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INAUGURAL LECTURE

DISASTERS AND PUBLIC HEALTH EMERGENCIES: *PROPER PRIOR PREPARATIONS PREVENT POOR PERFORMANCE*

By

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UNIVERSITY OF ILORIN, ILORIN, NIGERIA

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Ladies and Gentlemen,

Background

Mr Vice – Chancellor, Sir, I stand with gratitude to God the Almighty to deliver this lecture titled **DISASTERS AND PUBLIC HEALTH EMERGENCIES: *PROPER PRIOR PREPARATIONS PREVENT POOR***

PERFORMANCE **before this esteemed audience today 27th of June 2019.**

My name is Gordon Kayode Osagbemi, a medical doctor by profession with specialisation in Public Health and special interest in Disasters and Public Health Emergencies. I am currently a Professor of Public Health in the University of Ilorin and Consultant Public Health Physician to the University of Ilorin Teaching Hospital.

I have had hands on, field and academic experiences in Public Health, Epidemiology, Disease control and Disaster management spanning over a period of more than three decades, having served at various times as a Lecturer and Programmes Consultant to the University of Ilorin, Kampala International University, Kampala Uganda; World Health Organisation (WHO; United Nations Children's Fund (UNICEF); United Nations Fund for Population Activities (UNFPA); Nigerian Institute for Social and Economic Research (NISER); Federal Ministry of Health (FMOH); Medicins Sans Frontieres (Doctors Without Borders); Center for Disease Control (CDC) Atlanta Georgia USA; and the Amsterdam Institute for International Development (AIID) among others. I have carried out these activities in various parts of Africa including Nigeria, Republic of Benin, Ghana, Sudan and Uganda.

The focus of this lecture will be to:

i. Give an overview of disasters as a public health problem.
ii. Provide evidence to show that preparing for disasters can reduce the vulnerability and impacts of disasters.

iii. Describe the strategies that need to be put in place for proper preparations.
iv. Highlight some of my modest contributions as community service in my immediate environment as Public Health Practitioner.

Introduction

Disasters and Public Health Emergencies

A disaster is any event, natural or man-made, sudden or progressive, which impacts in such a magnitude that the affected individual, community or nation has to respond by taking exceptional measures outside the affected area. There is usually the need for outside intervention measures, because the impacts of the disaster overwhelm the ability of the affected persons to cope. When countries, regions, localities, communities, families or individuals are affected by disasters, they require international, national and other stakeholders from elsewhere to assist in order to stop the progression, reduce the impacts or prevent the recurrence of the disaster. A disaster is therefore a serious disruption of the functioning of a society, causing widespread human, material or environmental losses which exceed the ability of the affected society to cope using its own resources **(Osagbemi, 2009).**

Characteristics of Disasters

According to Osagbemi (2009), when a disaster occurs in an area, the general social and environmental settings are disrupted in such ways and extent that are characteristically different from the daily living patterns of the people. The effects are felt by individuals, families and the society at large. The specific features of particular

disasters vary in magnitude but they have general impacts that are felt whenever they occur. These include:

i. **Increase in mortality**: Mortality, which is the occurrence of death in a given area is increased due to the direct and indirect effects of disasters. Injuries that occur as a result of the event may lead to many people losing their lives in the immediate period and later on due to the effects of poverty, hunger and loss of income. The deaths attributable to the disasters add to the number of deaths that occur naturally in the community and deaths due to specific diseases or other causes.

ii. **Increase in morbidity**: Morbidity, which is the experience of illness and ill health in the community is increased when disasters occur. The illnesses usually occur as a result of the direct impact of the disaster. These may result in permanent disability among those affected. All communities normally record various levels of ill health due to diseases and other injuries in a given period; and when disasters occur, the degrees of ill health and incapacity increase leaving those affected to be less productive and poorer.

iii. **Destruction of property and infrastructure:** The physical effects of disasters often mean untold damage to buildings, roads, electrical and other installations. Residents are left without social and economic services until there is some restoration through the intervention of disaster management authorities.

iv. **Undue strain resources:** There is a lot of strain on the available resources when disasters occur in an area. Physical, medical, social and economic services are overstretched. This leads an inability to cope the local authorities. When resources are overwhelmed, service

providers including health workers are often stretched to their limit and need to work extra hours, thereby requiring external assistance.

v. **Local and international stigmatization:** The devastating effects of disasters are often well publicised by the media with wide range spread of information to many parts of the world. This publicity causes many nations and communities to avoid travel from and into such areas. Such disaster areas are often isolated from other parts of the world, either on a temporary basis or for a long time, depending on the nature of the disaster and the mechanisms put in place to ameliorate its effects in the community. The fear of the impact of the disaster on visitors and international travellers leads to restrictions of movement in and out of the affected area.

vi. **Disruption of social and economic activities**: Restricted movement coupled with destruction of infrastructure often paralyse socio - economic activities in disaster stricken communities. Social engagements such as weddings, funerals, meetings and other ceremonies including inaugural lectures, as well as economic activities are often postponed or cancelled outright when disasters occur.

vii. **Panic and confusion among residents**: When disasters occur, people become scared, confused and may not know the next line of personal, family and collective actions to take in order to remain functional. The panic and confused states often make people to take wrong actions in order to escape or reduce the impact of the disaster. The wrong actions taken can on the short and long runs worsen the effects of the disaster in terms of mortality, morbidity and other consequences.

Classification and types of disasters

Osagbemi (2009) classified disasters based to their speed of onset into:

Sudden disasters: These are disasters that occur rapidly often without prior or warning signs. Sudden disasters include epidemics, earthquakes, tsunamis, floods, storms, volcanic eruptions, explosions, landslides, massive road traffic crashes, air crashes and boat mishaps.

Slow or insidious disasters: These are disasters that start gradually and proceed to the extent of causing widespread effects and impact in the affected areas. Slow onset disasters include droughts, famine, environmental degradation, desertification, deforestation, pest infestation, civil conflicts, armed militancy, insurgency, epidemics, terrorism and radiation from nuclear activities.

Disasters may also be classified according to their precipitating causes into natural or man-made.

Natural disasters: These are disasters due to activities of nature that are usually not under the control of man. Such natural disasters include hurricanes, cyclones, volcanoes, earthquakes, landslides, sea slides, gully erosions, droughts, famine, disease epidemic outbreaks and floods. The natural disasters are attributable to the forces of nature without direct link to human actions or inactions.

Man - made disasters: These are disasters due to human activities that directly lead to catastrophic consequences. The principal or direct causes are identifiable to human actions or inactions, whether deliberate or inadvertent. Man - made disasters include civil disturbances, military conflicts, ethnic unrests, religious crises, political thuggery, armed militancy, fire outbreaks, poverty, bomb explosions,

road traffic crashes, air mishaps, sea accidents and collapse of buildings.

Complex or Compound Disasters: Complex disasters are a form of man-made emergencies in which the causes, effects and assistance to the afflicted are influenced by social, economic and environmental factors. They also include disasters influenced by intense levels of political considerations. Examples of complex disasters include problems of displaced people during time of civil conflicts who, while in a refugee camp, suffer from an outbreak of cholera within the camp, a famine within a region leading to hunger with possibility of civil strife and a flood that forces people to seek refuge across international boundaries where social conflicts ensue between host community members and refugees.

Vulnerable Groups to the Effects of Disasters

According to Osagbemi (2009), the most vulnerable groups to the effects of disasters include:

People at extremes of age: Children aged below 15 years and more so those below 5 years as well as the elderly above 60 years are more gravely affected when disasters happen. This is because they lack the physical and mental coping strategies that can enable them escape from danger. The young and the elderly cannot struggle for food and other essential requirements in the camp community at times of disasters. Many of them die from exhaustion, hunger, starvation and diseases that are due to the effects of the disaster.

Women and adolescent girls: Women and girls are often subjected to violent treatments such as sexual abuse, intimidation and molestation when disasters occur. They are

therefore at greater risks of the effects of the disasters than their male counterparts. However, it is now becoming common to read and hear about sexual abuse of males in unstable situations and circumstances, such as in war zones and in refugee camps.

Those with low socio-economic backgrounds: The effects of disasters are worse felt by the poor and underprivileged. This is because their social and economic statuses are usually already compromised before the onset of the disaster. The more privileged are able to cope with the impact of disasters. The rich are also able to recover faster since they are more likely to have some economic reserves ("the buffer effect phenomenon").

People living in hard – to - reach disaster zones: Difficulty in reaching remote populations probably due to bad roads and other difficulties in the terrain, poor communication networks, harsh weather conditions or unstable political and security environments mean longer time for the disaster reports to be received by those who are able offer assistance. It also takes time for the assistance to arrive at the disaster area due to the hard or dangerous to reach nature of the area.

Humanitarian and Aid personnel: During wars and civil conflicts, the people who are employed to offer assistance and intervene in the problems may become targets and victims of attacks. They may also be used as human shield by one of the opposing forces in an ongoing conflict. Peace keepers from foreign countries who are expected to be under international protective treaties are often subjects of attacks by religious and ethnic fundamentalists in conflicts areas.

Extreme Poverty: The most important single influence on the impact of disasters is poverty among government and the populace. The influence of all the other factors could be lessened if affected populations are not also limited by poverty. The wealthiest of the population either survive the disaster unaffected or are able to recover quickly.

To an increasing extent, poverty also explains why people are sometimes forced to move from their homes to other parts of their countries or even across borders in order to survive. Poverty is such a major contributor to socioeconomic squalor that it is regarded as a disaster itself. Poor countries of the world are unable to provide the essentials of health and development for their citizenry and are also unable to prepare and combat disasters. Individuals and families that are poor are not able to enjoy health programmes and services designed to improve their health.

Urban and Slum Dwellers: Many landslides or flooding are closely linked to rapid and unchecked urbanisation that forces low-income families to settle on the slopes of steep hillsides or along the banks of flood prone rivers. Urbanisation also contributes to overcrowding, population explosion and socio-economic squalor. The consequences of these include further impoverishment, crimes, disease transmission and other disasters related to these vices. Urbanisation without proper planning of city dwellings and transportation contributes to the release of greenhouse gases and global warming.

People who are ignorant and lack information: People are often affected by disasters because those vulnerable to them do not know how to get out of harm or take protective action when disasters are impending. The people often lack the awareness on what measures to take to reduce the

vulnerability and impact of disasters in their communities or nations.

There may not be adequate enlightenment on safe evacuation routes and procedures. Many people therefore perish during disasters often times because they lack appropriate knowledge.

Ecological manipulation zone dwellers: Man modifies the ecosystem in order to suit his purposes. In the process, he sets some mechanisms in place that make the environment become deleterious to healthful living. These activities disrupt the environmental balances set by nature and make such environments prone to disaster occurrences. Such human activities include dams and irrigation schemes, deforestation, building of residential homes along or close to river banks, indiscriminate dumping of refuse, oil explorations, geological and mining projects, crop farming and animal husbandry and bush burning.

People living in borderland communities: Borderland communities are areas whose physical, social, economic and cultural lives are influenced by their proximity to international boundaries. Borderlands are often zones of civil and military conflicts either between local, contiguous or adjacent communities or as areas of dispute between neighbouring states or nations. In times of breakdown of peace and security, the local communities suffer from increase in morbidity due to subsequent physical effects of combat.

Historical Trends of Disasters

Mr Vice – Chancellor, Sir, disasters have and will continue to occur. The following tables provide insight into some international, national and local disasters that have occurred or are still on-going:

Table 1: Examples of world historical events leading to disasters

Years	Events
1968 -	Drought & famine in Sahel Africa
1969 -	Shagdona flood in China
1970 -	Chemical exposure to dioxin in Seveso, Italy
1972 -	Drought in North East, Nigeria
1979 - Pennsylvania	Radiological exposure in 3 miles Island,
1980 -	Fire in Nevada Hotel, Las Vegas.
1983 -	Tsunami in Hanshu Japan.
1984 -	Buton storage explosion in Mexico City.
1985 -	Earthquake in Mexico city.
1986 -	Flood Bolivia & Columbia Nuclear explosion in Chevnobyl, USSR.
1987 -	Earthquakes in Chileand Philippines Drought in North East, Nigeria
1988 -	Earthquake in Ecuador
1989 -	Earthquake in san Francisco
1990 -	Oil spill in Niger Delta, Nigeria
1991 -	Plane crash in Jeddah (Nigerian pilgrims were involved)
1996 -	Fire from oil spill in Jesse village, Nigeria
1998 -	Flood in Niger river bank, Kwara and Niger states, Nigeria
2001 -	Attack on World Trade Centre in New York, USA
2002 -	Nuclear explosion in Ikeja cantonment Lagos Afghanistan – US War

2004	-	Tsunami in Asia & Africa Iraq – US war.
2005	-	Hurricanes Katrina and Rita in USA.
2008	-	Plane Crash in Nigeria
2012	-	Plane Crash in Nigeria
2009	-	Date Insurgency in North East Nigeria, Chad, Cameroon and Niger
2017	-	Date Farmers versus Herdsmen Clashes in Nigeria, Ghana
2000	-	Date Kidnapping in Nigeria

Source: Osagbemi (2017)

Disasters in Nigeria

Nigeria is a disaster prone country due to some factors such as population of almost 200 million people, topography ranges from lowland along the coasts of rivers Niger and Benue valleys to high plateaus in the middle belt and near deserts of north and mountains on the eastern borders. Other factors peculiar to Nigeria are relatively weak economy, under protected and expansive landmass.

The main disaster types in Nigeria are floods, droughts, oil spills, bush fires, massive Road Traffic Accidents (RTAs), plane crashes, boat mishaps and ethno religious clashes, explosions and wars.

Between 1980 and 2010, Nigeria experienced 119 devastating disasters while 25 series of bomb blasts occurred between 2010 and 2012 (**Osagbemi** et al. 2012). Research is still ongoing to document the number of bomb blasts currently going on in some parts of the country. Table 2 below shows the summary of impact analysis of reported disasters in Nigeria:

Table 2: Impact of Natural Disasters in Nigeria, 1980 – 2010

Overview of Disasters	Figures
Number of events	119
Number of people affected	6,306,441
Average number of people affected per year	230,434
Deaths	21,002
Average deaths per year	677
Economic damage (USD x1,000)	188,025
Economic damage per year (USD x1,000)	6,065

Source: National Emergency Management Agency. (2011)

Local Disasters (Kwara state)

The common disasters in Kwara state include communal clashes, floods and rainstorms; armed robberies, epidemics, fire outbreaks and RTAs. Table 3 below highlights some of the recent disasters in the state.

Table 3: Recent local disasters in Kwara state, Nigeria.

Communal clashes
2016 - (Idiape) Ilorin
2013 - Offa and Erinle
2016 - Tsaragi and Share
2018 - Offa armed robbery attack
2017 - Odowa and Iloffa
Floods
2017 - Ilorin
2018 - Pategi and Edu LGAs
2018 - Date ----Windstorms at College of Health Sciences, University of Ilorin

Source: Osagbemi (2019)

Some Research, Practice and Study Findings on Disaster Management

Various reports have shown that the impact of disasters is reduced if adequate preparations are put in place in anticipation of their occurrences. Findings from most of the studies showed low levels of preparedness in the Nigerian public health sector.

Road Traffic Accidents on University of Ilorin Roads

Road Traffic Crashes (RTCs) are not uncommon on university campuses around the world. There has however been only little interest in the problem of RTCs on university campuses, and hence very little research has been focused in this area. Most of what is known about RTCs in Nigerian university campuses is therefore from indirect sources. There have also been reported cases of RTCs within the University of Ilorin campus and this therefore triggered the interest to carry out a study sometime ago.

Compilation of data from clinic records of RTC victims that were kept in the Medical Clinic of the University of Ilorin Health Services and the security departments was carried out and the results are presented.

The accident report on the University of Ilorin campus in two years (2011 and 2012) showed that in the first year, there were a total of four (4) accidents in the months of March, April and May, resulting in minor injuries. There were, however, 26 accidents in the second year which occurred in the months of March to November involving 19 vehicles and 7 motorcycles within the University of Ilorin campus. Of this number, a total of 18 accidents (69.2%) occurred in the peak of the rainy season during the months of May to September.

Some identified factors responsible for some of these RTCs were the carelessness in the society which has provided an enabling ground for lack of obedience to road traffic rules and regulations; weather fluctuations; lack of adequate maintenance of the vehicles; bad state of the roads; giving away of vehicles to underaged drivers by parents as a status symbol; as well as operating vehicles under the influence of alcohol, especially by students. It was concluded that RTCs and injuries are of public health importance in university campuses and efforts should be made to ensure road safety within university environments (**Osagbemi** *et al.* 2013**).**

Preparedness of the Nigerian Health System to Scale up Some interventions

The Division of Health Systems and Services Development of the African Regional Office of the World Health Organisation conducted a rapid assessment of the operationality of District Health System (DHS) and its capacity to scale up priority health interventions in Nigeria.

The results showed that capacity and preparedness was highest for general out -patient care, followed by immunisation and health education. The lowest capacity across board in the LGAs was the ability to carry out basic laboratory services. This was followed by inadequate facility for admission for obstetrics care and family planning services. Most of the LGAs had the required management team components. Capacity to contribute to the Millennium Development Goals was highest for both the practice of Integrated Management of Childhood Illnesses (IMCI) and Insecticide –treated nets distribution with 63.5% and 63% contributions respectively. Capacity

was poorest across board for Human Immune-deficiency Virus screening and the provision of Ante- retroviral drugs (**Osagbemi,** 2009).

Environmental Preparedness at College of Health Sciences, University of Ilorin

A cross-sectional study to assess the level of environmental preparedness of the College of Health Sciences, University of Ilorin for National Universities Commission Accreditation was conducted in 2015. The study employed a structured observational checklist to assess the environment. Parts of the results showed that only 56%, 48% and 30% of areas surveyed had fire extinguishers, water hoses and sand buckets, respectively at the appropriate points around the then College premises. Although the College did not fail the accreditation then, there is a need to ensure better environmental preparedness including staff training and drills in the College and indeed in the University at all times **(Osagbemi, 2015).**

Local Governments Preparedness for Epidemic Outbreaks in Nigeria

In a prospective study conducted in 10 selected states in Nigeria in 1998, a total of 227 state and LGA staff were trained on EPR concentrating on cerebrospinal meningitis, cholera, measles and yellow fever. The trainees were evaluated after three months to assess their Knowledge Attitude Practice on EPR. Just 40% of the respondents had contingency plans for epidemic response, 62% had EPR committee**s** in place and only 9% of participants had cascaded the training among their facilities staff. Assessment of a concurrent measles outbreak showed

performance outbreak indicators were statistically ($p<0.01$) better among those that followed the training guidelines and were prepared compared to those with poor compliance with training guidelines (**Osagbemi** *et al.* 1999.)

Health Insurance as a Form of Preparedness for Health Shocks and Catastrophic Expenditures

Health insurance is a form of health care financing in which an individual or a family makes regular or annual contributions (premium) to an organised scheme and enjoys health services when he/she falls ill without having to pay for the services when the illness occurs. Ill health may require huge expenditure beyond the coping capacity of the family and indeed the expenditure may be catastrophic. Health insurance would then reduce the financial health burden of the individual or family.

In a prospective case control study among hypertensive enrolees and non-enrolees in Kwara State Community Health Insurance Scheme, it was found that systolic Blood Pressure decreased by 10.41mmHg among enrolees compared to non-enrolees ($p<0.01$) between 2009 and 2011 (Hendricks *et al,* 2014).

In a 2014 prospective survey to determine the factors that influence health insurance uptake among rural dwellers in Kwara North, Nigeria, first-time uptake was very low throughout the study period (7.7%) of one year. Strong seasonal enrollment patterns after crop harvesting were recorded. The poorest were least likely to enroll, indicating that poverty matters for first-time uptake. People took insurance more in months when they had more net income (liquidity). They did not enroll immediately upon the expiration of their previous insurance policies. People

enrolled more after having experienced a health shock or illness. Health insurance was therefore found to reduce the negative effects of liquidity (financial) constraints on health-seeking behaviour of people **(Osagbemi** *et al.* 2015).

Kwara North Flood Response and Outcome of Analysis

Two contiguous communities A and B along the banks of River Niger in Kwara state were affected by flood in June 1998 with resultant loss of lives and property. A retrospective analysis of the mortalities showed a statistically significant difference in the levels of mortality between community A and B, being higher in B than A. The main reason for the difference was that whereas the traditional ruler of community A was well educated and obtained prior warning information about the impending flood from the mass media and on the internet that of community B was not that fortunate. The community leader in A had evacuated his subjects who lived close to the river banks but the leader in community B did not, most likely because he was unaware of the impending flood. It was then concluded that the flood outcome was better in community A because of the preparedness of that community **(Osagbemi** *et al.* 1998).

Mr Vice – Chancellor, Sir,

I have read in the Holy Books, the story of a man (Noah) whom God instructed to build an Ark (a huge ship). In the ship were to be present all kinds of animal species both in male and female. This was in preparation for a heavy downfall that would cover the whole of the earth with overwhelming flood. The flood indeed came and destroyed everything except those in that ark that was built by Noah. Were Noah to have disobeyed and failed to prepare, perhaps

the whole of mankind would not be in existence today **(KJV Gen. Ch. 1-6)**

I also read that there was once a party to which ten maidens (virgins) were to be addressed. Five of them were wise while five were said to be foolish as they had no oil in their lamps. When they realised they did not have oil, they went in search of it. The bridegroom passed them by when they were away. **(KJV; Matt. Ch. 25 vs 1-13).**

From the foregoing, ladies and gentlemen, it is clear that ***proper prior preparations can prevent poor performance*** in disaster management.

Disaster Preparedness and Response (The Practical Approach in Developing Countries such as Nigeria)

Before 1999, Nigeria had the National Emergency Relief Agency (NERA) whose responsibilities were to provide and monitor relief activities in the country. It was then obvious that disaster management is much more than relief operations. That probably led to the establishment of the National Emergency Management Agency (NEMA) in 1999 with a broader mandate. NEMA has remained in existence since then but what is still largely in practice is mere disaster relief operations. Why this is so, is beyond the scope of this lecture but without full compliments of the disaster management spectrum, not much can ever be achieved.

Mr Vice – Chancellor, Sir, from my training, teaching, research, practice and field experiences, I have identified the following areas that Nigeria has to focus on in order to reduce the country's vulnerability to, and the consequences of disasters.

Establishment of the Emergency Preparedness and Response (EPR) Committee This is the team primarily responsible for putting things in place to ensure that the vulnerability to and impact of disasters are reduced in the country.

Situation analysis and vulnerability assessment: This process involves the identification of potential disaster issues in the country and the areas that are mostly at risk. These areas are listed and information relevant to their proneness, local capacities, topographies, landscapes and peculiar logistic requirements documented. The lists of available human, material and financial resources that are needed, and the available quantities and shortfalls are frequently reviewed and updated by the EPR committee. The sources of assistance to meet the shortfalls are also identified. The epidemic thresholds for various diseases that have potential to cause epidemic outbreaks are predetermined during the preparedness phase of disaster management.

Establishment of Early Warning Systems: The EPR committee also has the responsibility of putting in place mechanisms to trigger warning signals in case of an impending disaster. The purpose of such early warning systems is to enhance evacuation of potential victims where this is appropriate and to further alert the various response teams and relevant stakeholders on the impending disaster or epidemic outbreak.

Capacity building: These are the activities designed to ensure local ability to manage disasters in the country. The activities should include training of disaster management personnel, community volunteers, members of local non - governmental organizations and others who are important in

disasters. Research projects on issues of disaster concerns are carried out on continuous bases to develop new tools and strategies as well as to improve on existing ones.

Work plan for response activities

Apart from the disaster management plan, there is a need for a specific response plan of action. This should contain the layout of what specific activities that are to be carried out and the sequence or order in which they would be undertaken. It includes definite instructions on whom to contact, the list and physical addresses of potential response personnel, location of stores, vehicles and other logistic requirements.

Public Awareness: This to enable the ultimate beneficiaries to know what to do and what to expect about disasters. Awareness and sensitisation on relevant matters of disaster management are to be carried out in schools and other public places with special training courses for selected adult populations such as rescue team members. General public education through both the print and electronic mass media should complement the specific programmes aimed at defined target groups.

Disaster Response Activities and Services

The response phase of disaster management is usually the most commonly known and addressed component due to the sudden and acute nature of the stage. There is often increased community panic and the mass media houses are awash with alarming information about the magnitude of the problem. This is the stage that calls for immediate attention in order to reduce the mortality and morbidity due to the disaster. Response activities should be

timely and prompt in terms of when in the unfolding events that they are carried out and the speed with which they are delivered to those that are to benefit from them. Disasters are non-routine events that require non-routine responses.

The major activities to be carried out during the response phase include the following:

Reportage of disasters: The reporting of the occurrence of a disaster is usually by eye witnesses or on the spot people at the site of occurrence. Surveillance activities may indicate that there is increased number of disease cases from the most recent records indicating an epidemic outbreak. The speed of information dissemination depends on the environmental conditions such as communication networks, mass media reports, transport, geographical terrain, the level of public awareness and the identified lines of information flow. These factors are addressed at the preparedness levels in order that members of the communities, both rural and urban, have adequate information on where, when and how to report whenever disasters occur. The persons to report to including their contact addresses, both physical and telephone numbers of officers responsible for disaster response are expected to be clear to the members of the public. The reporting of disasters is crucial and should be as complete as possible in terms of the location, terrain, extent and magnitude of the disasters. It is important that the level of awareness of stakeholders be high enough so that the impacts of disasters are minimized.

Reaction to reports of disasters: The qualities of a good disaster management programme are that reports must generate action. When disaster reports are made, prompt actions are taken by the officers responsible for taking timely and appropriate measures to combat the disaster. The

lines of action are clearly spelt out so that the actions to be taken are clear to all concerned. Immediate analysis of the report is done and the credibility determined. Actions are taken even if the credibility of the report is in doubt but the reality of disaster is confirmed by the exploratory team that visits the area of the reported disaster for verification.

Exploratory mission to disaster sites: When a disaster is reported, the unit concerned with the verification of the reality of the disaster goes on to ascertain it. The immediate response team visits and contact the area concerned to collect relevant information and data that are required for intervention. The required information include the date and time of occurrence, the estimates of number of people at risk and those already affected, the needed and available local resources; and the ability or capacity to cope with the disaster. The shortfall in the requirement and the outside intervention input needed are then determined.

These activities are not carried out in isolation, independently or in sequence but integrated so that morbidity, mortality and general impacts are reduced in the disaster zone. People with expertise in different fields are identified prior to the occurrence of disasters and effectively coordinated by the central disaster management unit.

Evacuation of residents: When the early warning signs point to imminent disasters, it is sometimes possible to reduce morbidity and mortality by removing people from the danger zones. The feasibility of evacuation depends on the type of imminent disaster, the number of people at risk, their culture, available facilities in destination sites and ability of the emergency authorities to cope with massive movement of goods and persons. Mass evacuation of people requires pre - planned coordinated efforts from all

stakeholders, including community members who are to be evacuated and those to receive them.

The required logistics at the destination include food, shelter, water, sanitation, clothing, drugs and security. When evacuation is to be carried out, priority is given to human beings over their property such as household goods and animals. There are often some diehard members of the community that are to be moved who despite all persuasion would prefer to remain in their homes in the face of an impending calamity. Such persons run the risk of suffering the maximal impacts, should the disaster occur.

Rescue operations: Rescue operations need the associated logistics support that must have been planned as an integral part of the national disaster management programme. The use of local and outside personnel that have experience in the process entails the advance identification and immediate mobilisation of such persons. In many instances, some forms of rescue operations would have been embarked upon by the local people before the arrival of outside assistance. The outside assistance then complements the ongoing efforts of the community.

At the site of a disaster, the first intervention step is to stop the progression of the disaster where it is feasible. This is done simultaneously with the removal of people from danger and those alive taken to safety.

At the disaster site, attention is paid to the following:

The injured persons: The injured should be categorised depending on their status and severity of injuries. The process of sorting out those injured is referred to as triage and tagging. The patients should be classified and given priority as follows (Torrey, T. 2019):

Priority 1: These are those with treatable life-threatening injuries. This group includes those with airway obstruction, breathing difficulties, severe bleeding and those in shock. They are tagged with red coloured arm bands.

Priority 2: These are those that sustained serious but not life threatening injuries. Such injuries include mild to moderate burns, fractures, back injuries without spinal involvement and lacerations with mild bleeding. These category of victims are tagged with yellow coloured arm bands.

Priority 3: These are those with minor soft musculo-skeletal injuries. They are able to walk or are ambulant. The group is tagged with green coloured arm bands.

Priority 4: These are the dead and those with injuries considered fatal enough to warrant no resuscitation. These victims are labelled with black or grey arm bands.

The dead: The dead are examined to check if there are materials on them that may be useful for the purposes of personal identification. Valuable personal properties are required to be deposited with the security agencies. Disposal of the dead is usually the responsibility of family members. Where this is not feasible as in war situations and when relations cannot be traced, final disposal of the dead is done following the prevailing national legal guidelines.

Disaster entrapment: Disaster entrapment is a situation whereby the survival of human beings is threatened by a completed disaster or a disaster in evolution. This can be due to direct physical obstruction by rubbles and debris which prevent physiological access to survival as seen in collapsed buildings, earthquakes, landslides and other earth related disasters. These people are removed using careful and experienced persons in order to avoid man made

injuries to them. Entrapment may also result from barriers due to insecurity of lives of persons caught in the middle of conflicts, wars, civil unrest, hostage taking and other crises that prevent free movement of people. Care of persons entrapped by unstable situations require combined efforts in advocacy for truce among warring factions, humanitarian material aids mobilisation, management of internal and external displacement and appropriate rescue operations.

Onlookers: There are situations where people are found in disaster scenes and around the disaster areas that may not have been directly affected by the disaster that has just occurred. These are different from the persons directly concerned with rescue efforts. These include passersby, sympathisers, media practitioners and other observers. They need to be controlled because they may constitute danger to themselves, the victims, rescuers and other people found in the area. People who do not have reasons to be in disaster areas are required to keep off in order to reduce further risks of danger.

Property destroyed or entrapped by the disaster: These include personal, household community- owned belongings, infrastructure and social amenities. They are prone to looting by hoodlums. Security protection, salvaging reclamation and redistribution should be carried out with respect to prevailing local laws and customs but these should not take precedence over human life protection.

The dead are sorted out and efforts are concentrated on those injured that need immediate treatment either on site or at the nearest health facility. Simultaneous efforts are made to contact relations of all persons involved in the disaster. Family members and workplace contacts are made

using all available information found on and around the victims.

Basic Emergency Life Saving Skills (EMLS) training should be conducted among members of the public because they are expected to be first aid providers in times of emergencies. Non-Governmental Organisations (NGOs) who are specialised and involved in the training of Community Based Organisations (CBOs) are identified and their representatives included in the emergency preparedness committees and programmes.

Relief operations

The provision and supply of relief services reduce the immediate effects of disasters by ameliorating the impacts of the disaster in the affected area. The process is often a complex operation that requires adequate planning (despite being an emergency), implementation and constant evaluation. There is a general identification of the needed inputs, the required logistics support, distribution channels and significant personnel including local significant stakeholders. Required logistics include the needed items that may have to be procured immediately, transportation, warehousing, waybills, security for the goods, the warehouse, travel papers and permits for personnel, both local and expatriate. The distribution channels at the community include the state or regional levels, local and ward outlets. The community distribution points include market places, religious gathering points, club houses and other informal channels where there could be access to members of the community. Significant members of the local community that can facilitate relief operations include the community leaders, both traditional and religious, the

teachers, the security controllers and voluntary agencies that are present in the community. The needed relief inputs include food, clothing, shelter, water and sanitation, drugs; and community security.

Publications/Publishing: Adequate documentation of the entire disaster management process for a particular occurrence is important for subsequent evaluation, planning for the future and mitigation measures. It is necessary to document the onset where it is possible, the duration and the intervention or measures put in place to combat the disaster. The impacts in terms of morbidity, mortality and estimated socio - economic losses, as well effectiveness of interventions are collated and the report of the disaster compiled and disseminated among relevant stakeholders.

Safety of disaster management teams

This is of great importance to team members, their organisations and the international humanitarian community. Responsibility for staff safety rests on the combination of efforts by the staff (he/she should avoid heroic expeditions that often appear almost suicidal), the organisation for which they work and the host Government (where this exists).

Guidelines and procedures including evacuation plans for team members are put in place to ensure that team members work under conditions of minimum risk and maximum security. The respective organisations have the responsibility to inform team members about the hazards and risks they may face during field operations.

Health Care Programmes among Refugees and Internally Displaced Persons

Refugees: These are people who for one reason or the other have to move outside the international boundaries of their countries to live in other countries. Reasons and causes of refugee situations include man- made disasters such as intra and extra country wars, ethnic disturbances, religious crises, political instability, risks and actual exposure to radiations and chemical wastes. Natural disasters such as famine, drought, desertification, floods, tsunamis, wild fires, earth movements and tremors also lead to refugee situations (**Osagbemi, 2009**)

Internally Displaced Persons: Commonly and simply referred to as IDPs, these are persons who for emergency reasons leave their normal places of abode in a country to reside in other parts of the same country. Factors that lead to internal displacement of persons include man- made disasters such as civil wars, ethnic disturbances, religious crises, political instability, the risks and actual exposure to radiations and chemical wastes. Natural disasters such as famine, drought and desertification, floods, tsunamis, wild fires, earth movements and tremors also lead to internal displacement of persons (**Osagbemi, 2009**)

The factors influencing the health of refugees and IDPs include age, gender, poverty, educational levels, previous general health conditions, people's culture, geographical location and the nature of the precipitating disasters. These factors combine generally to influence the individual and collective health of internally displaced persons and refugees. The factors are considered in the planning and implementation of intervention programmes for these groups of vulnerable people.

Selection of camp sites for displaced populations: The location of sites to be used for refugees and IDPs is often one of the first challenges that face authorities. This is because of the land tenure system in most developing countries. The factors to be considered in selecting the sites include the available land, the anticipated population of inhabitants, the land acquisition agreement with host communities (whether lease or sale), the cost of compensation payment to host communities, security and the necessary prior host community sensitization. Prior sensitization and awareness within the host community are required to reduce friction and sometimes clashes between the hosts and the displaced persons when the latter arrive the camp. The land space required must be adequate for the erection and construction of temporary houses, provision of social amenities including toilets and wells, some recreational areas and space for limited expansion as the camp population expands. The duration of stay of displaced persons at the camp is often unpredictable, as it depends largely on the precipitating disasters and other factors beyond the control of the authorities concerned.

Water supply: Water is essential to life and one of the most fundamental requirements in the refugee and IDP camps. The needs start as soon as the refugees begin to arrive in the camp. Water supply priorities include the need for domestic uses such as drinking, washing, cooking and maintenance of household hygiene. Included also are the requirements for social uses like prayers and limited recreational activities. The quantity and quality of water supply in refugee camps should be as close as possible to recommended normal standards when there are no emergencies.

Environmental sanitation: Sanitation activities should include provision of housing or shelter, the disposal of solid and liquid wastes including excreta management. Also included are the control of domestic animals, rodents and vectors of public health importance. Provision of household items such as brooms, brushes, buckets, refuse bins and insecticide treated nets are to be carried out at regular and sustained intervals. Distribution plans are made and carried out by identified camp representatives under the supervision of programme assistants.

General medical care: The establishment of a camp clinic with the typical setting of medical personnel and equipment such as stethoscopes, blood pressure machines and thermometers tends to make camp residents not to view their health needs beyond curative services. (**Osagbemi, 2009**). While efforts are made to ensure there is adequate treatment of common diseases and injuries, promotive and preventive programmes should be provided and the community made to realise that proper attention to promotive and preventive measures would limit their need for curative services. Needed medical care in the camp depends on the prevailing communicable and non-communicable health conditions. Some members of the camp are expected to arrive with various overt and non-manifesting medical conditions from their places of origin. These conditions require continuation of treatment and there is a need for continuous screening to detect underlying diseases and conditions among camp residents.

Control of communicable and non-communicable diseases: Diseases that require priority attention include those that are endemic in the host community *ab initio* and those that become prevalent among the camp residents as a

result of the establishment of the camp itself. Diseases associated with overcrowding become more prevalent in refugee camps and often assume epidemic proportions. Control of communicable diseases in refugee camps requires adequate environmental sanitation, water supply, immunisation, control of vectors and rodents as well as community mobilisation and participation among camp residents.

Planning the Exit from the Camp and Returning Home

Refugees and IDPs are expected to return to their homes after the precipitating causes of displacement may have abated. Factors to be taken into consideration include the safety and security of the home environment, re-union with family and community members, resolution of identity crises among family members and relations as well as the levels of social and vocational rehabilitation achieved in the camp. Also important are the willingness of camp residents to return home, available physical and social infrastructure at home to which returnees can fall back, current relationship with the local community members with respect to inter-marriages, property owned and other cultural factors.

Disaster Mitigation

Disaster mitigation includes the various measures put in place to reduce further vulnerability and effects of disasters on the communities concerned. Whereas the primary focus of vulnerability reduction is on the communities that are prone to disasters, the effects of disasters invariably go beyond the boundaries of such communities. Mitigation benefits therefore go beyond the

disaster prone areas. The ultimate aim of mitigation is to prevent disasters from taking place and when it occurs, to reduce the impact on the communities in particular and the local and oftentimes the international community in general. Mitigation efforts are thus meant to reduce the risks and impacts of disasters.

Stakeholders to be targeted for mitigation include community members, governments at various levels, international agencies, the various non- governmental organisations, foundations and philanthropies. Disaster mitigation measures are not carried out in isolation, they are integral parts of disaster management programmes and include capacity building, service delivery, advocacy, legislation, surveillance, insurance schemes and international cooperation including promotion of global peace (**Osagbemi,** 2009).

Community Service and Contributions

Mr Vice-Chancellor Sir, I have worked with other people as a team leader to make some modest contributions to my immediate community. These include:

Academic Publications

There are 73 published articles in peer-reviewed local, national and international journals for the reading public. These articles can be accessed in libraries and many can be found using various search engines on the internet.

Textbook

Gordon Kayode Osagbemi: THE ESSENTIALS OF DISASTER MANAGEMENT AND EPIDEMICS - A Reference Book for Medical Undergraduates, Public Health Practitioners and Residents.

This book is readily available and has been the bulk of the resource materials for today's lecture.

College of Health Sciences University of Ilorin, orchard

When the College moved from the mini campus to its site near the University of Ilorin Teaching Hospital, the landscape was without form. As the Chairman of the College Environmental Protection Committee, I worked with others to create the present landscape including the establishment of an assorted fruit orchard. When horticulturists were invited to establish the orchard, the estimated cost then was N1.86M but our team was able to establish it by direct labour with just N0.53M, about 8 percent of the contract sum if the College had awarded it to contractors. The orchard is also there for all to see.

Olatinwo Market University of Ilorin Teaching Hospital

The traditional African market at the UITH was established by my humble self-working along with the Public Private Partnership unit of the hospital. At the initial stage, local buying and selling took place haphazardly everywhere within the hospital premises. As the Chairman of the Hospital Environmental Protection Committee then, I muted the idea of a market but the prototype market stalls were rather expensive for the traders to construct. The idea of a local market setting was then considered and it was so established. I then promised the hospital management that I would facilitate weekly sanitation supervision by Community Health Extension workers from the Department of Epidemiology and Community Health. These weekly visits have continued till date as part of the Food Hygiene programme of the department.

University of Ilorin Teaching Hospital Centre for Disease Control (UITH CDC)

During the 2015 Ebola Virus Disease crisis, the Federal Ministry of Health directed all Teaching Hospitals to establish temporary isolation units. These units were to be makeshift tent structures that may be dismantled after the crisis. As the disaster and epidemic focal person of the hospital, I advised that a more permanent structure be built that can be further developed into a standard centre. A four - wing centre was then designed to be built in collaboration with the University of Ilorin. For reasons beyond the scope of this lecture, only one wing came to reality but efforts have reached an advance stage to effect its completion. However, the unit is functional with activities such as immunisation, vision screening and community health communication taking place. When completed and equipped, the centre will be one of the best Emergency Operations Centres (EOCs) for epidemic management in the country. As this lecture manuscript was being concluded five weeks ago, the hospital received a donation of 2M Naira from one the Pharmaceutical Companies as a form of contribution towards the continuation of the project. This gesture came about as a result of advocacy from the department of Epidemiology and Community Health and is well appreciated. I therefore appeal to the authorities of University of Ilorin and other well- meaning people to assist towards the completion of the project. This will be the main focus of my activities in the immediate future.

Mentorship

I have been involved in the supervision and mentorship of a number of public health specialists within and outside the University of Ilorin and the UITH. These

include 15 Fellows of the West African College of Physicians and one Ph.D. degree of the University of Ilorin as well as several Masters of Public Health of the University.

The League of the Firsts

It is with humility, Sir, the Vice -Chancellor, that I also want to inform this great audience that I am a member of the League of Firsts in the College of Health Sciences, University of Ilorin having been:

The first alumnus to return to my department to pursue a career in Public Health.

The first alumnus to become a Consultant Public Health Physician at UITH Ilorin.

The first alumnus to become a Professor of Public Health, University of Ilorin.

The first alumnus to deliver inaugural lecture in Public Health in this University.

Conclusion

Disasters and public health emergencies are a time long occurrences that exert great tolls on lives and property with global scope. The effects are felt among all age groups with high levels of mortality and morbidity.

In this lecture, I have looked into disaster management as an interwoven and overlapping cycle of preparedness, response, mitigation and coordination with a focus on the preparations that need to be put in place. I also pointed out the consequences of failure to in prepare. In the lecture, I also highlighted my modest contributions to my immediate community within the available limited resources and opportunities.

Recommendations

International Agencies and Organisations should:

1. Ensure that mechanisms and modalities are put in place for the sustenance of their activities after they may have left programme intervention areas.
2. Ensure that programme staff are adequately briefed and prepared for the risks associated with working in dangerous locations.

The Federal Government should:

3. The Federal Government should take ownership through focused partnerships of the various disaster management activities in the country in order to reduce 'Donor Dependency Syndrome'
4. The National Emergency Management Agency should decentralise its activities and make its presence felt at the state, LGA and community levels.
5. The activities of NEMA should encompass all aspects of disaster management including disaster mapping, surveillance, preparation, response and; mitigation and research.

The Members of the Public should:

6. Be aware of the various hazards and disasters to which they are prone. This can be done by obtaining information from the relevant ministries of health and agencies.
7. Avoid hazardous lifestyles such as domestic storage of explosive materials, dangerous driving, substandard building constructions and heed to alerts when given by relevant authorities.
8. Embrace ethnic, religious and communal dialogues to ensure peaceful coexistence in Nigeria.

9. The mass media should ensure regular dissemination of disaster related information to members of the public.

The University of Ilorin should:

10. Regulate traffic activities on the various roads within and around the campus.
11. Ensure proper maintenance of the road network on the campus.
12. Pursue a more aggressive afforestation programme to reduce the menace of rainstorms on the campus environment.
13. Embark on regular sensitisation and awareness including practice and rehearsals on disaster preparedness and response among the staff and students of the University.

Acknowledgement

The Vice – Chancellor, Sir, members of the University of the Ilorin community and distinguished, respected audience of today's gathering, I am extremely honoured by this huge turn-out.

To begin to mention names will mark the onset of another inaugural lecture this evening. However, I want to thank: Members of my immediate (Kei, Dami, Opepe, Jojo and Iye) and extended families, the academia here present, members of staff of both the University and the University of Ilorin Teaching Hospital, my dear friends from far and near and above all, God the Almighty for not letting this lecture be a disaster!!.

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PROFESSOR OF PUBLIC HEALTH &
MEDICAL PARASITOLOGY
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ON THIS 31ST AUGUST 2015
PROF. A. W. O. OLATINWO
CHIEF MEDICAL DIRECTOR

UITH CDC

UITH CDC

OLATINWO MARKET UITH

ACCIDENT SCENE ALONG UNIVERSITY ILORIN ROAD

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