This short guide is designed to provide step-by-step instructions for the safe substitution of non-mercury thermometers and sphygmomanometers in health-care settings. It identifies the resources available to provide confidence that the substituted products will provide equivalent accuracy and comparable clinical utility, while protecting health-care workers and the environment. It is designed for professionals responsible for institutions or ministries desiring to switch to safer non-polluting technologies in health care.

This guide is also an output of a global mercury-free health-care initiative in which the World Health Organization is engaged. This global initiative aims to promote the substitution of mercury-based medical devices with safe, affordable, accurate alternatives around the world. The global mercury-free health-care initiative has documented mercury substitution in dozens of countries. It has also produced a series of additional resources for health professionals, health system managers and government officials that can be useful in developing and implementing policy and strategies for mercury substitution in the health sector.

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Replacement of mercury thermometers and sphygmomanometers in health care

Technical guidance

Edited by: Jo Anna M Shimek, Jorge Emmanuel, Peter Orris and Yves Chartier

World Health Organization

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Foreword

Elemental mercury has been used for decades in thermometers and sphygmomanometers in the health-care setting. Mercury, naturally occurring in the earth's crust, is released during volcanic eruptions and as a by-product of human activities such as the burning of coal, or mining and refining of metals.

Once released, mercury may travel great distances before depositing on land and water, where it reacts with organic materials to form methylmercury. Methylmercury bioaccumulates and becomes part of the aquatic food chain. This organic mercury is a potent neurotoxin, especially for developing fetal and children's brains.

In addition, in the health-care setting, elemental mercury may be released as a result of spillage from broken thermometers or leaking equipment. Inhalation of these mercury vapours may cause damage to the lungs, kidneys and central nervous system. Symptoms of mercury poisoning from chronic exposure may include shortness of breath, dyspnoea and irritability, depression and tremors.

The potential environmental damage, human toxicity and disposal costs of mercury have led to a growing demand for non-mercury-containing devices in health care. This guide will describe available alternative non-mercury-containing devices for thermometers and sphygmomanometers, and provide guidance on the selection of alternative devices.

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