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Sustainable Hospitals Program

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www.sustainablehospitals.org




Sustainable Hospitals Program (SHP)

*Reduce occupational and
environmental hazards*




Sustainable Hospitals Project

- In-hospital and field research
- Speak at meetings and conferences
- Technical literature
- Website of alternative products and practices (www.sustainablehospitals.org)




Mercury in Healthcare

- Why is mercury a problem?
- Environmentally Preferable Purchasing
- Alternative products



Mercury

- Elemental - medical instruments (liquid & vapor)
- Organic - methyl mercury (liquid)
- Inorganic - mercury salts (solid)



Why Mercury?

- Cohesive fluid
- Sensitive to temperature
- Favorable properties for pressure indication
- Good electrical conductor



So What's the Problem?

Persistent
Bioaccumulative
Toxic



Persistent

- long-lasting
- don't break down easily
- difficult to clean up



Bioaccumulative

- Bioaccumulate in food chains and build up in the body



Toxic

- poisonous



So What's the Problem? Pollution

Mercury contamination from:

- Spills from broken hospital devices
- Air pollution from coal
- Industrial waste



Because of this...

- More regulations and controls



Elemental Mercury

- Easily vaporizes
- Readily taken up from the lungs and delivered to brain and fetus
- Hg^0 oxidized in red blood cells, brain and fetus to Hg^{2+}
- Trapped by virtue of being ionized
- Neurological damage

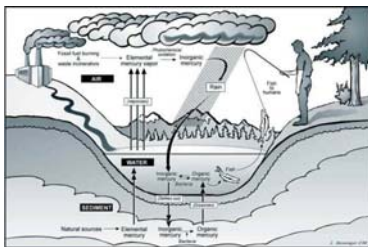


Mercury in Fish

- Mercury enters the environment and collects in lakes and rivers
- Microorganisms convert mercury to methylmercury
- Methylmercury bioaccumulates in fish
- Biomagnification up the food chain



Atmospheric Transport of Mercury



http://www.mercury.utah.gov/atmospheric_transport.htm



Moving up the food chain



This process is called "bioaccumulation"

<http://www.epa.gov/mercury/exposure.html#comp>



Methyl Mercury (Organic)

- Lipid-soluble
- Distributed to central nervous system
- Crosses placenta and concentrates in fat tissue and brain of fetus
- Oxidized to Hg^{2+}
- Neurological damage



Environmentally Preferable Purchasing:



Reducing Waste, Hazards, and Cost At the Source

CREDIT

The following EPP slides are product of the EPP workgroup of the Hospitals for Healthy Environment (H2E) cooperative project between the US EPA and the American Hospitals Association. The Sustainable Hospitals Program was a member of this workgroup.
http://www.geocities.com/EPP/how_to_guide/ (Accessed 7/30/09)



What is Environmentally Preferable Purchasing?

- Selecting products and services whose environmental impacts have been considered and found to be **preferable** to those of comparable alternatives.



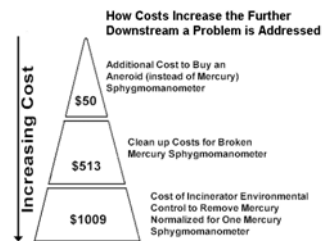
What are the Benefits of EPP?

- Reduced impact on the environment from hospital operations
- Healthier environment for patients and employees
- Potential cost savings
- Positive publicity



Why Purchasing?

- Central point for procuring nearly every hospital product or service
- Money changes hands here
- Proactive pollution prevention



Reference: C. Galligan, SHP, using data from Mercury Elimination and Reduction Challenge (MERC), "Mercury in the Health Care Sector: The Cost of Alternative Products", November, 1996, pp. 14-24



Keys to EPP Success

- A hospital policy to implement and support environmentally preferable purchasing
- Measurable goals
- Education of staff, patients, GPOs, manufacturers



Example of a Hospital Purchasing Policy

Kaiser Permanente



Kaiser Permanente's RFPs state that Kaiser is:

- Favoring products that cause the least environmental harm
- Partnering with suppliers who demonstrate a commitment to environmental quality
- Collaborating with distributors, manufacturers, and suppliers in designing/refining products to minimize environmental impact



Kaiser asks vendors to submit information on:

- Vendor's Sustainable Practices
- Pollution prevention attributes of products
- How products reduce solid waste
- Mercury content of products



Kaiser EPP Results

- Kaiser no longer procures:
Hg thermometers or sphygmomanometers
Certain Hg-containing lab products
- Kaiser recycles fluorescent lights
- Kaiser recycles xylene and alcohol
- Kaiser switched from latex to nitrile gloves



Examples of measurable goals

- Reduce purchase of mercury-containing products by 80% by next year.
- Increase purchase of recyclables or reusables by 30% by next fiscal year.
- Reduce packaging waste or total solid waste by 20% in 12 months.



Reducing Mercury With EPP

- Thermometers
- Sphygmomanometers
- Calibrators
- Gastrointestinal tubes
- Lab Chemicals
- Batteries, Lighting, Switches



Summary: Mercury in Healthcare

- Mercury is a problem
- Environmentally Preferable Purchasing is a solution
- Alternative products have a good track record in many U.S. hospitals