



**Letter:**

**Mercury Free Healthcare by 2020: Time for Action.**

**Authors**

**Raja Danasekaran, Geetha Mani, Kalaivani Annadurai,**  
Assistant Professors, Department of Community Medicine, Shri Sathya Sai Medical College & Research Institute,  
Kancheepuram, Tamil Nadu, India.

**Address for Correspondence**

**Dr. Raja Danasekaran,**  
Department of Community Medicine,  
Shri Sathya Sai Medical College & Research Institute,  
Thiruporur – Guduvanchery Main Road, Ammapettai village,  
Sembakkam Post – 603 108,  
Chenagalpattu Taluk, Kancheepuram District,  
Tamilnadu, India.  
**E-mail:** mailraja84@gmail.com

**Citation**

Danasekaran R, Mani G, Annadurai K. Mercury Free Healthcare by 2020: Time for Action. *Online J Health Allied Scs.* 2013;12(4):16. Available at URL:<http://www.ojhas.org/issue48/2013-4-16.html>

**Open Access Archives**

<http://cogprints.org/view/subjects/OJHAS.html>  
<http://openmed.nic.in/view/subjects/ojhas.html>

Submitted: Oct 19, 2013; Accepted: Jan 1, 2014; Published: Feb 20, 2014

**Abstract:** Urgent steps are needed to realise the goals of mercury free healthcare by 2020.

**Key Words:** Mercury; Thermometer; Sphygmomanometer; Dental amalgam

**Introduction:**

Mercury and its various compounds are of global public health concern and have a range of serious health impacts including brain and neurological damage especially among the young. World Health Organization and Health Care without Harm have joined forces to launch a initiative “Mercury-Free Healthcare by 2020” to get mercury removed from all medical measuring devices by 2020. The initiative calls for the phasing out of mercury thermometers and blood pressure devices containing mercury.[1]

**Discussion:**

Mercury thermometer and sphygmomanometer are being used for more than a century for the measurement of temperature and blood pressure which are two key elements in evaluation of health of patients. When mercury gets spilled from these instruments it vaporizes immediately in air which becomes an inhalation hazard.[2] Around 80% of the inhaled mercury vapour is absorbed in the blood through the lungs.[3] It results in damage of lung, kidneys and central nervous system. The symptoms will be dyspnoea and cough on acute exposure. Chronic exposure to low doses of mercury will lead to irritability, depression, tremors and slurred speech.[2] Recent studies suggest that mercury may have no threshold below which some adverse effects do not occur.[3] Alternatives to mercury thermometers include digital thermometers, tympanic infra red thermometers, liquid crystal forehead thermometers, temporal artery thermometers, alcohol-dye thermometers, phase change thermometers and thermo chromic thermometers.[1] Studies have shown that the oral digital thermometer provides the

best results in comparison with the mercury in glass thermometer, when compared to other alternatives. But like the mercury in glass thermometers it cannot be used reliably in an uncooperative or comatose patient. It has been suggested that the digital thermometers can be used for general purpose, the tympanic infra red thermometers for uncooperative patients and the liquid crystal forehead type for home use. [4]

Sphygmomanometers remain an area of concern because they represent a large mass of mercury per device and therefore pose a greater hazard in the event of breakage. In light of the toxicity of mercury and also the serious inherent inaccuracy of the auscultatory technique, validated and affordable electronic devices, that have the option to select manual readings, are the preferred option.[5] Other healthcare devices which contain mercury are dental amalgam, manometers and thermostats. Dental amalgam is one of the dental filling materials which contains high amount of mercury (45-55%) and it can be replaced with alternatives like glass ionomers or resin fillings. Similarly manometers and thermostats could be substituted by electronic devices.[6] To conclude, better alternatives to mercury containing healthcare equipment are available which are accurate and also practical in healthcare settings. The elimination of use of mercury, a potent neurotoxin, from these devices protects the healthcare providers as well as promotes the health of the patients. [1] And also by substituting the mercury containing devices with more accurate, affordable and safer alternatives we can promote health care sector leadership in the global reduction of mercury emissions.[6]

**References:**

1. World Health Organization. Replacement of mercury thermometers and sphygmomanometers in health care Technical Guidance. Geneva: WHO Press; 2011.

2. Agency for Toxic Substances and Disease Registry. Toxicological Profile for Mercury. Available from: <http://www.atsdr.cdc.gov/toxprofiles/tp46.pdf> [Last accessed on 2013 October 15]
3. World Health Organization. Mercury in health care: policy paper. Available from: [http://www.who.int/water\\_sanitation\\_health/medicalwaste/mercurypolpaper.pdf](http://www.who.int/water_sanitation_health/medicalwaste/mercurypolpaper.pdf) [Last accessed on 2013 October 16].
4. Fadzil F M, Choon D, Arumugam K. A comparative study on the accuracy of noninvasive thermometers. *Australian Family Physician*. 2010;39:237-239.
5. Parati G et al. Recommendations for blood pressure measuring devices for office/clinic use in low resource settings. *Blood Pressure Monitoring*. 2005;10:3-10.
6. Health Care Without Harm. Guide for Eliminating Mercury from Healthcare Establishments. Available from: [http://www.mercuryfreehealthcare.org/Mercury\\_Elimination\\_Guide\\_for\\_Hospitals.pdf](http://www.mercuryfreehealthcare.org/Mercury_Elimination_Guide_for_Hospitals.pdf) [Last accessed on 2013 October 16]