million in energy spend that the hospital will no longer have to account for once the consolidation is complete, which is projected to be in 2018.

Overall, Biggio estimates the consolidation effort will realize approximately \$25 million a year in operating efficiencies.

Also making headlines is BMC’s involvement in a cooperative power purchase agreement with Summit Farms, a North Carolina solar farm. Like Partners’ purchase of wind power, the solar purchase proved to be a complex transaction.

“I think the complexity is in the fact that you can’t really bring the power up to Boston, so in essence, we continue to contract for our power as we always have up here in Boston, but we’ve committed to purchase the power at Summit Farms for 25 years,” Biggio said. “We keep the renewable energy certificates as part of that purchase, and an agent then sells the power into the grid on our behalf in North Carolina.”

Biggio encourages others looking to make strides toward cutting greenhouse gases to consider similar strategies, including working with utility companies and aggressively searching out grant opportunities. BMC recently received a \$3.7 million grant from the state of Massachusetts for working with the city on a combined heat and power unit that, besides powering inpatient facilities, will also provide backup power to the regional communications equipment serving Boston Fire, Boston Police,

the Massachusetts State Police, and Boston EMS in the event of a major disaster.

“That collaboration was good for us financially, but it’s also good for the community in the event of a disaster like Superstorm Sandy,” Biggio said.

And then there are the tangential benefits to consider — things like public relations, donor interest, and employee recruitment.

“I don’t think we really expected all of those additional benefits when we started,” Biggio said. “But we’ve definitely seen them, and I don’t think people should underestimate how important they are.”

DO NO HARM

While ensuring that patients have access to medical care during an emergency is of primary concern to hospital leaders, both Messervy and Biggio also feel strongly that hospitals and health systems have an obligation to minimize the harmful environmental effects that are a byproduct of their operation.

“We’re experiencing climate change, and we’re experiencing worsening air quality and greenhouse gases daily. The consequences are reflected in many of the patients we see in our emergency rooms every day, being treated for chronic medical conditions that are amplified by aspects of climate change. So there’s a growing sense, especially in the health care sector, that health care has a role to play in setting a course to reduce emissions,” Messervy said.

Biggio agrees. “There’s certainly no better way to keep your community healthy than by starting with the environment and improving the environment in which you live,” he said. ●



Preparing for the Worst

Tornadoes. Extreme heat. Hurricanes. In the face of climate change, resilient hospitals must plan for the unpredictable.

BY ROBERT BITTNER

On May 22, 2011, Denise Dugan, then patient safety officer for St. John's Regional Medical Center in Joplin, Missouri, was at home when the first tornado siren went off.

"I knew that we were under tornado warnings, and I knew it was going to be bad," she said. "When the first siren went off, I took my dogs into the bathroom and waited. A second siren went off, and immediately everything went dead. After a bit, I heard the freight train noise people talk about. I'd been in several tornadoes before, but that was the first time I'd heard the noise. After a while, the TV came back on. I went outside, and nothing in my yard was touched. I live on 15th Street, and the tornado went down 20th.

"I took off to check on my mom and to go to the hospital. I got down to the corner, and it was packed with cars. I had to go down alleys due to trees in the street to get to my mom's house. Other houses around hers had damage, but her house didn't. The hospital was hit, so I headed there. I knew I wouldn't be able to get close with my car because of the traffic, so I parked and started walking. Once I got [there], the police stopped me and said there was a gas leak. I heard that the hospital had opened a triage center in Memorial Hall. I met up with some others, and we popped in a car and drove there. We worked in the triage center all night."

In the end, the EF-5 tornado — the most damaging category of tornado, with wind speeds of more than 200 miles per hour — killed 161 people and left a trail of devastation. Five patients and one visitor were killed at the hospital. But it could have been even worse.

"The hospital was moved 4 inches off its foundation," Dugan recalled. "It was totally trashed. The windows were all broken. All the heavy doors on patient rooms were off, and some were split in half. IV poles had gone down the halls like javelins. Sewers popped from the pressure, so we had all the sewage coming out. We had 185 patients there. They evacuated within 90 minutes after the tornado struck.

"We had a plan, we drilled, and we prepared," Dugan added. "And it's a good thing we did. But this tornado was so strong, it just took everything we had."

This was not an isolated incident. Joplin is in the part of the Midwest known as Tornado Alley. "We've had something like 59 EF-4s and EF-5s," Dugan said.

Even so, a facility does not have to sit in Tornado Alley to benefit from storm-hardening practices and a focus on resilience.

"Every single health facility needs to pay attention to resiliency," advised Angie Woo, who oversees climate resilience and adaptation at Fraser Health in Vancouver, British Columbia. Woo's interviews and research among health facilities throughout North America — she helped organize a summit on climate change and resilience in 2016 — have convinced her that extreme weather events are not limited to tornadoes and hurricanes. And they are not limited by geography.

"Here in the Pacific Northwest," Woo said, "we noticed unusual events that have caused strain on our hospital operations — for example, an extreme heat event in 2009."

That event alone led to 120 deaths and taxed hospital staff and systems, such as cooling and ventilation.

"We [also] had an extreme wind event in our valley in 2015 that knocked out power to several hospitals at once," she added. "They all had to go on emergency backup power at the same time, which had never happened before."

As the effects of climate change become more common and more severe, Woo believes the warranted response is to create a culture of resilience that begins with hospitals and then extends to the community at large. Unfortunately, it often takes an extreme event before resilience becomes an investment-worthy priority.

Hard Lessons

On Oct. 29, 2012, Hurricane Sandy struck New York City.

"Sandy created a significant storm-surge hazard," said Kelly McKinney, senior director of emergency management and enterprise resilience at NYU Langone Medical Center. "What 'storm surge' means is that a storm basically takes the coastline and moves it inland."

One result was water infiltration at NYU Langone, which filled up basements and underground passages connecting a number of the facility's buildings.

In its wake, the hurricane left behind millions of gallons of contaminated water, knocking out utilities and destroying equipment. "Power went out in the neighborhood, then some of our emergency power failed," McKinney said. "At that point, the hospital was evacuated and closed."

"We got the campus up and running 59 days after Sandy occurred," added Jenna Agins, NYU Langone's energy and sustainability



specialist. Since then, “we’ve done a lot of work ... to harden our campus overall.”

That includes flood-mitigation measures such as floodgates and doors, as well as relocating critical infrastructure to higher locations. These and other measures have earned NYU Langone a “Hub of Resilience” designation from the Disaster Recovery Institute International, a nonprofit that promotes disaster risk reduction.

“From a sustainability standpoint, we understand the implications of climate change on our community and the city of New York as a whole,” said Agins. “We see how climate change can impact extreme heat, extreme weather. In the coming decades, it’s very important for us to think about those things and do what we can to protect ourselves, our patients, and our employees, as well as our community.

“When FEMA releases its flood and storm projections, it’s important for hospitals to remember that [these projections] are often out-of-date and may not reflect changes in the climate that have already occurred,” she added. “FEMA publishes backward-looking projections that do not account for sea-level rise and more frequent, future extreme weather events due to climate change. This is why New York City and

many other cities have focused on providing world-class, science-based modeling for flood and storm prediction that takes climate change and other changes into account.”

For NYU Langone, that means being prepared for a Hurricane Sandy-size storm surge, plus an additional 2 feet. “We’re currently undergoing transformation into a high-reliability organization,” Agins said. “We have a very strong team here that makes sure all the systems are ready leading up to an event.”

“Many of our mitigation measures aren’t in place day to day; they require 36 hours or greater to put into place,” McKinney added. “If we have a blizzard, we’ll implement emergency housing for staff. If there are mass-transit disruptions, we’ll put alternative transportation and housing in place to accommodate individuals. During an impending storm, the emergency-management team will bring together a system of individuals across the enterprise to manage to continue providing clinical care and education, despite any weather event.”

The situation is similar in Joplin at the rebuilt and renamed Mercy Hospital Joplin. “We kind of never stopped working to rebuild,” said Dugan. After the tornado struck, “we went from the triage center to opening a tent hospital within

a week and we live with all of our electronic medical records.

“We moved into our current building in March 2015,” she said. “There are big cables built into the building, and they are buried deep underground, tethering us to the ground. A lot of buildings have roofs made of rubber panels topped with gravel. If a tornado takes that off, [the tornado is] in your hospital. Now we have a concrete roof. We have an energy plant built partially underground, connected to the hospital with a tunnel 25 feet underground. Our windows will withstand 150-mile-an-hour winds, and the windows in all intensive-care units will withstand 250-mile-an-hour winds. That makes it possible for critical-care patients to shelter in place.

“We monitor the weather all the time — three and four counties out,” Dugan added. “And we have warning apps on our phones.”

A Bigger Picture

Hardened structures and emergency procedures are essential. But Woo encourages hospitals to think about resilience as extending far beyond their own walls.

“There’s a tendency to focus on the hospital in isolation,” she warned. “Yet, critical infrastructure

such as roads and electricity grids — which are ‘outside the fence’ — are essential to ensure reliable food and medical supplies. When we consider resiliency, we also need to think of the vulnerabilities in our global supply chain — for example, pharmaceuticals manufactured in other regions.

“A core aspect of resilience is self-sufficiency,” Woo added. “To achieve that, we need to build in redundancy and localize our supply chain and backups. The measures we take to build the climate resilience of a hospital — so it can operate as an island for three days, seven days, or more — will help ensure that it can withstand and bounce back from other disasters, including earthquakes.”

It is also vital to think of resilience in terms of the local community. In the case of extreme heat, for example, Woo pointed out, “It will affect the most vulnerable disproportionately: the elderly, the chronically ill, the very young. Those who are most vulnerable likely will be most reliant on public services, including health care, during and after a disaster. In this sense, their level of resilience is closely linked to health-system resilience.”

Woo acknowledges that sometimes there is a tendency for hospitals, and even hospital departments, to be siloed and isolated. “We need to work with public health, municipalities, and others with outreach programs to increase community resilience, which will



help to increase self-reliance and self-care while reducing surge to the hospital during an extreme event,” she said.

“Resilience and sustainability — these are cross-sector and interdepartmental initiatives,” she continued. “We need not wait until we experience an extreme event to act. We

need to keep in mind that our window of opportunity is not that wide. We’re breaking heat records year after year. The sooner we formulate a plan of action grounded in lived experience and robust data, the better we’ll be able to provide health services to patients in a changing climate.”



Blending is Trending

Massachusetts hospital beefs up food offerings with blended meats.

BY APRIL GALARZA
HEALTH CARE WITHOUT HARM
COMMUNICATIONS COORDINATOR
HEALTHY FOOD IN HEALTH CARE



Chef Victor Thompson presents Cooley Dickinson Health Care's signature lasagna, featuring blended meat.



Executive Chef Gary Weiss offers the blended burger that introduced the blended meat concept at the hospital.

Photos courtesy of Cooley Dickinson, Marketing Communications Department

A NEW culinary technique pioneered by the James Beard Foundation is mixing up the food world and gaining momentum in hospital food service across the country.

Add one part ground meat to two or more parts plant-based ingredients, and you get a recipe for increased nutrition and a much smaller environmental footprint.

“You can lessen the meat provided and yet not feel like you are lessening the amount of meat you are eating — have the full portion and not even notice the difference,” said Gary H. Weiss, executive chef for Cooley Dickinson Health Care in Northampton, Massachusetts.

Weiss started his patrons with a blended burger and has since replaced the ground beef in all of the facility's recipes that required it with a 60/40 beef/mushroom blend.

He said incorporating blended meat is easier than his fellow food service professionals might think. He began by simply adding it to the menu. Weiss called the first meal a “mushroom burger” and served it topped with sautéed mushrooms. When people liked them and no one noticed the difference, he knew he was on to something.

He served it three more times and then hosted a special pre-Earth Day tasting of blended burger sliders, which he intentionally served plain and offered for free. He also invited Health Care Without Harm to help him introduce the concept and let people know about the product and its purpose.

“People absolutely loved them, even though they were plain. The feedback was awesome — even for those who were initially reluctant. I think because people thought to themselves, ‘I tried this before, and I didn't have a problem with it, so now let me try this burger and see what they are doing,’ and then we could explain all the reasons behind it,” Weiss recalled. “For weeks after, people would come to me and tell me how much they liked the sliders.”

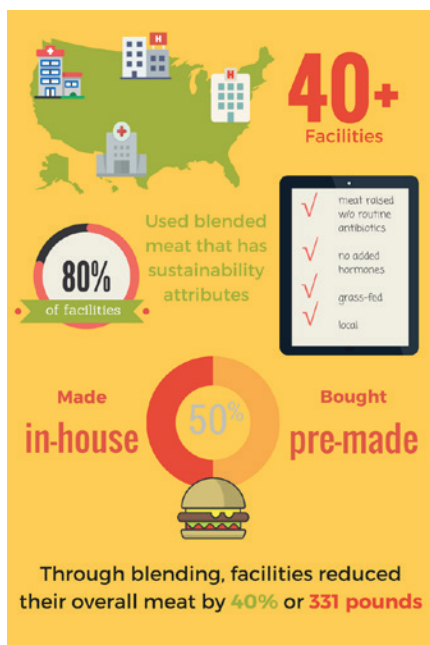
From there, it was easy to integrate them into the regular menu, along with tasty toppings from sautéed mushrooms to fresh avocado. Rebranded as a “blended burger” with the health and sustainability attributes at the forefront, people loved them even more than before, said Weiss.

Next, replacing all of the facility's ground beef with a blend was a natural progression. “Lasagna and shepherd's pie are very popular. We even did it with our tacos — anything you use ground beef for, this would work,” he said. “We did spaghetti and meatballs the other day with it. That went over really well.”

Health, Sustainability, and Great Taste

A recent *Journal of Food Science* study found that consumers prefer blends to 100 percent ground beef. For hospital food service, this trend is especially hopeful.

Blended meats reduce meat in the diet and add vegetables. One serving of mushrooms contains



three grams of protein, one gram of fiber, and nutrients such as vitamins B and D, antioxidants, and potassium. Enhancing the flavor of meat with mushrooms also reduces the need for salt.

“Health is the No. 1 reason,” Weiss said. “But of course, there are also all the side benefits, such as meat production’s impact on climate, water, and pollution.”

Reducing the amount of meat served is one of the most powerful measures that food service departments can take to reduce climate impact. Livestock contributes 18 percent of the world’s greenhouse gases, which cause climate change. Substituting one burger with a blended burger every week for a year saves 17,000 gallons of water and 138 pounds of methane, an impact equal to driving 3,750 miles.

Cooley Dickinson also purchases local pasture-raised, grass-fed (grain-finished) beef that is raised without routine antibiotics, reducing the risk of antibiotic-resistant infections.

And then there’s the taste. “The mushrooms give it that meaty umami flavor, so it tastes better than some of the beef you get in regular burgers,” Weiss said. Mushrooms also retain moisture for a juicier burger.

For other recipes, the blend’s stealth flavor profile eases acceptance among hesitant patrons, Weiss explains. “When you start with other things that may have mushrooms to begin with, it actually works even better,” he said. “We always put some mushrooms in our lasagna, so it’s not like you have to say anything; you expect veggies in a lasagna. It doesn’t show.”

For patients on restricted diets who are craving their comfort foods, blending meat with mushrooms may help align nutrient profiles with their health needs.

Cost savings is an added bonus. According to Weiss, reducing the overall amount of meat he serves allows him to invest the savings back into the meal. “We can use better-quality local meat without breaking the bank,” he said. “We’ve managed to maintain pricing.”

A Nationwide Strategy, One Meal at a Time

Cooley Dickinson was one of more than 40 health care facilities that reported celebrating

National Nutrition Month by serving blended burgers. Responses from survey participants showed that facilities reduced meat by as much as 40 percent.

“Imagine the impact if all 5,564 hospitals in the United States reduced meat through blending,” said John Stoddard, regional food coordinator for Health Care Without Harm and organizer of the Nutrition Month recipe challenge.

Almost 80 percent of survey respondents used blended meat with sustainability attributes such as meat that was raised without routine antibiotics, had no added hormones, was grass-fed, and was locally sourced and processed.

More than half of the participants created their own in-house blend, while others purchased premade blended meat. Health Care Without Harm and Practice Greenhealth released a Blended Burger Purchasing Guide to help food service staff decide if they should create their own blend or reference a list of companies that provide a premade option offering sustainability attributes.

“It’s important to talk with your business vendors [food service management companies or group purchasing organizations] and distributors, and communicate your preference for a blended burger made with sustainability attributes and verified through a third-party certification,” advised Hillary Greenwood, Health Care Without Harm’s national procurement director for the food program.

Cooley Dickinson is taking steps to increase its resiliency and reduce its carbon footprint across programs, such as the use of steam from burning wood chips to heat the hospital. Weiss sees food service as an important component of that work. He is exploring ways to incorporate other meats such as pork and turkey into blends, and increase the sustainability attributes of all the meat he serves.

“Anytime we can help people, help their health, and help the environment, we’re working with the Cooley values,” Weiss said. “We try to exemplify those values, try to be a leader, to help show people how they can do it and still get the feeling of eating a burger — not be missing something.” 🍔

On the Menu at a Hospital Near You

This “meat with a mission” is catching on nationwide. Hospital chefs, food service directors, and dietitians are proclaiming the blended burger’s benefits and popularity:

“People loved the burger’s flavor. Some who do not like mushrooms still enjoyed it because the flavor is hidden in the beef. Many of our registered dietitians enjoyed its more nutritious qualities.”

— *Mary Beth Schlichtholz, Food Service Director, Rady Children’s Hospital, San Diego, Calif.*

“We did a sampling of the beef/mushroom burger at the monthly Cooking Up Health booth. We asked, ‘Would you buy this burger here?’ We got overwhelmingly favorable results. People can’t wait to have them available on a daily basis — and that’s our plan.”

— *Deborah P. Keane, Food and Nutrition Services Director, Dartmouth-Hitchcock Medical Center, Lebanon, N.H.*

“One of our goals with the UH Health System is to reduce our beef purchases. We have consistently lowered our beef purchases year over year. We felt that adding a blended burger to the menu was a way to satiate the customer’s appetite for beef, but to incorporate a unique way to lower the amount of beef in the burger. It also had great flavor.”

— *Anthony P. Verona, Culinary Director, University Health System, Cleveland, Ohio*

To access recipes, the Blended Burger Purchasing Guide, and more, visit noharm.org/blendedburger.

Big Plans, Big Impact

Regions Hospital takes the long view when it comes to sustainability, measuring its impact both inside and outside the hospital walls.



Photo courtesy of Regions Hospital

NEW HOSPITAL MEMBERS

NYU Lutheran Medical Center, Brooklyn, N.Y.
Rochester Regional Health, Rochester, N.Y.

RENEWING HOSPITAL MEMBERS

Abraham Lincoln Memorial Hospital, Lincoln, Ill.
Bronson Methodist Hospital, Kalamazoo, Mich.
Dignity Health, San Francisco
Fairview Health Services, Minneapolis
Florida Health Sciences Center—Tampa, Tampa, Fla.
Gundersen Health, La Crosse, Wis.
Harborview Medical Center, Seattle
Hospital Sisters Health System, Springfield, Ill.
Inova Health, Falls Church, Va.
Johns Hopkins Bayview Medical Center, Baltimore
Metro Health Hospital, Wyoming, Mich.
NewYork-Presbyterian Hospital, New York
Overlook Medical Center, Summit, N.J.
Stony Brook University Medical Center, Stony Brook, N.Y.
The Richland Hospital, Richland Center, Wis.
University of Colorado Health North, Fort Collins, Colo.
Virginia Mason Hospital & Seattle Medical Center, Seattle

A comprehensive approach has helped Regions Hospital save millions and eliminate tons of waste.

WHEN IT started its green team in 2012, Regions Hospital in St. Paul, Minnesota, hit the ground running.

As the largest hospital of the HealthPartners system, Regions' program was the first step in addressing sustainability across the entire health system. "We took the approach to look at sustainability comprehensively right off the bat," said Dana Slade, director of sustainability programs for HealthPartners and a member of Regions' green team.

Slade is quick to point out the assistance Practice Greenhealth has offered since the inception of its sustainability program. "They helped us focus on areas that are important to the industry and important to the sector, so we could use our limited resources where we will have the biggest bang for the buck," Slade said. "To me, that is the biggest benefit of membership in Practice Greenhealth. Their resources have saved us a lot of energy and effort."

Regions started by focusing on several key areas: reducing the total amount of waste generated; improving energy efficiency; ensuring the use of environmentally preferred

purchasing and contracting; and launching a communication and education program to engage and educate employees.

That comprehensive approach has paid off, both for the hospital and the environment.

For example, Regions tracks its total amount of waste generated and is constantly looking to improve its recycling programs. "We are at about a 25 percent recycling rate, but it is less about the total percent of recycling and more about the total waste generated and how we can reduce that amount," said Nick Love, director of housekeeping at Regions and green team leader.

"We donate a lot of unused medical supplies and equipment, as well as office furniture, to avoid sending it to the landfill while helping those in need," he added. "Last year, we donated 11 tons of materials to our nonprofit partners, and in all, we kept about 561 tons of material out of the landfill, including 107 tons of food waste that was recycled through a food-to-hogs program."

Through these programs alone, Regions saved an estimated \$46,000 in 2016.

Other success stories from Regions' waste reduction efforts include reducing paper usage by 26 percent, equal to approximately 4.9 million sheets and \$30,000. A blue wrap reduction and recycling program eliminated 14 tons of waste and saved an estimated \$105,000 in purchasing costs and \$21,000 in disposal fees. And thanks to Regions' new fluid management systems — an award-winning Greening the OR initiative — the hospital was able to prevent 107 tons of regulated medical waste from being generated. In all, the initiative saved \$489,000, or \$23.25 per operating room procedure.

In addition, energy conservation projects have brought the largest financial savings for Regions — roughly \$1.5 million since 2011. Another \$500,000 came in the form of rebates from its utility provider.

Those kinds of returns from energy conservation and other sustainability programs help keep medical costs at HealthPartners considerably lower than the state average. "With the savings from our programs, we can drive the cost of health care down for our patients. That is something we are committed to," said Love.

A Big-Picture View

Executive leaders are personally involved in the sustainability efforts at Regions. As a result, Slade credits them for much of Regions' success in environmental sustainability: "HealthPartners is a mission-driven nonprofit organization. Both the Regions CEO and HealthPartners CEO recognize that sustainability aligns with and supports our mission."

Another plus: The executive sponsor on Regions' green team is its chief financial officer. "What some hospitals find as a barrier, we don't typically see as an issue because of the support from our finance department," said Love.

Regions' accomplishments have not only saved money and helped the environment, but have also brought local and national recognition. It is a two-time recipient of the Sustainable St. Paul Award. Additionally, Regions is a 2017 Practice Greenhealth Top 25 Environmental Excellence Award winner — the second time the hospital has received Practice Greenhealth's highest honor — and also earned the Practice Greenhealth Circle of Excellence Award for

Greening the OR. The hospital is well-connected locally and nationally in environmental organizations and groups such as the Health Care Climate Council and the Minnesota Sustainable Growth Coalition.

In addition, at the 2017 CleanMed conference, HealthPartners received a total of 18 Practice Greenhealth awards, including three Top 25 Environmental Excellence Awards, three Emerald Awards, and four Circle of Excellence Awards.

But Regions is not resting on its laurels. Looking to the future, Love is confident the hospital is ready to tackle larger endeavors.

One ambitious project Regions will address in 2017 is to calculate its carbon footprint and develop a strategic plan to better manage greenhouse gas emissions.

The HealthPartners system has also signed several community solar garden subscription agreements that, once built, will generate 20 million kilowatt-hours of clean, renewable energy each year. Additionally, Regions is working on a community solar garden subscription agreement that will double that output and provide almost 50 percent of its total electricity usage.

"We are extremely excited about the solar garden project," said Love. "It fits in with our mission, it fits in with our sustainability initiative, and it is local. It is a win-win-win all the way around."

Regions recognizes its place in the community it serves and the impact sustainability can have on the health of that community. "Regions Hospital is a Level I Trauma Center. We are looked at as an essential part of this community. It is important to us to be good stewards of the environment because our community looks to us to be a leader," said Love.

"We feel that our sustainability program's goal is to improve the health of the community, and in order to do that, we need to look outside of the walls of our facility and have a holistic, big-picture perspective," added Slade. "Regions has focused for many years on conservation and efficiency, and now we are taking the next steps to further that focus by producing clean, renewable energy to support the health of our community and our patients, while reducing our carbon footprint." ●

Real Work Experience

At HCA Healthcare, summer programs for sustainability are training future health care and business leaders to consider the environment.

NEW STRATEGIC ASSOCIATE

Service Employees International Union, Los Angeles

RENEWING COMMUNITY HEALTH CENTER

Seattle University Student Health Center, Seattle



Photo courtesy of Hollie White, HCA

From left, HCA interns Colin Smith, Meredith Ringvelski, and Kerri Lovell, along with Anna Weinroth Ward, HCA's director of sustainability.

NOT ALL interns who enter HCA Healthcare's summer programs for environmental sustainability are well-versed in the subject, but by the time they leave, they will have received a crash course in environmental solutions at one of the nation's leading providers of health care services.

With 172 hospitals and more than 1,700 outpatient facilities and physician clinics in the United States and the United Kingdom, HCA is well-suited to give students practical experience in handling environmental issues while working in a professional setting.

"We help them get acclimated to a major company and help them understand collaboration and teamwork, while giving them opportunities to pursue their business and environmental interest," said Anna Weinroth Ward, director of sustainability at HCA and primary creator of the multi-intern model for the organization's environmental sustainability internships.

For its eighth year, HCA is hosting an Environmental Defense Fund (EDF) Climate Corps fellow; fellows are master's-level graduate students. This is also the fourth year HCA Sustainability is hosting undergraduate students from HCA's own Summer Work Experience (SWE) program. The SWE program is open to family members of those who work in HCA's

corporate offices. (These interns may be assigned to sustainability, along with other areas.)

Ward explained the multi-intern model for sustainability: "Four years ago, we envisioned how we could support interns from two distinct and outstanding programs while maximizing results. We created a model to provide a positive experience and obtain [a] strong work product."

As a result of demonstrated success and experience under this model, HCA Sustainability is hosting three interns for about eight to 10 weeks. They will focus on a variety of solutions that could be adapted across its facilities in 20 states.

Students come from diverse backgrounds, with a wide range of accomplishments. "Everyone who gets involved in sustainability has a unique story," said Ward.

But what all sustainability interns do have in common is access to experts at HCA for mentorship and information, as well as exposure to a wide range of environmental issues through HCA's multidisciplinary Sustainability Steering Committee (interns have also presented projects to the committee) and four sustainability task forces. "The interns see sustainability not only on paper, but they see it in action, and they see how we look at proposals, and how we make them scalable for our entire enterprise," said Ward. "It



Photo courtesy of Lisa Najjarabadi, HCA

Ward, left, guides a meeting where interns share what they have learned in approaching their projects.

is important to us that they receive an overall education on what we do as a company, and the projects they work on directly support our sustainability plan.”

EDF projects are very structured. Climate Corps fellows work on specific projects proposed by HCA and focus directly on sustainability. Projects are heavy on research, and proposals are geared toward finding solutions that can work throughout the enterprise. Recent projects examined the energy impact of on-site versus off-site disposal of regulated medical waste, in addition to strategies that tackle the issues of food waste, renewable energy, and lighting retrofits.

The SWE program is also structured, but since the overall program is not specifically focused on sustainability, some interns may be new to the field. Interns are matched to various projects by HCA’s SWE team based on their particular skill set, whether that is redesigning a website or conducting research.

Ward interviews the SWE students who are specifically matched with sustainability projects to learn about their personal goals and where they would like to be challenged in growth. Using this method with interns whose interests may include environmental science, sports management, business, or even dentistry has given Ward an opportunity to align their interests with environmental sustainability early on in the internship — and help them see how their majors could relate to HCA’s sustainability program. With recent projects such as forming focus groups and designing surveys, structuring talking points for leadership, and

communicating data through the use of tables, charts and decision trees, “they may be learning new things, and we try to show them how sustainability in business can be helped by their skill set,” said Ward.

Ward, who also designs the projects for the sustainability interns, intends the internships to be real work programs reflecting the varying project lengths she experiences as a leader for HCA Sustainability. For example, some of the interns’ projects have two-day turnarounds, and some are anticipated to take the entire two-month period. “We propose the topics and structure, but once the interns come in, these projects are theirs to move forward with, and ultimately take ownership of,” she said.

A key part of the internships involves teaching the students how to build relationships. EDF and SWE interns interact with each other professionally and, in some cases, work as a “mini cross-functional team.” The interns quickly see the value in that, in communication and feedback, and in independent action — all necessary real-world skills.

“We believe this is a successful model. We give them an opportunity for personal growth, while they support HCA’s environmental sustainability efforts,” said Ward. “We promote openness and transparency, so they feel comfortable giving us feedback. There is an energy with these interns that we encourage. After all, these are our next generation of leaders in health care, business, and environmental sustainability, so this kind of exposure even before they begin their careers can be very beneficial.”



Photo courtesy of Martine Perrigue, Ph.D., dietitian at Harborview Medical Center

Ben Atkinson is a nutrition manager and dietitian at Harborview Medical Center, and he leads the hospital's biking club.

Riding High

Ben Atkinson, a nutrition manager and dietitian at Harborview Medical Center, estimates that about 200 employees bike to work almost every day — and that number is growing. He's the lead on the hospital's biking club, which launched in early 2016, and he has biked to work most days for the past nine years.


In the last few years, Harborview has established four code- or badge-accessed bike cages — the largest of which can hold up to 100 bicycles — so employees can have a safe place to stow their rides. Since the biking club's inception, it has also developed a web page to provide employees with

information on maps, parking, and even available showers on Harborview's five-building campus.

At monthly meetings, bikers can discuss the best routes into work or strategies for "hybrid" biking, where employees bike part of the way, then hop on a bus or train. Quarterly outreach events in the hospital cafeteria — which serves an average of 1,000 employees daily between noon and 1 p.m. — demonstrate bike gear and offer tips for the staff.

May has also designated Bike to Work Month, and groups of employees compete to see how many miles they can log — and how much carbon dioxide they can save — by biking instead

of driving. Those metrics are publicized to help motivate employees.

"Seattle is surrounded by water and mountains, and the people who live here want to keep it in pristine condition," said Atkinson. "So sustainability is pretty high on the list of things we want to achieve. As a health care center, we also recognize that health and sustainability are related. Air quality is directly related to the number of motor vehicles on the road. So we feel we can increase sustainability and our community's health if we can get people driving less — and doing a little more exercise at the same time." 



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