



DEPARTMENT OF THE NAVY
BUREAU OF MEDICINE AND SURGERY
7700 ARLINGTON BOULEVARD
FALLS CHURCH, VA 22042

IN REPLY REFER TO
BUMEDINST 6260.30B
BUMED M3
15 Oct 2015

BUMED INSTRUCTION 6260.30B

From: Chief, Bureau of Medicine and Surgery

Subj: MERCURY CONTROL PROGRAM FOR DENTAL TREATMENT SPACES

Ref: (a) International Organization for Standardization 11143:2008(E) (NOTAL)
(b) 40 CFR 261-265
(c) 29 CFR Subpart Z 1910.1000
(d) American Dental Association Statement on Dental Amalgam
(e) American Dental Association Best Management Practices for Amalgam Waste, October 2007 (NOTAL)
(f) OPNAVINST 5100.23G
(g) OPNAVINST 5100.19E
(h) NMCPHC-TM OM 6260
(i) OPNAVINST 6000.1C
(j) Defense Logistics Agency DRMS-BCP Memo of 24 Mar 05 (NOTAL)
(k) BUMEDINST 5450.167A
(l) OPNAV M-5090.1 of 10 Jan 2014

Encl: (1) Mercury Control, Decontamination, and Disposal
(2) Industrial Hygiene Technical Assistance
(3) Mercury Control Safety Program Materials

1. Purpose. Establishes minimum handling procedures for elemental mercury in dental treatment spaces to minimize personnel exposure and environmental contamination. This instruction does not apply to organic mercury compounds. This instruction is a complete revision and should be reviewed in its entirety.

2. Cancellation. BUMEDINST 6260.30A.

3. Scope. This instruction applies to personnel working in all Navy and Marine Corps dental spaces to include dental treatment facilities (DTF), and DTFs residing within medical treatment facilities (MTF) both ashore and afloat. The provisions of this instruction amplify the requirements of references (a) through (l), insofar as the practice of dentistry is concerned. Certain uniform controls aboard ships and at shore stations are needed to avoid potential contamination, and to provide for proper mercury disposal.

4. Background

a. Mercury, a heavy metal that vaporizes at room temperature and concentrates rapidly in confined spaces, is a significant health hazard if sufficient amounts are inhaled, ingested, or

absorbed through the skin. Mercury vapor has no exposure warning properties such as odor or color. Dental amalgam is a mixture of several metals, including mercury. Amalgam is approximately 50 percent mercury by weight. However in this format, mercury is bound into an inert, nontoxic form, and is not considered harmful to humans. The use of pre-encapsulated amalgam has reduced the potential for mercury exposure during routine dental procedures. However, fine amalgam particles can bypass the amalgam trap. The International Organization for Standardization (ISO) released reference (a), which specifies requirements for amalgam separator efficiency. Reference (a) requires that amalgam separators remove 95 percent of amalgam waste from the dental waste water stream. The use of ISO approved chairside amalgam separators will ensure 95 to 99 percent of this residual particulate amalgam burden is captured, thus reducing mercury release into the environment. Additionally, this fine particle amalgam capture will reduce sludge build up in the central clinic drain lines, reducing costly future maintenance expenses. Central filtration units function to filter the combined dental line waste from all chairs within a DTF. When used in addition to chairside amalgam separators, central filtration systems serve as an extra layer of protection against mercury release into the public sewer system.

b. Mercury is regulated as a hazardous waste by the Environmental Protection Agency, resulting in amalgam waste being managed per the Resource Conservation and Recovery Act requirements of reference (b). Mercury waste must be properly managed in a cradle-to-grave fashion to minimize the likelihood of environmental contamination.

c. Materials used as a replacement for mercury dental amalgam in the dental treatment spaces must be characterized to determine and properly manage the environmental impacts, including but not limited to considerations for wastewater discharges and hazardous waste management.

5. Discussion

a. The current American Conference of Governmental Industrial Hygienists, threshold limit values for elemental mercury vapor as updated per reference (c), will be used to evaluate personal exposures and determine if any significant exposures exist and if medical surveillance is required.

b. The exclusive use of pre-encapsulated amalgam for Navy dentistry has limited a major potential source of mercury contamination. There are, however, other potential sources of accidental exposure to mercury to dental personnel, such as leaky amalgam capsules, faulty amalgamators, or other sources as outlined in reference (d). Reference (d) is available at: <http://www.ada.org/1741.aspx>.

c. Reference (e) describes recommendations for disposal or recycling of amalgam scraps and the cleaning of dental water lines and vacuum filters.

d. The survey requirements specified in references (f) and (g), applying to all Navy workplaces, are appropriate and adequate for dental spaces. Air sampling is not specifically required, but may be performed at the discretion of the cognizant industrial hygienist. Industrial hygiene assistance can be obtained from the cognizant naval MTF, Navy Environmental and Preventive Medicine Unit, Navy and Marine Corps Public Health Center, or fleet industrial hygiene contacts, see enclosure (2).

e. Medical surveillance and biological monitoring is not required, but may be prescribed by an occupational health professional as circumstances warrant. When conducted, medical surveillance examinations must comply with the requirements of reference (h). Should pregnant staff or patients suffer accidental exposure to mercury as described in reference (d), they will require a medical evaluation and mercury exposure screening per reference (i).

f. Special handling and disposal of hazardous wastes, including mercury, for shipboard facilities are covered in references (j) and (k).

g. The Naval Medical Research Unit San Antonio (NAMRU-SA) has been assigned to provide guidance and identify solutions for DTFs to remain in compliance with mercury control and amalgam waste management with respect to dentally related mercury per reference (k).

h. The Bureau of Medicine and Surgery (BUMED) Environmental Programs oversees the proper implementation of requirements related to the proper management, collection, and disposal/reclamation of dentally related mercury waste.

i. The basic training of hospital corpsmen, particularly those in dental tracks or Biomedical Equipment Technicians involved in the upkeep of DTF equipment, requires comprehensive knowledge of the hazards of mercury and mercury products, including amalgam exposures, and the proper use, collection, and disposal of mercury and mercury products. Biomedical knowledge of proper clean up procedures and contacts included in references (e) through (g), and (j), and in enclosures (1) through (3) are a critical component of training.

6. Action

a. Commanders, commanding officers, and officers in charge of MTFs and DTFs, or leaders overseeing dental training programs, and senior medical department officers aboard ships having dental spaces must:

(1) Ensure the requirements of enclosures (1) through (3) are implemented and enforced particularly as they pertain to the disposal of dental amalgam as a hazardous waste as defined in reference (j) and enclosure (3).

(2) Ensure the use of only pre-encapsulated mercury amalgams.

(3) Ensure the following requirements are met, per NAMRU-SA:

(a) Install chairside amalgam separators that comply with reference (a) requirements as the primary amalgam waste collection device for all wastewater suction lines connected to dental chairs where amalgam restorations will be placed or removed. This requirement is in addition to manufacturer installed amalgam traps.

(b) Install appropriate central collection systems in addition to the chairside amalgam separators upon mandate by local, State, or Federal regulatory agencies.

b. NAMRU-SA, as lead agent for the Navy's Dental Mercury Abatement Program must:

(1) Provide guidance to MTFs and DTFs that are mandated or elect to install additional wastewater filtration solutions beyond chairside amalgam separators.

(2) Provide technical support and recommendations to maintain environmental compliance.

(3) Maintain a Web site that provides information including part numbers, manuals, training documents, and references. This site can be accessed through NAMRU-SA's home page at:

<http://www.med.navy.mil/sites/nmrc/Pages/namrusa.htm> or directly at:
http://www.med.navy.mil/sites/nmrc/Pages/mercury_pgfin.html

c. Navy Medicine Education and Training Command will ensure:

(1) The dental aspects of the Naval Hospital Corps School curriculum include review of this instruction and the specifics contained in references (a) through (l) and enclosures (1) through (3) of this instruction.

(2) The curricula for the Biomedical Equipment Technician-Basic and Biomedical Equipment Technician-Advanced Schools include review of this instruction and the specifics contained in references (a) through (l) and enclosures (1) through (3) of this instruction.

d. BUMED Environmental Programs will provide guidance and technical assistance to MTFs and DTFs regarding the proper management and disposal/reclamation of mercury waste.

7. Records. Records created as a result of this instruction, regardless of media and format, shall be managed per SECNAV M-5210.1 of January 2012.



M. L. NATHAN

Distribution is electronic only via the Navy Medicine Web site at:
<http://www.med.navy.mil/directives/Pages/BUMEDInstructions.aspx>

MERCURY CONTROL, DECONTAMINATION, AND DISPOSAL

1. Mercury Control. Enclosure (3) discusses the basic requirements for the control of mercury. Due to the health hazard potential of mercury, control procedures for the handling and disposal of amalgam, and mercury-contaminated items, are mandatory.

2. Mercury Decontamination and Spill Cleanup Procedures

a. A mercury decontaminant, such as HgX[®], must be readily available for immediate mixing and application to a contaminated surface. HgX[®] works by binding with the elemental mercury. If larger droplets of mercury are present, the HgX[®] only reacts with the outer surface of the droplet forming a shell. This shell can easily be broken, releasing elemental mercury. Therefore, care must be used during removal of large droplets.

b. When mercury contamination occurs, it must be cleaned up immediately. Follow the instructions provided in the mercury decontamination kits discussed in enclosure (1), paragraph 4.

c. Eating, drinking, and smoking must be prohibited during cleanup procedure.

d. Patient examination gloves must be worn during cleanup.

e. Collected mercury must be placed into a sealed, suitable liquid, and vapor tight container, and removed to a designated area for disposal as mercury.

f. Contaminated surfaces must be scrubbed with mercury decontaminant to convert any trapped mercury.

g. Any equipment or instruments, such as amalgamators, which become contaminated with mercury, must be thoroughly cleaned with mercury decontaminant.

h. The cognizant industrial hygiene office must be contacted to test the decontaminated area and equipment for residual mercury.

3. Mercury Disposal

a. Mercury and mercury compounds must not be dumped into any body of water including open seas or oceans, or intentionally released into any ship's waste disposal system. Shipboard mercury storage and handling areas must not be connected to deck drainage systems.

b. For shipboard only:

(1) All mercury-contaminated waste, including scrap amalgam, must be collected, packaged with a double boundary of confinement using plastic bags, sealable drums, or polyethylene bottles, and labeled.

(2) Disposal/reclamation of the mercury waste shall be coordinated with the shore installation providing hazardous waste management services.

c. For shore facilities:

(1) The management and disposal/reclamation of dentally related mercury waste must be coordinated with the hazardous waste program of the host installation environmental department. The host installation will provide assistance in determining if the requirements for waste management and recycling identified in enclosure (1) are applicable or if more restrictive requirements for the management and disposal/reclamation of these items as hazardous waste per references (k) and (l) or other state and local requirements apply. Where more restrictive requirements apply, the host installation will provide additional guidance to the MTF or DTF to ensure proper compliance.

(2) Sites that are not located on a host installation or at which the host installation does not provide hazardous waste disposal services or support shall contact BUMED Environmental Programs for assistance.

(3) The site-specific requirements for the cradle-to-grave management of dentally related mercury waste shall be documented and maintained in a standard operating procedure.

4. Mercury Decontamination Kits. Mercury decontamination kits are commercially available and must be obtained by commands to be available for facilities requiring their use.

INDUSTRIAL HYGIENE TECHNICAL ASSISTANCE

1. General. Industrial hygiene personnel at BUMED activities are available to:
 - a. Provide consultation on occupational health matters.
 - b. Provide specific assistance in identifying and evaluating personnel exposures to toxic contaminants and other hazardous agents.
 - c. Evaluate the need for, and recommend as appropriate, the administrative and engineering controls, and personal protective equipment required to control personnel exposures to toxic chemicals and harmful physical agents.
2. Forces Afloat. Forces afloat should request assistance from the cognizant regional industrial hygiene service.
3. Navy medical and dental centers can be located through <http://www.med.navy.mil/SiteInfo/Pages/default.aspx>. If still unable to find the cognizant industrial hygiene service or you need additional assistance, contact:

Navy and Marine Corps Public Health Center
Industrial Hygiene Department
620 John Paul Jones Circle, Suite 1100
Portsmouth, VA 23708-2103
DSN 377-0700 or Commercial (757) 953-0700

MERCURY CONTROL SAFETY PROGRAM MATERIALS

The following materials may be used in the Mercury Control Safety Program:

1. Decontaminating agent (HgX®), NSN 6850-00-495-5506.
2. Cup, dental amalgam, skid-resisting base, corrosion-resistant steel, NSN 6520-00-138-9748.
3. Jar, surgical needle with cover, 3 1/16" high and 3 1/8" overall, NSN 6530-00-782-7400, or bottle, urine specimen, NSN 6640-00-165-5778 (for amalgam scrap).
4. Stainless steel tray, 19" x 12 5/8" x 1/2," NSN 4931-01-007-0276, or equivalent (for catch tray).
5. Bag, dental prosthesis, NSN 6520-00-926-9041.