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A Sustainable Healthcare Partnership: How NOVO Health and BHSF Reduced Hospital Emissions through HLAC-Accredited Linen Management

A Data-Driven Blueprint for Scope 1 & 2
Greenhouse Gas Emissions Reductions and
Responsible Hospital Supply Chain Operations



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Executive Summary

Hospitals across the United States face unprecedented pressure to achieve ambitious climate targets while maintaining the highest standards of patient care and infection prevention. The Health Sector CARES Pledge offered by the organization Health Care Without Harm calls for hospitals, at a minimum, to reduce Scope 1 and 2 greenhouse gas (GHG) emissions by 50% by 2030 and achieve carbon neutrality by 2050, for example.

In line with this and other leader health sector climate targets, Baptist Health South Florida (BHSF) has committed to tracking and reducing all scopes of greenhouse gas emissions.

This white paper demonstrates how NOVO Health Services, through its Healthcare Laundry Accreditation Council (HLAC)-accredited, Textile Rental Services Association (TRSA) Clean Green Certified operations, serves as a critical partner to BSHF in achieving these goals. Together these two organizations are transforming hospital linen processing into a measurable lever for emissions reduction while also strengthening community engagement and responsible sourcing initiatives.

The Climate Imperative for Healthcare Linen Strategy

Regulatory and Voluntary Frameworks Driving Change

The healthcare sector accounts for 8.5% of U.S. greenhouse gas emissions, making it the fifth-largest emitter globally. Hospitals and healthcare facilities are incredibly resource-intensive operations, using substantial amounts of energy and water as well as generating waste. As a result, sustainability frameworks are increasingly focusing on sector-specific goals, strategies, and actions.

As a leading healthcare provider in south Florida with commitments to support community health

and wellbeing, Baptist Health South Florida's (BHSF) is committed to minimizing its greenhouse emissions. To accomplish this, BHSF adopted a comprehensive sustainability strategy in 2024, which includes conducting greenhouse gas (GHG) emissions inventories that establish baselines for systematic reductions. These emissions assessments are used to target the highest sources of GHG emissions and develop innovative programs and initiatives to reduce these sources.

How BHSF Has Tackled the Scope 1 and 2 Emissions Challenge

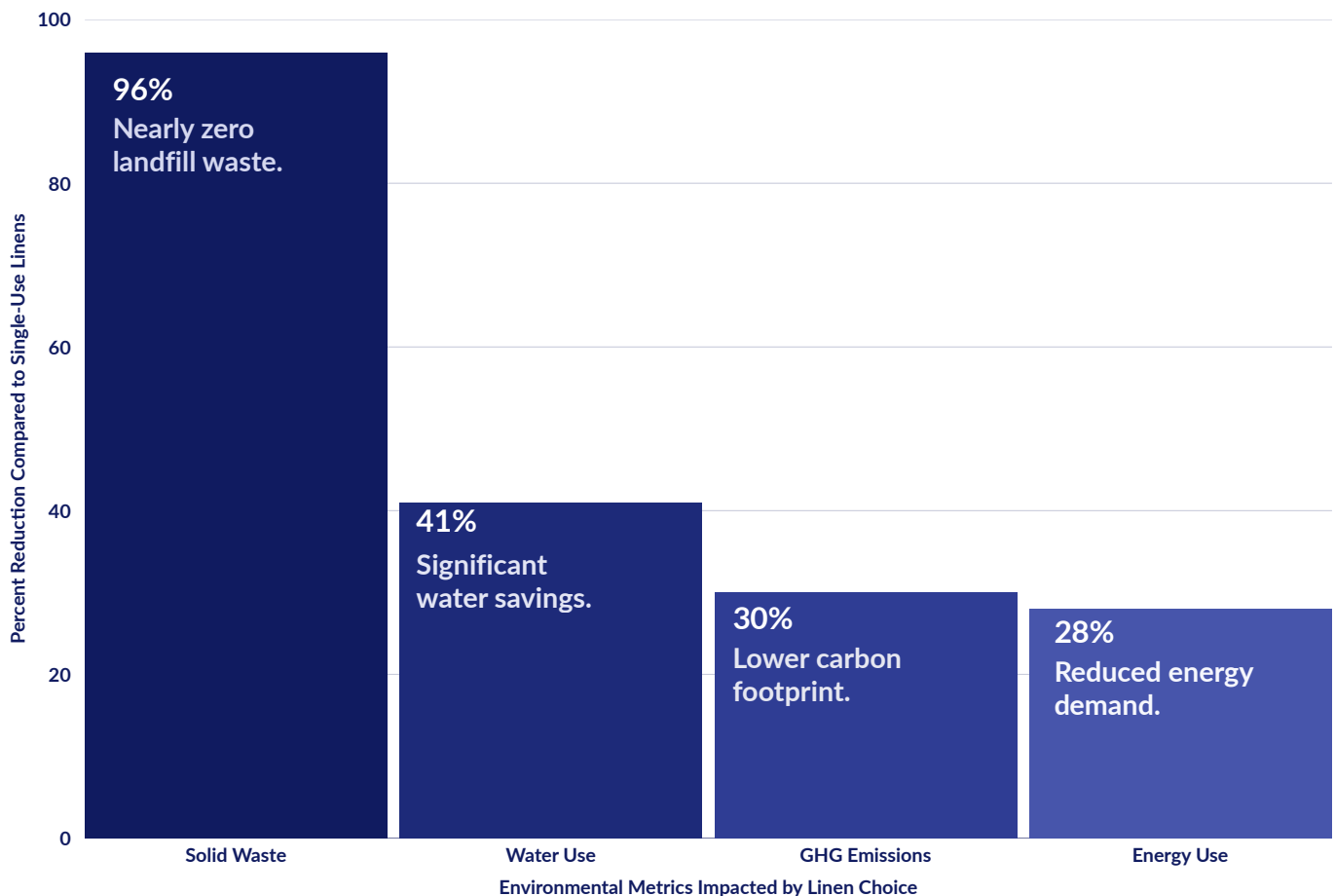
Hospital operations generate emissions through two primary pathways: Scope 1 emissions from direct facility operations including on-site boilers and medical gases, and Scope 2 emissions from purchased electricity, heating, and cooling. By comparison, recent life cycle assessments of hospital operations reveal that while Scope 3 supply chain emissions often dominate total carbon footprints, totaling about 60-75% of the total, Scope 1 and 2 emissions remain the most immediately controllable by hospital administrators.

Over the last several years, BHSF has invested millions of dollars in energy management efforts, including centralized building control and automation stations across its 12 hospitals and more than 200 outpatient facilities. This commitment to operational efficiency has led to BHSF achieving a substantial and consistent reduction in annual electricity consumption, including recent recognition by the American Society of Healthcare Engineers (ASHE) Energy to Care program.

Linen Management as an Emissions Reduction Lever

Hospital linen processing represents a significant but underutilized opportunity for emissions reduction. Studies demonstrate that reusable healthcare textiles reduce solid waste generation by 93-99%, water consumption by 41%, greenhouse gas emissions by 30%, and total energy consumption by 28% compared to single-use alternatives.

Environmental Benefits of Reusable Hospital Linens Compared to Single-Use Alternatives



Environmental impact comparison showing significant reductions when hospitals choose reusable linens over single-use alternatives

A comprehensive life cycle assessment of hospital laundry operations found average emissions of 0.225 kilogram (kg) carbon dioxide equivalent (CO₂e) per item and 0.508 kg CO₂e per kg of laundry, with natural gas consumption contributing 75.7% of on-site emissions. While these figures establish the environmental footprint of laundry operations in general, they also underscore why selecting the right processing partner is critical to lowering that footprint. Compared to the above statistics, single-use/disposable laundry item alternatives cause significantly higher per-use GHG emissions, even if reusable laundry were transported long distances and incinerated at the end of its lifetime.

The environmental benefits extend beyond direct processing and can offer other savings. For example, one reusable isolation gown **can replace 75 single-use disposables** throughout its lifecycle, leading to budget savings while at the same time generating 19.83 kg CO₂-equivalent compared to 108.98 kg CO₂-equivalent for equivalent single-use products.

By partnering with HLAC-accredited and TRSA Clean Green Certified providers such as NOVO Health Services, hospitals can capture these reductions at scale through advanced technologies (e.g., ozone wash systems, wastewater heat reclaim, and RFID-enabled inventory management) that go well beyond the performance of traditional laundry operations.

The Right Partner: NOVO Health Services Offers HLAC-Accredited Excellence in Healthcare Linen Management

Triple Certification Framework

NOVO Health Services distinguishes itself in the healthcare linen sector through a comprehensive certification framework that ensures operational excellence, sustainability, and infection prevention. The company maintains HLAC accreditation across all facilities, including for its state-of-the-art Miami plant, which achieved certification on its first inspection with zero observations requiring remediation.

The **HLAC accreditation standards** represent the industry's most rigorous framework for healthcare textile processing, covering facility design, operational practices, employee training, and customer relationships.

These standards align with federal regulations from the Centers for Disease Control and Prevention (CDC), Occupational Safety and Health Administration (OSHA), and other federal regulatory agencies to ensure hygienically clean textiles that meet or exceed infection prevention requirements.

Complementing HLAC accreditation, NOVO Health maintains **TRSA Clean Green Certification**, which validates the company's commitment to water and energy conservation and environmental best management practices. This dual certification framework positions NOVO Health as one of the few providers capable of delivering both clinical excellence and environmental sustainability.

Advanced Technology Infrastructure

NOVO Health's 80,000-square-foot Miami facility exemplifies the integration of sustainability and operational excellence. Opened in April 2022, the facility processes **40 million pounds of laundry annually with capacity for 60 million pounds**, serving both acute and sub-acute healthcare facilities throughout south Florida.

NOVO Health Services' Miami facility utilizes advanced automation and sustainable practices to process patient room linens for Baptist Health South Florida.



The facility incorporates several breakthrough technologies that directly support emissions reduction. **This technology includes:**

Thermal Iron Technology:

Energy-efficient ironing systems optimize temperature control and heat distribution, reducing energy consumption while maintaining textile quality and appearance. These systems integrate with the facility's overall thermal management strategy to maximize energy recovery and reuse.

Wastewater Heat Reclaim Technology:

The facility employs advanced heat recovery systems that capture thermal energy from wastewater to preheat incoming fresh water. These systems can recover up to 60% of original energy expenditure with payback periods of 12-24 months, while enabling up to 90% wash water recycling.

Radio-Frequency Identification (RFID) Tracking Systems:

Real-time textile tracking through embedded RFID tags enables comprehensive inventory management, reducing loss rates from 10-15% to under 3%. This technology provides item-level traceability throughout the cleaning lifecycle, supporting both cost control and compliance documentation requirements.

Ergonomic Design and Worker Safety

NOVO Health's Miami facility prioritizes worker safety and comfort through comprehensive ergonomic design features. In the challenging climate of south Florida, the facility incorporates cooling pipes and continuous cool air flow at each workstation, along with automation systems that reduce physical strain and repetitive motion injuries.

laundry work as inherently demanding, with potential for musculoskeletal disorders and repetitive stress injuries.

The facility's unique layout design addresses common industry bottlenecks by positioning dryers parallel to tunnels rather than in traditional U-shaped configurations, maintaining continuous production flow and reducing worker exposure to disruptions.

Driving Measurable Outcomes and Environmental Impact

Quantified Emissions Reductions

The partnership between BHSF and NOVO Health delivers measurable environmental benefits across multiple impact categories. Based on industry life cycle assessments and operational data, the transition to reusable linens processed through NOVO Health's Miami facility generates the following impacts:

Carbon Footprint Reduction:

Reusable hospital textiles processed at NOVO Health's Miami facility generate 30% fewer greenhouse gas emissions compared to single-use alternatives. For a health system of BHSF's scale (12 hospitals, more than 200 outpatient facilities), this outcome translates to significant absolute reductions in emissions.

Waste Diversion:

Reusable textiles eliminate 93-99% of solid waste generation compared to disposable alternatives. This reduction is in line with other solid waste generation efforts at BHSF including food waste composting, paper shredding and recycling, e-waste reduction, and more.

Resource Conservation:

The partnership achieves 41% reduction in water consumption and 28% reduction in total energy consumption compared to single-use textile procurement. NOVO Health's ozone wash systems and heat recovery technologies amplify these benefits by enabling cold-water processing and energy reuse.

Infection Prevention and Patient Safety

HLAC-accredited facilities like NOVO Health's Miami plant employ specialized processes that ensure reusable textiles meet or exceed infection prevention standards. The Hygienically Clean certification process includes three rounds of outcome-based microbial testing, facility inspections, and ongoing quality assurance protocols. These processes eliminate concerns about cross-contamination while providing superior protection compared to many single-use alternatives.

Supply Chain Resilience and Emergency Preparedness

The COVID-19 pandemic **demonstrated the vulnerability** of healthcare systems dependent on single-use textile supply chains. European healthcare systems, which utilize approximately 30% more reusable products than North American counterparts, avoided significant shortages due to their rotating inventory of reusable textiles. NOVO Health's Miami facility provides BHSF with enhanced supply chain resilience through local processing capacity, prewashed back-up linen reserves, and a strategically located storage facility outside hurricane-prone areas that supplies linen during emergencies. Together, these measures reduce dependence on global disposable textile markets while ensuring reliable service continuity.

NOVO Health Enhances Community Engagement and Responsible Sourcing

Local Economic Development

Both BHSF and NOVO Health are integral and long-term contributors to the South Florida economy. Rather than viewing environmental and community goals as constraints on patient care or business development, the partnership demonstrates how mission-aligned vendor relationships can simultaneously advance community impact, clinical excellence, cost control, and environmental stewardship.

NOVO Health's Miami facility **drives local economic development**, employing 186 team members and processing textiles for healthcare facilities throughout south Florida. This local processing model supports BHSF's responsible sourcing strategy while reducing transportation-related emissions compared to distant processing facilities.

With a 90% retention rate, NOVO Health fosters economic stability and career development for its workforce, with a focus on employee safety, strengthening both employee well-being and the broader south Florida community.

Recognizing that human health is closely tied to economic and environmental well-being, BHSF is committed to making an economic impact in the communities it serves. The organization benchmarks community impact in its sourcing processes such as spending with local, small, minority, disadvantaged businesses to align with its own strong ethical standards in employee benefit compensation and deep roots in the South Florida community. Further, BHSF is institutionalizing these values by embedding sustainability and local impact standards in its contracting and sourcing procedures.

Community Health and Environmental Justice

The partnership between BHSF and NOVO Health aligns with broader community health objectives by reducing environmental impacts that disproportionately affect vulnerable populations. Studies consistently demonstrate that climate change impacts — air quality degradation, extreme heat events, and water scarcity, to name a few — disproportionately affect low-income communities and communities of color.

By achieving measurable emissions reductions through linen management, the partnership contributes to broader regional sustainability and environmental justice goals.



NOVO Health Improves Technology Innovation and Reporting Capabilities

Real-Time Monitoring and Performance Analytics

NOVO Health's RFID-enabled tracking systems provide BHSF with unprecedented visibility into linen utilization patterns, enabling data-driven optimization of inventory levels and replacement cycles. This technology supports comprehensive reporting requirements for sustainability initiatives while identifying opportunities for continuous improvement.

The system's capability to track individual textile lifecycles — including wash cycles, usage patterns, and replacement schedules — provides essential data for lifecycle assessments and environmental impact reporting. This granular data supports BHSF's participation in voluntary reporting frameworks while enabling internal benchmarking and performance improvement.

Integration with Hospital Management Systems

NOVO Health's technology infrastructure integrates seamlessly with BHSF's existing hospital management and supply chain systems. This connection eliminates manual tracking requirements while providing automated updates for inventory management, billing reconciliation, and compliance documentation.

The partnership also leverages BHSF's recognized leadership in data-driven supply chain operations, building on the health system's collaboration with vendors like Medline to optimize operational performance through analytics integration.

Continuous Improvement and Innovation Pipeline

NOVO Health's recognition as TRSA's 2024 Plant of the Year reflects the company's commitment to continuous improvement and industry leadership. The facility's design incorporates flexibility for future technology adoption, including enhanced automation, additional energy recovery systems, and emerging sustainable processing technologies.

This innovation pipeline aligns with BHSF's broader approach to sustainability, which includes comprehensive facility energy management, renewable energy procurement, and integration of environmental considerations into all new construction and renovation projects.

NOVO Health Creates Forward-Looking Sustainability Strategies

Scaling Reusable Textile Programs

The success of the NOVO Health-BHSF partnership provides a roadmap for scaling reusable textile programs across the healthcare sector. Industry analyses suggest that increasing the share of reusable healthcare textiles from the current 10% market share to a minimum of 50% could deliver system-wide benefits including enhanced supply chain resilience, significant cost savings, and measurable environmental improvements.

Lawmakers in states like New York and California are considering mandates requiring minimum percentages of reusable personal protective equipment (PPE) in healthcare facilities, reflecting growing recognition of the benefits demonstrated by partnerships like the one between NOVO Health and BHSF. These regulatory trends create opportunities for health systems to gain competitive advantages through early adoption of sustainable practices.

Climate Resilience and Adaptation

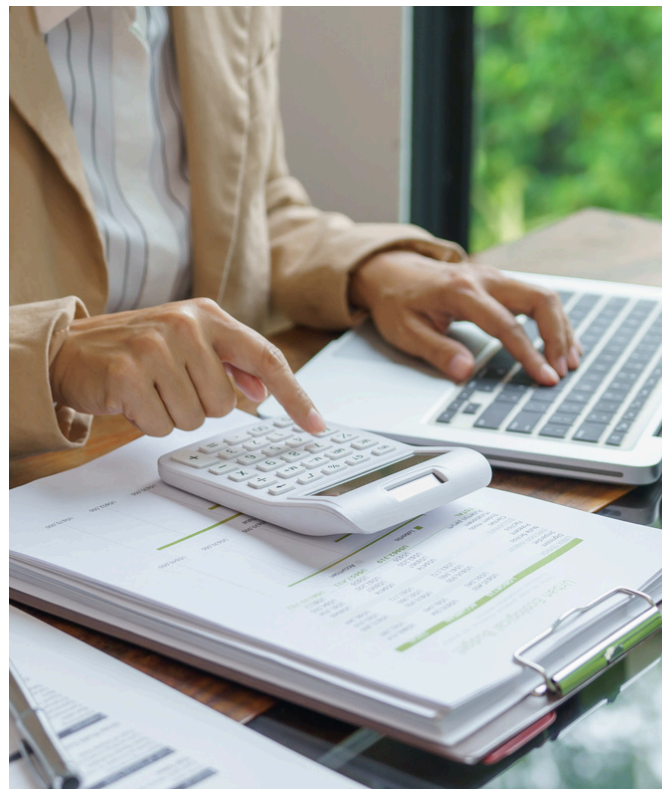
As climate impacts intensify, healthcare systems must build resilience while reducing their own contributions to climate change. The NOVO Health-BHSF partnership demonstrates how operational sustainability initiatives can simultaneously advance both adaptation and mitigation objectives.

Local processing capacity through NOVO Health's Miami facility enhances BHSF's resilience to supply chain disruptions while reducing transportation-related emissions. This model provides essential redundancy during extreme weather events that increasingly disrupt global supply chains.

Alignment with ESG and Investment Frameworks

Healthcare organizations face growing pressure from investors, regulators, and stakeholders to demonstrate measurable progress on environmental, social, and governance (ESG) objectives. The NOVO Health-BHSF partnership provides concrete metrics and outcomes that support comprehensive ESG reporting while delivering operational benefits.

The partnership's emphasis on local economic development, worker safety, and community engagement addresses social dimensions of ESG frameworks while achieving environmental objectives through emissions reduction and resource conservation. This integrated approach positions both organizations for success in an increasingly sustainability-focused healthcare landscape.



Conclusion: Reusable Linens Are a Mechanism for High-Leverage Climate Action

The partnership between Baptist Health South Florida and NOVO Health Services demonstrates that reusable linen management represents a high-leverage, low-disruption pathway for hospitals to achieve ambitious climate targets while maintaining clinical excellence and supporting community development. Through HLAC-accredited processing that meets the highest infection prevention standards, TRSA Clean Green Certified operations that deliver measurable environmental benefits, and local economic development that strengthens community resilience, this partnership provides a replicable model for healthcare sustainability leadership.

As healthcare systems nationwide confront the dual challenges of climate adaptation and emissions reduction, the documented outcomes from this partnership — including a 30% reduction in greenhouse gas emissions, a 41% reduction in water consumption, and a 93–99% reduction in solid waste generation — demonstrate a strong commitment to sustainability while continuing to advance patient care objectives.

Future healthcare sustainability leadership will require hospital executives to identify and scale partnerships that deliver measurable environmental benefits without compromising clinical outcomes or financial performance. The NOVO Health-BHSF model provides a proven framework for achieving these seemingly competing objectives through a mission-aligned vendor relationship that strengthens both organizations' capacity to serve their communities and contribute to broader climate resilience and environmental stewardship goals.

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