NATIONAL OPEN UNIVERSITY OF NIGERIA

SCHOOL OF SCIENCE AND TECHNOLOGY

COURSE CODE: EHS 315

COURSE TITLE: INTERNATIONAL AND PORT HEALTH SERVICES

COURSE GUIDE

EHS 315
INTERNATIONAL AND PORT HEALTH SERVICES

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INTRODUCTION

International and Port Health Services, is a semester course. It is a two-credit unit course available to all students of Bachelor of Science (B.Sc.) Environmental Health and other related sciences. Health and sanitation aspects of international traffic have been of concern to the World Health Organisation (WHO) since 1951, when the Fourth World Health Assembly recommended that all governments should "improve sanitary and environmental conditions, especially in and around ports and airports" (Resolution WHA4.80); at the same time, the need for "the sanitary protection of populations in mass movement" was also expressed (Resolution WHA 4.8l). Subsequent resolutions of both the World Health Assembly and the Executive Board emphasised the importance of maintaining high standards of hygiene and sanitation in international traffic (particularly in relation to the cross-border spread of diseases, provision of safe water and food and the correct procedures for the collection and disposal of wastes).

WHAT YOU WILL LEARN IN THIS COURSE

The course content consist of a unit of Course Guide, which informs you briefly what the course is about, what course materials you need and how to work with such materials. It also gives you some guideline for the time you are expected to spend on each unit, in order to complete it successfully.

It guides you concerning your tutor-marked assignment, which will be placed in the assignment file. Regular tutorial classes related to the course will be conducted and it is advisable for you to attend these sessions. It is expected that the course will prepare you for challenges you are likely to meet in the field of International Port Health Services.

COURSE AIMS

The course aim is to provide you with an understanding of port health and cross border public health issues. It is intended to let you the existing International Sanitary Regulations, especially the provisions of Article 14, in providing safe food for international air traffic, and in maintaining satisfactory control of, and protection from, malaria vectors at frontiers.

In view of the growth of international traffic, continuous attention should be given to the safety of food and water and the handling of wastes in such traffic", stressed "the need for each country to clarify the ultimate responsibility for the safety of food and water and the proper handling of wastes in international traffic" and, furthermore,

recommended that "countries coordinate and ensure the close and active participation in such a responsibility of health authorities, port and airport management, aircraft operators, shipping companies, tourist associations, and any other service or agency concerned with international traffic".

COURSE OBJECTIVES

To achieve the aim set out, there are sets of objective for the course. Each unit has specific objectives which are stated at the beginning of the unit. You are advised to read the objectives before you study to be able to track your understanding of the course and your progress. It is also good that you endeavor to check the unit objectives after the completion of each unit to work out your level of accomplishment. After going through the course, you should be able to:

- explain the fundamentals of port Health services
- discuss the function of environmental health officers on land, air and sea port
- collaborate with international organisations and agencies operating at the ports
- list and implement the environmental public health services at the ports
- plan and implement disease surveillance at the ports
- list and describe international collaboration and cooperation in port health
- enumerate and implement international health regulations, agreement, constitutions, treaties and other related local policies, regulations and laws.

WORKING THROUGH THIS COURSE

To complete this course, you are expected to read each study unit, read the textbooks and other materials, which may be provided by the National Open University of Nigeria. Each unit contains self-assessment exercises. In the course, you would be required to submit assignment for assessment. At the end of the course, there is final examination. The course should take about fifteen weeks to complete. Listed below are the components of the course, what you have to do and how to allocate your time to each unit, in order to complete the course successfully and timely. The course demands that you should spend good time to read and advice for you is that you should endeavour to attend tutorial session, where you will have the opportunity to comparing knowledge with colleagues.

COURSE MATERIALS

The main components of the course materials are:

1. The Course Guide
2. Study Units
3. References/Further Reading
4. Assignments
5. Presentation Schedule

STUDY UNITS

The study units in this course are as follows:

Module 1 Fundamentals of Port Health Services

Unit 1 Introduction to Port Health Services
Unit 2 Terminologies Used in Port Health Services .
Unit 3 Divisions and Sections in Port Health Services
Unit 4 Environmental Health Services Implemented at the Ports

Module 2 Duties of Environmental Health Officers in Port Health Services

Unit 1 Pest and Vector Control
Unit 2 Health Emergencies
Unit 3 Water Hygiene in Air Travels

Module 3 International Entry Measures and Procedure against Diseases Subject to IHR

Unit 1 Diseases Surveillance and Notification
Unit 2 Immunisation and Issuance of Yellow Fever Certificate
Unit 3 Implementation of International Health Regulations, 2005

Module One explains **the fundamentals of port health services**. There are four units in the module. The first unit focuses on the introduction to port health services, while the second unit deals with the terminologies use in port health services. The third unit dwells on divisions and sections in port health services while unit four also deals with environmental health services implemented at the ports.

The second module is on **the duties of environmental health officer in port health services**. It has three units starting from 1 to unit 3. The first unit deals with pest and vector control in port health while Unit 2

discussed health emergencies in port health. Unit 3 deals with water safety and hygiene in air travels.

The third and last module is entitled **international entry measures and procedure against diseases subject to IHR.** It has three units starting from Unit 1 which deals with diseases surveillance and notification. Unit 2 focuses on immunisation and issuance of yellow fever certificate while Unit 3 also deals with implementation of international health regulations 2005.

Each unit consist of one or two weeks' work and include an introduction, objective/s, main content, reading materials, exercises, conclusion, summary, tutor-marked assignments, references/further reading and other resources. The various units direct you to work on the exercises related to the require reading.

In general, the exercises test you on the materials you have just covered or require you to apply it in a way that it will assist you evaluate your own progress and to reinforce your understanding of the materials. Alongside the TMAs these exercises will help you achieve the stated learning objectives of the individual units and course as a whole.

PRESENTATION SCHEDULE

Your course materials have important dates for the early and timely completion and submission of your TMAs and attending tutorials. You are expected to submit all your assignments by the stipulated time and date and guard against falling behind in your work.

ASSESSMENT

There are three parts to the course assessment and these include self-assessment exercises, tutor-marked assessments and the written examination or end of course examination. It is advisable that you do all the exercises. In tackling the assignments, you are expected to use the information, knowledge and techniques gathered during the course. The assignments must be submitted to your facilitator for formal assessment in line with the deadlines stated in the presentation schedule and assignment file. The work you submit to your tutor for assessment will count for 30% of your total course work.

At the end of the course, you will need to sit for a final end of course examination of about three hours duration. This examination will count for 70% of your total course mark.

TUTOR- MARKED ASSIGNMENT

The TMA is a continuous component of your course. It accounts for 30% of the total score. You will be given four (4) TMAs to answer. Three (3) of these must be answered before you are allowed to sit for the end-of-course examination. The TMAs would be given to you by your facilitator and returned after you have done the assignment. Assignment questions for the units in this course are contained in the assignment file. You will be able to complete your assignment from the information and material contained in your reading, references and study units.

However, it is desirable in all degree level of education to demonstrate that you have read and researched more into your references, which will give you a wider view point of the subject. Make sure that each assignment reaches your facilitator on or before the deadline given in the presentation schedule and assignment file. If for any reason you cannot complete your work on time, contact your facilitator before the assignment is due to discuss the possibility of an extension. Extension will not be granted after the due date unless there are exceptional circumstances.

FINAL EXAMINATION AND GRADING

The end-of-course examination for international and port health services will be for about 3 hours and it has a value of 70% of the total course work. The examination will consist of questions, which will reflect the type of self-testing, practice exercise and tutor-marked assignment problems you have previously encountered. All area of the course will be assessed. Use the time between finishing the last unit and sitting for the examination to revise the whole course. You might find it useful to review your self-assessment exercises TMAs and comments on them before the examination. The end-of -course examination covers information from all parts of the course.

COURSE MARKING SCHEME

Assignment	Marks
Assignments 1-4	Four assignments, best three marks of the four counts 10% each for the 3course marks amounting to 30%.
End-of-course examination	70% of overall course marks
Total	100% of course materials

FACILITATORS/TUTORS AND TUTORIALS

There are 15 hours of tutorials provided in support of this course. You will be notified of the dates, times and location of the tutorials as well as the name and the phone number of your facilitator, as soon as you are allocated a tutorial group.

Your facilitator will mark and comment on your assignments, keep a close watch on your progress and any difficulties you might face and provide assistance to you during the course. You are expected to mail your Tutor-Marked Assignment to your facilitator before the schedule date (at least two working days are required). They will be marked by your tutor and returned to you as soon as possible.

Do not delay to contact your facilitator by telephone or e-mail if you need assistance. The following might be circumstances in which you would find assistance necessary, hence you would have to contact your facilitator if:

- you do not understand any part of the study or the assigned readings
- you have difficulty with self-tests
- you have a question or problem with an assignment or with the grading of an assignment.

You should endeavour to attend the tutorials. This is the only chance to have face to face contact with your course facilitator and to ask question which are answered instantly. You can raise any problem encountered in the course of your study. To gain more benefit from course tutorials, prepare a question list before attending them. You will learn a lot from participating actively in discussions.

SUMMARY

International and Port Health Services have been of concern to the World Health Organisation (WHO) since 1951, when the Fourth World Health Assembly recommended that all governments should “improve sanitary and environmental conditions, especially in and around ports and airports” (Resolution WHA4.80). At the same time, the need for “the sanitary protection of populations in mass movement” was also expressed (Resolution WHA4.8l). Subsequent resolutions of both the World Health Assembly and the Executive Board emphasised the importance of maintaining high standards of hygiene and sanitation in international traffic (particularly in relation to the cross-border spread of diseases, provision of safe water and food and the correct procedures for the collection and disposal of wastes).

Upon completing this course, you will be equipped with the knowledge and professional skill to accomplish effective International and Port Health Services. You will be able to identify professionals involved in International and Port Health Services and the role/s played by each professional health group at achieving effective trans-border transmission of internationally notify able diseases, the containment strategies and control measures at curtailing the spread of these diseases.

You will understand the dimension of the problem of international and port health services as well as the socio-cultural and occupational factors contributing to their occurrences. You will also know the role that can be played by individuals, the community, the government, international agencies as well as non-governmental organisations in the prevention and control of trans-border transmission of internationally notifiable infectious diseases. In addition, you should be able to answer questions on the subject such as:

- the fundamentals of port health services
- the function of environmental health officers on land, air and sea port
- collaborate with international organisations and agencies operating at the ports
- list and implemented the environmental public health services at the ports
- plan and implement disease surveillance at the ports
- list and describe international collaboration and cooperation in port health
- implement international health regulations.

The above list is just a few of the question expected and is by no means exhaustive. To gain most from this course, you are advised to consult relevant books to widen your knowledge on the topic. I wish you success in the course. It is my hope you will find it both illuminating and useful.

MAIN COURSE

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MODULE 1 FUNDAMENTALS OF PORT HEALTH SERVICES

CONTENTS

1.0 INTRODUCTION

The world over has become a global village, with millions of people travelling daily from one location to the other. The need to curtail the possible spread of disease of international concern is paramount in international health. Port health services has a major role to play in the control of communicable diseases in the migrating population, particularly the environmental health officers who are the first contact to anyone entering the country frontier be it air, land or water. Environmental Health Officers therefore play important role in the international control measures for cross-border or trans-boundary transfer of diseases.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define port health services
- narrate a brief history of port health services in Nigeria

- illustrate the organisational structure of port health services in Nigeria
- list the port health services locations in Nigeria.

3.0 MAIN CONTENT

3.1 Definition of Port Health Services

Port health services are defined as those key measures put in place to prevent cross-border disease transmission. Port health officers are also responsible for protecting the health and well-being of the crew and citizens by carrying out statutory obligations in relation to food safety, imported food control, air, land, ship sanitation and animal health. It aims to guard against the importation and exportation of diseases, thus keeping the indigenous population reservoir as small as possible and honestly notifying World Health Organisation (WHO) of the situation in the country. Port health authority is internationally recognised for responsible for all appropriate health measures permitted in the International Health Regulations (IHR) as applicable in the country's jurisdiction.

Therefore, port health is a measure taken to protect and promote complete physical, mental and social well-being of individual across international borders with minimal interference with international trade and traffic.

3.2 History of Port Health Services in Nigeria

Measures to prevent the introduction of infection were recorded in the early 1500s, when ships were isolated in Marsamxett Harbour. An organised organisational enforcement body, the 'Magistri Sanitatis,' was set up in 1538, during the time of the Order of St John. Strict enforcement of the law was practiced and emphasis was made on the construction of intricate sewage and drinking water systems, some of which are still operational to this very day. In January 1799, an inspector, Matthew Pulis, was shot by the French as his 'right of entry' enabled him to act as a go-between with Maltese insurgents both inside and outside the walls of Valletta.

Following a Royal Commission in 1838, the Water Police and the Quarantine Departments were amalgamated under the Superintendent of Quarantine. A review of measures to prevent disease gave rise to a comprehensive set of regulations which were later consolidated in a special ordinance embodied in Maltese law. The next major changes took place in 1885 and 1895, with the formation of the Public Health Department. Someone who left his mark during this time was Sir Temi

Zammit, a medical officer of health who was instrumental in the initiation of chlorination of water supplies; six months after its benefits were discovered in the United Kingdom. In 1887, together with Sir Robert Bruce, a British army doctor, Dr. Zammit isolated the Brucella melitensis organism from the spleen of a dead British soldier. Another sanitary inspector of note was the writer Ninu Cremona who was appointed as a sanitary inspector in 1904 after having attended a course in the Ashton School of Hygiene at the University of Liverpool. The designation of sanitary inspector was changed to that of health inspector by means of Act XX of the 12th December 1957.

In Nigeria, port health services started with the first problem that faced the modern day Nigerian Sanitary Inspectors as early as the 1920s when there was the outbreak of bubonic plaque in 1924. The professionals were actively involved in the control of the plaque epidemic. Dr. Oluwole Isaac revamped port health services and sanitation inspection at the country frontiers as a vital instrument for the control of communicable diseases, using entirely the Nigerian sanitary inspectors now environmental health officers.

3.3 Organisational Structure

Staffing – The port health team forms part of the public health department of the Federal Ministry of Health in Nigeria. It is being managed on a day-to-day basis by a director of port health services.

3.4 Port Health Locations in Nigeria

The location of port health services are at a country's frontiers, that is the airport, seaport and land borders. These are:

3.4.1 International Airports: There are Five (5) Designated Ports

- Murtala Mohammed International Airport, Lagos
- Port Harcourt International Airport, Port Harcourt
- Margaret Ekpo International Airport, Calabar
- Aminu Kano International Airport, Kano
- Nnamdi Azikiwe International Airport, Abuja – FCT.

3.4.2 Seaport: There are Five (5) Designated Seaports in Nigeria

- Apapa Port, Lagos
- Tin Can Island Port, Lagos (TCIP), Lagos

- Warri Port, Warri
- Port Harcourt Port
- Calabar Port, Calabar

3.4.3 Land Borders

There are presently twenty-two (22) designated/ official land frontiers in the 36 States of the Nigeria federation.

4.0 CONCLUSION

In concluding this unit, it is important to state that public health's safeguard of our country's points of entry/frontier is a sure means of controlling cross border diseases migration. The role of environmental health officer in the maintenance of high public health standard at port health being the first contact at the frontier back to the era of plaque epidemic is worthy of mention and note.

5.0 SUMMARY

We have so far discussed the definition of port health services, the history of port health services in Nigeria, the organisational structure of port health services in Nigeria and the various port health services location in Nigeria

6.0 TUTOR-MARKED ASSIGNMENT

1. What are port health services?
2. Where are the various ports of entry into Nigeria?
3. Give a short history of public health in Nigeria.

7.0 REFERENCES/FURTHER READING

http://www.westerncape.gov.za/eng/directories/services/11515/6455.

https://ehealth.gov.mt/HealthPortal/public_health/environmental-

health/health_inspectorate/port_health_services/port_health_services_objective.aspx

http://tsaftarmuhalli.blogspot.com/2011/04/environmental-health-in-nigeria.html.

http://www.euro.who.int/_data/assets/pdf_file/0004/151375/e95783.pdf.

UNIT 2 TERMINOLOGIES USED IN PORT HEALTH SERVICES

CONTENTS

1.0 INTRODUCTION

In the last unit, we introduced international port health services and traced the history, and organisational structure and staffing. In this unit, we shall be discussing the technical words used in port health.

Terminologies and acronyms are specialised vocabulary: the expressions and words, or a set of expressions and words, used by people involved in a specialised activity or field of work or discipline. It is a word or group of words used to give particular emphasis to an idea or sentiment.

The special emphasis is typically accomplished by the user's conscious deviation from the strict literal sense of a word, or from the more commonly used form of word order or sentence construction. From ancient times to the present, such figurative locutions have been extensively employed by orators and writers to strengthen and embellish their styles of speech and composition.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- list different terminologies used in port health services
- define terminologies used in port health services
- enumerate the importance acronyms used in port health services.

3.0 MAIN CONTENT

3.1 Terminologies Used in Port Health Services

- Accessible- Capable of being exposed for cleaning and inspection with the use of simple tools, such as a screwdriver, pliers or an open-end wrench.
- Adequate hygiene - Level of hygiene sufficient for the prevention of public health risk.
- Aircraft water system - Water service panel, filler neck and the onboard water storage tanks and all of the plumbing and fixtures on the aircraft.
- Airport water system- On-site airport distribution system and possibly water treatment facilities if the airport is a producer of potable water.
- Backflow- Flow of water or other liquids, mixtures or substances into the distribution pipes of a potable supply of water from any source or sources other than the potable water supply. Back-siphonage is one form of backflow. See also Back-siphonage.
- Backflow preventer-Approved backflow prevention plumbing device that would typically be used on potable water distribution lines where there is a direct connection or a potential connection between the potable water distribution system and other liquids, mixtures or substances from any source other than the potable water supply. Some devices are designed for use under continuous water pressure, whereas others are non-pressure types.
- Back-siphonage-Backward flow of used contaminated or polluted water from a plumbing fixture or vessel or other source into a water supply pipe as a result of negative pressure in the pipe.
- Biohazard bag-Bag used to secure biohazard waste that requires microbiological inactivation in an approved manner for final disposal. Such bags must be disposable and impervious to moisture and have sufficient strength to preclude tearing or bursting under normal conditions of usage and handling.
- Cleaning - Removal of visible dirt or particles through mechanical action, normally undertaken on a routine and frequent basis. The cleaning process and some products used for cleaning also result in disinfection. See also Disinfection.
- Communicable disease- Illness caused by organisms such as bacteria, viruses, fungi and parasites that can be directly or indirectly transmitted from an infected person to others. Sometimes the illness is due not to the organism itself, but rather to a toxin that the organism produces after it has been introduced into a human host.

- Competent authority-Authority responsible for the implementation and application of health measures under the International Health Regulations (2005).
- Control measure - Those steps in the drinking-water supply that directly affect drinking-water quality and that collectively ensure that drinking-water consistently meets health-based targets. They are activities and processes applied to prevent hazard occurrence.
- Corrosion resistant-Capable of maintaining original surface characteristics under prolonged influence of the use environment, including the expected food contact and the normal use of cleaning compounds and sanitizing solutions. Corrosion-resistant materials must be non-toxic.
- Cross-connection-Any unprotected actual or potential connection or structural arrangement between a potable water plumbing system and any other source or system through which it is possible to introduce into any part of the potable system any used water, industrial fluid, gas or substance other than the intended potable water with which the system is supplied. Bypass arrangements, jumper connections, removable sections, swivel or change-over devices and other temporary or permanent devices through which backflow can occur are considered to be cross-connections.
- Disinfection-The procedure whereby measures are taken to control or kill infectious agents on a human or animal body, on a surface or in or on baggage, cargo, containers, conveyances and goods by direct exposure to chemical or physical agents.
- Environmental system control - System that provides air supply, thermal control and pressurisation for the passengers and crew travelling on an aircraft used for airline operations.
- Food Contact surfaces - Surfaces of equipment and utensils with which food normally comes in contact. These include the areas of ice machines over the ice chute to the ice bins. See also Non-food contact surfaces.
- Food handling area - Any area where food is stored, processed, prepared or served.
- Food preparation are - Any area where food is processed, cooked or prepared for service.
- Food service area - Any area where food is presented to passengers or crew members (excluding individual cabin service).
- Food storage area - Any area where food or food products are stored.
- Food transport area - Any area through which unprepared or prepared food is transported during food preparation, storage and service operations (excluding individual cabin service).

- Health based target- A benchmark to guide progress towards a predetermined health or water safety goal. There are four types of health-based targets: health outcome targets, water quality targets, performance targets and specified technology targets.
- Non-food contact surfaces - All exposed surfaces, other than food contact or splash contact surfaces, of equipment located in food storage, preparation and service areas.
- Non-toxic materials - Materials that, when used in the water distribution system, do not introduce harmful or injurious ingredients or substances into the water.
- Operational monitoring - Methods to assess the performance of control measures at appropriate time intervals.
- Personal protective equipment - Equipment and materials used to create a protective barrier between a worker and the hazards in the workplace.
- Portable - Description of equipment that is readily removable or mounted on casters, gliders or rollers; provided with a mechanical means so that it can be tilted safely for cleaning; or readily movable by one person.
- Potable water- Fresh water that is intended for drinking, washing or showering; for handling, preparing or cooking food; and for cleaning food storage and preparation areas, utensils and equipment. Potable water, as defined by the WHO Guidelines for Drinking-water Quality, does not represent any significant risk to health over a lifetime of consumption, including different sensitivities that may occur between life stages.
- Potable water tank-All tanks in which potable water is stored for distribution and use as potable water.
- Public health authority - Government agency or designee responsible for the protection and improvement of the health of entire populations through community-wide action.
- Public health surveillance - The ongoing, systematic collection, analysis and interpretation of data about specific environmental hazards, exposure to environmental hazards and health effects potentially related to exposure to environmental hazards, for use in the planning, implementation and evaluation of public health programmes.
- Readily removable-Capable of being detached from the main unit without the use of tools.
- Removable - Capable of being detached from the main unit with the use of simple tools, such as a screwdriver, pliers or an open-end wrench.
- Safe material - Article manufactured from or composed of materials that may not reasonably be expected to result, directly

or indirectly, in their becoming a component of any food or water or otherwise affecting the characteristics of any food or water.

- Transfer point - Site of intermittent connection for water transfer between the hard-plumbed airport water distribution system and the aircraft water system. Sometimes referred to as Watering point.
- Traveller - A person in transit between locations.
- Turbidity - Light-scattering cloudiness or lack of transparency of a solution due to the presence of suspended particles. Turbidity is not necessarily visible to the eye.
- Validation - Investigative activity to identify the effectiveness of a control measure. It is typically an intensive activity when a system is initially constructed or rehabilitated. It provides information on reliably achievable quality improvement or maintenance to be used in system assessment in preference to assumed values and also to define the operational criteria required to ensure that the control measure contributes to effective control or hazards.
- Verification - Final monitoring for reassurance that the system as a whole is operating safely. Verification may be undertaken by the supplier, by an independent authority or by a combination of these, depending on the administrative regime of a given country. It typically includes testing for faecal indicator organisms and hazardous chemicals.
- Watering point - See Transfer point.
- Water safety plan - Documented comprehensive strategy for managing and operating a water supply system.
- Water supply surveillance-Continuous and vigilant public health assessment and review of the safety and acceptability of drinking-water supplies. There are two types of approaches: audit-based approaches and approaches relying on direct assessment. In the audit approach, assessment activities, including verification testing, are undertaken largely by the supplier, with third-party auditing to verify compliance. In direct assessment, the drinking-water supply surveillance agency carries out independent testing of water supplies.
- Mooring station – Is usually referred to as quarantine anchorage. It is a place within the seaport which is specified by the port health officer where the collector of customs for the area in which the part is situated and the harbour master for the mooring of ship for medical inspection so that they do not come in contact with other ships in the port.
- Quarantine station – Premises and facilities for the prompt isolation and care of infected persons

Important acronyms used in port health services:

- ACI - Airports Council International
- APHA - Association of Port Health Authorities (United Kingdom)
- GDWQ - Guidelines for Drinking-water Quality
- HPC - Heterotrophic Plate Count
- IATA - International Air Transport Association
- ICAO - International Civil Aviation Organisation
- IHR (2005) - International Health Regulations (2005)
- IMO – International Maritime Organisation.
- NTU - Nephelometric Turbidity Unit
- PVC - Polyvinyl Chloride
- PWS - Potable Water System
- SARS - Severe Acute Respiratory Syndrome
- NESRA – National Environmental Standard Regulation Agency
- USEPA - United States Environmental Protection Agency
- VOC - Volatile Organic Chemical
- WHA - World Health Assembly
- WHO - World Health Organisation
- WSP - Water Safety Plan.

4.0 CONCLUSION

In concluding this unit, it is important to state that the environmental health officer should be abreast of terminologies frequently used in port health services as well as the acronyms.

5.0 SUMMARY

We have defined several technical words and terminologies frequently in use in port health services, as well as the acronyms. You must, however, note that there are several others not captured in this unit, you are therefore advised to read wider to enable you capture the ones not contained in this topic.

6.0 TUTOR-MARKED ASSIGNMENT

1. List twenty terminologies used in port health services?
2. Define the first ten terminologies used in port health services?
3. List and write out ten acronyms used in port health services.

7.0 REFERENCES/FURTHER READING

http://www.westerncape.gov.za/eng/directories/services/11515/6455.

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Lawrence, O. Gostin (2004). "International Infectious Disease Law, Revision of the World Health Organisation's International Health Regulations". *Journal of the American Medical Association.*

UNIT 3 DIVISIONS AND SECTIONS IN PORT HEALTH SERVICES

CONTENTS

1.0 INTRODUCTION

In the last two units, you have been introduced to port health services in Nigeria. We have also discussed some of the technical words used in international port health services.

In this unit, we shall be looking into the divisions and sections in port health services in Nigeria. I will advise that you pay attention as you read along. The provision of an effective port health services is a combined effort of several professionals working at different levels and places simultaneously for the common objective of ensuring and accomplishing the international control measures for cross-border or trans-boundary transfer of diseases. The professionals working in port health services are in various divisions and sections and coordinated by the various heads of this division for the delivery of a common disease management and control goal.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- list the divisions and sections in port health services in Nigeria
- state the functions of the various divisions and sections in port health services in Nigeria
- draw the organisational organogram of port health services in Nigeria.

3.0 MAIN CONTENT

3.1 Divisions and Sections in Port Health Services in Nigeria

The various divisions in port health services in Nigeria are:

- Medical and Clinical Services
- Quarantine Services
- Environmental Health and Pollution Control
- Ad-hoc Duties
- Monitoring and Evaluation
- Planning, Programme Development and Administration and Accounts
- Medical Laboratory and Immunisation.

3.2 Functions of the Various Divisions and Sections in Port Health Services in Nigeria

- **Medical and Clinical Services**

The medical and clinical services division is headed by a medical doctor duly assisted by nurses and other health staff. This division is responsible for the curative, rehabilitative and promotional healthcare services within the port health.

- **Quarantine Services**

Quarantine services division is responsible for the enforcement of the international law providing that people or animals that may have been exposed to a contagious or infectious disease and could not show prove of vaccination against such infectious disease be isolated when entering a country for that period that will allow for the manifestation of the disease signs and symptom.

- **Environmental Health and Pollution Control**

The division is responsible for the taming and controlling all those deleterious factors in the port environment be it air, land or water that is capable of affecting man and animal.

- **Ad-hoc Duties**

This division is responsible for assignments and schedules occurring by emergency or that are not carried out on day-to-day basis. These assignments and schedules among others include: accident emergency response, Hajj operation and Christian pilgrimage.

- **Monitoring and Evaluation**

The division is responsible for the daily tracking of events and activities within the port health and to determine whether or not the planned programme of action is on track. The division is also in constant liaison with other divisions, measuring the performance level and identifying factors militating effective performance and the way out.

- **Planning, Programme Development and Admin and Accounts**

The division is responsible for the coordination of all administrative activities of programme planning and development. The division is also responsible for staffing and its welfare, including making funds available for the operational needs and demand import health services.

- **Medical Laboratory and Immunisation**

The medical laboratory and immunisation unit is a section directly responsible to the medical and clinical services division. The section carries out routine immunisation of suspected and quarantined persons and animals. It also carries out laboratory investigation of samples, specimens and other materials sent to it.

3.3 Organogram

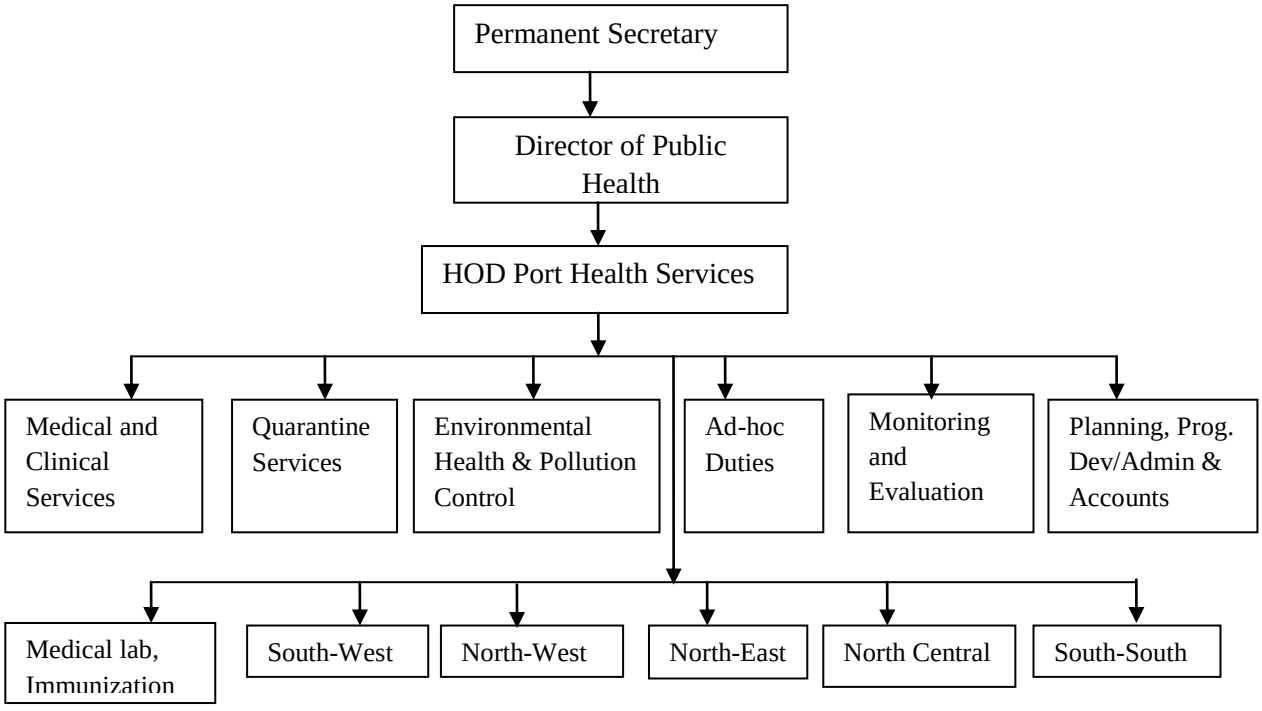

Fig.1.1: Organogram

4.0 CONCLUSION

In concluding this unit, it is important to state that the environmental health officer should be abreast of terminologies and the acronyms frequently used in the divisions, their duties as well as the organisational organogram in port health services.

5.0 SUMMARY

So far, we have discussed the definition of terminologies frequently in use in port health services, as well as the acronyms.

6.0 TUTOR-MARKED ASSIGNMENT

1 List twenty terminologies used in port health services?
2 Define the first ten listed in one above.
3 List and write out ten acronyms used in port health services.
4 Draw the organisational organogram of port health services in Nigeria.

7.0 REFERENCES/FURTHER READING

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UNIT 4 ENVIRONMENTAL HEALTH SERVICES IMPLEMENTED AT THE PORTS

CONTENTS

1.0 INTRODUCTION

In the last three units, we studied the introduction to port health services, some of the several technical words and terminologies used and the various divisions and sections in port health services.

In this unit, we shall be looking into the various environmental health services being implemented in our various port of entries be it air, land or sea.

The purpose of environmental health services in port health is to develop and implement environmental health policy as well as ensuring that environmental health goals are met. This include the management of relevant operations including planning, coordination, setting standards, monitoring and evaluation of environmental health services as well as providing technical support and guidance to partners/stakeholders within port health.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- list environmental health services implemented at the port health
- state airport health control measures
- define seaport health control measures
- state ship health control measures
- state land border health control measures
- state the requirements of a designated approved port
- list the diseases of international health regulation or international notifiable disease
- list other port health duties.

3.0 MAIN CONTENT

3.1 Environmental Health Services Implemented at the Port Health

The environmental health services that are being implemented at port health are as follows:

- Implementation of the international health regulations
- Disease surveillance within the ports and frontier post of entry and exit
- Quarantine administration
- Inspection and certification of vessels (aircraft, ship, train or road vehicle)
- Environmental sanitation within ports and frontier posts to control nuisances such as noise, dust, smoke and odour problems
- Vector/vermin control within and around ports and frontiers
- Food safety measures for both imports and exports
- Vaccination of travellers and issuance of vaccination certificates
- Respond to any health emergencies within and around the port area

  Scrutinise plans and documentation regarding improvement of port area for approval
- Liaise with other stakeholders in implementation of port health activities.

3.2 Airport Health Control Measures in a Designated Airport

It is an airport designated by the health authority of the national concerned and approved by the World Health Organisation for international voyage of journey. Airport health control measures are put in place to reduce incident of trans-border disease spread, this include but not limited to the following:

- Screening of passengers from countries affected by internationally notifiable diseases and taking appropriate action as necessary
- All incoming travelers at the International Airport are required to be immunised against yellow fever

The following information is contained in the yellow fever vaccination card:

1. Dosage given
2. Date of manufacture of the vaccine and name of manufacturer
3. Date of expiration

- Medical teams are at the airport to cater for travelers showing symptoms of suspected notifiable infectious diseases and such traveler may be referred to hospitals for further management.
- All people arriving at international airport, including transit passengers, are required to have yellow fever certificate or card. Anyone not having yellow card is suspected and quarantined.

3.3 Boarding of Aircraft

Aircraft in relation to port health means an aircraft making an international voyage. It includes any machine, which can derive support in the atmosphere from the reactions of the air and is intended for aerial navigation. Immediately the aircraft lands, the commander of the aircraft has to complete an aircraft declaration of health and submit it to the port health authority. He must also give other information as regards to the health condition of the aircraft as this information is required by the port health. He must also report to the authority of any case of death on board during the voyage. If the authority is satisfied with the health condition of the aircraft, “free pratique” is granted.

“Free Pratique” here implies, “permission for an aircraft after landing to disembark and commence operation”. Then all the health certificates of the passengers are thus checked. Those with expired papers are re-vaccinated and put under surveillance, depending on the type of disease. If the health authority is not satisfied with the health condition or the

aircraft is suspected or infected, such aircraft shall be detained depending on its health condition and proceed to apply all measures that shall make the aircraft free of infection.

The passengers of such aircraft shall not leave the vicinity, unless authorised. But, if such aircraft lands in any other airport (which is not international sanitary airport), the commander of the aircraft shall notify the medical officer of health in that area, who shall take measures appropriate to the circumstances.

3.4 Seaport Health Control Measures

Seaport health control measures are put in place to reduce incident of trans-border diseases spread. This includes but not limited to the following:

- Screening of passengers from countries affected by internationally notifiable diseases and taking appropriate action as necessary.
- All incoming travelers at the seaport are required to be immunised against yellow fever.
- The following information are contained in the yellow fever vaccination card:

1. Dosage given
2. Date of manufacture of vaccine and name of manufacturer
3. Date of expiration

- Medical team are at the seaport to cater for the travelers showing symptoms of suspected Notifiable infectious diseases and such traveler may be referred to hospitals for further management.
- All people arriving at seaport, including **transit passengers**, are required to have yellow fever certificate or card. Anyone not having yellow card is suspected and quarantined.
- Investigation of any case of infectious diseases report at the port or aboard any vessel (aircraft, ship, train or road vehicle) entering the country
- Notification of any diseases as per IHR (2005)
- Quarantine of passenger(s) suspected of having an infectious disease
- Fumigation of infected vessels and quarantine as need arises
- Quarantine any vessel disinfected or disinfested as per IHR (2005) and other existing local laws and regulations
- Inspect all types of commercial vessels to ensure appropriate sanitary conditions and hygiene standards are maintained
- Review of documents on Maritime Declaration of Health

- Issuance of Ship Sanitation Control Exemption Certificate/Ship Sanitation Control Certificate

3.5 Ship Inspection

Ship has been defined as mobile or floating premises and therefore, the inspection of the ship is very similar to house – to –house inspection.

"Premises" - means and includes messuages, buildings, lands, tenements, hereditaments, vehicles, tents, vans, structures or any ship or vessel in any port or on any inland water.

Ship inspection involves a routine, regular and systematic inspection in order to detect nuisances and abate them. It is pertinent to mentioned that sometimes, inspection could be as a result of investigation of complaints of nuisances and infectious diseases.

It is worthy of note that ship inspection is in compliance with the IHR. It starts from outside. All Ships are expected to use either or all of these methods to prevent rats in the ship, including health education. The methods are:

- The use of rat-guards in the rope
- Use of coal-tar (black) on all cables and wires of the ship
- Blocking the holes in the ship
- Use of electricity (bulbs) on the gang-way at night.

Whenever the ship fails to use any of the aforementioned devices, a "rat-guard notice" is served compelling the captain to put on and to prevent reoccurrence.

In case of reoccurrence, the captain of the ship is prosecuted. The health officer has to seek the permission of the captain or his assistant (chief-mate) before he carries out the inspection of the ship. The following information is collected:

a. Name of the ship
b. Nationality
c. Agent
d. Birth
e. Date of Arrival
f. Estimated time of departure
g. Type of certificate
h. Port of issue of the certificate
i. Last port of call
j. Next port of call

k. Rat-guard (present or absent)
l. Last port of water supply or does the ship make her water on board
m. Date of supply of water on board
n. How often does the ship clean its water tank in a year
o. Livestock on board
p. Any sick crew/passenger on board

After the information, the health officer carries out a keen and thorough inspection of the ship.

3.6 State Land Border Health Control Measure

Land frontier or post health control measures are those plan of actions put in place to reduce incident of trans-border diseases spread, this include but not limited to the following;

- All arrivals at land border control points and cross-boundary buses and vehicles are screening of internationally notifiable diseases and taking appropriate action as necessary
- All incoming travelers at land border are required to be immunised against yellow fever
- The following information are contained in the yellow fever vaccination card:

1. Dosage given
2. Date of vaccine was manufactured and name of manufacturer
3. Date of expiration

- Medical team are at the land border to cater for the travelers showing symptoms of suspected notifiable infectious diseases and such traveler may be referred to hospitals for further management.
- All people arriving at land border are required to have yellow fever certificate or card. Anyone not having yellow card is suspected and quarantined.

3.7 Requirements of a Designated Approved Port

- An organised organisational medical and health services with adequate trained health personnel.
- Equipments of a wireless station for easy communication between the ship and the health authority.
- Safe drinking water supply.
- Provision of mooring station which should always be kept clean

- Effective system and equipment for the removal and safe disposal of excrement refuse waste water, condemned food and other matter dangerous to public health.
- Waiting rooms or premises for the medical inspection and examination of persons.
- Premises and facilities for the prompt isolation and care of infected persons (quarantine station and isolation camp).
- Apparatus means for cleansing, disinfecting and disinfection of ship, clothing and other article/which can make the port free from mosquitoes especially *aedes aegypti.*
- Adequate and accommodation or homes for seamen while in the port premises.
- Provision of nearby market for easy shopping of passengers and crews men.
- Laboratory for bacteriological examination of rodents for plague infection, water and food samples.
- Provision of ambulance vehicle for easy removal of patient to hospitals.
- Equipment for vaccination and inoculation of passengers and crews men.

3.8 Diseases of International Health Regulation or International Notifiable Disease

- **Plague**

1. Incubation period (6days)
2. Suspected people should be quarantine for 6days
3. All passengers and crews should be put under surveillance for 6 day
4. Disinfection of the ships including baggage and articles of the infected or suspected people should be carried out.
5. Prophylactic inoculation with anti-plague vaccination of the passengers and crew is highly important.
6. If it is rodent plague, the ship should be fumigated
7. All dead rats should be burned
8. A certificate dully signed by EHO or a designated Health Personnel should be issued to ensure that the people could no longer spread the disease and also such a ship is granted free pratigue and allowed to stay and berth with other ship since she has been fumigated and is free for human habitation.

- **Cholera**

1. Incubation period (5days)
2. Disinfection of the ship with special reference to articles of the infected or suspected person.
3. Condemnation of H_20, fish, meat, vegetable or other exposed or uncooked food items found on board.
4. Inoculate the people whose certificate has expired.
5. All the infected person should be isolated.
6. All suspects should be quarantine.

- **Yellow fever**

1. Incubation period (6days)
2. Passengers and the crews should be place under surveillance for six days
3. Re-inoculate all the contacts
4. Isolation of all the infected persons
5. Disinfection of the ship for the destruction of vectors of yellow fever on board.

- **Smallpox**

- **Typhus fever**
  Relapsing fever, etc.

3.9 Other Port Health Duties

Health services throughout the world are designed to prevent diseases and accident, promote physical, social and mental health and to prolong life, through organised organisational community effort for the sanitation of the environment, the control of disease and education in personal hygiene. To achieve these objectives, every country provides the necessary health infrastructures like hospitals, health centres, health clinics, maternity and child health services, training institutions to train health personnel. But owing to contacts (by air, land and water) with the outside world, no country can achieve the objective of ensuring disease free environment. This is because the health status of the countries of the world differs, for example, cholera and yellow fever are endemic in India and most parts of Africa respectively, while Malaysia and most parts of Europe are receptive areas of yellow fever.

The implication therefore is that diseases known to be prevalent in a region could be introduced through trade routes. In Nigeria, it was only from 1970 that cholera became a health problem.

It is clear from the foregoing that disease prevention promotes health and prolongs life. Thus, our concern must go beyond the national boundaries. Steps must be taken to prevent importation and exportation of diseases as people cross and re-cross the political boundaries called national frontiers. This is the objective of international health. World Health Organisation therefore, recognises that the only true protection against inter-borders communicable diseases, is to control them at the sources, in order to prevent the danger of a disease localised in a region being spread to within and to other countries. Thus, any measure that prevents the spread of the communicable diseases would help the control of these diseases.

Disease prevention is one of the most important functions of the port health authority. It is a control measure that must be carried out promptly. Important highlight of this measure include but not limited to:

a. Prompt notification of appropriate health authority by port health officials of all cases of internationally modifiable infectious and communicable diseases
b. Investigation, analysis and report of findings by health officials
c. Prompt isolation and quarantine, where necessary
d. Immunisation of all contacts
e. Disinfection , disinfestations and derating
f. Laboratory diagnosis of all collected samples to establish cause of infection
g. Containment of spread and route of communicability.

- **Port Health Welfare Services**

Statutory duties of port health authority are services rendered by port health officials. This includes the ones run of routine, ad-hoc and emergency. These duties are given recognition under the law. The duties are:

a. Port welfare services,
b. Management of resuscitation centre,
c. Landing of corpse,
d. Management of quarantine station,
e. Management of isolation camp,
f. Pilgrimage,
g. Airport Health Control,
h. Vessel Inspection,
i. Imported foodstuffs,
j. Pharmaceuticals and medicines,
k. Port exports, etc.

a. Port Welfare Service

The port welfare service rendered to seamen is a joint service between the port health authority and other port welfare committees. In Nigeria, these committees include:

i. Port health authority
ii. Social welfare service of Lagos City Health Department
iii. All shippers agencies
iv. Mission to seamen (some distinguished seamen)
v. Shipping federation (who recruits all seamen for shipping lines in Nigeria)

The services rendered include both medical and social. The medicals are:

- Full medical examination of all crew and seamen every two years and on retirement
- Free infection examination of the seamen
- Vaccination and inoculation against diseases subject to regulations
- Treatment of venereal diseases – which are prominent among seamen. This is in line with the agreement signed on the 1st December 1924 at Brussels that treatment facilities be given to merchant seamen for the treatment of venereal diseases.

Article 1 of the Brussels Treaty states that the high contracting parties undertaken to establish and to maintain each of their principal sea or river, port services for the treatment of venereal diseases, is open to all merchant seamen or watermen without distinction of nationality. It should be made known that all medical treatments and supplies of necessities to the seamen are free of charge.

In Nigeria, the agent or owner of the particular ship settles the bill for all the services rendered to seamen. The following are the social activities that are given to seamen while in the port:

- Personal interviews with the seamen and rendering of help on various problems
- Exchange of library books and issuing of magazines and newspaper
- Excursion and visits to places of interest
- Night clubs, pubs, hotels and cinema houses are visited

NOTE: There is a seafarer's club house, which solves all the social problems of the seamen.

b. Resuscitation Centre

This is the reception centre for all survivors brought from the scene of events of an aircraft accident or emergency occurring at the airport. All injured persons are removed from the crash and given aid or treatment at this centre before finally transferred to either a hospital for further treatment to his house for recovery. If during the course of first aid, the survivor dies, he is removed to mortuary.
Since it is possible and not the wish of port health authority for a plane to crash, the resuscitation centre is routinely used as first aid base for the treatment of airport workers to treat minor ailments.

c. Landing of Corpse

Any aircraft or ship bringing a corpse known as "special cargo" is termed "suspect". The captain must submit the certificate showing the cause of the death to the port health authority. If the death is of infectious nature, the aircraft or the ship must be disinfected, if not, disinfection is not necessary. Then, the health authority should inspect the embalmed corpse. When thus satisfied, the corpse is handed over to the owner for burial.

Since the port health does not take responsibility for the burial, she only prescribes mode of burial or disposal or bodies of those dying from an infectious diseases, e.g., deaths due to cholera should be soaked in chlorinated lime or lysol before burial. This prescription must be followed by the local health department in charge of burial ground. The same process is followed for an exported corpse. Other welfare services include:

- Quarantine station
- Isolation camp
- Ambulances service
- Pilgrimage services.

4.0 CONCLUSION

In concluding this unit, we have studied and enumerated the environmental health services at the port to include among others: implementation of the international health regulations; disease surveillance within the ports and frontier post of entry and exit; quarantine administration including immunisation; inspection and certification of vessels (aircraft, ship, train or road vehicle); environmental sanitation within ports and frontier posts to control nuisances such as noise, dust, smoke and odour problems; vector/vermin control within and around ports and frontiers; food safety measures for

both imports and exports; vaccination of travellers and issuance of vaccination certificates and respond to any health emergencies within and around the port area. Environmental health officers should be abreast of specific activities that take place at the air, sea and land borders.

5.0 SUMMARY

In this unit, we have listed the environmental health services implemented at the port as well as the health control measures at the airport, the seaport and the land borders/frontiers.

6.0 TUTOR-MARKED ASSIGNMENT

1. List 15 environmental health services implemented at the port health.
2. State airport health control measures.
3. Define seaport health control measures..
4. State land border health control measures.

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MODULE 2 DUTIES OF ENVIRONMENTAL HEALTH OFFICER IN PORT HEALTH

Unit 1 Pest and Vector Control
Unit 2 Health Emergencies
Unit 3 Water Hygiene in Air Travels

In module one, the fundamentals of port health services was explained. It covers such topics as the introduction to port health services, the terminologies used in port health services, the divisions and sections in port health services in Nigeria and environmental health services being implemented at the ports.

Module two, which is on the duties of environmental health officer in port health services, has three units. Topics such as pest and vector control in port health; health emergencies in port health and water safety and hygiene in air travels will be treated.

UNIT 1 PEST AND VECTOR CONTROL

CONTENTS

1.0 INTRODUCTION

Throughout history, vector-borne illnesses have troubled mankind. In the past decade, they have been on the rise around the world and resurgent in places where they had once been under control. They have re-emerged not only because the hosts have developed resistance to pesticides and medical treatment, but also because international trade and travel continue to expand.

Vectors are carriers, usually small animals or arthropods that transfer a disease causing pathogen from one host to another. Some examples are: bats, birds, cats, fish, mice, rats, tick mosquitoes and reptiles raccoons etc.

Pest control within ports is of major importance as pests, such as rats and mice, are linked to the spread of international disease. The International Health Regulations (2005) and the Public Health (Ships) (Amendment) Regulations (2007) provide authorised port health authorities with the power to issue ship sanitation certificates to declare ships as being free from disease and the vectors of disease. The International Health Regulations (2005) make authorised ports responsible for the control of vectors that may constitute public health risk.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- list and discuss pest and vectors of port health concern
- list pest and vector control measures
- enumerate equipment used in pest and vector control
- list the chemicals used in control measures
- list the chemicals banned for use in pest and vector control.

3.0 MAIN CONTENT

3.1 Pest and Vectors of Port Health Concern

Rodent control is one of the major port health duties because of the nuisance usually created by rodents in terms of diseases transmission, destruction of valuable property like food, cloths, and books etc.

The word ‘rodent’ includes rat, mice, and squirrel etc. The two major ones which have significant effect in port health or international health concern are presented in a tabular form:

1. Ratus Ratus (RR)
2. Ratus Norvengicus (RN)

Ratus Ratus (R.R)	**Ratus Nqrvengicus (R.N)**
1. Brownish in colour	Black in colour
2. It lives in houses	Lives and swim in burrows
3. An excellent climber	Excellent swimmers
4. Droppings arc soft spindle in shape arid often grouped on run ways	Droppings are firm shape and scattered on the run way
5. It has appointed muzzle with large translucent ears.	It has a blunt muzzle with small hairy ears
6. It has thin tail longer than head and body put together.	It has tail shorter than head and body put Together

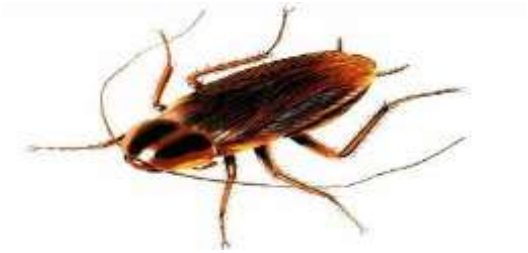
Rat (Ratus-ratus)

Rats and mice can transmit many diseases to humans such as Bubonic Plague and Weil's disease. They are also able to transmit certain types of food poisoning such as salmonella. Rodents may also pose a nuisance to humans through the contamination of food and damage to buildings and other structures due to gnawing and burrowing.

Rodent control both on board ships and within the port area is an important method by which the spread of international disease is prevented. All ships travelling internationally must demonstrate that they do not have rats on board by showing a valid ship sanitation certificate.

Environmental health officers are authorised to request the master of a ship to carry out control measures where there is evidence of rats on board. Control measures may include: trapping, poisoning or fumigation of the ship. As rats require water, shelter and food to survive, the elimination of harbourage and standing water may also be required.

- **Insects**



Cockroach

Cockroaches can spread disease via their bodies and droppings. They can carry dysentery, gastro-enteritis, typhoid and food poisoning organisms which they spread when coming into contact with our food.

Cockroaches are able to breed rapidly, therefore forming large numbers. They are also highly resilient to treatment. Like rats, it is important that cockroaches are controlled on board ships in order to prevent the spread of disease.

Environmental health officers are authorised to request the master of a ship to carry out control measures where there is evidence of cockroaches on board. Control measures may include: trapping and the use of insecticide. As with rats, the removal of habitat and food sources may also be required in order to treat an infestation. However, cockroaches will eat a wide variety of food sources (including leather and other dead cockroaches) and have been known to go without food for periods.

- **Mosquitoes**

Anopheles mosquito

Mosquitoes are found throughout the world, including the Arctic. Their habitats include both rural and urban locations. Globally, they are notorious for their biting habit and ability to transmit disease.

Disease transmission from mosquitoes is not only a risk in tropical countries; there is also a potential risk in other parts of the world. Poor

sanitation, housing, bad drainage system and overcrowding promotes breeding and transmission potential of mosquitoes. This made the transmission of the disease unsustainable. More recently, there have been cases of airport malaria where malaria infected mosquitoes have escaped from flights arriving from foreign counties and then gone on to bite local residents. There are many other mosquito borne viruses including: West Nile Virus and Yellow Fever.

- **International Health Regulations, 2005**

Port health authorities are responsible under the International Health Regulations 2005, for establishing programmes for controlling vectors that may transport an infectious agent (hence constituting a public health risk) to a minimum distance of 400 metres from point of entry facilities (e.g. docks).

3.2 Pest and Vector Control Measures

The control measures for pests and vectors include:

- Environmental cleanliness

    a. The elimination of breeding sites or hideouts e.g. clearing of drains and canals etc,.
    b. Removing their sources of food e.g. prompt clean up after cooking, regular garbage pickup and clean up. Environmental cleanliness is very effective for controlling pests and vectors and can lead to eradication, which can be sustained though health education and community sensitisation.

- Traditional method

    Time tested and effective methods of pest and vector control are the use of certain plants or the rearing of certain animals that repel pests and vector.

- Biological

This is the use of natural enemies of pest and vector such as animal and bird predators who feeds or prey on the pest and vector. The use of biological control does not usually lead to eradication, though it may appear safe and environmental friendly.

- Mechanical or physical control

The use of devices, machines, barriers and other mechanised methods to control pests or alter their environment e.g. traps, screens, fences, nets, radiation, and electricity etc. This safe and environmentally friendly method is effective as long as the device is intact and in good working condition, but does not usually lead to eradication.

- Chemical

The use of chemicals to destroy pest and vector is one of the control measures against their activity, causing damages and preventing further spread.

Chemicals either repel or kill the pest. It is the fastest way to get rid of pest and vector population, though it may not be environmentally friendly.

3.3 Equipment used in Pest and Vector Control

- Knapsack sprayer – manual sprayer mounted on human back to spray drains, stagnant water bodies and interior of buildings.
- Motorised or mechanical sprayer – used on large breeding water surface of canals, where it is impossible to treat manually.
- Swing fog machine – used to spray exterior environment. It oozes out chemical smoke as against moisture released by knapsack or motorised sprayer. It can be used to attack or disperse locust and quillial birds.

3.4 Chemicals used in Control Measures

- Pesticides – generic group name commonly used.

(a) Pyrethoids – have faster knockdown effects and very long lasting residual action on flies, mosquitoes and cockroaches.

(b) Organophosphates, also called opsl, have extensively been used in pest and vector control. It should be applied with caution as it is toxic to untargeted mammals and human. Most organophosphates deteriorate rapidly and therefore pose no problem of long term environmental contamination or effect.

- (Ficam) have lower toxicity to mammals. Carbamates have a similar mode of action to the organophospates. Generally, carbamates such as carbarly (sevin), propoxur (baygon) and bedniocarb.

- Botanicals are natural insecticides derived from plants. Botanicals include pyrethrum, rotenone, ryania and nicotine. Pyrethrum is an oily substance extracted from certain varieties of chrysanthemums plant. They are often used in combination with synergists such as pieronys butoxide.
- Fumigants are gaseous pesticides whose vapours enter the pest system though inhalation.
- Rodenticides are poisons which kill rodents. It comes in various forms, such as granules, powder, and cakes etc.

3.5 Chemicals Banned for use in Pest and Vector Control

- Heptachlor
- Flouracedtamide
- Chlordane
- Mercury compounds
- Ethylene 1.2-dibromide (EDB)
- Chlordimeform
- Dinoseb and dinoseb salts
- Dicholodiphenxyl trichloroethane (DDT)
- Pentachloropheny 2,4,5-
- Chlorobenizlate
- HCH (mixed isomers)
- Aldrin
- Dieldrin
- Methamidophos
- Methyl parathion
- Parathion
- Paraquat
- Lindane

Severe restriction

- Captafol
- Hexachlorebanzene
- Phosphamidon

4.0 CONCLUSION

In concluding this unit, we have studied and enumerated pest and vector that are of port health importance.

5.0 SUMMARY

In this unit, we have discussed pest and vector of port health importance. We also listed the equipments and chemicals used in pest and vector control. Mentioned was also made of banned chemicals.

6.0 TUTOR-MARKED ASSIGNMENT

1 List and discuss 2 pest and vectors of port health concern.
2 List pest and vector control measures.
3 Enumerate some of the equipments used in pest and vector control.
4 List the chemicals used in control measures.
5 List the chemicals banned for use in pest and vector control.

7.0 REFERENCES/FURTHER READING

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UNIT 2 HEALTH EMERGENCIES

CONTENTS

1.0 INTRODUCTION

In module 2, unit 1 above, we discussed pest and vector control on port health. It is important to note that when the breeding and activities of this pest and vectors are not controlled on port health services, it more often than not, leads to health emergency.

A Public Health Emergency of International Concern (PHEIC) may be declared when a State's health authority is satisfied that there is an outbreak or imminent outbreak of a communicable disease that poses a substantial risk to the population of the state or upon activation. (According to Annex 2 of the IHR (2005), "Decision instrument for the assessment and notification of events that may constitute a public health emergency of international concern").

It is recognised that public health emergencies, other than those posed by communicable disease, exist e.g. food poisoning and infectious substances. Public health emergencies other than those associated with communicable disease are outside the scope of this unit.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define health emergency
- state the role of port health authority in health emergencies
- list appropriate actions in health emergency.

3.0 MAIN CONTENT

3.1 Health Emergency

Health as defined by Public Health Emergency of International Concern (PHEIC) may be declared when a State's health authority is satisfied that there is an outbreak or imminent outbreak of a communicable disease that poses a substantial risk to the population of the state upon activation. (According to Annex 2 of the IHR (2005), "decision instrument for the assessment and notification of events that may constitute a public health emergency of international concerns").

- The roles of the aviation authority during a PHEIC are:

a. Ensure the availability, continuity and sustainability of critical air transport services; and
b. Coordinate and facilitate the implementation of health and non-health measures to protect the health and welfare of travellers, staff and the public, as well as to minimise/ mitigate the spread of communicable disease through air travel.

- Aim

This plan describes the measures to be adopted during a PHEIC. It complies with the relevant articles in the IHR 2005 and the ICAO Annexes 6, 9, 11 and 14.

- Principle Considerations

a. The processes and measures to be adopted during a PHEIC are guided by the following considerations:

i. Coordinated and Timely Response

a. The implementation of health measures is a multi-agency effort and not the sole responsibility of the aviation authority. As such, the measures implemented by the respective agencies should be well-coordinated to avoid confusion, inconsistencies and duplication of resources. At the initial outbreak stage, measures may need to be very rapidly deployed and timely implementation is important.

ii. Effective and Sustainable Measures

a. Response to a public health emergency may continue over a prolonged period of time. Measures adopted should be effective,

and at the same time be sustainable until the emergency situation ends.

iii. Minimise Inconvenience to Travellers

Processes and measures introduced during a public health emergency should primarily be targeted to mitigate the risks brought about by the outbreak of the disease. These processes and measures adopted should minimise inconvenience to all travellers.

iv. Rapid return to routine operations as the emergency subsides

v. Criteria for determining when the emergency is diminishing should be in place. An associated process for reducing the emergency measures is required so that a return to routine operations is facilitated in line with the reducing health risk.

- Planning Assumptions

The State health authority may issue planning assumptions based on its own assessment or information provided by neighbouring States or the WHO. There are two primary scenarios:

a. The first local human case is imported from another affected State/Administration (rather than developing from within the State);
b. There has been a local outbreak of a PHEIC within the State and measures have to be taken to contain the outbreak and minimise the spread to other States. **Note:** State Health and Aviation Authorities are encouraged to refer to the WHO Western Pacific Regional Office publication "Guidance for Public Health Emergency Contingency Planning at Designated Points of Entry; Requirement under the International Health Regulations (2005)"

This guide provides a recommended approach, structure and a logical but simple set of considerations and steps for National Public Health Authorities (NPHA) to guide public health and emergency planners responsible for points of entry to develop public health contingency plans.

- Execution of Health Emergency Plan

The aviation measures adopted should be an integral part of the State's overall plan for a PHEIC. The aviation authority will usually have a Crisis Management Team (CMT) to develop and execute the public health emergency plan. These planned measures may be contingent on

the State health authority's alert levels or according to the WHO phases of an evolving pandemic.

A risk management concept should be adopted to ensure a phased and gradual step-up of control measures, in accordance with the changing circumstances.

- Crisis Management Team (CMT)

As part of its preparedness for non-health related emergencies- accident, fire, and terrorist activity etc., the aviation authority is likely to have already established a crisis management team. This team may be adequate to deal with a public health emergency but it is more likely that the individuals comprising the team, and perhaps its leader, need to be revised for such an emergency. The team needs specific representation from the public health authority, and the individual to provide this expertise needs to be identified. Further, the individual leading the CMT and taking responsibility for team decisions involving public health emergencies requires advance planning. The constitution of the CMT needs to be flexible, as does its means of communication, since it may be required to deal with a PHEIC that involves only one, or a few affected individuals, or on the other hand may affect a whole population.

- Activation/Deactivation Process

The activation of the health measures will usually be initiated by the State health authority. The CMT will coordinate all measures within the aviation sector. The number of officers activated to support the crisis actions is subjected to the decision of the leader of the CMT. The deactivation or scaling down of measures will be initiated by the State health authority.

- Measures Adopted in Health Emergencies

The measures adopted at Points of Entry (POE), especially at airports are crucial to the containment and mitigation efforts of the State. The import/export of the communicable disease may be mitigated through the implementation of a specific set of measures corresponding to the defined alert levels. However, the measures are also subject to changes, attendant on the State's continuing assessment of the situation.

Note: The aviation authority in consultation with the State health authority and with the cooperation and collaboration of all the stakeholders is recommended to develop and implement a training program for airport workers that are likely to be involved in the implementation of the preparedness plan. These would include (but not

be limited to) check-in staff, immigration and customs personnel. This would also include training on how to pick up (as non medical persons) travellers that may be suspect cases of a communicable disease of public health importance. Such training could be similar to that given to cabin crew and the list of signs and symptoms similar to that used in the aircraft general declaration.

4.0 CONCLUSION

In concluding this unit, we have studied what is health emergency, the health emergency preparedness, the roles of port health authorities and the listing of appropriate action to be taken in cases of health emergency.

5.0 SUMMARY

A Public Health Emergency of International Concern (PHEIC) may be declared when a State's health authority is satisfied that there is an outbreak or imminent outbreak of a communicable disease that poses a substantial risk to the population of the State or upon activation by WHO (According to Annex 2 of the IHR (2005), "Decision instrument for the assessment and notification of events that may constitute a public health emergency of international concern").

It is recognised that public health emergencies other than those posed by communicable disease exist e.g. food poisoning, and infectious substances. Public health emergencies other than those associated with communicable disease are outside the scope of this unit.

6.0 TUTOR-MARKED ASSIGNMENT

1 Define health emergency.
2 State the role of port health authority in health emergencies
3 List appropriate action in health emergency.

7.0 REFERENCES/FURTHER READING

http://www.westerncape.gov.za/eng/directories/services/11515/6455.

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UNIT 3 WATER SAFETY AND HYGIENE IN AIR TRAVELS

CONTENTS

1.0 INTRODUCTION

In unit 2 above, we discussed health emergencies and the various strategy and plans that can be put in place to remediate the incidence of health emergency.

In this unit, we shall be considering water safety and hygiene in air travels. It is important to mention that a process within the aircraft revolves around water, as water is needed in food preparation, reduction of thirsty and dehydration and the cleaning activities in the aircraft.

Travel can facilitate the transfer of communicable disease. The volume and rapidity of travel can have an international impact on disease. This is particularly true for aircraft, as the global span of the aviation industry requires the loading and rapid transport of people and supplies from many locations all over the world. With the 21st-century potential for millions of people to have access to air travel on a global scale come the added problems encountered by aircraft operators that transit both into and out of disease-affected areas or areas with variable and sometimes inadequate standards of general hygiene and sanitation.

One risk is posed by the potential for microbial contamination of aircraft water by animal or human excreta. This contamination may originate from source waters or may occur during transfer operations or while water is stored on board the aircraft. Waterborne disease burdens in many parts of the world include cholera, enteric fevers *(Salmonella),* bacillary and amoebic dysentery and other enteric infections. These

diseases are not unique to water; as food may actually be the dominant risk vector in some environments. In fact, most airlines have a good record with respect to known contamination incidents. However, any location is at risk if proper procedures and sanitation practices are not continuously followed to ensure the safety of water that is used for drinking and food processing and preparation.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define water supply and transfer chain
- state water requirements of an aircraft
- mention the health risks associated with water on aircraft viz;
  (a) Water quality
  (b) Water quantity
- differentiate between bottled water and ice cubes
- mention the uses of potable water on board aircraft
- enumerate water safety plans.

3.0 MAIN CONTENT

3.1 Water Supply and Transfer Chain

If the water at the airport is safe, that does not ensure that it will remain safe during the transfer to the aircraft and storage activities that follow. An understanding of the aircraft drinking-water supply and transfer chain will help to illustrate the points at which the water can become contaminated en route to the tap on board the aircraft.

Generally, the aircraft drinking-water supply and transfer chain consists of four major components:

- the **source** of water coming into the airport;
- the **airport** water system, which includes the on-site distribution system. It may also include treatment facilities if the airport produces its own potable water;
- the **transfer point** (sometimes referred to as the watering point), including the water transfer and delivery system. It is typically a temporary interconnection between the hard plumbed distribution system of the airport (e.g. at a hydrant) and the aircraft water system, by means of potable water vehicles and carts, refillable containers or hoses. This water transfer process provides multiple opportunities for the introduction of contaminants into the drinking-water;

- the **aircraft water** system, which includes the water service panel, the filler neck of the aircraft finished water storage tank and all finished water storage tanks, including refillable containers/urns, piping, treatment equipment and plumbing fixtures within the aircraft that supply water to passengers or crew.

3.2 Water Requirements of an Aircraft

The water storage capacity required for all purposes on board an aircraft is based on the number of occupants (passengers and crew) and the duration of the flight, while being limited by weight, aircraft design and other practical considerations.

In practice, the capacity of aircraft water systems varies considerably. Examples of the potable water carrying capacities of different aircraft are given in Table 1.

Table 1.3: Approximate Capacity of Potable Water Tanks on Select Aircraft

Aircraft type	Number of tanks	Quantity per tank (litres)	Total quantity (litres)
A380	6	283.3 (option 377.7)	1700 (option 2266)
A340-500/600	3	356.7	1070
A340-200/300	2	350 (option 525)	700 (option 1050)
744 F/P	4	416.3	1665.2
744Combi	3	416.3	1248.9
MD11	4	238.4	953.6
777-200ER	3	412	1236
777-300ER	3	435	1305
A330	2	350	699

Individual size, location and capacity of each tank may vary due to customer preference and use on the aircraft.

3.3 Health Risks Associated with Water on Aircraft

- **Water quality**

The importance of drinking-water as a vehicle for the transmission of infectious disease micro-organisms in water supplies has been well documented in public and private water supplies.

The WHO *Guidelines for Drinking-water Quality* (GDWQ) (WHO, 2004) provide comprehensive guidance to ensure the quality and safety of drinking-water. Most of the concerns involving the safety of drinking-water on board aircraft focus on acute risks because of the short-term and limited exposure conditions. Thus, microbial risks are the principal concerns, although a few risks associated with acutely toxic chemicals also exist.

The WHO *Guidelines for Drinking-water Quality* (WHO, 2004) (GDWQ) identify the broad spectrum of contaminants, including micro-organisms, inorganic and synthetic organic chemicals, disinfection by-products and radionuclide's that can reach hazardous concentrations in potable water supplies and describe systematic approaches to risk management. As a general definition, safe drinking-water, as defined by the GDWQ, does not represent any significant risk to health over a lifetime of consumption, including different sensitivities that may occur between life stages.

Significant microbial risks are associated with ingestion of water that is contaminated with human and animal excreta, although exposure through food preparation and direct human contact are probably more significant contributors to overall microbial disease risks.

There are no known reports of illness associated with drinking contaminated water on aircraft. Nevertheless, the potential for serious illness exists, particularly for those with compromised health (e.g. individuals with chronic illness).

The water quality guidelines directly applicable to water on aircraft focus on acute risks from contamination that may be incurred during transfer from the airport, through the transfer point or on board the aircraft. The focus on acute risks is because the exposure that would occur during a flight and be experienced by passengers and crew would be intermittent and of short duration (hours) rather than long term or lifetime, which is the basis for most of the guidelines in the GDWQ. Typically, the GDWQ assume the consumption of 2 litres of drinking-water per day by an average 60-kg adult for a lifetime (70 years); 1 litre per day for an l G-kg child and 0.75 litre per day for a 5-kg bottle-fed infant.

Besides microbial organisms, a few inorganic chemical substances, such as nitrate and nitrite (which can enter the source water from agricultural activity, sewage inflow or sewage cross-contamination in plumbed systems) and copper (which may leach into drinking-water from copper piping), may also be of health concern due to subpopulations that may

be at risk from excess short-term exposures. For instance, methaemoglobinaemia may be caused by the temporary exposure of infants to nitrate and nitrite, among other contributing factors; and gastric irritation may result from short-term exposure to copper (WHO, 2004).

Potentially, significant cumulative effects of repeated short-term exposures to chemical hazards should not be overlooked, as they may lead to long-term consequences.

- **Water quantity**

An insufficient or non-existent quantity of potable water under pressure on board the aircraft for drinking, culinary purposes and personal hygiene can have an impact on the health and welfare of not only the passengers but also the crew.

There may not be enough water for the safe use of lavatories, which may lead to malfunctioning of some types of toilets, unpleasant odours, contaminated surfaces and an inability to wash hands. It may also lead to an inability to prepare or serve food in a sanitary manner, thereby impacting on the provision of safe food to passengers.

Adequate water intake during flight is also important to maintain health and well-being, although there is no need to drink more than usual (WHO, 2008b). The humidity in aircraft cabins gradually decreases on long-distance, high-altitude flights, sometimes reaching below IQ% (optimum comfort is at approximately 50% humidity). While this low relative humidity does not cause central dehydration (Stroud et al., 1992; WHO, 2008b), it can cause discomfort for passengers and crew. Dry, itchy or irritated eyes, dry or stuffy nose, dry throat and skin dryness are among the most common complaints of cabin crew (Lee et al., 2000). Regular water intake and use of a skin moisturiser will minimise these symptoms, but it is possible that some individuals may become intolerant of contact lenses and have to revert to spectacle use.

The amount of water required for hand washing and other sanitation needs should be adequately dealt with in typical passenger aircraft designs.

- **Difference between bottled water and ice**

Bottled water is considered as drinking-water by some regulatory agencies and as a food by others (WHO, 2004). For many airlines, bottled water is the primary or exclusive source of water used for direct consumption on board aircraft, with the exception of hot beverages.

International bottled water quality specifications exist under the Codex Alimentarius Commission (FAO/WHO, 2001) and are derived from the GDWQ.

For the purposes of this course, ice supplied to aircraft for both drinking and cooling has been classified as "food" (WHO, 2004).

- **Uses of potable water on board aircraft**

Potable water is used in a variety of ways on board commercial transport aircraft, including direct human consumption, food preparation and sanitation hygiene activities. Potential uses include:

a. preparation of hot and cold beverages, such as coffee, tea and powdered beverages;
b. reconstitution of dehydrated foods, such as soups, noodles and infant formula;
c. direct ingestion from cold water taps and water fountains;
d. reconstitution and/or ingestion of medications;
e. brushing of teeth in lavatories;
f. hand washing in lavatories and galleys;
g. cleaning of utensils and work areas;
h. preparation of hot, moist towels for hand and face washing;
i. direct face washing in lavatories;
j. onboard showering facilities;
k. emergency medical use.

Although some of these uses do not necessitate consumption, they involve human contact and possibly incidental ingestion (e.g. tooth brushing).

- **Water Safety Plans**

Water Safety Plans (WSPs) are the most effective management approach for consistently ensuring the safety of a drinking-water supply. A potable water source at the airport is not a guarantee of safe water on board the aircraft, as the water may be contaminated during transfer to or storage or distribution in the aircraft. A WSP covering water management within airports from receipt of the water through to its transfer to the aircraft, complemented by measures (e.g. safe materials and good practices in design, construction, operation and maintenance of aircraft water systems) to ensure that water quality is maintained on the aircraft, provides a framework for water safety in aviation.

A WSP has three key components, which are guided by health-based targets and overseen through drinking-water supply chain surveillance. They are:

1. **system assessment,** which includes

- description of the water supply system in order to determine whether the drinking water supply chain (up to the point of consumption) as a whole can deliver water of a quality that meets health-based targets;
- identification of hazards and evaluation of risks;
- determination of control measures, reassessment and prioritisation of risks;
- development, implementation and maintenance of an improvement plan;

2. **operational monitoring,** which includes identification of control measures that will control hazards and risks and verification (to determine whether the system meets health based targets);

3. **management and communication,** including preparation of management procedures and developing supporting programmes to manage people and processes (including upgrade and improvement).

3.4 Guidelines on Drinking Water Quality (GDWQ) and Guide to Hygiene and Sanitation in Aviation

The GDWQ describes reasonable minimum requirements for safe practices to protect the health of consumers and derives numerical guideline values for constituents of water or indicators of water quality. Neither the minimum requirements for safe practices nor the numerical guideline values are mandatory limits, but rather health-based guidance to national authorities to establish their own enforceable standards, which may also consider other factors. In order to define such limits, it is necessary to consider the GDWQ in the context of local or national environmental, social, economic and cultural conditions.

Nevertheless, given the global nature of air travel and the need for aircraft to board water from areas with variable and possibly inadequate standards of general hygiene and sanitation, the GDWQ or national standards should be followed, whichever are more stringent. This approach will provide passengers and crew with consistent reliable protection from the potential risks posed by contaminated drinking-water.

4.0 CONCLUSION

In concluding this unit, it is important to stress the importance of potable water to life. There is no gain saying that human body content is made up of about 75% water and air travels is the fastest and probably one of the safest mode of human transportation in the recent time. All need components of air travels requires water be it food preparation, cleaning services or other essentials within the aircrafts, hence the need for clean and portable water in the aircraft.

5.0 SUMMARY

In this unit, we have been interactively discussing the water requirements of an aircraft, health risks associated with water on aircraft, bottled water and ice in aircraft, water safety plans and application of the GDWQ to the *Guide to Hygiene and Sanitation in Aviation.*

6.0 TUTOR-MARKED ASSIGNMENT

1 Define water supply and transfer chain.
2 State water requirements of an aircraft.
3 Mention health risks associated with water on aircraft.
4 Enumerate water safety plans.

7.0 REFERENCES/FURTHER READING

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MODULE 3 INTERNATIONAL ENTRY MEASURES AND PROCEDURE AGAINST SUBJECT TO INTERNATIONAL HEALTH REGULATIONS 2005 (IHR)

UNIT 1 DISEASES SURVEILLANCE AND NOTIFICATION

CONTENTS

1.0 INTRODUCTION

In Module 2, unit 3 above, we looked into the importance of water safety and hygiene in air travels. We also examined the inter-link between water and disease spread.

Disease surveillance, notification and reporting have been defined as the continuous scrutiny of the occurrence of diseases and health related events to enable intervention for the control of diseases (CDC, 2009). Levels of surveillance can be individual, local, national and international. Most surveillance systems depend on the information on the occurrence of diseases obtained from health care providers, hospitals, clinics diagnostic laboratories and research laboratories.

National surveillance systems often depend on a district level surveillance department for the collection of data (CDC, 2009). Effective national and international surveillance for diseases therefore requires efficient and effective local or district surveillance department.
In Nigeria, surveillance and notification involves immediate notification of eleven diseases and routine notification of 22 diseases (FMOH, 2007). A surveillance officer in the health department is responsible for the collection of the data and reporting same to the state ministry of health. The state then forwards the report to the federal ministry of health. At each level, analysis of the data collected is done to enable intervention such as instituting control and preventive measures for disease outbreaks and epidemics. A functional surveillance department requires trained staff, adequate transport and other logistics for efficiency and effectiveness. Despite the established system, surveillance of diseases breaks down in Nigeria leading to avoidable morbidity and mortality. While various factors are thought responsible, studies have not yet documented the extant reasons that may be responsible for the breakdown in surveillance activities. This module attempts to assess the adequacy of the logistic support available for timely collection of data and its association with poor reporting of epidemics in the respective states of the federation.

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- state global infectious disease surveillance

- define World Health Organisation(WHO) in disease surveillance
- list advantages of International Diseases Surveillance and Response (IDSR)
- state formal and informal sources of information
- enumerate the legally mandated sources of information.

3.0 MAIN CONTENT

3.1 Global Infectious Disease Surveillance

Increased movements of people, expansion of international trade in foodstuffs and medicinal biological products, social and environmental changes linked to urbanisation, and deforestation are all manifestations of the rapidly changing nature of the world we live in. Add to that the rapid adaptation of microorganisms, which has facilitated the return of old communicable diseases and the emergence of new ones, and the evolution of antimicrobial resistance, which means that curative treatments for a wide range of parasitic, bacterial and viral infections have become less effective, and a communicable disease in one country today is the concern of all.
During 1996, fatal yellow fever infections were imported into the United States and Switzerland by tourists who travelled to yellow fever endemic areas without having had yellow fever vaccination

In industrialised countries where communicable disease mortality has greatly decreased over the past century, the concern is preventing diseases from entering and causing an outbreak or re-emergence. In developing countries, the concern is detecting communicable disease outbreaks early and stopping their mortality, spread and potential impact on trade and tourism.

One of the major means of addressing the concerns about communicable diseases in both industrialised and developing countries is through the development of strong surveillance systems. However, in view of the disparity among national surveillance systems, partnerships in global surveillance are a logical starting point in this area of common commitment.

3.2 World Health Organisation in Disease Surveillance

Since 1992, alarm over emerging and re-emerging diseases has resulted in a number of national and international initiatives to restore and improve surveillance and control of communicable diseases. The member states of the World Health Organisation (WHO) expressed their concern in a resolution of the World Health Assembly in 1995, urging all member states to strengthen surveillance for infectious diseases in

order to promptly detect re-emerging diseases and identify new infectious diseases. The World Health Assembly recognised that the success of this resolution depends on the ability to obtain information on infectious diseases and the willingness to communicate this information nationally and internationally. Improved detection and surveillance, moreover, will lead to better prioritising of public health efforts.

One of WHOs main means of creating a global surveillance system has been the development of a "network of networks" which links together existing local, regional, national and international networks of laboratories and medical centres into a super surveillance network. Requirements for monitoring the intentional use of pathogenic microbes have also been addressed by the network, specifically in the revision of the International Health Regulations (IHR), and in collaboration with the ad hoc Group of States Parties to the Biological Weapons Convention.

3.3 Advantages of International Diseases Surveillance and Response (IDSR)

Public health surveillance (also called field epidemiology) as defined by Centres for Disease Control and Prevention (CDC) is the ongoing systematic, collection, analysis and interpretation of outcome-specific data essential to the planning, implementation and evaluation of public health practises closely integrated with the timely dissemination of these data to those who need to know. The IDSR is a strategy of the WHO Afro region adopted by the member states in 1998 as a regional strategy for strengthening weak national surveillance systems in the African region.

The DSNOs, under the supervision of the Medical Officers of Health (MOHs), are responsible for surveillance activities within their local government catchment area. Therefore, their role is very crucial to the success of the IDSR strategy.

3.4 Formal and Informal Sources of Information

- Formal sources of information

Government and university centres of excellence in communicable diseases such as the epidemiological division of the Federal Ministry of Health, US Centres for Disease Control and Prevention, the UK Public Health Laboratory Service, the French Pasteur Institutes, the global network of schools of public health and the Training in Epidemiology and Public Health Intervention Network (TEPHINET) provide confirmed reports of communicable diseases. Most of these sites are or will become part of the WHO Collaborating Centre network. This network, along with the WHO Regional Offices, WHO country representatives and other WHO and UNAIDS reporting sites, contributes to global surveillance along with reporting networks of other United Nations agencies such as UNHCR and UNICEF. International military networks such as the US Department of Defence-Global Emerging Infections System (DoD-GEIS), private clinics, individual scientists and public health practitioners complete the network of formal information sources.

There are geographic and population gaps, as well as deficiencies in expertise in these networks, which must be rectified. As most of these networks represent the public sector, they should develop means of including the private sector, as well as other sources of valid information such as military and research laboratories. They need to represent both human and animal infections and provide information on antimicrobial

resistance and the environment including water, insect vectors and animal reservoirs.

- Informal sources of information

The rapid global reach in telecommunications, media and Internet access has created an information society permitting public health professionals to communicate more effectively. Many groups, including health professionals, non-governmental organisations and the general public now have access to reports on disease outbreaks. This is challenging to the national disease surveillance authorities which were once the sole source of such information. Public Internet sites are dedicated to disease news and include medicine and biology-related sites as well as those of the major news agencies and wire services. ProMed, an early electronic discussion site on communicable diseases occurrence on the Internet, provides an example.

Electronic discussion sites, accessible through free and unrestricted subscription, are valuable sources of information. Their scope may be worldwide (ProMed, TravelMed), regional (PACNET in the Pacific region) or national (Sentiweb in France). They exemplify unprecedented potential for increasing public awareness on public health issues.

The Global Public Health Information Network (GPHIN) is a second generation electronic surveillance system developed and maintained by Health Canada. It has powerful search engines that actively trawl the World Wide Web looking for reports of communicable diseases and communicable disease syndromes in electronic discussion groups, on news wires and elsewhere on the Web. GPHIN has begun to search in English and French and will eventually expand to all official languages of the World Health Organisation, to which it has created close links for verification.

Other networks which are likewise sources for communicable disease reporting include non-governmental organisations such as the Red Cross and Red Crescent Societies, Medecins sans Frontières, Medical Emergency Relief International (Merlin), and Christian religious organisations such as the Catholic and Protestant mission networks.

3.4 Legally Mandated Sources of Information

The International Health Regulations (IHR) is a legal instrument which requires WHO member states to notify diseases of international importance such as plague, cholera and yellow fever. Countries have not uniformly complied with disease notification, often fearing unwarranted reactions that affect travel and trade. In addition, the

official international reporting mechanism has not evolved with the new communications environment, and does not include many communicable diseases of importance to international public health. A revision of the IHR is therefore being directed towards a stronger role in global communicable disease surveillance and control. The revised IHR emphasise the immediate notification of all disease outbreaks of urgent international importance. This concept is currently being evaluated in a pilot study in 21 countries. Electronic reporting of specific clinical syndromes, which were developed taking into account those diseases of importance to public health, will help countries report immediately. This will facilitate rapid alert and appropriate international response while awaiting laboratory verification. Once the confirmed diagnosis is known, it will also feed into the system, permitting any adjustments to the international response which may be necessary. When the revision is complete, the IHR will constitute an important public health tool.

4.0 CONCLUSION

In this unit, we have studied disease surveillance and notification and we have taken the pain to examine in details what disease surveillance is and the roles played by WHO and other member states of United Nation, including other agencies of the United Nation in global surveillance and notification of internationally and locally communicable diseases.

5.0 SUMMARY

In this unit, we have been discussing diseases surveillance and notification. We went ahead to discussed the global infectious disease surveillance and the role of the World Health Organisation in disease surveillance, thus listing the advantages of international diseases surveillance and response. We also looked into the both formal and informal sources of information gathering and lastly we examined the legally mandated sources of information. It is my candid opinion that you require a good knowledge of diseases notification and surveillance.

6.0 TUTOR-MARKED ASSIGNMENT

1 Briefly discuss global infectious disease surveillance.
2 Explain the role of World Health Organisation in disease surveillance.
3 List the advantages of International Diseases Surveillance and Response (IDSR).

7.0 REFERENCES/FURTHER READING

http://www.westerncape.gov.za/eng/directories/services/11515/6455.

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UNIT 2 IMMUNISATION AND ISSUANCE OF YELLOW FEVER CIRTIFICATE

Vaccination stimulates the body to resist future infections by particular diseases. Most vaccines are given with shots.

CONTENTS

1.0 INTRODUCTION

Immunisation, also called vaccination or inoculation, a method of stimulating resistance in the human body to specific diseases using micro-organisms—bacteria or viruses—that have been modified or killed. These treated micro-organisms do not cause the disease, but rather trigger the body's immune system to build a defence mechanism that continuously guards against the disease. If a person immunised against a particular disease later comes into contact with the disease-causing agent, the immune system is immediately able to respond defensively.

Immunisation has dramatically reduced the incidence of a number of deadly diseases. For example, a worldwide vaccination programme resulted in the global eradication of smallpox in 1980, and in most developed countries immunisation has essentially eliminated diphtheria, poliomyelitis, and neonatal tetanus.

2.0 OBJECTIVES

At the end of this unit, you should be able to:
:

- explain what is vaccination
- list the types of immunisation
- state the immunisation recommended under International Health Regulations
- model international certificate of vaccination or prophylaxis (Yellow Fever Certificate)
- state the requirements concerning vaccination or prophylaxis for specific diseases
- list the Port Health Services location in Nigeria.

3.0 MAIN CONTENT

3.1 Vaccination

Vaccination stimulates the body to resist future infections by particular diseases. Most vaccines are given with shots immunisation, also called vaccination or inoculation, a method of stimulating resistance in the human body to specific diseases using microorganisms—bacteria or viruses—that have been modified or killed. These treated microorganisms do not cause the disease, but rather trigger the body's immune system to build a defence mechanism that continuously guards against the disease. If a person immunised against a particular disease later comes into contact with the disease-causing agent, the immune system is immediately able to respond defensively.

3.2 Types of Immunisation

Scientists have developed two approaches to immunisation: active immunisation, which provides long-lasting immunity, and passive immunisation, which gives temporary immunity. In active immunisation, all or part of a disease-causing micro-organism or a modified product of that micro-organism is injected into the body to make the immune system respond defensively. Passive immunity is accomplished by injecting blood from an actively immunised human being or animal.

- Active Immunity

Vaccines that provide active immunisation are made in a variety of ways, depending on the type of disease and the organism that causes it. The active components of the vaccinations are antigens, substances

found in the disease-causing organism that the immune system recognises as foreign. In response to the antigen, the immune system develops either antibodies or white blood cells called *Tlymphocytes*, which are special attacker cells. Immunisation mimics real infection but presents little or no risk to the recipient. Some immunising agents provide complete protection against a disease for life. Other agents provide partial protection, meaning that the immunised person can contract the disease, but in a less severe form. These vaccines are usually considered risky for people who have a damaged immune system, such as those infected with the virus that causes acquired immunodeficiency syndrome (AIDS) or those receiving chemotherapy for cancer or organ transplantation. Without a healthy defence system to fight infection, these people may develop the disease that the vaccine is trying to prevent. Some immunising agents require repeated inoculations—or booster shots—at specific intervals. Tetanus shots, for example, are recommended every ten years throughout life.

Active immunisation can also be carried out using bacterial toxins that have been treated with chemicals so that they are no longer toxic, even though their antigens remain intact. This procedure uses the toxins produced by genetically engineered bacteria rather than the organism itself and is used in vaccinating against tetanus, botulism, and similar toxic diseases.

- Passive Immunisation

Passive immunisation is performed without injecting any antigen. In this method, vaccines contain antibodies obtained from the blood of an actively immunised human being or animal. The antibodies last for two to three weeks, and during that time the person is protected against the disease. Although short-lived, passive immunisation provides immediate protection, unlike active immunisation, which can take weeks to develop. Consequently, passive immunisation can be lifesaving when a person has been infected with a deadly organism.

Occasionally there are complications associated with passive immunisation. Diseases such as botulism and rabies once posed a particular problem. *Immune globulin* (antibody-containing plasma) for these diseases was once derived from the blood serum of horses. Although this animal material was specially treated before administration to humans, serious allergic reactions were common. Today, human-derived immune globulin is more widely available and the risk of side effects is reduced.

3.3 Immunisation Recommended Under IHR

The recommended vaccines or other prophylaxis are specified by WHO in Annex 7 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.

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. Certificates under this Annex are valid only if the vaccine or prophylaxis used has been approved by WHO.

Certificates must be signed in the hand of the clinician, who shall be a medical practitioner or other authorised 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.

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

Certificates are individual and shall in no circumstances be used collectively. Separate certificates shall be issued for children. 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.

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.

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.

Vaccine or Prophylaxis	**Signature Date 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. _____

3.4 International Certificate of Vaccination or Prophylaxis (Yellow Fever Certificate)

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.

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

This certificate must be signed in the hand of the clinician, who shall be a medical practitioner or other authorised 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.

3.5 Requirements Concerning Vaccination or Prophylaxis for Specific Diseases

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:

1. Vaccination against yellow fever.

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 organisation 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 organisation 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 organisation.

(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 organisation 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 organisation 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 authorised medical officer or an authorised 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.

4.0 CONCLUSION

Concluding this unit, it is important that you know vaccination, prophylaxis and in related certificates under International Health Regulation. It is imperative to note that most vaccines are given with shorts and such vaccination stimulates the body to resist future infections of particular diseases vaccinated against.

5.0 SUMMARY

In the various units above, we have discussed the definition of vaccination, the types of immunisation, the immunisation recommended under International Health Regulations, the model international certificate of vaccination or prophylaxis and the requirements concerning vaccination or prophylaxis for specific diseases.

6.0 TUTOR-MARKED ASSIGNMENT

1 State three importance of vaccination.

2 What is the significance of international certificate of vaccination or prophylaxis (Yellow Fever Certificate) in international travels?

3 State the important features of a valid international certificate of vaccination or prophylaxis (Yellow Fever Certificate).

4 What are the requirements for vaccination or prophylaxis for specific diseases?

7.0 REFERENCES/FURTHER READING

http://www.westerncape.gov.za/eng/directories/services/11515/6455.

https://ehealth.gov.mt/HealthPortal/public_health/environmental-.health/health_inspectorate/port_health_services/port_health_services_objective.aspx.

http://tsaftarmuhalli.blogspot.com/2011/04/environmental-health-in-nigeria.html.

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UNIT 3 IMPLEMENTATION OF INTERNATIONAL HEALTH REGULATIONS 2005

CONTENTS

1.0 INTRODUCTION

This unit is the most important of all the units taught in this module. It captures those international regulations guiding local, national and international travels and the containment and control of diseases spread. The International Health Regulations 2005 are legally binding regulations (forming international law) that aim to:

- Assist countries to work together to save lives and livelihoods endangered by the spread of diseases and other health risks, and
- Avoid unnecessary interference with international trade and travels

The purpose and scope of IHR 2005 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 (Art. 2, IHR 2005).

A central and historic responsibility for the World Health Organisation (WHO) has been the management of the global regime for the control of the international spread of disease. Under Articles 21(a) and 22, the Constitution of WHO confers upon the World Health Assembly the authority to adopt regulations "designed to prevent the international spread of disease" which, after adoption by the Health Assembly, enter into force for all WHO member states that do not affirmatively opt out of them within a specified time period.

The International Health Regulations ("the IHR" or "Regulations") were adopted by the Health Assembly in 1969, having been preceded by the International Sanitary Regulations adopted by the Fourth World Health Assembly in 1951. The 1969 Regulations, which initially covered six "quarantine able diseases" were amended in 1973 and 1981, primarily to reduce the number of covered diseases from six to three (yellow fever, plague and cholera) and to mark the global eradication. In consideration of the growth in international travel and trade, and the emergence or re-emergence of international disease threats and other public health risks, the Forty-eighth World Health Assembly in 1995 called for a substantial revision of the Regulations adopted in 1969. In resolution WHA48.7, the Health Assembly requested the Director-General to take steps to prepare their revision, urging broad participation and cooperation in the process.

After extensive preliminary work on the revision by WHOs Secretariat in close consultation with WHO member states, international organisations and other relevant partners, and the momentum created by the emergence of severe acute respiratory syndrome (the first global public health emergency of the 21st century), the Health Assembly established an Intergovernmental Working Group in 2003 open to all member states to review and recommend a draft revision of the Regulations to the Health Assembly. The IHR (2005) were adopted by the Fifty-eighth World Health Assembly on 23 May 2005. They entered into force on 15 June 2007.

The purpose and scope of the IHR (2005) 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." The IHR (2005) contain a range of innovations, including: (a) a scope not limited to any specific disease or manner of transmission, but covering "illness or medical condition, irrespective of origin or source, that presents or could present significant harm to humans"; (b) State Party obligations to develop certain minimum core public health capacities; (c) obligations on States Parties to notify WHO of events that may constitute a public health emergency of international concern according to defined criteria; (d) provisions authorising WHO to take into consideration unofficial reports of public health events and to obtain verification from states parties concerning such events; (e) procedures for the determination by the Director-General of a "public health emergency of international concern" and issuance of corresponding temporary recommendations, after taking into account the views of an Emergency Committee; (f) protection of the human rights of persons and travellers; and (g) the establishment of

National IHR Focal Points and WHO IHR Contact Points for urgent communications between States Parties and WHO.

By not limiting the application of the IHR (2005) to specific diseases, it is intended that the regulations will maintain their relevance and applicability for many years to come even in the face of the continued evolution of diseases and of the factors determining their emergence and transmission.

The provisions in the IHR (2005) also update and revise many of the technical and other regulatory functions, including certificates applicable to international travel and transport, and requirements for international ports, airports and ground crossings.

This second edition contains the text of the IHR (2005), the text of World Health Assembly resolution WHA58.3, the version of the Health Part of the Aircraft General Declaration that entered into force on 15 July 2007, appendices containing a list of states parties and state party reservations and other communications in connection with the IHR (2005).

2.0 OBJECTIVES

At the end of this unit, you should be able to:

- define International Health Regulations 2005
- state the evolution of International Health Regulations
- list the principles embodying the IHR (2005)
- state the various parts and the chapters in the IHR 2005 and its headings
- enumerate port health related Articles of the IHR 2005

3.0 MAIN CONTENT

3.1 International Health Regulations 2005

The International Health Regulations (IHR) is an international legal instrument that is binding on 194 countries across the globe, including all the Member States of WHO. Their aim is to help the international community prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide.

The IHR, which entered into force on 15 June 2007, require countries to report certain disease outbreaks and public health events to WHO. Building on the unique experience of WHO in global disease surveillance, alert and response, the IHR define the rights and

obligations of countries to report public health events, and establish a number of procedures that WHO must follow in its work to uphold global public health security.

3.2 Evolution of International Health Regulations

The International Health Regulations originated with the International Sanitary Regulations adapted at the International Sanitary Conference in Paris in 1851. The cholera epidemics that hit Europe in 1830 and 1847 made apparent the need for international cooperation in public health. In 1948, the World Health Organisation constitution came about. The Twenty-Second World Health Assembly (1969) adopted, revised and consolidated the International Sanitary Regulations, which were renamed the International Health Regulations (1969). The twenty-sixth World Health Assembly in 1973 amended the IHR (1969) in relation to provisions on cholera.

In view of the global eradication of smallpox, the thirty-fourth World Health Assembly amended the IHR (1969) to exclude smallpox in the list of notifiable diseases.

During the forty-eighth World Health Assembly in 1995, WHO and member states agreed on the need to revise the IHR (1969). The revision of IHR (1969) came about because of its inherent limitations, most notably:

- *narrow scope of notifiable diseases* (cholera, plague, yellow fever). The past few decades have seen the emergence and re-emergence of infectious diseases. The emergence of "new" infectious agents Ebola Hemorrhagic Fever and the re-emergence of cholera and plague in South America and India, respectively;
- *dependence on official country notification*; and
- *lack of a formal internationally coordinated mechanism* to prevent the international spread of disease.

These challenges were placed against the backdrop of the increased travel and trade characteristic of the 20th century.

The IHR (2005) entered into force, generally, on 15 June 2007, and are currently binding on 194 countries (States Parties) across the globe, including all 193 member states of WHO.

In 2010, at the meeting of the states parties to the convention on the prohibition of the development, production and stockpiling of Bacteriological (Biological) and Toxin Weapons and their destruction in Geneva, the sanitary epidemiological reconnaissance was suggested

as well-tested means for enhancing the monitoring of infections and parasitic agents, for practical implementation of the IHR (2005) with the aim was to prevent and minimise the consequences of natural outbreaks of dangerous infectious diseases as well as the treat of alleged use of biological weapons against BTWC States Parties. The significance of the sanitary epidemiological reconnaissance is pointed out in assessing the sanitary-epidemiological situation, organising and conducting preventive activities, indicating and identifying pathogenic biological agents in the environmental sites, conducting laboratory analysis of biological materials, suppressing hotbeds of infectious diseases, providing advisory and practical assistance to local health authorities.

3.3 Principles Embodying the IHR (2005)

The principles embodying the implementation of IHR (2005) shall be:

- With *full respect for the dignity, human rights and fundamental freedom* of persons; Guided by the *Charter of the United Nations and the Constitution of the World Health Organisation*;
- Guided by the *goal of their universal application for the protection of all people* of the world from the international spread of disease;
- States have, in accordance with the Charter of the United Nations and the principles of international law, *the sovereign right to legislate and to implement legislation* in pursuance of their health policies .In doing so; they should *uphold the purpose of these Regulations*. (Art 3. IHR (2005))

3.4 Parts and the Chapters in the IHR 2005 and its Headings

Part I. Definitions, purpose and scope, principles and responsible authorities
Part II. Information and public health response
Part III. Recommendations
Part IV. Points of entry
Part V. Public health measures

- Chapter I. General provisions
- Chapter II. Special provisions for conveyances and conveyance operators
- Chapter III. Special provisions for travellers
- Chapter IV. Special provisions for goods, containers and container loading areas

Part VI. Health documents
Part VII. Charges

Part VIII. General provisions
Part IX. The IHR Roster of Experts, the Emergency Committee and the Review Committee

- Chapter I The IHR Roster of Experts
- Chapter II The Emergency Committee
- Chapter III The Review Committee

Part X. Final provisions

ANNEXES

1. a Core capacity requirements for surveillance and response
   b. Core capacity requirements for designated airports, ports and ground crossings
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
3. Model Ship Sanitation Control Exemption Certificate/Ship Sanitation Control Certificate Attachment to model Ship Sanitation Control Exemption Certificate/Ship Sanitation Control Certificate
4. Technical requirements pertaining to conveyances and conveyance operators
5. Specific measures for vector-borne diseases
6. Vaccination, prophylaxis and related certificates Model international certificate of vaccination or prophylaxis
7. Requirements concerning vaccination or prophylaxis for specific diseases
8. Model of Maritime Declaration of Health
   Attachment to model of Maritime Declaration of Health
9. Health Part of the Aircraft General Declaration.

APPENDICES

1. States Parties to the International Health Regulations (2005
2. Reservations and other State Party communications in connection with the International Health Regulations (2005) Index to the International Health Regulations (2005).

3.4 State Important Port Health Related Articles of the IHR 2005

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

Article 1 Definitions

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 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;

"Derating" 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 Organisation; "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 utilisation on board a conveyance;
"Ground crossing" means a point of land entry in a State Party, including one utilised 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 authorised 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;

"Organisation" or "WHO" means the World Health Organisation;

"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 minimise interference with international traffic;"surveillance" means the systematic on-going 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 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 minimise 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.

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 3 Principles

1. The implementation of these Regulations shall be with full respect for the dignity, human rights and fundamental freedoms of persons.

2. The implementation of these Regulations shall be guided by the Charter of the United Nations and the Constitution of the World Health Organisation.
3. The implementation of these Regulations shall be guided by the goal of their universal application for the protection of all people of the world from the international spread of disease.
4. States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to legislate and to implement legislation in pursuance of their health policies. In doing so they should uphold the purpose of these Regulations.

Article 4 Responsible authorities

1. Each State Party shall designate or establish a National IHR Focal Point and the authorities responsible within its respective jurisdiction for the implementation of health measures under these Regulations.
2. National IHR Focal Points shall be accessible at all times for communications with the WHO IHR Contact Points provided for in paragraph 3 of this Article.

The functions of National IHR Focal Points shall include:

(a) sending to WHO IHR Contact Points, on behalf of the State Party concerned, urgent communications concerning the implementation of these regulations, in particular under Articles 6 to 12; and
(b) disseminating information to, and consolidating input from, relevant sectors of the administration of the State Party concerned, including those responsible for surveillance and reporting, points of entry, public health services, clinics and hospitals and other government departments.

3. WHO shall designate IHR Contact Points, which shall be accessible at all times for communications with National IHR Focal Points. WHO IHR Contact Points shall send urgent communications concerning the implementation of these regulations, in particular under Articles 6 to 12, to the National IHR Focal Point of the States Parties concerned. WHO IHR Contact Points may be designated by WHO at the headquarters or at the regional level of the Organisation.
4. States Parties shall provide WHO with contact details of their National IHR Focal Point and WHO shall provide States Parties with contact details of WHO IHR Contact Points. These contact details shall be continuously updated and annually confirmed.

WHO shall make available to all States Parties the contact details of National IHR Focal Points it receives pursuant to this Article.

PART II. INFORMATION AND PUBLIC HEALTH RESPONSE

Article 5 Surveillance

1. Each State Party shall develop, strengthen and maintain, as soon as possible but no later than five years from the entry into force of these Regulations for that State Party, the capacity to detect, assess, notify and report events in accordance with these Regulations, as specified in Annex 1.
2. Following the assessment referred to in paragraph 2, Part A of Annex 1, a State Party may report to WHO on the basis of a justified need and an implementation plan and, in so doing, obtain an extension of two years in which to fulfil the obligation in paragraph 1 of this Article. In exceptional circumstances, and supported by a new implementation plan, the State Party may request a further extension not exceeding two years from the Director-General, who shall make the decision, taking into account the technical advice of the committee established under Article 50 (hereinafter the "Review Committee"). After the period mentioned in paragraph 1 of this Article, the State Party that has obtained an extension shall report annually to WHO on progress made towards the full implementation.
3. WHO shall assist States Parties, upon request, to develop, strengthen and maintain the capacities referred to in paragraph 1 of this Article.
4. WHO shall collect information regarding events through its surveillance activities and assess their potential to cause international disease spread and possible interference with international traffic. Information received by WHO under this paragraph shall be handled in accordance with Articles 11 and 45 where appropriate.

Article 6 Notification

1. Each State Party shall assess events occurring within its territory by using the decision instrument in Annex 2. Each State Party shall notify WHO, by the most efficient means of communication available, by way of the National IHR Focal Point, and within 24 hours of assessment of public health information, of all events which may constitute a public health emergency of international concern within its territory in accordance with the decision instrument, as well as any health measure implemented in

response to those events. If the notification received by WHO involves the competency of the International Atomic Energy Agency (IAEA), WHO shall immediately notify the IAEA.

2. Following a notification, a State Party shall continue to communicate to WHO timely, accurate and sufficiently detailed public health information available to it on the notified event, where possible including case definitions, laboratory results, source and type of the risk, number of cases and deaths, conditions affecting the spread of the disease and the health measures employed; and report, when necessary, the difficulties faced and support needed in responding to the potential public health emergency of international concern.

Article 12 Determination of a public health emergency of international concern

1. The Director-General shall determine, on the basis of the information received, in particular from the State Party within whose territory an event is occurring, whether an event constitutes a public health emergency of international concern in accordance with the criteria and the procedure set out in these Regulations.
2. If the Director-General considers, based on an assessment under these Regulations, that a public health emergency of international concern is occurring, the Director-General shall consult with the State Party in whose territory the event arises regarding this preliminary determination. If the Director-General and the State Party are in agreement regarding this determination, the Director-General shall, in accordance with the procedure set forth in Article 49, seek the views of the Committee established under Article 48 (hereinafter the "Emergency Committee") on appropriate temporary recommendations.
3. If, following the consultation in paragraph 2 above, the Director-General and the State Party in whose territory the event arises do not come to a consensus within 48 hours on whether the event constitutes a public health emergency of international concern, a determination shall be made in accordance with the procedure set forth in Article 49.
4. In determining whether an event constitutes a public health emergency of international concern, the Director-General shall consider:
   (a) information provided by the State Party;
   (b) the decision instrument contained in Annex 2;
   (c) the advice of the Emergency Committee;
   (d) scientific principles as well as the available scientific evidence and other relevant information; and

(e) an assessment of the risk to human health, of the risk of international spread of disease and of the risk of interference with international traffic.

5. If the Director-General, following consultations with the State Party within whose territory the public health emergency of international concern has occurred, considers that a public health emergency of international concern has ended, the Director-General shall take a decision in accordance with the procedure set out in Article 49.

Article 13 Public health response

1. Each State Party shall develop, strengthen and maintain, as soon as possible but no later than five years from the entry into force of these Regulations for that State Party, the capacity to respond promptly and effectively to public health risks and public health emergencies of international concern as set out in Annex 1. WHO shall publish, in consultation with Member States, guidelines to support states parties in the development of public health response capacities.
2. Following the assessment referred to in paragraph 2, Part A of Annex 1, a State Party may report to WHO on the basis of a justified need and an implementation plan and, in so doing, obtain an extension of two years in which to fulfil the obligation in paragraph 1 of this Article. In exceptional circumstances and supported by a new implementation plan, the State Party may request a further extension not exceeding two years from the Director-General, who shall make the decision, taking into account the technical advice of the Review Committee. After the period mentioned in paragraph 1 of this Article, the State Party that has obtained an extension shall report annually to WHO on progress made towards the full implementation.
3. At the request of a State Party, WHO shall collaborate in the response to public health risks and other events by providing technical guidance and assistance and by assessing the effectiveness of the control measures in place, including the mobilisation of international teams of experts for on-site assistance, when necessary.
4. If WHO, in consultation with the States Parties concerned as provided in Article 12, determines that a public health emergency of international concern is occurring, it may offer, in addition to the support indicated in paragraph 3 of this Article, further assistance to the State Party, including an assessment of the severity of the international risk and the adequacy of control measures. Such collaboration may include the offer to mobilise international assistance in order to support the national authorities

in conducting and coordinating on-site assessments. When requested by the State Party, WHO shall provide information supporting such an offer.

5. When requested by WHO, States Parties should provide, to the extent possible, support to WHO-coordinated response activities.
6. When requested, WHO shall provide appropriate guidance and assistance to other States Parties affected or threatened by the public health emergency of international concern.

Article 14 Cooperation of WHO with intergovernmental Organisations and international bodies

1. WHO shall cooperate and coordinate its activities, as appropriate, with other competent intergovernmental Organisations or international bodies in the implementation of these Regulations, including through the conclusion of agreements and other similar arrangements.
2. In cases in which notification or verification of, or response to, an event is primarily within the competence of other intergovernmental Organisations or international bodies, WHO shall coordinate its activities with such Organisations or bodies in order to ensure the application of adequate measures for the protection of public health.
3. Notwithstanding the foregoing, nothing in these Regulations shall preclude or limit the provision by WHO of advice, support, or technical or other assistance for public health purposes.

PART III. RECOMMENDATIONS

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 timeframe 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 authorised 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 1and 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 Organisations 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 1, 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 1 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 derating, 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 excreta, 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, derating, 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 minimise such a risk.

Chapter II – Special provisions for conveyances and conveyance operators

Article 25 Ships and aircraft in transit

Subject to Articles 27 and 43 or unless authorised 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 26 Civilian lorries, trains and coaches in transit

Subject to Articles 27 and 43 or unless authorised by applicable international agreements, no health measure shall be applied to a civilian lorry, train or coach not coming from an affected area which passes through a territory without embarking, disembarking, loading or is charging.

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 derating, 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.

Chapter III – Special provisions for travellers

Article 30 Travellers under public health observation

Subject to Article 43 or as authorised 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 minimise any discomfort or distress associated with such measures, including by:

(a) treating all travellers with courtesy and respect;
(b) taking into consideration the gender, socio-cultural, 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 authorised by applicable international agreements, goods, other than live animals, in transit without transhipment 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
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 38 Health Part of the Aircraft General Declaration

1. The pilot in command of an aircraft or the pilot's agent, in flight or upon landing at the first airport in the territory of a State Party, shall, to the best of his or her ability, except when that State Party does not require it, complete and deliver to the competent authority for that airport the Health Part of the Aircraft General Declaration which shall conform to the model specified in Annex 9.
2. The pilot in command of an aircraft or the pilot's agent shall supply any information required by the State Party as to health conditions on board during an international voyage and any health measure applied to the aircraft.
3. A State Party may decide:
   (a) to dispense with the submission of the Health Part of the Aircraft General Declaration by all arriving aircraft; or
   (b) to require the submission of the Health Part of the Aircraft General Declaration under a recommendation concerning aircraft arriving from affected areas or to require it from aircraft which might otherwise carry infection or contamination.

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

Article 39 Ship sanitation certificates

1. Ship Sanitation Control Exemption Certificates or 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
Part VIII. General provisions
Part IX. The IHR Roster of Experts, the Emergency Committee and the Review Committee
Chapter I. The IHR Roster of Experts
Chapter II. The Emergency Committee
Chapter III. The Review Committee
Part X. Final provisions

4.0 CONCLUSION

The International Health Regulations 2005 are legally binding regulations (forming international law) that aim to:

- Assist countries to work together to save lives and livelihoods endangered by the spread of diseases and other health risks, and
- Avoid unnecessary interference with international trade and travels

The IHR (2005) were adopted by the Fifty-eighth World Health Assembly on 23 May 2005. They entered into force on 15 June 2007.

The purpose and scope of the IHR (2005) 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." The IHR (2005) contain a range of innovations, including:

(a) a scope not limited to any specific disease or manner of transmission, but covering "illness or medical condition, irrespective of origin or source, that presents or could present significant harm to humans";
(b) State Party obligations to develop certain minimum core public health capacities;
(c) obligations on States Parties to notify WHO of events that may constitute a public health emergency of international concern according to defined criteria;
(d) provisions authorizing WHO to take into consideration unofficial reports of public health events and to obtain verification from States Parties concerning such events;
(e) procedures for the determination by the Director-General of a "public health emergency of international concern" and issuance of corresponding temporary recommendations, after taking into account the views of an Emergency Committee;
(f) protection of the human rights of persons and travellers; and
(g) the establishment of National IHR Focal Points and WHO IHR Contact Points for urgent communications between States Parties and WHO.

By not limiting the application of the IHR (2005) to specific diseases, it is intended that the Regulations will maintain their relevance and applicability for many years to come even in the face of the continued evolution of diseases and of the factors determining their emergence and transmission.

5.0 SUMMARY

In this unit, we defined International Health Regulations 2005, we also looked into the evolution of International Health Regulations, the principles embodying the IHR (2005), the various parts and the chapters in the IHR 2005 and its headings. Of particular importance is the Part I of the IHR 2005, which contains various definitions, the purpose and scope, the principles and responsible authorities in the implementation of the provisions of the IHR.. We also discussed Part II Information and public health response, Part IV Points of entry, Part V Public health measures and its Chapter I on general provisions, Chapter II on special provisions for conveyances and conveyance operators, Chapter III on special provisions for travellers and Chapter IV on special provisions for goods, containers and container loading areas. Mention was also made of Part VI on health documents and Part VIII on general provisions.

6.0 TUTOR-MARKED ASSIGNMENT

1. What is International Health Regulations 2005?
2. State the evolution of International Health Regulations.
3. Enumerate the principles embodying the IHR (2005).
4. State the sub-headings in Part I of IHR 2005.

7.0 REFERENCES/FURTHER READING

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