



PSEG Institute for Sustainability Science (PSEG ISS)

Presented by
Ariana Leyton, Media Manager
PSEG ISS

About Us

Mission

To advance sustainability by developing community-engaged research projects and building educational programs through academic-corporate-public partnerships.

- Education and Outreach
 - Green Team Internship Program
 - Student Ambassadors
- Sustainable Towns: Greening Montclair State & Montclair Community
 - Montclair & Verona Green Business Recognition Program
 - Montclair Community Garden
 - Montclair Street Trees
- Faculty Research
- Presentations, Conferences, Trainings, and Awards

Green Teams Program

Transdisciplinary teams of undergraduates, supervised by graduate students.

- Partners students with corporations
 - Solves sustainability problems
 - Bridges classrooms to careers



2016 Green Teams	2017 Green Teams
35 Undergraduates	45 Undergraduates
7 Participating Organizations	9 Participating Organizations, Including townships and universities
3 Participating Universities	10 Participating Universities
3 Graduate Assistants	10 Graduate Assistants

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Hackensack Meridian Health

Sustainability

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DELIVERABLES

Social Media
Infographics
Intranet
Sustainability Report
Sustainability Module
Focus Groups
Survey
Green Champions Playbook
Sustainability Guide
Water Bottle Bin
Recycling Blue Wrap



Sustainability on Social Media



@HmHgreenTEST on Instagram



Sustainability on Social Media





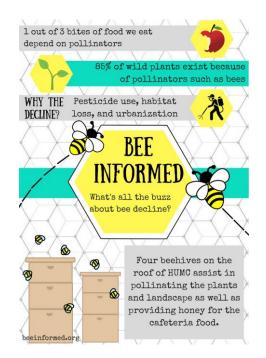
hmhgreentest

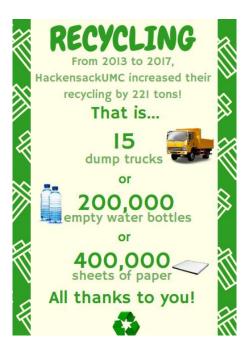
Follow

hmhgreentest Buying fresh, locally grown foods is a great start to healthy eating. Hackensack Meridian Health is teaming up with local farmers markets throughout New Jersey to help shoppers learn more about the food they're buying and how to prepare it. Locally grown food is full of flavor as well as packed with more nutrients than produce from the grocery store. By purchasing locally grown foods you help the local economy and reduce your carbon footprint as imported produce take an extensive amount of energy. To learn more visit http://bit.ly/2qYAaTA



Infographics





Total: 12 infographics

Topics covered

- Chemicals
- Recycling
- Bees
- Water Usage
- Stoplight Program
- Energy Usage
- Staying hydrated

Intranet



"It is our obligation as public health professionals to evolve with the changing healthcare landscape while staying true to our core principals of putting our patients' best interests first.

Embracing sustainability is integral to that effort."

- Robert C. Garrett, Co-CEO of Hackensack Meridian Health















This is a way to experience nature. " Dr. Jeffrey Boscamp.

Green Teams & Green Champions

What is a Green Team?

Green Teams can be found at all kinds of businesses, governments, and institutions. They are interdisciplinary and focus on promoting environmental sustainability. At Hackensack University Medical Center, our green team works on connecting wellness and public health to reducing our environmental impact.

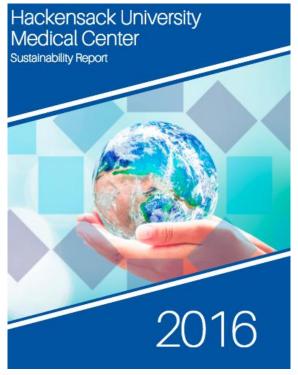
What do Green Teams and Green Champions do?

Hackensack University Medical Center's Green Team has 200 champions across the medical center campus.

- · They raise awareness about sustainability
 - · Identify green initiatives in their unit
- · Share and spread best practices for reducing our footprint
- · Periodically connect with the larger team to share their progress

Interested staff members may contact HMH's Director of Sustainability, Kyle Tafuri at Kyle.Tafuri@hackensackmeridian.org

Sustainability Report





Introduction

High-quality care begins with an imperative focus on the environment to sustain a healthy future. Through innovative work and practices, we improve public health without depleting natural resources or causing environmental damage.

Our Story

Hackensack University Medical Center, the flagship campus of the Hackensack Meridian Health Network, prides itself on being one of the best and most trusted healthcare providers in the entire nation. We are an institution dedicated to growth and innovation in order to meet the ever-changing needs of the public. In the twenty-first century, we have increasingly recognized that those needs extend outside of the operating room, outside of the hospital, and outside of healthcare.

We continue to provide the best care for our patients. We are expanding our work beyond secondary prevention, treating patients while they are already sick, to focusing on primary prevention, which is decreasing factors that contribute to health problems and disease in the first place. Preventative health care means improving the food we eat and the air we breathe to enhance our quality of life. We work to ensure that we provide a nurturing and healing environment for not just our patients, but also for our staff. We are changing the way we feed our guests, design our buildings, and do business with the greater community in order to improve the health of our guests, our team, and the planet.

Total GHG* Emissions Reductions 2,492.0

Metric Tons of CO2

Sustainability Initiatives Saved \$355,825.79

in 2016

Total GHG* Emissions

75,164.0

Metric Tons of CO2

Results

Making Our Waste Bins Lighter 🔟



In 2013, we generated 10 million pounds of waste, including 1.4 million pounds of regulated medical waste. Since then, the amount of medical waste produced has substantially declined to 600,000 pounds. In 2016, we produced 6 million pounds of solid waste, 160,000 pounds of pharmaceutical waste, 100,000 pounds of hazardous waste, and recycled 3 million pounds of waste.

How We Reduce Waste

We have developed innovative ways to reuse materials such as blue wrap and Tyvek®. We have used it to create

capes for patients in the Joseph M.

Sanzari Children's Hospital. graduation gowns for the Day Care Center beds for cats at the Montclair Township Animal Shelter, and fabric to make a wedding dress

Our Operating Rooms

To increase the recycling efforts throughout the hospital, our nursing staff led an initiative which ensured the right waste went in the correct bin. As a result our hazardous medical waste was reduced by 50% and

reduced operating room waste by

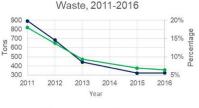
Recycling

We have installed a dining room recycling station that separates food, trash, and reusables. Aside from the food itself, we have also phased out styrofoam in our cafeterias. In 2016. we diverted 99% (250.000) pounds) of its food waste from landfills using its on-site biodigestor.

Increase in Medical Center Recycling 1600 1400 g 1200 24% P 1000

── Volume of Waste Recycled (Tons) → Volume of Waste Recycled as Percentage of Total

Reduction in Regulated Medical Waste, 2011-2016



-- Tons Total RMW Per Year --- Percentage Total Waste Per Year

* Greenhouse Gas

Results

Making Our Buildings Smarter



Energy

Dutdoor Spaces

By continuing our energy efficiency initiatives, we decreased our electricity use by 1 million kWh from 2015 to 2016 which saved \$326,117. We retrofitted 9,600 lighting fixtures with brighter, more energy-efficient fluorescent bulbs and installed over 1,100 occupancy sensors. Converting the lights in the outer parking garage to LEDs saved us \$84,000 in 2016. In addition, we replaced the old chillers and cooling towers in the boiler room which has led to savings of 1.8 million kWh and \$181.000.

We are proud to say we have 50,000 busy new guests! Four beehives are located on the roof viewable from the PICU. By giving these bees a home, we are helping the threatened bee populations in America. These bees assist in pollinating the plants in the surrounding area and provide honey used in our cafeterias.

The Audrey Hepburn Garden helps young trauma victims and their families by providing a healing space surrounded by nature. Staff members are also invited to enjoy the outdoor space as a place to destress.

Chemicals





We created the Greening The Cleaning® line of healthier, environmentally preferable cleaning



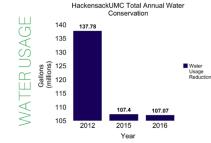


Results

Water



Water is a critical resource for community health and wellbeing, and water conservation remains a vital part of a strong environmental stewardship program.



At 107 million gallons last year, we are the largest water consumer in the region

Replacing the sterilization machines with water-efficient models has lowered our water consumption by 18%

The installation of low flow toilets in the new Emergency Department expansion contributes to water conservation efforts

We are a proud partner with the Hackensack Riverkeeper to raise awareness about the importance of clean water and access to clean water

Recent installation of state of the art waterefficient chillers led to a decrease in water use

By using native and drought tolerant plants since 2014, we have saved 119,000 gallons of water. Native plants promote the local pollinator populations resulting in a healthier ecosystem.



We benchmark water usage and conduct water audits of campus facilities

Sustainability E-Learning Module

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Sustainability Within Our Buildings

Because access to views improves cognitive functioning and recovery from surgery or illness,

HackensackUMC has many gardens open for staff and patients





According to ENERGY STAR®, non-profit healthcare organizations generate \$20 in new revenue for every \$1 saved on energy, which is why HackensackUMC has invested in energy-efficient technology

What can be done at home?

- Buy from green businesses and companies that implement sustainability
- Buy a water filter pitcher and refill using reusable water bottle
- Prioritize organic and/or antibiotic-free food choices
- Buy from farmer/local markets
- ☐ Use native plants outside and water early in the morning
- Installing LED light bulbs, solar panels, or energy efficient appliances all lowers your electric bill
- Recycle correctly by taking cap & label off (non-recyclable), not using a trash bag, and do not
 crush the can or bottle



Focus Group

- Goal: Gauge attitudes and beliefs regarding sustainability
- Employee engagement should connect to a purpose
 - Key sustainability drivers: Patient safety and employee wellness
- Challenges: employees reluctance to change, lack of personal purpose behind changes, and employees unwilling to admit fault





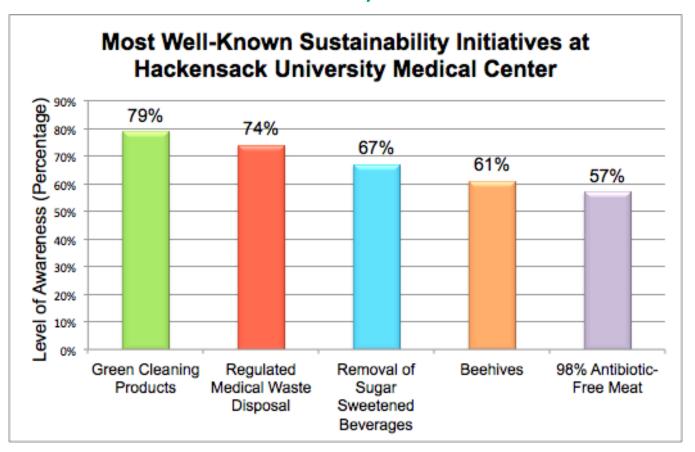
Survey

- 9 questions & 10 minutes to complete
- Gauge the attitudes, beliefs, and values regarding sustainability
- Paired with focus groups to determine employee engagement strategy
- Anonymous, strictly confidential

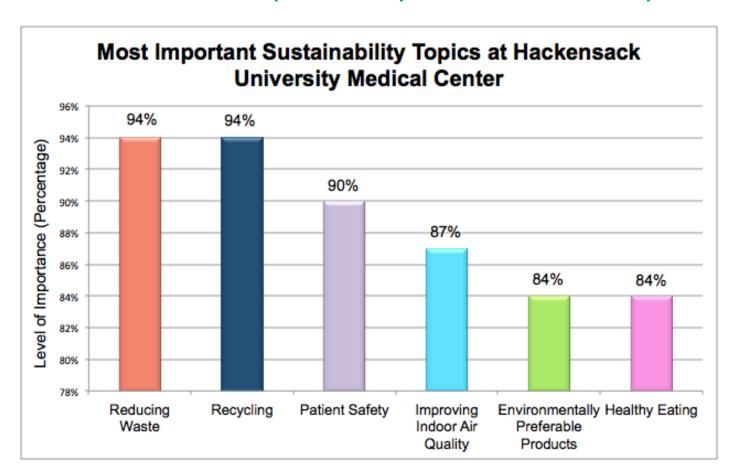




"Select the current sustainability initiatives that you are aware of at Hackensack University Medical Center."



"Please select the topics that you believe are important."



YOUR POSITION: QUARTERBACK

LEADING SUSTAINABLE ACTION

BE A PLAYMAKER

IDENTIFY OPPORTUNITIES IN YOUR UNITS/AREAS KICKSTART INITIATIVES
LEAD BY EXAMPLE





BECOME A SOURCE OF INFORMATION FOR YOUR TEAM MEMBERS

MOTIVATE OTHERS TO
LIVE HEALTHIER AND FOLLOW
SUSTAINABLE PRACTICES

BE A COMMENTATOR

RAISE AWARENESS ABOUT THE IMPORTANCE OF SUSTAINABILITY FOR PATIENT AND TEAM MEMBER HEALTH





BE A TEAM PLAYER

ATTEND MEETINGS TWICE A YEAR -LUNCH WILL BE INCLUDED!

"THIS IS A TEAM GAME AND IT TAKES THE WHOLE TEAM TO GET THE WIN" -ODELL BECKHAM JR.

Green Champions Playbook

- Introduction for Green Champions
- Highlights the connection between healthcare and sustainability
- Tips for incorporating sustainability into everyday home and work lives
- Topics include waste reduction and employee wellness, among others



TACKLING WASTE

AT WORK

- Avoid printing when you can send documents online and print double-sided when possible
- Place medical waste in appropriate colored bins to ensure proper disposal
- Separate food scraps, recyclable items, and trash into the designated bins in the dining areas
- Use a reusable water bottle

AT HOME

- Consider composting your food, so that it avoids going to the landfill, where it gives off greenhouse gases when it decomposes
- Consider extending the life of products by buying and donating second-hand goods online or at thrift shops
- Recycle properly items must be clean, remove caps & labels, and do not crush bottles/cans
- Shop with reusable bags



Climate Change and Rising Temperatures

- Increased rates of heat stroke and heat exhaustion
- Aggravated symptoms of chronic illness, such as cardiovascular and respiratory disease
- More pollen in the air due to altered plant pollinating schedules results in increased airborne allergens and
- Increased range of vector-borne diseases, such as Lyme disease



allergy symptoms

Climate Change and Natural Disasters

- Climate change contributes to stronger and more frequent extreme weather events, such as hurricanes, droughts, and tornadoes
- Spotlight: During the power outage caused by Superstorm Sandy, NYC nurses carried newborns down nine flights of stairs while manually squeezing a bag connected to their lungs, acting as a respirator

Pollution

- Long-term exposure to pollutants can lead to increased risk of cancer
- Contributes to compromised immune system functionality
- Contributes to issues in reproductive, developmental, neurological, and respiratory boalth.
- respiratory health

 Intensifies lung and heart problems, such as asthma and COPD
- May cause wheezing, coughing, chest tightness and difficulty breathing



Stay at the Top of Your Game

Don't pass up on your wellness!





- When possible, buy organic, local, and sustainably sourced food
- Consider eating more plant-based options and buying antibioticfree meat
- Enjoy time each day out in nature
- · Adopt a relaxing hobby, such as yoga or gardening
- Use as many natural products as possible to lessen your body's exposure to potentially harmful chemicals. For example, think of using coconut oil as a skin moisturizer, buying non-toxic cleaning products, and switching to aluminum-free deodorant.
- Join a fitness center and visit as often as you can - Take advantage of a discounted membership at the HackensackUMC Fitness & Wellness Center



- Comply with hand hygiene protocol
- Drink 8 cups of water each day to stay hydrated
- Explore the plant-based options in the dining areas
- Try to block a solid period of time out of your day to sit down and
- Try to take a break to relax and de-stress whenever possible
- Eat healthy snacks, including fruit and nuts, throughout the day to keep you feeling satisfied and energized
- Team up with your coworkers to hold each other accountable in these goals





Conserve Water

Stop Water Pollution

- Try to take shorter showers
- Always wash full loads of clothes and dishes
- Plant native and droughttolerant plants at home
- Find the most efficient sprinkler for the size and slope of your lawn, and mow at the highest recommended height for your grass--it will need less water this

 WAY
- Implement a rain garden or use a rain barrel to catch water and use it for your yard
- When replacing bathroom and kitchen fixtures, consider waterefficient models--look for certifications like WaterSense

products whenever possible.

Try high quality mulch (no cypress, rubber, or cocoa bean)

Choose organic landscaping

- for fertilizer and look up organic alternatives to pesticides
- Use less toxic products to wash your car at home or take it to a commercial car wash
- Avoid pouring out leftover pills/medication down the drain
- Choose personal care products free of micro-beads--they do not degrade in nature, and end up in lakes and streams, harming wildlife

Sustainability Guide

- Brochure for sustainability at HackensackUMC
- Emphasizes the importance of sustainability in the healthcare industry
- Communicates some of HackensackUMC's most important sustainability initiatives
- Topics include recycling and antibiotic-free meat, among others



Hackensack University Medical Center, in collaboration with The Deirdre Imus Environmental Health Center®, is committed to identifying, controlling, and ultimately preventing unnecessary exposures to potentially toxic chemicals in the environment that threaten the health and well-being of our patients, team members, their families and the



community.

Nurses and custodians have higher rates of asthma than any other profession due to their constant exposure to harmful chemicals. In order to limit these long-term effects on our team members, HUMC formulated an environmentally friendly product line, called *Greening the Cleaning*, which is used throughout the hospital and is just as effective as conventional products.



Intranet > Resources > Sustainability
Information













Sustainability and Healthcare

High quality care includes an imperative focus on the environment in order to sustain a healthy future. As a healthcare network, we strive to improve public health without depleting natural resources or causing harm to the environment. It is our duty to play an active role in not only the treatment of illnesses, but also the prevention.

To drive our commitment to disease prevention forward, HackensackUMC has pioneered initiatives such as banning carcinogenic flame retardant furniture, using green cleaning products, and providing antibiotic-free meat in our dining halls.



Recycling

- HUMC generates 10 million pounds of waste each year including 600,000 pounds of medical waste annually
- From 2011 to 2016, there was a 70% reduction in RMW
- Actions led by the nursing staff on the HUMC Green Team resulted in a 50% decrease in hazardous medical waste and a 34% reduction in OR waste
- Recycling at HMH has increased from 14% of the total waste in 2011 to 31% in April 2016.

Saving the Bees Bees are responsible for the vital

biodiversity of our planet, which sustains our food systems, accounting for one in every three bites of food we eat. Since bee populations have been declining in a phenomenon known as colony collapse disorder, HUMC has constructed **four** beehives on the roof, containing **50,000** bees, to support efforts in mitigating this environmental issue as well as provide the cafeteria with honey.







Cafeteria Initiatives Antibiotic-Free Meat

80% of the antibiotics used in the meat industry are the same as those used to treat human illness, according to Health Care Without Harm. Consumption may lead to antibiotic resistance, which affects our ability to treat certain infections that have previously been treated successfully. Due to the dangers that antibiotic-resistant bacteria pose to human health, 98% of the meat we provide is free of antibiotics.

Locally Sourced Produce

20% of the fresh produce that we offer is locally or sustainably sourced. Since the transportation of food is a major source of greenhouse gas emissions, this is an important step in reducing our footprint. This initiative also allows us to support local farms, upholding our dedication to serving our community.





Water Bottle Recycling Can



NSTRUCTIONS

WATER BOTTLE TRASH CAN

- Drill a small holes on the center of the cap and bottom of bottles.
- Cut string into 24, 4 ft. sections.
 Thread 4 water bottles onto each string.
- 4. Cut the wire into 3, 5.5 ft. sections.
 5. Bend each wire into equal size
 rings. Secure ends by twisting 1 in. of
 each wire end together.
- 6. To create the base, lay one of the rings on top of the piece of Tyvek and use hot glue to secure. Cut off excess Tyvek.
- 7. Assemble the can by securing the 4 dowels equidistant standing upright on the bottom Tyvek covered wire ring. 8. Place the second wire ring on the inside of the middle of the dowels and the third wire ring on top.
- 9. Use the needle to poke holes through the Tyvek base to thread one end of the water bottle strands through.
- 10. The the other end of the water bottle strand string to the top wire ring.
 11. Secure all contact points between materials.

MATERIALS

- · 100 water bottles
- · 2 sq. ft. Tyvek
- (x4) 3 ft. tall wood dowels 1/4 inch thick
- 16.5 ft of 16 gauge wire
- 96 feet of string
- · Sewing needle
- · Drill
- · Wire cutters
- · Hot glue gun
- · Hot glue sticks













Recycling Blue Wrap



Used to cover surgical equipment in transportation



15 minutes to create pillows



Donated cat beds to Montclair Township Animal Shelter





Acknowledgements





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Thank you!



PSEG

We make things work for you.