Jan. 26, 2017

“Sustainability 101: How Do I Start the Journey?”

Rick Beckler – Hospital Sisters Health System
John Baltosiewich – Holy Cross Health (Trinity Health)
HealthTrust 2017 Sustainability Webinar Series

Upcoming Sustainability Webinars:
• **Feb. 15:** National energy program
• **March 23:** Waste streams management (including pharmacy waste)
• **April 27:** Safer chemicals and healthier food
• **May 25:** Transportation, electric vehicle charging stations; LEED buildings, community connections
• **June 7:** Easy sustainability wins with EVS

Register for webinars at [www.healthtrustpg.com/education](http://www.healthtrustpg.com/education)
“Sustainability 101: How Do I Start the Journey?”

*Today’s presenters...*

**John Baltosiewich**  
Director of Supply Chain and Sustainability  
Holy Cross Health (Trinity Health)

**Rick Beckler**  
Director of Environment, Supply Chain Services  
Hospital Sisters Health System

Both presenters are members of HealthTrust’s ESN (Environmental Sustainability Network):
“Sustainability 101: How Do I Start the Journey?”

PART 1 – Rick Beckler

- Reverence for the Earth
- HealthTrust ESN
Reverence For The Earth

Hospital Sisters Health System
Getting Started

- Determine staff members with the expertise needed for the team.
- Establish roles and responsibilities of members.
- Establish communication processes.
- Assess where you’re at on the sustainability trail.
- Establish goals.
- Formulate a plan to accomplish the goals.
- Determine the time tables for accomplishing these goals.
- Establish resource needs.
  - Funding
  - Time commitment
Engage Community & Vendor Partners

• Ask them!
• Utilize them
  – Resources
  – Their passion
  – Their goals and objectives
  – Partnership
  – Recognition
HSHS Waste

Aggregate Normalized Waste Report

HSHS Waste Median

- % Recycling as a percent of total waste: 32.51 (HSHS), 31 (PGH)
- % RMW as a percent of total waste: 7.21 (HSHS), 6.8 (PGH)
- Pounds of RMW per staffed bed/day: 1.39 (HSHS), 2 (PGH)
- Pounds of total waste per patient day: 41.46 (HSHS), 44 (PGH)
- Total Tons of Waste per OR: 40.94 (HSHS), 86 (PGH)
Recycle your *unwanted* Christmas lights!

Monday, November 30, 2015 – Friday, January 15, 2016

Millions of tons of Christmas lights are discarded each year in the U.S. Help us do our part in keeping this recyclable product out of our landfills. All colleagues and their families are welcome to drop off unwanted working or nonworking Christmas lights for recycling.

**Drop Off Box locations:**
- HSHS St. Vincent – Next to the small electronics recycling box at the Skywalk Elevators.
- HSHS St. Mary’s – Next to the small electronics recycling box near the Main Atrium Elevators.
- HSHS St. Nicholas – Next to the small electronics recycling box across from the Ground Floor Visitor Elevators.
- HSHS St. Clare – Next to the small electronics recycling box on the Ground Floor.

Sponsored by the Green Team.
Recycling Product = Toner Cartridges

Copier and toner cartridges recycled with a HealthTrust contracted supplier
Activities

- Shoe Collection
- Office Supply Swap
- Girls Night Out
- Childhood Obesity programs/Community Benefit
- Increased activities for colleagues, such as wellness classes “Healthy Steps: Therapeutic movement to music to improve wellness, ROM, balance”
- NEW Planning – Christmas light collection open to public
- Farmers Market
  250 reusable totes
  How to store fresh foods without using plastic handout – Stericycle developed handout showcasing the impact of our efforts
Recycling for CY2014

- Cardboard - 120.95
- X-Ray - 25.868
- Sharps - 26.38
- Confidential - 79.1
- E-waste - 9.33
- Toner cartridges - 3
- Cooking Oil - 4.1

*Reported in tons

Single Stream Recycling in roll out phase right now. Soon the gaylords will be going away, and a dumpster will be in use, accepting more items!!

Colleague hired from UCP to handle the program.
Mission Integration Update

HSHS and its Local Systems continue to be a leader and one of a few Health Care Systems to be completely Mercury Free, System for Partnership or higher and System For Change recognized nationally by Practice Green Health for their collaborative efforts which include the recycling and reuse of equipment and supplies in the communities we serve to protect the environment. In FY2015, our Local Systems’ Reverence for the Earth teams accomplished the following:

- Recycled 1,438 tons (2,876,000 pounds) of cardboard, plastics, papers, cell phones, toner cartridges, electronics, glass and construction waste in year 2014.
- Reduced our municipal solid waste by 90 tons (180,000 pounds) due by utilizing reusable products and equipment.
- Reduced hazardous waste by 17 tons (34,000 pounds) by converting reusable health care products.
- Reduced surgical equipment waste pounds by 27 tons (54,227 pounds) by converting and utilizing recyclable equipment and switching away from single use products.
- Actively participated in the Hospital Sisters Mission Outreach program which achieved 53,550 items, recycled weight of 192,554 pounds and a value of $550,413.11 recycled and given another useful life.
- Community gardens and numerous healing gardens have been initiated with more than a ton of food donated to local families and food pantries.
- Three hospitals are recycling food waste with a combined weight reduction was more than nine tons recycled.
- Two Divisions are purchasing local “greens” from local, intercity and national acclaimed producer, Growing Power and Mid-West Produce.
- Other activities conducted in separate ministry events include: mercury thermometer exchanges; Farmers Markets; electronics recycling; cell phone recycling; Christmas lights recycling; kitchen fryer grease recycling; paint/ varnish and office supplies recycling.
- Reduced sugar sweetened beverage offerings in our cafeterias and initiated the Mind Full healthy choice program to include vending operations.

In addition, with broadened environmental insurance, HSHS continues to provide an environmental risk mitigation program. The risk exposures covered by Environmental Insurance are the following: Air Emissions; Indoor Air Quality; Drinking Water; Waste Water; Hazardous Waste; Medical Waste; Radioactive Waste; Chemical Use and Storage; Pesticides; Toxic Substances; Mercury Management; Emergency Response; Infection Control; Blood borne Pathogens; Tuberculosis Exposure; Pandemic; Hazardous Drugs; Radiation Safety; Storage Fuel Tanks (Above and Below Ground); and Soil Quality.

Narrative provided by Rick Beckler.
Supplier Profile Questions

1. Does your company have a Sustainability Officer or person responsible for Corporate Environmental Responsibility? (yes-no) If yes:
   - Provide full name
   - Provide title
   - Provide email address
   - Provide phone number

2. Is the above named person the contact we can put members in touch with regarding sustainability product questions? (yes-no) No have them contact:
   - Provide full name
   - Provide title
   - Provide email address
   - Provide phone number

3. Was the Sustainability Officer or person responsible for Corporate Environmental Responsibility consulted to complete this profile? (yes-no) No. Why not?

4. Have you made documented sustainability-related enhancements (i.e., reduced raw materials, packaging, chemicals, waste, energy) to your products over the last two years? (yes-no) Yes: Please describe

5. Do you offer clients reporting on their sustainable products spend for tracking purposes? (yes-no)

6. Has your organization received any type of national or industry recognition or awards for your sustainability or Corporate Environmental Responsibility efforts? (yes-no) Yes: Please describe
Questions?
“Sustainability 101: How Do I Start the Journey?”

PART 2 – John Baltosiewich

Holy Cross Germantown Hospital

Holy Cross Hospital
A Gateway to Sustainability
Contents

• Holy Cross Health
• Energy Efficiency
• Why Lighting Matters
• Infrared Scanning
• Kanban
• Red Bag Waste
• Disposing Blue Wrap Waste
• Focus Areas Moving Forward

Resources used: The Advisory Board Company, 2015, Healthcare Sustainability Initiatives, 30465
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Holy Cross Health, a founding member of Trinity Health in 2000

• **Holy Cross Hospital**, Silver Spring, Maryland
  - 495 Licensed Beds, Acute Care
  - Projecting 10,000 births in FY17 (July 2016 – June 2017)
  - All private room Patient Tower opened on November 1, 2015
  - Founded by the Sisters of the Holy Cross in 1962
  - LEED Certified

• **Holy Cross Germantown Hospital**, Germantown, Maryland
  - 100 Licensed Beds, Acute Care
  - Montgomery County’s first entirely new hospital in 40 years
  - Opened on October 1, 2014
  - LEED Certified

• **Holy Cross Health** serves our community with:
  - Seven community health centers
  - Acute Dialysis Center (at Holy Cross Hospital and in a health center)
Energy Efficiency

• Negative Environmental Impacts:
  – 8%: Percentage of greenhouse gas emissions that come from the healthcare sector
  – $1.1M: Cost of negative health impacts of emissions from a typical coal-powered, 200-bed hospital

• Avoidable Costs:
  – $13,611: Average annual energy cost per patient bed, per year
  – $600K to $1.8M: Average annual hospital savings due to energy consumption reduction from integration of mechanical, architectural, and central plant systems
  – $34K: Potential annual savings for an average 100,000 square foot hospital through commissioning—a process where engineers observe a building’s mechanical performance to ensure its systems are operating efficiently and appropriately

• Energy efficiency investments historically have a high ROI with a relatively brief payback period, while requiring little behavior change from staff and clinicians

• The First Five Steps in Energy Efficiency:
  – Retro-commission
    • Examine existing facilities
    • Identify and replace underperforming equipment
    • In FY16 and FY17, Holy Cross Hospital invested $2.3M in AHU (air handling unit) replacements
    • In FY15, Holy Cross invested $1.1M to replace two boilers first installed in 1962
Energy Efficiency, cont’d.

- **Improve Lighting**
  - Install efficient light fixtures and controls
  - Ensure appropriate lighting for the function of each space
  - In FY16, Holy Cross Hospital invested $35K in LED light bulbs for its two parking garages and received a $90K credit from its energy supplier
  - In FY16, Holy Cross Hospital placed LED light bulbs in exit signs and lighted way-finding

- **Reduce Load**
  - Reduce equipment use through the day: power down computer screens, look for “Ghost Energy”
  - Install occupancy monitors
  - Holy Cross Hospital requested FY18 Capital dollars to install motion detected light-sensors in offices
  - Holy Cross Germantown and Holy Cross Hospital installed motion detected light-sensors in all public and employee bathrooms (does not include patient rooms)

- **Optimize Airflow**
  - Adjust ventilation based on occupancy
  - Upgrade or adjust fan systems to maximize energy efficiency

- **Upgrade HVAC**
  - Set temperature range based on function of space and time of day
  - Upgrade to a new properly sized system to reduce energy requirement, noise and maintenance needs
Lighting the Path to Sustainability

- **Opportunity for Savings**
  - $150K-650K: Annual potential savings from lighting optimization due to lower maintenance costs, improved health outcomes, and reduced energy usage

- **The Dark Side of Lighting**
  - 43%: Proportion of electricity that is used for lighting
  - 27.5 kWh: Annual average hospital electric usage per square foot
  - The environmental impact of energy use equates to more than 10 million pounds of CO2 released into the atmosphere

- **First Steps Toward Lighting Savings**
  - Shut off the lights
    - Potential to save $10K annually by shutting off 20% of the lights in the hospital from 1 a.m. to 5 a.m., with a payback period of less than one year
    - Working with Facilities Management and Security to audit which of our lights can be switched off between 1 a.m. and 5 a.m.
  - Install LEDs wherever possible
    - Small capital outlay with potential energy supply company rebate
    - Holy Cross Hospital expects to save $15K a year from switching to LEDs in exit and lighted way-finding signs
Lighting the Path to Sustainability, cont’d.

• Do you have windows? Try these suggestions:
  – Bring in non-allergic plants to patient rooms and public areas
  – Prevent glare by using matte paint on walls and to increase indirect light
  – Reorganize rooms: Organize patient rooms, offices and public spaces to allow natural light to have the greatest effect
Infrared Scanning (IR)

- IR is the act of measuring the heat output of atomic components in movement. Scanning an electric panel with loose connections will show up as a “hot spot.” Also used to detect structural weakness due to water/rot damage and energy leaks

- Opportunity for Savings
  - $50K+: Average savings from preventing a motor or transformer burnout due to an unbalanced load
    - In FY15, Holy Cross Germantown paid $120K to repair two unbalanced transformers
  - $10K: Annual potential savings from the detection of steam leaks
  - $100-$500K: Annual potential savings from regular IR scanning due to saved energy and equipment failure avoidance

- Environmental Impact
  - $460/kWh: Savings per temperature anomaly found
  - 6,600 kWh: Average energy savings per temperature anomaly found. This equates to removing one car off of the road
Infrared Scanning (IR), cont’d.

• Three Steps to Begin IR in Your Facility
  – Buy or Build?
    • Depending upon the size and condition of your facility, it may make sense to buy IR camera (~$30K) to build internal capability or to contact out services (~$600/hr.)
    • Holy Cross Health requested FY18 Capital dollars to purchase an IR camera
  – Regular Scanning
    • Frequent scans will detect issues earlier and may prevent future repairs. The Advisory Board Company recommends an annual scan if the services are contracted out
  – Proactive Repair
    • Use temperature anomalies to identify problem areas. Prioritize replacing or fixing equipment that is close to failure
Kanban

• **Negative Environmental Impacts**
  - 250M pounds of unused pharmaceuticals are released into the water supplies by U.S. healthcare facilities each year
  - 5,332 pounds of waste reduction from one medical center after reformulating operating room packs

• **Opportunity for Savings**
  - $250K to $750K potential savings by employing Kanban to maintain supply inventories across departments, allowing hospitals to efficiently track and reorder supplies
    - Holy Cross Germantown opened with a fully implemented, visual two-bin Kanban system
    - Holy Cross Hospital is 75% completed with converting to a visual two-bin Kanban system
Kanban, cont’d.

• Three Steps to Begin Kanban Implementation
  – Assess Supplies
    • Audit supply rooms by examining use of each product
    • Group and categorize items according to frequency and type of use
    • Divide each supply item into two bins
  – Optimize Quantities
    • Examine average usage for each item to determine optimal supply quantities
    • Estimate supply stock for each item, including a main supply in one bin of four days maximum and a one-day supply in the second bin
  – Implement RFID (not yet implemented at HCH)
    • Add RFID cards to each pair of supply bins
    • Place an RFID reader in each stock room to automatically reorder supplies
    • Train staff to pull RFID cards when first supply bin runs out and drop cards in reader
Kanban, cont’d.

• How the Visual Two-Bin Kanban System Works
  – PAR levels are set for each item (how much should be available at any given time). When an item falls below PAR it is replenished
  – Both bins are filled to a set fixed quantity. When one bin is empty, it is moved behind the full bin and a card is flipped on the bin. Empty bins signal supply chain to refill to fixed quantity. While waiting for refill, inventory is pulled from the other bin

• Pros
  – Implementation of a new system is not required, just re-organization/training
  – Requires fewer trips to the supply room
  – Reduced cycle counting lowers labor cost
  – High reliability of maintaining adequate stock
  – Efficient stocking system reduces waste of expired, unused products

• Cons
  – Requires a regular, physical count of supplies
  – Counting and restocking daily can contribute to higher labor costs
  – Upfront capital purchase of bins/shelving units. Hospitals may require new/retrofitted supply rooms on patient floors
  – RFID requires capital and labor costs
Red Bag Waste

Red Bag Waste (Regulated Medical Waste) is biohazardous waste that is capable of producing an infectious disease.

Environmental Impact:
- 32 pounds: Average amount of total waste generated per hospital bed per day
- 30%: Estimated amount a typical hospital can reduce is RMW

Actions to Reduce Red Bag Waste
- Assess the situation and scope the problem, analyze cost and benefits
  - Perform a cost/benefit analysis of RMW streams to deploy a targeted solution and track results
- Simplify Waste Segregation
  - Provide the proper tools for employees to easily implement waste segregation. Work with department heads to determine the types and volumes of waste generated
Red Bag Waste, cont’d.

• Actions to Reduce Red Bag Waste
  – Optimal Container Placement/Size
    • Establish centralized bin locations or remove containers from areas where they are unnecessary, such as patient rooms.
    • Holy Cross Hospital is conducting a study in the ED where nurses are responsible for removing red bag waste (each bay supplied with a roll of red bags) and placing in a centrally-located bin
  – Review Specialty RMW Streams
    • Critically examine sharps management, prioritizing safety.
    • Consider a reusable sharps container program.
    • HCH employs a reusable sharps container program
  – Communicate with Waste Management Vendor
    • Compile a written protocol for any segregation issues (liquid waste, chemo).
    • Develop a contamination response plan, a waste monitoring form, and a mechanism to report concerns
Red Bag Waste, cont’d.

• Audit what goes into your Red Bags: Most waste management companies will conduct an audit for your facility
  – Inappropriate Red Bag Waste: Garbage, Sharps, Pathology Specimens, Hazardous Waste, Medication, Gloves (no blood)
  – Holy Cross Hospital is currently auditing its ED Red Bag Waste

• Reducing Misuse of Red Bag Waste Containers
  – Removing RBW from Patient Room
    • Nurse places RMW in individual Red Bag, not a container in the patient room. Nurse immediately removes red bag from room and places in Soiled Storage
    • Centralized storage of RMW. Lower labor and more frequent removal of RMW
  – Size red bag containers at eight gallons or less
  – Place signage directly on the lid and clearly display biohazard label
Blue Wrap Waste

- Blue Wrap is a polypropylene that looks similar to cloth. It is used to wrap medical instruments before sterilization. While it can be recycled, it cannot be reused in medical applications. Recycled blue wrap is used in other recycled products.

- Environmental Impact
  - 19%: Blue wrap comprises about 19% of surgical waste, about 5% of hospital waste
  - 15%: Percentage of total hospital waste attributed to recyclable plastics like blue wrap

- Potential Savings
  - 94%: Reduction is disposable cost by recycling blue wrap, compared to including it in normal waste streams
  - $20K to $80K: Average potential savings through blue wrap recycling or reduction

- Steps to Reduce Blue Wrap Waste
  - Seek recycling vendors - Find local recyclers who process blue wrap. If no local vendors are available, costs may be negated by shipping used blue wrap to a recycler

- Stakeholder Feedback
  - Discuss options and potential roadblocks with nursing, central sterile and supply chain. Sterilizers must be part of the conversation: Whether the goal is to recycle blue wrap or reduce use of blue wrap by using other products

- Consider Alternatives to Blue Wrap
  - Consider using cloth or hard metal surgical cases in place of blue wrap
  - Blue wrap alternatives can create a reusable solution to reduce usage of blue wrap by up to 70%
Blue Wrap Waste, cont’d.

- Incorporate blue wrap recycling into operations
  - Set up bins in surgical spaces and consolidate blue wrap in a central location
  - Consider the need for a compactor or substantial storage space due to the volume of blue wrap when planning a recycling program
- Purchase cloth or surgical cases for sterilization
  - Calculate quantity of cloth or surgical cases required for sterilization of surgical instruments
  - Use savings from reduced waste costs and blue wrap costs to pay for purchase
- Holy Cross Health will begin a study of blue wrap usage and recycling in FY17 Q4
- Companies that support blue wrap recycling
  - CalRecycle (California only)
  - HPRC
  - Halyard (formerly Kimberly-Clark)
    - Offers “Blue-Renew,” a program that connects hospitals with recyclers to save money through blue wrap recycling
  - Zeus Recycling
    - Offers extensive blue wrap services
    - Offers balers to compress blue wrap and has nationwide pickup for blue wrap from hospitals
Sustainability Actions Completed by Holy Cross

- LEED Gold Certification Holy Cross Hospital and Holy Cross Germantown
- New South Building Central Utility Plant—Efficient Heating, Cooling and Emergency Power
- AHU replaced in legacy Holy Cross Hospital building
- New LED Lighting Installation in Parking Garage and Exit/Way-finding Signs
- Visual Two-bin Kanban Inventory System Regulated Medical Waste (RMW)
- Green Roof Implementation
### Holy Cross Green Focus Areas Moving Forward

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<th>Energy</th>
<th>Purchasing</th>
<th>Waste</th>
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<tbody>
<tr>
<td><strong>Lighting:</strong></td>
<td><strong>Surgical Device Exchanges:</strong></td>
<td><strong>Red Bag Waste:</strong></td>
</tr>
<tr>
<td>• Shut Off 20% of lights from 1am to 5 am</td>
<td>• Sell unused surgical inventory that will not be used or will expire</td>
<td>• Review RMW streams with responsible vendor</td>
</tr>
<tr>
<td>• Install LEDs in Exit Signs</td>
<td>• Switch lights from T12 to Super T8 Lighting</td>
<td>• Discuss areas of improvement</td>
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<tr>
<td>• Switch lights from T12 to Super T8 Lighting</td>
<td>• Track progress &amp; report success</td>
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<tr>
<td><strong>Energy Efficiency:</strong></td>
<td><strong>Reformulate OR Packs:</strong></td>
<td><strong>Blue Wrap Waste:</strong></td>
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<tr>
<td>• Retro commission facility</td>
<td>• Identify supplies in surgical packs that are unused/wasted</td>
<td>• Recycle blue wrap to reduce unnecessary additional cost of processing it through the normal waste stream</td>
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<tr>
<td>• Ensure appropriate space lighting</td>
<td>• Work with vendor to remove unused supplies in surgical pack</td>
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<tr>
<td>• Install occupancy monitors</td>
<td>• Adjust fan &amp; ventilation systems</td>
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<td><strong>Reprocess Medical Devices:</strong></td>
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<tr>
<td><strong>Infrared (IR) Scanning:</strong></td>
<td>• Donate supplies to charities &amp; save on waste processing costs</td>
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<tr>
<td>• Scan for loose wires/unbalanced electrical loads</td>
<td>• Purchase and/or reprocess medical devices where possible</td>
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<tr>
<td>• Make repairs proactively to avoid equipment failure and the cost of associated downtime</td>
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QUESTIONS?

Thank you…

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HealthTrust Sustainability Resources
https://members.healthtrustpg.com/
Member Portal

- Sustainability resources added to the Member Portal
- Now three ways to find Sustainability info from the home page
New graphic bars created for easy recognition of sustainability initiatives on:

- Sustainability page
- Related contract pages (i.e., food, FIS)
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