SAMPLE MERCURY ELIMINATION & MANAGEMENT POLICY

I. **POLICY**

In an effort to protect patients, staff and the environment, it is the policy of **THIS FACILITY** to eliminate the use of mercury-containing equipment where a safe, effective alternative exists.

II. **PURPOSE**

The purpose of this policy is to remove mercury-containing equipment where safe, effective, mercury-free alternatives exist and to ensure the safe handling of remaining mercury-containing chemicals and equipment.

III. **GUIDELINES**

A. General Mercury Hazards and Background

Mercury is a liquid metal that occurs naturally in the environment. Mercury enters the environment from a large number of sources related to the use of the element and its compounds. Mercury is also a very persistent chemical, and bioaccumulates in the food chain. Humans are exposed to mercury either through consumption of contaminated fish or seafood, or through direct exposure to mercury in the workplace—through chemical handling, spills or equipment breakage.

Mercury is a potent neurotoxin that can impact the brain, kidneys, and lungs as well as the central nervous system at extremely low levels of exposure. According to the Centers for Disease Control, one in eight women in the United States have blood mercury levels high enough to impact fetal development[i] . The National Academies of Science states that each year about 60,000 children may be born in the United States with neurological problems that could lead to poor school performance because of exposure to methylmercury in utero [ii]. Preventing human exposure to mercury is an important public health priority.

Healthcare facilities are known to contribute mercury to the environment through medical waste treatment technologies, wastewater and solid waste. There are a variety of sources of mercury and mercury-related compounds in hospitals. Certain types of medical equipment and devices contain mercury, including thermometers, sphygmomanometers (blood pressure devices), esophageal bougies and dilators, cantor or Miller-Abbott tubes and button batteries. Mercury can be found in switches, relays, thermostats, fluorescent lamps, computer monitors and other facilities and operational equipment. Labs and pharmacy are also a source of mercury—in both equipment such as thermostats, electron microscopes and other diagnostic equipment as well as in stains, fixatives and pharmaceutical formulations. The mercury-based preservative thimerosal is still used in certain drug and vaccination formulations. All mercury-containing waste and equipment must be handled under the EPA's Resource Conservation and Recovery Act (RCRA) regulations. Due to the potential health hazards associated with mercury, proper handling and disposal of mercury is critical to avoiding worker exposure and environmental contamination.

B. General Handling Practices and Personal Protective Equipment

Individuals who may work with mercury or mercury containing compounds shall adhere to the following work practices:

- Avoid using mercury or mercury containing compounds whenever possible.
- Use instruments that are mercury-free

- Do not eat, drink, smoke; apply cosmetics, or store any of these items in areas where hazardous materials such as mercury are stored or used.
- Avoid all direct contact (i.e. skin, eye contact) with mercury.
- Eye protection should be used where necessary.
- Use neoprene or nitrile gloves when handling metallic mercury (refer to mercury spill guidelines). For specific glove selection contact the hospital environmental health and safety personnel for guidance. **Where work may involve exposure to organic mercury compounds specific handling procedures including glove selection will need to be evaluated.**
- Avoid storing or handling mercury near sinks. Spilled mercury could run into the sink, lodge in the "P" trap, ruin the pipe by amalgamating with and weakening the metal, and then be released into the environment.
- Avoid using mercury or mercury compounds in operations that could result in mercury waste.
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C. Labeling and Storage

The following applies to the labeling and storage of mercury, its compounds, and mercury containing equipment:

- All equipment and containers of mercury and its compounds shall be labeled
- Label all mercury containers as follows:

MERCURY
WARNING: VAPOR HARMFUL AT ROOM TEMPERATURE-MAY BE FATAL IF HEATED IN THE OPEN-DO NOT BREATHE VAPOR-USE WITH ADEQUATE VENTILATION-AVOID SKIN CONTACT.

- Refer to the **THIS FACILITY'S** Hazard Communication Program for additional labeling requirements
- Do not store mercury near chemicals that can create explosive mixtures with mercury (e.g., ammonia, chlorine dioxide). Keep mercury compounds that are oxidizers separate from organic materials and other combustibles. For specific mercury compound storage information refer to the MSDS for specific storage requirements.
- Minimize the amount of mercury in storage. Inventory mercury-containing equipment to determine which items are no longer in use or if they may be replaced by mercury-free alternatives.
- Store mercury in a cool, dry place.
- Use containers made of impact-resistant material or put them in sturdy secondary containers
- Keep mercury containers tightly closed when not in use.
- When removing mercury and mercury-containing devices, interim storage shall be provided in a designated and properly labeled area within the hazardous waste storage facility until such time that the mercury is moved off site by a licensed hazardous waste hauler.

D. Transporting Mercury-Containing sources

The following should be adhered to when transporting mercury-containing equipment in the hospital and/or between on-site facilities:

- When transporting small items or equipment containing mercury within the hospital secondary containment will be used, i.e. small trays.
- Larger equipment or multiple pieces should be transported using a cart or plastic carrying trays.

- Transferring equipment between on-site buildings should be accomplished using carts and/or plastic carrying trays.

E. Spill Response

- Mercury Spill kits are available in each department and should be used following the Mercury Spill Response plan.
- Notify your Supervisor and the Hazardous Communication Coordinator immediately.
- Special mercury vacuums are commercially available for larger spills but require advanced training to operate properly. **Never use a household vacuum cleaner or shop-vac to clean up mercury. These devices do not have adequate filtration and will spread mercury vapors.**

F. Purchasing Guidelines

Whenever possible the use of equipment and hazardous materials containing mercury should be minimized and/or eliminated. Products that contain mercury will be avoided where a safe, effective, mercury-free alternative exists. Where no acceptable substitute is available, products containing mercury will be clearly labeled and training will be provided for all individuals utilizing mercury-containing chemicals, devices or equipment.

G. Training:

Workers who are potentially exposed to mercury and/or handle equipment containing mercury shall be trained in the hazards and health impacts of mercury before initial assignment. Training shall be provided in accordance with the **FACILITY** Hazard Communication Program and applicable emergency response and hazardous materials procedures.

The following training topics will be required depending on the work performed:

	MD	RN	Sup
General **FACILITY** safety requirements	X	X	X
Hazard Communication	X	X	X
Mercury hazards	X	X	X
Work practices and handling mercury	X	X	X
Small spill response		X	X
Personal protective equipment		X	X
Incident/Accident Reporting		X	X
Patient Protection	X	X	X
Procedure for Safety Audits			X

[i] US Centers for Disease Control and Prevention. 1999-2000 National Health and Nutrition Examination Survey (1999-2000 NHANES).
[ii] National Academies of Science. EPA's Methylmercury Guideline Is Scientifically Justifiable
For Protecting Most Americans, But Some May Be at Risk. July 1, 2000.