

Scaling Sustainability: Organizational Strategies for Greener Health Care Systems



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HealthcareExecutives
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Panelists

- *Peggy Allen, MD, FASA, FAAP*
 - *Anesthesiologist, Department of Anesthesiology and Pain Medicine, Akron Children's Hospital*
- *Kara Brooks, SASHE, LEED AP BD+C*
 - *System Director, Sustainability, CommonSpirit Health*
- *Matt Cockerill*
 - *Director of Operations, Engineering Services, Nationwide Children's Hospital*

Moderator

- *Austin Wallace, MA, SFP*
 - *Senior Sustainability Specialist, American Society for Health Care Engineering (ASHE) of the American Hospital Association (AHA)*

Agenda

- Panelist and organization introductions
- Panel Discussion
- Q&A

Learning Objectives

- Describe how an organizational sustainability program is intertwined with the broader health care mission and operation.
- Explain the clinical and operational strategies to reduce emissions from waste anesthetic gases and evaluate their expected environmental and financial impact.
- Identify organizational levers such as policy and procurement that enable system level sustainability and outline steps on how to implement them.

Akron Children's

- Founded 1890
- Largest pediatric hospital in NE Ohio
- >500,000 patients/year
- >22,000 surgical procedures/year



Akron Children's Sustainability Journey

- 2021 Innovation Challenge
 - WAGER
- 2023
 - SPRUCE – Saving the Planet by Reducing Carbon Emissions
- 2025
 - Creeley Sustainability Effort Award
 - E-cylinder only delivery of N₂O
- 2026
 - Deactivation of centrally piped nitrous oxide (target)

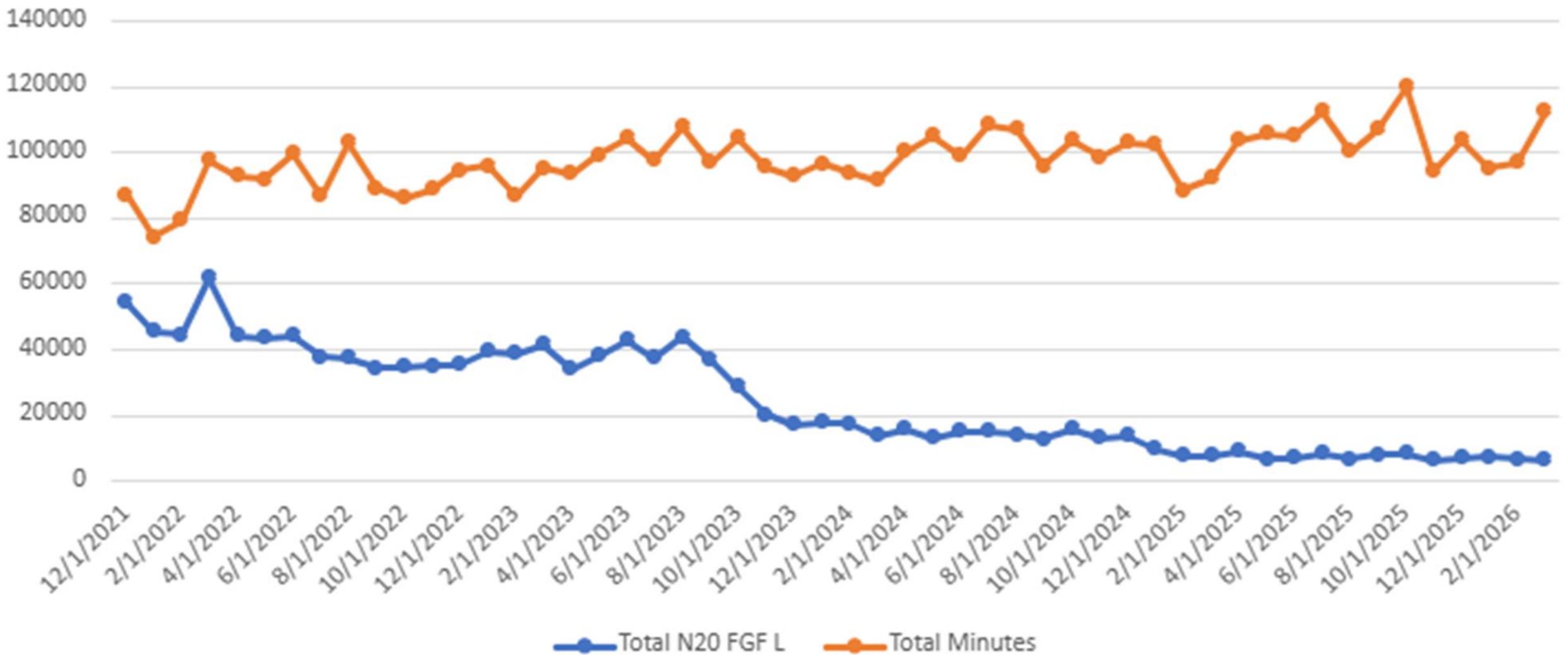


OR and the Environment

- Health care accounts for 10% of US GHG emissions
 - Up to 40% from ORs
 - 5-10% from Waste Anesthesia Gas
 - Nitrous oxide (N_2O)
 - GWP of 298 x CO_2
 - Atmospheric life of 114 years
 - Sevoflurane
 - GWP of 130 x CO_2
 - Atmospheric life of 1.1 years
- Solid Waste



Total N20 Liters and OR Minutes



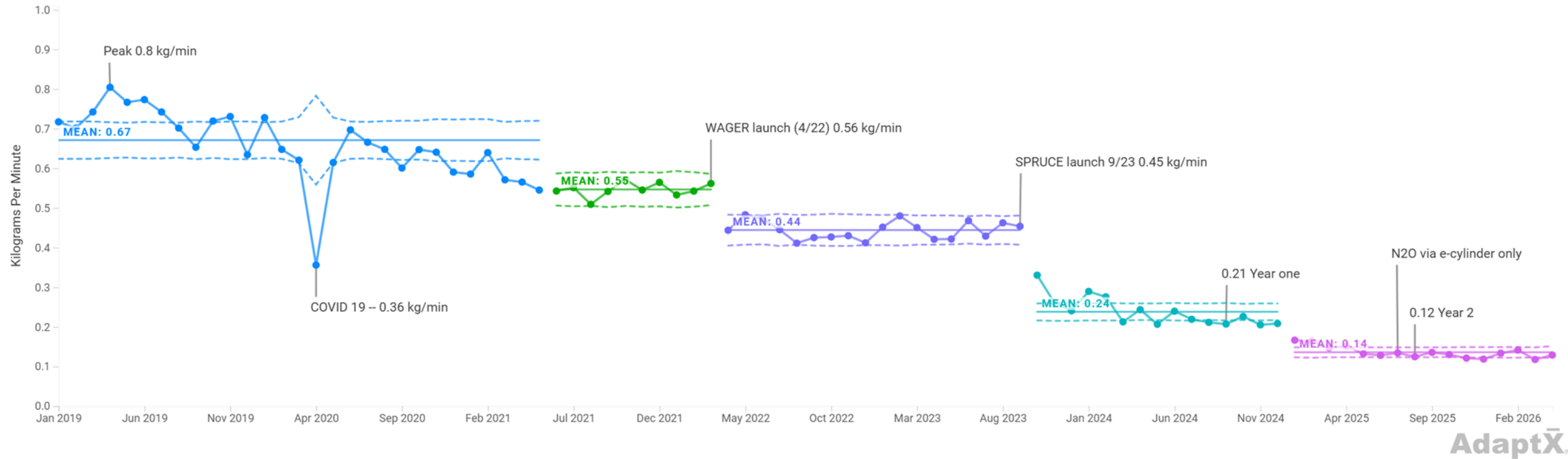
Month-...

Reduced Waste Anesthesia Gas Emissions

Average CO2 (Equivalent) kg/Min

Average CO2(e) kg/min of expired anesthetics, including N2O, from administered start to wheels out of the OR

● Baseline ● Socialization ● WAGER Improvement ● Project Spruce Phase 1 Improvement ● Project Spruce Phase 2 Improvement



AdaptX



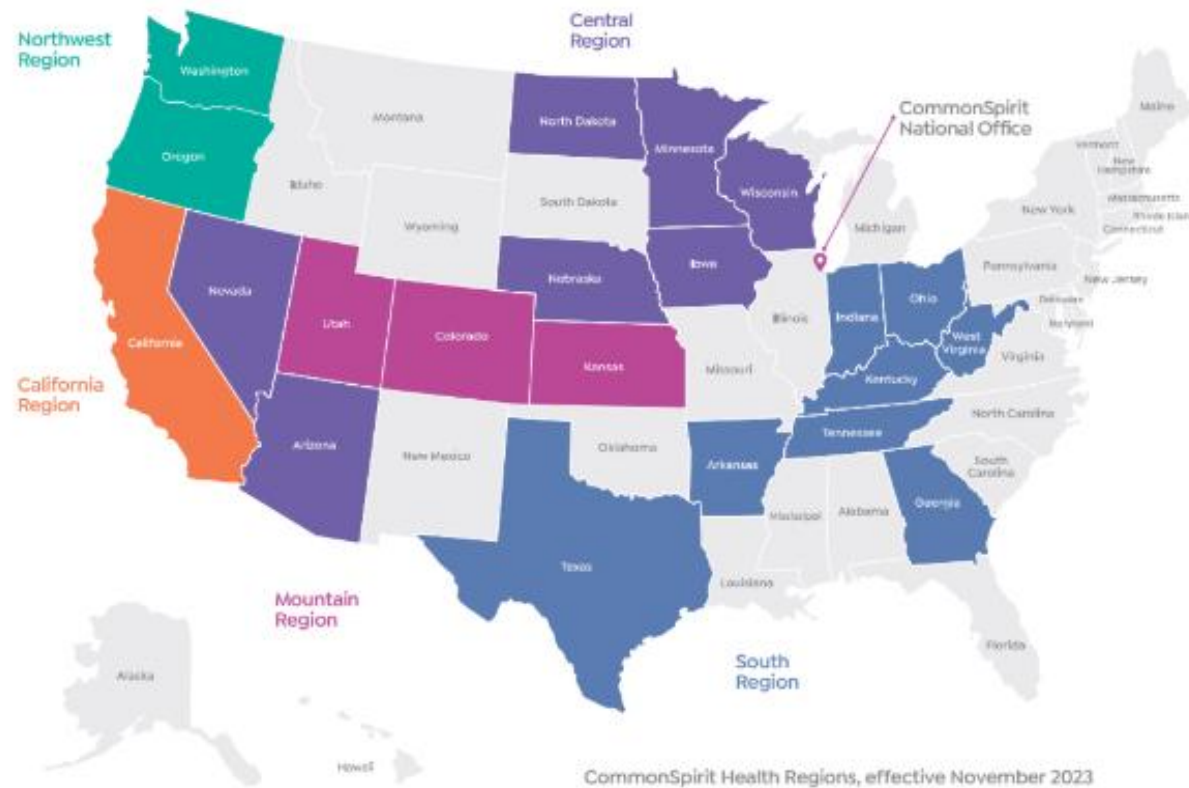
Akron Children's

How did we do this?

- Motivated individuals
- Supportive leadership
- Education
- Technology
- Engagement
- Reward and celebrate achievements
- Persistence
- Change management

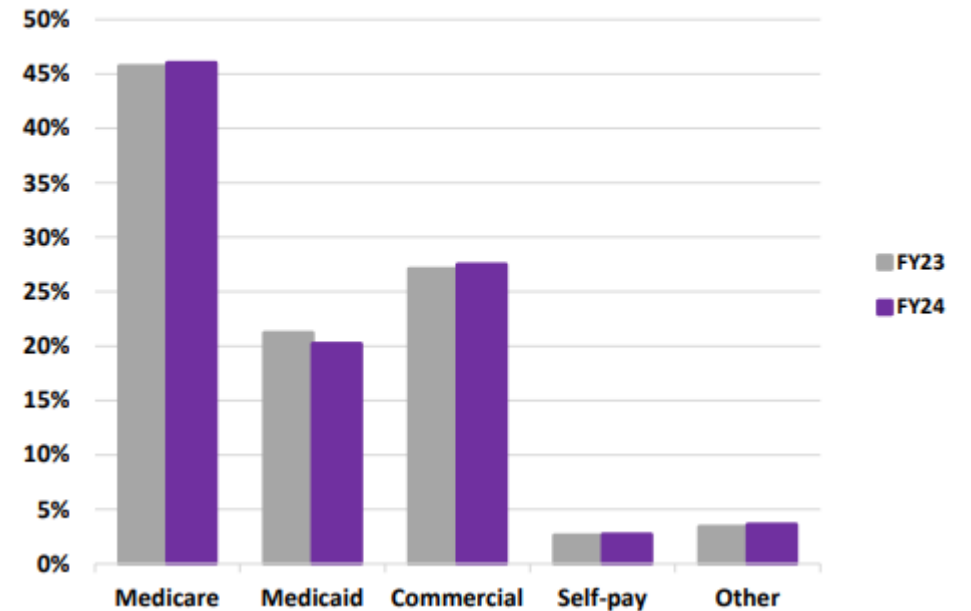


CommonSpirit Health



- In 24 states
- 2,300 care sites, including 170 Hospitals of which **30 are Critical Access Hospitals**
- 160,000 Employees; 25,000+ physicians and advanced practice clinicians

Gross Revenue Payor Mix



CommonSpirit Health's Commitment

To deliver on the net-zero by 2040 goal, CommonSpirit has developed a comprehensive strategy with three core pillars that sit atop the foundation of three key enablers.

Buildings & Operations

1. Building Performance
2. New Construction & Major Renovations
3. Renewable Energy Strategy

Supply Chain

1. Internal Assessment
2. Direct Vendor Engagement
3. Industry Collaboration

Community Resilience

1. Patient & Community Health
2. Emergency & Disaster Preparedness

IV. Enablers

A. GHG Data Reporting

B. Partnerships and Advocacy

C. Finance

Key Sustainability Initiatives - Buildings & Operations

- Focus on **utility usage and spend**; overall GHG reduction
- In FY25 - **\$1.9M net savings** = 9,500 (MTCO₂e)
- **Initiatives** include:
 - Retro-commissioning
 - LED lighting upgrades
 - Energy efficient equipments
 - PDC Standards
 - Green Leasing
 - EV Charging
 - Energy Procurement



Key Sustainability Initiatives - Supply Chain

- Dedicated resources to achieve **90% absolute reduction in Scope 3** emissions by 2040
- Engaged approx. **100 vendors** with highest GHG emissions
- Implemented **vendor education** campaign to support their own climate action and support ours
- Have our top 30 vendors commit to **establish science-aligned targets** for reducing their Scope 1 and 2 emissions



Key Sustainability Initiatives - Resilience

- **Geo-mapping** that overlays health, social and environmental vulnerabilities
- Community Health Needs Assessments - **CHNA** - to include environmental impact questions
- **Community Resilience Guide** - to make robust Emergency Operation Plans
- **Advocacy** Engagement & Leadership



Nationwide Children's Hospital

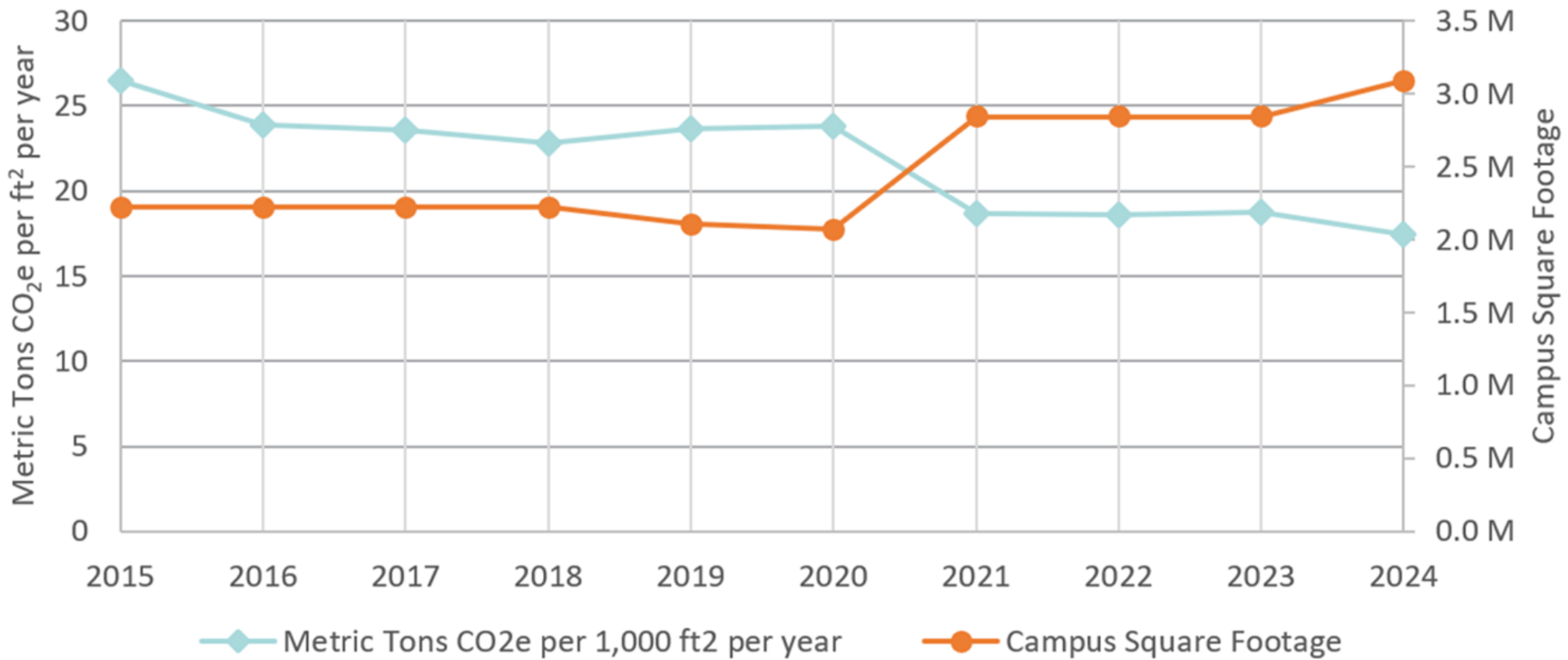
- 22 Main Campus Buildings
- 4 Million Sq. Ft. of patient care & support space
- 7.3 Million Sq. Ft. Owned Facility Space



Energy and Sustainability Initiatives

- Find Energy and Emissions Saving Opportunities
- Set Energy Management Goals and Strategies
- Practice Efficiency in Construction Projects
- Seek Out Sustainable Practices in Daily Operations
- Sustainable Purchasing Practices
- Apply for Recognition and Awards

NCH Campus Emissions Intensity



THE PATH TO ENERGY STAR

FEBRUARY 2026

35 Dec 2015

December 2025

86



87.7

Potential Score

	Cost Estimate	Score Impact	Simple Payback	Status	
D-AHU-10 CHW Valve Fix	Low/No Cost	0.1	Immediate	Complete	
LAC Cooling Tower Belts	Low/No Cost	0.1	Immediate	Complete	
LAC Unoccupied Settings	Low/No Cost	0.6	Immediate	Complete	
Conference Data Center Unoccupied Settings	Low/No Cost	0.4	Immediate	Complete	
BHP Unoccupied Settings	Low/No Cost	0.6	Immediate	Complete	
LAC AHU-03 SP Sensor Fix	Low/No Cost	0.1	Immediate	In Progress	Working with BCI to fix SP sensor on LA5 to reduce fan energy consumption.
WEP CHW Optimization	Low/No Cost	0.4	Immediate	In Progress	BCI implemented CHW Reset. Go is developing optimized staging sequence.
C AHU-6 CHW Valve Fix	Low/No Cost	0.2	Immediate	In Progress	BCI fixed leaking CHW Valve causing simultaneous H&C
Connect J Building Chilled Water Loop	<\$600,000	0.7	17 years	In Progress	Project underway – planning to complete in 2026.
Implement Unoccupied Settings D-AHU-14	Low/No Cost	0.1	Immediate	Identified	Cafeteria is Unoccupied 8P – 12:30A
Implement Unoccupied Settings D-AHU-13	Low/No Cost	0.2	Immediate	Identified	Space is being repurposed. Setbacks may be feasible.

Recently Completed In Progress Potential Projects

GREENHOUSE GAS EMISSIONS

FEBRUARY 2026

SCOPE 1



20.1k

Total Metric Tons CO₂e/year

- Direct Emissions
- From sources owned or controlled by the organization
- Primarily natural gas for boilers & furnaces
- Fleet vehicles
- Generators
- Anesthesia gas

6.5

Metric Tons CO₂e per 1,000 square feet



SCOPE 2



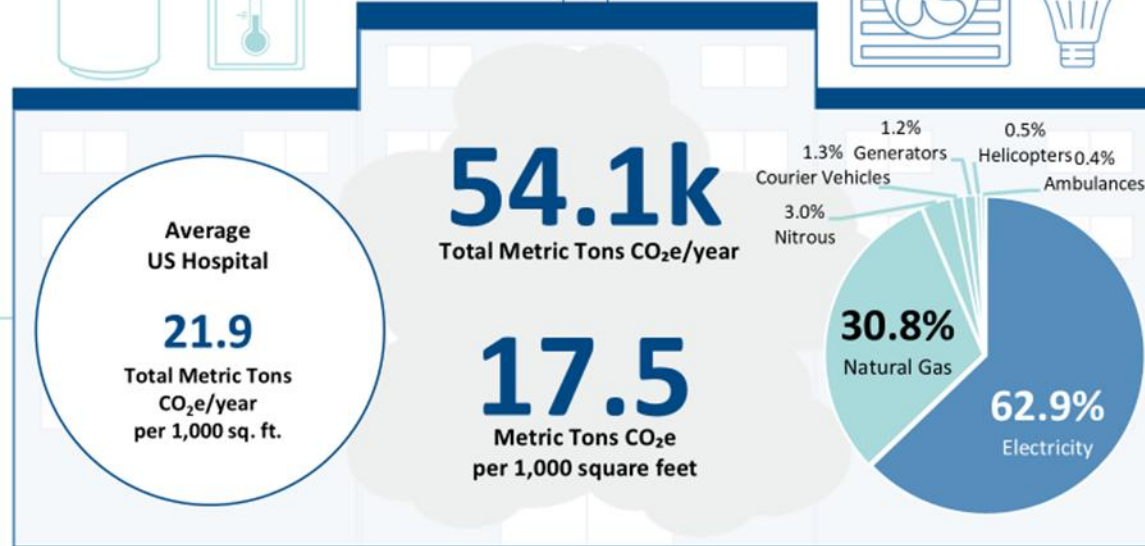
34.0k

Total Metric Tons CO₂e/year

- Indirect Emissions
- From the generation of purchased electricity
- Used to power lighting, computers, medical equipment, and HVAC.

11.0

Metric Tons CO₂e per 1,000 square feet



SCOPE 3



- Indirect Emissions
- All other indirect GHG emissions occurring as a consequence of business operations
- Not controlled by NCH.
- Scope 3 is often the largest source of GHG emissions.
- Employee commuting, patient travel, supplies, food, waste, water.

Not currently measured. Difficulty of measurement or no industry standard currently exists.



Path to Zero Carbon Emissions by 2050*

*Industry standard goal. Scope 3 not included.



Place GHG data at the core of business, construction, and equipment decisions.



Improve operational energy efficiency in facilities.



Purchase Renewable Energy Certificates (RECs) to offset scope 2 emissions.



Inventory & quantify anesthesia gas and find ways to reduce.



Install renewable energy generation sources.



Electrify fleet vehicles and HVAC.

Tips From A Facility Manager

Must Have's

- Support from Leadership
- Designated Funding
- Baseline Information
- SMART Goals

Nice to Have

- Third Party Support
- BAS Analytic Software

Panel Discussion

Live Q&A

Thank You



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