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MERCURY MINIMIZATION PLAN

POLICY

The presence and exposure to mercury in equipment, chemicals, and pharmaceuticals shall be minimized to the extent practicable in all facilities owned or occupied by SEMC.

PROCEDURE

1) PURPOSE

The purpose of this procedure is to limit mercury exposure at SEMC facilities through minimizing the presence of mercury at the Medical Center, where possible, and minimizing the exposure potential to mercury in place at the Medical Center until it is removed.

2) ABBREVIATIONS/ACRONYMS

EHSO: Environmental, Health & Safety Officer
GI: Gastrointestinal
SEMC: St. Elizabeth Medical Center

3) DEFINITIONS

4) PROCEDURE ELEMENTS

4.1. Purchasing

No equipment containing mercury in any form shall be purchased if a non-mercury alternative is available and economically feasible. If it is necessary to acquire any mercury-containing equipment, the Purchasing Department shall first notify the EHSO for assistance in determining if mercury-free alternatives are available.

4.2. Mercury Equipment and Products

Certain equipment and products may contain mercury in various forms. The following sections identify common items that may contain mercury and how they shall be handled at the Medical Center.

4.2.1. Thermometers

4.2.1.1. Patient Thermometers

Mercury-containing patient thermometers shall not be used at SEMC. All known mercury patient thermometers have been removed and replaced with non-mercury units. If a mercury-containing patient thermometer is encountered at the Medical Center, it shall be removed from service and the EHSO contacted.

4.2.1.2. Equipment/Area Thermometers

A small number of equipment/area thermometers that contain mercury are present at the Medical Center. These units shall be removed and replaced with non-mercury units on a schedule to be determined by the Environment of Care Team, the supervisors of the affected areas, and the Facilities Management Department. No new mercury equipment/area thermometers will be obtained.



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4.2.2. Sphygmomanometers

Mercury-containing sphygmomanometers shall not be used at SEMC. All known mercury sphygmomanometers have been removed and replaced with non-mercury units. If a mercury-containing sphygmomanometer is encountered at the Medical Center, it shall be removed from service and given to the EHSO for disposal.

4.2.3. GI Tubes

GI tubes (esophageal dilators, Cantor tubes, Miller Abbott tubes, etc.) containing mercury shall not be used at SEMC. All known mercury-containing GI tubes have been removed and replaced with non-mercury units. If a mercury-containing GI tube is encountered at the Medical Center, it shall be removed from service and given to the EHSO for disposal.

4.2.4. Laboratory Chemicals

Mercury may be present in certain chemicals used in laboratories. The SEMC Laboratory shall use alternatives to mercury-containing chemicals, when feasible. If there are no mercury-free products that meet the needs of the hospital, those that are the lowest in mercury concentration shall be used. In some cases, it may be necessary to obtain a Certificate of Analysis for a chemical from the manufacturer to determine if mercury is present and at what concentration.

4.2.5. Pharmaceuticals

Some pharmaceuticals may include mercury, generally as a preservative. Mercury may be present in pharmaceutical products even when it is not listed on the label or on the product information sheet. Examples of pharmaceuticals that may contain mercury include the following:

Product	Notes
Merbromin/water solution	Used in plastic/reconstructive surgery as a disinfectant and marker
Ophthalmic and contact lens products	May contain mercury preservatives: thimerosal, phenylmercuric acetate, phenylmercuric nitrate
Nasal Sprays	May contain mercury preservatives: thimerosal, phenylmercuric acetate, phenylmercuric nitrate
Vaccines	May contain thimerosal (primarily in hemophilus, hepatitis, rabies, tetanus, influenza, diphtheria and pertussis vaccines)

Source: Mercury Waste Virtual Elimination Model Plan, Hospitals for a Healthy Environment

The Pharmacy shall use alternatives to mercury-containing pharmaceuticals, when practical. If there are no mercury-free products that meet the needs of the hospital, those that are the lowest in mercury concentration shall be used.

4.2.6. Cleaning Products

Some manufacturing methods by which certain chemicals included in some cleaning products are produced introduces low levels of mercury into these chemicals. Sodium hydroxide, potassium hydroxide, chlorine, and hydrochloric acid (muriatic acid), as well as other chemicals that use these chemicals in their production, contain mercury if manufactured in a mercury-cell plant. When selecting cleaning products, mercury level shall be considered and no-mercury or low-mercury cleaning products shall be used when possible. In some cases, it may



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be necessary to obtain a Certificate of Analysis for a chemical from the manufacturer to determine if mercury is present and at what concentration.

4.2.7. Electrical/Control Equipment

A small percentage of electrical/control equipment (gauges, switches, thermostats, etc.) at SEMC contains mercury. Where practicable, this equipment shall be replaced with non-mercury equipment proactively, if easily accessible and not part of critical equipment that cannot be taken out of service. Mercury-containing components of critical equipment that cannot be taken out of service, or that are not easily accessible, will be replaced with non-mercury alternatives at the end of the equipment's useful life or when the equipment is out of service for maintenance and the mercury-containing components are accessible.

4.2.8. Electronic Equipment

Computers, monitors, laptops, cell phones and other electronic equipment often include mercury-containing components. To minimize potential mercury exposure, new purchases of electronics shall include an evaluation of mercury level, if possible, and lower mercury equipment will be selected if economically and logistically feasible.

4.2.9. Batteries

Certain battery types, notably mercuric oxide (mercury zinc), zinc air button batteries, alkaline manganese button batteries, and silver oxide button batteries likely contain mercury. In some cases, there may be zero mercury added or lower mercury alternatives available. Whenever possible, the lower mercury batteries shall be used, however, only batteries recommended by equipment manufacturers shall be used in any equipment that could impact patient care or facility operation.

4.2.10. Lighting

Lamps containing mercury (fluorescent lamps, high-intensity discharge (HID) lamps, etc.) are present throughout SEMC. This type of lighting is more energy efficient than alternative incandescent lighting and is expected to remain in place at SEMC for the foreseeable future. Lower mercury lamps are available from some lamp vendors. To minimize the potential exposure to mercury from lamps, all replacement lamps purchased and installed shall be of the lower mercury type.

4.3. Disposal

It is the responsibility of the EHSO to coordinate disposal/recycling of mercury-containing wastes. Mercury-containing wastes will be recycled, when practicable. The following sections provide information on disposal of certain types of mercury-containing wastes.

4.3.1. Fluorescent Lamps

Fluorescent lamps shall be collected for recycling through the Oneida-Herkimer County Solid Waste Authority, or an alternative facility approved by the EHSO, in accordance with ECI017, *Fluorescent Lamp Management*.



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4.3.2. Batteries

Select batteries shall be collected and recycled through the Oneida-Herkimer County Solid Waste Authority, or an alternative facility approved by the EHSO, in accordance with ECI019, *Waste Battery Handling*.

4.3.3. Electronic Equipment

Electronic equipment that is no longer of use to the Medical Center shall either be re-sold or donated, if possible. Equipment that cannot be re-sold or donated shall be recycled through the Oneida-Herkimer County Solid Waste Authority, or an alternative facility approved by the EHSO.

4.3.4. Miscellaneous Equipment

Equipment containing mercury that does not fall into one of the other categories above shall be disposed in accordance with ECI008, *Mercury-Containing Equipment Handling and Disposal*.

4.4. Spill Response

Spills of mercury shall be cleaned up in accordance with ECI009, *Mercury Spill Cleanup*.

5) REFERENCES

Mercury Waste Virtual Elimination Model Plan - <http://www.h2e-online.org/pubs/mercurywaste.pdf>
ECI017, *Fluorescent Lamp Management*
ECI019, *Waste Battery Handling*
ECI008, *Mercury-Containing Equipment Handling and Disposal*
ECI009, *Mercury Spill Cleanup*

6) RECORDS

- The EHSO shall maintain disposal records.
- The Director of Hospital Services shall maintain recycling records.

7) AUTHORIZING DOCUMENT

ECP004, Hazardous Materials Management Plan

Coordinated with Environment of Care Team

APPROVED BY: Tom Corp 3/25/08
Environmental, Health & Safety Officer Date