Sustainability in Healthcare

Presentation at the University of Rochester

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Agenda

1. About NYSP2I
2. My Background
3. Sustainability - General
4. Sustainability - Healthcare
5. Examples of work done
6. Resources
7. Q&A
New York State Pollution Prevention Institute (NYSP2I)

Vision & Mission

**Vision:**
The vision of the NYS P2I is to foster the transformation and development of sustainable businesses and organizations in New York State in a collaborative program committed to making the State a leader in environmental stewardship.

**Mission:**
The mission of the Institute is to provide a high-impact, comprehensive and integrated program of technology research development and diffusion, outreach, training and education aimed at making New York State more sustainable for workers, the public, the environment and the economy through:

- reductions in toxic chemical use
- reductions in emissions to the environment and waste generation
- the efficient use of raw materials, energy and water
NYSP2I - Core Programs

- **Research & Development**
  - Led by Technical Advisory Committee (TAC)
  - Four Partner Universities:
    - Clarkson
    - RIT
    - RPI
    - University at Buffalo
  - Short & Long-term research

- **Direct Assistance**
  - Facilitate the use of P2 for solving environmental problems
    - Assessment & Implementation
    - LE2: Lean/Energy/Environment

- **Community Grants**
  - Provide financial & technical support to community organizations
    - Raise awareness & understanding of P2

- **Professional Training/Outreach**
  - Workshops & Training
    - Areas of interest for stakeholders
    - Specific Training
      - Environmental Health for New Parents
      - Green Cleaning
      - Life-Cycle Assessment

- **Sector Projects**
  - Projects that have the potential to impact NYS on a high level
    - Dry Cleaning
    - Farm to Fork
    - Healthcare
    - Green Buildings

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Green Initiatives

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New York State Pollution Prevention Institute

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Sustainable Supply Chain & Technology Program

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My background

Role at NYSP2I:
- Senior Engineer/Interim Business Manager
  - Strategy development
  - Project Management
  - Proposal writing/development
  - Host industry workshops/roundtables
  - Data analysis
  - Technology/industry research
  - Publications and Conferences
  - Day-to-day operations

Education:
- M.E. Mechanical Engineering
- M.E. Engineering Management
- MBA, Finance & Public Policy

Publications:
- Evolving Role of EHS Manager in Industrial Sustainability Programs — Case Studies Incorporating a Pollution Prevention Approach to Problem Solving. Journal of Environmental Sustainability – Williamson, Fister, Ramchandra.
Sustainability – The Concept

Brundtland Commission:

• Convened by United Nations in 1983

• Created to address growing concern *about the accelerating deterioration of the human environment & natural resources and the consequences of that deterioration for economic & social development*

• Recognized that environmental problems were global in nature & determined that it was the common interest of all nations to establish policies for sustainable development

“..*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*”

![Venn Diagram showing Economic, Social, and Environmental intersections]
Sustainability – The Reality

• Is inter-disciplinary
• Is collaborative - needs cooperation and teamwork
• May need problem ‘re-framing’
• Requires a deep understanding of all stakeholders
• Is iterative
• Requires critical thinking
• May require multiple attempts
Sustainability Continuum

Available at: http://scholarworks.rit.edu/jes/vol2/iss2/2
Healthcare Value Chain

Information Flow

Producers
- Drug Mfrs.
- Device Mfrs.
- Medical-Surgical Suppliers
- Equipment Makers

Purchasers
- Wholesalers
- Mail-Order Distributors
- Group Purchasing Organizations (GPOs)

Providers
- Hospitals
- Physicians
- IDNs
- Pharmacies

Fiscal Intermediaries
- Insurers
- HMOs
- Pharmacy Benefit Managers

Payers
- Government
- Employers
- Individuals
- Employer Coalitions

Product/Service Flow

Adapted from The Health Care Value Chain by Lawton R. Burns and Wharton School Colleagues.
A Snapshot of the ‘Providers’

Figure 1: Types and Number of Health / Medical Care Services in NYS

Source: United States Census Bureau; County Business Patterns Data; 2009

Note: Data does not represent residential health/medical care services
A Snapshot of the ‘Providers’

Figure 2: Number of Employees at Health / Medical Care Services in NYS

Source: United States Census Bureau; County Business Patterns Data; 2009

Note: Data does not represent residential health/medical care services
Geographic Dispersion

Source: United States Census Bureau; County Business Patterns Data; 2009
Note: Data does not represent residential health/medical care services

Figure 3: Geographic Dispersion and County Concentration (based on number of establishments)
Key takeaways:

• Sustainability is becoming a key focus of healthcare institutions

• While ‘Green’ committees exist at healthcare institutions, there is a need for a structured approach towards sustainability. (Ex: Environmental or Sustainability Management System specific to hospitals)

• Quality of patient care and cost drive purchasing decisions and environmentally preferable purchasing is presently given little to no consideration

• There is a tremendous opportunity to facilitate greater communication between healthcare product manufacturers and hospitals for improved product/packaging design that can reduce waste (materials, energy, labor, cost)
Key takeaways:

• The likelihood of success in sustainability goals increases substantially when these goals:
  – Are recognized through the efforts of multi-departmental teams
  – Are clearly articulated as a problem statement or mission
  – Are integrated into the short-term and long-term operational strategy of hospitals
  – Have senior leadership commitment, including financial support
  – Are recognized and made visible within the hospital and the broader community
  – Are rewarded through financial incentives to hospital departments

• Voluntary agreements called Memorandums of Understanding (MOUs) with USEPA encouraging the incorporation of more sustainable construction, operation and maintenance practices at hospitals have been signed by hospitals.

• Signing these MOUs has served as a strong catalyst to committing to continuous improvement in achieving sustainability goals, as well as brought greater credibility to the hospitals

• The full list, along with reports of measured improvements can be found at: [http://www.epa.gov/region02/greenteam/](http://www.epa.gov/region02/greenteam/).
At the Institutional Level…

Sustainability Roadmap

Source: http://www.sustainabilityroadmap.org/topics/index.shtml
Industry Impacts

• Approximately 18,000 regulated medical waste (RMW) generators in New York State dispose of an estimated 200,000 tons of RMW annually (548 tons per day)

• According to the U.S. Energy Information Administration, U.S. inpatient health care facilities are the 2nd most energy-intensive facility type across the nation

• The majority of the materials procured by a hospital ultimately become waste, resulting in nearly 7,000 tons of waste every day and $10 billion annually in disposal costs across the health care industry

Sources: New York State Department of Environmental Conservation (NYSDEC)
American Hospital Association: Sustainability Roadmap for Hospitals
Sustainability Benefits

• Operational Cost Savings (Ex: RMW disposal can cost 10 times more than Municipal Solid Waste disposal)

• Reduced Environmental Impact (reduce, reuse, recycle, improved waste management/segregation)

• Organizational Effectiveness/Morale
Rochester General Hospital (RGH)

About RGH:
RGH is a 528-bed acute care teaching hospital that serves the Greater Rochester, NY region and is the third largest employer in Rochester.

Opportunity:
• Identify and quantify the types of wastes generated at RGH
• Reduce the quantity and cost of Regulated Medical Waste (RMW) disposal

NYSP2I Project Description:
• Profile the composition of RGH’s Municipal Solid Waste (MSW) stream and determine the degree to which MSW was being disposed in the RMW stream
• Identify improved packaging design opportunities of medical supplies that can reduce waste, reduce costs and the overall environmental footprint of the healthcare value chain

Results:
• Over 50% of the RMW could have MSW and recyclables mixed in with it.
• Training need identified to highlight the benefits of proper waste segregation practices
• Training program developed and deployed by NYSP2I and RGH
• Through the training program, RGH has already seen cost savings amounting to nearly $185,000 in the cost of RMW disposal from 2010 - 2012
Resources

- https://practicegreenhealth.org/
- http://healthierhospitals.org/
- http://www.sustainabilityroadmap.org/
- http://www.virginiamasoninstitute.org/
Questions
Contact Information

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