Spilled mercury contaminates a medical office

A worker in a medical office noticed small, silver "droplets" on the surface of her workstation. The employer attempted to clean up the spill with household cleaners and spread the material throughout the office. The silver substance was later identified as mercury, and four workers were exposed to elevated concentrations of mercury vapour. The mercury most likely originated from a broken piece of medical equipment.

What is mercury?

Mercury is a heavy, dense metal that is liquid at room temperature. The freezing point of mercury is actually less than 38 degrees below zero Celsius. The liquid is so dense that a bowling ball will float in it!

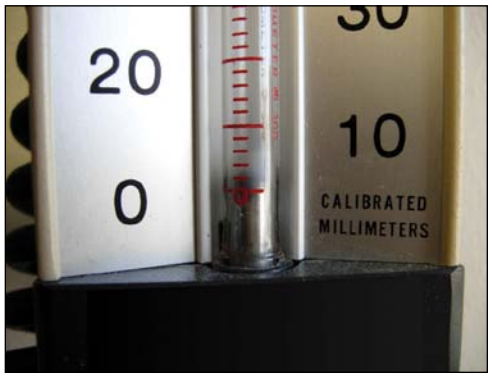
Mercury is found in a variety of electrical devices and other equipment, including thermometers and manometers (e.g., medical sphygmomanometers). Some countries, including Sweden and Holland, have banned the use of mercury in medical equipment. However, the devices are still widespread in Canada—mainly due to their superior accuracy and ease of calibration and maintenance.

A number of mercury spills are reported every year to WorkSafeBC. These usually occur when thermometers or manometers are mishandled or broken and the mercury leaks out. If the spill is not cleaned up promptly and properly, the mercury can be spread throughout the work area. If this were to occur in a physician's office, the office could be closed for several days while cleanup and decontamination take place.

Sphygmomanometer (on the right)

What happens if I am exposed to mercury metal?

Liquid mercury can affect human health through skin contact, ingestion, and by breathing the vapour—most worker exposure is through the inhalation of mercury vapour. Chronic (long-term) exposure to high concentrations of mercury vapour affects the central nervous system and can cause stupor, tremors, nervousness, and personality changes; eventually, the kidneys become damaged. Gum disease can be an early sign of chronic mercury exposure.



Mercury reservoir in a sphygmomanometer

How can I prevent mercury exposure?

The most effective way to prevent the exposure of workers, patients, and physicians to an accidental spill of mercury is to dispose of all mercury-containing medical devices and replace them with mercury-free equipment. Mercury-containing medical devices or material from cleanup of mercury spills must be disposed of according to the provisions of the province's *Environmental Management Act* and the Hazardous Waste Regulation.

Exposure control plan

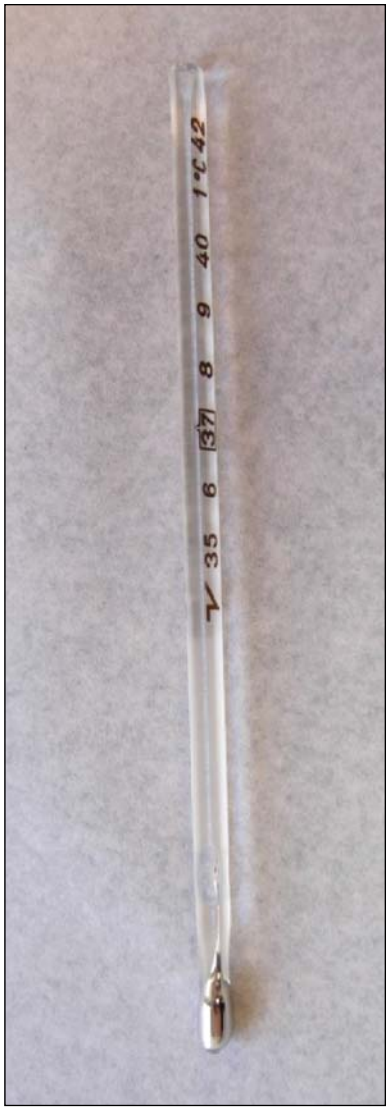
If mercury-containing devices are present in the workplace, the employer must develop and implement an exposure control plan.

- The exposure risk to workers and patients must be evaluated and the necessary controls (e.g., anti-spill plugs for manometers) implemented.
- Material Safety Data Sheets (MSDS) should be readily available in the workplace—these can be obtained from the equipment manufacturers.
- Safe work procedures must be developed for the handling, storage, and use of mercury-containing equipment.
- Emergency spill procedures must be created. Specific responsibilities should be assigned if a spill occurs. Ensure that all workers and supervisors are trained in these procedures.
- Any mercury exposures should be documented, and the health of the affected worker(s) monitored.

What do I do if a spill occurs?

Isolate the affected area. If the spill is small (less than 10 millilitres), clean up the spill. A mercury spill cleanup procedure (for minor spills) is posted on WorkSafeBC.com.

Even a minor spill, such as that from a small thermometer, should be reported to WorkSafeBC (phone 1 888 621-7233 during normal business hours, or 1 866 922-4357 after hours) to ensure that the mercury has been properly cleaned up. WorkSafeBC staff will collect the information and forward it to the Occupational Hygiene Officer (OHO) for the geographical area where the spill took place. The OHO can provide additional guidance regarding proper cleanup procedures and documentation. For information on the *Environmental Management Act* and the Hazardous Waste Regulation, contact the nearest regional office of the B.C. Ministry of Environment.



Mercury thermometer

WORK SAFE BC

WORKING TO MAKE A DIFFERENCE

worksafebc.com