

“Going Green – Opportunities for Healthcare Facility Managers” Florida Healthcare Engineering Association

Presenters

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Architecture • Engineering • Environment • Health • Safety

A high rate of non-compliance has been identified at healthcare facilities.

Significant environmental releases have been identified at healthcare facilities.

Healthcare facilities have received relatively little attention from environmental regulatory agencies, when compared to similar institutions.

“Level playing field” for healthcare facilities.

Basis for EPA Healthcare Initiative

Source of toxic chemicals, and persistent, bioaccumulative toxics (e.g., mercury and dioxin);

Generators of a wide variety of hazardous waste:

Produce two million tons of solid waste;

Contribute to air pollution (e.g., smog, air toxics, depletion of ozone layers); and

Not complying with environmental requirements.

Basis for EPA Healthcare Initiative

Hospitals will comply with environmental requirements.

**Hospitals will develop Environmental Management Systems –
<http://www.epa.gov>**

Mercury-containing waste will be eliminated from the hospital waste stream.

The volume of all hospital waste generated will be cut in half by 2010.

EPA Initiative Goals

EPA issued a Voluntary Audit Policy to encourage regulated entities to voluntarily discover, disclose, correct and prevent violations of federal environmental requirements.

EPA Audit Policy for HC Initiative

To enhance protection of human health and the environment by encouraging regulated entities to voluntarily discover, disclose, correct and prevent violations of federal environmental requirements.

As incentive, EPA will forgo all gravity-based (non-economic benefit) penalties when the regulated entity satisfies all policy conditions.

Purpose of EPA Audit Policy

Improper or lack of HW labeling.

No or improper weekly inspections of HW storage/satellite areas.

Open containers of HW

Improper disposal of chemotherapy drugs.

Failure to perform or improper HW determinations.

No or inadequate HW manifests.

Common Violations – Hazardous Waste

Improper management of mercury-containing wastes, expired pharmaceuticals, paints, etc.

Lack of a spill contingency plan.

Lack of or inadequate training of employees in HW management.

Improper consolidation of wastes from nearby facilities.

Malfunctioning UST leak detection systems.

Common Violations – Hazardous Waste

Failure to use properly trained and accredited asbestos personnel.

Failure to notify EPA of asbestos removal projects and to keep required documentation/records.

Failure to properly dispose of asbestos debris.

Common Violations – Air

Failure to close parts washer lids when not in use.

Failure to include spray paint booths and parts degreasers in air permit.

Failure to maintain required records on refrigerant/air conditioning equipment.

Common Violations – Air

No permit for wastewater discharges.

No or inadequate secondary containment for storage tanks.

Improper disposal down floor drains.

No Spill Prevention, Control and Countermeasure Plan.

Common Violations – Water

Ensure commitment from top management!

Commit sufficient resources!

Implement an Environmental Management System (EMS)!

Conduct periodic environmental compliance audits!

Hospitals for a Healthy Environment now called Practice Greenhealth - www.practicegreenhealth.org

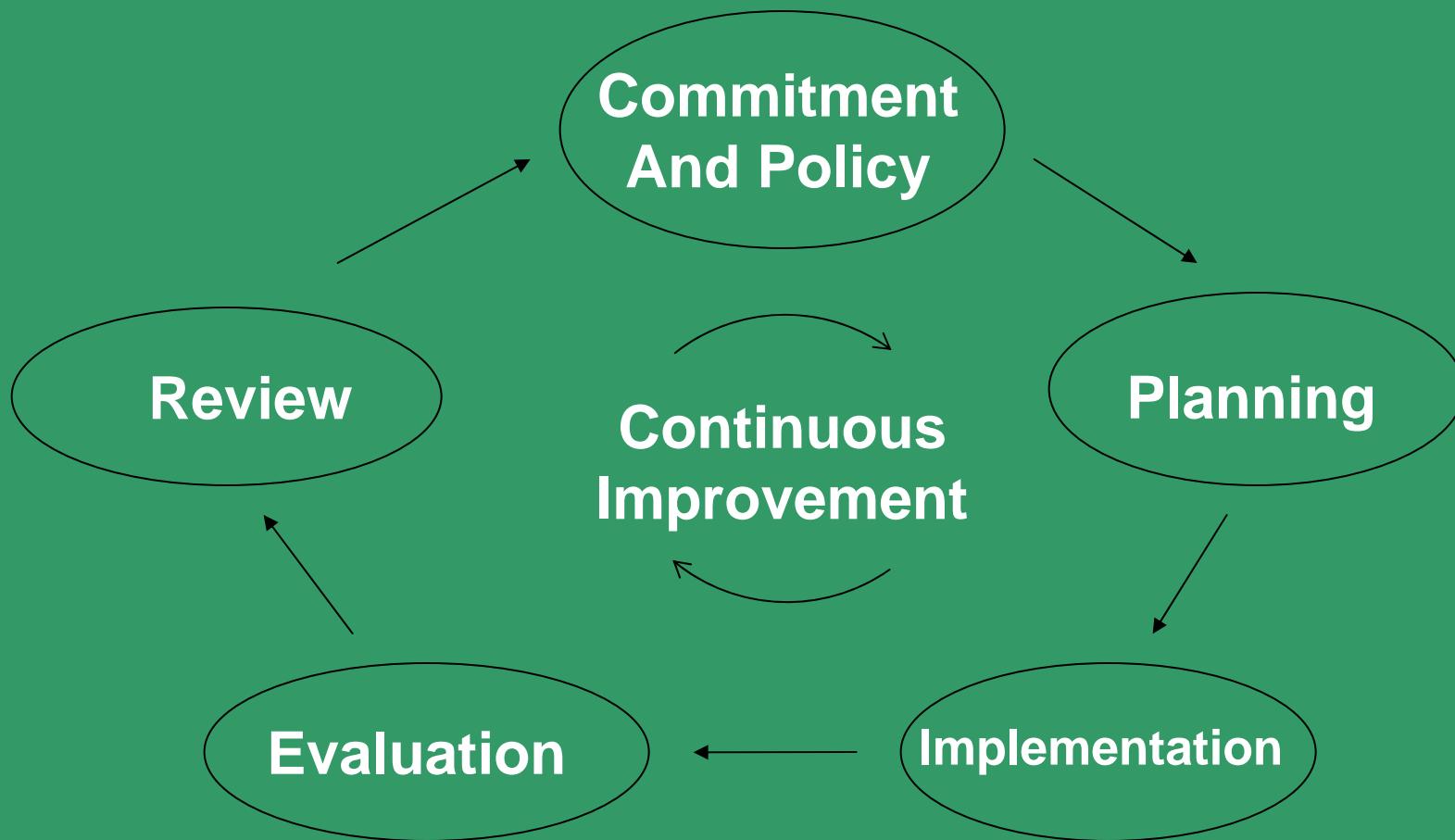
Steps to Achieving and Maintaining Compliance

EPA – Design for the Environment Program (DfE)

This approach assists with:

- Practice pollution prevention
- Avoid shifting problems from one waste stream to another
- Understands the risks
- Integrates; worker safety and health with environmental management
- Manage system change in addressing environmental concerns

Integrated Environmental Management Systems (IEMS)



www.epa.gov/dfe

www.epa.gov/dfe

Joint effort between EPA and AHA

Advancing Waste Minimization

- US Hospitals produce 2 million tons of solid waste/year
- 1% of the US municipal solid waste
- 15 pounds per patient day
- 85% of this waste is commercial waste
- Includes biomedical waste
- Small portion is a variety of complex hazwaste

Healthy Hospitals: Environmental Improvements
Through Environmental Accounting (EA)

Waste Minimization Approaches:

1. Procurement
2. Inventory Management
3. Waste Segregation
4. Recycling and Reuse
5. Reprocessing

Healthy Hospitals: Environmental Improvements
Through EA

EA Conclusions and Recommendations

The purpose of this study was to assess the current application of EA and evaluate the potential benefits of applying EA further.

1. Product Selection – lowest purchase price may not have the lowest life cycle cost (packaging, handling, disposal, etc.)
2. Waste Management – minimize waste through EA
3. Current EA application very unlimited
4. Construction Projects

Healthy Hospitals: Environmental Improvements
Through EA

Barriers to EA exist

- Poor information/inadequate accounting systems
- Few connections between procurement and EH&S/FM
- Procurement constraints (GPO's, corporate vendors, etc.,)
- Clinical efficacy (limits options on switching products),
Liability, Infection Control
- Environmental Risks are often not key drivers (WHY?)

Healthy Hospitals: Environmental Improvements
Through EA

Getting Started

- Educate Staff
- Incorporate environmental information in the value analysis
- Incorporate environmental information in the procurement systems (review vendor's environmental mission statement work practices, recycling, reuse practices, use of green products, etc.)

Healthy Hospitals: Environmental Improvements
Through EA

Facilities should develop Pollution Prevention Plans

- Include feasible source reduction and waste minimization projects
- Estimate of type and amount of reduction
- Explanation of employee training regarding pollution reduction
- Schedule of implementation
- Reference EMS

Pollution Prevention: Source Reduction
and Waste Minimization

CASE STUDY

St. Mary's Hospital, Maryland

Cafeteria is using eco-friendly, biodegradable products

Sugar cane paper products

Corn plastic and hot cups

Potato cutlery products

Degrade w/in 45 days

CASE STUDY

CASE STUDY

Kaiser Permanente was the first healthcare organization that the EPA and the Green Electronics Council have honored for “going green” for its effort to purchase environmentally efficient computers and monitors.

CASE STUDY

CASE STUDY

National Healthcare Survey

Most Popular “Going Green” Initiatives;

- Recycling (95%)
- Using Energy Efficient Products (72%)
- Reducing or reusing resources and materials (64%)

CASE STUDY

GREEN PURCHASING

Important certifications to look for;

- Energy Star – for energy efficient appliances
- Green Seal – for chemicals
- Forest Stewardship Council – for recycled (post consumer) products

GREEN PURCHASING

GREEN PURCHASING

- Renewable Energy
- Environmentally Preferable Purchasing (EPP)
 - Suppliers uses;
 - recycled products
 - environmentally preferable products
 - EPA's SmartWay Transport Partnership
- Practice Greenhealth Award (H2E)
 - www.particegreenhealth.org/awards
 - May qualify for Energy Star Award
 - May qualify for Water Efficiency Leader Awards
- Include these standards in RFP's

GREEN PURCHASING

WHAT ARE THE CHALLENGES OF GOING GREEN?

Administration's buy in

Will it cost \$ to "Go Green"?

Proper operation of existing systems/facilities

Resources not available

Storage/Handling of recycled items

EPA Region 4 Healthcare Initiative

(75% of funding for EPA program provided by ?)

CHALLENGES

JOHN WOOD - ASHE

“ASHE continues to support the goals of the EPA’s Energy Star program including ASHE’s Energy Efficiency Commitment initiative.”

Goal = 10% energy use reduction

To enroll your facility go to: www.ashe.org

Green Guide for Health Care TM

- Self certifying
- Best practices toolkit
- Provides baseline and benchmarking achievement
- Has Operations Section for existing buildings
- Has Design and Construction Section
- Borrows the LEED credit numbering system

www.gghc.org

Green Guide for Health Care TM

Building Enclosure Systems

- **Water, Vapor and Air Barriers**
- **Increase in Energy Performance vs. Moisture Control**
- **Operable windows**
- **Green Roofs**

HVAC Systems

- **Positive Pressure**
- **Increased Ventilation vs. Pressure and Humidity**
- **Building Air Flush-Out**

Water Reuse

- **Local Prohibitions**
- **Opportunities for Contamination**

LEED Rating System Considerations in Subtropical Climates

Green Building Materials

- Permeability
- Contamination Possibilities with Recycled Products
- Incompatibility of Organic and Synthetic Materials

Commissioning

- Energy Performance vs. Moisture Control
- Building Envelope Performance vs. HVAC System Performance

Sources: "The High Risk of Green Buildings", Odom & Scott, Liberty Building Forensics (www.aiafla.org) *New Construction & Major Renovation Reference Guide Version 2.2*, Third Edition; USGBC *Sustainable Building Technical Manual*, Public Technology Inc. (US DOE, US EPA, and USGBC)

LEED Rating System Considerations in Subtropical Climates

RESOURCES

- EPA's SmartWay Transport Partnership, www.epa.gov/smartway/
- Practice Greenhealth Award (H2E), www.practicegreenhealth.org/awards
 - EPA Energy Star Award, www.energystar.gov
 - EPA Water Efficiency Leader Awards, www.epa.gov/water.wel/
- EPA – Design for the Environment Program (DfE), www.epa.gov/dfe
- ASHE's Energy Efficiency Commitment initiative, www.ashe.org
- Green Guide for Health Care, www.gghc.org
- Florida Department of Environmental Protection, www.floridadep.org/pollutionprevention/initiatives.htm
- Leadership in Energy and Environmental Design (LEED), www.usgbc.org/
- EPA Region 4? – www.epa.gov/region04/

RESOURCES

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Wrap-up – Questions or Comments