

# Managing Formaldehyde and other Chemicals in Hospitals

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# Session

- Handling Chemicals Safely
  - Pollution Prevention
  - Generator Status Downgrade
  - Vendor Partnership
  - UWMC Case Study
- Specimen Discard Station and Formaldehyde Management

# Handling Hazardous Materials Safely

- Priorities of Best Management Practices, *Pollution Prevention*
  - Elimination/Substitution
  - Manage what is left
  - Dispose of waste in safest manner
    - On-site treatment
    - Off-site treatment
    - Disposal

# Elimination/Substitution

- Replacement of hazardous material use by eliminating its need via a new process or technology
- Substitution of a less or non-hazardous material, used in the same or similar process.
- Examples: Ethylene oxide, xylene, glutaraldehyde

# Managing What Is Left

- Compliance with hazardous materials rules provides only a baseline: best management practices go beyond (in many cases outdated) federal regulations
- Examples: micro management of “hit list” items, including the most toxic materials in a facility

# Disposal

- To treat or not to treat (on-site or off)
  - Local and state requirements are critical
  - Technology and regulatory gaps
  - Staff who “treat” become hazardous materials/waste handlers
  - Potential effects to environmental health and safety

# Recycling and Reuse

- On-site distillation
  - Codes
  - Titration
  - Inventory Control
  - Alcohols and Alcohol, Tobacco and Firearms

# Downcycling

- Hazardous waste “Alternative Disposal”
  - Employee giveaways (fuels)
  - Charitable donations (mercury)
  - Universal wastes (bulbs and batteries)

# Pollution Prevention

- Benefits
  - Creates safer workplace
  - Reduces generator status
  - Creates opportunities for growth
  - Reduces negative impact on environment
  - Reduces life cycle cost of hazardous materials

# Pollution Prevention

- Risks
  - Momentum
  - Can require capital expenses
  - Resistance to change from employees
  - Can require extensive research

# Generator Status

- Volume and toxicity contributions
- Generator status: a state issue
- Operational benefits
  - Logistics
  - Cost
  - Documentation and inspections

# Vendor Partnerships

- New Technology and Products: beta sites
- Leveraging existing relationships
- Milk runs and other connections

# Managing on a Small Scale

- Small hospitals and universities
  - May have proportionally higher volumes of hazardous materials
  - May have less staff but greater access
  - May be able to share resources

# Hazardous Material Training

- Targeted audience
  - Mandated
    - Safety
    - Shipping and Receiving
    - Clinical Staff
    - Contracted Services, Tenants and Others
    - Handlers
    - Purchasers

# Training for Pollution Prevention

- Dynamic training
  - Plan, do, act, check
  - Stakeholders buy in
  - Quality improvement opportunities

# Learning Pollution Prevention

- Clean Med and other conferences
- Websites
- Networking
- Case studies

# Web Sources

- State P2 coordinators
- Federal sites:
  - [Hercenter.org](http://Hercenter.org)
  - [Epa.gov](http://Epa.gov)
- Non-profit organizations:
  - [Practicegreenhealth.org](http://Practicegreenhealth.org)
  - [Noharm.org](http://Noharm.org)

# UWMC Case Study-Formaldehyde



# Project Objectives

- Elimination Evaluation-Not Achieved
- Activity Consolidation-Achieved
- Inventory Management-Achieved
- Exposure Control-Achieved
- Reduce Indoor Air Quality Concerns-On-going
- Waste Reduction-Onsite Treatment-Achieved

# Formaldehyde Overview

- OSHA/WISHA permissible exposure limit (PEL) at 0.75 ppm for an 8-hour workday, 40-hour workweek and short-term exposure limit (STEL) at 2 ppm as a 15-minute time-weighted average 29 CFR 1910
- DHHS may reasonably be anticipated to be a carcinogen.
- Health Effects Acute and Chronic
- Sensitizing Agent
- Designates as Toxic Dangerous Waste in WA
- Neutralizable using numerous commercial methods

# Before Picture



## Issues

- Shared space-Exposure risk for staff
- Ergonomic/Work Flow challenges
- PPE and staff comfort
- Waste management challenges
- Inadequate spill containment
- Seismic retrofit

# After Picture



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# Questions and Answers

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