

Case study title

Chemicals Used Reduction and Management



GGHH Agenda Goals

Replace toxic chemical substances with safer alternatives.

Hospital Goals

- Reduce the chemicals used.
- Use the comprehensive management way to non-replaceable chemicals.

Progress Achieved

- Replaced the mercury sphygmomanometers to electronic ones to lower the risk of mercury leakage.
- Only under the following circumstances are mercury sphygmomanometer used: in cases where it is difficult to use the electronic version to read the blood pressure; negative-pressure ward inpatient.
- No mercury spills have occurred in the past three years.

The Issue

Mercury is a persistent bio-accumulative metallic substance, which highly threatens environment and human health. Acute mercury poisoning can cause severe pulmonary edema, which then leads to respiratory failure and death. Long-term exposure to mercury will cause chronic poisoning, leading to problems with the gastrointestinal, kidney and nervous systems. In our hospital, the source of mercury is mainly in the mercury sphygmomanometer. Broken mercury sphygmomanometers may occur in ward areas and expose the registered nurses, patients and cleaners exposed to vapor mercury.

Sustainability Strategy

Implemented Under the sustainable goals to avoid using mercury, first build the consensus with the clinical staff. Checking the user habits and make sure only short-term training is needed to maintain the measurement accuracy in making the change from mercury to electronic sphygmomanometer. Secondly, check to make sure which situations require the use of mercury sphygmomanometer.

Implementation Process

Setting the mercury sphygmomanometer management policies and develop the standard operation procedure in decontamination and waste handling. Provide necessary training for staff in the clinical and Biomedical Division who may need to handle accidental mercury leakage.

1. Extremely limited use of the mercury sphygmomanometer: only for special patients such as the one whose blood pressure cannot be read by electronic meters, or those in the negative-pressure ward inpatient departments.
2. Standards: Biomedical Division is trained to use the mercury sphygmomanometer in hospital and conducts regular maintenance annually. Users have to use the mercury sphygmomanometer under the standard procedures.

- Exercise on emergency response: when mercury leak occurs, turn off the air conditioning immediately and then notify the officers in charge (notify Labor Safety Department during day times and Duty Head Nurse during night times and holidays). Evacuate people to a comparatively safe area. Put on the activated carbon mask and use empty needle to draw the visible mercury, and then seal it in the plastic bottle. Train handlers to use mercury leak handling kits to deal with invisible mercury to neutralize its toxicity and avoid volatilization into the air to harm humans.



Tracking Progress

According to the hospital's incident reporting systems in recent years, no mercury spill was reported, and no mercury leak handling kit was used.

Challenges and Lessons Learned

There are still few patients who are not suitable to use the electronic sphygmomanometer.

Next Steps

The Biomedical Division will centrally manage the mercury sphygmomanometer to avoid unnecessary usage.

Demographic Information

- The name of the institution: Taipei Medical University Hospital
- Its network: The first Affiliated Hospital in Taipei Medical University Healthcare System
- Address: 252, WuXing St., XinYi Dist., Taipei City 11031, Taiwan.
- Building scale: 3 medical building in total.
- Number of beds: more than 800 beds.
- Number of employee: more than 2000 staffs

Keywords / topics:

Mercury, Sphygmomanometer