

International Medical Guide for Ships

3rd edition

EXTRACTS FROM THE SHIPS MEDICAL GUIDE

CHAPTER 29 (ENVIRONMENTAL CONTROL AND HYGIENE)

&

CHAPTER 32 (IHR 2005 – PROCEDURES FOR SHIPPING)

Preface

Seafaring has always been a dangerous occupation. Long voyages, extreme weather conditions, illnesses and accidents can take a heavy toll on the health of crew members. Not only are they exposed to greater risk, seafarers are also isolated from the usual sources of medical care and assistance available to people on shore.

WHO has consistently strived to improve the health of people at their place of work. When people also live in their work environment – as seafarers must – they face particular risks to their health. Practical guidance is essential for those who must provide assistance when seafarers fall ill or are injured. Since its first publication by WHO in 1967, the *International Medical Guide for Ships* has been the standard source of such guidance.

The second edition, written in 1988, was translated into more than 30 languages, and has been used in tens of thousands of ships. This, the third edition, contains fully updated recommendations aimed to promote and protect the health of seafarers. This edition is also consistent with the latest revisions of both the *WHO Model List of Essential Medicines* and the *International Health Regulations (2005)*.

The International Labour Organization (ILO) *Maritime Labour Convention 2006* stipulates that all ships shall carry a medicine chest, medical equipment and a medical guide. The *International Medical Guide for Ships* supports a main principle of that Convention: to ensure that seafarers are given health protection and medical care as comparable as possible to that which is generally available to workers ashore, including prompt access to the necessary medicines, medical equipment and facilities for diagnosis and treatment and to medical information and expertise.

The Convention states that ships carrying 100 or more persons and ordinarily engaged on international voyages of more than three days' duration shall carry a qualified medical doctor who is responsible for providing medical care. Ships which do not carry a medical doctor shall be required to have either at least one seafarer on board who is in charge of medical care and administering medicine as part of their regular duties or at least one seafarer on board competent to provide medical first aid. Persons in charge of medical care on board who are not medical doctors shall have satisfactorily completed training in medical care that meets the requirements of the *International Convention on Standards of Training, Certification and Watchkeeping for Seafarers*. The *International Medical Guide for Ships* is a standard reference for these training courses, and is designed for use by all crew members charged with providing medical care on board.

The *ILO Maritime Labour Convention 2006* stipulates that the competent authority shall ensure by a prearranged system that medical advice by radio or satellite communication to ships at sea is available 24 hours a day – the *International Medical Guide for Ships* explains when it is essential to seek such advice.

By carrying this guide on board ships, and following its instructions, countries can both fulfill their obligations under the terms of the *Maritime Labour Convention 2006*, and ensure the best possible health outcomes for their seafaring population. WHO is pleased to be able to contribute to this goal by presenting the third edition of the *International Medical Guide for Ships*.

Maria Neira

Director, Department of Protection of the Human Environment

— Environmental control and hygiene —

Environmental controls are concerned with the climatic, physical, and biological factors that act on an individual and on the community.

A seafarer's health and survival depend mainly on:

- personal efforts to maintain optimum physical and mental efficiency;
- the organization of the physical facilities and the supplies needed to maintain optimum efficiency;
- the efforts of other personnel, ashore and afloat, to create and maintain conditions conducive to health.

A give-and-take attitude is particularly important in maintaining good environmental sanitation on board ship. Proper sanitation is impossible unless each crew member cooperates. The ship's master should ensure good sanitary conditions on board through periodic inspections, and compliance with the guidance given in the most recent edition of the *Guide to Ship Sanitation*.

VENTILATION

Adequate ventilation in living spaces and food stores is important for the health of all on board ship. This is often achieved by a recirculating air-conditioning system. As it is obviously undesirable that the air from a room occupied by a person with an infectious disease should be recirculated, purpose-built ships' hospitals have separate ventilation systems. However, when a person with an infection has to occupy a cabin, steps should be taken to prevent contaminated air from recirculating. For example, a porthole or external door not subject to an inflow of air should be opened, wherever possible, to remove the contaminated air.

For effective ventilation, there must be:

- an adequate flow of clean air with sufficient oxygen content;
- controlled humidity to prevent sweating and mould growth;
- controlled temperatures to make the atmosphere comfortable.

Modern vessels use ventilation and forced air to create conditions suitable for working on board.

Old ships still in service may have cowl ventilators, which are not very effective in the tropics. However, judicious use of all openings and efficient electric fans can achieve some measure of comfort.

Ships built for service in temperate climates need to improve their air supply system if they are to be used for tropical runs.

A common hazard aboard ship is the accumulation of gases in holds, bunkers, paint lockers, tanks, and other confined areas (see Chapter 11, *Poisoning*). Such gases may be poisonous or they may displace oxygen, and crew members entering an enclosed space may become ill or die of asphyxia.

Among common toxic gases are carbon monoxide, carbon dioxide, ammonia, chlorine, hydrogen sulphide, and petroleum gases. These and other gases are found in varying combinations in:

- shipboard fires;
- empty oil, chemical, and storage tanks;

- bilges:
 - skin tanks
 - certain cargo holds, such as those containing products of plant origin, such as:
 - › linseed cakes
 - › resin
 - › tobacco.

Poisonous gases or fumes may be formed from:

- decomposing residues in emptied tanks that have contained:
 - chemicals
 - petroleum
 - whale-oil
 - cargoes of hides that have become moist and have fermented;
- enclosed freshly painted compartments or tanks.

Mechanical refrigeration systems are potentially dangerous owing to the risk of leakage into enclosed spaces of ammonia, Freon, or other refrigerants. Cyanide or other gases used to fumigate ships present a serious hazard during fumigation and also after fumigation until the fumigated areas have been properly aired.

In all cases, safety depends on proper ventilation and proper individual precautions. When compartments or tanks must be entered for cleaning or other purposes, the deck officer and/or chief engineer must ensure that the area has been ventilated thoroughly, that all explosive gases have been vented, and that the oxygen supply is adequate. In addition, the first person to enter the area must wear a lifeline to be used in the event of malaise or illness and the work crew should be checked continuously during the first half-hour after entering the area. Proper canister-type oxygen gas masks should be available if a rescue operation becomes necessary. Frequent training demonstrations and emergency drills in the use of rescue and mask equipment should be organized for all ship's personnel.

LIGHTING

Without good lighting on board ship:

- fatigue and eyestrain develop rapidly
- work performance is reduced
- the risk of accidents increases
- morale deteriorates.

Good lighting is particularly important in:

- the engine room
- galley (ship's kitchen)
- chartroom
- companion-ways
- ladder-wells
- pantry
- scullery
- head.

FOOD HYGIENE

The ship's master should monitor the health of crew handling food and make regular and unscheduled inspections of areas used for the storage, preparation, and serving of food and of any self-dispensing food units aboard ship.

Food-handlers

The ship's master must ensure that all food-handlers aboard have proper health certification.

Applicants for food-handling work should undergo a pre-recruitment medical examination and a professional assessment should be made of their clinical history. Only those who are free from infection, with or without symptoms, should be hired. Food-handlers must report any conditions likely to present a risk of food contamination.

Persons carrying an organism that can spread through food or water should not be employed in food preparation or food-handling. See Chapter 26, *Nursing care and medical procedures* for guidance on isolation.

Food-handlers should be kept under regular surveillance for such infections.

Staff should be excluded from food-handling until given medical clearance to return to work if they:

- have wounds or sores that cannot be covered by a waterproof dressing;
- are suffering from a gastrointestinal infection;
- are suffering from any other condition likely to cause the contamination of food or of surfaces coming into contact with food.

Physical examinations for food service personnel are carried out in major ports by the medical department of the shipping company, the city health department, or any other suitable facility designated by the company, union, or country.

All food-handlers should receive basic instruction in hygiene and its application to:

- their work;
- company regulations and procedures;
- health requirements;
- use of equipment;
- use of protective clothing;
- the code of practice in:
 - handling food
 - reporting of sickness
 - personal hygiene
 - general standards of hygiene in working areas.

All food-handlers must:

- pay scrupulous attention to cleanliness of body and clothing;
- wear clothing designed for food service areas and do so only for food-handling work;
- have this clothing laundered regularly and wear it only during working hours.

Food service facilities

The surfaces of all decks, bulkheads, and deckheads close to the area where food is processed, served, and stored should be:

- corrosion-free
- smooth
- easy to clean.

All surfaces coming into contact with food should be of material that is:

- corrosion-resistant
- non-toxic
- non-absorbent
- smooth
- durable
- easy to clean.

Cooking utensils and equipment should be kept in a place where they can be used safely and efficiently and should not be made of potentially toxic metals, such as:

- cadmium
- lead
- zinc
- antimony.

Proper plumbing equipment in food service areas is mandatory. Only potable water should be piped into such areas, although non-potable water may be piped to garbage-grinder eductors. Food service equipment and areas should be adequately drained and the drains protected from backflow of waste matter.

The chief steward and the chief engineer must make regular sanitary inspections to ensure that these recommendations are implemented.

Food storage

NON-REFRIGERATED ITEMS

Non-refrigerated foods comprise bulk items and broken or lot items. The bulk items are boxed, bagged, or canned, must be kept free of poisons and contaminants, must be destroyed if infected or outdated, and must be stored in an area that is:

- raised at least 15 cm above the level of the deck, so as to facilitate cleaning
- accessible to inspection
- readily accessible for use
- kept clear of all cleansing or chemical agents
- locked when not in use
- used only for food items
- protected from rodent and insect contamination
- cool
- dry
- not liable to condensation
- not exposed to waste water.

Foods taken from the dry storage room to the day stores where they are unpacked must be protected from contamination.

After being loaded aboard ship, **boxed foods** should be:

- used quickly to minimize vermin infestation
- dated
- never left in storage.

Non-refrigerated **bulk items**, such as cereals, sugar, and vegetables, are extremely susceptible to contamination and to insect and rodent infestation. They must be protected by storage in easily cleaned, vermin-proof containers or bins.

Non-refrigerated **canned or bottled items** are usually stored in boxes or crates. They are best protected by:

- maintaining a rotating inventory
- keeping the units dry and cool
- eliminating damaged or distorted cans or tins.

Corrugated paper boxes should be emptied and removed from the ship as soon as possible, as they are apt to harbour insects.

REFRIGERATED ITEMS

The same basic requirements apply to the storage of refrigerated items. However, refrigerated storage is more confined and specific temperatures must be maintained.

Refrigerated foods fall into two general groups: frozen foods and cooled foods.

Frozen foods must be kept at between -18°C and -23°C from time of freezing until time of preparation. Under these conditions, food retains its normal taste and appearance and has a shelf-life of one to six months. Once thawed, such food must be used immediately and not re-frozen under any circumstances. Once food is thawed, it rapidly deteriorates and may become dangerous as a result of bacterial action. Frozen food is usually stored in packaged units. Once a package is opened, its contents must be wrapped, kept frozen in the day stores, and used at the earliest opportunity.

Cooled food items most often kept in storage include:

- fresh fruits
- vegetables
- processed and cooked meat products
- foods prepared for rapid use.

These foods, as well as leftovers, should be kept covered and stored at between 0°C and 7°C , depending on the product.

Freezer and cooler compartments should have accurate, adjustable thermostats for temperature control. Thermometers should be easily visible to persons working in passageways serving the refrigerated spaces and on the engineer's control panel.

In storage areas for cooled foods, humidity ranges from moderate to high. Cooled foods, properly handled, have a storage life of one day to four months, depending on the item. Leftover food is considered to have a shelf-life of not more than 48 hours because of the possibility of contamination.

Both frozen and cooled foods keep better when the refrigeration unit is:

- properly drained
- kept clean
- free of:
 - ice
 - frost
 - food spillage
 - residue
 - fungus
 - slime.

To maintain freezer efficiency, remove frost or ice before it reaches 5 mm in thickness.

When defrosting, wash the freezer with steam or heavily chlorinated, warm, soapy water to remove slime, dirt, grease, and fungus. Shelves, hooks, and grids should be removed and washed with a warm detergent solution, then steamed down, rinsed in hot water, and, if possible, sun-dried or heat-dried. The refrigerator decks should be cleaned and scrubbed with a hot detergent solution and then rinsed.

After cleaning, the refrigerator should be loaded so that stores are placed neatly, with no overloading, and separated to allow free circulation of air. Foods to be refrigerated should be stored in shallow metal pans or plastic containers covered with wax paper, plastic, or aluminium foil.

The chief steward must ensure the cleanliness of the storage areas and food storage equipment and the chief engineer must ensure the effective functioning of these units.

The galley (ship's kitchen)

The galley should be equipped, illuminated, and maintained in such a way as to ensure good sanitation. The equipment should be made of corrosion-resistant, non-toxic materials that are easy to clean. All galley areas, especially the cooking areas, should be protected against fire, easy to clean, and capable of being rapidly emptied of smoke, steam, odours, and gases.

Waste, particularly food scraps, should be kept in sturdy, tightly covered garbage cans.

Where possible, all galley equipment and utensils should be fixed in place. Non-fixed utensils should be hung or stored to avoid loss, damage, or injury when the ship rolls.

Foodstuffs, supplies, cookware, crockery, and utensils should be thoroughly cleaned after each use and stored in containers that can be secured when the contents are not in use.

Most raw meat is contaminated with microbes, which are destroyed by cooking and therefore do not cause disease. Undercooking can leave microbes alive. Meat should be cooked to a final temperature of at least 65 °C in the centre of the meat.

Cooked food can be recontaminated if it is placed on surfaces that have been used for preparing raw food. For this reason, utensils and chopping boards used to prepare raw food should be washed in hot soapy water after use.

Contaminated food, whether cooked or uncooked, is likely to cause disease if allowed to stand at room temperature for some time before being eaten. Some microbes produce toxins that are not destroyed by heat, so that even vigorous reheating of cooked food does not

render the food safe. Cooked food that is not be eaten immediately, and leftovers, should, therefore be, refrigerated promptly and uncooked food should be prepared immediately before consumption.

Toilet and washing facilities

Adequate toilet facilities should be available for food-handlers (or for all crew in small vessels) near areas where food is prepared.

If possible, toilets should not open directly into areas where food is prepared, stored, or served. Where they do, the doors should be tight-fitting and self-closing. Wherever possible, there should be a ventilated space between the toilets and areas where there is food.

Adequate hand-washing facilities should be provided within or adjacent to toilets and should include:

- a single outlet for dispensing mixed (hot and cold) water;
- a single-service dispenser of paper or cloth towels;
- a drying device;
- soap, detergent, or alcohol-based gels;
- a sign over the basin reading:

WASH HANDS AFTER USING TOILET

WASH THE BASIN BEFORE AND AFTER USE

Signs urging personnel to wash their hands after using the toilet should also be conspicuously posted on the bulkhead adjacent to the toilet door.

Where a common washbasin serves both a food-handling space and a toilet for food-handlers, a sign should be posted above it reading

WASH HANDS OFTEN—WASH THE BASIN BEFORE AND AFTER USE

On ships where hand-washing facilities exist in a stateroom for food service employees and are easily accessible from the food-handling areas, additional facilities are not required in the food-handling areas. In such cases, individual cloth towels for food-handlers are acceptable.

Scullery sinks, slop sinks, laundry tubs, dish-washing sinks, and similar facilities should not be used for hand-washing.

Non-potable wash-water (see section below, *Liquid transport and potable water*) may be used for the hot water supply to washbasins, provided that it is heated to a temperature of 77 °C. Only potable water should be used for the cold water supply to washbasins.

LIQUID TRANSPORT AND POTABLE WATER

LIQUID TRANSPORT SYSTEMS

Special piping systems for ships include:

- the bilge system, which collects drainage that must be pumped overboard;
- the clean ballast system, which maintains the proper trim, stability, and immersion of the vessel;

- the fuel oil and oily ballast system, which stores and transfers clean oil to the ship's fuel system and also replaces used oil with sea water as part of the ballast system;
- the fire system, which supplies water under pressure to the ship's fire stations and to the deck and anchor wash areas;
- the sanitary system, which supplies water to the heads and other sanitary fixtures;
- the wash-water system, which supplies fresh water from skin and/or peak tanks:
 - the wash-water system must be independent of all other piping systems and its outlets should be labelled NOT FIT TO DRINK;
- the drinking-water system, which supplies potable water to drinking-fountains and to washing and culinary units:
 - the drinking-water system must be protected, and isolated from all other systems.

Potable water sources

The term **potable water** covers water used:

- for drinking
- for cooking
- for washing utensils used for cooking and eating
- in the ship's hospital.

To be potable, water should be free from pathogenic organisms and harmful chemicals. Its quality should comply with WHO guidelines, especially those relating to microbes (*Guidelines for drinking-water quality, Vol. 1. Recommendations*, 3rd ed. Geneva, World Health Organization, 2004).

The handling of water must be rigidly controlled from source to consumer to avoid contamination.

Potable water on board ship is derived either from distillation or from natural sources. Distilled water is either fresh or comes from salt water that has been converted to steam and back to water. It is relatively free from impurities but has a flat taste. Natural water, or "shore water", is usually obtained from wells, springs, or freshwater sources ashore. It usually has to be treated, either ashore or afloat, to protect the health of the crew.

Potable water transport system

The water system of a port city is the usual source of potable water for ships. It is made available to a ship either through watering-points at dockside or from water-boats.

Each vessel should carry a sufficient length of special hose to load its potable water. This hose should be kept in a storage cabinet labelled POTABLE WATER HOSE ONLY and not used for any other purpose.

A deck officer should be responsible for the cleanliness and safety of a ship's filling hose and its extremities, as well as the connections of dockside, water-boat, or shipside filling lines. These connections – outlet and inlet – must be at least 40 cm above the dock, water-boat deck, and ship's deck, and housed with a proper fitting. Each watering-point connection must be labelled POTABLE WATER FILLING.

Potable water should be transported from storage areas to dispensing units through colour-coded, non-cross-connected pipes made of safe metals or plastic. All potable water outlets must be protected from back-siphonage by an air-gap or approved vacuum-breaker.

Potable water storage

To avoid contamination, a potable water tank should share no partitions with tanks containing non-potable liquids, including skin tanks. The potable water tank should be labelled POTABLE WATER and be accessible through a watertight, preferably side-mounted, manhole. The potable water tank must:

- have an overflow and relief valve or vent;
- be completely drainable from a bottom drain;
- be able to withstand pressure;
- have water-level gauges or petcocks;
- be emptied periodically for inspection and maintenance and then thoroughly scrubbed and flushed out; and the whole potable water system be disinfected with chlorine (see section below, *Disinfection of potable water*);
- be entered only by personnel wearing clean clothing and footwear and not suffering from a skin infection, diarrhoea, or a communicable disease.

Taking water on board

✓ What to do

- Remember that however bright, clear, and sparkling water may be, it could easily contain disease organisms or harmful minerals.
- If you plan to take water for drinking from a new and/or doubtful source, consult the company agents about whether the water is likely to contain germs or harmful minerals.
- If you decide that the source is acceptable, check that the potable water storage tanks on board are in order.
- Check that the delivery cocks on shore and the receiving point on board have been properly cleaned.
- Examine the hose to ensure that it is clean, in good working order, and free from leaks (germs can enter through leaks in the hose).
- Ensure that the ends of the hose do not drag across the quay, fall into the sea, or trail across your deck.
- If you suspect that the water you have taken on board might be contaminated with disease organisms, disinfect it as described below under, *Disinfection of potable water*.

Disinfection of potable water

To disinfect water with chlorine effectively:

- use a chlorination unit in tandem with a distillation unit to ensure that drinking water is of acceptable hygienic quality;
- chlorinate the whole system after the tanks have been opened up and cleaned or after possible contamination of the water;
- filter the water carefully before chlorination to ensure that it is free from pathogenic protozoa (including *Cryptosporidium*) and helminths (worms), which are more resistant to chlorine disinfection than bacteria or viruses;

- ensure that water turbidity is less than 1 nephelometric turbidity unit;
- ensure that contact time is greater than 30 minutes and pH less than 8.0, resulting in a free chlorine residual of 0.2–0.5 mg/litre.

DISPOSAL OF LIQUID AND SOLID WASTES

Liquid wastes are organic materials that can be mixed with water, flushed from the sanitary water system, and carried out of the vessel by its waste pipes. Liquid wastes include:

- body excretions, such as faeces, urine, sputum, and vomit;
- sink, laundry, and washroom wastes;
- food, tank, bilge, and engine-room wastes;
- other degradable materials.

Solid wastes are discarded materials not readily degradable without heat or pressure. Solid wastes include such items as:

- surgical dressings;
- disposable containers;
- refuse.

Both liquid and solid wastes are health hazards. Contamination by these wastes can cause outbreaks of typhoid fever, paratyphoid fever, cholera, or dysentery. Rats, flies, and other vectors of disease thrive on solid wastes. These wastes must, therefore, be disposed of carefully so as not to endanger the health of persons aboard the vessel or in off-ship areas.

COMBATING DISEASE VECTORS

Disease vectors include:

- mosquitoes, which carry malaria, dengue, and yellow fever;
- fleas, which carry plague and typhus fever;
- lice, which carry epidemic typhus fever;
- ticks, which carry spotted fever and Lyme disease;
- animals (rats, mice, dogs, etc.);
- birds (parrots, for example, can transmit psittacosis to humans).

Rodents

Rats on a ship are a menace to health and a nuisance. They cause extensive damage to cargo and food, and can carry leptospirosis, a bacterial disease, and other dangerous diseases. Because rats usually forage in the galley and food storage areas, they can introduce disease organisms into food and water supplies. Rats also carry fleas, which can transmit plague and typhus fever. Ships heavily infested with rats must be fumigated. Fumigation is laborious, expensive, and dangerous: it can be avoided through adequate anti-rat measures, including frequent inspection of the ship for signs of rat life, such as trails or runs marked by dirt or droppings.

Despite precautions by the ship's personnel and port authorities, some rats may still be on board. However, their numbers can be kept down by ensuring that they do not have access to food and that there are no suitable nesting-places for them, and also by trapping or otherwise destroying them before they breed and develop colonies.

To keep a ship relatively free of rats:

■ **prevent them from getting aboard by:**

- placing and maintaining rat guards on all mooring lines and keeping the gangplank well lit;

■ **rat-proof the ship** (at the same time curbing the proliferation of flies and cockroaches) by:

- eliminating hidden and dead spaces where rats can hide;
- keeping the ship in good repair;
- preventing lockers, boxes, dunnage, or other movable equipment from providing temporary shelters for rodents;

■ **starve rats by:**

- keeping all food and garbage stored in metal containers with tightly fitting metal covers;
- avoiding the accumulation of food scraps and cleaning up spilled food or edible waste;

■ **kill rats by** trapping, poisoning, or fumigation:

- for trapping:
 - › set snap traps (more effective and easier to set than cage-type traps) along ledges, bulkheads, and other places used as rat runs;
 - › for bait, use meat, bacon rind, or cheese, if rats cannot get at these foods in any other place, or apples, pears, dates, potatoes, and turnips;
 - › point the bait trigger towards the bulkhead or rat run;
 - › allow the rats to nibble at the bait for a few days before setting the trap;
 - › do not flame or scald the trap after the rat is caught: the odour of the rat will help in catching others;
 - › avoid touching a dead rat because of the danger of infected fleas;
- for poisoning:
 - › use anticoagulant rodenticides (rat poisons), such as warfarin and brodifacoum;
 - › **note that these chemicals are poisonous to man:** keep them in their original container, properly labelled, and stored away from food;
 - › bait trays or stations are recommended because they reduce the risk of poison being scattered and they allow remaining poison to be removed once rodents are controlled;
 - › unpoisoned water placed next to the bait may increase consumption of the rodenticides by the rats;
 - › surplus baits should be laid and then removed when rodents are controlled;
 - › crew handling rat poisons should wear gloves and wash their hands carefully after laying baits;
- for fumigation, which is the method of choice if the ship is badly infested:
 - › have the operation carried out by experts from authorized agencies;
 - › the gases most commonly used for fumigation are hydrogen cyanide and carbon monoxide;
 - › **note that these gases are extremely poisonous to human beings:**

- › before fumigation, have the ship tied up at a distance from other vessels;
- › **make sure there is no one on board** other than the fumigation team;
- › after fumigation, air the holds and superstructures;
- › test for gas after about an hour of airing;
- › thoroughly air beds and clothing on deck for at least two hours;
- › destroy any food that has been exposed to the fumigant gas;
- › note that **individuals have died because they returned too soon to compartments not completely aired and free of gas**;
- › **a fumigated ship should not be boarded until authorization is given by the officer in charge of the fumigation.**

Insects

With so many varieties of insects, so many ways in which they gain access to the ship, and so powerful a capacity to evade or resist efforts to destroy them, keeping a ship completely free of insects is impossible. Note:

- flies and mosquitoes may board the vessel at wharves or in harbours;
- bedbugs, fleas, lice, and ticks may be brought aboard on the bodies, clothing, or personal gear of crew or passengers;
- fleas may also be carried aboard by rats;
- cockroaches may be present in provisions or in cargo brought aboard ship.

Insects occasionally transmit bacterial infections when germs on their bodies come in contact with food or other articles. More often, insects spread infection by biting: *Anopheles* mosquitoes transmit malaria and *Aedes* mosquitoes transmit yellow fever in this way. Disease-causing organisms are sometimes present in insect faeces, so that scratching an insect bite can allow these organisms to enter the body: typhus is acquired in this way.

The suppression of insect infestation on board ship calls for coordination between ship and shore personnel. Unless control efforts are continued at sea, the most thorough campaign to destroy insects and rodents on a ship in port will fail. It is easier and less costly to maintain constant controls than to apply sporadic intensive measures only in port. Continuing control efforts at sea will also improve living and working conditions on board.

Combating insects calls for a knowledge of the habits of each type. Note:

- body lice live on the human body and clothing:
 - personal cleanliness will reduce the risk of louse infestation;
- bedbugs seek shelter in cracks in walls and floors around beds:
 - cleanliness and frequent inspection are essential;
- cockroaches breed wherever food is available:
 - strict cleanliness is essential wherever food is stored, prepared, or eaten;
- flies are attracted to unprotected food and refuse:
 - avoid unnecessary exposure of food;
 - place refuse in clean, tightly covered cans for prompt disposal.

Personal cleanliness and cleanliness of the living and working environment are vital to keeping insect populations to a minimum. Insecticides provide short-term relief but are of little long-term value if unsanitary conditions persist. Insecticides can also

contaminate drink, food, or surfaces used for food preparation. Some are dangerously flammable. Only properly trained personnel should be allowed to use insecticides, which must be stored in such a way as to prevent the insecticides from being stolen or picked up by accident. Regular maintenance and careful use of insecticide spraying equipment are imperative.

Note that failure to curb insect populations may be due to growing resistance of insects to insecticides. Using a different type of insecticide may be necessary.

Further information can be obtained from *Pesticides and their application for the control of vectors and pests of public health importance*, 6th ed. Geneva, World Health Organization, 2006, and also at www.who.int/whopes/.

Flies

Houseflies are a nuisance and may transmit diarrhoeal disease if they have access to faeces and food. Horseflies and deerflies cause painful bites, and sandflies can transmit a number of infections.

✓ What to do

- Store all refuse in durable cans with tight lids.
- Screen windows and doors.
- Use chemical sprays sparingly – widespread resistance limits their effectiveness and they may contaminate food:
 - do not use residual sprays: they promote the development of resistance;
 - cotton cords soaked in pyrethroids (0.5–10 g/l) and suspended from ceilings provide long-lasting fly control with less risk of resistance than residual spraying;
 - use one metre of cord for each square metre of floor area;
 - avoid placing cords over food containers or food preparation areas;
 - wear gloves when positioning cords.
- Space sprays are released as a fog or fine mist and kill on contact:
 - for space spraying use permethrin 0.025–0.05 g ai/m², natural pyrethrins 1–4 g/litre (0.1–0.4%), or chlorpyrifos-methyl;
 - where there is a risk of fire, use only space spraying dispensers that contain no propellant or a non-flammable propellant;
 - do not expose food or cooking utensils to insecticide sprays.

Mosquitoes

Several species of mosquito bite humans and may transmit malaria, dengue, yellow fever, encephalitis, filariasis, and other diseases.

✓ What to do

- Remove **all** potential receptacles or containers of standing water.
- Keep insect screens on windows and doors.
- When working outside, such as in ports where mosquito-borne diseases occur, use insect repellent lotions on exposed skin:

- DEET (N,N-diethyl-3-methylbenzamide) in 20–35% formulations is the best choice. DEET repels mosquitoes, flies, fleas, and ticks – higher concentrations last longer but are not more effective;
- picaridin and p-menthane-3,8-diol (PMD) are also effective insect repellents – they do not last as long as DEET and, therefore, have to be re-applied frequently;
- spray the hands with repellent lotion and use them to apply the lotion to the face;
- wash the hands after applying repellent so as to prevent contact with the eyes;
- spray permethrin and natural pyrethrins (which are not insect repellents but are toxic to insects) on the inside and outside of clothes and on socks, and allow to dry before wearing: protection against mosquito bites lasts up to one week, even after washing the clothes;
- at night, have the crew sleep under pyrethroid-treated bed nets;
- **DO NOT** use space spraying to control mosquitoes;
- **DO NOT** allow crew to rely on insect repellents other than those listed above.

Cockroaches

Cockroaches are often a mark of sub-standard cleaning and food storage but do not normally transmit disease.

✓ What to do

- Eliminate cracks, crevices, and dead spaces.
- Eliminate sources of moisture by repairing leaking taps and covering plug holes.
- Store food and garbage properly.
- Keep the entire ship scrupulously clean.
- Watch for, and destroy, all cockroaches and their egg cases, particularly those introduced with luggage, food stores, and furniture.
- Remove corrugated cardboard boxes and cartons from provision storerooms as soon as feasible.
- Use enclosed bait stations or gels containing chlorpyrifos 5 g/l in food storage and preparation areas.
- In other areas, spray with chlorpyrifos-methyl, 7–10 g/l.

Bedbugs

Bedbugs are common throughout the world, especially in tropical and sub-tropical zones and in poorer countries. They do not live in beds but in cracks and crevices around walls and roofs. They bite while the victim sleeps, most often just before dawn, and are rarely seen by the victim, who on waking notes the bites, usually on the hands, arms, and face. The bites cause itching, swelling, and redness of the skin, and can become infected. Typically, there are three bites closely spaced in a line.

✓ What to do

- To relieve itching, have the patient apply a 1% hydrocortisone cream.
- Hot-wash or dry-clean bedclothes, or place them in a plastic bag and then in a freezer (at –18 °C or less) for 24 hours.

Environmental control and hygiene

- Early in the day (to allow the cabin or living space to dry before it is used again for sleeping) use a residual insecticide to spray on cracks and crevices in bulkheads and floors, bed bases, mattresses, slats and springs, and furniture, choosing from the following insecticides:
 - pirimiphos-methyl, 10 g/litre (1%)
 - d-phenothrin, 1–2 g/l.
- Dry insecticide-treated mattresses completely before covering them with sheets for reuse.
- Note that bedbugs do not transmit disease.
- Pyrethrin-impregnated mosquito nets also prevent bed-bug bites.

SANITARY INSPECTION

Regular inspections are necessary to maintain a vessel in good sanitary condition. Those making the inspections should be on the alert for signs of vermin and rodent infestation and should check general order and cleanliness. Frequent monitoring by the ship's master and senior officers will also help to keep the crew aware of the need to maintain scrupulous cleanliness.

Areas to be inspected thoroughly include:

- the forepeak
- the provision storeroom
- the galley
- the pantry
- the issue room
- the sickbay
- the scullery
- the garbage disposal area
- the brig spaces
- sewage disposal areas
- the washroom and head
- cold storage spaces
- the refrigeration space
- the mess space
- living spaces
- the shelter deck
- holds.

International Health Regulations

The purpose of the International Health Regulations (2005) is to ensure maximum security against the international spread of disease, with minimum interference in world trade and travel. Administered by the World Health Organization (WHO), it is the only legally binding, global agreement which focuses on measures for preventing the transboundary spread of infectious disease.

The IHR (2005) provide a single code of procedures and practices for all participating countries, which include routine measures at airports and seaports for preventing the importation and exportation of disease and disease-transmitting agents (e.g. mosquitoes, rats, cockroaches, etc.). This chapter includes extracts from the IHR (2005) of articles which specifically pertain to ships – the full text of the Regulations is available from WHO.

INTERNATIONAL HEALTH REGULATIONS (2005)

PART I – DEFINITIONS, PURPOSE AND SCOPE, PRINCIPLES AND RESPONSIBLE AUTHORITIES

ARTICLE 1 DEFINITIONS

- I. For the purposes of the International Health Regulations (hereinafter the “IHR” or “Regulations”):
 - “affected” means persons, baggage, cargo, containers, conveyances, goods, postal parcels or human remains that are infected or contaminated, or carry sources of infection or contamination, so as to constitute a public health risk;
 - “affected area” means a geographical location specifically for which health measures have been recommended by WHO under these Regulations;
 - “aircraft” means an aircraft making an international voyage;
 - “airport” means any airport where international flights arrive or depart;
 - “arrival” of a conveyance means:
 - (a) in the case of a seagoing vessel, arrival or anchoring in the defined area of a port;
 - (b) in the case of an aircraft, arrival at an airport;
 - (c) in the case of an inland navigation vessel on an international voyage, arrival at a point of entry;
 - (d) in the case of a train or road vehicle, arrival at a point of entry;
 - “baggage” means the personal effects of a traveller;
 - “cargo” means goods carried on a conveyance or in a container;
 - “competent authority” means an authority responsible for the implementation and application of health measures under these Regulations;
 - “container” means an article of transport equipment:
 - (a) of a permanent character and accordingly strong enough to be suitable for repeated use;
 - (b) specially designed to facilitate the carriage of goods by one or more modes of transport, without intermediate reloading;

(c) fitted with devices permitting its ready handling, particularly its transfer from one mode of transport to another; and

(d) specially designed so as to be easy to fill and empty;

“container loading area” means a place or facility set aside for containers used in international traffic;

“contamination” means the presence of an infectious or toxic agent or matter on a human or animal body surface, in or on a product prepared for consumption or on other inanimate objects, including conveyances, that may constitute a public health risk;

“conveyance” means an aircraft, ship, train, road vehicle or other means of transport on an international voyage;

“conveyance operator” means a natural or legal person in charge of a conveyance or their agent;

“crew” means persons on board a conveyance who are not passengers;

“decontamination” means a procedure whereby health measures are taken to eliminate an infectious or toxic agent or matter on a human or animal body surface, in or on a product prepared for consumption or on other inanimate objects, including conveyances, that may constitute a public health risk;

“departure” means, for persons, baggage, cargo, conveyances or goods, the act of leaving a territory;

“deratting” means the procedure whereby health measures are taken to control or kill rodent vectors of human disease present in baggage, cargo, containers, conveyances, facilities, goods and postal parcels at the point of entry;

“Director-General” means the Director-General of the World Health Organization;

“disease” means an illness or medical condition, irrespective of origin or source, that presents or could present significant harm to humans;

“disinfection” means the procedure whereby health measures are taken to control or kill infectious agents on a human or animal body surface or in or on baggage, cargo, containers, conveyances, goods and postal parcels by direct exposure to chemical or physical agents;

“disinsection” means the procedure whereby health measures are taken to control or kill the insect vectors of human diseases present in baggage, cargo, containers, conveyances, goods and postal parcels;

“event” means a manifestation of disease or an occurrence that creates a potential for disease;

“*free pratique*” means permission for a ship to enter a port, embark or disembark, discharge or load cargo or stores; permission for an aircraft, after landing, to embark or disembark, discharge or load cargo or stores; and permission for a ground transport vehicle, upon arrival, to embark or disembark, discharge or load cargo or stores;

“goods” mean tangible products, including animals and plants, transported on an international voyage, including for utilization on board a conveyance;

“ground crossing” means a point of land entry in a State Party, including one utilized by road vehicles and trains;

“ground transport vehicle” means a motorized conveyance for overland transport on an international voyage, including trains, coaches, lorries and automobiles;

“health measure” means procedures applied to prevent the spread of disease or contamination; a health measure does not include law enforcement or security measures;

“ill person” means an individual suffering from or affected with a physical ailment that may pose a public health risk;

“infection” means the entry and development or multiplication of an infectious agent in the body of humans and animals that may constitute a public health risk;

“inspection” means the examination, by the competent authority or under its supervision, of areas, baggage, containers, conveyances, facilities, goods or postal parcels, including relevant data and documentation, to determine if a public health risk exists;

“international traffic” means the movement of persons, baggage, cargo, containers, conveyances, goods or postal parcels across an international border, including international trade;

“international voyage” means:

- (a) in the case of a conveyance, a voyage between points of entry in the territories of more than one State, or a voyage between points of entry in the territory or territories of the same State if the conveyance has contacts with the territory of any other State on its voyage but only as regards those contacts;
- (b) in the case of a traveller, a voyage involving entry into the territory of a State other than the territory of the State in which that traveller commences the voyage;

“intrusive” means possibly provoking discomfort through close or intimate contact or questioning;

“invasive” means the puncture or incision of the skin or insertion of an instrument or foreign material into the body or the examination of a body cavity. For the purposes of these Regulations, medical examination of the ear, nose and mouth, temperature assessment using an ear, oral or cutaneous thermometer, or thermal imaging; medical inspection; auscultation; external palpation; retinoscopy; external collection of urine, faeces or saliva samples; external measurement of blood pressure; and electrocardiography shall be considered to be non-invasive;

“isolation” means separation of ill or contaminated persons or affected baggage, containers, conveyances, goods or postal parcels from others in such a manner as to prevent the spread of infection or contamination;

“medical examination” means the preliminary assessment of a person by an authorized health worker or by a person under the direct supervision of the competent authority, to determine the person’s health status and potential public health risk to others, and may include the scrutiny of health documents, and a physical examination when justified by the circumstances of the individual case;

“National IHR Focal Point” means the national centre, designated by each State Party, which shall be accessible at all times for communications with WHO IHR Contact Points under these Regulations;

“Organization” or “WHO” means the World Health Organization;

“permanent residence” has the meaning as determined in the national law of the State Party concerned;

“personal data” means any information relating to an identified or identifiable natural person;

“point of entry” means a passage for international entry or exit of travellers, baggage, cargo, containers, conveyances, goods and postal parcels as well as agencies and areas providing services to them on entry or exit;

“port” means a seaport or a port on an inland body of water where ships on an international voyage arrive or depart;

“postal parcel” means an addressed article or package carried internationally by postal or courier services;

“public health emergency of international concern” means an extraordinary event which is determined, as provided in these Regulations:

(i) to constitute a public health risk to other States through the international spread of disease and

(ii) to potentially require a coordinated international response;

“public health observation” means the monitoring of the health status of a traveller over time for the purpose of determining the risk of disease transmission;

“public health risk” means a likelihood of an event that may affect adversely the health of human populations, with an emphasis on one which may spread internationally or may present a serious and direct danger;

“quarantine” means the restriction of activities and/or separation from others of suspect persons who are not ill or of suspect baggage, containers, conveyances or goods in such a manner as to prevent the possible spread of infection or contamination;

“recommendation” and “recommended” refer to temporary or standing recommendations issued under these Regulations;

“reservoir” means an animal, plant or substance in which an infectious agent normally lives and whose presence may constitute a public health risk;

“road vehicle” means a ground transport vehicle other than a train;

“scientific evidence” means information furnishing a level of proof based on the established and accepted methods of science;

“scientific principles” means the accepted fundamental laws and facts of nature known through the methods of science;

“ship” means a seagoing or inland navigation vessel on an international voyage;

“standing recommendation” means non-binding advice issued by WHO for specific ongoing public health risks pursuant to Article 16 regarding appropriate health measures for routine or periodic application needed to prevent or reduce the international spread of disease and minimize interference with international traffic;

“surveillance” means the systematic ongoing collection, collation and analysis of data for public health purposes and the timely dissemination of public health information for assessment and public health response as necessary;

“suspect” means those persons, baggage, cargo, containers, conveyances, goods or postal parcels considered by a State Party as having been exposed, or possibly exposed, to a public health risk and that could be a possible source of spread of disease;

“temporary recommendation” means non-binding advice issued by WHO pursuant to Article 15 for application on a time-limited, risk-specific basis, in response to a public health emergency of international concern, so as to prevent or reduce the international spread of disease and minimize interference with international traffic;

“temporary residence” has the meaning as determined in the national law of the State Party concerned;

“traveller” means a natural person undertaking an international voyage;

“vector” means an insect or other animal which normally transports an infectious agent that constitutes a public health risk;

“verification” means the provision of information by a State Party to WHO confirming the status of an event within the territory or territories of that State Party;

“WHO IHR Contact Point” means the unit within WHO which shall be accessible at all times for communications with the National IHR Focal Point.

2. Unless otherwise specified or determined by the context, reference to these Regulations includes the annexes thereto.

ARTICLE 2 PURPOSE AND SCOPE

The purpose and scope of these Regulations are to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade.

Article 18 Recommendations with respect to persons, baggage, cargo, containers, conveyances, goods and postal parcels

1. Recommendations issued by WHO to States Parties with respect to persons may include the following advice:
 - no specific health measures are advised;
 - review travel history in affected areas;
 - review proof of medical examination and any laboratory analysis;
 - require medical examinations;
 - review proof of vaccination or other prophylaxis;
 - require vaccination or other prophylaxis;
 - place suspect persons under public health observation;
 - implement quarantine or other health measures for suspect persons;
 - implement isolation and treatment where necessary of affected persons;
 - implement tracing of contacts of suspect or affected persons;
 - refuse entry of suspect and affected persons;
 - refuse entry of unaffected persons to affected areas; and
 - implement exit screening and/or restrictions on persons from affected areas.
2. Recommendations issued by WHO to States Parties with respect to baggage, cargo, containers, conveyances, goods and postal parcels may include the following advice:
 - no specific health measures are advised;
 - review manifest and routing;
 - implement inspections;
 - review proof of measures taken on departure or in transit to eliminate infection or contamination;

- implement treatment of the baggage, cargo, containers, conveyances, goods, postal parcels or human remains to remove infection or contamination, including vectors and reservoirs;
- the use of specific health measures to ensure the safe handling and transport of human remains;
- implement isolation or quarantine;
- seizure and destruction of infected or contaminated or suspect baggage, cargo, containers, conveyances, goods or postal parcels under controlled conditions if no available treatment or process will otherwise be successful; and
- refuse departure or entry.

PART IV – POINTS OF ENTRY

ARTICLE 19 GENERAL OBLIGATIONS

Each State Party shall, in addition to the other obligations provided for under these Regulations:

- (a) ensure that the capacities set forth in Annex 1 for designated points of entry are developed within the time frame provided in paragraph 1 of Article 5 and paragraph 1 of Article 13;
- (b) identify the competent authorities at each designated point of entry in its territory; and
- (c) furnish to WHO, as far as practicable, when requested in response to a specific potential public health risk, relevant data concerning sources of infection or contamination, including vectors and reservoirs, at its points of entry, which could result in international disease spread.

ARTICLE 20 AIRPORTS AND PORTS

1. States Parties shall designate the airports and ports that shall develop the capacities provided in Annex 1.
2. States Parties shall ensure that Ship Sanitation Control Exemption Certificates and Ship Sanitation Control Certificates are issued in accordance with the requirements in Article 39 and the model provided in Annex 3.
3. Each State Party shall send to WHO a list of ports authorized to offer:
 - (a) the issuance of Ship Sanitation Control Certificates and the provision of the services referred to in Annexes 1 and 3; or
 - (b) the issuance of Ship Sanitation Control Exemption Certificates only; and
 - (c) extension of the Ship Sanitation Control Exemption Certificate for a period of one month until the arrival of the ship in the port at which the Certificate may be received.

Each State Party shall inform WHO of any changes which may occur to the status of the listed ports. WHO shall publish the information received under this paragraph.

4. WHO may, at the request of the State Party concerned, arrange to certify, after an appropriate investigation, that an airport or port in its territory meets the requirements referred to in paragraphs 1 and 3 of this Article. These certifications may be subject to periodic review by WHO, in consultation with the State Party.

5. WHO, in collaboration with competent intergovernmental organizations and international bodies, shall develop and publish the certification guidelines for airports and ports under this Article. WHO shall also publish a list of certified airports and ports.

ARTICLE 21 GROUND CROSSINGS

1. Where justified for public health reasons, a State Party may designate ground crossings that shall develop the capacities provided in Annex I, taking into consideration:
 - (a) the volume and frequency of the various types of international traffic, as compared to other points of entry, at a State Party's ground crossings which might be designated; and
 - (b) the public health risks existing in areas in which the international traffic originates, or through which it passes, prior to arrival at a particular ground crossing.
2. States Parties sharing common borders should consider:
 - (a) entering into bilateral or multilateral agreements or arrangements concerning prevention or control of international transmission of disease at ground crossings in accordance with Article 57; and
 - (b) joint designation of adjacent ground crossings for the capacities in Annex I in accordance with paragraph 1 of this Article.

ARTICLE 22 ROLE OF COMPETENT AUTHORITIES

1. The competent authorities shall:
 - (a) be responsible for monitoring baggage, cargo, containers, conveyances, goods, postal parcels and human remains departing and arriving from affected areas, so that they are maintained in such a condition that they are free of sources of infection or contamination, including vectors and reservoirs;
 - (b) ensure, as far as practicable, that facilities used by travellers at points of entry are maintained in a sanitary condition and are kept free of sources of infection or contamination, including vectors and reservoirs;
 - (c) be responsible for the supervision of any deratting, disinfection, disinsection or decontamination of baggage, cargo, containers, conveyances, goods, postal parcels and human remains or sanitary measures for persons, as appropriate under these Regulations;
 - (d) advise conveyance operators, as far in advance as possible, of their intent to apply control measures to a conveyance, and shall provide, where available, written information concerning the methods to be employed;
 - (e) be responsible for the supervision of the removal and safe disposal of any contaminated water or food, human or animal dejecta, wastewater and any other contaminated matter from a conveyance;
 - (f) take all practicable measures consistent with these Regulations to monitor and control the discharge by ships of sewage, refuse, ballast water and other potentially disease-causing matter which might contaminate the waters of a port, river, canal, strait, lake or other international waterway;

- (g) be responsible for supervision of service providers for services concerning travellers, baggage, cargo, containers, conveyances, goods, postal parcels and human remains at points of entry, including the conduct of inspections and medical examinations as necessary;
 - (h) have effective contingency arrangements to deal with an unexpected public health event; and
 - (i) communicate with the National IHR Focal Point on the relevant public health measures taken pursuant to these Regulations.
2. Health measures recommended by WHO for travellers, baggage, cargo, containers, conveyances, goods, postal parcels and human remains arriving from an affected area may be reapplied on arrival, if there are verifiable indications and/or evidence that the measures applied on departure from the affected area were unsuccessful.
 3. Disinsection, deratting, disinfection, decontamination and other sanitary procedures shall be carried out so as to avoid injury and as far as possible discomfort to persons, or damage to the environment in a way which impacts on public health, or damage to baggage, cargo, containers, conveyances, goods and postal parcels.

PART V – PUBLIC HEALTH MEASURES

Chapter I – General provisions

ARTICLE 23 HEALTH MEASURES ON ARRIVAL AND DEPARTURE

1. Subject to applicable international agreements and relevant articles of these Regulations, a State Party may require for public health purposes, on arrival or departure:
 - (a) with regard to travellers:
 - (i) information concerning the traveller's destination so that the traveller may be contacted;
 - (ii) information concerning the traveller's itinerary to ascertain if there was any travel in or near an affected area or other possible contacts with infection or contamination prior to arrival, as well as review of the traveller's health documents if they are required under these Regulations; and/or
 - (iii) a non-invasive medical examination which is the least intrusive examination that would achieve the public health objective;
 - (b) inspection of baggage, cargo, containers, conveyances, goods, postal parcels and human remains.
2. On the basis of evidence of a public health risk obtained through the measures provided in paragraph 1 of this Article, or through other means, States Parties may apply additional health measures, in accordance with these Regulations, in particular, with regard to a suspect or affected traveller, on a case-by-case basis, the least intrusive and invasive medical examination that would achieve the public health objective of preventing the international spread of disease.
3. No medical examination, vaccination, prophylaxis or health measure under these Regulations shall be carried out on travellers without their prior express informed consent

or that of their parents or guardians, except as provided in paragraph 2 of Article 31, and in accordance with the law and international obligations of the State Party.

4. Travellers to be vaccinated or offered prophylaxis pursuant to these Regulations, or their parents or guardians, shall be informed of any risk associated with vaccination or with non-vaccination and with the use or non-use of prophylaxis in accordance with the law and international obligations of the State Party. States Parties shall inform medical practitioners of these requirements in accordance with the law of the State Party.
5. Any medical examination, medical procedure, vaccination or other prophylaxis which involves a risk of disease transmission shall only be performed on, or administered to, a traveller in accordance with established national or international safety guidelines and standards so as to minimize such a risk.

Chapter II – Special provisions for conveyances and conveyance operators

ARTICLE 24 CONVEYANCE OPERATORS

1. States Parties shall take all practicable measures consistent with these Regulations to ensure that conveyance operators:
 - (a) comply with the health measures recommended by WHO and adopted by the State Party;
 - (b) inform travellers of the health measures recommended by WHO and adopted by the State Party for application on board; and
 - (c) permanently keep conveyances for which they are responsible free of sources of infection or contamination, including vectors and reservoirs. The application of measures to control sources of infection or contamination may be required if evidence is found.
2. Specific provisions pertaining to conveyances and conveyance operators under this Article are provided in Annex 4. Specific measures applicable to conveyances and conveyance operators with regard to vector-borne diseases are provided in Annex 5.

ARTICLE 25 SHIPS AND AIRCRAFT IN TRANSIT

Subject to Articles 27 and 43 or unless authorized by applicable international agreements, no health measure shall be applied by a State Party to:

- (a) a ship not coming from an affected area which passes through a maritime canal or waterway in the territory of that State Party on its way to a port in the territory of another State. Any such ship shall be permitted to take on, under the supervision of the competent authority, fuel, water, food and supplies;
- (b) a ship which passes through waters within its jurisdiction without calling at a port or on the coast; and
- (c) an aircraft in transit at an airport within its jurisdiction, except that the aircraft may be restricted to a particular area of the airport with no embarking and disembarking or loading and discharging. However, any such aircraft shall be permitted to take on, under the supervision of the competent authority, fuel, water, food and supplies.

ARTICLE 27 AFFECTED CONVEYANCES

1. If clinical signs or symptoms and information based on fact or evidence of a public health risk, including sources of infection and contamination, are found on board a conveyance, the competent authority shall consider the conveyance as affected and may:
 - (a) disinfect, decontaminate, disinsect or derat the conveyance, as appropriate, or cause these measures to be carried out under its supervision; and
 - (b) decide in each case the technique employed to secure an adequate level of control of the public health risk as provided in these Regulations. Where there are methods or materials advised by WHO for these procedures, these should be employed, unless the competent authority determines that other methods are as safe and reliable.

The competent authority may implement additional health measures, including isolation of the conveyances, as necessary, to prevent the spread of disease. Such additional measures should be reported to the National IHR Focal Point.

2. If the competent authority for the point of entry is not able to carry out the control measures required under this Article, the affected conveyance may nevertheless be allowed to depart, subject to the following conditions:
 - (a) the competent authority shall, at the time of departure, inform the competent authority for the next known point of entry of the type of information referred to under subparagraph (b); and
 - (b) in the case of a ship, the evidence found and the control measures required shall be noted in the Ship Sanitation Control Certificate.

Any such conveyance shall be permitted to take on, under the supervision of the competent authority, fuel, water, food and supplies.

3. A conveyance that has been considered as affected shall cease to be regarded as such when the competent authority is satisfied that:
 - (a) the measures provided in paragraph 1 of this Article have been effectively carried out; and
 - (b) there are no conditions on board that could constitute a public health risk.

ARTICLE 28 SHIPS AND AIRCRAFT AT POINTS OF ENTRY

1. Subject to Article 43 or as provided in applicable international agreements, a ship or an aircraft shall not be prevented for public health reasons from calling at any point of entry. However, if the point of entry is not equipped for applying health measures under these Regulations, the ship or aircraft may be ordered to proceed at its own risk to the nearest suitable point of entry available to it, unless the ship or aircraft has an operational problem which would make this diversion unsafe.
2. Subject to Article 43 or as provided in applicable international agreements, ships or aircraft shall not be refused *free pratique* by States Parties for public health reasons; in particular they shall not be prevented from embarking or disembarking, discharging or loading cargo or stores, or taking on fuel, water, food and supplies. States Parties may subject the granting of *free pratique* to inspection and, if a source of infection

or contamination is found on board, the carrying out of necessary disinfection, decontamination, disinsection or deratting, or other measures necessary to prevent the spread of the infection or contamination.

3. Whenever practicable and subject to the previous paragraph, a State Party shall authorize the granting of *free pratique* by radio or other communication means to a ship or an aircraft when, on the basis of information received from it prior to its arrival, the State Party is of the opinion that the arrival of the ship or aircraft will not result in the introduction or spread of disease.
4. Officers in command of ships or pilots in command of aircraft, or their agents, shall make known to the port or airport control as early as possible before arrival at the port or airport of destination any cases of illness indicative of a disease of an infectious nature or evidence of a public health risk on board as soon as such illnesses or public health risks are made known to the officer or pilot. This information must be immediately relayed to the competent authority for the port or airport. In urgent circumstances, such information should be communicated directly by the officers or pilots to the relevant port or airport authority.
5. The following shall apply if a suspect or affected aircraft or ship, for reasons beyond the control of the pilot in command of the aircraft or the officer in command of the ship, lands elsewhere than at the airport at which the aircraft was due to land or berths elsewhere than at the port at which the ship was due to berth:
 - (a) the pilot in command of the aircraft or the officer in command of the ship or other person in charge shall make every effort to communicate without delay with the nearest competent authority;
 - (b) as soon as the competent authority has been informed of the landing it may apply health measures recommended by WHO or other health measures provided in these Regulations;
 - (c) unless required for emergency purposes or for communication with the competent authority, no traveller on board the aircraft or ship shall leave its vicinity and no cargo shall be removed from that vicinity, unless authorized by the competent authority; and
 - (d) when all health measures required by the competent authority have been completed, the aircraft or ship may, so far as such health measures are concerned, proceed either to the airport or port at which it was due to land or berth, or, if for technical reasons it cannot do so, to a conveniently situated airport or port.
6. Notwithstanding the provisions contained in this Article, the officer in command of a ship or pilot in command of an aircraft may take such emergency measures as may be necessary for the health and safety of travellers on board. He or she shall inform the competent authority as early as possible concerning any measures taken pursuant to this paragraph.

ARTICLE 29 CIVILIAN LORRIES, TRAINS AND COACHES AT POINTS OF ENTRY

WHO, in consultation with States Parties, shall develop guiding principles for applying health measures to civilian lorries, trains and coaches at points of entry and passing through ground crossings.

Chapter III – Special provisions for travellers

ARTICLE 30 TRAVELLERS UNDER PUBLIC HEALTH OBSERVATION

Subject to Article 43 or as authorized in applicable international agreements, a suspect traveller who on arrival is placed under public health observation may continue an international voyage, if the traveller does not pose an imminent public health risk and the State Party informs the competent authority of the point of entry at destination, if known, of the traveller's expected arrival. On arrival, the traveller shall report to that authority.

ARTICLE 31 HEALTH MEASURES RELATING TO ENTRY OF TRAVELLERS

1. Invasive medical examination, vaccination or other prophylaxis shall not be required as a condition of entry of any traveller to the territory of a State Party, except that, subject to Articles 32, 42 and 45, these Regulations do not preclude States Parties from requiring medical examination, vaccination or other prophylaxis or proof of vaccination or other prophylaxis:
 - (a) when necessary to determine whether a public health risk exists;
 - (b) as a condition of entry for any travellers seeking temporary or permanent residence;
 - (c) as a condition of entry for any travellers pursuant to Article 43 or Annexes 6 and 7; or
 - (d) which may be carried out pursuant to Article 23.
2. If a traveller for whom a State Party may require a medical examination, vaccination or other prophylaxis under paragraph 1 of this Article fails to consent to any such measure, or refuses to provide the information or the documents referred to in paragraph 1(a) of Article 23, the State Party concerned may, subject to Articles 32, 42 and 45, deny entry to that traveller. If there is evidence of an imminent public health risk, the State Party may, in accordance with its national law and to the extent necessary to control such a risk, compel the traveller to undergo or advise the traveller, pursuant to paragraph 3 of Article 23, to undergo:
 - (a) the least invasive and intrusive medical examination that would achieve the public health objective;
 - (b) vaccination or other prophylaxis; or
 - (c) additional established health measures that prevent or control the spread of disease, including isolation, quarantine or placing the traveller under public health observation.

ARTICLE 32 TREATMENT OF TRAVELLERS

In implementing health measures under these Regulations, States Parties shall treat travellers with respect for their dignity, human rights and fundamental freedoms and minimize any discomfort or distress associated with such measures, including by:

- (a) treating all travellers with courtesy and respect;
- (b) taking into consideration the gender, sociocultural, ethnic or religious concerns of travellers; and
- (c) providing or arranging for adequate food and water, appropriate accommodation and clothing, protection for baggage and other possessions, appropriate medical treatment, means of necessary communication if possible in a language that they can understand and other appropriate assistance for travellers who are quarantined, isolated or subject to medical examinations or other procedures for public health purposes.

Chapter IV – Special provisions for goods, containers and container loading areas

ARTICLE 33 GOODS IN TRANSIT

Subject to Article 43 or unless authorized by applicable international agreements, goods, other than live animals, in transit without transshipment shall not be subject to health measures under these Regulations or detained for public health purposes.

ARTICLE 34 CONTAINER AND CONTAINER LOADING AREAS

- 1. States Parties shall ensure, as far as practicable, that container shippers use international traffic containers that are kept free from sources of infection or contamination, including vectors and reservoirs, particularly during the course of packing.
- 2. States Parties shall ensure, as far as practicable, that container loading areas are kept free from sources of infection or contamination, including vectors and reservoirs.
- 3. Whenever, in the opinion of a State Party, the volume of international container traffic is sufficiently large, the competent authorities shall take all practicable measures consistent with these Regulations, including carrying out inspections, to assess the sanitary condition of container loading areas and containers in order to ensure that the obligations contained in these Regulations are implemented.
- 4. Facilities for the inspection and isolation of containers shall, as far as practicable, be available at container loading areas.
- 5. Container consignees and consignors shall make every effort to avoid cross-contamination when multiple-use loading of containers is employed.

PART VI – HEALTH DOCUMENTS

ARTICLE 35 GENERAL RULE

No health documents, other than those provided for under these Regulations or in recommendations issued by WHO, shall be required in international traffic, provided however that this Article shall not apply to travellers seeking temporary or permanent residence, nor shall it apply to document requirements concerning the public health status of goods or cargo in international trade pursuant to applicable international agreements. The competent authority may request travellers to complete contact information forms and questionnaires on the health of travellers, provided that they meet the requirements set out in Article 23.

ARTICLE 36 CERTIFICATES OF VACCINATION OR OTHER PROPHYLAXIS

1. Vaccines and prophylaxis for travellers administered pursuant to these Regulations, or to recommendations and certificates relating thereto, shall conform to the provisions of Annex 6 and, when applicable, Annex 7 with regard to specific diseases.
2. A traveller in possession of a certificate of vaccination or other prophylaxis issued in conformity with Annex 6 and, when applicable, Annex 7, shall not be denied entry as a consequence of the disease to which the certificate refers, even if coming from an affected area, unless the competent authority has verifiable indications and/or evidence that the vaccination or other prophylaxis was not effective.

ARTICLE 37 MARITIME DECLARATION OF HEALTH

1. The master of a ship, before arrival at its first port of call in the territory of a State Party, shall ascertain the state of health on board, and, except when that State Party does not require it, the master shall, on arrival, or in advance of the vessel's arrival if the vessel is so equipped and the State Party requires such advance delivery, complete and deliver to the competent authority for that port a Maritime Declaration of Health which shall be countersigned by the ship's surgeon, if one is carried.
2. The master of a ship, or the ship's surgeon if one is carried, shall supply any information required by the competent authority as to health conditions on board during an international voyage.
3. A Maritime Declaration of Health shall conform to the model provided in Annex 8.
4. A State Party may decide:
 - (a) to dispense with the submission of the Maritime Declaration of Health by all arriving ships; or
 - (b) to require the submission of the Maritime Declaration of Health under a recommendation concerning ships arriving from affected areas or to require it from ships which might otherwise carry infection or contamination.

The State Party shall inform shipping operators or their agents of these requirements.

ARTICLE 39 SHIP SANITATION CERTIFICATES

1. Ship Sanitation Control Exemption Certificates and Ship Sanitation Control Certificates shall be valid for a maximum period of six months. This period may be extended by one month if the inspection or control measures required cannot be accomplished at the port.
2. If a valid Ship Sanitation Control Exemption Certificate or Ship Sanitation Control Certificate is not produced or evidence of a public health risk is found on board a ship, the State Party may proceed as provided in paragraph 1 of Article 27.
3. The certificates referred to in this Article shall conform to the model in Annex 3.
4. Whenever possible, control measures shall be carried out when the ship and holds are empty. In the case of a ship in ballast, they shall be carried out before loading.
5. When control measures are required and have been satisfactorily completed, the competent authority shall issue a Ship Sanitation Control Certificate, noting the evidence found and the control measures taken.

6. The competent authority may issue a Ship Sanitation Control Exemption Certificate at any port specified under Article 20 if it is satisfied that the ship is free of infection and contamination, including vectors and reservoirs. Such a certificate shall normally be issued only if the inspection of the ship has been carried out when the ship and holds are empty or when they contain only ballast or other material, of such a nature or so disposed as to make a thorough inspection of the holds possible.
7. If the conditions under which control measures are carried out are such that, in the opinion of the competent authority for the port where the operation was performed, a satisfactory result cannot be obtained, the competent authority shall make a note to that effect on the Ship Sanitation Control Certificate.

PART VII – CHARGES

ARTICLE 40 CHARGES FOR HEALTH MEASURES REGARDING TRAVELLERS

1. Except for travellers seeking temporary or permanent residence, and subject to paragraph 2 of this Article, no charge shall be made by a State Party pursuant to these Regulations for the following measures for the protection of public health:
 - (a) any medical examination provided for in these Regulations, or any supplementary examination which may be required by that State Party to ascertain the health status of the traveller examined;
 - (b) any vaccination or other prophylaxis provided to a traveller on arrival that is not a published requirement or is a requirement published less than 10 days prior to provision of the vaccination or other prophylaxis;
 - (c) appropriate isolation or quarantine requirements of travellers;
 - (d) any certificate issued to the traveller specifying the measures applied and the date of application; or
 - (e) any health measures applied to baggage accompanying the traveller.
2. State Parties may charge for health measures other than those referred to in paragraph 1 of this Article, including those primarily for the benefit of the traveller.
3. Where charges are made for applying such health measures to travellers under these Regulations, there shall be in each State Party only one tariff for such charges and every charge shall:
 - (a) conform to this tariff;
 - (b) not exceed the actual cost of the service rendered; and
 - (c) be levied without distinction as to the nationality, domicile or residence of the traveller concerned.
4. The tariff, and any amendment thereto, shall be published at least 10 days in advance of any levy thereunder.
5. Nothing in these Regulations shall preclude States Parties from seeking reimbursement for expenses incurred in providing the health measures in paragraph 1 of this Article:
 - (a) from conveyance operators or owners with regard to their employees; or
 - (b) from applicable insurance sources.

6. Under no circumstances shall travellers or conveyance operators be denied the ability to depart from the territory of a State Party pending payment of the charges referred to in paragraphs 1 or 2 of this Article.

ARTICLE 41 CHARGES FOR BAGGAGE, CARGO, CONTAINERS, CONVEYANCES, GOODS OR POSTAL PARCELS

1. Where charges are made for applying health measures to baggage, cargo, containers, conveyances, goods or postal parcels under these Regulations, there shall be in each State Party only one tariff for such charges and every charge shall:
 - (a) conform to this tariff;
 - (b) not exceed the actual cost of the service rendered; and
 - (c) be levied without distinction as to the nationality, flag, registry or ownership of the baggage, cargo, containers, conveyances, goods or postal parcels concerned.
In particular, there shall be no distinction made between national and foreign baggage, cargo, containers, conveyances, goods or postal parcels.
2. The tariff, and any amendment thereto, shall be published at least 10 days in advance of any levy thereunder.

ANNEX 1

B. CORE CAPACITY REQUIREMENTS FOR DESIGNATED AIRPORTS, PORTS AND GROUND CROSSINGS

I. At all times

The capacities:

- (a) to provide access to (i) an appropriate medical service including diagnostic facilities located so as to allow the prompt assessment and care of ill travellers, and (ii) adequate staff, equipment and premises;
- (b) to provide access to equipment and personnel for the transport of ill travellers to an appropriate medical facility;
- (c) to provide trained personnel for the inspection of conveyances;
- (d) to ensure a safe environment for travellers using point of entry facilities, including potable water supplies, eating establishments, flight catering facilities, public washrooms, appropriate solid and liquid waste disposal services and other potential risk areas, by conducting inspection programmes, as appropriate; and
- (e) to provide as far as practicable a programme and trained personnel for the control of vectors and reservoirs in and near points of entry.

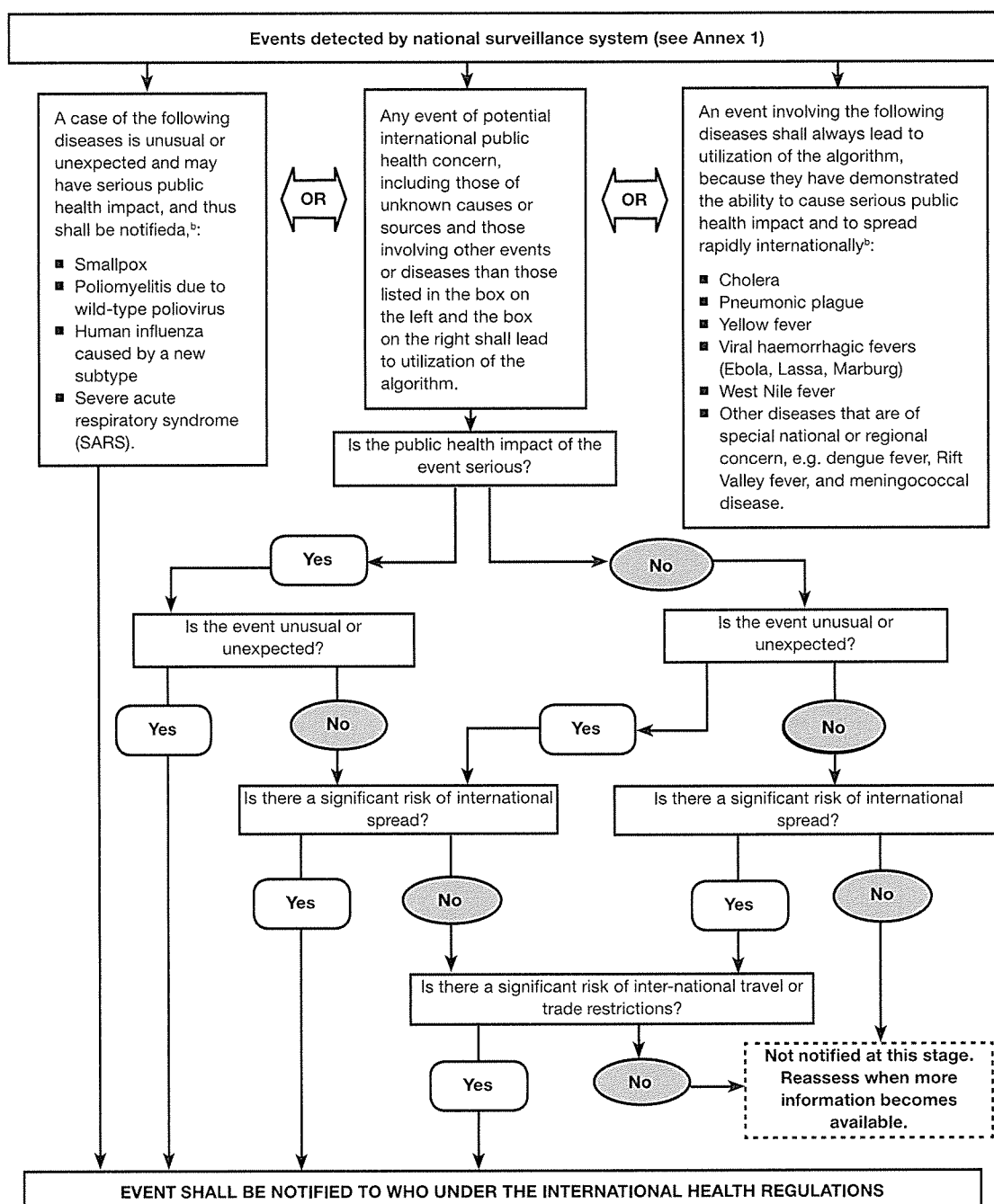
2. For responding to events that may constitute a public health emergency of international concern

The capacities:

- (a) to provide appropriate public health emergency response by establishing and maintaining a public health emergency contingency plan, including the nomination of a coordinator and contact points for relevant point of entry, public health and other agencies and services;
- (b) to provide assessment of and care for affected travellers or animals by establishing arrangements with local medical and veterinary facilities for their isolation, treatment and other support services that may be required;
- (c) to provide appropriate space, separate from other travellers, to interview suspect or affected persons;
- (d) to provide for the assessment and, if required, quarantine of suspect travellers, preferably in facilities away from the point of entry;
- (e) to apply recommended measures to disinsect, derat, disinfect, decontaminate or otherwise treat baggage, cargo, containers, conveyances, goods or postal parcels including, when appropriate, at locations specially designated and equipped for this purpose;
- (f) to apply entry or exit controls for arriving and departing travellers; and
- (g) to provide access to specially designated equipment, and to trained personnel with appropriate personal protection, for the transfer of travellers who may carry infection or contamination.

ANNEX 2

DECISION INSTRUMENT FOR THE ASSESSMENT AND NOTIFICATION OF EVENTS THAT MAY CONSTITUTE A PUBLIC HEALTH EMERGENCY OF INTERNATIONAL CONCERN



Examples for the application of the decision instrument for the assessment and notification of events that may constitute a public health emergency of international concern

The examples appearing in this Annex are not binding and are for indicative guidance purposes to assist in the interpretation of the decision instrument criteria.

DOES THE EVENT MEET AT LEAST TWO OF THE FOLLOWING CRITERIA?

Is the public health impact of the event serious?	I. Is the public health impact of the event serious?
	1. Is the number of cases and/or number of deaths for this type of event large for the given place, time or population?
	2. Has the event the potential to have a high public health impact? THE FOLLOWING ARE EXAMPLES OF CIRCUMSTANCES THAT CONTRIBUTE TO HIGH PUBLIC HEALTH IMPACT: ✓ Event caused by a pathogen with high potential to cause epidemic (infectiousness of the agent, high case fatality, multiple transmission routes or healthy carrier). ✓ Indication of treatment failure (new or emerging antibiotic resistance, vaccine failure, antidote resistance or failure). ✓ Event represents a significant public health risk even if no or very few human cases have yet been identified. ✓ Cases reported among health staff. ✓ The population at risk is especially vulnerable (refugees, low level of immunization, children, elderly, low immunity, undernourished, etc.). ✓ Concomitant factors that may hinder or delay the public health response (natural catastrophes, armed conflicts, unfavourable weather conditions, multiple foci in the State Party). ✓ Event in an area with high population density. ✓ Spread of toxic, infectious or otherwise hazardous materials that may be occurring naturally or otherwise that has contaminated or has the potential to contaminate a population and/or a large geographical area.
	3. Is external assistance needed to detect, investigate, respond and control the current event, or prevent new cases? The following are examples of when assistance may be required: ✓ Inadequate human, financial, material or technical resources – in particular: <ul style="list-style-type: none"> ■ Insufficient laboratory or epidemiological capacity to investigate the event (equipment, personnel, financial resources) ■ Insufficient antidotes, drugs and/or vaccine and/or protective equipment, decontamination equipment, or supportive equipment to cover estimated needs ■ Existing surveillance system is inadequate to detect new cases in a timely manner.
	IS THE PUBLIC HEALTH IMPACT OF THE EVENT SERIOUS? Answer "yes" if you have answered "yes" to questions 1, 2 or 3 above.

	II. Is the event unusual or unexpected?
	<p>4. Is the event unusual?</p> <p>THE FOLLOWING ARE EXAMPLES OF UNUSUAL EVENTS:</p> <ul style="list-style-type: none"> ✓ The event is caused by an unknown agent or the source, vehicle, route of transmission is unusual or unknown. ✓ Evolution of cases more severe than expected (including morbidity or case-fatality) or with unusual symptoms. ✓ Occurrence of the event itself unusual for the area, season or population.
	<p>5. Is the event unexpected from a public health perspective?</p> <p>THE FOLLOWING ARE EXAMPLES OF UNEXPECTED EVENTS:</p> <ul style="list-style-type: none"> ✓ Event caused by a disease/agent that had already been eliminated or eradicated from the State Party or not previously reported.
	<p>IS THE EVENT UNUSUAL OR UNEXPECTED?</p> <p>Answer "yes" if you have answered "yes" to questions 4 or 5 above.</p>
Is there a significant risk of international spread?	III. Is there a significant risk of international spread?
	<p>6. Is there evidence of an epidemiological link to similar events in other States?</p>
	<p>7. Is there any factor that should alert us to the potential for cross border movement of the agent, vehicle or host?</p> <p>THE FOLLOWING ARE EXAMPLES OF CIRCUMSTANCES THAT MAY PREDISPOSE TO INTERNATIONAL SPREAD:</p> <ul style="list-style-type: none"> ✓ Where there is evidence of local spread, an index case (or other linked cases) with a history within the previous month of: <ul style="list-style-type: none"> ■ international travel (or time equivalent to the incubation period if the pathogen is known) ■ participation in an international gathering (pilgrimage, sports event, conference, etc.) ■ close contact with an international traveller or a highly mobile population. ✓ Event caused by an environmental contamination that has the potential to spread across international borders. ✓ Event in an area of intense international traffic with limited capacity for sanitary control or environmental detection or decontamination.
	<p>IS THERE A SIGNIFICANT RISK OF INTERNATIONAL SPREAD?</p> <p>Answer "yes" if you have answered "yes" to questions 6 or 7 above.</p>
Risk of international restrictions ?	IV. Is there a significant risk of international travel or trade restrictions?
	8. Have similar events in the past resulted in international restriction on trade and/or travel?
	9. Is the source suspected or known to be a food product, water or any other goods that might be contaminated that has been exported/imported to/from other States?
	10. Has the event occurred in association with an international gathering or in an area of intense international tourism?
	11. Has the event caused requests for more information by foreign officials or international media?
	<p>IS THERE A SIGNIFICANT RISK OF INTERNATIONAL TRADE OR TRAVEL RESTRICTIONS?</p> <p>Answer "yes" if you have answered "yes" to questions 8, 9, 10 or 11 above.</p>

States Parties that answer "yes" to the question whether the event meets any two of the four criteria (I-IV) above, shall notify WHO under Article 6 of the International Health Regulations.

ANNEX 3

MODEL SHIP SANITATION CONTROL EXEMPTION CERTIFICATE/SHIP SANITATION CONTROL CERTIFICATE

Port of..... Date:

This Certificate records the inspection and 1) exemption from control or 2) control measures applied

Name of ship or inland navigation vessel.....Flag.....Registration/IMO No.

At the time of inspection the holds were unladen/laden with tonnes of cargo

Name and address of inspecting officer.....

Ship Sanitation Control Exemption Certificate

Areas , [systems, and services] inspected	Evidence found1	Sample results 2	Documents reviewed
Galley			Medical log
Pantry			Ship's log
Stores			Other
Hold(s)/cargo			
Quarters:			
- crew			
- officers			
- passengers			
- deck			
Potable water			
Sewage			
Ballast tanks			
Solid and medical waste			
Standing water			
Engine room			
Medical facilities			
Other areas specified - see attached			
Note areas not applicable, by marking N/A.			

No evidence found. Ship/vessel is exempted from control measures.

Name and designation of issuing officer Signature and seal Date

Ship Sanitation Control Certificate

[illegible]

Control measures indicated were applied on the date below.

'(a) Evidence of infection or contamination, including: vectors in all stages of growth; animal reservoirs for vectors; rodents or other species that could carry human disease, microbiological, chemical and other risks to human health; signs of inadequate sanitary measures. (b) Information concerning any human cases (to be included in the Maritime Declaration of Health).

Results from samples taken on board. Analysis to be provided to ship's master by most expedient means and, if re-inspection is required, to the next appropriate port of call coinciding with the re-inspection date specified in this certificate.

Sanitation Control Exemption Certificates and Sanitation Control Certificates are valid for a maximum of six months, but the validity period may be extended by one month if inspection cannot be carried out at the port and there is no evidence of infection or contamination.

ATTACHMENT TO MODEL SHIP SANITATION CONTROL EXEMPTION
CERTIFICATE/SHIP SANITATION CONTROL CERTIFICATE

Areas/facilities/systems inspected	Evidence found	Sample results	Documents reviewed	Control measures applied	Re-inspection date	Comments regarding conditions found
Food						
Source						
Storage						
Preparation						
Service						
Water						
Source						
Storage						
Distribution						
Waste						
Holding						
Treatment						
Disposal						
Swimming pools/spas						
Equipment						
Operation						
Medical facilities						
Equipment and medical devices						
Operation						
Medicines						
Other areas inspected						

Indicate when the areas listed are not applicable by marking N/A.

ANNEX 4

TECHNICAL REQUIREMENTS PERTAINING TO CONVEYANCES AND CONVEYANCE OPERATORS

Section A Conveyance operators

1. Conveyance operators shall facilitate:
 - (a) inspections of the cargo, containers and conveyance;
 - (b) medical examinations of persons on board;
 - (c) application of other health measures under these Regulations; and
 - (d) provision of relevant public health information requested by the State Party.
2. Conveyance operators shall provide to the competent authority a valid Ship Sanitation Control Exemption Certificate or a Ship Sanitation Control Certificate or a Maritime Declaration of Health, or the Health Part of an Aircraft General Declaration, as required under these Regulations.

Section B Conveyances

1. Control measures applied to baggage, cargo, containers, conveyances and goods under these Regulations shall be carried out so as to avoid as far as possible injury or discomfort to persons or damage to the baggage, cargo, containers, conveyances and goods. Whenever possible and appropriate, control measures shall be applied when the conveyance and holds are empty.
2. States Parties shall indicate in writing the measures applied to cargo, containers or conveyances, the parts treated, the methods employed, and the reasons for their application. This information shall be provided in writing to the person in charge of an aircraft and, in case of a ship, on the Ship Sanitation Control Certificate. For other cargo, containers or conveyances, States Parties shall issue such information in writing to consignors, consignees, carriers, the person in charge of the conveyance or their respective agents.

ANNEX 5

SPECIFIC MEASURES FOR VECTOR-BORNE DISEASES

1. WHO shall publish, on a regular basis, a list of areas where disinsection or other vector control measures are recommended for conveyances arriving from these areas. Determination of such areas shall be made pursuant to the procedures regarding temporary or standing recommendations, as appropriate.
2. Every conveyance leaving a point of entry situated in an area where vector control is recommended should be disinsected and kept free of vectors. When there are methods and materials advised by the Organization for these procedures, these should be employed. The presence of vectors on board conveyances and the control measures used to eradicate them shall be included:
 - (a) in the case of aircraft, in the Health Part of the Aircraft General Declaration, unless this part of the Declaration is waived by the competent authority at the airport of arrival;
 - (b) in the case of ships, on the Ship Sanitation Control Certificates; and
 - (c) in the case of other conveyances, on a written proof of treatment issued to the consignor, consignee, carrier, the person in charge of the conveyance or their agent, respectively.
3. States Parties should accept disinsecting, deratting and other control measures for conveyances applied by other States if methods and materials advised by the Organization have been applied.
4. States Parties shall establish programmes to control vectors that may transport an infectious agent that constitutes a public health risk to a minimum distance of 400 metres from those areas of point of entry facilities that are used for operations involving travellers, conveyances, containers, cargo and postal parcels, with extension of the minimum distance if vectors with a greater range are present.
5. If a follow-up inspection is required to determine the success of the vector control measures applied, the competent authorities for the next known port or airport of call with a capacity to make such an inspection shall be informed of this requirement in advance by the competent authority advising such follow-up. In the case of ships, this shall be noted on the Ship Sanitation Control Certificate.
6. A conveyance may be regarded as suspect and should be inspected for vectors and reservoirs if:
 - (a) it has a possible case of vector-borne disease on board;
 - (b) a possible case of vector-borne disease has occurred on board during an international voyage; or
 - (c) it has left an affected area within a period of time where on-board vectors could still carry disease.
7. A State Party should not prohibit the landing of an aircraft or berthing of a ship in its territory if the control measures provided for in paragraph 3 of this Annex or otherwise recommended by the Organization are applied. However, aircraft or ships coming from an affected area may be required to land at airports or divert to another port specified by the State Party for that purpose.
8. A State Party may apply vector control measures to a conveyance arriving from an area affected by a vector-borne disease if the vectors for the foregoing disease are present in its territory.

ANNEX 6

VACCINATION, PROPHYLAXIS AND RELATED CERTIFICATES

1. Vaccines or other prophylaxis specified in Annex 7 or recommended under these Regulations shall be of suitable quality; those vaccines and prophylaxis designated by WHO shall be subject to its approval. Upon request, the State Party shall provide to WHO appropriate evidence of the suitability of vaccines and prophylaxis administered within its territory under these Regulations.
2. Persons undergoing vaccination or other prophylaxis under these Regulations shall be provided with an international certificate of vaccination or prophylaxis (hereinafter the "certificate") in the form specified in this Annex. No departure shall be made from the model of the certificate specified in this Annex.
3. Certificates under this Annex are valid only if the vaccine or prophylaxis used has been approved by WHO.
4. Certificates must be signed in the hand of the clinician, who shall be a medical practitioner or other authorized health worker, supervising the administration of the vaccine or prophylaxis. The certificate must also bear the official stamp of the administering centre; however, this shall not be an accepted substitute for the signature.
5. Certificates shall be fully completed in English or in French. They may also be completed in another language, in addition to either English or French.
6. Any amendment of this certificate, or erasure, or failure to complete any part of it, may render it invalid.
7. Certificates are individual and shall in no circumstances be used collectively. Separate certificates shall be issued for children.
8. A parent or guardian shall sign the certificate when the child is unable to write. The signature of an illiterate shall be indicated in the usual manner by the person's mark and the indication by another that this is the mark of the person concerned.
9. If the supervising clinician is of the opinion that the vaccination or prophylaxis is contraindicated on medical grounds, the supervising clinician shall provide the person with reasons, written in English or French, and where appropriate in another language in addition to English or French, underlying that opinion, which the competent authorities on arrival should take into account. The supervising clinician and competent authorities shall inform such persons of any risk associated with non-vaccination and with the non-use of prophylaxis in accordance with paragraph 4 of Article 23.
10. An equivalent document issued by the Armed Forces to an active member of those Forces shall be accepted in lieu of an international certificate in the form shown in this Annex if:
 - (a) it embodies medical information substantially the same as that required by such form; and
 - (b) it contains a statement in English or in French and where appropriate in another language in addition to English or French recording the nature and date of the vaccination or prophylaxis and to the effect that it is issued in accordance with this paragraph.

MODEL INTERNATIONAL CERTIFICATE OF VACCINATION OR PROPHYLAXIS

This is to certify that [name], date of birth, sex,

nationality, national identification document, if applicable

whose signature follows

has on the date indicated been vaccinated or received prophylaxis against:

(name of disease or condition)

in accordance with the International Health Regulations.

Vaccine or prophylaxis	Date	Signature and professional status of supervising clinician	Manufacturer and batch No. of vaccine or prophylaxis	Certificate valid from until	Official stamp of administering centre
1.					
2.					

This certificate is valid only if the vaccine or prophylaxis used has been approved by the World Health Organization.

This certificate must be signed in the hand of the clinician, who shall be a medical practitioner or other authorized health worker, supervising the administration of the vaccine or prophylaxis. The certificate must also bear the official stamp of the administering centre; however, this shall not be an accepted substitute for the signature.

Any amendment of this certificate, or erasure, or failure to complete any part of it, may render it invalid.

The validity of this certificate shall extend until the date indicated for the particular vaccination or prophylaxis. The certificate shall be fully completed in English or in French. The certificate may also be completed in another language on the same document, in addition to either English or French.

ANNEX 7

REQUIREMENTS CONCERNING VACCINATION OR PROPHYLAXIS FOR SPECIFIC DISEASES

1. In addition to any recommendation concerning vaccination or prophylaxis, the following diseases are those specifically designated under these Regulations for which proof of vaccination or prophylaxis may be required for travellers as a condition of entry to a State Party:

Vaccination against yellow fever.

2. Recommendations and requirements for vaccination against yellow fever:
 - (a) For the purpose of this Annex:
 - (i) the incubation period of yellow fever is six days;
 - (ii) yellow fever vaccines approved by WHO provide protection against infection starting 10 days following the administration of the vaccine;
 - (iii) this protection continues for 10 years; and
 - (iv) the validity of a certificate of vaccination against yellow fever shall extend for a period of 10 years, beginning 10 days after the date of vaccination or, in the case of a revaccination within such period of 10 years, from the date of that revaccination.
 - (b) Vaccination against yellow fever may be required of any traveller leaving an area where the Organization has determined that a risk of yellow fever transmission is present.
 - (c) If a traveller is in possession of a certificate of vaccination against yellow fever which is not yet valid, the traveller may be permitted to depart, but the provisions of paragraph 2(h) of this Annex may be applied on arrival.
 - (d) A traveller in possession of a valid certificate of vaccination against yellow fever shall not be treated as suspect, even if coming from an area where the Organization has determined that a risk of yellow fever transmission is present.
 - (e) In accordance with paragraph 1 of Annex 6 the yellow fever vaccine used must be approved by the Organization.
 - (f) States Parties shall designate specific yellow fever vaccination centres within their territories in order to ensure the quality and safety of the procedures and materials employed.
 - (g) Every person employed at a point of entry in an area where the Organization has determined that a risk of yellow fever transmission is present, and every member of the crew of a conveyance using any such point of entry, shall be in possession of a valid certificate of vaccination against yellow fever.
 - (h) A State Party, in whose territory vectors of yellow fever are present, may require a traveller from an area where the Organization has determined that a risk of yellow fever transmission is present, who is unable to produce a valid certificate of vaccination against yellow fever, to be quarantined until the certificate becomes valid, or until a period of not more than six days, reckoned from the date of last possible exposure to infection, has elapsed, whichever occurs first.
 - (i) Travellers who possess an exemption from yellow fever vaccination, signed by an authorized medical officer or an authorized health worker, may nevertheless be allowed entry, subject to the provisions of the foregoing paragraph of this Annex and to being provided with information regarding protection from yellow fever vectors. Should the travellers not be quarantined, they may be required to report any feverish or other symptoms to the competent authority and be placed under surveillance.

ANNEX 8**MODEL OF MARITIME DECLARATION OF HEALTH**

To be completed and submitted to the competent authorities by the masters of ships arriving from foreign ports.

Submitted at the port of Date

Name of ship or inland navigation vessel Registration/IMO No arriving from sailing to

(Nationality) (Flag of vessel) Master's name

Gross tonnage (ship).....

Tonnage (inland navigation vessel).....

Valid Sanitation Control Exemption/Control Certificate carried on board? yes..... no..... Issued at..... date.....

Re-inspection required? yes..... no.....

Has ship/vessel visited an affected area identified by the World Health Organization? yes..... no.....

Port and date of visit

List ports of call from commencement of voyage with dates of departure, or within past thirty days, whichever is shorter:

.....

Upon request of the competent authority at the port of arrival, list crew members, passengers or other persons who have joined ship/vessel since international voyage began or within past thirty days, whichever is shorter, including all ports/countries visited in this period (add additional names to the attached schedule):

(1) Name joined from: (1).....(2).....(3).....

(2) Name joined from: (1).....(2).....(3).....

(3) Name joined from: (1).....(2).....(3).....

Number of crew members on board.....

Number of passengers on board.....

Health questions

(1) Has any person died on board during the voyage otherwise than as a result of accident?
yes.... no.....

If yes, state particulars in attached schedule.

Total no. of deaths

(2) Is there on board or has there been during the international voyage any case of disease which you suspect to be of an infectious nature? yes..... no..... If yes, state particulars in attached schedule.

(3) Has the total number of ill passengers during the voyage been greater than normal/expected?
yes.... no.....

How many ill persons?

International Health Regulations

- (4) Is there any ill person on board now? yes..... no..... If yes, state particulars in attached schedule.
- (5) Was a medical practitioner consulted? yes..... no..... If yes, state particulars of medical treatment or advice provided in attached schedule.
- (6) Are you aware of any condition on board which may lead to infection or spread of disease?
yes..... no.....
If yes, state particulars in attached schedule.
- (7) Has any sanitary measure (e.g. quarantine, isolation, disinfection or decontamination) been applied on board? yes
..... no.....
If yes, specify type, place and date.....
- (8) Have any stowaways been found on board? yes no..... If yes, where did they join the ship (if known)?
.....
- (9) Is there a sick animal or pet on board? yes no.....

Note: In the absence of a surgeon, the master should regard the following symptoms as grounds for suspecting the existence of a disease of an infectious nature:

- (a) fever, persisting for several days or accompanied by (i) prostration; (ii) decreased consciousness; (iii) glandular swelling; (iv) jaundice; (v) cough or shortness of breath; (vi) unusual bleeding; or (vii) paralysis.
- (b) with or without fever: (i) any acute skin rash or eruption; (ii) severe vomiting (other than sea sickness); (iii) severe diarrhoea; or (iv) recurrent convulsions.

I hereby declare that the particulars and answers to the questions given in this Declaration of Health (including the schedule) are true and correct to the best of my knowledge and belief.

Signed

Master

Countersigned

Ship's Surgeon (if carried)

Date

ANNEX 9

THIS DOCUMENT IS PART OF THE AIRCRAFT GENERAL DECLARATION,
PROMULGATED BY THE INTERNATIONAL CIVIL AVIATION ORGANIZATION

HEALTH PART OF THE AIRCRAFT GENERAL DECLARATION¹

Declaration of Health

Name and seat number or function of persons on board with illnesses other than airsickness or the effects of accidents, who may be suffering from a communicable disease (a fever - temperature 38°C/100 °F or greater - associated with one or more of the following signs or symptoms, e.g. appearing obviously unwell; persistent coughing; impaired breathing; persistent diarrhoea; persistent vomiting; skin rash; bruising or bleeding without previous injury; or confusion of recent onset, increases the likelihood that the person is suffering a communicable disease) as well as such cases of illness disembarked during a previous stop

Details of each disinsecting or sanitary treatment (place, date, time, method) during the flight. If no disinsecting has been carried out during the flight, give details of most recent disinsecting

Signature, if required, with time and date

Crew member concerned

¹ This version of the Aircraft General Declaration entered into force on 15 July 2007. The full document may be obtained from the website of the International Civil Aviation Organization at <http://www.icao.int>.