Changes and Additions to the *VSP Operations Manual* from 2000 to 2005

U.S. Public Health Service

Centers for Disease Control and Prevention

National Center for Environmental Health

Vessel Sanitation Program

Outline of Changes and Additions

3.0 Definitions

3.2 Definitions

Potable Water

"Atmospheric vacuum breaker" Means an approved backflow prevention plumbing device utilized on potable water lines where shut-off valves do not exist downstream from the device. *The device is not approved for use when it is installed in a manner that will cause it to be under continuous water pressure.* An atmospheric vacuum breaker must be installed at least 152 mm (6 inches) above the flood level rim of the fixture or container to which it is supplying water.

"Backflow preventer" means an approved backflow prevention plumbing device that must be used on potable water distribution lines where there is a direct connection or a potential connection between the potable water distribution system and other liquids, mixtures, or substances from any source other than the potable water supply. Some devices are designed for use under continuous water pressure, whereas others are non-pressure types. To ensure proper protection of the water supply, a thorough review of the water system shall be made to confirm that the appropriate device is selected for each specific application. *The VSP only accepts vented devices.*

"Black water" means waste from toilets, urinals, medical sinks, and other similar facilities.

"Cross-connection" means any unprotected actual or potential connection or structural arrangement between a public or a consumer's potable water system and any other source or system through which it is possible to introduce into any part of the potable system, any used water, industrial fluid, gas, or substance other than the intended potable water with which the system is supplied. Bypass arrangements, jumper connection, removable section, swivel or change-over devices, and other temporary or permanent devices which or because of which backflow can occur are considered to be cross-connections.

"Gray water" means all water including drainage from galleys, dishwashers, showers, laundries, and bath and washbasin drains. It does not include black water or bilge water from the machinery spaces.

"Hose connection vacuum breaker" Means an approved backflow prevention plumbing device that attaches directly to a hose bib by way of a threaded head. This device uses a single check valve and vacuum breaker vent. It is not approved for use under continuous pressure (when

a shut-off valve is located downstream from the device).

"Non-potable fresh water" means fresh water that may or may not be halogenated, but is intended for use in technical and other areas where potable water is not required (laundries, engine room, toilets and waste-treatment areas, and for washing decks in areas other than the vessel's hospital, food service, preparation, or storage areas).

"Potable water" means fresh water intended for drinking, washing, bathing, or showering; for use in freshwater swimming pools and whirlpool spas; for use in the vessel's hospital; for handling, preparing, or cooking food; and for cleaning food storage and preparation areas, utensils, and equipment.

"Potable water tanks" means all tanks in which potable water is stored from bunkering and production for distribution and use as potable water.

"Reduced pressure principle backflow prevention assembly (RP Assembly)" means an assembly containing two independently acting approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valves and at the same time below the first check valve. The unit shall include properly located resilient seated test cocks and tightly closing resilient seated shutoff valves at each end of the assembly.

"Spa Pool" means a fresh or saltwater supplied pool with water temperatures and turbulence comparable to a whirlpool spa, but a water depth and volume more comparable to a pool (ie. 30-40 °C or 86-104 °F, bubbling or jetted water effects which physically break at the water surface, depth over 1 m (3 feet), shape is normally non-circular, and volume exceeds 6 tons of water).

"Technical water" means fresh water NOT intended for 1) drinking, washing, bathing, or showering: 2) use in the vessel's hospital: 3) handling, preparing, or cooking food: and 4) cleaning food storage and preparation areas, utensils, and equipment.

Food Safety

"Accessible" means capable of being exposed for cleaning and inspection with the use of simple tools such as a screwdriver, pliers, or an open-end wrench.

"Blast Chiller" means a unit specifically designed for rapid intermediate chilling of food products from 60 °C (140 °F) to 21 °C (70 °F) within two hours and 21 °C (70 °F) to 5 °C (41 °F) within an additional 4 hours.

"Coved" means a concave surface, molding, or other design that eliminates the usual angles of 90 degrees or less.

"Deck sink" means a sink recessed into the deck, sized to contain waste liquids from tilting kettles and pans.

"Disinfection" means the destruction of all vegetative cells (not spores) in or on inanimate objects.

"Floor sink" see deck sink.

"Gap" means an open juncture between two materials or equipment components and is generally larger than a seam. See seam.

"Hand Antiseptic" means antiseptic products applied to human skin. (*replaces the term hand sanitizer*)

"Potentially hazardous food" *does not include:*

(a) An air-cooled hard-boiled egg with shell intact, or a shell egg that is not hard-boiled, but has been treated to destroy all viable Salmonellae;

"Readily accessible" means exposed or capable of being exposed for cleaning or inspection without the use of tools.

"Readily removable" means capable of being detached from the main unit without the use of tools.

"Removable" means capable of being detached from the main unit with the use of simple tools such as a screwdriver, pliers, or an open-end wrench.

"Sealed" means having no openings present that will permit the entry of soil or seepage of liquids.

"Sealed seam" means a seam that has no openings that would permit the entry of soil or liquid seepage.

"Seam" means an open juncture between two materials or equipment components greater than mm (1/32 inch) and less than mm (1/8 inch).

"Temperature measuring device or TMD" means a thermometer, thermocouple, thermistor, or other device that indicates the temperature of food, air, or water and is numerically scaled in Celsius and or Fahrenheit.

Outbreak-related Definitions

"Acute gastroenteritis (AGE)" – means an irritation and inflammation of the digestive tract characterized by sudden onset of symptoms of diarrhea and/or vomiting, as well as other constitutional symptoms.

"Attack rate" – (1) means the proportion of individuals who are exposed to an infectious agent who become clinically ill. (2) The cumulative incidence of infection in a group observed over a period during an epidemic.

"Chemical disinfectant" – means a chemical agent that is applied to inanimate objects to kill microbes. Chemical disinfectants are classified as "high-level," "intermediate-level," and "low-level" according to their comparative levels of potency and their intended uses. Chemical disinfectants are regulated either by FDA (medical instrument uses) or the Environmental Protection Agency EPA (environmental surface uses). Intended uses and directions for use are found both on the labels of the products and/or in package inserts. Material Safety and Data Sheets (MSDS) for each product are available from the manufacturer.

"Chemical sanitizer" – means a chemical that, when applied to a surface, reduces the number of microbes to a safe level.

"Communicable disease" – means an illness due to a specific infectious agent or its toxic products that arises through transmission of that agent or its products from an infected person, animal or inanimate reservoir to a susceptible host; either directly or indirectly through an intermediate plant or animal host, vector or the inanimate environment.

"Communicable period" – means the time during which an infectious agent may be transferred directly or indirectly from an infected person to another person, from an infected animal to humans, or from an infected person to animals, including arthropods.

"Contamination" – means the presence of an infectious agent on a body surface, in clothes, bedding, toys, surgical instruments or dressings, or other inanimate articles or substances including food and water.

"Date/Time of onset" – means the date/time on which the first symptom appeared.

"Diarrheal Disease" – means 3 or more episodes of loose stools in a 24-hour period or of a greater than normal (for the person) amount of loose stools.

"Disinfectant" – (see chemical disinfectant)

“Disinfection” – means the process that reduces the level of microbial contamination. A disinfectant is a chemical or physical agent that is applied to inanimate objects to kill microbes. Disinfectant performance is typically not defined in terms of a specific percentage or log-reduction target, and unlike the sanitizers for food-contact surfaces, products that are termed disinfectants are usually not intended for use in association with food-contact surfaces.

“Epidemic” – means the occurrence in a community or region of cases of an illness, specific health-behavior, or other health-related events clearly in excess of normal expectancy.

“Epidemic curve” – means a graphic plotting of the distribution of cases by date/time of symptom onset.

“Fomites” (singular, fomes) – means articles that convey infection to others because they have been contaminated by pathogenic organisms. Examples include handkerchief, drinking glass, door handle, clothing, and toys.

“Fomite transmission” – means the transmission of pathogenic organisms via inanimate objects (see fomites)

“Foodborne disease outbreak” (see food safety definition section)

“Gastrointestinal illness case” – (see reportable gastrointestinal illness case)

“Host” – means a person or other living animal, including birds and arthropods, that affords subsistence or lodgment to an infectious agent under natural conditions.

“Incubation period” – means the time interval between invasion by an infectious agent and the appearance of the first sign or symptom of the disease in question.

“Index case” – means the first case in a family or other defined group to come to the attention of the investigator.

“Infectious agent” – means an organism (virus, rickettsia, bacteria, fungus, protozoan, or helminth) that is capable of producing infection or infectious disease.

“Quarantine” – means the limitation of movement of apparently well persons who have been exposed to a case of communicable (infectious) disease during its period of communicability to prevent disease transmission during the incubation period if infection should occur.

"Reportable gastrointestinal illness case" (VSP definition) – means a case of gastrointestinal illness with one of the following characteristics; (1) diarrhea (three or more episodes of loose stool in a 24-hour period), or (2) vomiting and one additional symptom including one or more episodes of loose stool in a 24-hour period, or abdominal cramps, or headache, or muscle aches, or fever; and (3) reported to the master of the vessel, the medical staff or other designated staff by passenger or a crew member.
"Sanitization" (food-contact surfaces only) – means the application of cumulative heat or chemicals on cleaned food-contact surfaces that, when evaluated for efficacy, is sufficient to yield a reduction of 5 logs, which is equal to a 99.999% reduction, of representative disease microorganisms of public health importance.

"Sanitization" (non-food-contact surfaces) – means the performance standard used by the Environmental Protection Agency (EPA) for these sanitizers has required a reduction of the target microorganism by 99.9% or 3 logs (1000, 1/1000, or 10^3) after 5 minutes of contact time.

"Sanitizer" – (see chemical sanitizer).

"Secondary attack rate" – means the proportion of cases of an infection that occur among contacts within the incubation period following exposure to the primary case in relation to the total number of exposed contacts; the denominator is restricted to susceptible contacts when these can be determined. The secondary attack rate is a measure of contagiousness and is useful in evaluating control measures.

"Surveillance" (CDC) – means the ongoing, systematic collection, analysis and interpretation of outcome-specific data used in planning, implementation, and evaluation of public health practice.

"Transmission" (of infection) - means any mechanism by which an infectious agent is spread from a source or reservoir to another person. These mechanisms are defined as follows:

(1) Direct transmission (includes person-to-person transmission) – Direct and essentially immediate transfer of infectious agents to a receptive portal of entry through which human or animal infection may take place.
(2) Indirect transmission – Occurs when an infectious agent is transferred or carried by some intermediate item, organism, means, or process to a susceptible host, resulting in disease. Included are airborne, foodborne, waterborne, vehicle borne (e.g., fomites) and vectorborne modes of transmission.

"Vehicle" – means the mode of transmission of an infectious agent from its reservoir to a susceptible host. This can be by food, water, and vectors, among others.

“Waterborne outbreak” (USEPA) – means an outbreak involving at least two people that experience a similar illness after ingesting or using water intended for drinking or after being exposed to or unintentionally ingesting or inhaling fresh or marine water used for recreational purposes and epidemiological evidence implicates the water as the source of illness. A single case of chemical poisoning or a laboratory-confirmed case of primary amebic meningoencephalitis is considered an outbreak.

4.0 Gastrointestinal Illness Surveillance

4.1 Data Collection

4.1.1.1 Definition

4.1.1.1.1 A reportable case of gastrointestinal illness shall be defined as:

(2) Vomiting and one additional symptom including one or more episodes of loose stools in a 24-hour period, or abdominal cramps, or headache, or muscle aches, or fever (temperature of ≥ 38 °C (100.4 °F)); and

4.1.1.1.2 The reportable cases shall include those crew members with a symptom onset time of up to 3 days before boarding the vessel. Documentation of the 3 day assessment for each crew member **WITH SYMPTOMS** shall be maintained on the vessel and be available for review during inspections.

4.1.2 Records

4.1.2.1 Log

4.1.2.1.4 The gastrointestinal illness surveillance log entry for each passenger or crew member shall contain the following information:

(8) Illness symptoms, including the presence of the following selected signs and symptoms: numbers of episodes each of diarrhea and vomiting per day, bloody stools, fever, recorded temperature, abdominal cramps, headaches and muscle aches.

4.1.2.1.5 Antidiarrheal medications shall not be sold or dispensed to passengers or crew except by designated medical staff. *A yes/no entry for antidiarrheal medications sold or dispensed at medical will be recorded on the gastrointestinal illness surveillance log form.*

4.1.2.3 Retention

4.1.2.3.1 The medical log, gastrointestinal illness log and the 72 hour self-administered questionnaires shall be maintained on the vessel for 12 months. Electronic records of these documents are acceptable as long as the data are complete and can be retrieved during inspections and outbreak investigations. Retention of a paper record or crew medical log for crew members with symptoms up to 3 days prior to boarding the vessel is acceptable and shall also be maintained on the vessel for 12 months.

4.1.2.3.2 The gastrointestinal illness surveillance log and the 72 hour self-administered questionnaires shall be available for review by the VSP during inspections and outbreak investigations. These materials shall be transmitted by facsimile to the VSP for review in outbreak investigations, as requested.

4.2 Notification

4.2.1 Routine Report

4.2.1.1 Routine Report Timing

4.2.1.1.1 The master, the medical staff, or other designated staff of a vessel destined for a U.S. port from a foreign port shall submit at least one standardized gastrointestinal illness report based on the number of reportable cases in the gastrointestinal illness log to the VSP no less than 24 hours, but not more than 36 hours before the vessel's expected arrival at the U.S. port.

4.2.1.1.2 If the number of cases changes after submission of the initial report, an updated report shall be submitted no less than 4 hours before the vessel's arrival at the U.S. port. The 4-hour update report shall be a cumulative total count of the reported crew and passengers during the entire cruise, including the additional cases.

4.2.1.1.3 Routine (24 hour) and 4-hour update reports may be made by telephone, facsimile, or preferably electronically. The vessel shall maintain proof onboard that the report was successfully received by the VSP.

4.3 Clinical Specimens

4.3.1 Clinical Specimen Submission

4.3.1.1 The medical staff will be responsible for maintaining a supply of at least 10 clinical specimen collection containers for both viral and bacterial agents (10 for each), as well as the proper shipping containers and labels for same and provided in Annex 13.4 of this manual. *Specific information on vendors where supplies may be ordered is provided in the VSP website.*

4.3.2 Clinical Specimen Submission Collection Procedures

4.3.2.1 When a vessel reaches 2% reportable gastrointestinal illness in either passenger or crew members, the medical staff will begin collecting whole stool specimens for viral analysis, unless it is clear from clinical and epidemiological data that the causative agent is of bacterial or parasitic etiology. If the etiologic agent is suspected to be bacterial and/or parasitic, the medical staff should consult with epidemiology staff at the VSP for clinical specimen collection requirements.

All clinical specimens shall be packaged and shipped in accordance with the guidelines outlined in Annex 13.4 and the specific details provided in the VSP website. The specimen packaging shall include the proper documentation as required by the receiving laboratory.

4.4 Requirements for Isolating Symptomatic and Primary Contacts of Crew and Passengers with Gastroenteritis

4.4.1 Crew, Staff, Officers and other Employees

4.4.1.1 a. Symptomatic and meeting the case definition for Acute Gastroenteritis (AGE):

i. Food Employees

-Isolation in cabin or designated restricted area until symptom-free for a minimum of 48 hours;

-Follow-up with and approval by designated medical personnel is required before returning crew to work;

ii. Non-food Employees:

- Isolation in cabin or designated restricted area until symptom-free for a minimum of 24 hours;

- Follow-up with and approval by designated medical personnel is required before returning crew to work.

4.4.1.2 b. Asymptomatic cabin mates or immediate contacts of symptomatic crew:

i. Food and Non-Food Employees:

- Restrict exposure to symptomatic crew member(s);

- Medical or supervisory staff shall conduct a verbal interview with asymptomatic cabin mates and immediate contacts to confirm their condition, advise them of the hygiene and handwashing facts, and to instruct them to report immediately to medical if they develop illness symptoms;

- Medical or supervisory staff shall conduct verbal interviews daily with asymptomatic crew until 48 hours after onset of the ill crew members symptoms began.

4.4.2 Passengers

4.4.2.1 a. Symptomatic with AGE:

-Advised to remain isolated in cabin until well for a minimum of 24 hours after symptom resolution;

-Follow-up by infirmary personnel advised;

-Handwashing tips and personal hygiene fact sheet provided by ship.

5.0 Potable Water

5.1 Source

5.1.1 Bunkering

5.1.1.1 Standards

5.1.1.1.1 Drinking water bunkered from shore supplies shall be from a potable source which meets World Health Organization standards for potable water.

5.1.1.2 Sample Reports

5.1.1.2.1 Where available, the vessel shall have a copy of the most recent microbiologic report from each port before bunkering potable water to verify that the water meets potable standards. *A recent microbiological report shall mean a report where the date of the analysis report is 30 days or less from the date of potable water bunkering, and the report should include an analysis for Escherichia coli at a minimum.*

5.1.1.2.2 *Water samples collected and analyzed by the vessel for the presence of Escherichia coli may be substituted for port water system supplied reports. These samples shall be analyzed utilizing a method accepted in Standard Methods for the Examination of Water and Wastewater. If a vessel bunkers potable water from the same port more than once per month only one test per month is required.*

5.1.2 Water Production

5.1.2.1 Location

5.1.2.1.1 A reverse osmosis, distillation plant or other process that supplies water to the vessel's potable water system shall not operate in polluted areas, harbors, or at anchor.

5.1.2.1.2 A reverse osmosis unit or evaporator with a completely separate plant/process, piping system, and connections from the potable water system may be used to produce technical water while in polluted areas, in port, or at anchor.

5.2 Bunker and Production Halogenation

5.2.1 Procedures

5.2.1.1 Residual Halogen

5.2.1.1.1 Potable water shall be continuously halogenated to at least 2.0 mg/L (ppm) free residual halogen at the time of bunkering or production with an automatic halogenation device. The amount of halogen injected during bunkering or production shall be controlled by a flow meter or a free halogen analyzer.

5.2.1.2 Monitoring

5.2.1.2.1 A free halogen residual and pH test shall be conducted on the shore-side water supply before starting the bunkering process to establish the correct halogen dosage. The results of the pre-test shall be recorded and available for review during inspections.

5.3 Potable Water System

5.3.1 Potable Water Tanks

5.3.1.1 Protection

5.3.1.1.2 Piping systems carrying sewage or other non-potable liquids shall not pass through potable water tanks. Minimize the use of non-potable lines above potable water tanks. Non-potable lines above potable water tanks shall not have any mechanical couplings.

5.3.1.1.3 Interior coatings on potable water tanks shall be approved for potable water contact, and all manufacturers' recommendations for application, drying, or curing shall be followed. Written documentation for the coating used and recommendations followed shall be available for review during inspections.

5.3.2 Potable Water Piping

5.3.2.1 Protection

5.3.2.1.1 Paint or stripe potable water piping and fittings in auxiliary blue, or in accordance with ISO 14726, at 5 m (15 feet) intervals and on each side of partitions, decks, and bulkheads, except where décor would be marred by such markings.

5.3.2.1.4 The potable water filling line shall have a screw cap or plug fastened by a non-corroding chain to an adjacent bulkhead or surface in such a manner that the cap or plug shall not touch the deck when hanging free. The connections for the hose attachments shall be unique and fit only potable water hoses.

5.3.2.1.5 Each bunker station potable water filling line shall be painted auxiliary blue and clearly marked “POTABLE WATER FILLING” in letters at least 13 mm (0.5 inch) high, stamped on a non-corrosive label plate or the equivalent and located at or near the point of hose connection.

5.3.3 Potable Water Hoses

5.3.3.1 Construction

5.3.3.1.2 Potable water hoses shall be labeled for use with the words “potable water only” in letters at least 13 mm (0.5 inch) at each connecting end.

5.3.3.2 Handling

5.3.3.2.5 Potable water hoses shall be stowed rolled tight with the ends capped, on reels, or racks, or with ends coupled together in potable water hose lockers.

5.3.4 Potable Water System Contamination

5.3.4.1 Cleaning and Disinfection

5.3.4.1.3 Documentation of the inspection, maintenance, cleaning, disinfection (to include concentration and contact time of disinfectant), and flushing shall be maintained for 12 months and shall be available to the VSP for review during inspections.

5.3.4.1.4 Disinfection following potential contamination shall be accomplished by increasing free residual halogen to at least 50 mg/L (ppm) throughout the affected area and maintaining this concentration for 4 hours or by way of another procedure recognized and accepted by the VSP.

5.3.4.1.6 The disinfected parts of the system shall be flushed with potable water or otherwise de-chlorinated until the free residual halogen is ≤ 5.00 mg/L (ppm).

5.3.4.1.7 An alternative potable water tank cleaning and disinfection procedure which is **ONLY** approved for routine cleaning and disinfection and is **NOT** approved for known or suspected contaminated tanks is as follows:

(1) Remove (strip) all water from the tank;
(2) Clean all tank surfaces, including filling lines, etc. with an appropriate detergent;
(3) Thoroughly rinse the surfaces of the tank with potable water and strip this water;
(4) Wet all surfaces of the tank with at least a 200 ppm (mg/L) solution of chlorine (this can be done using new, clean mops, rollers, etc.);
(5) Ensure that the tank surfaces remain wet with the chlorine solution for at least 2 hours;
(6) Refill the tank and verify that the chlorine level is 5.0 ppm (mg/L) or below before placing the tank back into service.

5.4 Potable Water System Halogenation

5.4.1 Halogenation Devices

5.4.1.2 Operation

5.4.1.2.2 The amount of halogen injected into the potable water system shall be controlled by a free halogen analyzer.

5.4.1.2.3 At least one backup halogen pump shall be installed with an active automatic switchover feature to maintain the free residual halogen in the event that the primary pump fails, an increase in demand occurs, or the low chlorine alarm sounds.

5.5 Potable Water System Halogen Monitoring

5.5.1 Halogen Analyzer-Chart Recorder

5.5.1.1 Installation

5.5.1.1.1 A halogen analyzer-chart recorder shall be installed at a distant point in the potable water distribution system where a significant water flow exists and represents the entire distribution system. In cases where dual distribution loops exist and no pipes connect the loops there shall be an analyzer and chart recorder for each loop.

5.5.1.2 Operation

5.5.1.2.1 The halogen analyzer-chart recorder shall be properly maintained, operated, and calibrated/verified daily in accordance with the manufacturer's instructions. A manual comparison test shall be conducted daily to verify calibration. Calibration shall be made whenever the manual test value is > 0.2 ppm higher or lower than the analyzer reading.

5.5.1.2.2 The daily, manual comparison test or calibration shall be recorded either on the recorder chart or in a log book.

5.5.3 Manual Halogen Monitoring

5.5.3.1 Equipment Failure

5.5.3.1.4 Provide an audible alarm in a continuously occupied watch station, ie: the engine control room, to indicate low free halogen readings at the distant point (bridge) analyzer.

5.6 Microbiologic Monitoring

5.6.1 Sampling and Analysis

5.6.1.1 Methodology

5.6.1.1.1 A minimum of four potable water samples per month shall be collected and analyzed for the presence of *Escherichia coli*. Samples shall be collected from locations forward, aft, upper, and lower decks of the vessel. Sample sites shall be changed each month in order to obtain a good representation of the potable water distribution system.

5.6.1.2 Records

5.6.1.2.1 Sample results shall be maintained onboard the vessel for at least 12 months, and shall be available to the VSP for review during inspections.

5.7 Water Distribution System Protection

5.7.1 Cross-Connection Control

5.7.1.1 Program

5.7.1.1.3 The vessel shall provide a comprehensive cross- connection control program that provides safe connections to the potable water system through air gaps or appropriate backflow devices at the following locations, if present:

(1) Potable water supply lines to swimming pools, whirlpool spas, hot tubs, bathtubs, showers, and similar facilities; In the case of a potable water supply to a pool or whirlpool spa make-up tank, an overflow line at least twice the diameter of the potable water supply line and located below the tank supply line, is an acceptable form of backflow prevention provided that there is an indirect connection to the wastewater system;

(15) International shore connections for fire/sprinkler, high saline overboard discharge from evaporators, or other such cross-connections involving high pressure require reduced pressure assembly backflow prevention devices installed; and

5.7.1.1.4 A cross-connection control program shall include at a minimum: a complete listing of cross-connections and the backflow prevention method/device for each, so there is a match to the plumbing system component and location, the program shall set a schedule for inspection frequency. Repeat devices such as toilets can be grouped under a single device type, and air-gaps shall be included in the listing. A log documenting the inspection or maintenance in written or electronic form shall be maintained and be available for review during inspections.

5.7.1.2 Device Installation

5.7.1.2.9 Backflow preventers shall be located so they may be inspected, serviced, and maintained.

6.0 Swimming Pools and Whirlpool Spas

6.1 Flow-through Seawater Swimming Pools

6.1.1 Operation

6.1.1.2 In Port

6.1.1.2.1 The pool (when in flow-thru seawater mode only) shall be drained before the vessel reaches port, and it shall remain empty while in port.

6.2 Recirculating Swimming Pools

6.2.1 Operation

6.2.1.1 Filters

6.2.1.1.2 Filter pressure differential shall be monitored, and the filter shall be backwashed as recommended by the manufacturer. A written or electronic record of the backwashing shall be available for review during inspections.

6.2.1.2 Water Quality

6.2.1.2.2 A fecal accident response procedure which meets or exceeds the procedure provided in annex 13.11 shall be documented and available to the VSP for review during inspections.

6.2.1.2.3 A written or electronic record shall be made of all fecal accidents which includes pool name, date and time of incident, response steps taken, free residual halogen level achieved following cleaning, and contact times.

6.2.2 Halogenation

6.2.2.1 Residual Halogen

6.2.2.1.1 A free residual halogen of ≥ 1.0 and ≤ 5.0 mg/L (ppm) shall be maintained in recirculated swimming pools.

6.3 Whirlpool Spas

6.3.1 Public Operations

6.3.1.1 Filters

6.3.1.1.4 Granular filters shall be backwashed at least daily. Backwashing shall be repeated until the water viewed through the sight glass or discharge point is clean flowing.

6.3.1.1.5 The granular filters shall be opened at least monthly and examined for cracks, mounds, or holes in the filter media. A core sample of the filter media shall be inspected for excessive organic material accumulation using a recommended sedimentation method. *One acceptable method is to draw water down to the media surface and inspect the for cracks, mounds, or holes, Take a sample from the filter core and inspect it for excessive organic/dirt build-up at least monthly. Shake sampled media and water in a clean, stoppered, clear-plastic container and observe the settling action. If, after 30 minutes of settling, a measurable layer of sediment is within or on top of the filter media or fine, colored particles are suspended in the water , the organic loading may be excessive, and media replacement should be considered.*

6.3.1.1.8 The operating manuals for all whirlpool spa components such as filters, pumps, and halogenation equipment shall be maintained aboard the vessel in a location that is known by and is accessible to crew members who are responsible for the whirlpool spa's operations and maintenance.

6.3.1.2 Water Quality

6.3.1.2.3 A fecal accident response procedure which meets or exceeds the procedure provided in annex 13.11 shall be documented and available to the VSP for review during inspections.

6.3.1.2.4 A written or electronic record shall be made of all fecal accidents which includes pool name, date and time of incident, response steps taken, free residual halogen level achieved following cleaning, and contact times.

6.3.2 Halogenation

6.3.2.1 Residual Halogen

6.3.2.1.2 The free residual halogen shall be increased to at least 10.0 mg/L (ppm) in whirlpool spas and circulated for at least 1 hour at the end of each day. Except for areas covered in section 6.3.3 and 6.3.4, the free halogen shall be increased to at least 10.0 mg/L (ppm) in whirlpool spas and circulated for at least 1 hour at the end of each day. *Whirlpool spas filled with seawater are exempt from this requirement.*

6.3.2.1.4 A written or electronic record of whirlpool spa filter inspections, backwashing, core sample sedimentation test, and shock halogenation (concentration in ppm and time) shall be available for review during inspections.

6.3.4 Individual Hydrotherapy Pools

6.3.4.1 Maintenance

6.3.4.1.1 Individual hydrotherapy pools shall be cleaned and disinfected, including associated recirculation systems, between customers.

6.4 Safety

6.4.1 Public Swimming Pools and Whirlpool Spas

6.4.1.1 Signs and Markings

6.4.1.1.2 The depth of each pool shall be displayed prominently, so that it can be seen from the deck and in the pool. Depth markers should be labeled either in feet or meters, or both. Additionally, depth markers shall be installed for every 1 m (3 feet) change in depth.

6.4.1.2.1 Easy access shepherd's hook and approved floatation device (with a length of line ½ the pool width or 16 m (50 feet)) shall be provided at a prominent location near each public swimming pool.

6.4.1.2.2 Anti-entrapment drain covers or other drains that prevent entrapment hazards as specified in U.S. Consumer Product Safety Publication 363-009801(dual drains/channel drains) shall be provided on swimming pools and whirlpool spas. An approved cover shall have either the plumbing/engineering approving organization stamp and flow rate affixed to the cover, or a letter maintained onboard the vessel certifying that the cover meets the safety requirements outlined in ASME/ANSI A112.19.8M or an equivalent standard.

6.4.2 **Spa Pool** (*an independent pool with combined elements of a whirlpool spa*)

6.4.2.1 Maintenance and Operating Standards

6.4.2.1.1 The spa pool halogen shall be operated and maintained according to whirlpool spa standards provided in sections 6.3.1.1.1-6.4.1.3.1, except that daily water change in section 6.3.1.2 is not required. *If the spa pool uses only seawater the daily shock in section 6.3.2.1.2 is also not required.*

6.4.2.1.2 For any pool with an attached whirlpool spa, where the water, recirculation system equipment, or filters are shared with the spa, all elements of the whirlpool spa standards shall apply to the pool.

7.0 Food Safety

7.2 Personnel

7.2.2 Employee Health

7.2.2.1 Communicable Diseases and Symptoms

7.2.2.1.1 Food employees suspected of, diagnosed with, or exposed to any communicable diseases caused by ***Salmonella* typhi**, ***Shigella*** spp., ***Escherichia coli*** O157:H7, or hepatitis A virus, or other communicable diseases that can be transmitted by food, shall be restricted from working in any food or food related areas or operations, including working with exposed food, warewashing, equipment, utensils, table linens, single-service and single-use articles. The restricted individual shall not be allowed to return to the above duties until they are symptom free for a minimum of 48 hours.

7.2.2.1.5 A written or electronic record of both the work restriction and release from restriction shall be maintained onboard the vessel for 12 months for inspection review.

7.2.3 Employee Cleanliness

7.2.3.1.4 A hand antiseptic or a hand antiseptic used as a hand dip, or a hand antiseptic soap shall: comply with applicable formulation and use laws under FDA or 21 CFR 170.39, 178, 182, 184, or 186.

7.2.3.1.5 A hand antiseptic or a hand antiseptic used as a hand dip, or a hand antiseptic soap shall only be applied to hands that are cleaned.

7.3 Food

7.3.2 Food Sources

7.3.2.1 Lawful Sourcing

7.3.2.1.6 U.S. supplied fluid milk and milk products shall be obtained from sources that comply with Grade A standards as specified in law. Non-U.S. sourced fluid milk and milk products shall be obtained from sources which meet or exceed the standards of the health authorities from the source Country.

7.3.3 Food Protection

7.3.3.2 Food and Ingredient Contamination

7.3.3.2.4 Pasteurized eggs or egg products shall be substituted for raw shell eggs in the preparation of foods such as Caesar salad, hollandaise, or Béarnaise sauce, mayonnaise, eggnog, ice cream, and egg-fortified beverages or dessert items that are not cooked.

7.3.3.3 Ice as Coolant

7.3.3.3.6 *Other unpackaged foods in a raw, cooked, or partially cooked state may be immersed in ice as part of an ongoing meal service process, such as liquid egg product, individual eggs, pasta, and reconstituted powdered mixes.*

7.3.3.4 Equipment, Utensils, and Linens

7.3.3.4.2 During pauses in food preparation or dispensing, food preparation and dispensing utensils shall be stored:

(3) On a clean portion of the food preparation table or cooking equipment only if the in-use utensil and the food-contact surface of the food preparation table or cooking equipment are cleaned and sanitized at least every four hours;

7.3.3.6 Food Display and Service

7.3.3.6.4 After being served and in the possession of a consumer or being placed on a buffet service line, food that is unused or returned by the consumer:

(3) Except re-service for foods served to passengers from a fully enclosed display case, under strict employee monitoring, strict temperature control of hot/cold potentially hazardous foods, proper cooling and reheating of hot held potentially hazardous foods, and complete protection from any other contamination sources, including pests is permitted.

7.3.4.2 Parasite Destruction

7.3.4.2.1 (3) If foods, such as gravlax, seviche, fish carpaccio, or sashimi, are prepared in a food processing plant and certified as parasite free, they may be served raw, raw-marinated, or partially cooked ready-to-eat without freezing the product on-board the vessel.

7.3.4.2.2 (2) If the fish are frozen by a supplier, a written letter from the supplier which specifies the fish species involved and both the temperature to which the fish was frozen and the total time period at that temperature. If the supplier provides any of the same fish species to the vessel in a fresh state, there shall be some designation on the outer packaging for the parasite-free fish.

7.3.5 Food Holding Temperatures and Times

7.3.5.2 Food Cooling

7.3.5.2.6 Logs documenting cooked potentially hazardous food cooling temperatures and times from the starting points designated in 7.3.5.2.1 thru the control points at 2 and 6 hours shall be maintained onboard the vessel for a period of 30 days from the date the food was placed in a cooling process. Logs documenting cooling of potentially hazardous foods prepared from ingredients at ambient temperatures, with the start time to the time when 5 °C (41 °F) is reached, shall also be maintained for a 30 day period, beginning with the day of preparation.

7.3.5.3 Food Holding Temperatures and Times

7.3.5.3.2 Refrigerated, ready-to-eat, potentially hazardous food:

(1) Prepared on a vessel and held refrigerated for more than 24 hours shall be clearly marked at the time of preparation to indicate the date or day by which the food shall be consumed, which is 7 calendar days or fewer from the day the food is prepared. The day of preparation is counted as day 1.

(2) A container of refrigerated, ready-to-eat potentially hazardous food prepared and packaged by a food processing plant and held on the vessel after opening for more than 24 hours shall be clearly marked, at the time the original container is opened, to indicate the date by which the food shall be consumed which is, including the day the original container is opened, 7 calendar days or fewer after the original container is opened. The day of opening is counted as day 1.

(3) The date marking requirement can be accomplished with a calendar date, day, color-code, or other system, provided it is effective. Hard and semisoft aged cheeses, and pasteurized process cheese manufactured according to 21 CFR 133 are exempt from the date marking requirement. Some shelf stable meats (dry, fermented sausages and salt-cured products such as prosciutto and parma ham that are not labeled “Keep Refrigerated”) are exempt from the date marking requirement.

7.3.6 Consumer Information

7.3.6.1 Advisory

7.3.6.1.1 If an animal food such as beef, eggs, fish, lamb, milk, pork, poultry, or shellfish that is raw, undercooked, or not otherwise processed to eliminate pathogens is offered in a ready-to-eat form or as a raw ingredient in another ready-to-eat food, the passengers shall be informed by vessel newsletter articles, brochures, embarkation television broadcasts, menu advisories, placards, or other written means of the significantly increased risk to certain especially vulnerable consumers eating such foods in raw or undercooked form. *Raw shell egg preparations are prohibited in uncooked products as described in 7.3.3.2.4.*

7.4 Equipment and Utensils

7.4.3 Numbers and Capacities

7.4.3.3 Utensils, Consumer Self-Service

7.4.3.3.2 Each self-service food dispensing utensil shall be covered or located beneath shielding during service.

7.4.4 Equipment Location and Installation

7.4.4.1 Fixed Equipment, Spacing or Sealing

7.4.4.1.1 Equipment that is fixed because it is not easily movable shall be installed so that it is:

(2) Spaced from adjoining equipment, bulkhead, and deckhead at a distance of not more than 0.8 millimeter or 1/32 inch; or

7.5 Warewashing

7.5.7 Protection of Clean Items

7.5.7.1 Drying

7.5.7.1.1 After cleaning and sanitizing, equipment and utensils shall be air-dried or adequately drained before contact with food. *Cleaned, sanitized, and air-dried dishware, glassware, and utensils may be polished with a clean, dry, lint-free cloth that is maintained clean and dry.*

7.7 Facilities

7.7.1 Handwashing and Toilet Facilities

7.7.1.1 Handwashing Facility Installation

7.7.1.1.2 The handwashing facility shall be located within 8 m (25 feet) of all parts of the area and should not be located in an adjacent area that requires passage through a closed door, where the user makes hand-contact with the door.

7.7.1.1.3 A handwashing sink shall be equipped to provide water at a temperature of at least 43°C (110°F) through a mixing valve or combination faucet. For handwash sinks with electronic sensors, where the user cannot make temperature adjustments, the temperature provided to the user after the mixing valve shall not exceed 52 °C (125°F).

7.7.3 Liquid Waste Disposal and Plumbing

7.7.3.1 Drain Lines

7.7.3.1.2 *Drain lines from handwashing and mop sinks may be directly connected to the appropriate waste system.*

7.7.3.1.4 All drain lines from warewashing sinks or machines shall drain through an air-gap or air-break to a drain or scupper.

7.7.4 Decks, Bulkheads, and Deckheads

7.7.4.1 Design and Construction

7.7.4.1.3 Bulkhead and deck junctures shall be coved (including galleys, pantries, deck/counter junctures at buffets, bars, waiter stations, and dining room work counters).

7.7.5 Lighting

7.7.5.1 Intensity

7.7.5.1.3 In bars and dining room waiter stations provide 220 lux (20 foot candles) light intensity during cleaning operations.

8.0 Integrated Pest Management

8.1 Integrated Pest Management

8.1.2 IPM and Pesticide Use

8.1.2.1 Pesticide Application

8.1.2.1.1 The Integrated Pest Management Plan shall include a record of pesticides used. The record shall include only pesticides currently onboard the vessel and those used in the previous 12 months.

8.2 Pest Control

8.2.1.1.3 Incoming shipments of food and supplies shall be routinely inspected for evidence of insects, rodents, and other pests. A record of these inspections shall be maintained onboard the vessel and shall be available for review during inspections.

9.0 Housekeeping

9.1 Infection Control Procedures

9.1.1 Disinfection

9.1.1.1 Public Areas

9.1.1.1.2 Each vessel shall have a written Outbreak Prevention and Response Plan (OPRP) which details the standard procedures and policies to specifically address gastrointestinal illness onboard. The written OPRP shall include at a minimum, the following:

(a) Duties and responsibilities of each department and their staff
(b) Steps in outbreak management and control and the trigger for each step
(c) A detailed example OPRP is provided in the VSP website at http://www.cdc.gov/nceh/vsp/.

9.1.1.1.3 Public toilet facilities shall be equipped so that persons exiting the toilet room are not required to handle the door with bare hands. *This may be accomplished by methods such as locating paper towel dispensers at sinks and waste containers near the room door, installing mechanically operated doors, door removal, or other effective means.*

9.2 Air Systems

9.2.1 Design and Maintenance

9.2.1.1 Construction

9.2.1.1.1 Air handling unit condensate drain pans and collection systems shall be accessible for inspection, maintenance, and cleaning. Installation of sight windows or other effective methods for full inspection and cleaning of condensate collection pans shall be utilized when original equipment access makes evaluation during operational inspections impractical.

9.2.1.2 Maintenance

9.2.1.2.3 Vessels shall have a plan to inspect and maintain heating, ventilation, and air conditioning systems in accordance with manufactures recommendations and industry standards. The written inspection, cleaning, and maintenance plan for the heating, ventilation, and air-conditioning system shall be maintained on the vessel and available for review during inspections.

9.3 Fountains, Humidifiers, and Showers

9.3.2 Hot-Water System and Showers

9.3.2.1 Maintenance

9.3.2.1.1 The potable hot-water system including shower heads shall be maintained to preclude growth of ***Mycobacterium*** or ***legionella***.

9.3.2.1.2 Shower heads shall be cleaned and disinfected every 6 months to preclude growth of ***Mycobacterium*** or ***legionella***.

10.0 Child-Activity Centers

10.1 Diaper Changing

10.1.1 Diaper-Changing Facilities

10.1.1.1 Design

10.1.1.1.3 Signs shall be posted in the diaper-changing area advising handwashing after each diaper change.

10.3 Cleaning and Disinfection

10.3.1 Furnishings and Toys

10.3.1.1 Construction

10.3.1.2.2 Toys used in the child-activity center shall be cleaned and disinfected daily. Balls used in ball pits/pens shall be cleaned at least once per week, unless otherwise contaminated.

10.3.1.3 Linens

10.3.1.3.1 Linens such as blankets, sheets, and pillow cases shall be laundered between each use.

13.0 Annexes

13.2 Forms for Gastrointestinal Illness Surveillance System

13.2.2 Forms

Vessel Name:		Voyage number:		Dates	From:	__/__/__	To:	__/__/__	Page:		of	
Total number of passengers aboard:		Total number of ill passengers:		Total number of crew aboard:			Total number of ill crew:					

Date (mm/dd/yy)	Name (Last, First)	Age	M/F	Pax/Crew	Cabin No.	Pax Meal Seat / Crew Pos.	Illness Onset		Diarrhea			Vomiting		Fever		Abd. cramps	Headache	Myalgia	Stool specimens		Antidiarrheal Medications (Y/N)	Reportable case (Y/N)	Underlying illness (Specify)
																			Req.	Rec.			
							Date	Time	Y/N	#	Blood Y/N	Y/N	#	Y/N	°F	Y/N	Y/N	Y/N	Y/N	Y/N			

CENTERS FOR DISEASE CONTROL AND PREVENTION

Gastronintestinal Illness Surveillance System Questionnaire

(To be completed if you experienced gastrointestinal illness)

Vessel Name:		*Voyage No. :*		*Date:*
Last Name:		*First Name:*		
Date of Birth:	*(mm/dd/yyyy)*	*Age:*	*(in years)*	*Sex M / F*
Cabin Number:		*Total Number of People in Cabin:*		
Dining Seating:		*Dining Table Number:*		
Symptoms Started Date:	*(mm/dd/yyyy)*	*Time:*	*(hh:mm)*	*AM / PM*
Do you know other people ill with the same symptoms?				*Yes / No*
If yes, please list their names:				
Did you stay overnight or longer in a boarding city before you joined the vessel?				*Yes / No*
If yes, where?	*City:*	*State:*	*Country:*	
Was the overnight stay in a hotel/motel/commercial residence?				*Yes / No*
If yes, what was the name and address of the hotel, motel/commercial residence *Name:* *Address:* *City:* *State:* *Country:*				
How did you travel to the city where you boarded the ship for this cruise? Select all that apply.				
[ ] Airplane	*Airlines:*	*Flight No.:*		
[ ] Automobile				
[ ] Bus/Motorcoach				
[ ] Train				
[ ] Other	*Please specify:*			
Are you a member of a tour group?				*Yes / No*
Prior to boarding the ship, did you participate in a pre-embarkation tour/package?				*Yes / No*
If yes, which tour(s)/package(s) did you participate in? (list all)				
Prior you your illness, did you go ashore at any of the ports of call?				*Yes / No*
If yes, please list the ports of call where you went ashore				
Did participate in any shore excursions at any port of call?				*Yes / No*
If yes, which shore excursions did you participate in? (list all)				
Did you eat anything while you were ashore at any port of call?				*Yes / No*
Did you drink anything (including drinks with ice) while ashore at any port of call?				*Yes / No*
What did you think is the cause of your illness?:				

PLEASE TURN THIS FORM OVER TO PROVIDE FOOD AND SHIPBOARD ACTIVITIES HISTORY

CENTERS FOR DISEASE CONTROL AND PREVENTION

Last Name _____ First Name _____

Meals and Activities Aboard Vessel Prior to Illness

Please list the ***specific*** vessel locations of the meals you consumed and the vessel activities you participated in before you became ill

Day of illness onset Give Date:_____		**Day before illness onset**		**Two days before illness onset**		**Three days before illness onset**	
Breakfast Place: _____ Time: _____ Items eaten/drank		**Breakfast** Place: _____ Time: _____ Items eaten/drank		**Breakfast** Place: _____ Time: _____ Items eaten/drank		**Breakfast** Place: _____ Time: _____ Items eaten/drank	
Lunch Place: _____ Time: _____ Items eaten/drank		**Lunch** Place: _____ Time: _____ Items eaten/drank		**Lunch** Place: _____ Time: _____ Items eaten/drank		**Lunch** Place: _____ Time: _____ Items eaten/drank	
Dinner Place: _____ Time: _____ Items eaten/drank		**Dinner** Place: _____ Time: _____ Items eaten/drank		**Dinner** Place: _____ Time: _____ Items eaten/drank		**Dinner** Place: _____ Time: _____ Items eaten/drank	
Snack Place: _____ Time: _____ Items eaten/drank		**Snack** Place: _____ Time: _____ Items eaten/drank		**Snack** Place: _____ Time: _____ Items eaten/drank		**Snack** Place: _____ Time: _____ Items eaten/drank	
Activities		**Activities**		**Activities**		**Activities**	
AM	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**