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DISEASE CONTROL AND MANAGEMENT IN NIGERIA: EXAMINE THE CHALLENGES OF STATE AND LOCAL GOVERNMENTS.

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Abstract

In recent years, Nigerian health care has experienced a number of epidemics of infectious diseases outbreaks of Ebola virus, cholera, polio virus, Lassa fever, coronavirus, and other diseases have swamped the federal ministry of health and its agency, the Nigeria Centre for Disease Control (NCDC). Making it difficult for the country to provide adequate medical care but also track, monitor and control disease. The paper looked at the challenges that state and local governments face when it comes to disease control and management. The paper was a quantitative research. Data was obtained from secondary sources including journals, articles and publications. Inadequate funding of the health sector, a dearth of medical personnel, a lack of medical facilities, and a weak linkage system were all mentioned in the study have all contributed to the inability of government to control and manage disease, most especially by the state and local governments.

The paper concluded that if the goal of government at all levels is to provide universal health care coverage for all citizens, efforts must be geared towards control and management of disease outbreaks in Nigeria. It consequently encouraged boom increased budgetary allocation to health sector, recruitment of certified medical personnel, provision of clinical infrastructure, establishment of useful surveillance device and aggressive health campaign and attention as mechanisms to correctly control and manage disease in Nigeria.

Keywords: Control and Management of Disease, Challenges, Nigeria, State and Local Governments.

Introduction

Throughout the history of human race, safety of human beings has always been threatened by infectious disease, and in the course of fighting them, humans have continuously explored and researched the pathogens, transmission routes, the methods of prevention and treatment, as well as other elements of these diseases are discussed (Liang & Yuan, 2020, p. 23). Liang and Yuan (2020) explained the great disaster infectious diseases have caused to human beings and has a profound impact on politics, economy, military, social and culture. In different to deal with infectious disease, humans started out to prevent and manage them from little knowledge about them to accuracy, and from the view point of superstition to the use of advance clinical strategies which has caused the establishment order of prevention gadget aimed to efficaciously control and manage infectious diseases outbreaks.

Disease control and management is often regarded as one of the ways of achieving managed care and also as a stand-alone mechanism aimed at improving the cost effectiveness of care (David & Gillian, 1997, p. 50). The spectrum of disease control and management extends from health promotion and disease prevention, through diagnosis, treatment, and rehabilitation, to long term care. It is a structured system response to a set of problems which are evident to some degree in all health-care systems. At the global stage, the World Health Organization (WHO) has sought to coordinate resources towards controlling and preventing global pandemic as glaring in its reaction to the extreme Acute Respiratory Syndrome (Coronavirus-2 SARS-Cov-2) (Mahdy, 2020). The global standard control strategies which includes travel restrictions, lockdowns, curfew, closure of public places such as restaurants, schools, pubs etc., strict hand hygiene practices, social distancing and the wearing of face masks were preventive and control measures adopted by World Health Organization (WHO) and countries globally to curtail the spread of COVID-19 pandemic (Adebowale, Adenubi, Adesokan, Oloye, Bankole & Fadipe, 2021; p. 2).

Disease Control and Management in Nigeria has been coordinated by the Nigeria Center for Disease Control (NCDC), a National Public Health Institute under the Federal Ministry of Health. The agency's goal is to protect Nigerians from the impact of communicable diseases

through the coordination of public health preparedness, surveillance, laboratory, and response functions for all infectious diseases (NCDC, 2021). The NCDC targets its activities towards the prevention and control of diseases of public health importance, which includes the preparedness, detection and response to public health emergencies, research, training and knowledge management, health promotion and other activities to protect the health of Nigerians (Njidda, Oyebanji, Obasanya, Joshua, Adedeji, Mba, Oladejo & Ihekweazu, 2018).

According to Elvis, Akintola, Fatiregun and Ikeoluwa (2015), Disease control and management has been quite challenging in Nigeria owing to incomplete data collection, collation, analysis and interpretation from public health institutions, poor awareness among clinicians, lack of resources for proper coordination, dearth of qualified personnel, and late notification activities for the prevention of infectious disease outbreaks. The Federal Government of Nigeria on a yearly basis made a budgetary provision for the Federal Ministry of Health, under whose the Nigeria Centre for Disease Control (NCDC) domiciled as an agency for management and control of tropical diseases. The huge allocation for the Nigeria Centre for Disease Control (NCDC) has not translated to effective control and management of most tropical diseases that are widespread in Nigeria. Lassa fever, one of the severe viral hemorrhagic fever (VHF) which was first discovered in Nigeria in 1969 has continued to have a repeated outbreak in Nigeria, and its control has been neglected within the context of neglected tropical diseases (Frame, Baldwin, Gocke & Troup, 1970; Akpede, Asogun, Okogberin & Okokhere, 2018). According to the Minister of State for Health, Senator Dr. Olorunnimbe Mamora, Lassa fever outbreak in Nigeria has claimed the lives of 132 person since the beginning of year 2022 in 23 States of the country, 3,746 suspected cases and 691 confirmed cases had been reported (Amos, 2022). The repeated outbreaks of tropical diseases such as malaria, cholera, yellow fever, river blindness, Lassa fever, dengue etc. in Nigeria has confirmed the report of the World Health Organization (WHO), that the country is still battling with 14 of the 20 tropical diseases listed by WHO and efforts by Government to control and management them are proving inadequate (Nike, 2021). The Nigeria Centre for Disease Control (NCDC), being a federal agency has its headquarters in Abuja, the federal capital territory of Nigeria. Apart from liaising with state ministries of Health, it is doubtful if the agency has offices in the 774 local government areas in country, and this has significantly contributed to its inability to effective control and manage diseases and outbreaks in Nigeria.

Disease control and management should be a collaborative effort among various health institutes whether private or public, health practitioners, health service providers, State Ministries of Health, Local Government Primary Health Centres etc. Therefore, the paper is set out to examine the Role of State and Local Governments in Disease Control and Management in Nigeria.

Methodology

This paper is based on qualitative method of social research. It is theoretical in nature and extract its arguments and information from secondary data including journals, textbooks, newspapers and publications. The paper is structured into the following sections. The first section examines Disease control and management as a concept and process. The second section discusses common diseases in Nigeria. The third section examines challenges facing control and management of diseases in Nigeria. The fourth section outlays the role of state and local governments in disease control and management in Nigeria. The final section draws conclusion from the analysis.

Literature Review

Disease control and management perspectives patients as entities experiencing the clinical route of a sickness. It is based on coordinated set of arrangements for reliving care, a strong support towards acute treatment, a careful preventive care, and appropriate treatment. For example, Czumbel, Quinten, Lapalco, *et al.,* (2018) observed that in control and management of communicable diseases in schools and other child care settings, information on the incubation period and period of infectiousness or shedding of infectious pathogens is critical for management and control of communicable diseases. Findings of the study for eight (8) selected diseases: measles, mumps, rubella, varicella, pertussis, meningococcal disease, hepatitis A and seasonal influenza, display the incubation duration for measles ranged among 6 and 21days with a mean round thirteen day; for mumps and rubella the most common value ranged between 16 and 18 days; and for varicella the mean/median was around 14 – 16days, depending on the contacts. The incubation period for pertusas was between 7 to 10days. Incubation duration for meningococcal disease was turned into much less than four days and affect median of two days.

The study conclusion on infectiousness and noted that the measles virus was to be isolated 4 days after onset, mumps was to be isolated up to 14 days after parotitis onset. Varicella was found most contagious while the rash spread until the lesions have crusted over up to 5 days after onset of the rash. Meningococcal disease infectiousness persisted up to 1 and 2 days after effective treatment while influenza turned into observed to be maximum contagious 1 day after 7 days after onset. Hepatitis virus become mentioned to be maximum infectious 2 weeks earlier than and eight days after onset of illness. The study advocated exclusion for four to five days for measles, five days for mumps and pertussis, five to 7 days for rubella, and five days to six days for varicella. For meningococcal disease, exclusion must begin as quickly because the ailment is suspected while excursion for hepatitis A turned into one week of exclusion after onset of jaundice.

In Harapan, Naoya, Amanda, Wira, Synat, Haypheng, Dewi, Zinatul, Abram and Mudatsis (2020) research on coronavirus disease 2019 (COVID-19): A literature review, they explained that COVID-19 is clearly a serious disease of international concern with a higher reproductive number than SARS and the key to stop the spread of the disease was to disrupt the chain of its transmission. They suggested infection control measures including isolation, contact tracing, wearing of facemask, strictly adherence to triage procedure, medical personnel entering isolation centres have to put on non-public defensive equipments, decontamination of rooms, public locations and hospitals, social distancing, personal hand hygiene etc. The infection control measures of Harapan *et al.,* (2020) changed consonance with the COVID-19 preventive measure techniques of the World Health Organization (2020).

Lindsay, Emma & Petra (2016) suggested early detection of infectious disease outbreaks can reduce the ultimate size of outbreak, with lower overall morbidity and mortality due to the disease. In their study of Drivers of earlier infectious disease outbreak detection: A systematic literature review, revealed that early detection has been and remains the current narratives of infectious disease surveillance (Lindsay *et al.*, 2016, p. 1). The study, posited that a variety of surveillance approaches such as mandatory disease-specific notification, laboratory surveillance, syndromic surveillance, event-based surveillance (EBS) etc. are all aimed at detecting outbreaks earlier and helped in disease control and management.

Disease Control and Management

The emergence and spread of infectious disease with pandemic potential occurred regularly throughout the history of mankind (Jocelyne & Guy, 2021). The world has witnessed major pandemics and epidemics such as plague, cholera, influenza and coronavirus diseases, which have caused millions of deaths globally.

The plague of Justinian which occurred in Egypt between 541 and 543, spread throughout the Eastern Roman Empire killing an estimated 100 million people in the Roman Empire (Cunha & Cunha, 2008). The second plague pandemic according to Zietz and Dunkelberg (2004) cited in Jocelyne and Guy (2021) was the Black Death plague pandemic which originated from East Asia and swept throughout central Asia into Europe via land and sea, killing estimated 200million people between 1347-1351 (Wagner *et al.,* 2014). Between 2010 and 2015, the plague killed 584 people (Glatter & Finkehman, 2020), in the Democratic Republic of the Congo, Madagascar, and Peru, prompting the World Health Organization to categorized the disease as an infectious disease (World Health Organization [WHO], 2017a).

Cholera was endemic in Asia until 1817 (Jocelyne & Guy, 2021). Between 1985 and 2015, Five major cholera pandemics occurred, claiming the lives of millions of people (Faraque *et al.,* 1998). Mutreja *et al.,* (2011) and Hu *et al.,* (2016), observed cholera outbreak in Indonesia in 1961 which became endemic in many regions of the world was the most expensive in terms of geographic spread and duration. Zimbabwe (2008), Haiti (2010), Sierra Leone (2012), Mexico (2013), South Sudan and Ghana (2014) and Yemen (2016) had witnessed outbreak of cholera epidemics in recent times (Jocelyne & Guy, 2021) between 2008 and 2012, the World Health Organization reported number of cases with 95,000 deaths, and between 1.3 and 4 million per year (Ali *et al.,* 2015).

Influenza virus has continued to infect humans since 1510 when the first case was recorded (Morens *et al.,* 2010). The Russian flu that occurred between 1889 and 1893 was reported to have caused an estimated 1 million deaths worldwide (Taubenberger *et al.,* 2007). The Spanish flu which struck in 1918 – 1919 was disseminated in at least three waves a 9-month interval resulted in approximately 500 million infectious and 50 million deaths worldwide (Johnson & Mueller, 2002). The global marketing rate of the Hong Kong flu of the 1968 – 1970, the Mexico

and Southern United States of 2009 were estimated to be 0.5 – 2millions and between 148,000 and 249,000 respectively (Saunders – Hastings & Krewski, 2016; Simon-Sen *et al.*, 2013).

The coronavirus called SARs-Cov-2 (Zhu *et al.*,2020). Jocelyne & Guy (2021) stated that a typical pneumonia was reported in a cluster of patients in Chinese city of Wuhan. The disease is later known as COVID-19 which reasons a huge spectrum of infection from slight signs to life threatening sickness (Wiersinga *et al.*, 2020). As at April, 24th 2022, it was reported that COVID-19 had spread worldwide within a few period leading to approximately 500 million confirmed cases and over 6 million deaths globally (World Health Organization [WHO], 2022).

Infectious disease was estimated to have caused 12.3 million deaths by World Health Organization analysis of the world burden of diseases, accounting for 21% of total global death of 56.8 million death (WHO, 2008). The report observed that Lower respiratory infections, AIDs, diarrhoeal disease, tuberculosis and malaria account for 81% of the total infectious diseases burden globally and 97% deaths occur in the economically developing countries (WHO, 2008). To understand the mechanism of transmission of pathogens to humans, led to the establishment of methods to prevent, control and manage infectious diseases.

According to Robert (2022) control and management of disease refer to the actions and programmes directed towards reducing disease incidence (new infectious), reducing disease prevalence (infection in the community at any given point in time), or complete eradicating the disease. He deduced that control geared toward decreasing the superiority via way of means of shortening the period of infection or their risk factor which includes protection health through individual and community-wide measures such as maintaining good nutritional status, keeping physically fit, immunizing against diseases, providing safe water and ensuring the proper disposal of faeces. He further said that secondary prevention of disease corrects departures from good health through individual and community-wide measures, including such factors as screening that result in early defection of disease, prompt antibiotic treatment, and ensuring adequate nutrition.

Guus (2009) noted that disease control and management entails of a collection of cohesive treatments created to prevent or treat one or more chronic disorders, utilizing a methodical, interdisciplinary approach that may involve a number of different modalities. He further asserted that the goal of management is to identify persons at risk for one or more chronic conditions, to

promote self-management by patients and to address the illnesses or conditions with maximum clinical outcome, effectiveness and efficiency regardless of treatment setting(s) or typical reimbursement patterns.

According to Epstein and Sherwood (1996), disease control and management involves the use of an explicit systematic population-based approach to identify people at risk, intervene with particular programs of care, and monitor clinical outcomes. It is also generally defined as a comprehensive, integrated approach to care and reimbursement based on disease's natural course, which its goal is to address the illness or condition with maximum effectiveness and efficiency regardless of treatment setting(s) or typical reimbursement pattern (Zitter, 1997).

At the worldwide stage, the World Health Organization (WHO), a specialized agency of the United Nations (UN) established in 1948 is responsible for worldwide public health. The organization works worldwide to promote health, keep the world safe, and serve the vulnerable. It plays an essential role in global governance of health and disease, with a core global functions of establishing, monitoring and enforcing international norms and standard and coordinating multiple actors toward common goals. The Centers for Disease Control and Prevention (CDC) is another well-known international public health agency of the United States founded in July 1, 1946 with a main goal of protecting public health and safety through the manage and prevention of disease, injury and incapacity within side the United States and globally (CDC Mission Pledge, 2017).

The Nigeria Centre for Disease Control (NCDC) which was founded in 2011 by the Federal Government of Nigeria is specifically tasked to respond to the challenge of public health emergencies and to enhance Nigeria's preparedness and response to epidemics through prevention, detection and control of communicable and non-communicable diseases (NCDC, 2020). The agency core mandate is to detect, investigation prevent and control diseases of national and international public health importance.

Common Diseases in Nigeria

Nigeria, like other developing countries is not immune from outbreak of infectious disease such as cholera, Ebola virus, malaria, yellow fever, Lassa fever etc. These diseases are not unusual place in Africa and they are environmental disease (infectious) because of contamination through residing organism. They are referred to as communicable diseases, due to the fact that unfold

from individual to individual, or once in a while from animals to people and are one of the commonest causes of death, particular in children in Africa.

Disease can be classified according to two major dimensions, namely the time course and cause. The time course is classified as acute (characterized by a rapid onset and a short duration), and chronic disease (characterized by prolonged duration) while classification by cause can be further categorized as infectious (caused by living parasitic organisms such as viruses, bacteria, parasitic worms, insect etc.) or as non-infectious (which are caused by something other than a living parasitic organism).

Nigeria, as part of the developing world, has two major health problems; lack and near absence of health facilities, and the spread of infectious diseases and communicable diseases, such as tuberculosis, meningitis, pneumonia, cholera, yellow fever, guinea worm disease, monkey pox, measles, viral hemorrhagic fever, Lassa fever etc., are the main public health issues in Nigeria. Within side the absence of good health facilities, the best way to lessen the fatalities from these infectious diseases is to have a Disease control and management strategies.

The following are the common communicable diseases in Nigeria.

1. **Cholera:** Cholera is an acute diarrhoel disease due to vibrio cholera; a gram bad rod-formed bacterium (NCDC, 2019). It is far a doubtlessly existence threatening common water borne disease. There are many serogroups of V. cholera, but only two of the serogroup (01 and 0139) cause outbreaks. Cholera is a deadly disease and seasonal disease in Nigeria, happening yearly through the wet season and regularly in regions with badsanitation. The first series of cholera outbreaks were reported between 1970 and 1990 (NCDC, 2022). Major epidemics of cholera also occurred in 1992, 1995, 1996, and 1997. Consistent with the Nigeria Centre for Disease Control (NCDC, 2022) 42,466 suspected cases together with 830 deaths had been recorded from 20 out of 36 states of the country in 2018. The primary reservoir of vibrio cholera is human beings, however, water mollusc, fish and aquatic plants life are capacity reservoirs too. The micro-organism is transmitted particularly through the faeco-oral path through ingestion of infested meal or water and its signs and symptoms consist of speedy onset of flowing watery diarrhea (rice water stools) with or without vomiting. The major treatment for cholera is through

prompt administration of oral rehydration solation (ORS), administration of intravenous fluids and administration of appropriate antibiotics

2. **Lassa Fever:** Lassa fever (LF) is an acute viral illness and a viral hemorrhagic fever (VHF). The causative agent is a single-stranded RNA within side the own circle of relative of Arenariridae, the Lassa virus. This zoonotic disease is related to excessive morbidity and mortality (NCDC, 2022). The illness was first reported in Lassa community in Borno state, and since then, cases and outbreaks continue to be reported in Nigeria. The disease is increasingly recognized to be endemic in many parts of West Africa including Nigeria, Benin, Ghana, Mali and the Nano River areas of Sierra Leone, Liberia and Guinea (NCDC, 2022). In 2018, NCDC reported the largest ever number of cases in Nigeria with over 600 confirmed cases and over 170 deaths. According to Ileyemi (2022) Nigeria has recorded 123 deaths with a case fatality rate (CFR) of 18.7% from Lass fever across 91 Local Governments in 23 states of the federation. Lassa fever is transmitted to humans through contact with food, household items contaminated by infected rodents, or contaminated persons. Symptoms include fever, headache, sore throat, general body weakness, cough, vomiting, muscle pains and in several cases, unexplainable bleeding from ears, eyes, nose, mouth and other body opening (Ileyemi, 2022). The major treatment for Lassa fever is carried out in designated isolation centres by trained staff, Administration of Ribavirin drug either orally or parenterally, promotion of good environmental and personal hygiene.
3. **Leprosy:** Leprosy is a continual contamination disorder caused by mycobacterium leprae. The disease mainly affects the skin, the peripheral nerves, mucosal surfaces of the upper respiratory tract and the eyes (NCDC, 2022). Leprosy remains a disease of public health importance with over 3500 people diagnosed with leprosy each 12 month and approximately 25% of patients having some degree of disability (NCDC, 2022). Leprosy is airborne and is transmitted mainly through spread of nasal secretions of patients infected by Hansena bacillus and also through inoculation into broken skin. Signs of leprosy encompass exact sensory loss, with or without thickened nerves, nice pores and skin smears etc. The disease can be treated with a combination of drugs known as multidrug therapy including Rifampicin and Dapsone.

4. **Malaria:** Malaria is a life-threatening ailment caused by plasmodium parasites. The parasites are unfolded to humans through the bites of infected female Anopheles mosquitoes called “malaria vectors” (NCDC, 2022). In African continent, the dominant malaria parasite is the P. falciparum species which accounts for most malaria-associated deaths globally. Nigeria accounted for up to 25% of the global cases and deaths related to malaria. Female Anopheles mosquitoes transmitted malaria through its bites. The female mosquitoes search a blood food to nurture their eggs. Malaria accounted for most death in Africa especially among young children (NDCD, 2022). Symptoms of malaria includes fever, headache, chills and vomiting and if not well treated within 24 hours, P. falciparum malaria can progress to severe illness, often leading to death. Treatment of malaria includes the usage of insecticide-treated mosquito nets, indoor residual spraying and the use of Artemisinin-based combination therapy (ACT) etc.
5. **Measles:** Measles disease is an acute, highly infectious disease. It is a viral organism of the family paramyxoviridae. According to the 2013 Nigeria Demographic and Health Survey, measles disease remains a leading cause of death among children (NCDC, 2022). The Southern parts of the country have highest measles coverages (62% - 74%) compared with the Northern regions (22% - 48%). There are 47 priority countries contributing significantly to measles mortality indices, including Nigeria (NCDC, 2022). The disease is spread via coughing and sneezing, contact with respiratory secretions or close personal contact. The symptoms of the disease include high grade fever, cough, runny nose, red eyes etc. Measles disease can be treated through high vaccination coverage with two doses of measles – and rubella – containing vaccines, supplementation of vitamin A, Adverseevents following Immunization (AEFIs) etc.
6. **Meningitis:** Meningitis is an inflammation of the meninges, a thin layer of the connective tissue that covers the brain and the spine cord. This inflammation can be caused by a variety of organisms-bacteria, viruses, parasites or fungi and has a high morbidity and mortality rate. Among the three predominant bacteria responsible for more than 70% of bacterial meningitis cases, meningococcal meningitis is common in Sub-Saharan Africa, with 26 countries belonging to the African meningitis belt including all northern states of Nigeria (NCDC, 2022). Meningitis epidemic killed 11,717 of the 109,580 recorded cases, with subsequent epidemics in 2003, 2008 and 2009 in Nigeria (NCDC, 2022). Also, in

2013 and 2014, sequential outbreaks of serogroup C of the meningitis were observed in north western Nigeria and another reported 14,518 suspected cases in 2016 and 2017. Meningitis is transmitted through direct person-to-person contact including droplets from the nose and throat of an infected person. The most common signs and symptoms are fever, headache, nausea and vomiting, photophobia, fatigue, severe muscle pain, rapid breathing and purpuric rash. The disease can be treated by ceftriaxone drugs.

7. **Monkey Pox:** Monkey pox is rare viral zoonotic infectious disease (i.e. an infection transmitted from animal to humans). Following the eradication of small pox, monkey pox virus has emerged as the most important orthopoxvirus (NCDC, 2022). The first human case was recorded in 1970 in the Democratic Republic of Congo. The 2017 monkey pox outbreak in Nigeria is the largest documented outbreak of the West Africa till date (NCDC, 2022). The disease is transmitted both from animal to human and from human to human transmission. Animal-to-human transmission may occur by direct contact with the blood, body fluids or skin or mucosal lesions of infected animals e.g. monkeys, squirrels and rodents. The symptoms of the disease are fever, swelling of lymph nodes, back pain, intense headache, muscle ache and severe asthenia (lack of energy). There are no specific treatment available for monkey pox infection, post exposure vaccination may help prevent the disease or reduce its severity (NCDC, 2022). Also, preventive measures such as avoiding contact with animals that could harbor the virus, isolating potentially infected animals from other animals, hand washing with soap and water after contact with infected animals, thorough cooking of all animal products before eating etc.
8. **Yellow Fever:** Yellow fever is an acute viral hemorrhagic illness caused by the yellow fever virus, an RNA virus that belongs to the family Flaviviridae (NCDC, 2022). The virus is found in tropical and subtropical areas of Africa and Central/South America with the illness being endemic in 34 African countries including Nigeria and 13 Central and South American countries (NCDC, 2022). The earliest outbreak of yellow fever in Nigeria was in Lagos in 1864, with subsequent regular outbreaks reported in 1996 and 2017 (NCDC, 2022). The virus is transmitted by mosquitoes both Aedes and Haemogogus species. The symptoms of the illness include backache, headache, lost of appetite and nausea or vomiting. Also, bleeding can occur from the mouth, nose, eyes or

stomach leading to death within 7 – 10days if not treated. The disease can be treated by antibiotic treatment, vaccination, routine infant immunization etc.

Challenges of Disease Control and Management in Nigeria

Nigeria has a developing country is faced with major health problems such as the spreading of communicable and infectious diseases and lack of basic health care facilities. The inadequate and challenges in programs designed to effectively combat the spread of communicable disease and numerous health problems in Nigeria have led to little improvement in health sector and reduce overall life expectancy at birth to 54years (Mohammed *et al.,* 2017, p. 6).

The World Health Organization (WHO) Status Report on non-communicable diseases listed Nigeria and other developing countries in Africa, South America and Asia as the worst hit with deaths from non-communicable disease (Bolaji, 2016). The efforts of the Nigeria Government to effectively control and manage communicable disease is being hindered by numerous challenges, which include, among others;

1. **Shortage of Health Workers:** One of the major challenges of disease control and management in Nigeria is a dire shortage of health workers as a result of economic and social brain drain that are well documented. As at May 19, 2022 no fewer than 727 medical doctors trained in Nigeria have relocated to the United Kingdom (Tolu-Kolawole, 2022) According to the Public Health Foundation of Nigeria report of 2016 cited by Mohammed *et al.,* (2017), the country has only 27 physicians per 100,000 people. The shortage of health workers in Nigeria has proved difficult for people to access health care services as over 70% of doctors are in the urban area where only 48% of population reside, leaving 52% of the population who reside in the rural area at the mercy of inadequate health workers (WHO, 2011). This uneven distribution of health personnel between the urban and rural areas due to shortage of health workers has hindered the control and management of diseases whose outbreaks are mostly in the rural areas.
2. **Inadequate Public Health Funding:** Over the years, health care financing in Nigeria has been described as inadequate with budgetary allocation to health sector barely exceeding 7% of the nation's total budget (Adebisi *et al.,* 2020, p. 2). The lack of commitment to

adequate financing of Health care financing in Nigeria was clearly evident in the allocation to the sector in the 2022 federal budget. A paltry amount of 4.34% of the entire budget was allocated to health financing. The allocation clearly falls below the Abuja Declaration of April 2001 of allocating a minimum of 15% of national budget to health (Uzochukwu *et al,* 2015). Poor funding of the Health sector in Nigeria has hindered access to health care services by the people due to obsolete equipment, lack of drug, expensive care services and inability to achieve the core objectives of the revised national health policy. Inadequate public health funding has prevented prompt responses to outbreaks of infectious diseases and it making its control and management quite challenging.

3. **Lack of Effective and Efficient Emergency Response and Disease Prevention System:** The National Emergency Response and Preparedness Team constituted by the Federal Ministry of Health (FMoH) Nigeria in recognition of the importance of disease prevention and control has not achieved any tangible result in recent years due to poor planning and logistics. Every year, Nigeria records an outbreak of infectious disease across the 36 states of the federation, killing people in their thousands (Bolaji, 2012). The lack of proper planning and logistics on the part of the National Emergency Response and Preparedness Team has hindered effective and efficient disease control and management in Nigeria. According to WHO (2011), cholera outbreak in Nigeria is anticipated to three to 5 million instances yearly with 100,000 to 150,000 deaths yearly.
4. **Corruption:** One of the major challenges of disease control and management in Nigeria is corruption and misappropriation of resources meant for health financing. Despite the fact that the annual budgetary allocation to Health financing is inadequate, from 2003 – 2019, Nigeria has acquired Worldwide International Budget to combat AIDs, Tuberculosis and Malaria to the tune of US $ 2.3 billion in grant (Kalu, 2021). These grants are expected to bridge the financing gap in Nigeria, but unfortunately, some of these funds have not been properly utilized for the improvement of the citizen's health status (Bolaji, 2016) and control and management of communicable diseases. According to Onwujekwe (2020) the discussion study, which was released on May 4th, 2020, highlighted 49 top corrupt practices in the Nigeria health system, including absenteeism, corruption in procurement, under-the-counter payments, corruption in health financing,

and corruption in employment. The huge corruption within side the Health sector of the federal and state governments has hindered disease control and management in Nigeria.

5. **Health Illiteracy and Poverty:** Low degree of health literacy and poverty had been identified as the two major challenges facing the control and management of infectious disease in Nigeria. At the commemoration of the World Tuberculosis Day 2017, a consultant microbiologist, Dr. Mutiu Bamidele of the Lagos State University Teaching Hospital (LASUTH), Ikeja, Lagos State, Nigeria observed that most people who are infested with communicable disease are not always aware of the symptoms of such disease due to low level of health illiteracy, and when they do, they lack financial resources to seek proper medical attention (NAN, 2017). Constrained or inadequate health literacy turned into related to decreased adoption of protective behaviours along with immunization, and an inadequate knowledge of antibiotics. Health literacy is key elements to the control and management of disease (Castro-Sanchez & Holmes, 2015).

The Challenges of State and Local Governments in Control and Management of Diseases in Nigeria

The provision of health care in Nigeria remains the function of the three tiers of government namely, the federal, state and local government, likewise within side the control and management of diseases. The State Ministries of Health are anticipated to offer support for the number of primary health care (PHC) facilities controlled throughout by the 774 local government areas in the provision of health care as well as control and management of communicable disease (Omoruan *et al.*, 2009). The secondary health care system is managed by the ministry of health at the state level, and patients at this level are often referred from the primary health care (Menizibouja, 2011).

Primary health care plan launched on August 1987 by the Federal Government of Nigeria amongst important objectives to promote treatment, control and prevention of epidemic diseases (Awosika, 2005). Local government monitors and coordinates the activities of primary health care (PHC) facilities to ensure that best practices are followed at all times. They serve as a first point of contact for patients at community level, thereby facilitating the realization of Universal Health Care delivery. The World Health Organization in its report on Universal Health Care

mentioned that Primary Health Care is the most efficient and cost-effective way to achieve universal health coverage around the world and prevention of communicable diseases (WHO, 2019).

Control and management of diseases by Federal Government and its agencies alone can not be successful without the collaborative efforts both the state and local governments. More than strategies are needed to address the frequent outbreak and unfold of infectious diseases in Nigeria. State and local governments can play a role in dealing with these problems with closely coordination of effective programmes by Federal Health Agencies. Unfortunately, the state and local governments on which the Nigeria health care system was built have not helped in effectively controlling of the spread of communicable diseases in Nigeria (Muhammed *et al.*, 2017). The Nigeria Primary Health Care Policies (2010) observed that the diverse health reforms geared toward eradication of communicable diseases recommended through the federal government are yet to be carried out at state and local government levels.

The Alliance for Health Policy and Systems Research (2016) cited in Adebisi *et al.*, (2000) noted that allocation to primary health care services are grossly inadequate, and this explains reasons for the deplorable conditions of most state government hospitals and primary health care (PHC) facilities across many states and local governments in Nigeria. In a lots of states of the federation, the non-release of fund for each recurrent and capital budget has led to significant poor implementation of programme activities with local government areas most affected (Uzochukwu, 2017). Disease control and management has been most affected with low level of financial allocation to the health sector beyond payment of salaries of medical staff, despite the National Health Policy Guidelines to all three tiers of government to prioritize resource allocation in favour of preventive health services and primary health care (PHC) for control and management of communicable diseases.

Insufficient State General Hospitals and Primary Health Care (PHC) facilities in nearly all local governments and communities in some states have hindered the control and management of communicable diseases which are more pronounced in rural areas. The Primary Health Care facilities are primarily to serve the health care services of the rural dwellers, while the secondary health care systems provided by state governments serve as referred to primary health care in term of emergencies. However, the inadequate of both primary and secondary health care

facilities across many states in Nigeria has contributed to inability of government at all levels to effectively control and prevent outbreaks in the country.

Uzochukwu (2007) observed that epidemiology units of the Federal and State Ministries of Health, National Centre for Disease Control and Surveillance and notification units of LGAs are the notable structure for identifying, measuring and responding to tracking diseases through the usage of the surveillance and notification reporting device from local government to the state and federal level. However, they pointed out that due to inadequate surveillance and reporting systems, weak network structure, and outbreaks of infectious diseases, both the state and local governments have had difficulty managing and controlling these diseases.

The Nigeria National Health Conference statement from 2009 states that the country's incapacity to manage and control infectious diseases has been exacerbated by a lack of clarity regarding roles and responsibilities among the various levels of government to have compounded the situation of inability to control and manage infectious diseases in Nigeria. The Nigeria Emergency Response and Preparedness team constituted by the Federal Ministry of Health for the purpose of disease prevention and control and the Department of Public Health which is responsible for disease prevention and control under the Federal Ministry of Health has now no longer helped state and local governments within side the control and management of diseases in Nigeria.

The primary health care centres at the local government level are rather dominated by community health extension workers (CHEWs) and junior community health extension workers, who make up 36.8% of all care providers at the Primary Health Care level (Uzochukwu, 2017). These sets of workers are not properly trained to handle outbreaks at the local level. Also, almost all state government hospitals are short of doctors and nurses to offer health care services to rural communities owing to brain drain. The shortage of qualified medical personnel has contributed to the frequent outbreaks and spread of communicable diseases at local level.

Studies have shown that most health workers detest rural life owing to lack of fundamental facilities consisting of everyday deliver of regular supply of electricity, water facilities, good road network etc. subsequently they lack preference to work in primary health care (PHC) located in rural areas. Apart from the fact that most of primary health care (PHC) facilities are under fund, poor quality of care and performance and inadequate supply of drugs, which are

considered a constraint to service delivery (Obembe *et al.,* 2014). These factors have negative impact on job satisfaction, staff performance and health service delivery, and consequently lead to ineffective control and management of diseases at the local level.

The linkage among State Ministries of Health who are expected to offer secondary care facilities and primary health care (PHC) provided by the local government are perceived to be weak in Nigeria. Consistent with Uzochukwu, (2017) secondary care facilities in numbers of states of Nigeria do not function efficaciously, with implication for linkage with primary health care facilities in term of initiating a referral to a receiving facility and producing a feedback has made prevention and management of disease through the state and local governments problematic.

Conclusion

The Nigerian health care had suffered numerous infectious disease outbreaks in current times. Disease control and management are poorly developed and have suffered backdrops, especially at the state and local government levels. Insufficient funding, scarcity of medical personnel, insufficient medical infrastructure, negative guidelines implementation, susceptible linkage among the state provided. Secondary and primary health care facilities, and poor medical intelligence and surveillance to monitor outbreaks of communicable diseases which occurrence are more pronounced at the rural communities. To achieve success in disease control and management in Nigeria, most especially with combine efforts of the state and local governments, the following recommendations are suggested for government at all levels, stakeholders in health sector and healthcare practitioners.

1. Government at different levels should as a matter of urgency give higher priority to health financing of their budget allocation to bridge the gap in insufficient investment of the health sector.
2. Holistic technique should be made to deal with the wave of brain drain affecting the health sector which has significantly reduce the ration of doctor to patient as recommended by the World Health Organization. Insufficient health personnel have hindered effective control and management of disease in Nigeria.
3. Medical infrastructure should be provided by government at all levels and more medical personnel be employed especially at the Primary Health Care (PHC) Centers in the direction of realizing the goals of removing common outbreaks in Nigeria.

4. Functional surveillance and medical intelligence be developed by the Federal Ministry of Health in conjunction with State Ministries of Health to powerfully monitor outbreaks and develop preventive mechanism.
5. Massive health campaign and awareness should be carried out at the rural community which studies have identified as hotspot of outbreaks on hygiene living conditions. Most of these communicable diseases are traceable to poor living condition of the people, hence sensitization should be carried on how people could improve their living conditions.
6. For a better understanding of disease control and management in Nigeria, more researches on the issue are highly recommended.

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