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RESEARCH ARTICLE

Assessment of Core Capacities for the Implementation of International Health Regulations (2005) at selected Points of Entry (POEs). A case for Southern, Western and Lusaka Provinces of Zambia.

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Abstract

Objective: To assess the core capacities for the implementation of the IHR (2005) for the prevention and control of infectious diseases, events and other conditions at the selected Points of Entry.

Methods-A cross-sectional descriptive study and qualitative methods were employed at POEs visited. WHO core capacity assessment tools were used for data collection. Respondents were purposely chosen for the study. In depth interviews, focus group discussions in form of meetings and visits to isolation sites and general observations were conducted.

A conceptual frame work for thematic areas and observations was followed. Thematic areas (Foster partnership, strengthen the POEs disease prevention and surveillance, strengthen the public health security in travel and transport, sustain rights, obligations and procedures and conducting studies and monitoring of progress including the core capacity measurements of compliance were used to generate study findings.

Results-The National Health Policy was found not to adequately cover issues of port health. Many decision makers in both private and government departments have less correct understanding of the IHR (2005). None of the seven (7) visited POEs had an authority document as designated ports. There have been no clear communication channels except at KKIA for reliable risk communication. Public Health Emergency Preparedness and Response was not practiced other than Emergency Response activities prominently pronounced by the Zambia Revenue Authority (Ground Crossings) and Air Corporation (Airports). Most staff did not fully understand the IHR (2005) and in all POEs, the staff needs capacity building, official staff accommodation and relevant tools to use. There has been little or no financing at POEs from the monthly grant given to District Medical Offices. There has been unclear reporting structure of line of authority between first aid clinic staff and port health officers at KKIA.

Conclusion: Assessment of core capacities measurements of POEs provides a good platform to review gaps in the implementation of the IHR (2005). Linking the core capacity assessment measurements to "Areas of Work for Implementation (2007) determine the National Health Policy position and foster strengthened partnership at Points of Entry. The "Areas of Work for Implementation (2007)" are famous for their achievement of good outcomes for POEs for Zambia.

Introduction:-**Background:-**

Throughout the 19th century the focus on selected diseases was recognized by the global community, in particular diseases like cholera, yellow fever and plague. During this time nations used to prevent the spread of diseases on international borders. The first International Sanitary Convention (1882) subsequently became the cornerstone for quarantine and later became the International Sanitary Regulations. This Convention was in 1951 adopted by the World Health Organization (WHO) and in 1969 the International Health Regulations (IHR) were named after the regulations were revised (WHO, 2008).

Due to several transformations and amendments of these regulations from 1973 through 1981 led to the revision of the IHR (2005) and its application was broadened to reflect disease surveillance, alert and response. The International Health Regulations have been legally document binding the 194 Member States for World Health Organization. This document aims to prevent and control Public Health Emergencies of International Concern (PHEIC), corresponding with and restricted to public health risks (WHO, 1969). State Points of Entry (POEs) are potential areas for effective interventions that prevent infectious diseases transmission at Points of Entry (Part IV of IRH, 2005).

Competent authorities and core capacities have to be identified at each designated POEs and observe tasks such as: Determining the control measures that prevent local and international spread of diseases and communicate and inform available POE sectors in order to disseminate information as per WHO recommendations and other state parties:

- a. To conduct laboratory analysis and solicit laboratory logistical assistance such as transport, equipment and other medical supplies
- b. Provide direct link with other key players in IRH(2005)
- c. Establish, operate and observe a national multi-disciplinary and sectoral PHEIC
- d. Designated POEs to provide 24/7 health services to travelers and local people

The revised IHR (2005) core capacities include the national legislation policy, financing, coordination of state focal points (National Focal Point), communication, disease, event, condition, surveillance, response and preparedness, risk communication, human resource and laboratory services. Each designated POE should have the stated core capacities to control and respond to PHEIC (WHO, 1969 & Fisher.J, 2010).The Member States agreement postulates to strengthen core capacities at every designated Points of Entry.

Communicable Diseases-Emerging and Re-Emerging Diseases:-

The pandemic of diseases like Severe Acute Respiratory Syndrome (SARS) and Avian Influenza, Ebola, Zika Virus (Fisher, 2010) in the recent past has underscored the importance of these communicable diseases and their impact on economic development and health. Many developing countries are at the epicenter of such epidemics. Many new micro organisms have emerged and several existing communicable diseases are spreading to newer areas. These communicable diseases (re-emerging and emerging) have and will continue to pose public health challenges for many years to come.

Several socio-economic, demographic and environmental factors have been found to facilitate the spread of these diseases, their impact could be minimized through strong public health surveillance systems (Hophmayer Tockish.S,(2012).To effectively respond to these diseases core capacities at POEs have to be well coordinated with pragmatic plan of action.

Due to human, animal and vector behavior changes, as well as the environmental pressures, new health risks have been experienced, while other diseases have already been eradicated. Risk assessment, preparedness and response for each member state demand critical attention to prevent and control the spread of diseases (WHO, 2009).

The re-emerging diseases of the 21st century are a serious problem for public health and even though there has been enormous progress in medical science and in the battle against infectious diseases, these diseases are a long way from being really brought under control.

A well organized public health monitoring system would enable the epidemiological characteristics of the infectious diseases to be analyzed and the success or other wise of preventive interventions to be precisely evaluated (WHO, 2009).

A need for collaborative net work at every POE has been emphasized by the formation of the World Health Organization Comprehensive Plans and Policies by each Member State to implement intervention strategies that have to encompass surveillance and response in terms of early detection, prompt investigation and monitoring of emerging pathogens (IHR, 2005).

The prevention and control measures at POEs have to emphasize on enhancing communication of public health information about emerging diseases and ensuring prompt implementation of prevention strategies such as infrastructure that support surveillance and implementing prevention and control programs and applied research (IHR, 2005).

Points of Entry for Member States:-

Zambia has many Points of Entry and it is a known fact the POEs are challenging places of work as many cargos, persons and animals from different places of the world are being transported. Health service delivery demands are immense (24/7) and in all types of climate and weather. Appropriate public and occupational health measures have to be instituted at any POE in all Member States (WHO, 2012).

Sources of infection among air travelers can be challenging as it can be scattered quickly upon arrival at Points of Entry and it is important to strengthen the surveillance system at POEs (IHR, 2005). The provision of health services at POEs monitor and evaluate many items and travelers including animals that enter and leave the country. Infectious diseases are prevented and controlled, especially those through passengers, vessels, cargoes as well as food staff and water (WHO, 2011).

Zambia has interventions to prevent and control infectious diseases at Points of Entry. There are both designated and undesignated Points of Entry. The State has ground crossings and international airports where assessments of disease suspects are undertaken at isolation spaces. More of the ground crossings have received less recognition by the health system by not providing transport, isolation and office spaces. Temperature monitoring to travelers has been done in some big air ports and some selected busy ground crossings. Conveyances have been treated against sources of infection and contamination in accordance to sources of infection and suspects are quarantined.

Zambia under Ministry of Health uses the Integrated Disease Surveillance and Response Guidelines for various diseases from the world over and inland for communicable diseases such as measles, chicken pox, cholera, typhoid, Ebola, Zika Virus as well as HINI (IHR,2005). Zambia is a Member State of WHO and all resolutions pertaining to IHR (2005) have been adopted by the Member States including new initiatives (IDSR, Africa Region, 2010).

International Health Regulations (2005) Implementation System in Zambia:-

Southern, Western and Lusaka Provinces are part of the ten (10) Provinces of Zambia. Southern Province has five (5) Points of Entry while Western has one big Point of Entry at Katima Mulilo among other smaller ports servicing mostly Southern Province. Lusaka Province has two (2) very busy Points of Entry, one Airport, Kenneth Kaunda International Airport (KKIA) and one Ground Crossing (Chirundu). Dry Ports in Zambia are many and have not been very much recognized by the health system as part of sources of infection. The Points of Entry have special threats to each member state and need good coordination and implementation of the IHR (2005).

Port Health Services monitor and evaluate all food stuffs, cosmetics, disinfectants, hazardous substances and medicines entering POEs and control and monitor the possible entering of serious diseases in the country. Zambia provides airport health control, vessel inspection, inspection of imported food stuffs, pharmaceuticals and medicines including port exports. The functions and duties of port health organization in Zambia have been primarily (PHA, Cap 295 of the Laws of Zambia):

- a. Medical examination, isolation and care of infected persons on international travel
- b. On board sanitary inspection, disinfection of conveyances
- c. Supervision of active anti mosquito measures in port premises
- d. Collection and examination of rodents for plaque infection
- e. Analyzing and clearing imported food samples

- f. Verification and issuing of health permit documents
- g. Providing yellow fever vaccinations as directed by the Ministry of Health

Standards for the Management of Public Health Emergency at Designated Points of Entry (IHR, 2005):-

There should be emergency preparedness at every designated POE emphasizing pre-arrangements with agencies that are able to provide services when required, such as arrangements with local hospitals for treatment of ill passengers and with service providers for the provision of relevant public health services like disinfection and such as:

1. Port or Airport Authorities or relevant agencies to provide appropriate space for interviewing suspected or affected persons
2. Local medical and veterinary facilities for isolation of animals, treatment and other support services when required;
3. Relevant facilities (away from the POEs) to provide for the assessment and if required quarantine of suspected travelers; quickly applying entry or exit controls(including screening) for applying to arriving and departing travelers, when required;
4. Relevant sectors to access to specially designated equipment and supplies and provision of trained personnel for special measures such as decontamination, when required; and
5. Public health authorities and other relevant agencies for effective communication and coordinated response, including sharing information, risk assessment, public communication and contact tracing.

Operational Relationship at Points of Entry:-

Points of Entry air corporation, ship operators, medical, security, customs, immigration, drug enforcement commission, agriculture, veterinary, port health authorities, medical facilities(**hospital, logistical services, command structures, ambulatory services and quarantine facilities, human and animal**),cargo flight handlers and hazardous materials. Crew teams have to exist/formed to work in liaison and communication with planning, intelligence and logistics including enforcement of State Laws and IHR (2005)

In addition to the World Health Assembly (WHA, 58.3) revised IHR, article 2(k), 21a and 22 of the constitution of WHO-Annex 1-9),Zambia has been using the Codex Alimentarius (Documents), Food and Drugs Act Cap 303, Biosafety Act, 2007,Public Service Code of Conduct and the International Health Regulations(2005).

Problems with the implementation of IHR (2005) Core Capacities in Zambia:-

The general implementation of the (IHR, 2005) has many problems firstly with a need to strengthen the policy implementation frame work that provides the interface between actors in International Health Regulations (Hophmayer.T.S, 2012). Implementation of the policy has been controlled by multi-sectoral approach and type of interactions and as a motivated process while actors can participate as target groups and implementers.

Other stakeholders have an important role to play for successful implementation of activities (Bressers. H. 2004). Since independence(1964), Zambia has been reforming its health care system without prioritizing public health to strengthen International Health Regulations(2005).Not everything that changes or cause change, is a health reform (Nair K.S,2015).

The health reforms attempted to address how sufficient funds should be raised and allocated in order to pay for health care services. *These “raised funds have not included port health services delivery and nothing of value has been allocated to strengthen the delivery of services at Points of Entry”*. The country has been identified to have many POEs challenges, worsened by a weak health system policy framework undermining the effectiveness of port health system. The POEs are not recognized as individual entities to fully operate but have remained in some places as part of nearby clinics or as part of first aid clinics in border areas and airports.

One or two people have been assigned to man each Point of Entry. No transport (Vehicle or Motorcycle) has been assigned in many Points of Entry, except KKIA(Kenneth Kaunda International Airport).The Ministry of Health has been conducting performance Assessment and Technical Support Services to health care facilities and infrastructure development but POEs have not been reached in some districts making the institution remain marginalized.

Most of the ground crossings do not have official offices and Port Health Practitioners have remained squatters in seemingly convenient places at Points of Entry, further lowering staff morale under the negligence of the health system policy.

There are several recognized and important factors that may correct the established problems: *inadequate understanding of the objectives and purposes of the IHR (2005), lack of policy frame work for port health, inadequate legislations and guidelines for implementation of IHR(2005),stakeholders at POE not oriented in IHR(2005) and not aware about them.*

Many stakeholders in Zambian POEs do not have IHR (2005) guidelines and other related documents, lack clear coordination of IHR (2005) implementation at Points of Entry, have limited access to information of IHR (2005) among the supposed to be implementers. There has been also lack of budgetary allocation for Public Health Emergency of International Concern at POEs assessed in Lusaka, Western and Southern Provinces. Health staff lack training and orientation in modern Automated Systems for Customs Data (ASYCUDA).They also lack involvement in laboratory support network to respond to the implementation of the IHR (2005) at Points of Entry assessed. Shortage of manpower and financial and inadequate health system recognition of POEs has remained a major gap to implementation of IHR (2005) in Zambia.

Many Member States have been experiencing unwanted and poor goods for human life like, foods, chemicals and cosmetics entering countries through designated and undesignated Points of Entry. These items have caused physical, biological, radiation and chemical hazards (Bressers H, 2007).Infectious diseases if not properly managed can affect many people as they have no boundaries across the world. The emerging and re-emerging diseases have surfaced up affecting both developed and developing nations while the later suffering the most(Bessers,H,2007).

Zambia`s geographical position and the tourism industry make the nation very vulnerable and insecure to many diseases of international concern and other international threats. According to WHO, all Member States including Zambia were requested to strengthen and maintain the required core capacities at POEs (WHO, IHR, 1969). After 2007, International Health Regulations faced many implementation gaps such as weak capacity to enforce public health measures and inadequate scientific knowledge, hindering the prevention and control measures for disease outbreaks, more especially in developing countries across the world (Hophmayer T.S, 2012).

In Zambia the use of the IDSR guidelines to monitor notifiable diseases has been established like in many other countries in the world, the notifiable diseases list has included both emerging and re-emerging diseases making a strong link between POEs prevention and control and public health surveillance systems.

This paper analyses and describes a suitable public health care system core capacities that can successfully help improve implementation of IHR (2005) at POEs throughout the Zambian port health system. No study has so far been conducted to improve the IHR (2005) implementation in Zambia. International public health security has been one of the main challenges that have been rising from the new and complex public health landscape.

The shared vulnerability to diseases and events has implied shared responsibility while strengthening the nation`s disease surveillance and response systems have become central to improving public health security in each WHO member state. With interdependent and interconnected world experiencing today`s highly mobile population, opportunity for rapid spread of diseases is being experienced. This study attempts to assess core capacity implementation at Points of Entry towards the strengthened implementation of IHR (2005) in Southern Province and other selected POEs in nearby provinces in Zambia.

The next section on methods elaborates further the proposed model or frame work that provides a detailed account of the methods to monitor the model. The plan for this paper is as follows: First, section **I**, introduces the IHR (2005) development and its historical implementation as well as the gaps identified in the Zambian health reformation and health policy towards port health implementation. Section **II**, describes the objectives and how the gaps in port health care system can be intervened. Section **III**, presents the undertaken methods for the literature of the study. Section **IV**, details the results of the study that are presented according to the reviewed literature centering on conceptual frame work and “Areas of Work for implementation of the IHR (2005)”. Section **V**, details general discussions of the results of the seven (7) recent important factors of the “Areas of work for implementation of the IHR (2005)”.Section **VI**, then details the studies on major findings. Section **VII**, addresses the limitation of the study. Section **VIII**, provides recommendations for levels and probably future study and section **IX** gives some concluding thoughts and the list of references has been attached.

Purpose of Study:-

The purpose of study was to identify gaps in the implementation of IHR (2005) and share experiences and be able to come up with recommendations for levels and further identify the relationships among the “Areas of work for implementation (2007)” of the IHR (2005)” and the scores of the core capacity measurements. The study also sought to understand the “Areas of work for implementation,(2007)” of the IHR (2005).The outcome of a quality health care system has been regarded as important and can provide for better results for the 21st century, where emerging and re-emerging diseases have become an international concern.

However, unlike expected outcomes, the implementation of IHR (2005) is politically driven. The study will focus on “Areas of work of implementation(2007) of IHR(2005)” and practice for implementation of IHR(2005) since it came into effect on the 15th June,2007(WHO,2008).By June 2012,every Member State agreed to develop and strengthen core capacities at designated points of entry, airports and ground crossings.

Member States have been obliged under the legal instruments that contain rights for countries concerning prevention, surveillance and response to health measures for international travel through Points of Entry. According to articles 5 and 13 of the IHR(2005) each Member State shall develop, strengthen and maintain and enforce these regulations with the capacity to positively respond to PHEIC as laid out in the IHR(2005) Core Capacity Requirements for response and surveillance(WHO,2008).Zambia has many International Points of Entry both ground crossings and international airports. The findings of this study have provided the understanding of the implementation gaps that exist in the selected POEs in relation to the requirements of the IHR (2005).

Research Questions:-

1. What are the core capacities for implementation of IHR (2005) at selected Points of Entry?
2. What are the expected results of “Areas of Work for Implementation (2007) of the IHR (2005)” at selected POEs for Lusaka, Southern and Western Provinces?

Objectives:-**Main Objective:-**

To assess the core capacities for the implementation of the IHR (2005) for the prevention and control of infectious diseases, events and other conditions at selected POEs in Lusaka, Southern and Western Provinces of Zambia.

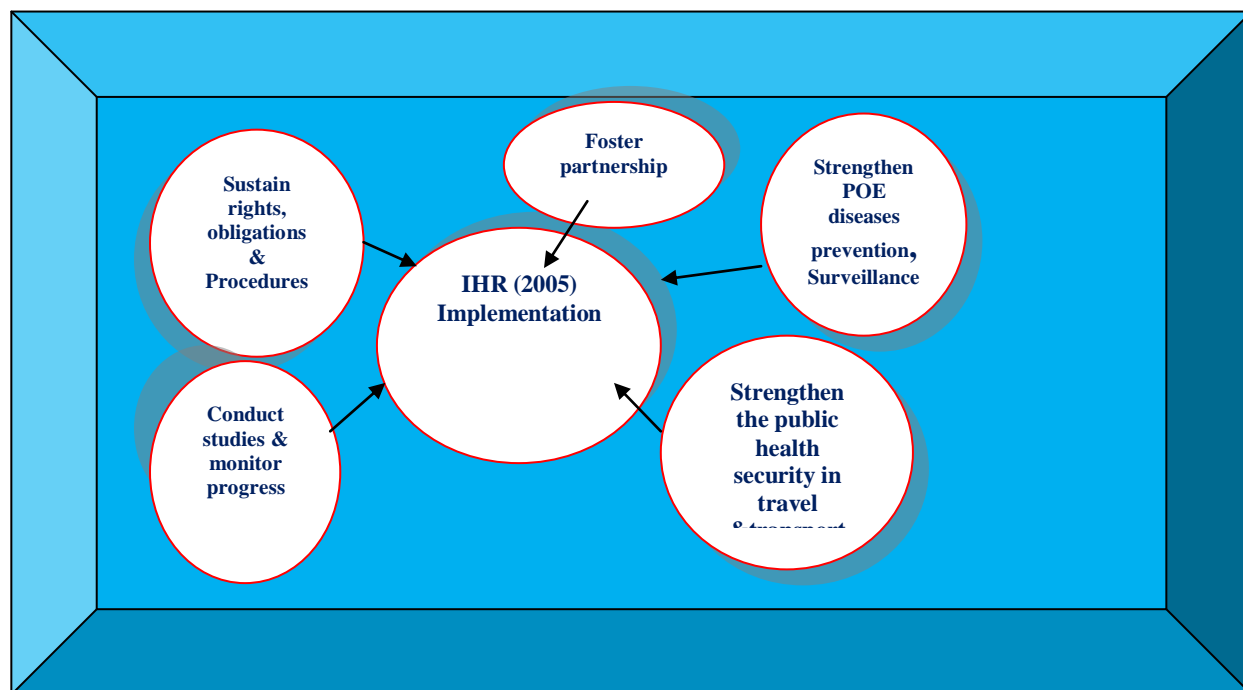
Specific Objectives:-

1. To assess core capacities in order to develop, strengthen and maintain the IHR (2005) requirements at designated ports, airports, ground crossings related to prevention, early warning and public health risks and events.
2. To assess the prevention and response to Public Health International Concern to selected POE in Southern Province (all), Western Province (Katima Mulilo) and Lusaka Province (Chirundu and KKIA).
3. To determine the existence of National Health Policy that supports port health to foster partnership at POEs for sustenance of rights, obligations and procedures.
4. To share experiences among the provincial (POEs) for the three provinces (Southern, Lusaka and Western).
5. To provide recommendations to Ministry of Health & UNICEF to address identified gaps and short comings at POEs for core capacity (IHR, 2005) implementation for Zambia.

Methodology:-**Study Design and Methods:-**

This section provides a “Conceptual Frame Work” that is based on the gathered literature review and observations that were made during the core capacity assessment. Cross-sectional descriptive and qualitative methods were employed at Points of Entry visited. Core capacity assessment tools/protocols by WHO were used.

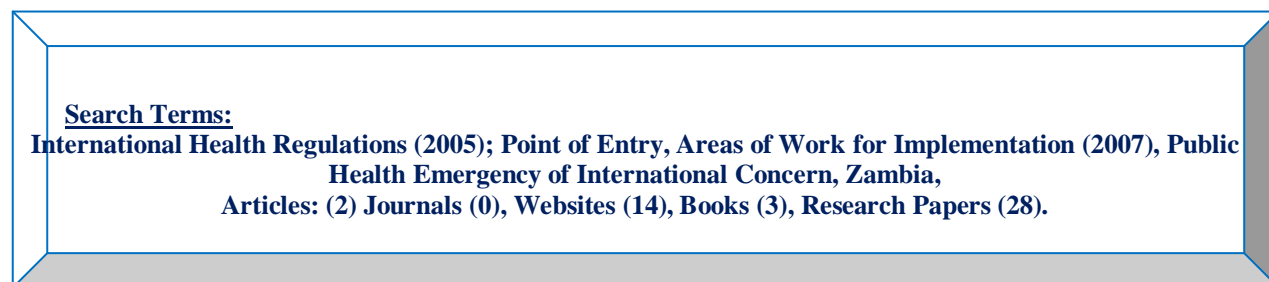
In depth interviews, focus group discussions (FGDs) in form of meetings, visits to isolation sites and general observations of areas of interest to obtain the needed information were conducted. Respondents were purposely chosen for the study. Thematic core capacity measurements of compliance were used to generate study findings.

Figure 1:- Conceptual Frame Work

Source: Areas of work for implementation (2007) of IHR (2005)

This paper Conceptual Frame Work focuses on seven (7) “**Areas of Work for the Implementation (2007) of the IHR (2005)**”; four key areas of work **2, 3, 4** and **5** calls for significantly strengthened national efforts: **2**-Strengthen national disease surveillance, prevention and control and response systems and **3**. Strengthen public health security in travel and transport and addresses countries public health capacities to fulfill IHR (2005) requirements, **4** – Strengthen state alertness and response systems and **5**. Strengthen the management of specified risks and focus on the necessary surveillance, prevention and control through POEs (WHO Medium Term Strategic Plan 2008-2013 (2007).

6- Sustenance of rights, obligations and procedures and **7**. - Conducting studies and monitoring of progress through utilization of indicators to regularly monitor and evaluate IHR, (2005).

Box 1:- Search and Literature Data Sources

Results:-

This chapter presents the findings of the core capacities measurements for compliance at designated Points of Entry in the three provinces: Southern (**4**), Lusaka (**2**) and Western Province (**1**) structured by the thematic areas on the challenges facing the implementation of IHR(2005). The assessment findings are based on the responses and experiences to the questionnaire used (WHO tool).

The identified thematic areas were: *policy frame work, port health services implementation, communication, provision of medical services including diagnostic services, human resources, equipment and premises, capacity*

building of public health inspectors and others, safe environment, vectors and disease control, public health emergency responses, isolation facilities for humans and animals, measures for disinfection, decontamination and treatment of conveyances (Core Capacity measurements of POEs (IHR,2005).

Policy and Legal Frame work:-

The Zambian National Health Policy sets out clear directions for inclusive development of the health sector. The policy has been included in the Vision 2030 and has been implemented through successive National Development Plans and National Health Strategic Plans. It also takes into consideration emerging issues at both the national and international levels such as communicable and non communicable diseases, health systems strengthening, gender equality, globalization and climate change (WHO/HSE/IHR/LYO/2009).

The policy does support the IHR (2005) and the State (Zambia) has designated IHR National Focal Point (NFP)- Article 1 & 22 but the health system does not fully recognize the Port Health Services as an institution that offers health services to international travelers and the cross-border marginalized populations. The National Health Strategic Plan (2012) under 4.2.1 Environmental Health and Food Safety only gives a weak short statement on port health under policy measures (Viii).This makes the Zambian health system have less concern on enforcement and strengthening of port health service delivery.

Port Health Services:-

The Points of Entry assessed monitor and evaluate all food stuffs, cosmetics, disinfectants, hazardous substances and medicines entering the ports. They also control and monitor the possible entering of serious diseases into the country. Harry Mwanga Nkumbula International Airport (HMNKIA) has a First Aid Clinic with only three (3) staff and the Port Health Office has one staff. The two offices are housed by the Air Port Corporation. These offices are administratively attached to the District Medical Offices and are represented by the District Medical Office in corporate top management meetings.

This administrative approach does not adequately represent the priority needs of the two offices. Unlike Kenneth Kaunda International Airport (KKIA) that has staff from the First Aid Clinic and Port Health Offices represented in top management of the Airport Corporation. This variation shows lack of policy guidelines for the management of port health services for Zambia.

Kazungula, Kariba and Victoria Falls, ground crossings have no official offices and are not funded from the district health monthly grants to implement routine office activities. Katima Mulilo has offices provided by Zambia Revenue Authority (ZRA) but are not funded by parent offices to implement activities. Chirundu ground crossing has offices for port health and staff is uniformed and monthly grant is allocated for them to run port health services.

All the seven (7) Points of Entry assessed, Chirundu had uniform for port health staff and KKIA had dust coats of similar function for different cadres of staff and it was difficult to identify the professional lines for the different staff. The POEs have been found to enforce the regulations: Food & Drugs Act 303, Biosafety Act of 2007, Public Health Act cap 295 of the Laws of Zambia and the International Health Regulations (2005).

The Occupational Health and Safety Act of 2010 were not available at the time of the visit. The management of the POEs have own regulations more specifically those related to security. During the assessment most of the port managers were found not to have and know the contents of the IHR (2005) and all Points of Entry indicated a need to have an orientation in these regulations (IHR,2005).

Communication/Collaboration Structure:-

Respondents from the POEs Management (Zambia Revenue Authority) indicated that they had no current official communication with other POEs abroad. This meant that there has been no communication with competent authorities at other POEs internationally, to provide relevant information regarding evidence found and control measures still needed on arrival of affected conveyance.

Further, investigations indicated that there were no Memorandum of Understanding (MOUs) and Protocols in place for routine and urgent communication and collaboration among stakeholders, should a Public Health Emergency of International Concern occur at the Point of Entry.

This communication has to be with the competent authority at other POEs and health authorities at local, intermediate and national levels and with other relevant government ministries, agencies and other partners involved with POEs activities. The competent authority at each POEs had no current details of the National IHR Focal Point (MOH).

The communication and procedures were not very clear for the relevant public health measures to be taken pursuant to the International Health Regulations(2005) such as communication with NFP (MOH) in order to inform the office within 24 hours of receipt of evidence as manifested by exported or imported (1) human cases,(2) vectors that carry infection or contamination or (3) goods contaminated that may cause international disease spread (4) additional health measures and their health rationale within 48 hours of implementation.

The direct operational links that exist among superiors with other junior officials at POEs are quite informal for rapid approval. The communication and procedures for advance notice of application of control measures, for issuance of sanitation certificate and receipt of other documents and conveyance operators contact details of competent authority are not very clear.

The assessment found that there were no direct links that exist from Points of Entry to the hospitals, clinics or laboratories but informal link existed on superiors (District Medical Officers & Zambia Revenue Authority).Each organization at POEs has its own legal departmental documents that related to National Legislation, Administrative Acts and protocols.

Procedures are not widely disseminated to empower competent authorities to conduct inspections and to identify public health regulations together with required control measures to be applied that provide requirements to report public health related events on board.

Provision of Medical Services:-

Access to medical and diagnostic facilities has been arranged informally under the existing national health system. The administrative arrangements have no MOUs in place to grant access to medical and diagnostic facilities for assessment and care of illness or suspected travelers in consultation for the referral system. The vaccination of yellow fever was found to be conducted at a hospital and not district primary health care level as the case for Livingstone district. There has been lack of existence of key information regarding medical and diagnostic facilities for travelers at all Points of Entry.

Human Resources, Equipment and Premises:-

All assessed POEs indicated that trained personnel are not adequate to man the institution in relation to the volume and frequency of travelers and complexity of POEs regarding terminal facilities, destinations and multi modal practice in place among other factors. There has been inadequate operational space for staff including isolation facilities for both human beings and animals. All POEs have no arrangements for translation and interpreters of various languages to locals and foreigners. KKIA indicated that they sometimes hire such services from Ministry of Foreign Affairs, seemingly to be time consuming and not feasible.

Most staff in the assessed POEs has formal training in their areas of study but has not been drilled in the infectious diseases prevention and control that have emerged and those that have re-emerged. The staff need training to recognize disease symptoms and be familiar with procedures regarding prompt assessments, care and reporting of ill travelers. HMNKIA and KKIA and Chirundu have adequate space to conduct private interviews with ill travelers and only KKIA has computerized system of detecting temperatures for travelers in case detecting.

The Victoria Falls and Kazungula POEs have unhygienic and environmentally unsafe space set aside to conduct private interviews to suspected travelers. These are of inadequate size in relation to volume, type of conveyance and frequency of travelers and complexity of POE regarding terminal facilities, destinations and multimodal practices. Existing isolation sites are not of international standards and are not well designed as they seem to be temporally acquired especially those of KKIA. All Points of Entry need standard isolation facilities for both humans and animals, including food products.

Access to necessary equipment (Personal Protective Equipments) for initial interview to ill travelers and triage has not been adequate as per standards. It has been found that KKIA and Chirundu have uniforms and it is not adequate

in serious disease out breaks. Only KKIA has a government ambulance for referring patients to University Teaching Hospital and Levy Mwanawasa Hospital. HMNKIA has no Ministry of Health ambulance. The corporation ambulance has different emergency functions and cannot leave the airport for 20-30 minutes due to the nature of its demand at any aeroplane landing point.

The ambulance has been used during landing of the craft and time of taking off of the craft. Staff at all POEs needs to be trained in infection prevention and control, trauma management, emergency preparedness through drills. Both KKIA and HMNKIA have had a series of drills in emergency management. The ground crossing POEs feel no accident can occur but were reminded of fire out breaks and that earth movements can affect them at any time.

The Public Health Inspectors at Points of Entry need capacity training in inspection of conveyances, understanding of inspection standard operating procedures. All POEs had the required related documents for conveyances. Many of the staff on the contrary does not have adequate knowledge on epidemiological situation at the POEs on public health related risk detection. Public health events are being reported using varying self made report forms (Blair .I, 2007)

No official report forms are available for Points of Entry. Capacity building has to be built in demonstrable knowledge on the correct methods of understanding of techniques such as disinfection, isolation, quarantine, contact tracing at entry and exit control. All POE health staff demonstrated adequate knowledge of testing and sampling techniques and use of correct control methods of relevant vector borne diseases for hosts and vectors. This includes disinfecting and derrating knowledge of correct practices of safe food management especially with regard to handling, supply, source, preparation, storage and distribution.

Food samples are being taken to the Food and Drugs Laboratory at University Teaching Hospital (UTH) for further analysis. Air craft use water companies and private restaurants to supply water and food and the POEs staff demonstrated adequate knowledge for both water and food safety management. Solid waste management both solid and liquid waste management systems for detection, assessment and recommended control measures for present and potential risks were used and well demonstrated by staff (WHO, 2007).

There were no knowledge of requirements for biosafety procedures, equipment, medical chest and environmental requirements for medical facilities on board, according to the size, type and the kind of conveyance and related applicable guidelines such (WHO,ILO,IMO,ICAO). KKIA and HMNKIA have adequate and standard washroom premises that are consistent with the volume and frequency of travelers and are regularly hygienically cleaned with regard to the volume of passengers and personnel using terminal and other facilities at Points of Entry.

Special Capacities According to Type of Point of Entry:-

The staff at all assessed POEs have varying post graduate qualifications ranging from environmental management, occupational health and safety, environmental health, food safety and hazard analysis critical control points (HACCP),policing and disease surveillance. Certain more measures are being utilized at POEs such as:

1. **Airports**-The public health locator document is used as a procedure concerning communication of events for suspected cases of communicable diseases or other public health related events on board aircraft, encompassing air traffic control. The staff use WHO recommendations and guidance as applicable. Procedures concerning communication with aircraft regarding “free pratique” exist.
2. **Ground Crossings**-Procedures concerning communication with ground transport conveyance and ground crossing operator regarding border control measures when mass suspect cases or high public health related risk are detected.

Public Health Emergency Responses:-

All the assessed POEs do not have PHEIC Plans but have air port corporation emergency plans integrated with other public health response plan (national/intermediate/ local levels) and other emerging operational plans at POEs, covering relevant services at POEs and disseminated to all key stakeholders. Periodic drill exercises are being carried out familiarizing contact points of key sectors/services at POEs with the public health contingency plan and inspection of roles and functions with it.

Isolation Facilities (Animals):-

The assessment conducted revealed that there was no written formal agreement in place with the District Veterinary Offices to provide diagnostic tests, assessment and recommended measures related to affected animals. At time of assessment, it was found that the Veterinary Department had difficulties to get a feedback on infection prevention plan including the availability of adequate equipment and procedures for managing or for utilization of clinical care facilities that deal with heightened level of public health risks other than routine level risks. No animal isolation facilities were observed during the assessment. Many (50%) respondents indicated that the POEs only receive dogs and cats. There was no referral transport of animals to designated veterinary offices for screening.

Measures for Disinfect, Derat, Disinsect and Decontamination:-

There are no designated Points of Entry to apply such measures. Such POEs are supposed to be legally and properly designed to avoid possible injury/discomfort/harm to persons and damage to the environmental factors such as wind direction and distance to human habitats that all have to be taken into consideration.

A formal Plan to apply for entry and exit control for arriving and departing of travelers to enable for risk assessment of individual travelers during the events were not displayed at most of the Points of Entry. A “tool box” of methods was available for screening, including visual inspection, questionnaire for travelers, health declaration forms and temperature measurements by use of thermal scanners at HMNKIA and KKIA, Kazungula, Victoria Falls and Katima Mulilo.

Discussion:-

This report brings together all the known “Areas of Work for Implementation (2007) of the International Health Regulations (2005) at Points of Entry. Zambia’s National Health Policy of 2012 has to distinctively include port health on its own as a section under the health service delivery and discuss its position in the health system and service delivery structures.

The implementation of the IHR(2005) face many challenges in Zambia and this has been found to limit the intended goal to detect and give meaningful response to any public health threats of Public Health Emergency of International Concern. The introduction section provided an overview on the evolution and challenges faced in implementing the International Health Regulations (2005).

The challenges include inadequate coverage of port health system in the Zambian National Health Policy (2012), the lack of financing port health services in monthly grant allocations, inadequate information with stakeholders at POEs including lack of information on the contents of the IHR (2005), lack of clear coordination of plans for the implementation of IHR (2005) at POEs and lack of budget allocation for public health emergency response.

Staff shortage and lack of operating spaces for Port Health Officers and office equipment for use clearly shows lack of recognition of port health by authorities (NFP) hence reactive implementation of IHR (2005) when PHEIC is reported by other member WHO Member States and WHO communication on such events. The stakeholders from various government departments showed low understanding of the IHR (2005) and this constrain the smooth implementation of the IHR (2005) in Zambia.

Achieving international public health security has been one of the main challenges a rising from the new and complex landscape of public health in WHO Member States (WHO, 2007). Shared vulnerability implies shared responsibility in Member States (WHO, 2007).The international public health security has relied on appropriate and timely management of public health risks that in turn depend upon effective national capacities, international and intersect oral collaboration.

Section (4) of the IHR (2005) sets out seven areas of work to assist countries with challenges inherent to the new obligations. Each area of work has a specific goal that contributes to the over-arching goal for international public health security and subject to more detailed implementation plans. There is a paradigm shift from containment at source for public health threats to adapted response.

The results were outlined chronologically under the core capacities measurements of compliance. My discussion has summarized the main results concentrating largely on the most important developments under the “Areas of Work of Implementation (2007)” of the IHR (2005) that have been regarded as areas of poor commitment to implementation of IHR (2005).Generally, the study results indicated that commitment by the leadership and focused governance in

conjunction to agreed obligations by Member States are critical for quality port health service delivery system in Zambia.

These factors are well elucidated in detail in the last part of the discussion. The discussion has been organized into the main themes from the assessment findings but under the conceptual frame work areas of work areas for implementation of the IHR (2005): *Foster partnership, strengthening national capacity for disease prevention, surveillance, control and response systems, strengthen public health security in travel and transport, strengthen the management of specific risks, sustain rights, obligations and procedures, conduct studies and monitor progress.*

Foster Policy Partnership:-

A global alert and response system has been replicated to national and regional up to lower levels to build on partnership, equally and transparently based on strong national public health systems to maintain active surveillance of diseases and public health events being able to rapidly investigate reports, assess public health risks, share information and be able to implement public health control measures.

Not many efforts and enforcement of partnership in our assessed POEs have been implemented to ensure that ministries, departments and urgencies understand the concepts of IHR (2005). There has been lack of advocacy and sensitization to partners/stakeholders to comprehend the efforts that every player has direct role in achieving the IHR (2005). The dissemination of the IHR (2005) to all actors in the circuit enhances implementation of the International Health Regulations (Menucci, 2012).

The management at Points of Entry assessed only hold security meetings and this has been where stakeholders are brought together and this could have been an opportunity to discuss and create awareness and understanding of the IHR(2005). There are many players at POEs that have different government and private agencies, institutions and organizations that are governed by the application of various legislations, regulations and instruments that are likely to interfere or conflict with the implementation of the IHR(2005). Many legislations and instruments related to public health were available in all the assessed Points of Entry.

The core capacity monitoring framework for IHR (2005) strongly emphasizes the enforcement of such legislations and enforcing them could strengthen the role of IHR (2005) and institutionalizing them. A study by Wamala J, F (2009) suggested that in order to ensure a national broad scope in participation of the implementation of the IHR (2005), legal and technical advisors for assessing legislations that govern all POE functions should be established. I agree with Wamala and I further suggest this should be replicated at policy formulation, coordination and implementation level to foster coherent partnership at levels.

During the assessment exercise, Integrated Disease Surveillance and Response Guidelines were found not to be used at POEs as stipulated in the IHR (2005). The Public Health Act Cap 295 of the Laws of Zambia has been mainly used to handle PHEIC events at Points of Entry. Zambia has to inform various partners' right from policy development and planning phases for the implementation of the IHR (2005) at all Points of Entry. It has not been very clear whether our POEs are designated and meet the obligations of the regulations (WHO, 2008).

Partnership between many sectors such as Health, Travel, Agriculture, Veterinary, Trade and Commerce, Education, Defense, Zambia Revenue Authority, Immigration and others build coherent alert and response systems that cover all public health threats, and at the time of events, are also able to rapidly mobilize the required resources in a responsive way.

An effective national system that supports disease control program to contain specific public health threats has been able to continuously assess the national picture of public health risks(national risk assessment) and has been prepared to rapidly respond to the unexpected internationally and nationally spreading events.

Strengthening Communication/Coordination of National Disease Prevention, Surveillance, Control and Response Systems:-

Communication and coordination has been the cornerstone for enhanced national and international communication. According to Article 4 (WHO, IHR 2005) mandates each Member State to appoint the IHR National Focal Point agencies for coordinating IHR implementation in each Member State. Well coordinated net works provide the best solution as proposed to the implementation of the policy and helps actors in policy implementation to achieve an institution`s end results needed (Bakari.E, 2012).

This study revealed very weak coordination among key stakeholders at POEs despite Zambia having obliged to implementation of the IHR (2005) at Points of Entry. The findings revealed that the National Health Policy (2012) did not include POEs as a priority. Lack of wide consultation or passion representation at development of any national policy may lead to friction, demonstration and conflict within the same organization as in the case of Ministry of Health (NFP). The port health service front liners lack clear understanding of their roles and responsibilities (Brinkerhoff, DW, 1996).

The implementation of IHR (2005) at the assessed POEs has been unstructured and channels of communication overlap and are unclear. There has been also lack of structured communication channels between the IHR (NFP), the WHO, and other actors complicating the implementation of IHR (2005) more especially in risk communication.

This study on the assessment of core capacity of the IHR (2005) discovered that there has been a well designed channel of risk communication from the MOH (NFP) to district level despite the country not having national health guidelines on risk communication.

Inadequate Access to Information on IHR (2005) to Stakeholders:-

The MOH (NFP) website has limited access to disease surveillance information at POEs and the public health surveillance system rarely if at all gets information at the Points of Entry, assuming it is already in the routine data system. The assessment findings indicated that the system captures POEs information as a reactive response during PHEIC events reported. There should be a national requirement to access MOH internet services by POEs to enhance a timely and reliable means of communication within the country.

KKIA and Chirundu were found to have computers; printers and internet connection while other POEs were still attached to routine information services at District Health Offices. Transport has never been offered for mobility for officers except Chirundu and KKIA. It was found difficult to be highly motivated for these Public Health Officers at Points of Entry.

Public Health Emergency Preparedness at Points of Entry (POEs):-

Public health security travel and transportation has to be strengthened. IATA (2014). It has been indicated that under the IHR (2005) the control of diseases at border crossings remain a fundamental element of the regulations. There have been a number of IHR (2005) requirements that apply to designated airports, ground crossings, and ports and entail close collaboration with United Nations Organizations such as the International Civil Aviation Organizations (ICAO), World Trade Organization (WTO) and Industry Association (IATA) and Airports Council International (ACI). ICAO, (2006).

During the assessment, the findings were that only the Airport Cooperation had an Emergency Plan that considers only plane crash issues, fire out-breaks and this was not shared among other departments. No POE had a Public Emergency Contingency Plan. The Health Department had recently prepared Public Health Plans but were not available in the health offices but were said to be in homes of officers and were not shared and incorporated with other running plans.

Mostly the port health implementation plans were found to be available in POEs assessed in Southern Province only. The respondents indicated that since they are not funded despite making requests to their parent health offices, it was not important for them to develop same plans year in year in and year out.

Most of the isolation facilities visited for examining suspected or ill travelers do not have the required equipment and supplies .Other isolation facilities were just rooms without a single item while the majority did not have isolation facilities. Further investigation indicated that disease suspects are taken to selected hospitals in the city which have isolation rooms. We found the situation for isolation facilities for KKIA not corresponding with its international status. KKIA indicated that they take their suspected ill travelers and or specimen to Levy Mwanawasa General Hospital and have since made official arrangements for such events.

The revised International Health Regulations (2005) further state that all travelers have to be treated with dignity, human rights and fundamental freedoms to be observed and there should be minimization of any discomfort or distress associated with such measures while complying with IHR (2005) requirements. All sanitary facilities should be well maintained and be kept free of infection or contamination including vectors and reservoirs. Ground crossings

POEs did not have good sanitary facilities but the air ports; KKIA and HMNKIA were found to have good sanitary facilities run by the air ports corporations. The assessment found no WHO list of designated POEs authorizing issuance of craft sanitation control or exemption certificates. This is in contrary to the WHO guidelines (www.WHO.int/ihr/ports/airports/en)

Prevention and Response to International Public Health Emergency of International Concern:- Alertness and Response Systems:-

Effective national systems for alertness and response are very critical to provide national and regional risk assessment, support provinces and districts that request for assistance, mobilize resources and coordinate provincial response. At POEs the alertness and response systems seemed to emanate from the District Epidemic Preparedness Committees that also were found not to be active and rarely do they meet and involve POEs authorities (Areas of work for Implementation, 2007).

Such systems are to monitor national public health threats, assess risks and complement to national, provincial and district alert and response systems. The collaborative risk management has to be developed and proven, for it to be effective and has to be reinforced and formalized. The assessed POEs have had no strategic approach guidelines and standardized operating procedures and significant funding for activities.

The POEs staff was found not to be trained in high quality risk assessment, which has a proven collaborative risk management process that has been developed and proven to be effective and needed reinforcement and formalization (IHR, 2005). Members States need to implement the WHO Standard Operating Procedures for the successful management of a cute public health threats across the MOH structures through levels. Tools for methodologies and capacity development for risk assessment, information management and communication have to be provided to port health staff.

Strengthen the Management of Specific Risks:-

The national management of the risks that threaten international health security such as communicable diseases for the Zika virus, ebola, yellow fever, SARs, poliomyelitis have to be controlled or provided with containment. The assessed POEs have weak preparedness measures relating to surveillance, risk reduction such as exposure reduction, vaccination, health communication, safe clinical management and other cross cutting measures for zoonotic and animal human interface risk reduction initiatives (Areas of work for Implementation, 2007).

Points of Entry have to stockpile critical supplies such as vaccines, personal protective equipment and others. Operational research to characterize and assess risks, develop and test for new interventions that have to be initiated or implemented at every Points of Entry. Surveillance and early warning systems have to be planned and successfully implemented by all Points of Entry.

It is however important and crucial that integrated approaches to port health service delivery be undertaken as much as possible so that all threats, specific preparedness and readiness be put in place in the context of the overall activity planning and management of public health emergencies at Points of Entry.

Understanding and accurate knowledge of the provisions in the revised regulations to all relevant stakeholders are crucial for their accurate implementation of activities at all Points of Entry.

Zambia as a Member State of the IHR (2005) has been obliged to provide the core capacity requirements so as to ensure programs are implemented that address diseases which every single case irrespective of context, requires immediate notification to WHO (Annex 11). This includes programs that address diseases that demonstrate the potential that cause serious health impact and rapid spread of diseases across the borders and with those with epidemic potential (IHR, 2005).

Adhoc drills and exercises have to be always conducted to test the alertness and response capacity in the face of the most likely conditions/events as provided in the revised IHR (2005). These drills and exercises also need to absorb and take on this paradigm shift in focus, that calls for a pre-emptive and proactive approach that contain all public health threats. The IHR (2005) also proposed an adapted response that is specific to each health threat, rather than that which relies on pre-set measures that may be in appropriate and ineffective in nature to continuously improve the available interventions(IHR,2005).

Sustenance of Rights, Obligations and Procedures:-

The new legal mechanisms set out in the IHR (2005) state that all relevant personnel should understand and sustain the new mechanisms. It has to be understood that the revised regulations are much broader in their scope than their predecessors and contain considerable paradigm shift in focus. The current IHR (2005) now cover all the potential international public health emergencies whether they occur naturally, accidental or are deliberately provoked. (Areas of work for Implementation, 2007).

The POEs need guidance to understand the new legal provisions set out in the revised IHR (2005). They also need to absorb and take on this paradigm shift in focus that calls for a pre-emptive and proactive approach that contains all public health threats. The IHR (2005) also proposed an adapted response that is specific to each health threat, rather than that which relies on pre-set measures that may be inappropriate and ineffective in nature. Understanding and accurate knowledge of the provisions in the revised regulations relevant to implementation at all POEs is very cardinal.

At this point, it is necessary to mention that all actors in the field of public health, law, event management, surveillance, epidemiology, risk assessment, response, and laboratory and case management should be fully involved in implementing port health activities and should play a big role as provided by the revised International Health Regulations (2005).

Zambia as a Member State of IHR (2005) has been obliged to provide the core capacity requirements for its POEs to detect, assess, notify and report events in accordance with regulations and to “respond promptly and effectively to public health risks”(article 5,13,19-22,Annex 1,IHR,2005). The Member States have been also obliged, given permission or provided of certain public health actions in respect of international travelers, goods, cargo and conveyances at ports, airports and border crossings that they utilize (Article 19-41).

Zambia like any other WHO Member State has further been obliged to the administration of IHR(2005) such as the nomination of a National IHR Focal Point(MOH)-(Article 4,47-66.IHR,2005) and to the management of information and public response for the events that may constitute a “Public Health Emergency of International Concern (Article 5-18,Annex 11 and to fully respect human rights(Article 3,30,31,32) and adherence to the Charter of the United Nations and the Constitution of the World Health Organization(Article 3).

Conduct Studies and Monitor Progress:-

No study in Zambia so far has been conducted to monitor, evaluate and report on the progress of the implementation of the IHR (2005) at Points of Entry. Several proposals for specific studies have to be developed to improve monitoring and evaluation of the implementation of the IHR (2005) that has been central to proper follow up and improvement of the implementation efforts at all levels. This builds donor`s confidence presented in regular reports to the World Health Assembly as required under the regulations (Areas of work for Implementation, 2007).

The Ministry of Health needs to identify and include quantitative indicators to monitor and assess progress of IHR (2005) implementation within its national public health system. This further encourages the identification of global indicators of international public health security and those that are relevant for legal procedures and processes. Data collection has to be emphasized and analyzed according to the best standards within the Health Management Information System (HMIS). Bench marks have to be determined on core capacities at all levels required under the regulations. For better decision making, areas of research have to be identified to improve the regulations and their implementation in Zambia.

Major Findings:-

This study has shown that the “Areas of Work for Implementation (2007)” of the revised IHR (2005) have strong relationships and related to results of core capacities measurements of compliance to implementation of the IHR (2005) at our Points of Entry. The seven (7) assessed Points of Entry provide a strategic planning of a quality port health system in Zambia to implement the IHR (2005).

Quality Gurus have indicated that quality has been an inherited concept whose journey evolution depends upon leadership and governance in charge of policy formulation. It can be concluded that better implementation of the IHR (2005) cannot be easily achieved instead. It is a gradual process that relies on committed inclusive policy

formulation and strategic planning in the 21st century and beyond. The core capacities measurements of compliance to thematic areas are clearly supported by the “Areas of Work for Implementation (2007) of the revised IHR (2005).

The second major finding was that there is little information existing on understanding of the revised IHR (2005) scope and its objectives. This was also coupled with unavailability of such tools (Regulations) to stakeholders even the POEs management. There has been poor dissemination of the revised guidelines towards the implementation of IHR (2005) at Points of Entry. Among the assessed POEs both the ground crossings and the airports, it was not clear how many of these have been designated to implement IHR (2005) in Zambia.

The third major finding was lack of clear coordination of activities and plans for implementation of IHR (2005) especially at the air ports, worse at ground crossings where activity plans were not presented during the assessment period, for example the introduction of ASYCUDA.

The fourth major finding was lack of a system by Zambia Revenue Authority for adequate funding for Public Health Emergency Preparedness and Response including routine activities expenditure. There exists a reported critical shortage of financial, equipment and supply resources for port health at some assessed Points of Entry.

The fifth major finding was lack of capacity building to port health workers. Most of them are left out of all the health system trainings or refresher courses unless if there is a reported PHEIC event then emergency trainings are being done. Further the staff is not uniformed in all visited Points of Entry, a part from KKIA and Chirundu Points of Entry.

The sixth major finding was weak laboratory network response to implementation of the IHR (2005) at all Points of Entry. This was reported as a big challenge for rapid response in terms of availability and easy access in case of an event. Readiness was also not assured in terms of coordination, equipment and quick mobility of samples to the public health laboratory or nearest laboratory with the capacity to deal with the samples submitted. A question arose to whether the district laboratories at district hospitals have capacity for investigating chemical hazards and confirm reported health conditions. Laboratory facilities at POEs have to exist for several reasons and not only for PHEIC activities alone.

It was suggested that coordination and communication have to be harmonized between the public health laboratories and respective laboratories for timely and quick response to any suspects requiring laboratory investigation and confirmation. The most obvious finding was the quality implementation of IHR (2005) as a multifaceted issue that underpin on committed leadership, staff motivation, learning organization and availability of adequate resources. The core capacities measurements of compliance and “Areas of Work for Implementation (2007) of the IHR (2005) require knowledge by the assessors about the health system of every Member States.

Limitation of Study:-

The study has several numbers of important limitations that need to be considered. First, the WHO questionnaire was not pre-tested and was assumed to have been pre-tested. Many questions were repeated in the questionnaire and this was noticed during the first administration of the questionnaire. It was suggested that in future the use of such a questionnaire, questions should be piloted and thoroughly revised to reduce repetition of same questions after a while.

We planned a purposeful sampling of stakeholders but it was impossible to have every one during the assessment period. Ministry of Health (NFP) was not interviewed to have their insights but was targeted for briefing on the summary of the findings. The two airports (KKIA AND HMNKIA) became very busy during the assessment period and this reduced the number of respondents since it was not a self administered questionnaire. Some staff was on leave and others had various responsibilities to attend in their duty line. We cannot generalize the findings for the country as we only had seven (7) POE assessed (Two (2) airports and Five (5) ground crossings).

It was assumed that KKIA and HMNKIA ports are part of the three International Airports in Zambia including Simon Mwansa Kapwepwe International Airport in Ndola. We assume these findings from the two, represented large airports and are being representative of the country situation at Points of Entry. Even the five (5) ground crossings are assumed to have represented others in the country.

Therefore the findings of this study can be generalized to the situation with Points of Entry and Ground Crossings though they may slightly differ in many aspects such as the magnitude of the work load, geographical position and other services offered. Time for the assessment and financial resources were not adequate. Views of travelers were not captured as they were not included in the questionnaire.

Recommendations:-

The assessment and review of literature has given rise to many questions and gaps that need to be further investigated. It is recommended that further research be undertaken in National Health Policy of other countries in the SADC Region how they have placed port health in their own health service delivery system agenda. Lusaka and Southern Province POEs and the rest of the country POEs staff and the Zambia Revenue Authority (ZRA) staff should be trained in the revised IHR (2005) that will later build the capacity of others to foster strong partnerships in implementation of IHR (2005) at Points of Entry in Zambia. The country should start strategizing in setting up min-public health laboratories at major Points of Entry.

A joint plan has to be developed with multi players at POEs that will focus on interventions on the revised IHR (2005) requirements in various POEs throughout Zambia. Port health services have to be included in the “National Health System” service delivery component as standalone section of the National Healthy Policy.

Conclusion:-

1. Core capacities measurements of compliance for the revised IHR (2005) provide a good platform to review gaps in the implementation of IHR (2005) by any Member State.
2. The use of “Areas of Work” for implementation (2007) of the IHR (2005) and linking to the philosophical concepts of the core capacity requirements for coordination, communication of event information and adoption of measures for POEs determine policy position and foster strengthened partnership at Points of Entry.
3. The “Areas of Work for Implementation(2007)” for IHR(2005) implementation approach provides a solid foundation for strategically promoting quality and quality systems for IHR(2005) performance direction, monitoring and evaluation of practices and quality activities.
4. The “Areas of Work for Implementation (2007)” for IHR (2005) Conceptual Framework is famous for its achievement of good outcomes for POEs in Member States. This was developed in line with the WHO Medium Term Strategic Plan (2008-2013) that identified the implementation of the revised IHR (2005) as one of the main priorities under the strategic objectives of the plan (WHO, 2007).

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