

EVALUATION OF IMPLEMENTATION OF INTERNATIONAL HEALTH
REGULATIONS (IHR 2005) CORE CAPACITIES OF NIGERIAN PORT OF ENTRY IN
COMBATING TRANS-BORDER SPREAD OF DISEASES

By

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DECLARATION

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PREVIEW

CERTIFICATION

This is to certify that this thesis has been read, approved and accepted as meeting the requirement for the award of Doctor of Philosophy Degree in Environmental Health, School of Allied Health and Environmental Science, Kwara State University Malete, Ilorin, Nigeria.

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DEDICATION

This project is solely dedicated to Almighty Allah, the Creator, for his provisions, protection, endless care and has always been my all in all. I also dedicate this work to my wonderful and supportive mother, my family and siblings for their moral and spiritual support.

PREVIEW

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PREVIEW

ABBREVIATIONS AND ACRONYMS

ASP	Apapa Sea Port
DMO	District Medical Officer
ECOWAS	Economic Community of West Africa States
EPR	Epidemic Preparedness and Response
FGD	Focus Group Discussion
FAAN	Federal Airport Authority of Nigeria
FMoH	Federal Ministry of Health
HIV	Human Immunodeficiency Virus
IDSR	Integrated Disease Surveillance and Response
IHR	International Health Regulations
JNIA	Julius Nyerere International Airport
JKIA.	Jomo Kenyatta International Airport
MoD	Maritime Declaration of Health
MOF	Ministry of Finance
MMIA	Murtala Mohammed International Airport
MSD	Medical Store Department
KWASU	Kwara State University
NFP	National Focal Point
NIMR	National Institute for Medical Research
NBS	National Bureau of Statistics
NAS	Nigerian Aviation Sector
NHSP	National Health Sector Planning
PHEIC	Public Health Emergencies of International Concern
POE	Points of Entry
PPE	Personal Protective Equipment
RAS	Regional Administrative Secretary
NAIA	Nnamdi Azikwe International Airport Abuja
SARS	Severe Acute Respiratory Syndrome
SEAR	South East Asia Region
SOP	Standard Operating Procedures
SLB	Seme Land Boarder
TB	Tuberculosis
UN	United Nations

WHA World Health Assembly
WHO World Health Organization
WHO AFRO World Health Organization Regional Office for Africa

PREVIEW

OPERATIONAL DEFINITION OF TERMS

Aircraft is a plane designed for local and international voyage.

Airport is a place where local and international flights arrive or depart.

Competent authority means an authority responsible for the implementation and application of health measures.

Core capacity: The International Health Regulations (IHR) 2005 define core capacity requirements for each of the 194 countries that are party to the IHR to ensure that all countries have the ability to detect and respond appropriately to any potential public health emergency of international concern (PHEIC). There are eight core capacity requirements, namely; (1) National legislation, policy and financing, (2) Coordination and national focal point (NFP) communication, (3) Surveillance, (4) Response, (5) Preparedness, (6) Risk communication, (7) Human Resources and (8) Laboratory

Crews: are persons on aircraft, ship, train, road vehicle or other means of transport who are not passengers.

Event is a manifestation of disease or an occurrence that creates a potential for disease.

Infection is 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 is 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 is the movement of persons, baggage, cargo, containers, conveyances, goods or postal parcels across an international border, including international trade.

Isolation is the process of 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 is the preliminary assessment of a person by an authorized health worker 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 center, designated by each country, which is accessible always for communications with WHO IHR Contact Points.

Point of entry is a passage for international entry or exit of travelers, 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.

Preparedness is a set of activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations.

Prevention means measures aimed at stopping an event from occurring and/or preventing such occurrence having harmful effects on communities (or groups of individuals) such as vaccination programmes by the health sector.

Public health emergency of international concern is an extraordinary event which is determined, as provided in International Health Regulations (2005) to constitute a public health risk to other States through the international spread of disease and to potentially require a coordinated international response.

Public health surveillance is a systematic collection, analysis and interpretation of data and information about diseases and exposure to environmental hazards for use in planning, implementing and evaluating the public health trends.

The International Health Regulations (IHR 2005) means an agreed code of conduct to ensure global public health safety, communication, collaboration, information sharing, surveillance and response to protect against the international spread of serious risks to public health and minimize unnecessary restrictions in traffic and trade. This was adopted in 1969 and revised in 2005 to broaden its application and reflect the current alert and response.

Response means all activities taken during or right after an event that addresses the immediate and short-term effects of an emergency. Response includes immediate actions to save lives, protect property, and to meet basic human needs.

ABSTRACT

Background: The increase in travel and trade globally and locally creates favorable conditions for emerging and re-emerging and spread of international infectious diseases across borders. In controlling this menace, International Health Regulations (IHR 2005) were adopted to prevent, protect, control and provide a public health response to trans-boundary diseases. There is urgent need to examine the core capacity and provisions of the regulations in tackling the issues over years.

Objective: This study evaluates the strength and weaknesses of the International Health Regulations (IHR 2005) Core Capacities across Nigerian Points of Entry in combating trans-border diseases spread.

Methods: A descriptive comparative cross-sectional study that employed qualitative and quantitative techniques. Two Hundred and Sixty-Eight (268) respondents were selected randomly across few Points of Entry (POEs) of Semen Land Border (SLB), Murtala Mohammed International Airport Lagos (MMIAL) Apapa Sea Port (ASP) and Nnamdi Azikwe International airport Abuja (NAIAA). Using simple random sampling, respondents were selected from the frontline port health workers, port security personnel and staff of Federal Ministry of Health headquarters and thereafter stratified quantitatively and qualitatively into (162) and (106) respectively. A semi-structure, paper-based, interviewer-administered questionnaire and Focus Group Discussions / Key Informant interviews were adopted to draw relevant information on core capacities among such includes human resources / staffing at POEs, risk communication, policy and legislation, coordination core capacity, surveillance and response to Public Health Event of International Concern (PHEIC), containment and Public Health threats/ Emergency Preparedness and training and building of capacity. Qualitative data were analyzed with thematic methods while quantitative data were analyzed using Statistical Packages for Social Sciences (version 23) for descriptive and inferential statistics at $p > 0.05$. **Results:** Generally, there was moderately low level of knowledge and understanding of the IHR across all POEs investigated and this follow the order MMIAL>NAIAA>ASP>SLB. It revealed that human resources / staffing at POEs was generally inadequate across all POEs. (SLB) being (55.0%), MMIAL (43.0%) and ASP (33.0%) respectively. Risk Communication within the POEs was adequate at SLB (50.0%), MMIAL (55.0%) and ASP (23.0%). Policy and Legislation within the POEs was adequate at SLB (55.0%), MMIAL (55.0%) and ASP (53.0%). Coordination of core capacity within the POEs was also adequate at SLB (22.0%), MMIAL (55.0%) and ASP (19.0%) respectively. There were weak and fragmented co-ordination at SLB and ASP.

Responses to Public Health Event of International Concern (PHEIC) within the POEs were adequate at SLB (47.5%), MMIAL (44.0%) and ASP (22.0%). Surveillance of core capacity within the POEs was rated adequate at SLB (60.0%), MMIAL (33.0%) and ASP (26.5%). Containment and Public Health threats/ Emergency Preparedness within the POEs were rated adequate at SLB (60.0%), MMIAL (33.0%) and ASP (25.0%). There is neither “no standard format on safety by IHR to access effectively level of environmental safety nor special training attended by any of the respondents as aiding or facilitating comprehension of the IHR policy/guideline. All the respondents agreed concerning the non-official designation of any of Nigerians POEs as WHO officially designated to implement the IHR 2005 policy/guideline. It was noted that core capacities in all the Points of Entry were inadequate. None of the core capacities at POEs has achieved the requirements stipulated in the IHR (2005) despite the selected POEs were the busiest and highest international traffic flow in Nigeria.

Conclusion: The core capacities such as effective laboratory services, surveillance, emergency preparedness and response, and risk communication to respond to public health threats at POEs should be strengthened to combat trans-border diseases spread.

CHAPTER ONE

INTRODUCTION

1.1 Background Information

1.1.1 HISTORICAL BACKGROUND OF INTERNATIONAL HEALTH REGULATIONS (IHR)

In 1948, the World Health Organization (WHO) Constitution entered into force and in 1951 WHO Member States adopted the International Sanitary Regulations, which were replaced by and renamed the International Health Regulations in 1969. The 1969 Regulations were subject to minor modifications in 1973 and 1981. (Katz and Fisher, S. 2010)

A central and historic responsibility for the WHO has been the management of the global regime for the control of the international spread of diseases. 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 diseases” 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. The cholera epidemics that overran Europe between 1830 and 1847 were catalysts for intensive infectious disease diplomacy and multilateral cooperation in public health. This led to the first International Sanitary Conference in Paris in 1851. 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. (Adamson, E; 2011)

The 1969 Regulations, which initially covered six “quarantinable diseases” were amended in 1973 and 1981, primarily to reduce the number of diseases covered 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 WHO’s Secretariat in close consultation with WHO Member States, international organizations 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. (Katz, R and Dowell, S. 2015)

1.1.2 International Health Regulation (2005)

In 1800s the global community was recognized to focus on selected diseases particularly cholera, plague and yellow fever. Quarantine was used to prevent the spread of these diseases across international borders. This was built on the first International Sanitary Convention of 1892 which later became the International Sanitary Regulations. The convention was adopted by WHO Member States in 1951. The regulations were revised and renamed the International Health Regulations in 1969 (Katz and Fischer, 2010).

Later, these regulations went through several transformations which resulted into amendments of the Regulations in 1973 and 1981. The revised IHR (2005) has broadened its application to reflect the global disease surveillance, alert and response. It is a global legal instrument that binds all 194 Member States of World Health Organization (WHO). The regulations focused on preventing, protecting against, control and provide public health response to international spread of diseases that are corresponding with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade (Menucci ,2011].

Part IV of IHR (2005) is all about the issues related to points of entry (POE). The state must identify competent authorities at each designated POE to embark on the following tasks:

1. To determine control measures to prevent local and international spread,
2. To conduct laboratory analysis and logistical assistance e.g. equipment, supplies and transport;
3. To provide direct link with other key players;
4. To communicate, inform available health facilities, POE and other key operational areas for dissemination of information and recommendations from WHO and in other countries;
5. To establish, operate and maintain a national public health emergency response of multi-disciplinary and multi-sectoral on public health event of international concern;
6. To provide 24 hours 7 days (24/7) health services at each point of entry.

The core capacities in the revised IHR (2005) include the national legislation, policy and financing, coordination and national focal point (NFP) communication, surveillance, response, preparedness, risk communication, human resources and laboratory. The designated POE should have the stated core capacities all the time for controlling and responding to events of the public health emergency of international concern (PHEIC) (WHO, 2011).

1.1.3 Emerging and Re-emerging Diseases.

The emergence and re-emergence of infections formerly thought to be controlled have changed the face of public health across the world. It was clearly demonstrated by emergence of Severe Acute Respiratory Syndrome (SARS) and pandemic H1N1 influenza 2009 (WHO, 2011). Due to changes in human, animal, and vector behaviors as well as environmental pressures, the world is experiencing new health risks while others including smallpox have been eradicated worldwide (Fischer *et al.*, 2011). The existing threat of great international concern are emergence of new diseases such as SARS, pandemic influenza, Ebola; and re-emerging of old diseases such as Ebola, tuberculosis (TB), anthrax, foot and mouth disease, rabies and so on. The rapid increase in travel has reversed the importance of traditional quarantine measures which served the world so well, but effective surveillance systems at the POE remain crucial (Civil Contingencies, 2011). Therefore, the emerging and re-emerging diseases worldwide demand critical attention on risk assessment, preparedness and response of each country to prevent and control the spread of diseases.

1.1.4 Points of Entry

The POE is challenging places to work as they involve the variety of transportation of items, people from different areas of the world with their different cultures. This movement demand the health-related services all the time (day and night) and in all type of the weather. Therefore, appropriate health and safety measures to manage the associated risks need to be instituted at any POE (HSE INDG446, 2011).

Airport authorities and other POE should closely collaborate with health authorities in public health surveillance to identify health related issues and trace the causes to control and prevent disease spread. To identify sources of infections among air travelers can be challenging as it can be scattered quickly upon arrival. It is necessary to strengthen the surveillance system at the POE (WHO, 2009). Health services at POE are expected to monitor and evaluate range of items and people entering or leaving the country. It controls and prevents infectious diseases transmitted through passengers, vessels, cargoes as well as water and foodstuff. Kenya, an

East African Country for instance, prepared to prevent and control infectious diseases at the Jomo Kenyatta International Airport (JKIA). Assessments of suspect or sick passengers are undertaken at the isolation space at airport. History is taken, medical examination and other appropriate health services are provided. The conveyance is treated against sources of infection and contamination, and according to source of infection, the conveyance may be denied entry. In Nigeria again, health officers at POE have among others, the responsibility of taking a control measures over the infected or suspected ships arriving from foreign port or outgoing ships (Adamson, 2011).

In July 2009, the Chief Medical Officer in India instructed all Port Health Officers to screen all international passengers and crews coming to India; in case any passenger detected of having flu like illness should be isolated for further clinical medical examination. The measures were aiming to prevent the epidemic of H1N1 Influenza (Government of India, New Delhi, 2009). Standard Operating Procedures (SOP) for POE insist on the presence of authorities with adequate capacity to respond to public health, planning for emergency of international concerns and meet the health needs of travelers, both incoming and outgoing (Blair, 2007).

From unpublished report of Federal Ministry of Health and Social Welfare (MoHSW)-Integrated Disease Surveillance and Response (IDSR), Nigeria has experienced several outbreaks and infectious diseases from within and neighborhood countries like measles, cholera, Ebola, rift valley fever as well as influenza A (H1N1) due to interrelation and trade along the borders and also refugees due to civil and political instability in their country of origin (Price-smith; 2000).

Nigeria, like other WHO Member States, is bound by all international regulations and resolutions and is expected to adopt the new initiatives. There are 42 official points of entry including 27 airports (5 are International), 5 sea ports, 3 lake ports and more than 22 land borders. These are the special areas that need to have good organization and coordination in the whole process of implementation of IHR (2005).

1.2 Statement of the Problem

There are reports of diseases of Nigerian origin such as Lassa fever which was first discovered in 1969 when two missionary nurses died of a mysterious hemorrhagic fever in the town of Lassa in Borno State (Frame, 1970), but later became endemic in Benin (where it was diagnosed for the first time in November 2014), Guinea, Liberia, Sierra Leone and some parts of Nigeria.

The IHR was primarily promulgated to control the trans-border disease crossing. The recent outbreak and spread of the diseases to and from Nigeria such as HIV/AIDs, Ebola viral disease, Cholera and reemergence of Lassa fever and its spread among the West African countries. The spread of these diseases through human and possibly animal carriers via the land, sea or air travels is expected to have been controlled and or eliminated. The current trends speak volumes of its knowledge, utilization and efficacy. There are issues about the regulation and its implementers, process of its implementation among member nations surrounding Nigeria. Due to enhanced interaction in business and other developmental activities, there is a possibility of spread of diseases from one area to another if prevention and control measures are not well organized (Ernest *et al.*, 2016). The main worry in the history of epidemics has been the disease control in freely movement of people, trade and transportation (Lee and Collin, 2005). Many countries are experiencing unwanted and poor quality of goods for human health like foods, drugs, chemicals and cosmetics entering into their countries. These cause the occurrence of biological, chemical and radiation hazards (PHA, 2009). The infectious diseases have no boundary; it is presumed that if not properly managed, can affect many people in many countries in the world. Emerging and re-emerging diseases have been reported in different places in the world. For example, in Africa, Avian Influenza has occurred in Burkina Faso, Djibouti, Egypt, Ivory Coast, Niger, Nigeria and Sudan (EAC, 2016). Nigeria is also a center of international travel and it is very unsecured and vulnerable to many international diseases and other cross border health threats. All WHO Member States including Nigeria were required to start implementation of IHR (2005) within five years from June 2007. An emphasis was to strengthen and maintain the required core capacities (Katz and Fischer, 2011).

The implementation of these regulations among the countries was at different stages. Among other shortcomings, lack of scientific knowledge and capacity to enforce public health measure hindered the prevention and control of outbreaks in most developing countries (Lee and Collin, 2005). In Tanzania for instance, the communicable diseases have been given a special attention in public health. The country has established routine surveillance system; Integrated Disease Surveillance and Response (IDSR) to monitor notifiable diseases such as cholera, plague, yellow fever, rift valley fever, Ebola and avian influenza (Ernest *et al.*, 2016). The link between the public health surveillance systems and POE in preventing and control of infectious diseases has the potential impact among core capacities of IHR (2005).

This study attempts to assess the core capacities of international health regulation (2005) in combating spread of diseases at some selected Point of Entries across Nigerian borders.

1.3 Justification of the Study

The need for this evaluation was born out of the fact that, with the IHR (2005) in place, the huge resources being allocated by various governments especially Nigerian Government for capital and recurrent expenses to maintain land, sea and air borders, the numerous staff working under the port health services in the countries around Nigeria etc., there should not be an opportunity for travelers to cross our borders with threatening disease(s) of Public Health Importance. There is the need to prove beyond reasonable doubt that investment is yielding positive result. The IHR, since the last review, was particularly interested in the three quarantinable diseases namely Plague, Cholera and Yellow fever but now some more deadly diseases have emerged such as Ebola, Zika, Lassa fever, SARS, Dengue, RVHF etc., to mention but a few and are coming through the same boarders (land, air or/and sea) and need to be controlled in order to safeguard the health of the citizenry.

The need to examine the capacity and provisions of the regulations in tackling the issues is required. Increasing international migration flow in the present day emphasizes the need to strengthen the points of entry (POE) to adhering to domestic and international legislations and avoiding unnecessary interference with International traffic and trade. The eight core capacities at the POE needed to detect, assess, notify and respond to a public health emergency were assessed.

All 194 WHO Member States including Nigeria agreed to implement the IHR (2005) since it has come into effect on 15th June 2007. It was agreed to develop and strengthen core capacities at chosen international ports, airports and ground crossing by June 2012. This legal instrument contains rights and obligation for countries concerning prevention, surveillance and response, health measures applied to international travelers at POE. Regarding the public health response, articles 5 and 13 of the IHR (2005) states that each country shall develop, strengthen and maintain as soon as possible but not later than five years from the entry into force of this regulations, the capacity to respond well and quickly to PHEIC as set out in the core capacity requirements for surveillance and response (Menucci, 2011).

There was little document on the implementation of IHR (2005) at POE, particularly at airports in Nigeria. Thus, the findings from this study will provide the understanding on the implementation status in relation to requirements of IHR (2005) core capacities at Murtala

Muhammed International Airport (MMIA) and Nnamdi Azikwe International Airport Abuja in Nigeria. It will help to know the discrepancies between existing and desired situation towards the IHR (2005) requirements and implementation. It will clearly bring out the challenges in all aspects such as human resources, financing constraints, weakness in surveillance and emergency preparedness and responses, risk communications, availability or otherwise of functional laboratory etc.

1.4 Research Questions

1. What is the level of knowledge of the Core capacity requirements at Nigerian Points of Entry (PoEs) for the implementation of IHR (2005)?
2. What are the core capacities available to detect, notify, report and respond to public health emergence of international concern at Nigerian Points of Entry?
3. What are the current statuses of POEs in the implementation of the core capacity requirement of the IHR (2005) at the Nigeria Points of Entry?
4. What are the limitations and challenges in using the provisions of IHR (2005) in combating trans-boundary diseases across major Nigerian ports?

1.5 Hypothesis

H₀: There are no adequate provisions in the IHR (2005) in combating spread of trans-boundary diseases across the Nigerian Points of Entry (PoEs).

H_a: There are adequate provisions in the IHR (2005) capable of combating trans-boundary disease spread across the Nigerian Points of Entry (PoEs).

H₀: There are no limitations and challenges in using the provisions of the IHR (2005) in combating trans-boundary diseases across the Nigerian Points of Entry (PoEs).

H_a: There are limitations and challenges in using the provisions of the IHR in combating trans-boundary diseases across the Nigerian Points of Entry (PoEs).

1.6 Research Objectives

1.6.1 General Objective:

To evaluate the International Health Regulations IHR (2005) core capacities at the Points of Entry (PoE) and its implementations across major ports in Nigeria.

1.6.2 Specific Objectives:

1. To determine the knowledge of the IHR (2005) requirements among the implementing stakeholders at the PoEs.