

US EPA ARCHIVE DOCUMENT

Hospital Pollution Prevention

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NC Div. of Pollution Prevention

www.p2pays.org

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or
How I Saved My Hospital a
Bundle of Money and
Saved the Planet before 10 AM



Hospital Waste Streams – A It Makes a Village

General

- Water usage
- Energy, HVAC
- Disposables
- Cleaning supplies

Business

- Supply chain
- Office
- Groundskeeping

Restaurant, Laundry

- Cafeteria
- Linens

Industry

- Safety
- Hazardous substances
- Sharps
- Transportation/fuel
- Lab chemicals

Unique

- Medical and infectious
- Drugs
- Patient care

Where do I start?

Analyze your waste streams

- What will have the biggest impact?
- What's easiest to implement?
- What will affect compliance?



The low-hanging fruit: Recycling

- Find a company to recycle your waste at the North Carolina Recycling Markets Directory:

www.p2pays.org/rbac/recycling_markets.html

- Office paper, cardboard
- Cans, bottles, plastic bottles
- Plastics - Blue sterile wrap, plastic film, other
- Construction waste: carpet, metals, gypsum, wood, concrete, pavers
- Compost food waste -
 - > groundskeeping
- X-ray film and fixer
- Electronic waste
- Batteries
- Don't forget to **BUY RECYCLED** – keep the recycling markets strong!

Simple - Reduce Waste Generated

- Washable dishes and utensils in cafeteria and rooms
- Eliminate plastic trash liners in offices
- Minimize non-regulated waste in red bags
- Employee discount for using own mug, cup
- Reusable (linen) surgical scrubs, drapes, diapers, bed pads, etc.
- Autoclavable plastic bed pans
- Nontoxic x-ray developer



Reuse



- Reuse linens in cleaning
- Reuse packaging for mailings
- Eliminate disposables – ex: Stainless trays and instruments in surgery
- Replace foam mattresses with waterproof, permanent mattresses
- Carpet squares – replace only worn areas
- Distill solvents (xylene) for reuse

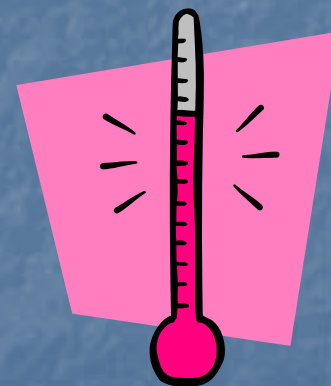
Remember Hazards: Mercury

■ Our Mercury Webpage:
www.p2pays.org/mercury/

■ Mercury Topic Hub :
<http://wrrc.p2pays.org/p2rx/>

- Thermometers, thermostats, sphygomanometers
- Esophageal Dilators (Bougies) and Feeding Tubes
- Gastro/Esophageal Tubes Containing Mercury
- Barometers in Respiratory Therapy

- Intraocular Pressure Devices
- B-5 Fixative
- Manage fluorescent bulbs - universal waste
- Mercury-Free Cleaning Products





Energy & Water Conservation



- Water Conservation info: www.p2pays.org/water/
- Low flow shower heads, toilets, aerators, HVAC, generators, ice machines, leaks
- Xeriscaping, irrigation methods
- Reuse gray water? Capture rain?
- Energy Conservation - www.p2pays.org/energy/
- Get an energy audit!
- State Energy Office – trainings, loans: www.energync.net
- Lighting –Maximize natural; install motion sensors, check ballasts, use fluorescent bulbs and recycle properly
- HVAC – efficient? Proper size? Temp? Intake?
- Other appliances – ice makers, light in soda machines
- How do you pay for power? Peak shaving

Purchasing



- Buy recycled content
- Buy in bulk
- Request reduced or reusable containers, pallets
- Buy from local sources when possible
- Consider supporting local agriculture and healthy eating – The Farm to Hospital Program
http://www.foodsecurity.org/F2H_Brochure.pdf
- How are purchasing decisions made?
 - Upfront cost only, or life-cycle cost considered? (Cost to use, cost of disposal, cost of transportation)

Look at Source

- Where does our energy come from?
 - Sustainable energy? (www.ncgreenpower.org)
- Where do our materials and supplies come from? Were they made sustainably?
 - Distance transported; green suppliers; recycled content
- Where does our food come from?
 - UEPI Farm to Hospital program
 - Where does our waste food go – shelters, composting
- How do the choices you make affect the environment?
- Are you making the right choices?



Education = Waste Saved

- Print/generate only what is necessary
- Put waste in correct container
- Look at operating expenses as well as initial cost = long-term savings
- Train workers at all levels – how does my job impact the environment? What choices am I making?
 - Did I turn off the light or leave the water running?

How do I get a handle on it all?

- Individual Programs by Section – Compliance focused

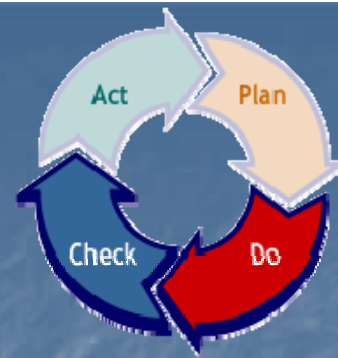
or

- Hospital Waste Manager - Recycling, facility-wide programs

or

- Environmental Management System
 - ISO 14001
- Facility-wide system integrated into business
- Beyond compliance and continuous improvement
- All employees are part of environmental program

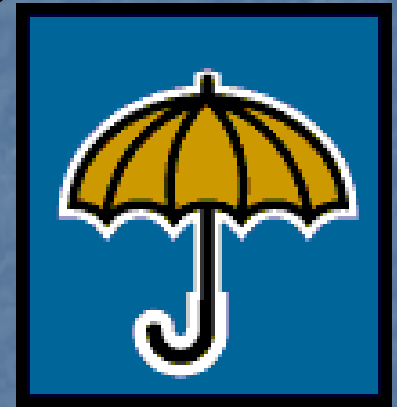
What is an EMS?



- *A tool to improve environmental performance*
- Based on Plan-Do-Check-Act Model (PDCA)
- **Continual Improvement** of system
- Addresses immediate and long-term impact of an organization's products, services and processes on the environment
- ISO 14001 - International standard; can become certified by third party auditor

Why Implement an EMS?

- Compliance and reporting requirements
- Moving beyond compliance
- Vehicle for positive change
 - improved employee morale
 - enhanced public image
- Employee turnover
- Environmental management just one of many responsibilities
- System to unify multiple environmental programs under one umbrella!



Getting started - we can help

- DPPEA - Free and non-regulatory Technical Assistance – waste, energy, water, recycling and haz help
- DENR Environmental Stewardship Initiative
 - Free training and assistance with developing an EMS
 - Assigned coach
 - Other benefits



ESI Overview

- www.p2pays.org/esi
- Voluntary program
- Environmental improvement & recognition program
- Promotes & encourages superior environmental performance
- Oversight by DENR Secretary
- Three levels of membership
 - Partner
 - Rising Steward
 - Steward



Membership Status



- 👍 81 Environmental Partners
- 👍 13 Rising Environmental Stewards
- 👍 6 Environmental Stewards
 - ✴ Novozymes North America Inc.
 - ✴ ASMO North Carolina Inc.
 - ✴ City of Gastonia Long Creek Resource Recovery Facility
 - ✴ Corning Inc. – Wilmington Optical Fiber Facility
 - ✴ Naval Air Depot, Cherry Point
 - ✴ GKN Driveline Precision Forming, Sanford Plant

Members Successes



- City of Gastonia Wastewater Treatment Plant reduced noncompliance from a max. of 45 events in 1999 to zero in 2004.
- Smithfield Foods, Wilson: saved over \$200,000 in 2005 due to composting, source reduction and water conservation.
- The NC Zoo has installed a biodiesel processing unit to recycle its fryer grease into fuel for the zoo trams and other vehicles.
- ESI Member Cost Savings: \$12,721,772 (2005)

Hospital Case Studies

- Itasca Medical Center in MN saved >\$16,200 per year in purchasing and solid waste costs with an integrated waste management system
- Thomas Jefferson Univ. Hospital in Philadelphia saves \$150,000/year through recycling
- Fletcher Allen Healthcare in Vermont composts 90% of its food scraps and steam table leftovers for a savings of \$1,400 annually
- Norwood Hospital in Boston reduced water usage >14.6 million gallons annually (29%), saving >\$120,000/year with a \$58,000 investment

Keeping it in Perspective



How to Begin



- Pollution Prevention (P2) Assistance:
<http://www.p2pays.org/> for general info
and online library of 40,000+ documents or
- <http://wrrc.p2pays.org/indsector.asp> for
hospital best references, case studies
- Hospitals for a Healthy Environment -
www.h2e-online.org/

How to Join ESI

- ESI Program:

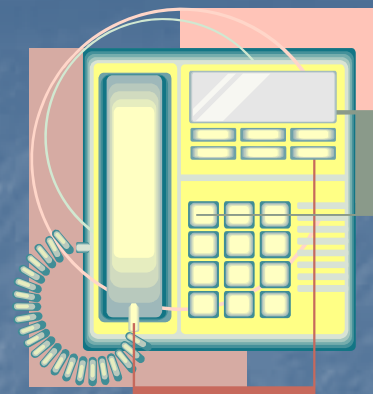
www.p2pays.org/esi/

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- We look forward to hearing from you!