



REPÚBLICA FEDERATIVA DO BRASIL
MINISTRY OF HEALTH
BRAZILIAN SANITARY SURVEILLANCE AGENCY



BRAZILIAN SANITARY GUIDE FOR CRUISE SHIPS 2011





President

Dirceu Bras Aparecido Barbano

Director

José Agenor Álvares da Silva

General Manager of Ports, Airports and Borders

Paulo Biancardi Coury

ORGANIZERS:

Fabio Miranda da Rocha

Camila da Silva Borges Lacerda

Viviane Vilela Marques

AUTHORS (in alphabetic order):

Acary de Oliveira

Adriana Aquino Barbosa

Ana Clara Ribeiro Bello

Camila da Silva Borges Lacerda

Cristiano Gregis

Enedina Reis

Ericksson Costa Ferreira

Fabio Miranda da Rocha

Graziela Alvarez Corrêa da Costa

Greice Madeleine Ikeda do Carmo

Janaína Vieira Pacheco

Júlio César Colpo

Karla Freire Baeta

Leonardo Oliveira Leitão

Luiz Alves Campos

Marestela Hupes Schneider

Maria Aparecida Oliveira Araújo

Marianna Donato Pirrone

Noemi Melo Cabral

Olimar Santos

Patrícia Pereira da Silva de Freitas

Viviane Vilela Marques

Walkiria Delnero Almeida Prado

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I. INTRODUCTION AND BACKGROUND

Sanitary surveillance activities began in the 18th and 19th Centuries with the aim of avoiding the spread of disease in the world's newly emerging urban centers. The main purpose of this exclusive State responsibility was to keep watch over certain professional activities, to put a stop to charlatanism, and to inspect ships, cemeteries and places where food was on sale to the public.

At the end of the 19th century, sanitary surveillance was reorganized as new discoveries were made in the fields of bacteriology and therapeutics. The latter discoveries proved to be of major importance in the 1st and 2nd World Wars. After the 2nd World War, government administration was generally re-orientated, partly in response to the new period of economic growth. The responsibilities falling within the remit of sanitary surveillance were broadened in parallel with the building of Brazil's industrial structure. At the same time, central planning was given greater prominence and the Brazilian public sector took on a central role in enhanced efforts to develop the country.

From the 1980s onwards, the growing participation by the population and of a range of organizations representing several different sectors of society in the political process began to develop and give weightier meaning to the concept of sanitary surveillance in Brazil. The State, based on the Constitution behind it, became the repository of a wide range of sanitary surveillance responsibilities, looking after the rights of the consumer and assuming responsibility for providing better health conditions for the population.

The purpose of this Manual is to set out guidelines for health professionals, port health and other agency staff and the crew of cruise ships sailing under Brazilian jurisdiction for the identification and management of transmissible diseases aboard. Furthermore, these guidelines are intended to provide the basic procedures for prevention, action and response required.

Therefore, we presented in this Guide all requirements related to best practices for food preparation, potable water and air handling safety, garbage, pest and sewage management. And it is also presented all guidelines and recommendations related to pre cruise actions, notification of suspected cases to Brazilian authorities, procedures during outbreaks or detection of suspected cases on board, including cleaning and disinfection procedures required as well as measures for epidemiological surveillance to be taken.

This guidance may be subject to change at any time by decision of Brazilian health authorities or in accordance with World Health Organization guidelines, or in case of unusual situations occurring in certain events on board that require new or tailored measures.

WARNING: THESE GUIDELINES DOES NOT DISCLAIM A VESSEL TO FULFILL OTHER REQUIREMENTS PROVIDED IN BRAZILIAN LAWS AND TECHNICAL REGULATIONS.

1. AUTHORITY

The Brazilian Sanitary Surveillance Agency (Anvisa) was established by Law 9.782, of January 26, 1999. The Agency is designated an autonomous agency operating under a special regime. This means that ANVISA is an independently administered, financially-autonomous regulatory agency, with security of tenure for its directors during the period of their mandates. The Agency is managed by a Collegiate Board of Directors, comprised of five members.

Within the structure of Federal Public Administration, the Agency is linked to the Ministry of Health, under a Management Contract. The agency incorporated additional attributions: coordination of the National Sanitary Surveillance System (SNVS), the National Program of Blood and Blood Products and the National Program of Prevention and Control of Hospital Infections; monitoring of drug prices and prices of medical devices; attributions pertaining to regulation, control and inspection of smoking products; technical support in granting of patents by the National Institute of Industrial Property.

The institutional purpose of the agency is to foster protection of the population health by exercising sanitary control over production and marketing of products and services subject to sanitary surveillance. The latter embraces premises and manufacturing processes, as well as the range of inputs and technologies concerned with the same.

In addition, the Agency exercises health control in ports, airports and borders including conveyances, areas, services that may impose health risks, travelers health and formalities of importation and exportation of goods and products related to health safety. Thus, the Brazilian Sanitary Surveillance Agency is responsible for ensuring sanitary inspection of Ports, Airports and Borders. The fulfillment of its institutional role as a public health agency involves protecting travelers' health; safeguarding the sanitary aspects of means of transportation and of services subject to sanitary inspection, including that of premises and processes; approval and exemption of products, inputs and relating technology; and overall responsibility for enforcing Brazilian health and sanitary legislation as well as International Health Regulations and other such formal Acts subscribed to by Brazil.

2. HEALTH INSPECTIONS IN BRAZIL

Anvisa's Mission is: "To protect and promote health, ensuring the hygiene and safety of products and services and taking part in developing access to it." Unfortunately, to accomplish it health inspectors must often warn, punish, and use the power of the institution.

The police power of Anvisa, as an attribute of the Republic, has a regulatory function of individual and collective rights to ensure that public health measures are undertaken. It must be within the law and is therefore limited to the exercise that accompanies Anvisa's mission.

In this way, to avoid criminal sanctions, Anvisa's Headquarters require that all crew member and officers must:

- Respect and follow health authorities during inspections of areas/services under your responsibility, providing all facilities for inspectors perform their inspection;
- Ensure that health authority can photograph, analyze, collect samples and registry all areas/services inspected;
- Do not obstruct, impede, complicate or interfere in the inspections of health authorities;

Note: Crew member assigned to follow health inspectors must have full knowledge of processes/controls of inspected areas/services and be able to answer doubts and questions of health authorities. The information provided by these crew members will be considered official and final by health authorities!

Note: Do not comply with the requirements of this Guide and Brazilian Laws is a sanitary infraction, pursuant to Act no. 6437 of August 20th, 1977, and it is also subject to the civil, administrative and criminal sanctions.

Passage and entry of vessels into Brazilian ports

Only vessels which meet satisfactory standards of hygiene and fulfill all the correct and appropriate sanitary and health requirements will be permitted to sail in Brazilian territory, and at the time of entry into a Health Controlled Port. All health documentation must be available for inspection by the Brazilian sanitary authorities and four documents must be presented in all Brazilian ports of call as follows:

- a) Maritime Health Declaration
- b) A valid International Ship Sanitation Control or Exemption Certificate;
- c) Health Tax receipt;
- d) A list of all crew and passengers, with place and date of embark;

Other documents may also be required any time by health authorities, especially during inspections. A list of main complimentary documents is presented as follows:

- e) Register of Medical Occurrences and the Spreadsheet Annex of the Maritime Health Declaration. This documentation must contain a full account of all the

clinical occurrences, deaths and accidents suffered by the crew or passengers during the voyage, as well as a description of the precautions which have been adopted to take full account of the health of the patients concerned and the health and sanitary conditions on board the vessel, if called for;

- f) Report or Certificate of disposal of solid waste. These reports shall be presented by the company which has provided this service within the port where such collection took place, or submission of the log recording (Garbage Book) the disposal on the high seas of the aforementioned solid residues, in accordance with current environmental legislation. In any case, where the solid residues have not been collected, a proper justification must be presented;
- g) Report or logs of Maintenance of the Air Conditioning/Ventilation Equipment, as the case may be, in accordance with current health and sanitary legislation (See detailed information in the specific Chapter of this Guide).
- h) A list of narcotic products or products which can cause physical or psychological dependency, stored in the ship's on-board dispensary;
- i) Information about the geographical locations where water was taken on board for the ballast of the vessel and the place where its disposal was carried out in the case of vessels which needed to effect such operations;
- j) Last Free Pratique Certificate, when the vessel is proceeding from a Sanitary Control Port located in another Brazilian state;
- k) A list of merchandise/good to be loaded or unloaded;
- l) A list of the stock of products employed for treating water for human consumption, if this is the appropriate case;
- m) A Spreadsheet, Log or Other Record of the Drinking Water Supply of the vessel with information about operations when water was taken board by the vessel;
- n) A Spreadsheet, Log or Other Record of the Monitoring of the Cleaning and Disinfection of the Drinking Water System of the vessel with the last 2 (two) operations;
- o) Integrated Pest Management Plan and monitoring logs;
- p) Written procedures for food safety covering all stages of food preparation. For example a Food Safety Plan or similar, HACCP, and logs related to food safety.

3. FREE PRATIQUE

Free Pratique is a permit to be issued by the sanitary surveillance authority so that a vessel proceeding or not from abroad may enter a port within Brazilian territory

and commence loading and unloading operations of both merchandise and passengers.

Loading and unloading operations of merchandise and passengers to and from the vessel shall not be permitted unless the Free Pratique Certificate can be produced at the time when the vessel enters a port, except in cases set forth in the relevant Regulations.

Any vessel that is not granted the Free Pratique Certificate on entering the port must await inspection by the health authority, with the respective International Signal Code (ISC) activated.

All vessels which have carried out the following must request authorization of Free Pratique from the health authority before entering a Sanitary Control Port.

4. REGISTRATION ON ANVISA'S WEBSITE

It is recommended that any ship owner (Cruise Line), a tour operator or travel agency or company that operates reservation services and other tourism services related to cruise ships carry their registration with the Brazilian Sanitary Surveillance Agency (ANVISA) through Link <http://www.anvisa.gov.br>

5. OBJECTIVES

This guide aims to:

- Standardize the procedures for cruise ship sanitation;
- Facilitate the monitoring of suspected cases of transmissible diseases on board of cruise ships;
- Provide early action on illness notification on board of cruise ships;
- Take action to get appropriate laboratory diagnosis of the disease/illness;
- Establish guidelines for notification of transmissible diseases occurring on cruise ships;

This Guide will be in constant review process and may be changed at any time by ANVISA, which have to give publicity of these changes.

II. ADMINISTRATIVE GUIDELINES

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III. EPIDEMIOLOGIC SURVEILLANCE

The main objective of this Chapter is to define concepts and control measures required to minimize or eliminate risk of occurrence of illness or medical conditions of public health concern aboard cruise ships. Then, specifically this chapter aims to:

- I - Standardize the procedures of sanitary control on cruise ships;
- II - Facilitate the monitoring of suspected cases of infectious diseases aboard cruise ships;
- III - Provide prompt action of notification of health events aboard cruise ships;
- IV - Guide the actions required to get appropriate laboratory diagnosis of diseases and medical conditions;
- V - Establish guidelines for the notification of suspected cases of infectious diseases aboard cruise ships.
- VI – Guide epidemiological investigations and control measures recommended or required.

1. DETECTING CASES AND OUTBREAKS OF NOTIFIABLE DISEASES

The medical staff aboard must be sensitive to the occurrence of diseases on board which must be promptly detected, identified and controlled.

1.1. ILLNESS SURVEILLANCE LOG

A standardized illness surveillance log for each cruise shall be updated by the master of the vessel, the medical staff, or other designated staff. Examinations carried out and any samples collected by the medical staff must be recorded in the Illness Surveillance

Log, which shall be fully completed and contain the following basic information:

- Full name;
- Age;
- Gender;
- Cabin number;
- Crew member (identify his/her position or job on the vessel) or Passengers;
- Date and time of illness onset;
- First date of clinic visit or report to staff of illness;
- Illness symptoms and signs
- Prescribed or administered drugs/medicines;
- Exams and samples collected.

Medical logs which are already standardized by cruise lines shall meet these requirements by completing missing information on the observation fields or by adapting to the model suggested in Annex I.

1.2. REPORTABLE CASES

1.2.1. Suspected Case of Acute Gastroenteritis (AGE)

A case of AGE is defined as:

Diarrhea (three or more episodes of loose stools in a 24 hour period or what is above normal for the individual. See section 4.1.2.1.3, illness symptoms); or 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 $\geq 38^{\circ}\text{C}$ [100.4°F]);

1.2.2. Suspected case of Influenza-like illness (ILI)

Any individual with acute disease (duration of up to 5 days) featuring fever (temperature of $\geq 38^{\circ}\text{C}$ (100.4°F)), accompanied by cough or sore throat, in the absence of other diagnosis.

1.2.3. Suspected Case of Cholera

Every person coming from areas where there is occurrence of cholera cases, regardless of age, and presenting sudden episodes of watery, abundant diarrhea. The presence of rapid dehydration, acidosis and circulatory collapse reinforce the suspicion.

1.2.4. Suspected Case of Botulism

Every person showing acute symmetric descending flaccid paralysis, normal level of consciousness, presenting one or more of the following signs and symptoms: blurred vision, diplopia, eyelid ptosis, dry mouth, dysarthria, dysphagia or dyspnea.

1.2.5. Suspected Case of Poliomyelitis

Every case of flaccid paralysis, of sudden onset, in every person under 15 years old, regardless Poliomyelitis hypothesis; or

Every case of flaccid paralysis, of sudden beginning, regardless of the age of the patient, occurring to persons who have been to countries where the poliovirus is circulating, 30 days preceding the onset of the paralysis, or that have had contact with persons who have been to these countries and are suspected of being diagnosed with poliomyelitis.

1.2.6. Suspected Case of Exanthematous Disease

Any person presenting fever, skin rash (exanthema), coughing and/or coryza, and/or conjunctivitis, cervical ganglions, regardless of age group or immunization status.

1.2.7. Suspected Case of Meningitis

Every infant over nine months old and/or adults presenting fever, headache, vomiting, neck stiffness, other signs of meningeal irritation, seizures, bleeding under the skin (purpura) and stupor. Pay attention to irritability or bulging fontanelle in infants under nine months old.

Note: On suspicion of Meningococcal Disease, the ill person shall be immediately disembarked and transported to a medical facility.

1.2.8. Other Diseases and Medical Conditions of Compulsory Notification

During the voyage, passengers or crew members exhibiting or complaining of signs or symptoms that meet the diseases or medical conditions described above or other diseases specified in the Annex on Notifiable Diseases (Annex II) be assessed by the medical staff and fulfill the Illness Surveillance System Questionnaire, in compliance with the Annex III in this Guide.

1.3. OUTBREAK DECLARATION

For infectious diseases considered rare among the population concerned, only one case shall be considered as an outbreak (e.g.: botulism, cholera, poliomyelitis, measles etc).

1.3.1. Outbreak of Acute Gastroenteritis (AGE) on Ships

An Outbreak of AGE must be declared by medical staff when the cumulative percentage of reportable cases reaches 2% among passengers or 2% among crew.

Every vessel shall have specific triggers that are able to identify an increase in the number of AGE cases that exceed the level expected for the population concerned, within the specific time period, and then shall take preventive control measures even before the 2% rate above mentioned is reached.

1.4. CASE NOTIFICATION

The cumulative cases of Acute Gastroenteritis (AGE), Influenza-Like Illness, or other Notifiable Diseases in Brazil (Annex II) shall be reported by the ship to ANVISA by completing the online form. This form shall be used in routine just as much as in special situations, as described bellow.

The routine report also be used to report other health care on board (like work injuries, sore throat, allergies, cardiovascular problems, etc. In this way, you may use the field "Other" in electronic form.

Online Notification: http://formsus.datasus.gov.br/site/formulario.php?id_aplicacao=2518

1.4.1. Routine Report

Every ship, arriving from foreign or national ports, shall notify the health authorities whether there is suspected or confirmed cases of infectious diseases on board by completing the Notification Form online, in accordance with the specifications bellow:

- Ships arriving from foreign ports must make the notification at least 24 hours and up to 36 hours before estimated time of arrival at first Brazilian port-of-call;
- Ships arriving from national ports shall notify daily before noon (12:00 pm).

It is important to emphasize that Routine Notifications shall be submitted, even in the case of negative notifications on the occurrence of suspected cases on board, always in obedience to the periods and time specified above.

1.4.2. Special Report

This notification must be given whenever there is any change in the number of suspected cases reported on routine notification or whenever an outbreak is confirmed on board (see the criteria above) or even when the medical staff on board considers it appropriate due to the occurrence of unusual events on board.

This notification shall be submitted by completing a Notification Form online as well, identified as a Special Notification.

1.5. EPIDEMIOLOGICAL QUESTIONNAIRES

Every traveler (crew or passenger) who presents symptoms that meet to the cases definitions contained in this Guide shall be encouraged to complete the Investigation Questionnaire, as specified in Annex III. These questionnaires shall be kept on board for at least 60 days after the end of the cruise, and be made available to Brazilian authorities if so requested.

1.6. LABORATORY DIAGNOSIS

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2. CONTROL MEASURES

The adoption of control measures aims both to prevent outbreaks and reduce its spreading on the ship. The main measures will be implemented as follows.

2.1. PRE-EMBARKATION SCREENING

It is highly **recommended** that the cruise line carry out the pre-embarkation screening. In the case the procedure is adopted, prior to embarkation all travelers should complete a Pre-Boarding Questionnaire (Annex IV) with information about symptoms and signs of infectious diseases, which is going to be provided by the Cruise Line. These questionnaires must contain, as a minimum, gastroenteritis and Influenza-like syndrome information. An example of a Health Questionnaire is to be found in Annex IV.

Completed questionnaires shall be collected by crew or staff of the Cruise Line responsible for the cruise, which is also responsible for the storage, management and analysis of such forms. The forms shall be kept on board for at least 90 days after the end of the cruise. It is also possible to store the information electronically.

Following the analysis of the questionnaires, the medical staff on board must provide guidance and implement the sanitary measures required to reduce the spread of diseases of public health concern aboard. Other potential health measures include: the isolation of suspected cases, recommendation to postpone the trip or required guidance.

In the case the symptoms completed in the forms are consistent with any infectious disease definition the medical staff must assess the traveler at no cost and determine the specific health measures to be taken if symptoms are confirmed to be consistent with the definition. Nevertheless, if other tests, treatment, or type of medical care not related to the infectious diseases mentioned in this Guide are required the ship may charge for these services under the criteria established by the Cruise Line. The cost of such services must be clearly informed to the travelers prior to the provision of any extra medical service or lab tests.

In the case the traveler presents symptoms consistent with Severe Acute Respiratory Syndrome, that is, if an individual of any age presents acute Influenza-like Illness characterized by fever, accompanied by coughing or sore throat, and dyspnea or other sign of seriousness, the health authority must be communicated immediately and the traveler should receive guidance and sent to the closest reference hospital, in order to receive medical care.

Under no circumstance the form must be completed before the date of the travel, as to safeguard the information recorded.

In the case other diseases are suspected or confirmed on board or in order to discuss the adopted sanitary measures the medical staff on board may seek guidance with Brazilian sanitary authorities through E-mail: naviosdecruzeiro@anvisa.gov.br

2.2. CONTROL OF SUSPECTED CASES, CLOSE CONTACTS AND ENVIRONMENT

The measures for reducing the impact of outbreaks among travelers are described below.

2.2.1. Planning Actions

When an outbreak is suspected or confirmed, the medical staff on board shall:

- Declare the outbreak in compliance with criteria standardized by Brazilian health authorities;
- Report Brazilian health authorities immediately;
- Provide adequate medical care for affected travelers at no costs;
- Coordinate the **surveillance** and monitoring of cases on board; and
- Convene the incident team to adopt strategic researches immediately in order to identify the potential sources and types of disease.

2.2.2. Incident Team Members

Whilst at sea, the incident team members shall basically comprise the:

- Ship's Doctor
- Ship's Master or Deputy
- Ship's Executive Purser or Hotel Manager
- Ship's F&B Manager or Catering Officer
- Ship's Chief Technical Officer

This team should always maintain close contact with Brazilian health authorities by the means of communication contained in this Guide.

2.2.3. Duties of the Incident Team

The incident team must:

- Review information collected on the suspected cases of outbreak and try to identify potential etiological agents;
- Report immediately and frequently (at least one additional report per day) to health authorities at the destination port about measures being adopted and outbreak situation on board;
- Implement control measures for passengers and crew members (hygiene and isolation) and for the environment (cleaning and disinfection);
- Ensure that fecal samples are collected and stored properly;
- Provide precise and accurate information in the notices and reports to passengers and crew;
- Ensure adequate surveillance and monitoring of suspected cases;
- Coordinate and monitor the application of Epidemiological Questionnaires – Annex III - to all suspected cases on board;
- Monitor those in close contact with suspected cases and advise them on prevention and control measures;
- Advise other passengers about recommended measures for personal hygiene, such as handwashing, so as to prevent spread of the infection.

- Recommend prevention and control measures for all crew and passengers to try to avoid disease spread. As example: to increase handwashing frequency and establish good hygiene habits during the outbreak, etc.

2.2.4. Environmental Cleaning

As soon as an outbreak suspicion is notified on board, a special cleaning routine must be adopted. This cleaning routine demands a specific team, which will be responsible exclusively for cleaning cabins of passengers and crew members with suspected diseases and also for cleaning and disinfecting areas with vomits and/or feces.

All guidelines and procedures that must be adopted are described in the document “Guidelines for Cleaning and Disinfection Procedures on Ships with Infectious Diseases Aboard”, Annex V.

2.2.5. Personal Hygiene

Microorganisms can remain viable on one’s hands for hours, thereby giving hands the potential to spread infections. Washing hands, thus, is likely to be one of the most important procedures for preventing the spread of an infection aboard.

2.2.6. Handwashing

Handwashing with soap and water must be promoted on board. Lavatories must be strategically located around the vessels, so travelers can wash their hands frequently.

Areas where food is prepared, bars, warewashing areas and areas for the storage of solid waste must be equipped with at least one washbasin.

Passengers and crew shall be provided with instructions (any kind of advertising is allowed – signs, TV, etc.) for proper handwashing which should include the use disposal papers when turning off hand operated taps, dispensers and other hand operable devices, to prevent re-contaminating clean hands.

Handwashing is recommended after using toilet, coughing or sneezing into hands and practicing activities requiring hand use. It is recommended washing hands before handling food, eating, drinking, smoking, brushing teeth and performing any activity requiring hand-mouth contact. It is also recommended to wash hands when entering the cabin.

2.2.6.1. Alcohol-based Hand Gel (70% ethanol)

Alcohol-based hand rubs (70% ethanol) should be considered an adjunct to handwashing and not a replacement. Alcohol-based hand gel (70% ethanol) is usually effective against enveloped viruses and bacteria, providing an overall 99% reduction (3-4 log 10). However, non-enveloped viruses such as Norovirus are more resilient and alcohol-based hand gel typically only reduces them by 1-2 log 10 with a 30 second

contact period. Products producing reductions less than 2 log 10 are not considered effective hands disinfectants.

Nevertheless, it is extremely important to provide alcohol-based hand rubs in different points around the vessel, especially in areas with no washbasins, such as theaters and casino entrances, etc.

2.2.7. Isolation

Isolating travelers with suspected diseases is a measure aimed at reducing the spread of infections, and controlling circulation and services provided to suspected and affected travelers. Isolation enables to block pathogen transmission, thus making it possible to mitigate consequences of the spread.

2.2.7.1. For Crew

2.2.7.1.1. Crew with Suspected Acute Diarrhea Illness

Food handlers and medical staff members with suspected gastroenteritis shall be isolated immediately and for at least 48 hours after resolution of their symptoms. After this period, they must be examined for obtaining authorization to go back to their daily activities. Other crew members must be isolated until symptom free for 24 hours.

2.2.7.1.2. Crew with Suspected Influenza-like Illness

Crew members suspected of Influenza-like Illness (ILI) must be oriented to notify their supervisors as soon as possible who must report to the infirmary for medical evaluation, according to shipboard protocols. All suspected cases of ILI must remain isolated in their cabins or quarters until at least 24 hours after resolution of fever (100° F [37.8° C]) without the use of fever-reducing medications.

2.2.7.1.3. Crew with Suspected Exanthematous Disease

All suspected cases of exanthematous diseases (measles and rubella) must be isolated or remain inside their cabins until laboratory tests are ready. If measles or rubella is confirmed, the crew member shall be isolated up to seven days after the onset of skin rash, which is considered the peak period of transmission. Food and medical service shall be provided in the cabin. Professionals who are taking care of confirmed cases must use disposable personal protective equipment and receive vaccination against measles and rubella (2 doses) and update this information in their certificate of vaccination.

2.2.7.1.4. Cabin companions

Cabin companions of affected crew must be relocated in non-food or beverage area jobs until 48 hours have passed and monitored for further 24 hours.

Asymptomatic cabin companions of suspected cases, whenever possible, should be relocated to another cabin.

2.2.7.2. For Passengers

2.2.7.2.1. For Passengers with Suspected Acute Gastroenteritis

All passengers diagnosed with suspected remain inside their cabins for at least 24 hours following resolution of their symptoms. They must be advised to only use room service and not be allowed to eat their meals at buffet or self-service areas until they have been asymptomatic for 48 hours. They shall be encouraged to use only the toilet in their cabin **for a further** 24 hours following resolution of their symptoms.

2.2.7.2.2. For Passengers with Suspected Influenza-like Syndrome

Passengers with ILI who nonetheless decide to board, as well as passengers who develop ILI en route, be medically evaluated and remain isolated in their cabins or quarters until at least 24 hours after resolution of fever [38° C] without the use of fever-reducing medications.

2.2.7.2.3. Cabin Companions

Cabin companions of affected crew or passengers do not require isolation but should receive information about outbreak prevention and control on cruise ships. Individuals whose vulnerability is known must be warned to avoid temporarily contact within the cabin or within the isolation area for affected travelers. For instance, immunosuppressed children (less than 2 years old) or passenger who have not been infected should **be removed, whenever possible**, from the cabin of a patient presenting a clinical picture consistent with AGE or influenza and being isolated.

Individuals who are not the relatives of a patient with suspected gastroenteritis or influenza must be discouraged from visiting the patient during the period of disease transmission.

2.2.7.3. Precautions Against Airborne Transmission

Ill passenger or crew requiring respiratory isolation remain in a restrict area equipped with special air handling and ventilation capacity, which meet negative pressure requirements relative to surrounding areas, with 12 air changes per hour in recently designed facilities and 6 air changes per hour in existing facilities. The exhauster must be facing the outside area and the air pass through a HEPA filter before the return to facility.

A separate room, with closed door should be used whenever precautions regarding airborne transmission of pathogens are unable to be implemented due to limited engineering resources (i.e., passengers and crew cabins). In this case, surgical masks must be provided to travelers with suspected diseases, reducing, thus, the likelihood of airborne transmission until the patient is transferred to an appropriate facility.

2.2.7.4. Utensils

For warewashing, hot water and detergents used in dishwashing machines are enough and no special precaution is required. Utensils used by travelers kept in isolation shall not be shared, compliant with personal hygiene principles intended to prevent the

spread of diseases. In the case adequate cleaning material is unavailable, disposable utensils must be used.

2.3. PASSENGER AND CREW GUIDANCE

When a case consistent with transmissible disease on board the medical staff should tighten health controls before outbreak notification by adopting some of the following measures:

- Display signs and posters in toilets or public areas stressing the importance of handwashing in the prevention of diseases, as detailed below;
- Advise passenger and crew to avoid sharing personal belongings, especially between children and adults;
- Report to medical staff the onset of symptoms, so the team can provide a more adequate service and monitoring;
- Crew responsible for the room service of ill persons receive training in the recommended procedures for ensuring health security;
- Make public announcements with information on preventive measures and infectious disease transmission on board. For example: avoid close contact with people presenting symptoms consistent with gastroenteritis or influenza; Seek medical staff as soon as characteristic symptoms arise; avoid shaking hands, hugging and kissing people on their cheeks as greetings.

2.4. OTHER MEASURES ESTABLISHED BY HEALTH AUTHORITIES

Following the evaluation of the outbreak, health authorities may adopt additional control measures, such as vaccination, chemoprevention, etc. Incident team on board must be a support for the medical staff.

MODEL OF HANDWASING INSTRUCTIONS

Wash your hands following these procedures:

Wet your hands with warm water.

Apply a moderate amount of soap and rub hands vigorously;

Rub hands together for 20 seconds and be sure to scrub between fingers and under fingernails;

Rinse hands under warm running water;

Dry hands with a disposable paper towel;

Use a disposable towel to turn off the faucet and to open the door.

IV. SANITARY SURVEILLANCE

1. FOOD

1.1. FOOD SAFETY PLAN

Vessels must have aboard and maintain updated a Food Safety Plan.

The Codex Alimentarius Commission (CAC) implements the joint FAO/WHO Food Standards Programme, the purpose of which is to protect the health of consumers and to ensure fair practices in the food trade. Food Safety Plans (FSP), or Food Safety Programmes (FSP) are required to manage the process of providing safe food. A modern FSP must outline the aspects that could affect the food quality and safety. Then, FSP shall describe all hygienic and sanitary procedures adopted by the ship's operator to ensure food quality and compliance with national and international sanitary legislation.

The Food Safety Plan is a document concerning activities conducted within the vessel, including at a minimum the sanitary requirements for physical facilities, maintenance and cleaning of the facilities, equipment and utensils, control of water bunkering, integrated pest management, health and hygiene control of food handlers, training of food handlers and control of quality and safety of the final product.

The Food Safety Plan must be strictly consistent with the actual vessel's reality (for example construction, layout, ship menus, equipment or technological developments.) and must be updated whenever physical facilities or operations are changed.

The Annex VI of this Guide sets out a proposed model to Food Safety Plan.

The base reference for food safety management is the HACCP. There may be other acceptable food safety management programs that involve partial application of the full HACCP system.

The Food Safety Plan must be used as a tool to assess hazards and establish control systems that focus on prevention rather than relying mainly on final product quality. As well as enhancing food safety, implementation of a FSP can provide other significant benefits including, providing a framework to support inspection and certification by regulatory authorities and registers.

The successful implementation of a FSP requires the full commitment and involvement of both management and crew members involved.

Follow, we transcribe some HACCP principles that are written in Guide to Ship Sanitation of WHO (2011):

“The core HACCP steps and principles will be briefly described as they relate to ships. It is important when applying HACCP to be flexible where appropriate.

Preliminary steps:

- *Step 1. Assemble HACCP team. The ship operator ensure that the appropriate knowledge and expertise is available for the development of an effective HACCP plan. The scope of the HACCP plan be identified.*
- *Step 2. Describe the products. Full description be given including storage conditions.*
- *Step 3. Identify intended use. Vulnerable groups of the population e.g. elderly or pregnant may have to be considered, as may allergic groups.*
- *Step 4. Construct flow diagrams. A flow diagram cover all steps in any given operation.*
- *Step 5. Onsite confirmation of flow diagram. The HACCP team confirm the process operation against the flow diagram and make amendments where necessary.*

HACCP principles

- *Principle 1. Hazard analysis. The team list all potential hazards associated with each step, conduct a hazard analysis and consider any measures to control identified hazards. Hazard identification includes defining which hazards are of a nature that their elimination or reduction to acceptable levels is essential for the preparation of safe food. The HACCP team must then consider whether control measures, if any exist, can be applied to each hazard. More than one control measure may be required to control a specific hazard(s) and more than one hazard maybe controlled by a specified control measure. In conducting the hazard analysis, wherever possible, the following should be included:*

- o *the likely occurrence of hazards and severity of their health effects;*
- o *the qualitative and/or quantitative evaluation of the presence of hazards;*
- o *survival or multiplication of microorganisms of concern;*
- o *production or persistence in foods of toxins, chemicals or physical agents; and*
- o *conditions leading to the above.*

- *Principle 2. Determine Critical Control Points (CCP). CCP are the stages in the preparation and cooking of food which must be controlled to ensure food safety. There may be more than one CCP at which control is applied to address the same hazard. The determination of a CCP in the HACCP system can be facilitated by the application of a decision tree, which indicates a logic reasoning approach.*

- *Principle 3. Establish critical limits for each CCP. Critical limits must be specified and technically validated for each CCP. Criteria often used include temperature, time, available chlorine and sensory parameters such as visual appearance and texture.*

- *Principle 4. Establish a monitoring system for each CCP. Monitoring is the scheduled measurement or observation of a CCP relative to its critical limits. The monitoring procedures must be able to detect loss of control at the CCP. Further, monitoring ideally provide this information in time to make adjustments to ensure control of the process to prevent violating the critical limits. Where possible, process*

adjustments should be made when monitoring results indicate a trend towards loss of control at a CCP. If monitoring is not continuous, then the amount or frequency of monitoring must be sufficient to guarantee the CCP is in control.

- *Principle 5. Establish corrective actions. Corrective actions must be developed for each CCP in the HACCP system in order to deal with deviations when they occur. The actions must ensure that the CCP has been brought under control.*
- *Principle 6. Establish verification procedures. Verification and auditing methods, including random sampling and analysis, can be used to determine if the HACCP system is working correctly. The frequency of verification should be sufficient to confirm that the HACCP system is working effectively.*
- *Principle 7. Establish documentation and record keeping. Efficient and accurate record keeping is essential to the application of a HACCP system. Documentation and record keeping should be appropriate to the nature and size of the ship.”*

Note: Training programmes shall be routinely reviewed and updated when necessary. Systems must be in place to ensure that food handlers remain aware of all procedures to maintain the safety and suitability of food.

1.2. SUPPLIER SELECTION

Food shall be obtained from sources that comply with applicable country of origin's statutes, regulations, and ordinances. All food items provided by Brazilian suppliers shall comply with Brazilian regulations, laws and ordinances.

Ship operator (or designated crew member) should be responsible for: selection, and quality control of food suppliers, and safety of foods received. They must verify compliance with best practices for storage, transport and food supply. All food suppliers must be registered in Brazilian ports, so ship operator must check if suppliers are registered in ANVISA port offices.

The list of registered suppliers can be found in ANVISA offices in Ports and <http://www.anvisa.gov.br/hotsite/cruzeiros/industria.html>

1.3. FOOD RECEIVING

1.3.1. Physical facilities

Physical facilities of food receiving area shall:

- be maintained in a good state of repair and condition that meets sanitary standards: free of chippings, cracks, leakage, seepage, mold, peeling, proper adjustment;
- be free of unused or extraneous materials (cardboards, cloths, papers, sanitizing products, plastic bags, pallets, brooms, etc.);
- be provided with natural or artificial lighting that does not compromise food hygiene and does not change colors, and enables good working conditions;

- be provided with electrical wiring installations that are properly covered and insulated;
- be provided with sufficient ventilation that avoid intense heat, vapors condensation and accumulation of mold, fumes and smoke;

Food receiving area must be cleaned in a daily basis and whenever necessary. And sanitization process (cleaned and disinfected) must take place immediately before food entry. Disinfectant manufacturer's instructions, including concentration and contact time, shall be strictly followed.

Food cannot enter by the same area from where solid waste is removed. If it is absolutely impossible to provide different areas, it is essential to establish a different schedule and the area shall always be sanitized (cleaned and disinfected) before food receiving.

Operational flows for garbage discharge (from Garbage Room – storage areas – to exit gate or door), and food receiving (from entry gate/door to storage areas) must be established and implemented in a way which minimize the risk of cross contamination.

Integrated Pest Management actions shall be implemented at this area accordingly to the provisions established in the specific chapter below.

1.3.2. Receiving Condition

Personnel in charge of receiving foods on the vessel must keep a good hygiene as specified for food handlers.

Raw material and ingredients shall be received solely at a clean and protected area. The packages/containers of raw materials and ingredients shall be intact and in good hygiene conditions.

Packages which can contaminate food or transport vectors (eggs, adults, etc.) - e.g. cardboards, paper, wood - must be carefully inspected upon arrival and changed as necessary, especially for fruits, vegetables and foliage packages.

Industrialized food conditioned only in a primary packaging, it must be cleaned before storage.

It is recommended the use of pre-washed and ready-to-eat fruits. If not, all fruits and vegetables must be cleaned and disinfected (using chemical or other efficient system) before storage. Therefore, if it is not possible, all fruits and vegetables must be cleaned and disinfected before enter food preparation areas (cut, combination with other ingredients or cooked)

Food temperatures, which must be in accordance with the manufacturer instructions or laws of manufacturing country , and discard date and integrity of the content be

checked upon receipt and registered at schedules/sheets/logs (as specified in ship GMP Manual and HACCP), including a description of corrective actions taken in cases of failures.

If the manufacturer does not provide an alternative instruction, receiving temperatures shall be as follows:

(1) Refrigerated, potentially hazardous food shall be at a temperature of 7°C (45°F) or below when received.

(2) Potentially hazardous food that is cooked and received hot shall be at a temperature of 60°C (140°F) or above.

(3) Frozen food shall be received solidly frozen.

Upon receipt, potentially hazardous food shall be free of evidence of previous temperature abuse.

Raw fresh seafood shall be refrigerated, held in ice, and maintained at temperature of 5° C (41°F) or below.

Milk products shall be received only if they are pasteurized, liquid, frozen or dry. Cheese may be obtained according to alternative procedures.

Eggs preferably should be pasteurized, and if not, they must be received clean and intact. Crew members responsible must be very strictly with quality and safety of this food (temperature, cleanliness, humidity, etc.)

Ice intended for consumption must be accepted only if made from drinking water.

Shell stock shall be reasonably free of mud, dead shellfish, and shellfish with broken shells when received by a vessel, and must be packaged into clean, intact and no recyclable box/containers. Contaminated shell stock shall be discarded immediately upon receipt.

Packages or containers of seafood and exotic foods (fish, crustaceans, mollusks, amphibians, turtles, etc. for human consumption) must be labeled (or identified) with accurate and complete information as follows:

1. Name of the product;
2. Ingredients are to be listed in descending order of predominance, i.e. the first ingredient listed shall be the most prevalent in the product, and so forth;
3. Liquid content (quantity or volume of the product)
4. Source identification (the country or local of the product processing);
5. Lot or batch identification;
6. Expiration date: Regarding the date of minimum durability, DAY and MONTH for less than 3 months, and MONTH and YEAR more than 3 months
7. Preparation instructions, if needed.

8. Seal of Federal Inspection Service, Provincial/Regional Inspection Service or Local Inspection Service.

Personnel in charge of receiving foods on the vessel shall check if fresh fishes present the following appearance:

- Firm, taut, moist and unblemished skin.
- Bright and bulging eyes;
- Bright scales that do not flake off;
- Bright, deep red, almost burgundy colored and no slimy gills;

Crustaceans must have their natural color and not present orange or dark colored carapace. Both octopuses and squids shall have solid and elastic flesh, which does not smell disgusting.

All seafood shall be free of contaminants (such as sand, pieces of metal, plastic, fuels, soap and flies).

Dry seafood shall be free of mud, fly eggs or larvae, dark or red blemishes, surface slime, mold and bad/disgusting smell.

All food shall be obtained from approved sources that comply with applicable local, state, provincial and federal standards of the manufacturer's country. Food prepared at home and without labeling may not be used or offered for human consumption on a vessel.

Lots or batches of materials, ingredients or other packages that have not been approved shall be immediately returned to the supplier but, if not possible, shall be identified (labeled) and stored separate from approved foods.

During food loadings all crew members in charge wash hands often, and always when they finish loading food of a specific class (e.g. seafood or meat or chicken or fruits/vegetables) and they are start another food class.

1.3.3. Register

Safety and quality items must be checked upon receipt and registered at schedules/sheets/logs (as specified in Food Safety Plan and HACCP), including a description of corrective actions taken in cases of failures. This schedule/sheet/log must be fully completed and contain the following basic information: Date, Supplier, transport vehicle plate, product, amount (kg or number), temperature of received food and inside vehicle, lot, expiration dates, acceptance or rejection, corrective actions, signature of crew member). Logs or sheets which are already standardized by cruise lines shall meet these requirements by completing missing information on the observation fields or by adapting to the model suggested. The equipment used for quality and internal temperature control of meat, poultry and seafood (ex. Meat thermometer, etc.) must be cleaned after every use. After each use, wash the stem

section of the meat thermometer thoroughly soap and hot water (or other efficient method), soapy water and keep it safe from contamination.

The vessel must keep these records during all season in Brazil.

1.4. STORAGE

1.4.1. Physical facilities

Storage facilities shall have floor, walls, doors, lighting, electrical wiring, ventilation system, equipment, furniture and utensils maintained in good sanitary conditions (conservation, maintenance and hygiene).

Furniture, utensils and installations shall be constructed of surfaces that allow their proper sanitation, i.e. shelves, racks, etc. shall be constructed of cleanable materials that are corrosion-resistant and free of open seams, cracks or crevices, etc.

Food products shall be stored on pallets, and/or shelves, taking into consideration the minimum area available so as to ensure proper ventilation, circulation, cleaning, and disinfection procedures. Moreover, these products shall not be exposed to droppings, soil or other contamination.

Food shall not be stored in: toilets rooms, dressing rooms, corridors/passages, garbage rooms, engine rooms, under pipe or sewer lines, under stairwells, areas with water condensation, or any other area that is not specific and exclusive for this purpose.

Contact surfaces of equipments and utensils used in the packaging, storing and transportation of foods shall be smoothly finished, non-absorbent, cleanable and free of roughness, cracks or other that may not facilitate their proper cleaning and become source of food contamination.

Primary packages (direct contact with foods) shall be maintained in good repair, and made of non-absorbent materials that do not contaminate food with toxic substances, smell or flavor.

Freezers and air conditioners shall be maintained in proper condition, operation and repair so as to prevent dripping or condensation inside of storage areas or condensation over food.

Integrated Pest Management actions shall be implemented at this area accordingly to the provisions established in the specific chapter of this Guide.

1.4.2. Quality and control of food products

Food storage areas (pantry or stores) shall have control measures for food discard dates, such as “First in First Out” (FIFO) or Last in First out (LIFO) or any other system which allow precision control of discard dates.

This control must be formally described, and can be done through color coding, bar code reading, spreadsheets, among others. If spreadsheets/logs are used, they shall contain the following minimum information: product identification, date of manufacture, expiration date, date of entry and exit of the storage room.

Foods that are removed from their original packages shall be properly stored and identified with the following original label basic information: name of product, manufacturer name, fractioning and expiration dates and lot or batch (if applicable).

Food products shall be periodically checked to assess their signs of quality and safety (odor, texture, blemishes, etc.) that may indicate problems with the sanitary quality and safety of the food.

Food must always be protected from contamination by keeping them well packaged, covered and stored in a dry and clean location where they are not exposed to dust, splash or other potential contamination.

Products shall be kept at a safe distance above the deck to allow proper ventilation, cleaning and disinfection of the area (recommended distance of 15 centimeters (6 inches) above the deck).

Food shall be stored by separating different types of foods from each other, i.e. meat shall not be mixed with beverages, canned food, bulk products; ready-to-eat food shall be separate from raw food, and so on.

Food must be stored separate from single-use articles, chemical sanitizers, cleaning and hygienic equipments or products; or toiletries. These products and equipments must be stored in exclusive lockers/rooms and it be cleaned in specific places/rooms.

1.4.3. Temperature control

All storage areas shall be provided with temperature measures devices at visible location and in good hygiene and maintenance conditions.

Food temperatures shall be checked regularly and recorded at schedules/logs/sheets (it can be done electronically) as specified in Food Safety Manual and HACCP, or accordingly to the information provided in Brazilian suggested model as follows:

Storage room:			Month/Year:		
Date	Morning	Noon	Night	Corrective actions	Sign

The temperatures of storage areas must comply with the limits defined below:

- (1) Refrigerated food: 5°C (41°F) or below.
- (2) Frozen food: between -12°C and -18°C (-0.4 to 10°F).
- (3) Dry food: between 10°C and 25°C (71.6 F and 77°F)

Whenever temperatures are out of the limits above, crew member responsible must take corrective actions and register them in the schedules/logs/sheets as specified in FSP and HACCP.

1.5. GALLEYS

1.5.1. Facilities, equipment, furniture and utensils

All galleys (including any food preparation area like grills, pizzerias, etc.) facilities shall have decks, bulkheads, doors, lighting, electrical wiring, ventilation system, equipment, furniture and utensils that are maintained in good sanitary conditions (working, maintenance and hygiene).

Floor, walls and ceiling shall have smooth, impervious and washable surfaces. Must be made of corrosion-resistant material that not contaminate food, and be kept intact, kept free of cracks, crevices, leaks, spills, mold, peeling, among others..

Furniture, utensils and installations shall be made of corrosion-resistant materials that allow their proper sanitation, and be free of open seams, cracks or crevices, etc.

Materials that are used in the construction of multiuse utensils and food-contact surfaces of equipment may not allow the migration of deleterious substances or impart colors, odors, or tastes to food and under normal use conditions shall be safe. In this way they must be durable, corrosion-resistant, nonabsorbent, with weight and thickness to withstand repeated warewashing. Food contact surfaces of equipments and utensils shall be smoothly finished, non-absorbent, cleanable and free of roughness, cracks or other that may not facilitate their proper cleaning.

Natural or mechanical means of ventilation must be designed and constructed so that air does not flow from contaminated areas to clean areas and, where necessary, they should be adequately maintained and cleaned. It is **recommended** that the temperature of preparation areas not exceed 30°C (86°F) and 22°C (71, 6°F) in pre-preparation rooms.

Ventilation must ensure the air renewal and maintenance of the environment free of fungi, gases, smoke, dust, particulate matter, vapor condensation, etc.

Louvers or registers at ventilation terminals must be made readily removable for cleaning.

Adequate natural or artificial lighting is required to enable operation in a hygienic manner. The intensity must be planned according to the nature of the operation.

Lighting fixtures must be protected to ensure that food is not contaminated by breakage or explosion.

Galley size and layout must be compatible with all operations. There must be separation between the different activities by physical barriers or by other effective means to avoid cross contamination.

Doors must be kept tightly adjusted to the stops and frames. It is recommended automatic closing for preparation and food storage doors. External openings in the food preparation areas (i.e exhaust system, windows, etc.) shall be equipped with millimeters screens, no more than 1.6 mm spacing, to prevent access of vectors and urban pests.

Drains must be protected with siphon strainers.

All galley wastes, exclusive of ground refuse, that may contain grease must be made to flow through grease interceptors (grease traps) to a retaining box prior to discharge. The grease collected may be disposed of by incineration, by storage for shore disposal, or by overboard discharge on the high seas.

Grease traps size must be compatible with volume of waste (with grease) produced in the galley, and it must be located outside preparation areas and be maintained in good hygiene and repair conditions.

Galleys internal areas must be free of foreign or into disuse objects, like mops, brooms, etc.

Toilets and changing rooms shall not communicate directly with galleys, food storage or service areas, and be organized and maintained in proper condition of hygiene and repair. Outside doors should be equipped with automatic closing, whenever possible.

Integrated Pest Management actions shall be implemented at this area accordingly to the provisions established in the item XXX below.

1.5.2. Sanitizing of facilities, equipment and utensils

Warewashing facilities and equipments are adequate and suitable for safe and effective sanitizing, and shall be maintained in good hygiene and repair conditions.

The temperature of warewashing equipment shall be maintained at not less than the temperature specified on the cleaning agent manufacturer's label instructions.

If hot water is used for sanitization in manual warewashing operations, the sanitizing compartment of the sink shall be designed with an integral heating device that is capable of maintaining water at a temperature not less than 77°C (171°F);

A sink with at least 3 compartments shall be provided for manually washing, rinsing, and sanitizing equipment and utensils. Sink compartments shall be large enough to accommodate immersion of the largest equipment and utensils. If equipment or utensils are too large for the warewashing sink, a warewashing machine or alternative equipment shall be used. The water in each tank should be replaced whenever necessary to ensure hygiene, efficiency and effectiveness of washing method (frequency of water exchange be described GMP Manual).

Water temperature measuring devices shall be designed to be easily readable. Water temperature measuring devices on warewashing machines shall have a numerical scale, printed record, or digital readout.

A warewashing machine shall be provided with an easily accessible and readable data plate affixed to the machine by the manufacturer that indicates the machine's design and operating specifications including the:

- (1) Temperatures required for washing, rinsing, and sanitizing;
- (2) Pressure required for the fresh water sanitizing rinse unless the machine is designed to use only a pumped sanitizing rinse; and
- (3) Conveyor speed for conveyor machines or cycle time for stationary rack machines.

Warewashing machine wash and rinse tanks shall be equipped with baffles, curtains, or other means to minimize internal cross-contamination of the solutions in wash and rinse tanks. The whole system must be kept in good hygiene and maintenance conditions.

Drainboards, utensil racks, or tables large enough to accommodate all soiled and cleaned items that may accumulate during hours of operation shall be provided for necessary utensil holding before cleaning and after sanitizing. The drying of utensils and equipment shall be conducted in a natural way, being forbidden to use of unsafe drying systems (dishcloth, etc.).

In manual warewashing operations, a test kit or other device that accurately measures the concentration in mg/L (ppm) of sanitizing solutions shall be provided. If automatic dosing is used, they have to kept in as recommended by the manufacturer.

Warewashing areas/machines for dirt utensils and equipment from galleys shall be separate from that used for washing utensils coming from service areas (restaurants) (forks, knives, cups, plates, etc.).

Do not use steel wool (or any other pad that can put in risk consumers of food) for cleaning equipment and utensils.

Warewashing and cleaning operations must be conducted by personnel demonstrably qualified and frequently supervised to ensure the maintenance of quality and minimize the risk of contamination of food. Crew members responsible for cleaning activities shall use proper and clean uniforms. These uniforms must be different (color or identification) from those used by food handlers.

Precautions must be taken to prevent contamination of food caused by sanitizing chemicals (particles suspension and aerosol formation). Odorizers and deodorants or any of its forms may not be used in areas of food preparation and storage.

The dilution, contact time and method of use / application of sanitizing products must be strictly followed as recommended by the manufacturer. The sanitizing products shall be identified and kept in place reserved for that purpose.

1.5.3. Food preparation

All food preparation (since receive to service), must be planned and conducted to minimize the risk of cross contamination.

The number of food handlers, equipment, furniture and utensils available shall be compatible with the volume, diversity and complexity of food produced.

Raw fruits and vegetables shall be thoroughly cleaned and disinfected (using water and chemicals) to remove soil, other contaminants and pathogens before going to preparation areas, i.e. being cut, combined with other ingredients or cooked. If it is not possible to have separate areas, these activities must be made in different moments and with cleaning and disinfection between them.).

These chemicals must be used strictly as described by manufactures' especially into consideration with time and concentration of it. The frequency of exchange of the chemical solution must be performed in order to maintain the concentration level recommended and hygiene.

Raw food, especially meat, needs to be effectively separated, either physically or by time, from ready to eat foods, with effective intermediate cleaning and where appropriate, disinfection. Surfaces, utensils, equipment, fixtures and fittings must be thoroughly cleaned and where necessary disinfected after raw food has been handled.

Foods of different groups must be pre-prepared in:

- (a) distinct rooms; or
- (b) the same room, but in different moments; or
- (c) the same room, but with physical barriers between each handling areas, including distinct warewashing and purging facilities.

It is recommended that pre-preparation rooms of meat (including poultry, fish and seafood, etc..) comply with the criteria of temperature and time of stay of food during handling, respecting the maximum limit of 30 minutes at 22º C.

Equipment, utensils and food contact surfaces must always be cleaned at the end of handling a certain group of food.

Frozen products must be technically defrosted, as described below, before cooking to ensure adequate heat penetration, except when food manufacturer recommends alternative procedure.

The defrosting process must be carried out in order to prevent those favorable conditions for microbial multiplication on food surfaces. Thawing shall be carried out at a temperature below 5 ° C (five degrees Celsius) or using the microwave when food will be then be immediately cooked. The thawing process shall include mechanisms for effective control of the start date, temperature and time limit for use of defrosted food.

Equipment (cameras and refrigerators, for example) used for the thawing be separate from those used for the storage of products.

Defrosted foods must be kept under refrigeration if they won't be used immediately and it must not be refrozen.

Food under thawing process must remain packaged or protected, not being allowed to defrost food by methods of immersion in liquids.

Raw materials and ingredients when not used in its entirely must be properly packaged and identified with at least the following information: date of fractioning, name of product and expiration date after opening or removal of the original packaging.

All food (ready to eat or in preparation) must be protected to prevent contamination by foreign bodies such as glass or metal shards from machinery, dust, harmful fumes and unwanted chemicals, particularly after any maintenance work.

The heat treatment must ensure that all parts of the food reach a temperature of at least 70 ° C (158 ° F). Lower temperatures may be used in heat treatment provided that the combinations of time and temperature are sufficient to ensure the safety of food.

Fruits and vegetables that are cooked for hot holding shall be cooked to a temperature of 60°C (140°F).

After cooking, prepared foods must be kept in controlled time and temperature ranges that not favor microbial multiplication. Hot food must be stored in temperatures above 60 ° C (sixty degrees Celsius) for up to six (6) hours. For storage under refrigeration or freezing, food must first be submitted to the cooling process. Ready-to-eat food must be kept under refrigeration and be consumed before than 5 days after.

The cooling process of a prepared food must be done to minimize the risk of cross contamination. The temperature of the prepared food must be reduced from 60 ° C (140°F) to 21 ° C (70°F) within two hours and from 21°C (70°F) to 5°C (41°F) or less within 4 hours. Then it must be kept refrigerated at temperatures below 5 ° C (five degrees Celsius), or frozen at a temperature at or below -18 ° C (eighteen degrees Celsius).

Food employees must avoid direct or indirect contact between raw foods, semi-prepared and ready for consumption in all food preparation chain, including inside of blast chillers, refrigerators, transport containers, etc.

Prepared foods kept in the storages area or waiting for transport must be protected against contaminants and labeled at least with the product description, date and time of preparation.

Storage and transport of prepared hot food must occur under conditions of time and temperature that not compromise their hygienic quality and safety. The temperature of the food prepared must be monitored and registered during all moments of preparation (including storage and transport of prepared food)

Remember!!!!

Prepared hot foods must be kept in controlled time and temperature ranges that not favor microbial multiplication. Hot food must be kept in temperatures above 60 ° C (140 ° F) for up to six (6) hours since.

Attention!!!!

Hot food placed in unmarked containers or packages or that is outside the limits of time and temperature must be discarded.

Storage and transport of prepared refrigerated food must occur under conditions of temperature that not compromise their hygienic quality and safety. The temperature required in this situation is below 5 ° C (41 ° F) and shall be monitored and registered during all moments of storage and transport.

Transport equipments of prepared food must be cleaned, and protected against vectors and urban pests. Vehicles should be provided with protective cover for the cargo and not carry other loads that compromise the safety of prepared food.

The elevators used to transport of prepared or raw foods must be unique for this purpose and must be kept in satisfactory conditions of hygiene and conservation. The lift must be identified with the phrase "only for food" or similar.

The oil and fat used for frying foods may not be a source of chemical food contamination.

The oils and fats used must be heated to temperatures no higher 180 ° C (356° F), and must be changed immediately when any obvious change of physical, chemical or sensory patterns, such as aroma and flavor, or intense production of foam and smoke. Discarded oils and fats must not be used again in food preparation areas. Discard date and name of the responsible crew member must be registered.

Ice production, handling, storage and transport must ensure protection against contamination.

Ice machines must be kept in perfect hygiene and repair conditions. Ice used as food be made from potable water and kept in hygienic and sanitary condition to prevent contamination.

The utensils that come into direct contact with ice must remain protected against contamination, and its use and storage must ensure the safety and quality of this product.

1.5.4. Food handlers

The vessel operator or crew member responsible for food operations on the vessel shall ensure compliance with all measures described below.

All food handlers must have the necessary skills and hygiene training commensurate with their duties.

Food handlers must be supervised and regularly trained in personal hygiene, in hygienic handling of food and foodborne diseases. These trainings must be registered and controlled, by ship operator or designated officer and these records must be available on board.

All people who access food production areas must meet the requirements of hygiene and health required for food handlers.

Waiters and maître, that enter food preparation areas, must also comply with the requirements of hygiene and health established for food handlers.

Food handlers must:

- take all practicable measures to ensure that nothing in the body or clothing may contaminate food;
- take all practicable measures to prevent unnecessary contact with ready to eat food,
- to guarantee personal hygiene and food safety, all food handlers follow some recommendations:
- take bath daily, keep teeth brushed and short and clean nails without enamel;
- not use necklaces, amulets, bracelets or ribbons, earrings, watch, rings, piercing among others during food preparation;
- do not use cloth or plastic bags to protect clothing;
- do not carry into the uniform: pens, pencils, lipsticks, brushes, cigarettes, lighters, watches, among others (service staff are allowed to carry pen or pencils);
- ensure cleaned clothing and apron, making changes whenever necessary;
- cover bandages and dressings on exposed parts of the body with a waterproof covering,
- keep clean and brushed hair, protected by nets or caps;
- shave (beard and mustache) in a daily basis;
- do not eat, sneeze, blow, cough, spit or smoke around food or food surfaces,
- wash hands whenever hands are likely to be a source of contamination (before handling food and after using the toilet, smoking, coughing, sneezing, eating, drinking or touching hair, scalp or body).

To keep hands and forearms clean, food handlers must wash hands often as follows:

1. Wet your hands and forearms with warm water.
2. Apply a generous amount of liquid soap
3. Rub your hands together for 20 seconds, including between fingers and back hands;
4. Rub your forearms;
5. Rinse your hands and forearms.
6. Dry your hands with a paper towel (made of paper not recycled).
7. Use the paper towel to turn off the faucet and open the door.
8. Throw the paper into the trash bin.

Brazilian Government does not require food handlers to use gloves or masks, and strongly recommends that to not use.

If using gloves, must be careful to avoid food contamination, using them only during continuous tasks and then discarding them. Gloves must be removed, discarded and replaced with a new pair before handling food and before working with ready to eat food after handling raw food. Gloves must be removed, discarded and replaced after using the toilet, smoking, coughing, sneezing, eating, drinking or touching the hair, scalp or body.

All food handlers must always use utensils to food handling. If not possible to use utensils, use of disposable gloves can be allowed especially in the following cases during handling of:

- ready-to-eat food, which already has suffered some heat treatment (e.g. cooked food, baked or fried);
- ready-to-eat food that will not be cooked;
- fruits and vegetables, which have been properly cleaned.

Get used to WASH YOUR HANDS SEVERAL TIMES A DAY!

And always before:

- enter the area of food preparation or storage;
- change your activity;
- food handling;
- touch sanitized utensils;

And always after:

- using the bathroom;
- coughing, sneezing;
- touching the nose, hair and other body parts;
- using mops, brooms, rags, cleaning materials;
- touch cash, cigarettes, pen, pencils, watches, etc.;
- smoking;
- to collect garbage and other waste;
- touch sacks, boxes, bins, bottles and shoes;
- any interruption of service;
- touch spoiled food.

During handling or any other operation, wash your hands several times.

In general, the personal habits of food handlers are very important to prevent food contamination.

Therefore, items listed below are not allowed inside the food areas where there is food, to prevent food contamination:

- talking, singing, whistling, coughing or sneezing over food;
- chewing gum, toothpicks, matches or similar;
- sucking candies, eat;
- taste food with bare hands or with the same utensil used to stir the food;
- blowing your nose, put your finger in the nose or ear, touching the hair or comb her hair;
- wipe the sweat with his hands, cloth or garment;
- handle money;
- smoking;
- touching doorknobs with dirty hands;
- touching covers of trash bins;
- make use of dirty utensils and equipment.

Note₁: When coughing or sneezing, protect your mouth with a paper towel or the forearm and never use your hands.

Note₂: The sweat must be dried well with paper towels. Then wash your hands.

Note₃: After washing hands, the antiseptics (which promotes the reduction of microorganisms) can be made with the application of solution or gel-based alcohol 70%.

Note₄: Rubber gloves must be used to protect the food handler in performing the following tasks:

- washing pots and pans;
- collecting and transporting garbage and other waste;
- cleaning of waste containers;
- Cleanliness of toilets and garbage areas;
- handling chemicals.

The ideal is to separate rubber gloves per each type of activity (e.g. those used in the cleaning of toilets must be different from those used in warewashing).

Note₅: Steel mesh gloves (cut gloves) are indicated as safety item for cutting raw meats, chicken, etc. For handling ready to eat grocery it is not indicated because of the difficulty of cleaning it. When extremely necessary in this activity it must be exclusive, properly cleaned, and if possible covered with disposable glove. After use, wash with detergent, rinse with water, sanitize by boiling in 15 minutes, dry and store in a suitable, clean and dry locker/place.

Note₆: The gloves (to avoid burnings) used for food handlers in the bakery must be kept clean and sanitized and be replaced whenever necessary.

1.5.5. Health of food handlers

Any problem related to food handlers health, such as injuries/bruises on the hands, nails or skin, or digestive tract diseases (e.g. diarrhea) or respiratory (e.g., running nose, coughing), must be reported to the medical staff, as these problems may lead to food contamination.

Food employees who have conditions or symptoms of boils, open sores, inflamed wounds, diarrhea, jaundice, fever, vomiting, sore throat with fever, running nose, cough shall report these conditions or symptoms to the vessel's medical staff and shall be restricted from working with exposed food, warewashing, clean equipment, utensils, table linens, etc. The only person who can remove this restriction is the vessel's physician or equivalent medical staff. The physician has to deliver a written approval for the person in charge of food operation to allow employee return to regular job.

A written or electronic record of both the work restriction and release from restriction shall be maintained on board for six months.

1.5.6. Handwashing and Toilet Facilities

Sufficient handwashing facilities shall be provided and conveniently located to be used for no other purpose than hand washing.

Each food preparation area, bar, warewashing area, and garbage-processing area shall have at least one handwashing facility located in it, and this facility shall be strategically placed to prevent cross contaminations.

Handwashing facilities shall be provided in or immediately adjacent to toilets or cloakrooms.

A handwashing facility shall be equipped to provide hot water and shall include a sink, liquid soap dispenser, single-use paper towels dispenser (non-recycled paper), and hands-free waste receptacles **that should be tightly covered**. *Anvisa Food Department asks us to keep this requirement.*

A sign stating "WASH HANDS OFTEN" or similar in a language that the food employees understand shall be posted over handwashing sinks. And drawings, figures or pictographic instructions of correct way of handwashing must be placed in a visible place to food handlers near from lavatories.

Toilet rooms for food handlers shall be provided and conveniently located. Toilet fixtures shall be kept clean and in good repair.

Signs shall be conspicuously posted on visible and convenient location, reading "WASH HANDS AFTER USING TOILET" in a language that the food employees understand.

Toilet rooms shall be completely enclosed and shall have tight-fitting, self-closing doors which shall be kept closed except during cleaning or maintenance. Easily cleanable waste receptacles, fitted with tight covers, shall be provided.

1.5.7. Solid waste management

It is important to characterize the waste stream and the amount of wastes produced in galleys and related areas in order to provide a basis for planning to prevent environmental contamination. People in charge of waste collection shall use personal protection equipment including rubber or nitrile gloves, face masks, protective goggles, safety boots and appropriate protective clothing.

The frequency of waste removal from food areas must be proportional to the volume of waste generated in each area.

Food preparation areas must have handsfree trash bins or containers, which must have plastic bags inside if used for food waste. Receptacles and wastehandling containers must be kept covered when not in continuous use and after they are filled.

All ships must be equipped with facilities (garbage room) for safe storage of food refuse. All food refuse must be received and stored in watertight, non-absorbent and easily cleaned containers, fitted with tight covers which be always closed.

These containers must be placed in waste storage air conditioned spaces, specifically constructed and used for this purpose. After each emptying, each container must be thoroughly scrubbed, washed, and disinfected to prevent odors and to avoid the attraction of rodents, flies and cockroaches. Containers must not be left uncovered except during the necessary clean up procedures.

1.6. SERVICE AREAS (RESTAURANTS AND DINNING ROOMS)

1.6.1. Facilities

All service areas of the vessel shall be kept clean and free of factors risks to health.

In Self Service system, food on display shall be protected from any contamination by the use of bar food guards.

Consumer self-service operations (hot or cold units) or buffet ready-to-eat foods shall be provided with suitable utensils or dispensing methods that protect the food from contamination. This system shall be monitored by crew members trained in food safety.

Food display equipment must be properly dimensioned, and be a proper state of cleanliness, repair and operation. The temperature of these equipments shall be regularly monitored and registered.

In self-service systems, cutlery available to consumers shall be entirely protected. ***The use of napkins was accepted by ANVISA Food Department.***

Service areas (restaurants, cafeteria, etc.) must be organized and maintained in proper hygienic and sanitary conditions. The equipment, furniture and fixtures available in these areas must be compatible with the activities and shall be kept clean and in good repair.

Dishes, glasses, cups, mugs, etc. shall be disposable or be properly cleaned and stored protected from dust, smokes, etc.

Condiments shall be protected from contaminations by being kept in their original dispensers or other containers that ensure their proper protection, preventing contamination.

Industrialized condiments and sauces must be maintained at all times at temperatures recommended by the manufacturer.

Industrialized mayonnaise, ketchup or mustard must be preferably offered in individual packages and should be kept under conditions as recommended by manufacturer.

Condiments and sauces produced on board that have ingredients like mayonnaise, **ketchup and mustard must be protected and secured at all times kept under refrigeration. Submitted to ANVISA Food Department ... waiting analysis.**

The ornaments and plants located in restaurants or cafeteria not be a source of food contamination.

The handling, assembling, exposure and service of food in outdoor areas (decks, pools, etc.) must meet the criteria of time, temperature, packaging, safety and hygiene as described in the specific chapter of this Guide. The facilities and equipment must also be appropriate to the type of food produced in those areas.

After being served to a consumer or after being placed on a buffet service line, food that is unused or returned by the consumer shall not be offered for human consumption over again, and must be discarded.

The utensils that come into direct contact with ice must remain protected against contamination, and its use and storage must ensure the safety and quality of this product.

Ice used as a medium for cooling the exterior surfaces of food such as fruits or seafood, canned beverages, etc. ice may not be used as food.

Packaged food may not be stored in direct contact with ice or water if the food package or wrapping allows the entry of water.

1.6.2. Temperatures and exposure time

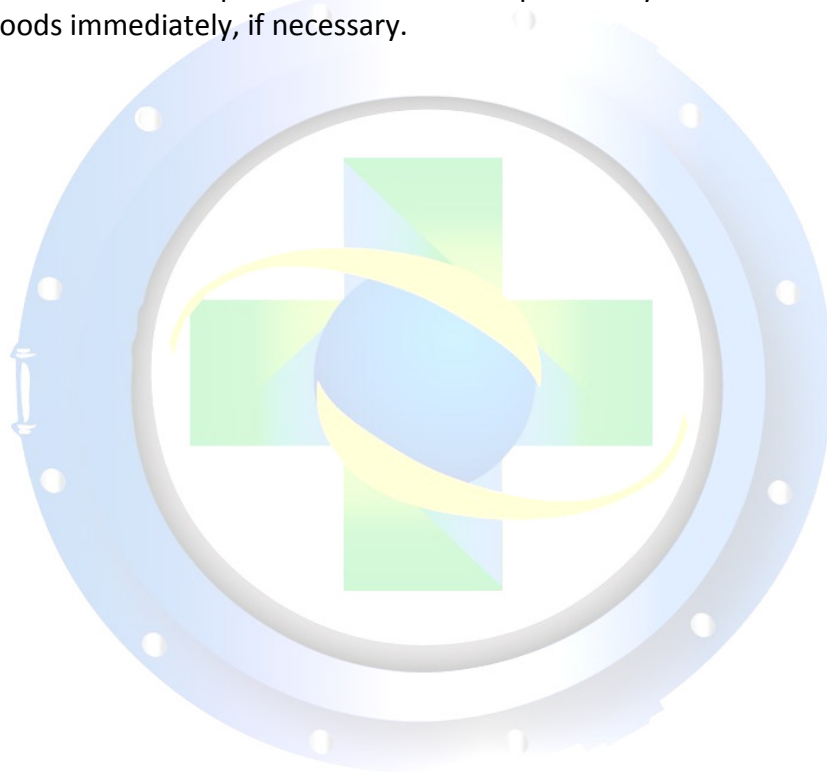
Temperatures (hot and refrigerated food) shall be monitored and recorded during all time of service, including date and time, and shall be available for review during all Brazilian season.

Food must be maintained throughout the period of service under proper conditions of time and temperature to ensure food safety:

(A) hot food above 60 ° C for up to 6 hours of service;

(B) refrigerated foods (salads, chopped fruits, drinks in their original packaging, cold puddings, buckler, mousses, sauces, etc.): below 5 ° C (can be accepted up to a maximum of 8 ° C).

Note: Foods outside of these ranges of temperature and time above shall be discarded. The person responsible for this sector must be trained and qualified to perform the verification of the food temperature whenever requested by the health authority and to discard foods immediately, if necessary.



2. POTABLE WATER

2.1. SOURCE

The vessel authorities shall ensure that the water intended for human consumption bunkered from the port or bunkering vehicle meets the standards for potable water required by the relevant federal sanitary legislation.

The vessel authorities shall request a copy of the most recent microbiologic report from each port/barge before starting the bunkering to verify that the water meets potable standards (a recent microbiological report shall mean that the date of the analysis is 30 days old or less from the date where the water sample was collected). Such report shall include an analysis for the presence of thermotolerant and total coliforms at a minimum.

A free halogen residual and pH rapid test shall be conducted before the bunkering process to establish the correct halogen dosage. The results of rapid tests shall be recorded and maintained onboard the vessel for 12 months, and shall be available to health authorities. At the time of bunkering, potable water shall contain at least 2.0 mg/L (ppm) free residual halogen and pH between 6 and 8.5.

Water samples collected and analyzed for the presence of coliforms may be substituted by port/service providers reports. This analysis shall be conducted according to a method approved by the Standard Methods for the Examination of Water and Wastewater. If a vessel bunkers water from the same port more than once per month only one test per month is required.

The records of potable water analysis shall be maintained onboard the vessel for 12 months and shall be available to health authorities at all times.

Water intended for human consumption may be produced onboard by any potable water system providing that the system does not operate in polluted areas, harbors, at anchor, etc.

2.2. POTABLE WATER SYSTEM

The potable water system layout shall be available in written or electronic form to health authority at all times.

Crew members in charge of the maintenance/operation of potable water system shall be responsible for the collection of water samples to verify microbiologic and physicochemical analysis.

Water stored at the main tank and intended for human consumption 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.

Free residual halogen monitoring shall be performed at least hourly during the bunkering, and performed at least once every 4 hours during the onboard production of potable water. The records of this monitoring shall be maintained onboard for 12 months and available to health authorities whenever requested.

2.2.1. Potable Water Tank(s)

Potable water tanks shall be labeled for use with the words "POTABLE WATER".

Water samples may be collected from the main bunker station during inspection for physicochemical analysis and microbiological examination.

Potable water tanks shall not share a common wall with the hull of the vessel or with tanks holding non-potable water or other liquids.

There should be no connections between potable water tanks and other piping systems.

All manufacturers' recommendations for maintenance of potable water tanks shall be followed. Documentation of the recommendations followed shall be available to the health authority at all times.

Potable water storage tanks shall be cleaned and disinfected in the following situations:

- 1) Before being placed in service;
- 2) Before to operation after repair;
- 3) Being subject to any contamination.

Cleaning and disinfection logs shall be maintained onboard the vessel for 12 months and shall be available to the health authority at all times.

Cleaning and disinfection activities shall be followed in accordance with the recommendations provided in the VSP Operations Manual:

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.

In an emergency, this contact time may be shortened to 1 hour by increasing free residual halogen to at least 200 mg/L (ppm) throughout the affected area.

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).

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) before placing the tank back into service.

2.2.2. Potable Water Pipes

Potable water pipes shall be in good operational and sanitary hygienic conditions, and free of potential sources of contamination. All potable water must be identified with colors as specified by International Standards Organization rules.

2.2.3. Quality and safety of potable water

Storage unit(s), piping systems and other components to supply potable water onboard the vessel and shall not be used for any other purpose.

All fresh water offered on board must be treated before human consumption.

Water provided onboard the vessel that is treated with chlorine-based products after disinfection must be regularly maintained at a minimum of 0.2 ppm and 2 ppm at a maximum in every water supply.

Other disinfectant or treatment methodology shall be used providing that the person responsible for the treatment system consider them as effective as the methods established by the relevant legislation regarding microbiological inactivation.

It is recommended that turbidity in all system remains below 5NTU (Turbidity Units).

All halogen devices must be installed and kept as recommended by manufacturer. The Maintenance Manual must be available on board.

Residual halogen monitoring shall be performed on a daily basis in several distribution points. Although electronic records are acceptable, regular manual recordings are recommended to identify and correct potential failures in the electronic record system. These monitoring records shall be maintained onboard the vessel for 12 months.

A minimum of four potable water samples per each 15 days shall be collected and analyzed for the presence of coliforms (thermotolerant and total). Sampling sites shall be different each month in order to obtain an accurate representation of the potable water distribution system.

Packages of halogen products must be labeled with minimum information as follows: name of halogen product, concentration, lot or batch (if applicable), expiration date

and name of manufacturer. The vessel shall keep technical data sheet or log (printed or electronic) of the halogen product specifications.

Halogen products must be kept in a cool and dry place that must be locked and exclusive place (chemical room is accepted). Halogen stock must be enough to the use during the cruise.

During a sanitary inspection the health authority in charge can randomly select the locations where water samples will be collected and analyzed.



3. RECREATIONAL WATER FACILITIES (RWF)

The quality of water used for recreation must meet the international standards, ensuring their safety, without harming the health and welfare of users.

The water used for recreation shall have the following physical characteristics:

- I - clarity such that the deepest part is seen clearly;
- II - free of floating materials and free of debris in the bottom.

The pools can be filled with sea water or potable water. The supply system of the pool shall have backflow preventers or other mechanism to avoid cross contamination of the drinking water system.

3.1. SEAWATER SWIMMING POOLS

Seawater swimming pools can only be supplied with seawater while the vessel is at least 12 nautical miles offshore. Flow-through seawater supply systems must be done to enable the renewal of water. If the pool is not drained before arriving in port, the seawater filling system shall be shut off 20 km (12 nautical miles) before reaching land and a recirculation system must be used with proper filtration and halogenation.

3.2. RECIRCULATING SWIMMING POOLS

The water in recirculating swimming pools must be filtered. Filters must be maintained and changed as defined by the manufacturer. The maintenance, changes and backwash operations shall be recorded (written or electronically) and it should be available on board for 12 (twelve) months. Flow rates, pH and turbidity of the recirculated water be monitored and adjusted as recommended by the manufacturer.

When submitted to chlorination, swimming pool water must contain a free residual chlorine content of at least 1.0 ppm and a maximum of 7.0 ppm.

The use of other disinfecting agent or other treatment method is admitted, provided that it has the same efficiency of microbial inactivation.

The halogenation system must be operated and maintained in satisfactory conditions, according to the manufacturer's guidelines.

The vessel shall provide (and use) a halogen test kit. Halogen free residual shall be checked every 4 hours during the operation of recirculation. A free halogen analyzer can be used to replace manual testing, but it must be calibrated daily. The records of halogenation and calibration must be kept on board for 12 (twelve) months.

It is recommended that the pH of pool water supplied with potable water remains between 7.2 and 7.8, when chlorination is used, and between 7.2 and 8.0, when bromine is used.

3.3. WHIRLPOOL SPA AND SPA POOL (OR SIMILAR HOT TUBS)

Whirlpool spa and spa pool (or similar) water shall be filtered. Filters must be maintained and changed as defined by the manufacturer. The maintenance, changes and backwash operations must be recorded (written or electronically) and it be available on board for 12 (twelve) months.

The operating manuals for all whirlpool spa and spa pool (including diagrams) must be maintained aboard the vessel in a location that is known by and is accessible to crew members who are responsible for operations and maintenance.

At the end of each day (1-hour before) whirlpool spa and spa pool (and similar hot tubs) water must be circulated and halogenated at least to free residual of 10 mg/L (ppm) – daily shock halogenation.

Whirlpool spa and spa pool (and similar hot tubs) shall maintain a free residual chlorine of ≥ 3.0 mg/L (ppm) and ≤ 10 mg/L (ppm), or a free residual bromine of ≥ 4.0 mg/L (ppm) and ≤ 10 mg/L (ppm).

The vessel shall provide (and use) a halogen test kit. Halogen free residual must be checked each hour during the operation. A free halogen analyzer can be used to replace manual testing, but it must be calibrated daily. The records of halogenation and calibration must be kept aboard for 12 (twelve) months.

It is recommended that the pH of water remains between 7.2 and 7.8.

Halogenation and filtration systems shall be operated and maintained in good repair in accordance with the manufacturer's recommendations.

The whirlpool spa water, including compensation tank, filter housing, and associated piping, must be changed every 72 hours, provided that the system is operated continuously and that the correct water chemistry levels are maintained during that period, including daily shock halogenation. Spa pool water must be changed as often as necessary to maintain proper water chemistry. The date and time of whirlpool spa and spa pool water changes must be recorded in the log.

3.4. RECOMMENDATIONS

Individual hot tubs (or similar) must be cleaned and disinfected after each use, and be maintained as recommended by manufacturer.

Whirlpool spa and spa pool (and similar hot tubs) have devices to control water temperature, so that it does not exceed 40 °C (104 °F).

Children with diaper or who do not have control of the sphincter must not use swimming pools, whirlpool spa and spa pool (and similar hot tubs).

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

4. AIR CONDITIONING

4.1. OPERATIONAL AND HYGIENIC SANITARY CONDITIONS

Those crew members responsible for air conditioning system on board must keep all parts of the system in good operational and hygienic conditions as follows.

Intake air openings must be maintained clean;

Air filters must be kept in good hygienic and work conditions;

Not disposable (permanent) filters shall be cleaned monthly. In “dirty” places, like smoking areas, filters must be checked more often and clean if necessary before 1 month interval.

Disposable filters shall be changed no later than 3 months or in accordance with the manufacturer's official written specification provided in a statement or manual/guide;

A/C ROOMS must be maintained clean and no objects, products, utensils, etc. should be stocked or stored at A/C ROOMS, and this area can not be shared with other systems, for example chlorine dosing units for pools.

A/C ROOMS must not present any leakage on condensing and cooling system. And all thermal isolation of ducts must be kept under proper conditions of repair and cleanliness;

Cleaning and disinfection procedures in Air Conditioning System (including A/C rooms cleaning) shall be made only with specific chemicals indicated for this kind of system (non-toxic, biodegradable, etc.). Crew member responsible must be available all protective equipment necessary to this activity.

Recommendation: All Public areas of the vessels should be maintained at room temperature between 23-26 °C, when occupied by travelers (crew or passengers).

4.2. CLEANING AND MAINTENANCE RECORDS

Maintain on board records of cleaning and maintenance procedures of air conditioning systems and make these records available upon request;

A list of the products used on cleaning procedures of air conditioning system AC UNITS shall be made available upon request;

Maintain on board records of manufacturer recommendations about time limits for safe use of filters (efficiency and classification) and make such records available upon request;

5. HOSPITAL

Each area of the hospital must be exclusive to the activity which is intended, without introducing foreign objects on the site. All hospital areas be maintained in good hygienic and sanitary conditions (clean, with proper light and ventilation systems, well organized furniture, fixtures and equipment; waterproof and smooth floor and walls without crevices/gaps, providing ease of cleaning and sanitizing and movement of professionals working in the hospital area.

The reception area must contain different schedule to medical care of crew and passengers, as well as handwashing facilities.

The records should be archived properly, to allow easy access to health care professionals, the ship's captain and the health authority, ensuring the confidentiality of information.

All patient records (files) include:

- Health history of crew members, including admission and routine exams, health events and days off, with the following information: event date, name, cabin number, signs or symptoms, drugs administered (dose, name and qualification of medical staff who administered it);

Note: Measles vaccination is **recommended** for the crew, because, in Brazil, measles is eradicated.

- Health history of passengers with the following information: event date, name, cabin number, signs or symptoms, drugs administered (dose, name and qualification of medical staff who administered it);
- Protocols of communicable diseases, with special attention to health alerts and work flow of notification.
- Records of waste sent to incineration (medical and pharmaceutical waste)

Other records that must be kept on board (if possible, in the hospital):

- Protocols of communicable diseases, with special attention to health alerts and work flow of notification.
- Records of calibration and maintenance dates of all equipment (each device must be labeled with expiration date of calibration);
- Records of waste sent to incineration (medical and pharmaceutical waste)
- Reports of microbiological and physical-chemical test for potable water of the hospital facilities.

The clinic area must have sufficient furniture, materials and equipment to guarantee medical care.

The emergency care unit (mobile support) must contain all items required for the immediate service to cardio-respiratory assistance (drugs and other equipment).

The emergency equipment (suction and intubation devices, catheters, and ventilator, defibrillator, monitor, etc.) must be easily accessible and in good repair condition.

Humidifiers, when filled with liquid, must contain the date of supply with maximum validity period of one (1) day.

The ends of the equipment that comes into contact with the patient (ends of mechanical ventilators, oxygen tubes, assembly for inhalations, endotracheal tubes, etc.) must be protected to prevent contamination.

Medicines and health products shall be stored in a safe place/locker (protected against humidity and dust), with adequate lighting.

The fractional drug packaging must contain information with the name of the drug / product, date of fractionation and expiration date.

The drugs and immunobiological medicines under refrigeration should be organized to facilitate the circulation of cold air between them and should be performed temperature control (maximum and minimum) three times a day with record in spreadsheets that must remain posted on the equipment or near to it. The refrigerator should be used exclusively for this purpose.

The central storage of medicines and health products shall be exclusive and maintained in good hygienic and sanitary conditions. Only medical staff must be allowed to access this storage room.

Medicines and health products shall be organized (preferentially for product class) and be maintained within the expiration date.

Fractionated medicines must be labeled with name, concentration, and expiration date.

Narcotics and psychotropic substances shall be stored in restricted safe location. This locker/room must be maintained closed and the keys must be kept under control of the master, doctor or nurse in charge;

Heat resistant materials submitted to sterilization (stainless steel material or other metal instruments placed in perforated metal tray or box, scissors, syringes, glass bottles, glass flasks, test tubes, among others) shall be sterilized and labeled with lifetime compatible with the technical standards of sterilization, packaging storage and correct use of health products. In addition, it should be noted:

- Monitoring must be performed by biological tests weekly or as recommended by the manufacturer;
- Thermosensitive tapes shall be used to ensure that the package passed by required temperature recommended by the manufacturer;
- Sterilized packs must contain dates of sterilization and expiration.
- All sterilized materials shall be stored and organized in specific, dry and protected location.

The hospital shall contain support facilities and equipment needed for patient care, and private toilet facilities, under appropriate conditions of use.

Cleaning and disinfection flowchart of the hospital be posted in visible locations.

In cases of death, the corpse shall be maintained at temperatures lower than 5° C (preferably between 0 and 5° C).



6. VECTORS AND RESERVOIRS

The IHR (2005) state that: “Conveyance operators must permanently keep conveyances for which they are responsible free of sources of infection or contamination, including vectors and reservoirs”. Then, all areas of the vessel must remain free of risk factors that provide shelter, food or breeding habitats for adult insects or other vectors and reservoirs of transmissible diseases and poisonous animals whose presence entails risks to the individual or public health.

In the same way, those responsible must maintain an effective control against the presence of adult insects or other vectors and reservoirs of transmissible diseases and poisonous animals.

Every ship must develop an Integrated Pest Management Plan (IPM) to define strategies for pest control and monitoring on board.

IPM must contain at least the following information:

- The identification and biological description of species under control;
- Identification of responsible officers in all operational areas of the ship;
- Description of techniques and operational procedures of control for each species including environmental management;
- Description of monitoring indicators;
- Description of the products used: common name, active ingredient, concentration, instruction of dilution and use, and target pest;
- A description of the equipment used;
- The frequency of each activity (control and monitoring) is performed for the operational areas of the ship (the schedule for periodic monitoring inspections, including some at night);
- Models of records used;
- Description of PPE used by applicators and the general security measures used during application of the products;
- The description of procedures and storage area;

IPM shall include procedures for passive surveillance, such as traps and other monitoring tools, as well as the location of each.

IPM must have an illustrative map showing the locations of all traps inside the ship or alternatively a list of all specific trap locations.

6.1. MONITORING AND CONTROL ACTIONS

The vessel must maintain measures and equipment to prevent entry of rodents, insects, etc. These devices must be constructed, installed and maintained to ensure their efficiency and effectiveness.

Sleeping quarters, mess rooms and dining rooms, indoor recreational areas, as well as all food spaces, must be effectively screened or protected especially when ships are in

areas where flies and mosquitoes are prevalent. Refuse stores must be screened (or protected with doors tightly closed) and inspected frequently to check for, and eliminate the breeding of flies or other vermin. Screens need to be kept in good repair.

6.2. PRODUCTS: LABELING, STORAGE, AND DILUTION

The packaging of products used to pest control must be properly and safely discarded, avoiding the contamination of man, animal and environment.

Insecticides or rodenticides formulations must contain only authorized active substances, as well as concentrations of use within the limits allowed;

All chemicals used in monitoring and pest control must be:

- labeled with the identification of active principles and expiration date;
- diluted as recommended by the manufacturer and in specific locations for this purpose (preferably in exclusive rooms). Dilution shall be performed by trained personnel that must use recommended PPE as described by the manufacturers;
- Written recommendations for accidental intoxications.

Insecticides and rodenticides must be kept in their original packages and if not possible all information described in the original package shall be available for responsible crew members.

Insecticides and rodenticides, and any poisonous substances, and equipment for their use must be stored in specific (and exclusive, if possible) lockers/rooms, with access control and away from accommodations. Further, such poisonous substances not be stored near galleys, food storage rooms, dishes and utensils, or tableware, linen and other equipment used for the handling and serving of food and drink. To prevent the accidental use of these poisons, such hazards must be kept in colored containers marked with the word "POISON".

7. SEWAGE

The discharge of sewage in the port seawater is prohibited, except when the ship has in operation an approved sewage treatment plant (IMO approval and with Sewage Pollution Prevention Certificate valid).

Vessels with approved sewage treatment plants (including valid sewage Pollution Prevention Certificate) can discharge in ports and anchorage, only if all service (maintenance valves for aeration and sedimentation tanks) and overboard valves are kept closed and sealed. At the port or anchoring the vessel shall provide sewage treatment system in good repair, operating and hygienic conditions with service valves closed, aeration, sedimentation and disinfection working properly, and sludge return without obstruction, as defined by the manufacturer. To allow the discharge of sewage in the aquatic environment, those responsible must verify if the results of installation tests are launched at the Sewage Pollution Prevention Certificate, at the moment of issuance. And additionally, the effluent resulting from the treatment must not produce visible floating solids, or discoloration, in the surrounding waters.

Sewage treatment plants installed on ships must be the same as described in the Sewage Pollution Prevention Certificate and may not be amended.

When the sewage system use liquid products for the disinfection process, it must guarantee the active ingredient described in the product label and promote the complete control or elimination of pathogenic microorganisms. Residual halogen used for disinfection in the sewage treatment must be monitored weekly or as defined by manufacturer.

The manufacturer's instructions book of the sewage system must be updated and available on board and must contain information regarding the type of treatment and all instructions of operation, cleaning and preventive maintenance needed for the correct discharge of sewage.

Sewage from safe holding tanks may be discharged to ports connections or to special barges or trucks. The design of treatment systems and waste holding tanks needs to be based on a suitable volume. And must have suitable overboard pipes and keep all overboard valves closed while in the port and anchorage area.

Comment: To deal with capacity of sewage (black water) and grey water holding tanks on ships, the recommendation 11/10 of Helsinki Convention should be used. On many ships there is a connection between sewage and grey water systems so that in the following there is also given a calculation scheme for the combined system.

	LITRE PER PERSON PER DAY	
	CONVENTIONAL SYSTEM	VACUUM SYSTEM
SEWAGE (BLACK WATER)	70	25
SEWAGE AND GREY WATER	230	185

Adapted from HELCOM RECOMMENDATION 11/10

8. SOLID WASTE (GARBAGE)

The management of solid waste aboard must comply with Good Pratiques ensuring that crew members are involved in the design, construction, planning and operational flow to prevent environmental and health problems during activities.

Classification of solid waste in Brazil:

In order to facilitate the planning and management of solid waste, solid wastes in Brazil are classified as follows:

- Group A - Infectious
- Group B - Chemical
- Group C - Radioactive
- Group D - Non-Hazardous
- Group E – Sharps

Note that for each waste group the management plan must be compatible with the place and amount of garbage produced, and flow (way) of garbage until disposal or treatment.

Those responsible for managing the waste must wear protective equipment including nitrile or rubber gloves, masks, goggles, safety boots and suitable protective clothing.

Waste management must be coordinated by a crew member who also must prepare a Garbage Management Plan. This Plan is essential to prepare a garbage management plan of the vessel in order to improve the planning and management safety of this activity and to characterize the volume of waste produced in each area, in order to prevent potential environmental contamination.

It is important to note that Brazil does not require color identification or specific symbols for the different solid waste generated on board, but rather requires that the vessel defines a symbology set (or color) to different groups of waste. This symbology or criteria must be described in the Garbage Management Plan and it must be widely understood by all crew members involved.

8.1. REVERSE LOGISTICS

Garbage Management on board must be done in a way to comply with Solid Wastes Law (Brazilian Solid Wastes, Law 12305 of August 2, 2010). The reverse logistics is the instrument of economic and social development characterized by a set of actions, procedures and means to facilitate the collection and recovery of solid waste from all consumers, for reuse in their cycle or other productive cycles, or other disposition environmentally appropriate end.

In this logic the cruise ships that buy products (described below) in Brazil must make the return of products and packages, after use, to dealers or distributors. The packages and products that require this logistic are:

I - pesticides, their waste and packaging as well as other products whose packaging after use, hazardous waste, subject to the rules for hazardous waste management provided by law or regulation;

II - batteries;

III - tires;

IV - lubricating oil, waste materials and packaging;

V - fluorescent lamps, sodium vapor and mercury and mixed lighting;

VI - consumer electronics and its components.

8.2. MANAGEMENT STAGES

8.2.1. Generation and segregation

The places where the waste is produced must contain containers for each type of garbage as follows: paper/cardboard, plastic, glass, metal, wood, hazardous waste, medical waste and food waste. The responsible crew member must make a diagnosis of all areas and types of garbage generated for disposal of containers compatible with reality.

Chemical garbage (classified in Brazil as Group B) has as examples: oil, containers of disinfectants, paints, solvents, dirty rags, unused medicines, lamps, batteries, tires and more. The chemical garbage must be separated from other waste, and send for authorized companies that respect requirements for this kind of waste. Preferably this garbage must be stored for return to the manufacturer of the product - reverse logistics. The management of waste oil also must comply with that described in the MARPOL Convention.

Potentially infectious garbage in Brazil is classified as group A. Examples: soiled toilet paper, garbage generated by ill person (crew or passengers) and from vomiting/diarrhea, cleaning procedures, and from medical waste (except office garbage that is considered non-hazardous), etc.

Group A garbage may change if a public health emergency of international importance is ordered by World Health Organization - WHO and stricter measures regarding waste management can be adopted.

8.2.2. Packaging

The packaging of garbage must be done according to the volume, the physical state and withdrawal flow.

All containers of solid waste shall be done of washable, resistant - to breakage, leakage, puncture and fall - material, with cover and compatible size.

The containers of administrative offices do not need cover, except when used also for food waste.

In places where there is potential risk of cross contamination, such as kitchens and food handling areas, health-care settings, all containers be fitted with **lids** with no manual activation.

To minimize environmental impact the use of plastic bags should not be encouraged and alternative solutions should be applied.

The infectious garbage (group A) and sharp waste (group E) must be identified in the entire chain of management with universal symbol for infectious substances.

8.2.3. Storage

The storage area of garbage (garbage room and storage areas) must be located in a place that minimizes cross contamination with clean areas (potable water tank, food areas – storage, kitchens, corridors, etc. - and hospital).

Preferably, the garbage storage area must facilitate garbage removal. These areas shall be equipped with facilities for safe storage of food waste/refuse and must be refrigerated.

The garbage storage area must:

- I. be exclusive for this purpose, identified, easily accessible, scaled in accordance with the volume of garbage produced, and size and number of containers. This area can be shared among the different types of waste respecting their particularities;
- II. be organized with physical separation for each type of garbage;
- III. be restricted to access of authorized persons only;
- IV. be maintained with smooth, washable and resistant floor;
- V. be maintained with smooth and washable walls
- VI. be protected from sun and rain;
- VII. be provided with walls and baseboards with rounded corners;
- VIII. have its liquid waste drained directed to the sewage system (if biological treatment is used do not use chemicals in cleaning) or holding tank;
- IX. be illuminated with adequate intensity;
- X. presents water facility to clean the area;
- XI. presents exhaustion system protected with screen against vectors;
- XII. presents garbage containers, made of durable, smooth, washable and easy to clean material, provided with cover;
- XII. presents door tightly fitted and a mechanical barrier at the bottom against pests if necessary;
- XIII. presents exclusive lockers for safekeeping and maintenance of PPE (provided for cleaning and disinfection procedures), and sink with eyewash and shower for hygiene of workers who operate in this activity;

NOTE 1: For storage of chemical garbage (group B), the garbage room shall have an appropriately rated fire protection system;

NOTE 2: The garbage room and containers must be cleaned and disinfected after each operation of garbage collection or transfer, or at the discretion of the competent health authority, in order to maintain good sanitary conditions.

NOTE 3: The liquid waste (slurry and waste from cleaning procedures) from the storage area shall follow the guidelines for release of these effluents established by the environmental and sanitation authorities and international standards.

8.2.4. Treatment

The treatment is composed of a series of procedures to reduce the quantity or the pollution potential of garbage. Garbage treatment is important to avoid prohibited disposal of some types of garbage by turning it into inert or biologically stable forms.

Biological hazardous garbage (group A and E) may not be discharged into the environment without prior treatment to ensure the elimination of the hazard characteristics of garbage, necessary for preservation of natural resources and the compliance with environmental and health standards. So, when the vessel request garbage removal in ports the master must choose companies that meet these requirements.

Solid waste belonging to group "A" and "E" can not be recycled, reused or recycled. The residues from group B must go through the process of reuse, recycling, or appropriate treatment and its packaging and materials contaminated with chemicals must be treated the same way as the substance that has contaminated.

The residues of group D can be reused or recycled and do not require treatment prior to disposal.

For groups of waste that must be treated before discharged into the environment, the technology to be adopted must address the premise of promoting the reduction or eliminating the biological risk and to ensure appropriate mitigation of toxicity of compounds treated.

8.2.5. Discharge in ports

The 70s was characterized by regulations and environmental control. After the United Nations Conference on the Human Environment held in Stockholm in 1972, all nations have begun to structure their bodies and establish their environmental laws for the control of environmental pollution. In Brazil in 1981 comes the National Environmental Policy regulated by Law 6938 establishing the "polluter pays" concept. This concept seeks to allocate the social costs to repair the damage, the prevention and suppression costs of pollution caused by the polluter. This law also pointed that polluter is directly or indirectly guilty by activity causing environmental degradation.

It is important to know this law when the removal of solid waste in Brazil. The vessel should be aware of where the waste will be sent, so it is recommended that vessel's operator require from garbage carrier to prove that the landfill is legal - Environmental Operating License must be valid - and also prove that all garbage was delivered properly by checking the Certificate of Delivery issued by authorized landfills.

At the time of garbage discharge in ports all vessels must declare the types of garbage to be taken especially when dealing with batteries, light bulbs, tires, paints, solvents and others. When discharging hazardous garbage in ports all vessels must do an assessment if the State is able to receive hazardous garbage prior to withdrawal.

Reduce

The reduction of garbage is considered the best way to accomplish a good garbage management.

The search for alternatives to reduce is encouraged to achieve the Good Pratiques on garbage management.

Reuse and Recycle

The management actions shall promote strategies in priority order as follows: producing no garbage, reduce, reuse, and recycling garbage. The advantages to comply with these perspectives are:

- preservation of natural resources;
- energy savings;
- financial savings for discharge;
- awareness of environmental issues.

So it is essential to plan all activities to make it possible to improve control measures throughout the garbage management stages.

9. HOUSEKEEPING

CHAPTER UNDER RECOMMENDATION IN 2012 SEASON

All housekeeping procedures must be performed in a way to avoid cross contaminations between clean and dirty areas. All clean procedures must be registered by crew responsible.

All equipment/material used during cleaning and disinfection of a toilet bowl must be changed (or disinfected) before the use in another toilets. All equipment used in cabins must be different from that used on toilets.

If not disposable, all gloves used by housekeeping staff must be changed (or disinfected) between uses of different cabins

All showers head must be disinfected each 6 months with an appropriate halogen-based disinfectant at 10 ppm for 60 minutes, or an equivalent ct value.

All chemical products shall be stored and diluted in an exclusive room/locker and packaging – it includes bottles with diluted an ready to use products - must always be labeled.

All chemical rooms must be organized, clean and exclusive for this kind of products/material.

All chemical products must have technical data information: indication of use, bactericide or virucidal use, instructions of use and dilution, active products, recommended concentrations, safety warnings and personal protective equipment recommended.

All collective toilets (restrooms) must be kept clean during all cruise. And must be provided with liquid soap, paper towel and trash bins.

Vessels that have restrooms with trash bins for collection of dirty toilet paper these must have lid and plastic bags inside.

All crew members must have proper personal protective equipment available for use.

All vessels must have a protocol for cleaning and disinfection of fecal/vomit accidents and also a specific trained team.

10. ANNEXES

Annex I – Medical Book (Model)

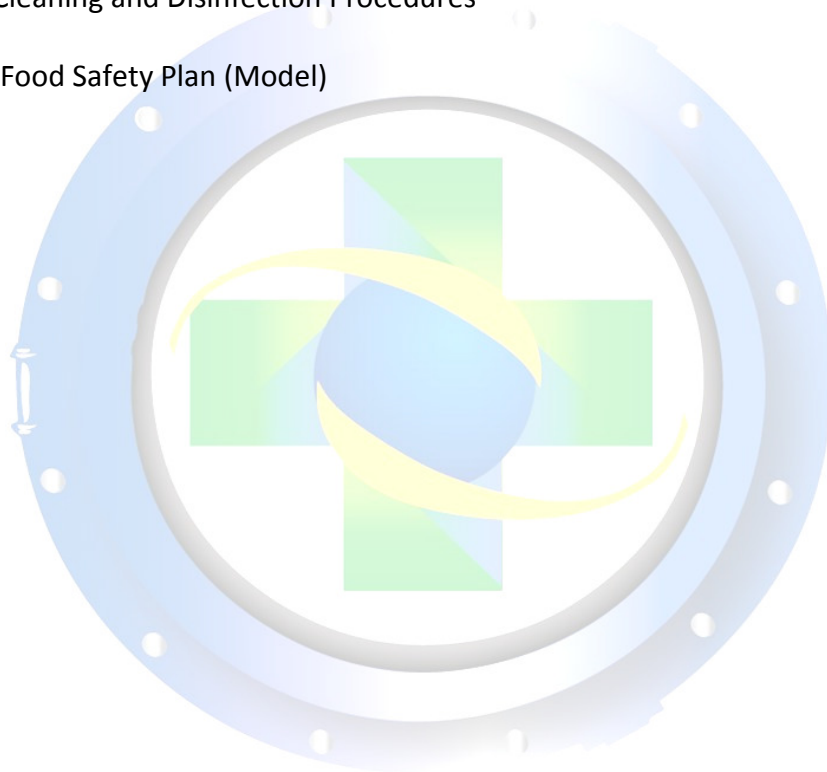
Annex II - Diseases of Compulsory Notification: list of diseases, damages and public health events adopted in Brazilian Laws in accordance with International Health Regulation (2005).

Annex III – Epidemiological Questionnaire

Annex IV – Pre-boarding Questionnaire

Annex V – Cleaning and Disinfection Procedures

Annex VI – Food Safety Plan (Model)



11. BIBLIOGRAPHY

Reserved.

