

Environmentally Preferable Purchasing

Required

EP Prerequisite 1 Mercury Reduction

Intent

Protect the health of patients, staff and visitors, and reduce disposal costs and liability, by avoiding purchase of mercury-containing equipment and devices and phasing out existing mercury sources.

Health Issues

In 1998, a Memorandum of Understanding between the American Hospital Association and the U.S. EPA set new goals for hospital pollution prevention. One of the top priorities was the virtual elimination of mercury and mercury-containing devices from the hospital purchasing and waste stream. Mercury is a potent neurotoxin. The most sensitive health effect of mercury is an adverse impact on the neurological development of fetuses, infants and children. Low-level prenatal exposure can result in language, memory and attention deficits in children who were exposed in utero. Since the establishment of the MOU, hospitals have substantially reduced the purchase of mercury-containing chemicals and medical devices and found substitutes for many mercury-containing pharmaceuticals. Some hospitals have eliminated mercury purchases completely.

Credit Goals

Equipment and Devices

- Develop a mercury reduction purchasing policy that prohibits purchase of mercury-containing equipment without prior specific approval from the Hazardous Materials Committee (or equivalent).
- Create an inventory identifying all mercury-containing devices and equipment.

Note: Mercury-containing equipment and devices may include, but are not limited to, the following: MRI equipment, wheel chairs, automated beds, cantor tubes, bed warmers, bougies and thermometers and other medical and laboratory equipment.

- Label any mercury-containing equipment or devices as “contains mercury.”

Note: Fluorescent lamps are exempt from this labeling and inventory requirement; however, note purchasing criteria for lamps listed below.

- Identify alternatives to mercury-containing clinical devices and other stand-alone medical and/or facilities equipment (excluding fluorescent lamps) and pilot through supply chain or purchasing, in accordance with the protocol for any new purchase. Develop a plan to transition to mercury-free devices with 100% completion in five years (average 20% per year.)
- For dental equipment, install or confirm existence of amalgam separators that capture a minimum 98% of mercury. Ensure Proper disposal of the captured mercury in accordance with GGHC WM Prerequisite 1: Waste Management Plan.

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Mercury Reduction

Lamps

Develop and implement a lamp purchasing policy covering the following topics:

- Purchase only illuminated exit signs certified by Energy Star®.
- At the end of their useful life, replace standard (e.g. non-pulse start) metal halide lamp assemblies in interior spaces and mercury vapor High Intensity Discharge (HID) lamp assemblies with other, lower mercury lamp types.
- At the end of their useful life, replace current facility lamps with low mercury fluorescent and high pressure sodium lamp assemblies as follows:

Fluorescent Lamp	Criteria
All T-12 lamps	Phase out entirely
Eight-foot T-8 (Standard and High Output)	Maximum 10 mg mercury
Four-foot T-8 (Standard and High Output)	Maximum 3.5 mg mercury
Three-foot T-8	Maximum 6 mg mercury
Two-foot T-8	Maximum 6 mg mercury
U-Bent T-8	Maximum 8 mg mercury
28-watt T-5	Maximum 2.5 mg mercury
24-watt T5HO (High Output)	Maximum 2.5 mg mercury
54-watt T5HO (High Output)	Maximum 2.5 mg mercury
22-watt Circular T-5	Phase out entirely
Compact fluorescent lamps	Maximum 5 mg mercury - Energy Star® qualified, (excluding pin base lamps)
High Pressure Sodium Lamp	Criteria
50-watt HPS	Maximum 18 mg mercury
70-150-watt HPS	Maximum 15 mg mercury
200-watt or greater HPS	Maximum 32 mg mercury

- Implement a lamp-recycling program that meets or exceeds the Universal Waste regulations of the respective state.

EP Prerequisite 1 continued

Mercury Reduction

Training

- Educate and annually update purchasing and department heads on the facility's mercury reduction policy, the process for purchasing mercury-free equipment and devices, and progress with the mercury phase-out plan.

Suggested Documentation

Equipment and Devices

- Compile documentation of the facility's mercury reduction purchasing policy and annually review progress in accordance with Credit Goals.
- Compile an inventory identifying all mercury containing devices and equipment and mercury-free alternatives in accordance with Credit Goals. Label any identified mercury-containing equipment or devices as "contains mercury."
- Compile documentation verifying that amalgam separators able to capture a minimum of 98% mercury are installed on all applicable dental equipment in accordance with Credit Goals.

Lamps

- Demonstrate that lamp purchasing over a minimum one-year period complies with the Credit Goals, based on documentation for each type of mercury-containing lamp. Document performance of the fluorescent lamp recycling program, including the number and percentage of mercury-containing lamps recycled and final disposition, in accordance with Credit Goals.

Training

- Document an annual or more frequent training of all relevant employees on proper segregation of mercury until phase-out is complete.

Reference Standards

U.S. Environmental Protection Agency (EPA) Energy Star, <http://www.energystar.gov>

U.S. Environmental Protection Agency (EPA), Universal Waste Rule, <http://www.epa.gov/epaoswer/hazwaste/id/univwast.htm>

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Mercury Reduction

Potential Technologies & Strategies

- **Credit Synergies:** *Coordinate implementation of this credit with GGHC IO Prerequisite 1: Integrated Operations & Maintenance Process; GGHC FM Prerequisite 2: Minimum Building Energy Efficiency Performance; GGHC FM Credit 1: Optimize Energy Efficiency Performance; GGHC CM Prerequisite 2: Chemical Management Policy and Audit; GGHC CM Credit 1: Indoor Chemical Contaminant Prevention; GGHC WM Prerequisite 1: Waste Management Plan; GGHC WM Prerequisite 2: Waste Generation Profile and Measurement; GGHC WM Prerequisite 3: Solid Waste Land Disposal; GGHC WM Credit 1: Solid Waste and Material Management; GGHC WM Credit 2: Regulated Medical Waste Reduction; GGHC EP Prerequisite 2: Electronic Assets Environmental Management Plan; GGHC EP Credit 1: Solid Waste Prevention in Purchasing; GGHC EP Credit 2: Toxicity Prevention in Purchasing; GGHC EP Credit 3.1-3.5: Toxic Chemical Reduction: Facility Alterations & Additions; GGHC EP Credit 3.6: Toxic Chemical Reduction: Furniture & Medical Furnishings; GGHC EP Credit 5: Electronics Purchasing & End of Life Management.*
- Develop a mercury management policy for proper management of mercury-containing devices until the facility is mercury-free. Maintain the policy and training even after the site is designated “mercury-free.”
- Conduct a community-wide thermometer exchange to encourage the public to return mercury-containing devices for proper recycling and disposal in return for a mercury-free thermometer.
- Purchase low-mercury fluorescent lamp assemblies. Advances in lighting and ballast technology have greatly reduced the per bulb mercury concentrations. Low-mercury, high intensity discharge lamps are increasingly available. Consider long-life bulbs to reduce costs associated with relamping, recycling and purchase.
- Consider piloting the use of mercury-free LED (light-emitting diode) lamps or very low mercury fluorescent induction lighting, with instant on–off control, offering reduced energy usage and long life.
- Avoid bulb crushers (even if legal in a certain state) as they can expose workers to mercury vapor and increase hazardous waste generation (crushed bulbs are not classified as universal waste).
- Develop a mercury spill response policy that meets the intent of the U.S. EPA Resource Conservation and Recovery Act (RCRA), including: spill cleanup supplies, and staffers trained in spill response, including removal by a licensed hazardous waste hauler. Ensure proper oversight of spill cleanup. Report the spill to Joint Commission and other applicable regulatory bodies and replenish spill supplies. (See GGHC CM Credit 1.1: Community Contaminant Prevention: Leaks & Spills.)
- Collect, store and dispose all mercury-containing devices as Universal Waste, per Universal Waste guidelines. (See GGHC CM Credit 2: Indoor Chemical Contaminant Prevention.)
- Review the Practice Greenhealth Making Medicine Mercury Free Award criteria for a review of mercury sources, <http://www.practicegreenhealth.org>.

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Mercury Reduction

Resources

The American Hospital Association (AHA) and the United States Environmental Protection Agency (EPA) signed a Memorandum of Understanding identifying goals to reduce the impact of health care facilities on the environment. <http://www.practicegreenhealth.org>.

Health Care Guide to Pollution Prevention Implementation through Environmental Management Systems (U.S. EPA 2005 draft), <http://www.kppc.org/EMS/>

Medical, Academic and Scientific Community Organization (MASCO), Boston, MA: Mercury Work Group, <http://www.masco.org/mercury/>

Minnesota Technical Assistance Program Mercury Page, <http://mntap.umn.edu/health/mercury.htm>

NY Academy of Science "What You Should Know about the Health Risks of Mercury," The report discusses major sources of mercury and methylmercury to the Harbor (and health care's role). <http://www.nyas.org/about/newsDetails.asp?newsID=55&year=2002>

Practice Greenhealth, Making Medicine Mercury Free Award criteria, <http://www.practicegreenhealth.org>.

U.S. Environmental Protection Agency (EPA), Mercury page and Mercury Study Report to Congress, <http://www.epa.gov/mercury/report.htm>.

U.S. Environmental Protection Agency (EPA), Resource Conservation and Recovery Act, 1976 (RCRA), <http://www.epa.gov/rcraonline/>

Many states have enacted laws prohibiting some or all uses of mercury-containing medical devices and/or mercury switches. These include but are not limited to:

- Maine *State law (LD 1159)* prohibiting the sale of mercury in switches, measuring devices (including sphygmomanometers), instruments and thermostats.
- Washington *State law (House Bill 1002)* requiring the labeling of fluorescent lamps that contain mercury. Prohibits the sale of mercury-containing items in products such as thermometers and thermostats. Sphygmomanometers may not be sold with the exception of a hospital or health care facility with a mercury reduction plan in place.
- Michigan *State law (House Bill 4599)* bans the sale of mercury thermometers.
- Connecticut *State law (House Bill 5539)* bans the sale and distribution of mercury fever thermometers and places restrictions on the sale of other mercury-containing equipment and devices.
- Massachusetts *State law (House Bill 3772)* bans the sale of mercury fever thermometers.
- California *State law (SB 633)* restricts the use and distribution of mercury fever thermometers and other mercury-containing equipment and devices.
- Oregon *State law (HB 3007)* phases out mercury thermostats and prohibits the sale of mercury-containing fever thermometers and other mercury-containing equipment and devices.