

Hackensack Meridian *Health*

**Making Sustainability part of your
Health System's DNA**

Kyle Tafuri
Vice President, Sustainability



Hackensack
Meridian *Health*

KEEP GETTING BETTER

Who We Are

18 Hospitals



3 Academic Medical Centers

1 University Teaching Hospital

8 Community Hospitals

2 Rehabilitation Hospitals

AND

1 Center for Discovery & Innovation

2 Children's Hospitals

1 Behavioral Health Hospital

1 Long Term Acute Care Hospital

1 School of Medicine



4,714

Licensed Beds



7,000+

Physicians



\$6.8B

Operating Revenue



36,000+

Team Members

Care Delivered in 2022



177,362

Patient Admissions



16,545

Babies Delivered



650,086

Emergency Visits



2,058,163

Outpatient Visits



103,669

Surgeries
(Inpatient and Outpatient)



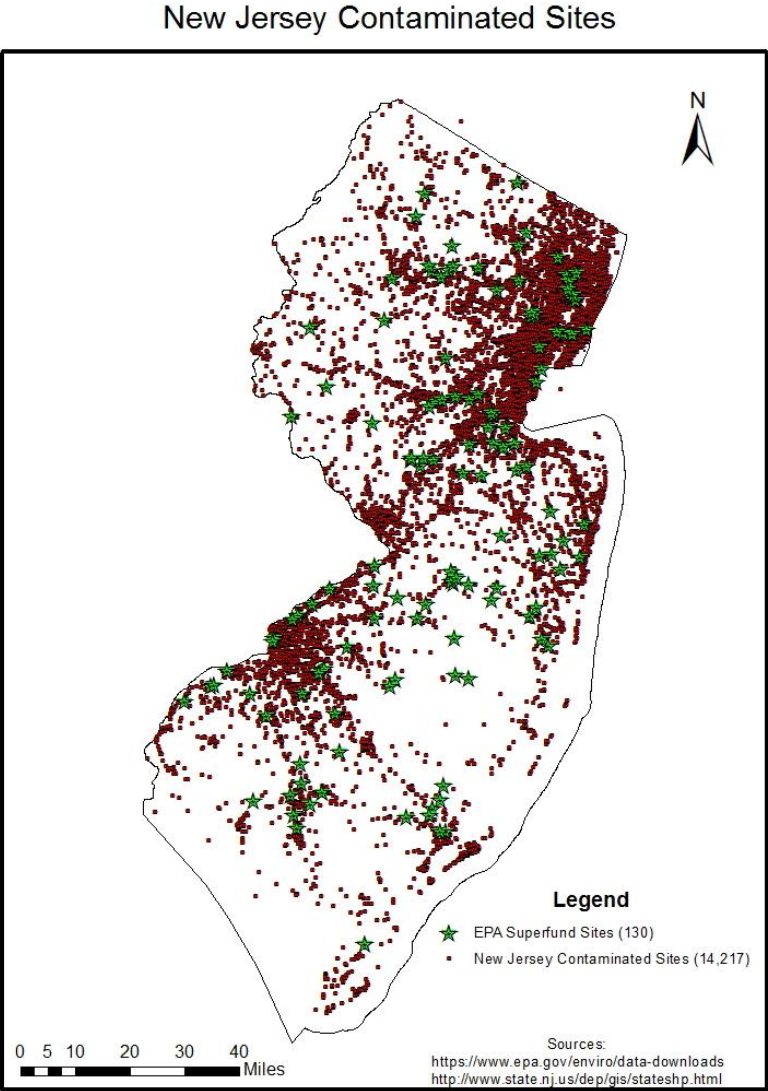
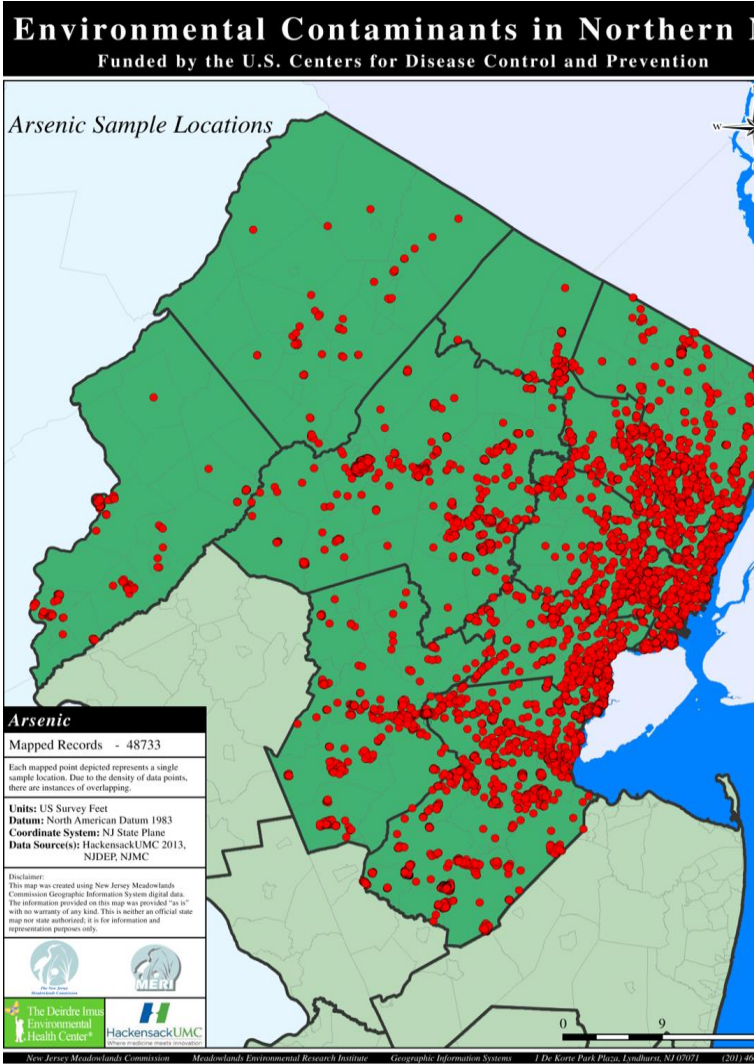
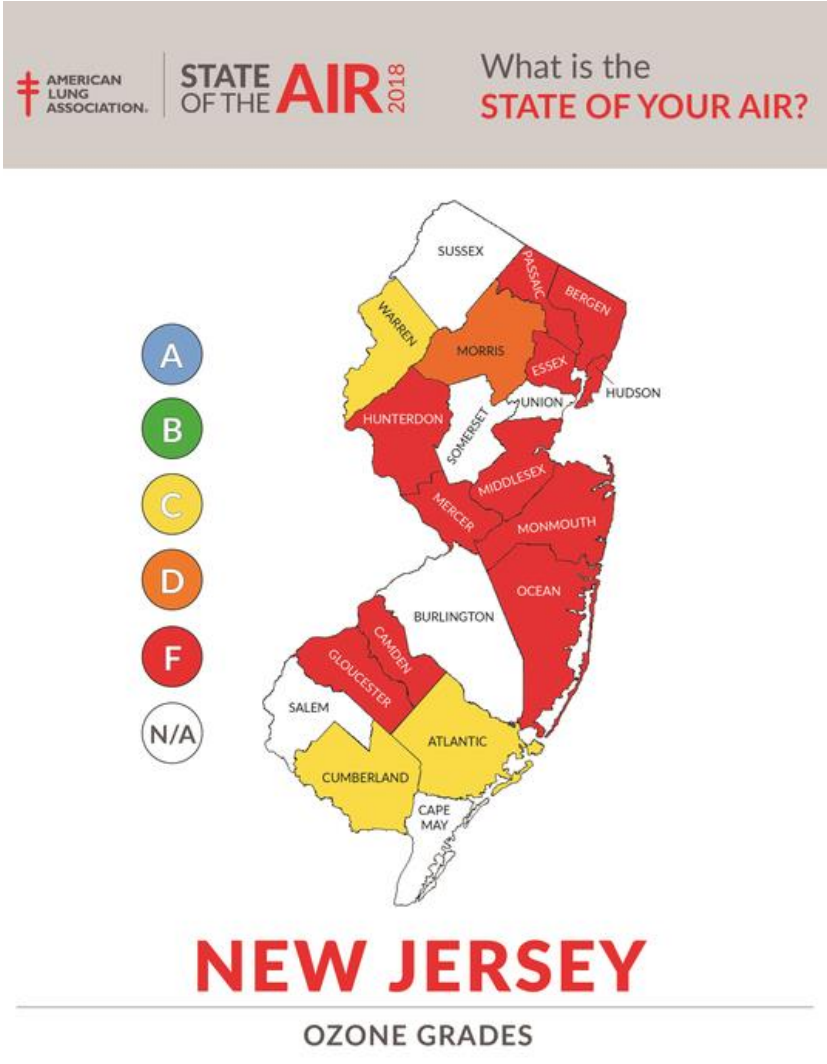
IF THE GLOBAL
HEALTH CARE SECTOR WERE
A COUNTRY, IT WOULD BE
THE FIFTH LARGEST
GREENHOUSE GAS EMITTER
ON THE PLANET

SOURCE: HEALTH CARE'S CLIMATE FOOTPRINT
How the health sector contributes to the global climate crisis and opportunities for action



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Health Equity - NJ



Health care must help fight climate change | Opinion

Robert C. Garrett Special to the USA TODAY Network

Published 11:23 a.m. ET Sept. 16, 2021

Sacking the competition: Hackensack-Meridian breaks sustainable food records

News posted by **Healthy Food Team** on **October 22, 2019**

Hackensack takes fight for safer chemical regulations to Congress

March 17, 2016

'The healthcare industry must lead the way'

Robert C. Garrett, Chief Executive Officer, Hackensack Meridian Health

Our Holistic Approach to Environmental Stewardship



ENERGY, WATER & WASTE REDUCTION

We are committed to reducing our environmental footprint while we deliver high quality care.



SUSTAINABLE FOOD

We offer locally-sourced, plant-forward menu options including antibiotic-free meat and poultry and sustainably-sourced seafood.



SAFER CHEMICALS

We strive to reduce exposures to potentially harmful chemicals to help ensure the well-being of our patients, visitors and team members.



RESPONSIBLE PURCHASING

We aim to source products and services that have a reduced effect on human health and the environment.



ADVOCACY & EDUCATION

Educate all, including students at our School of Medicine, around the unequivocal connection between human health and the environment.



School of Medicine - Call to Action

Dear Dean Boscamp and the Faculty of HMSOM,

We hope this letter finds you well. We are concerned members of the Health Policy and Environmental Health Interest Groups writing on behalf of the student body of the Hackensack Meridian School of Medicine (HMSOM). We are involved members of the HMSOM community and desire to communicate a pressing matter that warrants our school's collective attention and action. As an institution committed to excellence in medical education and patient care, we believe it is crucial for HMSOM to recognize the threat climate change poses to public health. We hope to solidify that our institution acknowledges the coming challenges within the state of New Jersey and the inevitable impacts on our healthcare system, but also seeks to be an agent of change. Given HMSOM's commitment to teaching the social determinants of health, it would be unfitting for us to not lead the way in lessening climate change's impact on the health of our state.



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Energy Progress

- Energy Efficiency Overview since 2011:
 - Total Investment: \$113,468,332
 - kWh reduction: 85,076,559
 - Therms reduction: 5,298,423
 - Annual \$ Savings: \$10,816,733



PSEG



**New Jersey
Resources**



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Continuous Monitoring



A new recommendation has been created for HUMC: CWP Ops (#4 vs. #6 operating with Chiller 1).

Afternoon Mark,

Monitoring (2) Chiller operations, we have been noticing when the plant operates Chillers 1&4 in parallel, this combination receives ~800+ GPM of Condenser Water Flow, which consumes ~23% additional CWP kWh vs when Chiller 1 operates with #6. I only mention this, as Chiller performance of the smaller electrics are very close, the auxiliaries are driving the optimal overall efficiency. If you are able to pickup the CWP savings (with #1 and 4 operating), you can save roughly \$655/Week (vs. the current configuration)

I'll continue to monitor and provide a follow up w/ the warmer weather.

Regards,

Chris Angerame



2022: \$672,000 Savings

Clean Energy

- On-Site Generation -

- On-Site Solar: 20 MW
- Battery Storage: 10 MW
- Annual Energy Savings to HMM: \$7.3 million
- Annual NJ SRECs to HMM: \$2.1 million

Inflation Reduction Act: Investment Tax Credit (“ITC”) - Not for Profits can receive

- 6% - Minimum Credit on eligible projects ITC
- 24% - Prevailing Wage ITC -
- 10% - Domestic Content ITC
- 10% - Energy or Coal Closure Communities ITC
- 10% - Low Income Communities
- 60% Total Investment Tax Credit

HMM, as the owner of the proposed Solar and Battery projects across the entire system, is conservatively estimating to qualify for 30%-40% ITC resulting in \$39.7 - \$50.1 million of direct receipt credits

Future Solar PV at HMM



Future Battery Storage at HMM



Physician Engagement - Pulmonologist



 **Ceres**

Clean Transportation: Cutting Medium and Heavy-Duty Diesel Pollution and Improving Health Equity

A dive into the inequitable impacts of pollution from medium- and heavy-duty trucks and the environmental justice benefits of clean transportation policies.

Webinar

April 29, 2021
3-4 pm ET
12-1 pm PT

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Air Pollution Increases Risk of COVID-19 Related Death

- England: particulate matter pollution = increased infectivity and COVID-19 deaths.
- Netherlands: a 1 micron/cubic meter increase in PM2.5 air pollution = 13-21% increase in COVID-19 deaths.
- United States: a 1 micron/cubic meter increase in PM2.5 air pollution = 11% increased risk of COVID-19 deaths.



Sustainability

HMH Network Goals

NAE Meats



2023 System KPI Goal:

Any site <40% must increase by 7%
Any site >40%, increase by 5%

Q4 Goals:

Raritan Bays = 50%
Palisades = 50%
Legacies = 65%

Meat Reduction, Plant-Forward



Q4 '22 Goal:
All sites fall **below .045 lbs** meat per total food + beverage spend.

Food Waste Reduction



Q4 '22 Goal:
Establish consistent tracking, determine baseline and set goals.

Local Purchasing



2022 Goal:
Each site to achieve 5% local purchases by April 2023 (PGH deadline)



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Plant Based

“It’s pretty simple, food is the problem, and plant based will be one of the solutions”



- > 1/3 of cancers in US may be preventable by improved nutrition
 - Cancer has strong & consistent association with obesity
 - Fruits & vegetables: consistent evidence for cancer reduction
- American Cancer Society recs:
 - Healthy weight, plants: fruits, vegetables, grains, cereals
 - Physical activity
 - Minimal EtOH
- WCRF/AICR: Cancer Risk Reduction
 - Avoid sugary drinks. Limit energy-dense foods.
 - Variety vegetables, fruits, whole grains & legumes
 - Limit red meat, avoid processed meats
 - Limit alcohol: Male 2, Female 1 / day
 - Limit salty & processed foods



Review

• Open Access •

A plant-based diet for the prevention and treatment of type 2 diabetes

Michelle McMacken, Sapana Shah

Division of General Internal Medicine, Department of Medicine, New York University School of Medicine, New York, USA

Abstract

The prevalence of type 2 diabetes is rising worldwide, especially in older adults. Diet and lifestyle, particularly plant-based diets, are effective tools for type 2 diabetes prevention and management. Plant-based diets are eating patterns that emphasize legumes, whole grains, vegetables, fruits, nuts, and seeds and discourage most or all animal products. Cohort studies strongly support the role of plant-based diets, and food and nutrient components of plant-based diets, in reducing the risk of type 2 diabetes. Evidence from observational and interventional studies demonstrates the benefits of plant-based diets in treating type 2 diabetes and reducing key diabetes-related macrovascular and microvascular complications. Optimal macronutrient ratios for preventing and treating type 2 diabetes are controversial; the focus should instead be on eating patterns and actual foods. However, the evidence does suggest that the type of fats (monounsaturated and polyunsaturated versus saturated and trans), and protein (plant versus animal) sources are important for the management of type 2 diabetes. Multiple potential mechanisms underlie the benefits of plant-based diets, including promotion of a healthy body weight, increases in fiber and phytonutrients, food intake, and reductions in advanced glycation endproducts, nitrosamines, and heme iron.

J Geriatr Cardiol 2017; 14: 342–354. doi:10.11909/j.issn.1671-5411.2017.05.009

WHO & United Nations: diets higher in plant foods

- effective for preventing chronic diseases and obesity
- more environmentally sustainable than diets rich in animal products

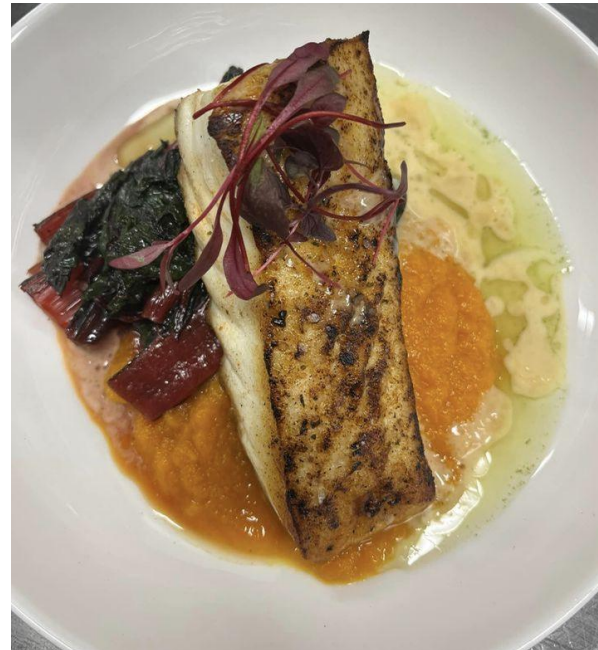
2015 United States Dietary Guidelines Advisory Committee

“The case for using a plant-based diet to reduce the burden of diabetes and improve overall health has never been stronger.”



Plant Forward

“It’s pretty simple, food is the problem, and plant based will be one of the solutions”



Anchors of the Community



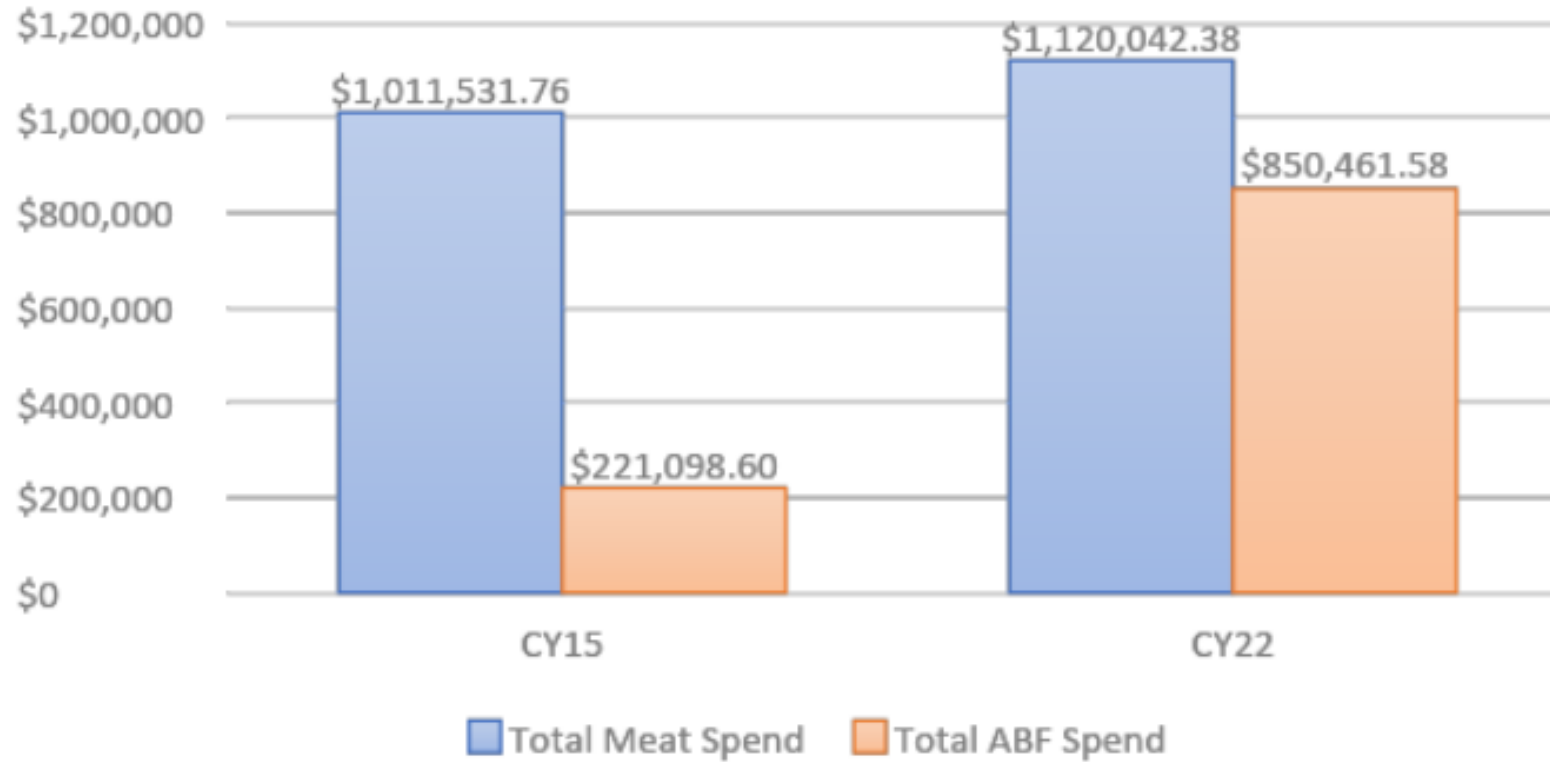
FDA report shows meat producers continue overusing antibiotics

Report shows no real progress to reduce antibiotic use in meat production



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HUMC ABF Meat Spend



Transforming Supply Chains



Hospitals Stop Purchasing Furniture with Toxic Flame Retardants

September 11, 2014 by Jessica Lyons Hardcastle



Advocate Health Care, Beaumont Health System, Hackensack University Medical Center, and University Hospitals will stop purchasing furniture treated with toxic flame retardant chemicals.

Combined, these four health systems represent 7,000 patient beds throughout Illinois, Michigan, New Jersey, and Ohio.

Each of the systems will specify with their suppliers that upholstered furniture should not contain flame retardant chemicals where code permits. Kaiser Permanente made a similar announcement in June. The five health systems spend nearly \$50 million a year on furniture for their facilities.

Commonly used flame retardant chemicals can pose a threat to human health and the environment.

This move is driven by a new California flammability standard, which allows furniture manufacturers to meet the standard without the addition of hazardous flame retardant chemicals.

The four health systems phasing out the purchasing of furniture with flame retardant chemicals are enrolled in the Healthier Hospitals Initiative (HHI), a national campaign aimed at improving environmental health and sustainability in the health care sector.

Market Transformation - Supply Chain

- Pre-September 2014 - 3 Manufacturers have product lists that meet HHI Criteria
- September 2014 - 6 major health systems sign letter committing purchasing HHI compliant furnishings
- April 2017 - 37 Manufacturers have product lists that meet HHI Criteria
- October 2018 - 80+ Manufacturers have product lists that meet HHI Criteria

Results

“Green OR” Efforts

- **\$1,253,904** saved by reprocessing medical devices
- **26,000** pounds diverted from landfill
- **\$352,789** saved from OR Kit Reformulation



Responsible Purchasing

- **58%** antibiotic-free meat + **28% local/sustainable food**
- **95%** of cleaning products third party certified green
- **100% Flooring and 97% furnishings meet healthy interior guidelines**



Energy Management

- **\$114 million** invested in infrastructure upgrades, saving:
 - **60 million kilowatt hours** of electricity
 - **1.5 million therms** of natural gas



PEER Gold Certification

- CUP at Hackensack is the 3rd hospital in the U.S. to receive **PEER Gold Certification**
- **HUMC (8x), JSUMC(2x), OUMC (2x) Top 25 Green Hospitals in U.S.**



Collaboration





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Operationalizing

- Several Executive Champions at corporate
- Executive Champion at each hospital
- Align with Organizational Committees
 - Facilities Value Analysis Team (Energy)
 - Purchasing Department Green Team (Safer Chemicals/Responsible Purchasing)
 - Environment of Care (Hazardous Materials, Waste Management)
 - Cancer Prevention and Control (Cancer Center) (Food, Safer Chemicals, Green Building)
 - Health Equity Councils (All of it)
- Aligning Contracts with Vendors - Financial Incentives
 - Waste, Housekeeping, Food Services, Energy

Thank you