

Health Sector in the Implementation of the Minamata
 Convention on Mercury
 Kingston, Jamaica
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Healthcare Mercury Elimination.
 Regional experiences on replacement.

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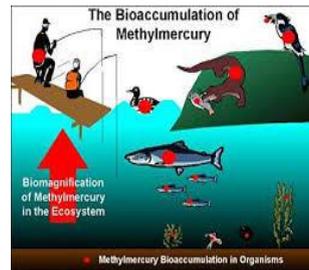
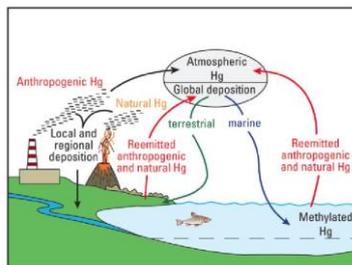


Mercury

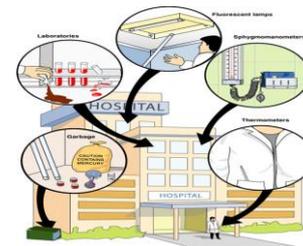


Chemical Forms of Mercury

- Elemental
 - Liquid metal
- Inorganic salts
 - Mercuric chloride
- Organic
 - Methyl, ethyl, dimethyl
 - Phenyl organic groups



Mercury healthcare settings



Historical Perspective

- Wide use of mercury in the healthcare setting
- Minimal understanding about mercury impacts
- Minimal understanding about mercury sources
- Little or no regulation



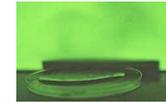
Obstacles to Eliminating Mercury

- Little awareness about health impacts
- Reluctance to change
- Lack of awareness of alternatives and economics
- Disposal costs of old mercury.



Elemental Mercury

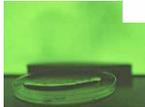
- Heavy metal
- Liquid at room temperature
- Exposure through inhalation of vapor



Hg routes of exposure

Most important routes of exposure:

- Through inhalation of vapor
- <https://www.youtube.com/watch?v=lpZF88fqrl8>
- Consumption of fish



Mercury in medical devices

(Collated by Bill Ravanesi of Health Care Without Harm (HCWH))

Medical device	Amount of Hg
Fever thermometers	0,5 a 1,5 gr.
Hospital laboratory thermometers	3 a 4 gr.
Wall blood pressure units and floor portable units	110 a 200 gr.
Esophageal dilators (Maloney o Hurst)	A tube may contain as much as 1361 gr.
Cantor tubes	54 a 136 gr.
Miller Abbott tubes	136 gr.
Fluorescent tubes	10 a 50 mg. per tub

Thermometers

- 1 gm mercury/thermometer
- Average breakage in a medium sized hospital – 70/month
- 70 gms mercury released/month by a hospital



Sphygmomanometer

- 100 gms Hg/sphygmomanometer
- Calibration/refilling done in-house
- Zero protection, zero training
- Vapour levels in a typical calibration room dangerously high



Dental amalgams



- Dental amalgam alloy approximately 50% mercury.
- Mercury is released when the fillings are removed or when excess scrap is improperly handled.



Making Medicine Mercury Free

- Educate staff
- Mercury audit
- Eliminate use/ Conduct assessment of cost
- Develop and Implement mercury free purchasing policy



Develop and implement waste segregation for mercury containing wastes

Digital Thermometer

- Meets same accuracy requirements as glass mercury
- Slightly more expensive than glass mercury
- Require button batteries



Hg Thermometer Alternative

- Infrared device
- Emergency rooms



Refrigerator/Laboratory Thermometer

- Replaced with alcohol thermometer



Sphygmomanometers

- Aneroid most common Hg alternative
- Comparable in cost to mercury
- Both Mercury and Aneroid require calibration



Mercury clean up and disposal

- Education and Training
- Maintenance Protocol
- Spill Clean up
- Waste Collection
- Disposal and Storage



Spill Clean Up

- Does not have to be “high tech”
- Should have 2-3 available in each facility
- Once used must be replaced
- Used by trained personnel
- Kit includes instructions



Spill Kit Contents

- 4 to 5 zip lock-type bags
- trash bags (2 mm or greater)
- Plastic container with lid that seals.
(35 mm film canister for example)
- nitrile or latex gloves
- paper towels
- cardboard strips



Disposal / Storage

- Short term solution
- Designated location for storage of waste mercury collections drums.
- Drums will have liners and be placed on a concrete slab.
- Protected from rainfall, and flooding theft and/or unauthorized opening.
- Broken and/or obsolete mercury medical devices shall be placed in drums along with spilled mercury



WHO-HCWH

- From 2008- 2014, WHO and HCWH collaborated in a global initiative .
- Demonstrating the feasibility of phasing out of mercury-based thermometers and sphygmomanometers in health care and their substitution with accurate, economically viable alternatives.



Minamata convention

- Global legally binding instrument on mercury
- Thermometers and blood pressure devices are included for phase-out by 2020.



Mercury phase out in Latin America

- Brasil
- Argentina
- Chile
- Costa Rica
- Nicaragua
- México
- Paraguay
- Colombia
- Ecuador



Resources

- **Guide for eliminating mercury in Health Care Establishments**
https://noharmglobal.org/sites/default/files/documents/files/2460/Mercury_Elimination_Guide_for_Hospitals.pdf
- **The Accuracy of Alternatives to Mercury Sphygmomanometers**
https://noharm.org/sites/default/files/lib/downloads/mercury/Accuracy_Alt_Mercury_Sphyg_rev1009.pdf
- **Making Medicine Mercury-Free**
https://noharmcanada.org/sites/default/files/documents/files/839/Making_Med_Mercury_Free_HC_Wr.pdf
- **Thermometer Fact Sheet**
https://noharm-uscanada.org/sites/default/files/documents-files/978/Thermometer_Fact_Sheet.pdf
- **A New Era: The Elimination of Mercury Sphygmomanometers**
https://noharmcanada.org/sites/default/files/documents/files/1098/A_New_Era_Mercury_Eliminati.pdf



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