




UNITED STATES DEPARTMENT OF COMMERCE  
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OFFICE OF MARINE AND AVIATION OPERATIONS  
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MEMORANDUM FOR: Distribution

FROM: Rear Admiral Michael J. Silah, NOAA   
Director, NOAA Corps and  
Office of Marine and Aviation Operations

SUBJECT: NOAA Ship Health Plan Update 2018

The National Oceanographic and Atmospheric Administration (NOAA) Ship Health Plan has been issued in accordance with Part 339 of Title 5 of the Code of Federal Regulations.

The 2018 NOAA Ship Health Plan provides current guidelines for health and sanitation conditions aboard NOAA's fleet of ships. It applies to inhabitable spaces aboard all NOAA ships and complies with recommendations from the Occupational Safety and Health Administration (OSHA).

The 2018 Ship Health Plan replaces the 2013 Ship Health Plan with only minor changes made to the new plan as follows:

1. Replaces all references to Regional Director Health Services (RDHS) with Director Marine Medicine (DMM).
2. Paragraph 9 changes the procedure for tracking formulary resupply utilizing a shared Google spreadsheet.

An electronic version of the NOAA Ship Health Plan is available in the OMAO Document Management System <http://nor-is-waypoint.corpsrv.noaa.local/WebDesktop/Binders.aspx>.



**National Oceanic and Atmospheric Administration**

**Office of Marine and Aviation Operations**

# **NOAA SHIP HEALTH PLAN**

**October 2018**



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**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
OFFICE OF MARINE AND AVIATION OPERATIONS  
NOAA SHIP HEALTH PLAN**

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**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
OFFICE OF MARINE AND AVIATION OPERATIONS  
NOAA SHIP HEALTH PLAN**

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**NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
OFFICE OF MARINE AND AVIATION OPERATIONS  
NOAA SHIP HEALTH PLAN**

**1. GENERAL INFORMATION**

**1.A. Responsibility.** The Commanding Officer/Master (CO) is responsible for the overall health and sanitation aboard the National Oceanic and Atmospheric Administration (NOAA) ship under their command. Additionally, it is the responsibility of each crewmember to comply with health and sanitation guidelines to ensure a healthy work environment is maintained for all persons on board the ship.

**1.B. Responsibility for Standards Compliance.** Each NOAA ship shall comply with the standards set forth in the NOAA Ship Health Plan. In the event a standard is not completely met, any written or electronic documentation which supports the effort to comply with the standard shall be made available to the fleet inspection team. Responsibility for compliance will then be determined and referred to the specific organizational unit for remediation.

**2. HEALTH AND SANITATION INSPECTION REPORTS**

A weekly inspection shall be conducted by the U.S. Public Health Service (USPHS) Medical Officer (MO), a Medical Person in Charge (MPIC), or CO's designee of the common spaces listed below for general health and sanitation, except when the ship is declared uninhabitable for a period greater than one (1) week.

- (1) Interior passageways adjacent to living or common spaces on all decks
- (2) Interior stairwells adjacent to living or common spaces
- (3) All public heads located throughout the ship
- (4) Common lounges
- (5) Laboratories
- (6) Laundry Room, including a thorough inspection of lint screen housings
- (7) Exercise Room
- (8) Garbage collection area
- (9) All weather decks

The inspection must determine the overall cleanliness of the space to include an observed absence of clutter, debris, leaks, spillage, spoilage, mold, mildew, infestation, or conditions that could support infestation. Inspection results shall be documented on the Weekly Health and Sanitation Inspection (NOAA Form (NF) 57-10-21). The inspection shall be signed and dated by the MO, MPIC, or CO's designee and the CO. Original inspections shall be maintained aboard the ship for one (1) full fleet inspection cycle. At the time of the fleet inspection, the records shall be presented to the Fleet Inspectors for review and then forwarded to the Director of Marine Medicine (DMM). A copy of the inspection report shall be provided to the Executive Officer/Chief Mate (XO) who shall then forward each department head. A copy of the report shall be posted in a common area on the ship.

### **3. POTABLE WATER MANAGEMENT**

**3.A. Responsibility.** The CO shall ensure potable water, fit for human consumption, is provided to all hands. Potable water production, receipt, treatment, storage, and distribution shall be performed by the Engineering Department. Potable water surveillance shall be performed by the MO, MPIC, or CO's designee as a part of the weekly health and sanitation inspection.

**3.B. Shipboard Potable Water.** Shipboard potable water comes from shipboard water production plants, approved shore side sources, and unapproved shore side sources. Potable water is used aboard ship for drinking, cooking, laundry, medical, personal hygiene, and other purposes. Potable water and seawater systems shall not be cross connected.

**3.B.1 Production of Potable Water.** Shipboard water production plants produce potable water from seawater contaminated with bacteria. Potable water must be adequately and continually treated to maintain required halogen residual levels in order to eliminate bacteria in the water produced. Water production shall be suspended while the ship is operating in harbors, near sewage outfalls, or in polluted seawater areas.

**3.B.2. Receipt of Potable Water.** Shore side water supply facilities provide potable water. Shore side suppliers should provide documentation of the halogen residual and a negative coliform test performed within the past 30 days. Approved shore side facilities include Environmental Protection Agency (EPA) approved public water systems and U.S. military approved water systems. Water received from an approved water supply may be placed directly into the ship's potable water distribution system. A free available chlorine (FAC) or a total bromine residual (TBR), and a coliform test shall be completed by the MO, MPIC, or CO's designee on all water to be received from an unapproved source or in a foreign port. It takes a minimum of 24 hours to perform the coliform test so testing personnel and the engineering department personnel need to be prepared to wait 24 hours prior to taking any potable water aboard the ship. Potable water to be received with a halogen residual lower than 2.0 parts per million (ppm) shall be increased to meet this required level of 2.0 ppm.

### **3.C. Potable Water Hoses Use, Stowage, and Markings.**

**3.C.1 Use.** Potable water hoses shall only be used to transfer potable water. If either end of a potable water hose comes into contact with the ground, pier, deck surface, or harbor water, the hose shall be considered contaminated and subsequently disinfected before additional use as indicated in paragraph 03.I.

**3.C.2 Stowage.** All potable water hoses, fittings, and adaptors shall be stowed inside a designated potable water hose locker or stowage space. Hoses shall be hung at least 18 inches off the deck. Hose end fittings must be capped with threaded fittings or the hose ends coupled together to prevent contamination.

**3.C.3 Markings.** Potable water hoses must be stenciled in light blue, or an appropriate color that will stand out and be easily read by any concerned personnel. The letters shall read "Potable Water Only" at six (6) foot intervals along the length of the hose. End fittings and caps must be painted light blue. The potable water hose locker or stowage space shall be clearly identified by a sign which states "Potable Water Hose Stowage Only."

### **3.D. Potable Water Filling Lines and Connections.**

**3.D.1 Filling Lines.** Potable water filling lines shall only be connected to potable water tanks. A filling line with a cross connection arrangement for diverting potable water to a non-potable water system by means of a valve is not permitted, unless an air gap or an interchangeable pipe fitting (swing connection) follows the valve.

**3.D.2 Connections.** Potable water filling connections shall be fitted with a screw cap which is secured to or immediately adjacent to the filling connection by a keeper chain. The keeper chain must be short enough to prevent the cap from contacting the deck or other surfaces when the connection is in use. The cap must be attached to the filling connection when the connection is not in use. The potable water filling connection inlet must begin either in a horizontal position, a gooseneck, or a vertical position with the open end facing down. The filling connection must be at least 18 inches above the deck. The potable water filling connection must be clearly marked "Potable Water Filling" by a label plate or stencil.

**3.E. Potable Water Storage Tanks.** Potable water tanks shall only be used to store potable water. Potable water tanks shall not have pass through piping systems which carry sewage or non-potable liquids. Non-potable liquid piping systems above potable water storage tanks shall not have mechanical couplings. Potable water storage tanks must be opened, inspected, cleaned, recoated, resealed, and subsequently disinfected every two (2) years or sooner if necessary.

**3.F. Potable Water Piping.** Potable water piping shall only be used to distribute potable water throughout the ship. Potable water piping must not pass through or under sewage tanks, fuel tanks, ballast tanks, or other tanks holding non-potable liquids. Potable water piping must be clearly labeled with "Potable Water"

and an arrow to indicate the direction of flow. Markings must be made using light blue paint at intervals of 15 feet or less.

**3.G. Disinfection of the Potable Water System.** Any portion of the potable water system opened for inspection, repair, cleaning, or potentially contaminated by any means must be disinfected by the use of chlorine. Bromine may not be used for disinfection of potable water tanks or systems. Disinfection shall be completed as follows:

- (1) Fill potable water system and tank(s) to over flow level with potable water.
- (2) Thoroughly flush the system.
- (3) Determine the volume of the system which requires disinfection.
- (4) Add chlorine to achieve 50 ppm FAC residual throughout the system and operate all pumps until the system is filled with the disinfectant solution. Use the tables below to calculate the amount of chlorine solution required to disinfect the volume determined in step 3. Common household bleach is a 5 percent solution of sodium hypochlorite. Commercial disinfecting bleach is a 10 percent solution of sodium hypochlorite. Granulated powders used in mechanical chlorination systems are 65-70 percent calcium hypochlorite.
- (5) Hold the chlorine solution in the system for 24 hours.
- (6) Completely drain the potable water system.
- (7) Refill system with potable water to the required halogen residual level.
- (8) Perform bacteriological testing of potable water system.
- (9) Distribute potable water throughout the ship after satisfactory bacteriological testing and aesthetic water quality is reached.

**Chlorine Dosage Calculator for 5 Percent Liquid Sodium Hypochlorite  
(Unscented Household Bleach)**

Quantity Gallons	1 ppm	5 ppm	25 ppm	50 ppm	100 ppm	200 ppm
50,000	1 gal	5 gal	25 gal	50 gal	100 gal	200 gal
25,000	2 qt	10 qt	10 gal	25 gal	50 gal	100 gal
10,000	26 oz	1 gal	5 gal	10 gal	25 gal	50 gal
5,000	13 oz	2 qt	2 gal	5 gal	10 gal	25 gal
2,000	6 oz	26 oz	1 gal	2 gal	4 gal	10 gal
1,000	3 oz	13 oz	2 qt	1 gal	2 gal	4 gal
500	2 oz	7 oz	1 qt	2 qt	1 gal	2 gal
200	1 tbsp	3 oz	13 oz	1 qt	2 qt	1 gal
100	2 tsp	2 oz	7 oz	13 oz	1 qt	2 qt
50	1 tsp	1 oz	4 oz	7 oz	13 oz	1 qt
25		1 tbsp	2 oz	4 oz	7 oz	13 oz
10			1 oz	3 tsp	3 oz	6 oz
5			1 tsp	5 tsp	2 oz	3 oz

gal - gallon, qt - quart, oz - ounce, tbsp - tablespoon, tsp - teaspoon, 3 tsp = 1 tbsp, 2 tbsp = 1 oz

**Chlorine Dosage Calculator for 10 Percent Liquid Sodium Hypochlorite  
(Unscented Commercial Bleach)**

Quantity Gallons	1 ppm	5 ppm	25 ppm	50 ppm	100 ppm	200 ppm
50,000	2 qt	10 qt	10 gal	25 gal	50 gal	100 gal
25,000	1 qt	5 qt	5 gal	10 gal	25 gal	50 gal
10,000	13 oz	2 qt	2 gal	5 gal	10 gal	20 gal
5,000	7 oz	1 qt	5 qt	2 gal	5 gal	10 gal
2,000	3 oz	13 oz	2 qt	1 gal	2 gal	5 gal
1,000	1.5 oz	7 oz	1 qt	2 qt	1 gal	2 gal
500	1 oz	3 oz	13 oz	1 qt	2 qt	1 gal
200	2 tsp	1.5 oz	7 oz	13 oz	1 qt	2 qt
100	1 tsp	1 oz	4 oz	7 oz	13 oz	1 qt
50		2 tsp	2 oz	4 oz	7 oz	13 oz
25		1 tsp	1 oz	2 oz	4 oz	7 oz
10				1 oz	2 oz	3 oz
5					1 oz	2 oz

**Chlorine Dosage Calculator for 65-70 Percent Granular Calcium Hypochlorite**

Quantity Gallons	1 ppm	5 ppm	25 ppm	50 ppm	100 ppm	200 ppm
50,000	10 oz	3 lb	15 lb	30 lb	60 lb	120 lb
25,000	5 oz	24 oz	7.5 lb	15 lb	30 lb	60 lb
10,000	2 oz	10 oz	3 lb	7.5 lb	15 lb	30 lb
5,000	1 oz	5 oz	1.5 lb	3 lb	7.5 lb	15 lb
2,000		2 oz	10 oz	19 oz	3 lb	7.5 lb
1,000		1 oz	5 oz	10 oz	19 oz	3 lb
500			3 oz	5 oz	10 oz	19 oz
200			1 oz	2 oz	5 oz	10 oz
100				1 oz	2 oz	5 oz
50					1 oz	2 oz
25						1 oz

lb - pound, 1 lb = 16 oz

**3.H. Disinfection of Potable Water Filling Hoses.** Potable water filling hoses must be thoroughly flushed and disinfected before each use in accordance with the following instructions. These instructions shall be posted in the hose stowage location or at the potable water filling connection.

- (1) Flush the hose thoroughly with potable water then drain the hose completely.
- (2) Raise both ends of the hose to an equal level, fill the hose to overflowing with a disinfecting solution containing not less than 100 ppm FAC, close the ends of the hose and allow the disinfecting solution to remain in the hose for at least two (2) minutes. The concentration of the disinfecting solution used shall be recorded in a log book along with the date and time.
- (3) Drain the disinfecting solution from the hose and flush thoroughly with potable water before attaching the filling line.

**3.I. Disinfection of Potable Water Dispensers.** Fountains, faucets, and shower heads must be maintained in a clean condition to preclude growth of bacteria. Where applicable, removable heads of water dispensers shall be removed, cleaned, and disinfected every six (6) months. Disinfection must be accomplished in a chlorine solution bath with a concentration of 10 ppm for 60 minutes. (Use 1 tsp of bleach per 4 gallons)

**3.J. Potable Water Treatment via Halogenation.** Mechanical halogenation shall be used as the primary method of potable water treatment aboard NOAA ships. Manual halogenation, via batch chlorination, may be used as a back-up method of potable water treatment aboard NOAA ships when the mechanical halogenation system fails. Free halogen residual levels shall be maintained at or above 0.2 ppm at all times in the storage tanks and a trace level (at or above 0.02 ppm) must be detectable at the far ends of the piping system.

#### Required Halogen Residual

Halogenation Treatment Requirement	Chlorination Dosage Requirements	Bromination Dosage Requirements
Initial treatment of potable water at time of bunkering or production.	Continuous mechanical chlorination to an FAC level of at least 2.0 ppm throughout the bunkering or production process.	Continuous mechanical bromination to a TBR level of at least 2.0 ppm throughout the bunkering or production process.
Continuous treatment of stored potable water in the potable water tanks and distribution system.	Intermittent mechanical chlorination to maintain a FAC level of at least 0.2 ppm in the storage tanks and a 0.02 ppm level at the far ends of the piping system.	Intermittent mechanical bromination to maintain a TBR level of at least 0.2 ppm in the storage tanks and a 0.02 ppm level at the far ends of the piping system.

Treatment of water obtained from a questionable source (no microbiological report and residual halogen level less than 0.2 ppm).	Continuous mechanical chlorination until the FAC level reaches 2.0 ppm at the far ends of piping system then intermittent chlorination to a FAC level of at least 0.2 ppm in the storage tanks thereafter. Emergency situations may require manual chlorination to reach required levels quickly.	Continuous mechanical bromination until the TBR level reaches 2.0 ppm at the far ends of the piping system then intermittent bromination to a TBR level of at least 0.2 ppm in the storage tanks thereafter. Emergency situations may require manual chlorination to reach required levels quickly. Chlorine may be safely added to water containing bromine.
Treatment of water used to disinfect tanks and potable water system.	Manual chlorination of required volume to 50 ppm in the storage tanks per the above chlorine dosage calculator tables. Hold for 24 hours, then intermittent mechanical chlorination to a FAC level of at least 0.2 ppm.	N/A
Treatment of water used to disinfect hoses, couplings, and water connections prior to connection to potable water system.	Manual chlorination of required volume to 100 ppm per the above chlorine dosage calculator tables. Maintain at least two (2) minutes of contact time.	N/A

**3.K. Potable Water Treatment via Ultraviolet Radiation.** Ultraviolet (UV) radiation may be used as a secondary method of potable water treatment aboard NOAA ships. UV radiation may not be used as the primary or sole potable water treatment method since UV radiation does not have a residual effect that retards bacterial growth in water.

**3.L. Potable Water Monitoring.**

**3.L.1 Coliform and Escherichia Coli Testing.** The MO, MPIC, or CO's designee shall perform coliform bacteria and E. coli testing at two water sources on a weekly basis, except when the ship's potable water system is secured and the ship is declared uninhabitable. One source to be tested shall be a water dispenser in the galley or mess deck such as a sink, water fountain, scuttlebutt, or ice machine. The



other source to be tested shall be a faucet or showerhead in a berthing area. Weekly test site locations shall be varied so no test site is repeated within any month, unless there is sufficient medical evidence to warrant more frequent testing. Two or more people with gastrointestinal symptoms or a positive test result for E. coli is sufficient medical evidence to warrant more frequent testing. Test results shall be documented on the NF 57-10-21 (Weekly Health and Sanitation Inspection).

**3.L.2 Positive Bacteriological Test Results.** In the event of a positive test result for E. coli, additional coliform and E. coli tests shall be performed until the source of the contamination is identified. The contaminated source shall be disinfected with a 100 ppm chlorine solution. If the contamination source cannot be identified then the potable water distribution system shall be considered contaminated and subsequently disinfected per instructions in section 03.G.

### **3.L.3 Halogen Residual Monitoring.**

**3.L.3.A. Medical Department.** The MO, MPIC, or CO's designee shall perform halogen residual monitoring at two water sources on a weekly basis. Either FAC or TBR shall be measured on the same two water sources referenced in section 03.L.1. The halogen residual levels shall be documented on the NF 57-10-21.

**3.L.3.B. Engineering Department.** The Chief Marine Engineer or designee shall monitor halogen residual levels before and during potable water receipt or production. Halogen residual levels shall be recorded prior to and at least hourly during potable water bunkering operations. Halogen residual levels shall be recorded at least every four (4) hours during shipboard production of potable water. Chart recorders or electronic data loggers may be used to record automated free halogen residual level analysis in lieu of manual testing and logs. Calibration of the analyzer must be annotated on the chart recorder or entered into the electronic data logger at the beginning of shipboard production or receipt of potable water. Halogen residual levels shall be recorded daily on the Potable Water Log (NF 57-06-03). This form shall be maintained for two (2) years on the ship and presented upon request to U.S. Navy Preventative Medicine Technicians conducting ship sanitation inspections, to foreign port authorities in compliance with OMAO Policy 1002, and to fleet inspectors.

**03.M. Potable Water Monitoring Documentation.** The Command shall maintain potable water test results on board the ship for one (1) year. Potable water documentation shall be provided to port authorities upon entry into a foreign port or to Fleet Inspectors upon request.

## **4. FOOD SERVICE ACTIVITIES**

**4.A. Responsibility.** The CO shall ensure food service, free from contamination, is provided to all hands. The Chief Steward shall maintain shipboard compliance with all applicable food preparation, handling, and service laws and regulations.

**4.B. Food Service Areas.** Food service activities shall only be conducted in spaces specifically designed for food preparation and handling. Food service activities shall not be conducted in staterooms, laboratories, or in any other space not specifically designed for food service.

**4.C. Food Service Area Sanitation Inspections.**

**4.C.1. Weekly Sanitation Inspections.** Whenever food service is provided, all food service areas shall be inspected on a weekly basis by the MO, MPIC, or CO's designee in accordance with the checklist found on the Weekly Food Service Area Sanitation Inspection (NF 57-10-22). Operational temperatures for the walk-in reefer, walk-in freezer, and dishwasher(s) shall be recorded on a weekly basis. Additional food service appliances, such as a microwave oven in the crew's lounge or a coffee maker on the bridge, must be inspected weekly and added to the NF 57-10-22. All food service appliances, except small refrigerators and coffee makers, are prohibited in staterooms. At least 50 percent or half of the number of the items listed in each area shall be evaluated weekly. At the end of two (2) weeks, all items in each food service area shall be fully inspected. The galley shall be fully inspected by the Chief Steward, Chief Cook, or Second Cook immediately before reopening after any period of closure greater than 24 hours, using only Page 1 of the NF 57-10-22. All items listed on Page 1 must receive a score of "Pass" before the galley can resume food service. A copy of this galley inspection must be presented to the ship's Command before the next meal is served. This inspection of the galley, only after closure and before reopening, in no way replaces or circumvents the inspection of the galley by the MO, MPIC, or CO's designee as a routine part of the Weekly Food Service Area Sanitation Inspection. All food service areas listed on NF 57-10-22 shall be fully inspected after any period of closure if shipboard activities significantly increase the risk of contamination of these food service areas. Each item evaluated shall be assigned a rating of "Pass" or "Fail" based on the evaluation criteria indicated on the form for that item. All items noted as "Fail" shall be corrected as soon as possible by the responsible department. The corrective action date shall be noted on the inspection report and initialed by the person who completed the corrective action. Results shall be submitted to the CO within three (3) days after the inspection. Any item that poses a serious health concern noted as "Fail" twice within a four (4) week period shall be reported to MHS. The inspection shall be signed and dated by the MO, MPIC, or CO's designee and the CO. Original inspections shall be maintained aboard the ship for one (1) full fleet inspection cycle. At the time of the fleet inspection, the records shall be presented to the Fleet Inspectors for review and then forwarded to MHS.

**4.C.2. Annual Sanitation Inspections.** All food service areas shall be fully inspected on an annual basis by a Fleet Inspector. Annual inspection results shall be documented on the Annual Food Service Area Sanitation Inspection (NF 57-10-23, for Fleet Inspector use only).

#### **4.D. Food Service Personnel.**

**4.D.1. Food Service Personnel Certification.** All personnel in the Steward Department, with the exception of an assigned General Vessel Assistant (GVA), shall maintain appropriate food handler certification. Food service personnel certifications shall be posted in plain view in the galley. The GVA-Steward may assist in the galley, as required, but may not handle food without food handler certification. Regardless of certification, a GVA-Steward may not cook food.

**4.D.2. Access to Food Service Areas.** Only personnel of the Steward Department are authorized access to the walk-in freezer, walk-in reefer, thaw room, and dry stores at any time. Personnel conducting official inspections, periodic security rounds, or repair and maintenance activities are permitted access to these areas on an as needed basis. Steward Department personnel and authorized guests of the Chief Steward are authorized access to the galley. All personnel are authorized access to the mess deck.

**4.D.3. Restricted Food Service Personnel.** The CO shall restrict any person that is ill, believed to be ill, or a carrier of a communicable disease from performing food service activities. Any suspected health condition which would restrict an employee from food service shall be immediately reported to the MO or MPIC. Examples include but are not limited to: persistent sneezing, coughing, boils, open sores, infected wounds, diarrhea, jaundice, fever, vomiting, sore throat with fever, or a runny nose that causes discharges from the eyes, nose, or mouth. Only an MO may reinstate a restricted food service employee after an appropriate medical evaluation is performed and the employee is symptom-free for a minimum of 48 hours. If the ship does not have an MO, the MPIC will perform a medical evaluation and obtain a consultation with MHS to determine if the employee is in good health. A written record of the work restriction and release from restriction shall be forwarded to MHS. A copy of the work restriction and release shall be maintained aboard the ship for one (1) full year.

#### **4.E. Food Service Personnel Hand Washing and Personal Hygiene.**

**4.E.1. Hand Washing Facilities.** The galley shall have at least one clean hand washing sink in working order which is accessible at all times. Hand washing facilities shall:

- (1) Be used for washing hands and only washing hands;
- (2) Provide a supply of hand cleansing soap and single-use paper towels;
- (3) Provide water at a temperature of at least 110°F / 43°C through a mixing valve or combination faucet;
- (4) Provide a continuous flow of water for at least 20 seconds without the need to reactivate the faucet; and
- (5) Have a sign posted over the sink which reads "Hand Wash Sink Only."

**4.E.2. Hand Washing Requirements.** Food service personnel shall thoroughly wash their hands and exposed portions of their arms immediately before engaging in food preparation and before returning to work after each break period. Hand washing shall be performed in a designated hand washing sink for at least 20 seconds, using warm water, soap, and vigorous hand rubbing, and then followed by a thorough rinsing with clean potable water. Hands should be washed as often as necessary during food preparation to prevent cross contamination between foods. Hands must be washed after:

- (1) Touching the clothing or unclean exposed body part of any person;
- (2) Using the restroom;
- (3) Using tobacco, eating, drinking, coughing, or sneezing;
- (4) Using a handkerchief or tissue;
- (5) Handling potentially hazardous or raw foods;
- (6) Handling potentially contaminated equipment or utensils;
- (7) Removing soil, chemicals, labels, or packaging from food;
- (8) Using a wiping cloth or other cleaning supplies; or
- (9) Touching any potentially contaminated surface.

**4.E.3. Personal Hygiene.** All food service personnel shall:

- (1) Wear clean outer clothing while working;
- (2) Keep fingernails and cuticles clean, trimmed, and smooth. Fingernail polish and artificial fingernails are excepted when intact gloves are worn during food preparation, food service, and clean up;
- (3) Wear gloves when required as follows:
  - (a) Single use gloves shall be used for only one task (such as working with ready-to-eat foods or raw foods);
  - (b) Slash-resistant gloves may only be used:
    - (i) In direct contact with food that is subsequently cooked (such as frozen food or a primal cut of meat); or
    - (ii) With ready-to-eat food that will not be subsequently cooked if the gloves have a smooth, durable, and nonabsorbent outer surface or are covered with a single use glove;
  - (c) Cloth gloves may not be used in direct contact with food unless the food is subsequently cooked (such as frozen food or a primal cut of meat);
- (4) Properly wear hair and beard restraints (as necessary) and clean clothing that covers body hair to prevent contamination with food, equipment, utensils, and supplies;
- (5) Use suitable utensils, in lieu of hands, when handling exposed, ready-to-eat foods (except when washing fruits and vegetables or otherwise approved);
- (6) Not wear jewelry on the arms or hands (plain smooth rings are excepted);
- (7) Not eat, drink, or use any form of tobacco in the galley; and
- (8) Not keep clothing or personal effects in the food preparation and serving areas.

**4.F Food Service Area Sanitation.** Food service areas, equipment, and utensils shall be maintained in a clean and sanitized condition when not in use. Food service areas, equipment, and utensils shall be free of contamination when in use.

**4.F.1. Ware Washing Equipment.**

**4.F.1.A. Manual Ware Washing.** A three compartment deep sink shall be used for manual ware washing procedures if a mechanical ware washer is not used. The compartments shall be used exclusively for washing, rinsing, and sanitizing. The water temperature of the wash sink shall be maintained at or above 110°F / 43°C. The water temperature of the sanitizing sink shall be maintained at or above 171°F / 77°C. Food contact surfaces shall be immersed for at least 30 seconds in the sanitizing sink. A drying rack shall be located immediately adjacent to the sanitizing sink. Sinks and drain boards shall be self-draining. If a mechanical sanitizer is used, a two compartment deep sink may be used for manual ware washing and rinsing.

**4.F.1.B. Mechanical Ware Washing.** Mechanical ware washing machines may use either chemicals or hot water to sanitize tableware and utensils. The temperature of the wash solution in spray type mechanical ware washers that use chemical sanitation must not be less than 120°F / 49°C. The temperature of the wash solution in spray type mechanical ware washers that use hot water sanitation must be in accordance with the manufacturer's specification. If not specified, the hot water sanitization must not be less than:

- (1) 165°F / 74°C for a stationary-rack, single temperature machine;
- (2) 150°F / 66°C for a stationary-rack, dual-temperature machine;
- (3) 160°F / 71°C for a single-tank, conveyor, dual-temperature machine; or
- (4) 150°F / 66°C for a multi-tank, conveyor, multi-temperature machine.

The temperature of the hot water sanitation rinse, as it enters the manifold, may not be more than 194°F / 90°C or less than:

- (1) 165°F / 74°C for a stationary-rack, single temperature machine;  
or
- (2) 180°F / 82°C for all other machines.

Dishwasher operating temperatures shall be tested weekly by using dishwasher temperature test strips. The ware washing machine shall be run through at least two complete cycles before testing. The test strip must be irreversible and register the maximum temperature obtained during the heat sanitation process (minimum 160°F / 71°C). The test strip shall be attached to the center of a dry ceramic plate. The plate with the test strip shall be placed in a vertical position in a rack that is exposed to the final sanitizing rinse spray. The color must be uniform throughout the test strip. The

appropriate test strip must be used for the dishwasher unit for which it was designed. The test strip shall be permanently attached to the NF 57-10-22.

**4.F.2. Sanitizing Concentrations.** Any chemical sanitizer used as the sanitizing solution for a manual or mechanical ware washing operation must be listed in 21 CFR 178.1010, Sanitizing Solutions. All chemical sanitizers shall be used in accordance with the EPA approved manufacturer's label use instructions at a minimum temperature of 75°F / 24°C. Exposure time for a chlorine solution shall be at least seven (7) seconds. Exposure time for other chemical sanitizers shall be at least 30 seconds. Sanitizing solutions shall be used in the following concentrations:

- (1) A chlorine solution must have a concentration between 50 milligrams/Liter (mg/L) (ppm) and 200 mg/L (ppm);
- (2) An iodine solution must have a concentration between 12.5 mg/L (ppm) and 25 mg/L (ppm) and a pH of 5.0 or less, or a pH no higher than the level for which the manufacturer specifies the solution is effective; or
- (3) A quaternary ammonium compound solution must have a concentration as specified in 40 CFR 180.940 and as indicated by the manufacturer's use directions included in the labeling.

If another solution concentration or pH of a chlorine, iodine, or quaternary ammonium compound is used, it must be demonstrated that the solution achieves sanitization and the use of the solution must be approved.

If a chemical sanitizer other than a chlorine, iodine, or quaternary ammonium compound is used, it must be applied in accordance with the manufacturer's use directions included in the labeling.

Sanitizer solution concentrations shall be tested weekly. A sanitizer solution test strip or other device that accurately measures the concentration of sanitizing solutions in mg/L (ppm) shall be used for testing. The test results shall be recorded on and the test strip attached to the NF 57-10-22. Any newly installed ware washing machine using a chemical sanitizer shall be equipped with a device that indicates audibly or visually when more chemical sanitizer needs to be added.

**4.F.3. Tableware and Utensils.** Sanitized tableware and utensils shall be air dried and stored in a manner that protects the tableware and utensils from contamination resulting from unnecessary handling, dust, and splashes. Tableware and utensils shall be inspected daily. Dishes, cups, and glasses with chips or cracks shall be discarded. Knives, forks, spoons, and utensils that are badly deformed, rough-edged, or rusty shall be discarded.

**4.F.4. Equipment.** Food service equipment shall be maintained in good operating condition. Equipment which is no longer used or is unserviceable shall be discarded. Equipment shall be cleaned and sanitized after the final use of the workday

or after each use if necessary. Equipment shall be air-dried after cleaning or sanitizing, or adequately drained before contact with food. A clean dry lint-free cloth shall be used to polish food service equipment and utensils.

Copper and copper alloys such as brass may not be used in contact with a food that has a pH below 6.0, such as vinegar, fruit juice, wine, or for a fitting or tubing installed between a backflow prevention device and a carbonator. Galvanized metal may not be used for utensils or food-contact surfaces of equipment that are used in contact with acidic food.

Food temperature measuring devices with glass sensors or stems must be encased in a shatterproof coating. Mercury filled thermometers should not be used.

For functionality, equipment openings, closures, and deflectors shall conform to:

- (1) A cover or lid for equipment shall overlap the opening and be sloped to drain;
- (2) An opening located within the top of a unit of equipment that is designed for use with a cover or lid shall be flanged upward at least 0.2 inches / 5 millimeters; and
- (3) Fixed piping, temperature measuring devices, rotary shafts, and other parts extending into equipment shall be provided with a watertight joint at the point where the item enters the equipment. If a watertight joint is not provided, the piping, temperature measuring devices, rotary shafts, and other parts extending through the openings shall be equipped with an apron designed to deflect condensation, drips, and dust from openings into the food; and the opening shall be flanged at least 0.2 inches / 5 millimeters.

**4.F.5. Equipment and Utensil Storage.** Food service equipment, utensils, linens, and consumable supplies shall be completely dry when placed in storage, and shall be stored without exposure to contamination in a clean dry location. Only articles necessary for the food service operation shall be stored in the food preparation, food storage, or ware washing areas.

**4.F.6. Food Tasting or Sampling Utensils.** An uncontaminated utensil shall be used to taste food. A tasting utensil shall not be used twice to taste food.

**4.F.7. Microwave Ovens.** Microwave ovens in the galley, mess deck, and lounges shall be cleaned daily or more often as necessary. The oven chamber, window, door seals, and turntable shall be thoroughly cleaned. Microwave ovens shall meet the safety standards specified in 21 CFR 1030.10 Microwave Ovens.

**4.F.8. Can Openers.** Cutting or piercing parts of can openers shall be readily removable for cleaning and replacement. Cutting parts shall always be sharp.

**4.F.9. Countertop and Messing Tables Sanitation.** Countertops and messing tables shall be cleaned after each meal service period and inspected for cleanliness just prior to each meal service period.

**4.F.10. Cutting Boards.** Cutting boards shall be in good condition and sanitized after each use. Cutting boards which are scored or cut shall be resurfaced or discarded. Separate cutting boards shall be maintained for fish, poultry, beef, and vegetables.

**4.F.11. Cleaning Supplies and Equipment Storage.** Cleaning supplies and equipment such as mops, buckets, brooms, and cleansers shall be stored in a designated space with adequate ventilation in a neat and orderly manner. This space cannot be in a food prep area. Cleaning supplies and equipment shall be stored so that food, equipment, utensils, and linens are not contaminated. Wet mops shall be positioned while drying so bulkheads, equipment, and supplies are not contaminated by the mop. Buckets used for washing, rinsing, or sanitation shall be stored in a nested and inverted position if stored with other maintenance tools.

**4.F.12. Waste Disposal.** Collection containers for garbage and recyclables shall be durable, non-absorbent, leak proof, and insect and rodent resistant; lined with a plastic garbage bag; and covered with a tight fitting lid when not in use. These containers shall be emptied as often as necessary during the workday to prevent overflowing and shall be emptied at the end of the workday. Collection containers for garbage and recyclables shall be cleaned at a frequency which prevents contamination and infestation. Garbage and recyclables shall not be stored in food service areas. Food scraps for overboard disposal shall be comminuted as necessary and removed from the food service area by Steward Department personnel at the end of the workday. Food scraps to be held for disposal at a later time may not be held in the walk-in reefer, but may be held in a container with a tight sealing lid in the walk-in freezer until proper disposal is possible. Food scraps disposed of at sea shall be in accordance with all federal, state, and local disposal laws and regulations.

**4.F.13. Decks, Bulkheads and Overheads.** The decks, bulkheads, and overheads in all food service areas shall be maintained in a clean condition. Decks shall be graded to drain and an adequate number of drains must be provided to remove spill and wash water. Mess decks shall be swept after each meal service period and spot cleaned as necessary. The galley and mess deck shall be cleaned at the end of the workday. Bulkheads behind or near the hot service line, salad bar, or dessert service area shall be cleaned daily or after each meal service period as necessary. Overheads shall be spot cleaned on an as needed basis.

**4.F.14. Drain Lines.** Drain lines carrying sewage or other liquid waste should not pass directly overhead or horizontally through food service, cleaning, or storage areas. Drain lines that do pass through food service areas shall be sleeve-welded or shielded to contain any potential drips and shall not have mechanical couplings. Drain lines from ware washing sinks, refrigeration units, appliances, and



other fixtures used in food service areas shall be indirectly connected to waste water systems by means of an air gap or air break. Hand washing and mop sinks are exempted.

**4.F.15. Ventilation Systems.** Food service areas shall be sufficiently ventilated to remove heat, smoke, odors, and fumes. Temperatures that reach 100°F / 38°C in food service areas shall be reported to the CO. Ventilation systems shall be cleaned of dirt and grease weekly, or as often as necessary to avoid the danger of fire. Range hoods shall be cleaned daily.

**4.F.16. Lighting.** Lighting fixtures in food service areas shall be shielded to protect food from broken glass. Heat or warming lamps shall be protected against breakage by a shield surrounding and extending beyond the bulb, exposing only the face of the bulb. Food service areas shall be illuminated to a minimum light intensity of:

- (1) 10 foot-candles (108 lux) in all areas;
- (2) 20 foot-candles (216 lux) inside lighted equipment, in storerooms, at hand washing stations, ware washing stations, buffet lines, and salad bars; and
- (3) 50 foot-candles (540 lux) in food preparation areas.

**4.F.17. Storage Areas.** The overheads, bulkheads, shelves, grates, and decks inside the walk-in freezer, walk-in reefer, thaw room, and dry stores shall be thoroughly cleaned and scrubbed on a monthly basis. The Chief Steward shall maintain a log to document the storage area cleaning dates for a period of one (1) year.

#### **4.G. Food Receipt and Storage**

**4.G.1. Condition Upon Receipt.** All foods received from a commercial vendor shall be checked upon delivery to determine that the food is:

- (1) From an approved source;
- (2) Protected from contamination;
- (3) Sealed in undamaged packaging (canned goods with stains and/or dents on the end or side seams may not be accepted);
- (4) Delivered at the required temperature;
- (5) Free of temperature abuse evidence; and
- (6) Within expiration or "Best Used By" date.

**4.G.2. Refusal of Food Items.** The Chief Steward shall refuse any food item to be received with questionable packaging or an observed likelihood of contamination. Specific considerations include:

- (1) All egg products (liquid, frozen, and dried), milk products (Grade A only), and cheese products shall be received in a pasteurized state, except some cheese products may be unpasteurized if alternative

- procedures to pasteurization for curing certain cheese varieties have been followed (21 CFR 133, Cheeses and Related Cheese Products);
- (2) Shell eggs shall be received clean and sound;
  - (3) Raw shucked molluscan shellfish (oysters, clams, mussels, or scallops) shall be received in a non-returnable package which bears a legible label;
  - (4) Shellstock (live molluscan shellfish in the shell) shall be received in containers bearing legible source identification tags or labels that are affixed by the harvester and each dealer that depurates, ships, or reships the shellstock. Shellstock shall be reasonably free of mud and dead shellfish when received. Shellstock with badly broken shells shall not be received. Shellstock are packaged in containers that have tags attached. The shellstock must remain in this container until empty with the tags intact. These shellstock tags or labels must be retained for 90 days from the date the container is emptied by using an approved recordkeeping system that keeps the tags or labels in chronologic order correlated to the date when the shellstock are served; and
  - (5) Raw shucked molluscan shellfish shall be obtained in non-returnable packages bearing a legible label that identifies the:
    - (a) Name, address, and certification number of the harvester, shucker, packer, repacker, or dealer of the molluscan shellfish;
    - (b) The “sell by” or “Best Used By” date for packages less than ½ gal / 1.89 L, or the date shucked for packages of ½ gal / 1.89 L or more;
    - (c) The date and precise location of harvesting; and
    - (d) The type and quantity of the molluscan shellfish.

The following statement shall be visible on the tag in bold capitalized type: **“THIS TAG IS REQUIRED TO BE ATTACHED UNTIL CONTAINER IS EMPTY OR RETAGGED, AND THEREAFTER KEPT ON FILE FOR 90 DAYS.”**

**4.G.3. Dry Storage.** Food shall only be stored in spaces specifically designated for food storage. Food shall not be stored in staterooms, lounges, laboratories, wash rooms, supply lockers, garbage rooms, mechanical rooms, under stairwells, or in any other space not specifically designed for food storage. Containers used for bulk food items removed from original packaging and stored in a working container shall be labeled with the name of the food item. Food shall not be stored under overhead water or sewer lines unless the lines are shielded to contain any potential drips. Food items stored in a dry food storeroom shall be protected from contamination by storing the food:

- (1) At a temperature between 50°F / 10°C and 70°F / 21°C;
- (2) At an elevation of 6 inches off the deck;
- (3) In a clean organized storeroom free of debris;
- (4) In fully sealed wrappings, covered containers, or commercial packages; and
- (5) Without exposure to dust, splashes, or other contamination.

**4.G.4. Cold Storage.** All refrigerated potentially hazardous foods (those known to cause severe food-borne illness and death such as eggs and comminuted meats) shall be received and stored at or below 45°F / 7°C, and shall be cooled to 41°F / 5°C or below within four (4) hours after receipt. If a temperature other than 45°F / 7°C for a potentially hazardous food is specified by law governing its distribution (such as shell eggs, milk, molluscan shellfish), the food shall be received at the specified temperature. Food stored in cold storage shall be protected from contamination by storing the food:

- (1) At a temperature between 33°F / 0.5°C and 41°F / 5°C;
- (2) At an elevation of 6 inches off the deck;
- (3) In a clean organized reefer free of debris; and
- (4) In fully sealed wrappings, covered containers, or commercial packages, except bulk fruits and vegetables.

Milk, to be used for human consumption, shall be stored in a reefer.

**4.G.5. Frozen Storage.** All foods labeled as “Frozen” shall be packaged, shipped, and received frozen. Upon receipt, all foods labeled as “Frozen” shall be maintained frozen. Food stored in frozen storage shall be protected from contamination by storing the food:

- (1) At a temperature at or below 0°F / -18°C;
- (2) At an elevation of 6 inches off the deck.
- (3) In a clean organized freezer free of debris; and
- (4) In fully sealed wrappings, covered containers, or commercial packages.

Milk, to be used for cooking purposes, may be stored in a freezer. Milk when frozen will separate and thus the quality reduced for consumption (taste and/or consistency). However, there are not quality issues with cooking.

**4.G.6. Frozen Fish Temperature Records.** The Chief Steward shall record the freezing temperature and the duration of the frozen storage of raw, raw-marinated, partially cooked, marinated-partially cooked fish served in ready-to-eat form, and all fish caught from the ship not to include fish for raw consumption. Freezing records shall be retained for 90 days after the food is served.

**4.G.7. Freezer, Reefer, and Thaw Room Temperatures.** Steward Department personnel shall monitor freezer, reefer, and thaw room temperatures on a daily basis. Freezer temperatures shall be maintained at or below 0°F / -18°C. Reefer and thaw room temperatures shall be maintained within the range of 33-41°F / 0.5-5°C. The MO, MPIC, or CO's designee shall record the temperatures of the walk-in freezer and walk-in reefer on a weekly basis on the NF 57-10-22. All out of range temperature readings shall be reported to and addressed by the Engineering Department.

Temperature measuring devices shall be located in the warmest part of the freezer, reefer, or thaw room.

**4.G.8. Stock Rotation Plan.** A written “First-in / First-out” stock rotation plan shall be developed and used to maintain freshness. The MO, MPIC, or CO’s designee shall verify adherence to this plan during the weekly inspections of the walk-in freezer, walk-in reefer, and dry stores. All food that has exceeded the “Best Used By” date shall be discarded.

**4.G.9. Prepared Foods.** All covered containers of previously prepared foods shall be labeled with a “Preparation” date and a “Discard By” date, not to exceed seven (7) days from the preparation date (preparation date is day one). All food seven (7) days past the preparation date shall be discarded. This also applies to all ready-to-eat foods prepared and packaged by a food processing plant and to all potentially hazardous foods.

Prepared food removed from temperature control (hot or cold) shall be labeled with a “Discard By” date and time of two (2) hours past the time it was removed from temperature control. All food in unmarked containers or in marked containers exceeding the two (2) hour time limit shall be discarded.

#### **4.H. Food Preparation**

**4.H.1. Thawing Potentially Hazardous Foods.** Frozen potentially hazardous foods shall be thawed:

- (1) Under refrigeration that maintains the food temperature at or below 41°F / 5°C, or
- (2) Completely submerged under running water with a temperature at or below 70°F / 21°C, with sufficient water velocity to agitate and float particles in an overflow, for a period of time that:
  - (a) Does not allow thawed portions of ready-to-eat foods rise above 41°F / 5°C, or
  - (b) Does not allow thawed portions of a raw animal food requiring cooking to be above 41°F / 5°C for more than 4 hours including:
    - (i) The time the food is exposed to running water and the time needed for preparation for cooking, or
    - (ii) The time it takes under refrigeration to lower the food temperature to 41°F / 5°C, or
- (3) As part of a cooking process if the food that is frozen is:
  - (a) Cooked as specified, or
  - (b) Thawed in a microwave oven and immediately transferred to a conventional oven without interruption in the process, or
- (4) Using any procedure if a portion of frozen ready-to-eat food is thawed and prepared for immediate service in response to an individual order.

**4.H.2. Cooking Temperature and Time Requirements.** Current cooking temperature and time requirements are located in the latest version of the Food and Drug Administration (FDA) Food Code, Part 3-4, "Destruction of Organisms of Public Health Concern."

<https://www.fda.gov/food/guidanceregulation/retailfoodprotection/foodcode/ucm374275.htm>

**4.H.3. Cooking Potentially Hazardous Foods.** Except when cooked in a microwave oven, raw animal foods such as eggs, fish, meat, poultry, and foods containing these raw animal foods shall be cooked to a uniform temperature and for a time period that complies with one of the following methods:

- (1) To 165°F / 74°C or above for 15 seconds for poultry, wild game animals, stuffing containing fish, meat, or poultry; and stuffed fish, meat, pasta, and poultry;
- (2) To 155°F / 68°C or above for 22 seconds for whole meat roasts cooked in a preheated oven, including beef, corned beef, lamb, pork, and cured pork roasts such as ham;
- (3) To 155°F / 68°C or above for 15 seconds for comminuted fish, meat, and commercially raised game animals, injected meats, ostrich, emu, rhea, and raw eggs not prepared for immediate service; and
- (4) To 145°F / 63°C or above for 15 seconds for fish, shellfish, molluscan shellfish, meat, pork, and raw shell eggs that are broken and prepared in response to an individual order and for immediate service.

A raw or undercooked whole-muscle, intact beef steak may be served if the steak is cooked on both the top and bottom to a surface temperature of 145°F / 63°C or above, and a cooked color change is achieved on all external surfaces.

**4.H.4. Microwave Cooking.** Raw animal foods cooked in a microwave oven shall be:

- (1) Covered to retain surface moisture;
- (2) Uniformly heated to a temperature of at least 165°F / 74°C;
- (3) Rotated throughout or stirred midway through the cooking process to compensate for uneven distribution of heat; and
- (4) Allowed to stand covered for two (2) minutes after cooking to obtain temperature equilibrium.

**4.H.5. Cooking Fruits and Vegetables for Hot Holding.** Fruits and vegetables cooked for hot holding shall be cooked to a temperature of 135°F / 57°C.

**4.H.6. Preparation of Individual Orders.** Cooked and refrigerated food prepared for immediate service in response to an individual order, such as a roast beef sandwich au jus, may be served at any temperature.

## 4.I. Food Service and Display

**4.I.1. Safe Holding Temperatures for Cooked Food.** Potentially hazardous foods which are not served immediately after cooking must be either rapidly chilled to a temperature of 41°F / 5°C or lower, or held at 140°F / 60°C or higher. Potentially hazardous foods which have been held at temperatures between 41°F / 5°C and 140°F / 60°C longer than four (4) hours are considered unsafe for consumption and must be destroyed.

**4.I.2. Reheating for Hot Holding.** Potentially hazardous food that was cooked and then refrigerated may only be reheated once for hot holding. All parts of the food must reach a temperature of at least 165°F / 74°C for 15 seconds, and then held at 140°F / 60°C or above until served. Food reheated in a microwave oven shall be rotated or stirred, covered, and allowed to stand covered for two (2) minutes after reheating.

**4.I.3. Reheating Commercially Sealed Foods.** Ready-to-eat potentially hazardous food taken from a commercially processed, hermetically sealed container, or an intact package shall be heated to a temperature of at least 135°F / 57°C for hot holding.

**4.I.4. Reheating Time Periods.** Reheating for hot holding shall be done rapidly. The time the food is between 41°F / 5°C and 165°F / 74°C may not exceed two (2) hours.

**4.I.5. Reheating Roast Beef.** Any remaining unsliced portion of roast beef that is already cooked may be reheated for hot holding using the oven parameters, and the minimum time and temperature conditions used in the original cooking process.

**4.I.6. Serving Raw Fish.** Fish, other than molluscan shellfish, intended for consumption in a raw form may be served if it is obtained from a supplier that freezes the fish to destroy parasites and frozen throughout to a temperature of 0°F / 18°C, or below, for 168 hours (seven (7) days).

Fresh fish may be caught from the ship and served for immediate consumption, or soaked in a brine bath and cooled to 41°F / 5°C overnight. After initial serving, the remaining raw fish must be refrigerated within two (2) hours of service. (See Section 11. for Ciguatera reference)

**4.I.7. Serving Raw Molluscan Shellfish.** Molluscan shellfish intended for consumption in a raw form may be served if it is obtained from a supplier that processed, labeled, packaged, and shipped the live or frozen product in accordance with the National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish (FDA). Live molluscan shellfish must be shipped and received at a temperature at or below 50°F / 10°C (internal temperature), and stored and served at a

temperature at or below 41°F / 5°C. (Note: Molluscan shellfish are any edible species of oyster, clam, mussel, scallop, or edible portions thereof, except when the scallop product consists only of the shucked adductor muscle.) Except as specified in this section, molluscan shellfish may not be removed from the original container in which they are received other than immediately before preparation for service. For display purposes, shellstock may be removed from the container in which they are received, displayed on drained ice, or held in a display container and provided for consumption if the source on the shellstock on display is identified as outlined in Section 04.G.2.(5), and the shellstock are protected from contamination. Shellstock tags or labels shall remain attached to the container in which the shellstock are received until the container is empty. The date when the last shellstock from the container is served shall be recorded on the tag or label. This tag or label shall be retained for 90 days.

#### **4.J. Contamination Protection.**

**4.J.1. Cross Contamination Protection.** Food shall be protected from cross-contamination by physically separating raw animal foods during storage, preparation, holding, and display from other raw ready-to-eat food so products do not physically touch or drip from one product onto another. Such raw animal foods include fish, sushi, molluscan shellfish, or other raw ready-to-eat food such as vegetables and cooked ready-to-eat food. The exception to the requirement listed above is when these items are combined as ingredients: separating types of raw animal foods from each other such as beef, fish, lamb, pork, and poultry during storage, preparation, holding, and display by using separate equipment for each type or arranging each type of food in equipment so that cross-contamination of one type with another is prevented, or preparing each type of food at different times or in separate areas. Deli tissue, spatulas, tongs, single-use gloves, or dispensing equipment shall be used to protect food from cross contamination.

A container of food that is not potentially hazardous may be transferred from one consumer to another if the food is dispensed so it is protected from contamination and the container is closed between uses such as a narrow-neck bottle containing catsup, steak sauce, or soy sauce; or food such as crackers, salt, or pepper is in an unopened original package and is maintained in sound condition.

**4.J.2. Contamination Protection of Displayed Foods.** Food on display shall be protected from contamination by the use of display cases, enclosed shelving, tiers, railings, sneeze guards on buffet lines and salad bars, lids, covers, domes, wrappings on individual items, or any other effective means.

**4.J.3. Contamination Protection of Ice.** Ice intended for human consumption shall be made from potable water. Ice used for cooling stored or displayed food shall not be used for human consumption. Ice machines shall be cleaned and bacteriologically tested monthly in accordance with Section 03.L.1. Ice scoops shall be stored “handle up” in a freely draining metal bracket outside the ice storage compartment or installed within the machine at such a height as to preclude the scoop

being covered by the ice. Ice scoops shall not be left in the ice bin or lying on top of the ice machine. Ice shall not be scooped with any drinking vessel. Any supply of ice suspected of contamination shall be fully discarded.

**4.J.4. Contamination Protection at Self Service Stations.** Self-service consumer operations, such as buffet lines and salad bars, and unpackaged ready-to-eat foods; shall be provided with suitable utensils or effective dispensing methods that protect the food from contamination, and shall be monitored by food service employees trained in safe operations procedures. Self-service consumers shall not reuse soiled tableware to obtain additional food from the display and serving equipment. Self-service consumers may reuse drinking vessels if refilling is a contamination-free process. Refilling must be done without contact between the pouring spout utensil and the lip contact area of the drinking container. Each self-service food dispensing utensil shall be covered or located beneath shielding during service

**4.J.5. Contamination Protection of Condiments.** Bottled condiments available for common use shall be refrigerated if necessary after opening when not in service. Condiment dispensers or containers shall be cleaned at a frequency that prevents build-up at the container opening and keeps the outside of the containers free from food or dirt. Condiments shall be protected from contamination by being served in:

- (1) Protected food displays with the proper utensils;
- (2) Dispensers designed to provide protection;
- (3) Original containers designed for dispensing; or
- (4) Individual packages or portions.

#### **4.K. Food Disposal Requirements.**

**4.K.1. Discard Requirements of Prepared and Ready-to-Eat Food.** Prepared and ready-to-eat food shall be discarded when:

- (1) At any time, the food is determined to be not from an approved source.
- (2) At any time, the food may have been contaminated by an excluded or restricted employee;
- (3) At any time, the food is contaminated by a person through contact with their hands or other exposed body part, clothing, or bodily discharges;
- (4) After service, the food is unused or returned by the consumer;
- (5) After service, the food is removed from temperature control for more than two (2) hours;
- (6) After preparation or opening, the food is determined to be unsafe;
- (7) After preparation or opening, the food is not consumed within seven (7) days; and
- (8) After preparation or opening, the food is found in an unmarked container.



**4.K.2. Discard Requirements of Packaged Food.** Packaged food shall be discarded when:

- (1) The “Best Used By” date is past;
- (2) The package is found opened;
- (3) Packages are crushed, torn, soiled, or wet;
- (4) Canned goods are soiled, rusted, dented, or swollen; or
- (5) Bottles are broken or leaking.

## **5. GASTROINTESTINAL ILLNESS**

**5.A. Definition.** A reportable case of gastrointestinal illness is defined as:

- (1) Diarrhea (three or more episodes of loose stools in a 24-hour period); or
- (2) Vomiting and one additional symptom; which may be at least one episode of loose stools in a 24 hour period, abdominal cramps, headaches, muscle aches, or fever (temperature of  $\geq 100.4^{\circ}\text{F}$  /  $38^{\circ}\text{C}$ ).

Nausea, although a common symptom of gastrointestinal illness, is specifically excluded from this definition in order to avoid misclassifying seasickness (nausea and vomiting) as gastroenteritis. Any crewmember exhibiting the symptoms of gastrointestinal illness shall report to the MO or MPIC for further evaluation.

**5.B. Single Case of Gastroenteritis.** If a single case of gastrointestinal illness is observed on the ship, the MO or MPIC shall treat the illness, investigate the possible source, and notify the CO of the occurrence. If the source is identified, proper cleaning and/or disposal techniques shall be utilized to resolve the problem. Whether the source is identified or not, the MO or MPIC shall vigilantly monitor crew health for the development of additional cases.

**5.C. Multiple Cases of Gastroenteritis.** If two or more cases of gastrointestinal illness are observed on the ship, the source of these symptoms shall be investigated. Any embarked personnel exhibiting symptoms listed above shall report to the MO or MPIC for further evaluation, including those with a symptom onset time of up to three (3) days before boarding the ship. The MO or MPIC shall:

- (1) Notify the Director Marine Medicine (DMM);
- (2) Record information for each person with symptoms on the Gastrointestinal Illness Surveillance Questionnaire (NF 57-10-14); and
- (3) Begin a Gastrointestinal Illness Surveillance Log (NF 57-10-15).

**5.D. Surveillance.** The original surveillance questionnaires and surveillance logs shall be closed at the end of the calendar year and maintained aboard the ship for one (1) full year. After a year, the records shall be forwarded to DMM in January.

**5.D.1. Gastrointestinal Illness Surveillance Questionnaire.** Each person exhibiting gastrointestinal illness symptoms shall complete an NF 57-10-14.

**5.D.2. Gastrointestinal Illness Surveillance Log.** The surveillance log (NF 57-10-15) shall be maintained for each day until the illnesses have been resolved and completed in its entirety. Up to three individual cases can be documented on one form.

## **5.E. Isolation Requirements.**

**5.E.1. Personnel with Gastroenteritis.** Personnel symptomatic of gastrointestinal illness shall be isolated from asymptomatic personnel following a clinical determination made by the on board MO or the DMM (or designee) for ships with an MPIC. Symptomatic food service employees shall be isolated in an assigned stateroom or designated restricted area to the greatest extent possible until symptom free for a minimum of 48 hours. All other crew shall be isolated to the greatest extent possible until symptom free for a minimum of 24 hours. The MO that initiated the isolation shall declare the employee asymptomatic following a clinical evaluation.

**5.E.2. Immediate Contacts of Personnel with Gastroenteritis.** Asymptomatic cabin mates or immediate contacts of symptomatic personnel shall restrict their exposure to such persons. The MO or MPIC shall conduct a verbal interview with asymptomatic cabin mates and immediate contacts to:

- (1) Confirm their condition;
- (2) Advise of proper hygiene, contamination protection, and hand washing;
- (3) Advise of gastroenteritis symptoms and treatment; and
- (4) Encourage immediate reporting of any gastrointestinal illness symptoms.

These interviews shall be conducted daily with asymptomatic crew until 48 hours after the onset of the most recent ill crew member's symptoms.

**5.F. Gastroenteritis Notification and Prevention.** The MO or MPIC shall notify the CO, the Chief Steward, and the roommate(s) of any ill crewmember exhibiting symptoms defined in section 05.A. As applicable, the Chief Steward shall dispose of any questionable prepared foods and review food contamination protection procedures. An all hands safety stand down to cover the topics listed above is recommended if the topics have not been reviewed within the past year.

**5.G. U.S. Port Arrival Reporting.** The MO or MPIC on a NOAA ship proceeding to a U.S. port from a foreign port shall submit a Gastrointestinal Illness Standardized Report (NF 57-10-16) to the DMM between 24 and 36 hours prior to the scheduled arrival time to the U.S. port, even if the total number of gastrointestinal illness cases is zero (0). The report must be based on the number of cases recorded in the surveillance log and include an indication of total cases per each leg of the voyage and

the full voyage period. If the number of cases changes after submission of the initial report, an updated report shall be submitted no less than four (4) hours before the ship arrives in port. The DMM shall consult with the Centers for Disease Control (CDC) if two or more cases are indicated on the NF 57-10-16 for any voyage. Reports shall be submitted electronically or by facsimile. Proof shall be maintained aboard the ship that the report was successfully received by the DMM. The original report shall be forwarded to MHS upon arrival. A copy of the report shall be maintained aboard the ship for one (1) full year.

**5.H. Foreign Port Arrival Reporting.** The MO or MPIC on a NOAA ship proceeding to a foreign port shall prepare required documentation and forms in accordance with the Office of Marine and Aviation Operations (OMAO) Policy 1002-Medical Clearance to Enter a Foreign Port. The original declaration of health form shall be presented to competent port authorities upon request. A copy of the record shall be maintained aboard the ship for one (1) full year.

## **6. EMERGENCY WASH STATIONS**

**6.A. General Requirements.** Emergency showers and eyewash stations for quick drenching or flushing shall be provided within the work area for immediate use where the body or eyes of any person may be exposed to injurious corrosive materials (29 CFR 1910.151(c)). Emergency shower and eyewash stations will either be permanently plumbed or self-contained. Handling of injurious corrosive materials should be restricted to areas where plumbed emergency wash stations are available. When this is not possible, a portable self-contained unit must be available. All types of emergency showers and eyewash stations shall:

- (1) Be located in well lighted areas;
- (2) Be identified with a high visibility sign;
- (3) Be located on the same deck of the hazard;
- (4) Be located in an area that requires no more than ten (10) seconds to reach;
- (5) Be accessed by an unobstructed path;
- (6) Be constructed of materials resistant to corrosion;
- (7) Be protected from airborne contaminants;
- (8) Deliver tepid flushing water at a temperature of 60-100°F / 16-38°C;
- (9) Deliver flushing fluid at a rate that is non-injurious to the user;
- (10) Deliver flushing fluid within one (1) second of activation;
- (11) Be operable in a hands-free mode via stay open control valves (initial activation may be manual, but continual operation must be hands-free);
- (12) Deliver flushing fluid continuously for at least 15 minutes after activation;
- (13) Be inspected weekly with results documented on the NF 57-10-21; and
- (14) Be inspected annually to verify compliance with the current American National Standards Institute (ANSI) Z358.1 standards.

**6.B. Plumbed Emergency Showers.** Plumbed emergency showers shall:

- (1) Be connected to a source of potable water;
- (2) Be activated weekly to ensure clear flushing fluid is provided;
- (3) Deliver flushing solution at a rate of 20 gallons per minute;
- (4) Be positioned so the shower head is 82-96 inches above the deck;
- (5) Provide a 20 inch spray pattern at 60 inches above the deck; and
- (6) Be centered so the spray pattern is 16 inches from any obstruction.

**6.C. Plumbed Emergency Eyewash Stations.** Plumbed Emergency eyewash stations shall:

- (1) Be connected to a source of potable water;
- (2) Be activated weekly to ensure clear flushing fluid is provided;
- (3) Deliver flushing solution at a rate of 0.4 gallons per minute;
- (4) Be positioned so the dispensing nozzle is 33-45 inches above the deck and at least six (6) inches from the bulkhead or any obstruction; and
- (5) Deliver flushing solution to both eyes at the same time.

**06.D. Self-Contained Emergency Eyewash Stations.** Self-contained emergency eyewash stations are gravity fed units that contain a supply of wash solution. These units shall be installed in any work space where an emergency eyewash station is required, but a plumbed eyewash station cannot be installed due to plumbing or space restrictions. Self-contained emergency eyewash stations shall:

- (1) Be completely filled with potable water;
- (2) Be completely refilled after any full or partial use;
- (3) Be fully flushed and refilled weekly, if filled with potable water only, or fully flushed and refilled quarterly, if filled with potable water and a treatment solution (treated flushing fluid must be maintained within the manufacturer's thermal requirements at all times); and
- (4) Have an attached inspection tag which indicates the last change date of the flushing fluid.

**06.E. Personal Emergency Eyewash Bottles.** Personal eyewash bottles may be used as supplemental eyewash at the workstation to provide immediate wash solution to the eyes. Personal eyewash bottles do not meet the requirement of a permanently plumbed or self-contained emergency eyewash station. Personal eyewash bottles may be placed strategically throughout the ship. These bottles must be discarded after any full or partial use, or when reaching the manufacturer's expiration date. All personal eyewash bottles must be labeled with an expiration date.

**7. POSTED INFORMATION**

**7.A. Warning Signs.** Posted warning signs shall be of commercial manufacture or equivalent quality. Warning signs shall not be handwritten or of a temporary nature.

**7.B. Resuscitation Posters.** Resuscitation posters shall be displayed in conspicuous locations around the ship and shall contain the most current instruction in resuscitation procedures.

**7.C. Emergency Contacts.** Daytime and after hours phone numbers for MOC Operations, MHS, NOAA Dive Center, and on-call physician services shall be visibly posted in Sickbay.

**7.D. List of Medically Trained Personnel.** A list of all personnel with any medical qualification or training shall be conspicuously posted on the ship. The list shall contain the names, certification levels, and certification expiration dates of all MPICs and persons trained in First Aid, cardio-pulmonary resuscitation (CPR), or automated external defibrillator (AED).

## **8. FIRST-AID KITS**

**8.A. General Requirements.** All ships shall maintain two types of first-aid kits:

- (1) Daily use first-aid kits located in various places throughout the ship; and
- (2) Emergency Response (ER) or jump first-aid kits.

All first-aid kits shall contain an inventory of all supplies, as indicated below, and shall be checked and restocked on a weekly basis by the MO or MPIC.

**8.B. Daily Use First-Aid Kit Contents.** All daily use first-aid kits shall be clearly marked and permanently installed in the passageway of each deck, on the bridge, and in the engine room. Additional daily use first-aid kits of appropriate size may be permanently installed in high risk areas, such as the machine shop or other spaces as deemed necessary.

Daily use first-aid kits shall be stocked with items appropriate to the environment and potential hazards, and shall not contain prescription medications. Supplies shall be maintained within the posted expiration dates and in sufficient quantities to support all activities and personnel normally in or near a given area where the daily use first-aid kit is located. The daily use first-aid kit inventory shall include, but not necessarily limited to:

- (1) Band aids of various sizes
- (2) Surgical tape
- (3) Rolls of gauze and kling (elastic gauze rolls) of various sizes
- (4) Gauze pads (4x4's, 2x2's)
- (5) Alcohol wipes
- (6) Individual packages of topical antibiotic

- (7) Non-sterile gloves
- (8) CPR barrier device (CPR mask may be mounted outside of the first-aid kit)

**8.C. Emergency Response or Jump First-Aid Kit Contents.** ER kits shall be clearly marked, highly visible, easily accessed, and located either in Sickbay or an alternative medical supply storage area. Additional ER kits may be placed aboard rescue boats, survey launches, or dive boats as designated by the CO. The CO shall provide the DMM with the number of ER kits needed aboard the ship in order to facilitate resupply. ER kits shall be stocked with items appropriate to the environment and potential hazards. Supplies shall be maintained within the posted expiration dates and in sufficient quantities to support all activities and personnel until the sick or injured person(s) can be transported to Sickbay or an alternative medical treatment area. The ER kit inventory shall include, but not necessarily limited to:

- (1) Band aids of various sizes
- (2) Surgical tape
- (3) Gauze rolls of various sizes
- (4) Large absorbent compression bandages
- (5) Gauze pads of various sizes
- (6) Burn dressings of various sizes
- (7) Alcohol wipes
- (8) Individual topical antibiotic packets
- (9) Large bandage scissors
- (10) Eye bandages
- (11) One or more litter bottles of eyewash solution
- (12) Ring cutter
- (13) Triangular bandage with safety pins
- (14) Individual elastic bandages
- (15) Non-sterile gloves
- (16) CPR barrier device

**8.D. MPIC Physical Assessment Kits.** All MPICs shall maintain their own personal MPIC physical assessment kit. Physical assessment kits shall be taken ashore with shore parties or aboard launches by the MPIC detailed to activities off of the ship where they are required to respond to emergencies as an MPIC. The MPIC physical assessment kit inventory shall include, but not be limited to:

- (1) Stethoscope
- (2) Blood pressure cuff
- (3) Pen light
- (4) Otoscope/ophthalmoscope
- (5) Reflex hammer
- (6) Non-sterile exam gloves
- (7) Glasgow coma scale
- (8) Neurological exam checklist
- (9) Copy of the NOAA MPIC Training Binder

(10) Five or more copies of the NOAA SOAP note form

The MO aboard a Medical Class A ship (see section 09.B) may incorporate physical assessment kit items into the ER kit.

## **9. NOAA FLEET FORMULARY AND MEDICAL INVENTORY**

**9.A. General Policy.** NOAA ships shall maintain a stock of unexpired medications, medical supplies, and medical equipment in the amounts indicated on the NOAA Fleet Formulary and Medical Inventory (OMAO Policy 1003).

**9.B. Medical Classification of Ships.** Each NOAA ship shall be classified as either a Medical Class A or Medical Class B ship. Ships meeting the criteria for a USPHS Medical Officer, as indicated in OMAO Procedure 1001-02, shall be classified as Medical Class A. All other ships shall be classified as Medical Class B. If a specific voyage on a Medical Class B ship meets the requirements of a Medical Class A ship, a USPHS MO shall be temporarily assigned to the ship and the formulary increased to Medical Class A levels. Once the requirement for Medical Class A status no longer exists, the USPHS MO shall detach from the ship and the formulary and medical inventory revert back to Medical Class B levels. Medical Class A items are denoted on the formulary with an asterisk (\*).

**9.C. Mission Critical and Mission Essential Items.** Various items on the NOAA Fleet Formulary and Medical Inventory are designated as Mission Critical, Mission Essential, or Diving Mission Essential. These items are respectively highlighted in orange, yellow, and olive green on the master formulary, and listed separately on the mission critical and mission essential formularies. A ship may not get underway with a Category 1 medical deficiency unless the ship is issued a waiver by the OMAO Director in accordance with OMAO Policy 1702. The DMM or a designee shall prepare and present a recommendation and a risk assessment for the waiver request to the MOC-CO. The MOC-CO will either deny the waiver request or forward through the chain of command for consideration. A ship may get underway with a Category 2 medical deficiency, but must order a replacement stock of expired or missing items as soon as possible.

Mission Critical items shall be stocked at a minimum of 100 percent of the indicated amount upon any departure. Failure to meet this criterion constitutes a Category 1 medical deficiency.

Mission Essential items shall be stocked at a minimum of 50 percent of the indicated amount upon any departure. Failure to meet this criterion constitutes a Category 1 medical deficiency. Meeting the criterion for Mission Essential items, while counting expired medications, constitutes a Category 2 medical deficiency.

Diving Mission Essential items shall be stocked at a minimum of 50 percent of the indicated amount upon any departure that requires a hyperbaric chamber to be aboard. Failure to meet this criterion constitutes a Category 1 medical deficiency.

**9.D. Repackaged Items.** Formulary and medical inventory items may be removed from the original manufacturer packaging and repackaged in another storage container. The new storage container must be clearly labeled with the name, manufacturer, quantity, strength, lot number, and expiration date of the repackaged item. MPICs may not repackage prescription medications without the advice and consent of an MO. Medical supplies that have multiple pieces or parts must be completely repackaged in a single container, with all operating instructions, if removed from the original manufacturer packaging.

**9.E. Alternate Dosage Units.** The designated dosage units for medications may not always be supplied in the exact units indicated on the formulary. An alternate dosage unit and count may be placed in the formulary as long as the total dosage requirements and ability to administer prescribed doses are maintained. For example, a 200 count bottle of 100mg Ibuprofen tablets may be substituted for a 100 count bottle of 200mg Ibuprofen tablets; however, a 25 count bottle of 800mg Ibuprofen tablets may not be substituted for a 100 count bottle of 200mg Ibuprofen tablets.

**9.F. Formulary Stock Management.** MHS shall stock each ship according to the current NOAA fleet formulary and periodically review the fleet formulary and make recommendations to add or delete items from the formulary.

**9.F.1. Expired Medications and Medical Supplies.** All items in the formulary and medical inventory which have passed the indicated expiration date shall promptly be replaced with unexpired medications or medical supplies. Expired items shall be maintained on board the ship until replacement items are received. Expired items may be administered by the MO or MPIC if no other suitable unexpired items are available.

All expired medications must be returned to MHS upon receipt of unexpired replacement stock. The return shipment of expired items shall include an Expired Medications and Medical Supplies Return Packing List (NF 57-10-11). Controlled substances shall be returned separately from other expired medications with the original Controlled Substance Inventory Log (NF 57-10-12). Expired refrigerated items may be returned unrefrigerated. Expired fluids (intravenous or bottled) may be disposed of on the ship in accordance with non-hazardous waste disposal procedures. Absolutely under no circumstance shall expired medications or medical supplies be destroyed, discarded, donated, or distributed to other persons other than described in this section.

MHS will track the amounts and expiration dates of all items listed on the formulary for individual ships using a shared Google spreadsheet. MHS staff will update the shared formulary spreadsheet with the amount and expiration dates of all medications and supplies before mailing them to the ships. Ships will inventory



formulary resupply shipments upon receipt and notify MHS immediately if the items received do not match the spreadsheet. Ship MOs or MPICs should update the shared formulary spreadsheet each time a formulary item is used. At least 60 days prior to creating a formulary resupply order for the fleet, MHS staff will prompt the MOs and MPICs via email to update their formulary spreadsheets.

At least 45 days prior to a fleet inspection, the MO or MPIC shall perform an inventory of all mission critical and mission essential formulary items, and submit a special resupply request to MHS. MHS will fill special requests as soon as possible. When an item cannot be obtained prior to the fleet inspection, MHS will provide the ship with an e-mail acknowledging that the formulary is not fully supplied. The MO or MPIC shall retain this e-mail and provide it to Fleet Inspectors to avoid any Category 1 findings. The ship can send a second e-mail to MHS identifying formulary items used immediately before the fleet inspection that need to be restocked. MHS will respond with an e-mail acknowledging receipt of this request and the anticipated resupply date. In a prolonged emergency situation at sea, the consumption of some formulary items can lead to a Category 1 deficiency due to missing items. This situation must be resolved immediately when the ship returns to port.

**9.F.2. Controlled Substances Management.** The CO is the designated custodian of all controlled substances aboard an OMAO ship. The OMAO formulary includes a supply of five medications classified as controlled substances. These medications are: Codeine sulfate tablets, Morphine sulfate injection, Diazepam injection, Diazepam tablets, and Tramadol tablets. Any other controlled substances listed in Schedules II-IV, derivatives thereof, or combination products are not authorized. Unauthorized possession or use of controlled substances is a criminal offense.

All controlled substances shall be locked in a combination safe used solely for storage of these medications. The drug safe must be located in Sickbay, the CO's cabin, or a space designated in writing by the CO that is secured and accessible to only the CO, XO, or MO.

Access to the drug safe shall be limited to the MO, CO, and XO. MPICs shall not have direct access to the drug safe. On Medical Class A ships, the MO shall be the drug safe custodian. On Medical Class B ships, the CO shall be the drug safe custodian. The drug safe custodian is accountable for the inventory and use of controlled substances.

Controlled substances shall only be administered by an MO with appropriate licensure. MPICs and other MOs shall only administer controlled substances under the order and direction of an MO with appropriate licensure. Expired or recalled controlled substances shall be sent directly from the ship to MHS. No controlled substance is to be used, discarded, or otherwise charged off the inventory without authorization from an approved and appropriately licensed authority (DOHS, DMM, or designated MO representative). Controlled substances are ordered for replacement or resupply in the same manner as other medications from the fleet formulary.

**9.F.2.A. Controlled Substance Inventories.** The MO or MPIC, with the XO or CO as a witness, shall conduct an inventory of the controlled substances on board the ship upon:

- (1) Receipt;
- (2) Transfer of stock to the MOC or other authorized entity;
- (3) Change of custodian;
- (4) Pre-fleet inspection inventory; or
- (5) Quarterly.

**9.F.2.B. Controlled Substance Inventory Log.** All receipts, returns, or other changes to the shipboard inventory of controlled substances shall be documented on the NF 57-10-12. MHS shall prepare an inventory log for each controlled substance sent to the fleet. All line entries shall be completed in ink to be valid. An accurate account of controlled substances shall be maintained and the inventory log stored in the drug safe with the corresponding medication at all times. When a Controlled Substance Inventory Log is filled, a new log shall be started with the balance of medication on hand forwarded to that form.

**9.F.2.C. Return or Consumption of Controlled Substances.** Upon expiration or recall, the unused supply of a controlled substance shall be returned directly to MHS along with the original NF 57-10-12. In order to maintain accountability, each controlled substance return shipment shall be shipped separately via a shipper that offers package tracking capabilities. Upon full consumption of a controlled substance, the original NF 57-10-12 shall be returned to MHS. Copies of all NF 57-10-12 forms shall be retained for one (1) full calendar year on board the ship and may be destroyed thereafter.

**9.F.3. Medical Equipment Performance Tests.** A weekly performance test based upon manufacturer recommendations shall be conducted on the following medical equipment listed on the medical inventory. Results of the performance tests shall be documented on NF57-10-21.

- (1) Automated External Defibrillator (AED)
- (2) Manual External Defibrillator (Medical Class A only)
- (3) Manual External Defibrillator battery check (Medical Class A only)
- (4) 12-Lead Electrocardiogram (EKG) machine (Medical Class A only)
- (5) Sphygmomanometers
- (6) Suction machine
- (7) Portable suction machine
- (8) Glucometer
- (9) Centrifuge (if applicable)
- (10) Sickbay bed function test (if applicable)
- (11) Sickbay emergency call device test (if applicable)
- (12) Medical reefer – external temperature gauge
- (13) Medical reefer – internal temperature gauge
- (14) Medical oxygen (O<sub>2</sub>) tanks

## 10. MEDICAL LOGS

**10.A Medical Equipment Maintenance Logs.** A maintenance log shall be maintained to record periodic maintenance performed on each piece of medical equipment per the requirements indicated in manufacturer's service manual. All manufacturers recommended periodic maintenance shall be performed by an authorized service or repair company. If the equipment is removed from the ship for service or repair, a separate dated entry shall be made to record when the equipment was removed from the ship and when the equipment was returned to the ship. The MO or MPIC shall verify the equipment is fully operational and ready for use. A description of the maintenance performed shall be recorded on the Medical Equipment Maintenance Log (NF 57-10-19). The maintenance log shall be maintained for the life span of the equipment.

**10.B Sick Call Logs.** The MO/MPIC shall maintain a Sick Call Log (NF 57-10-10) to record all medical treatment provided to personnel aboard the ship. Entries shall be clearly printed and legible. All columns must be completed for each person treated. Use as many rows of the "Purpose of Visit" column as necessary. The CO and MO/MPIC shall sign and date each completed sheet. At the end of each quarter the log will be closed out, signed, and reviewed by the MPIC/MO with the CO. A copy of the quarterly sick call log shall be sent to the DMM for review. Quarterly Sick Call Logs shall be maintained as a set for each calendar year and numbered serially. Sick Call Logs shall be closed at the end of the calendar year and maintained aboard the ship for one (1) full year. After a year, the records shall be forwarded to MHS in January. MHS shall maintain the records for four (4) years then transfer the records to the Regional Record Center, and destroyed 25 years later.

## 11. REFERENCES

Ship Commands shall ensure compliance with all NOAA instructions and shall ensure these references are available on board the ship and incorporated into the ship's safety program. The basis for the requirements set forth in this document can be found in:

- (1) NAVMED P-5010-1 (Rev. 8-1999): Manual of Naval Preventative Medicine, Chapter 1, Food Safety (With Change 1 Included 2004)
- (2) NAVMED P-5010-6 (Rev. 7-2005): Manual of Naval Preventative Medicine, Chapter 6, Water Supply Afloat
- (3) Vessel Sanitation Program 2018, Operations Manual, USPHS, CDC
- (4) American National Standards for Emergency Eyewash and Shower Equipment, ANSI/ISEA Z358.1-2009
- (5) Food Code, November 13, 2013, USPHS, FDA
- (6) Medical Clearance into Foreign Ports, September 2008, OMAO Policy 1002
- (7) NOAA Fleet Medical Formulary, March 2016, OMAO Policy 1003
- (8) National Shellfish Sanitation Program Guide for the Control of Molluscan Shellfish: Version 2009, FDA

- (9) Food Standards and Label Policy Book, August 2005, U.S. Department of Agriculture, Food Safety and Inspection Service
- (10) Fresh and Frozen Seafood: Selecting and Serving it Safely, FDA, August 2006
- (11) OMAO Document Management System Medical Binder (1000) Document 2007 03 PJP Ciguatera Fish Poisoning

## 12. FORMS

All NOAA Forms listed below are available on the NOAA e-Forms website and on the Document Management System website.

NF 57-06-03	Potable Water Log
NF 57-10-03	NOAA Ship Declaration of Health
NF 57-10-10	Sick Call Log
NF 57-10-11	Expired Medications and Medical Supplies Return Packing List
NF 57-10-12	Controlled Substance Inventory Log
NF 57-10-14	Gastrointestinal Illness Surveillance Questionnaire
NF 57-10-15	Gastrointestinal Illness Surveillance Log
NF 57-10-16	Gastrointestinal Illness Standardized Report
NF 57-10-19	Medical Equipment Maintenance Log
NF 57-10-21	Weekly Health and Sanitation Inspection
NF 57-10-22	Weekly Food Service Area Sanitation Inspection
NF 57-10-23	Annual Food Service Area Sanitation Inspection

## 13. ACRONYMS

AED	Automated External Defibrillator
ANSI	American National Standards Institute
CDC	Centers for Disease Control
CFR	Code of Federal Regulations
CO	Commanding Officer/Master
CPR	Cardio-Pulmonary Resuscitation
°C	Degrees Celsius
°F	Degrees Fahrenheit
DOHS	Director, Office of Health Services
DHHS	Department of Health and Human Services
DMM	Director, Marine Medicine Program
EPA	Environmental Protection Agency
ER	Emergency Response
FAC	Free Available Chlorine
FDA	Food and Drug Administration
GVA	General Vessel Assistant
ISEA	International Safety Equipment Association
L	Liter
mg	milligram

MHS	Marine Health Services Branch
MMA	Maritime Medical Access
MO	Medical Officer
MOC-CO	Marine Operation Center – Commanding Officer
MPIC	Medical Person in Charge
NAVMED	Naval Medical Command
NF	NOAA Form
NOAA	National Oceanic and Atmospheric Administration
O <sub>2</sub>	Oxygen
OMAO	Office of Marine and Aviation Operations
pH	potential of Hydrogen
ppm	parts per million
TBR	Total Bromine Residual
U.S.	United States
USDA	U.S. Department of Agriculture
USPHS	U.S. Public Health Service
UV	Ultraviolet
XO	Executive Officer/Chief Mate