REPUBLIC OF GHANA

National Preparedness and Response Plan

for the Prevention and Control of

Ebola Viral Disease

August 2014

Acronyms

CBOs	Community-Based Organizations
CDC	Centers for Disease Control
CEPS	Customs, Excise and Preventive Service
DCC	District Coordination Committee
DSD	Disease Surveillance Department
DTCC	District Technical Coordinating Committee
EVD	Ebola Viral Disease
FAO	Food and Agricultural Organization
GHS	Ghana Health Service
GRCS	Ghana Red Cross Society
ICD	Institutional Care Division
MDAs	Ministries, Departments and Agencies
MOH	Ministry of Health
NADMO	National Disaster Management Organization
NCC	National Coordinating Committee
NMIMR	Noguchi Memorial Institute for Medical Research
NTCC	National Technical Coordinating Committee
PH	Public Health
PHD	Public Health Division
PHRL	Public Health Reference Laboratory
PPEs	Personal Protective Equipment
SOPs	Standard Operating Procedures
UN	United Nations
VHF	Viral Haemorrhagic Fevers
WHO	World Health Organization

Acknowledgement

The contributions of the Chair- persons and Members of each of the five thematic area working groups is highly appreciated. The active participation of the staff of the UN agencies is acknowledged and appreciated. We are particularly grateful to the WHO Country Representative, Dr. M. Robalo for her personal interest, commitment and technical inputs towards the development of this plan. We are equally grateful to CDC Country Director, Dr. Celia Woodfill for her support and provision of the needed technical material to enrich this document. The invaluable contributions of representatives from Forestry Commission (Wildlife), Veterinary Services, NADMO, Noguchi Memorial Institute of Medical Research and US Naval Research Unit (NAMRU3), the Military, the Police and other stakeholders is as well acknowledged. The last but not the least, we are grateful to the Director General of the Ghana Health Service and his team and Directors from the Ministry of Health for their immense contribution to the development of this plan.

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EXECUTIVE SUMMARY

Ghana Preparedness and Response Plan for Ebola Viral Disease, August 2014

1. Background

Ebola Virus Disease (EVD) outbreak began in Guinea in December 2013 and the World Health Organization (WHO) was notified in March 2014. Transmission is currently ongoing in Guinea, Liberia, Nigeria and Sierra Leone. As of 2 August 2014, 1619 cases and 891 deaths have been reported. According to WHO, as of 9 August 2014, a total of 1848 cases and 1013 deaths have been reported. These numbers include laboratory-confirmed, probable, and suspect cases and deaths of EVD. Guinea reported 506 cases and 373 deaths; Liberia reported 599 cases and 323 deaths; Nigeria 13 cases and 2 deaths; Sierra Leone, 730 cases and 315 deaths. This is the largest EVD outbreak ever recorded. WHO has declared the EVD outbreak a Public Health Emergency of International Concern (PHEIC); an extraordinary event that poses a public health risk to other States; an emergency whose possible consequences of further international spread are particularly serious in view of the virulence of the virus, the intensive community and health facility transmission patterns, and the weak health systems in the currently affected and most at-risk countries. Therefore, a coordinated international response is deemed essential to stop and reverse the international spread of Ebola. This being the first ever EVD outbreak in West Africa, there is lack of experience and limited capacity among health care workers in particular (e.g. suboptimal care and suboptimal infection prevention practices) and national institutions in general for mounting a rapid and effective response.

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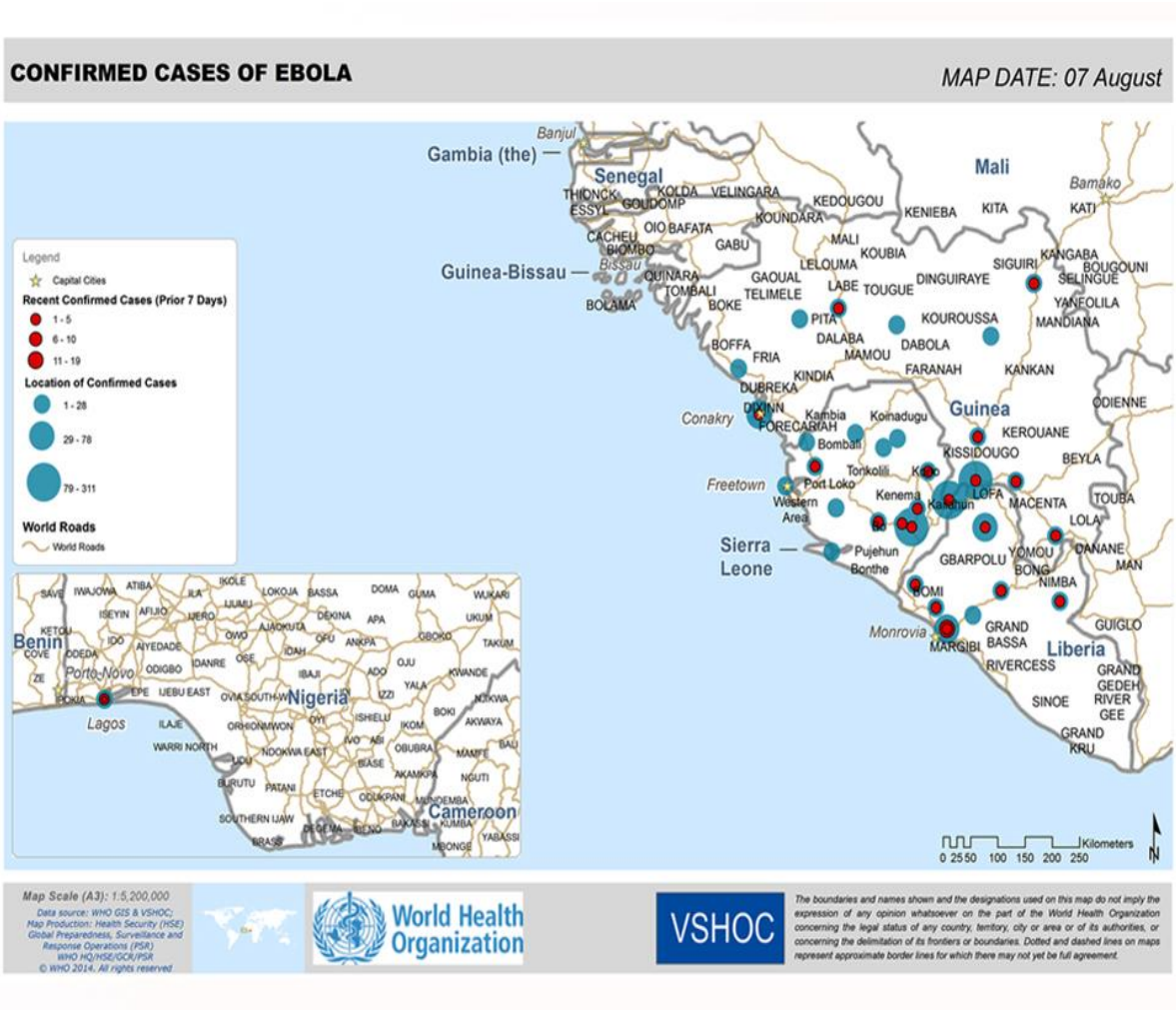

2. What is the risk to Ghana and why do we consider EVD outbreak a national security threat?

Ghana has a peculiar risk in view of the combination of a varied number of factors which have the potential to facilitate importation of the virus and trigger an outbreak:

- Intense traffic between Ghana and Nigeria and Ghana and Liberia, as well as with neighboring countries and close and far away continents. It is estimated that an average, 30 flights land at and depart from the Kotoka International Airport on a daily basis, transporting between 4,000 to 10,000 passengers on a daily basis.
- Air, land and sea border crossing are frequent . An estimated 57 approved entry points are used daily, and the number of unauthorized crossing points is estimated to be higher than the approved ones.
- Numerous bus terminals transport people from within and outside Ghana on a daily basis.Swift cross travel around the world further complicates surveillance of passengers's original country of departure.

- Ghana has weak health systems, with majority of doctors concentrated in Greater Accra region. The surveillance system is also weak, with challenges identified in collection, analysis and reporting of data and intelligence. There are several harmful Cultural practices related to health care seeking practices.
- EVD initial symptoms similar to common diseases such as malaria
- Communities with relatives from affected countries (refugee camps)
- Economic and security implications and impact (e.g. in Guinea it is estimated that the economic growth will decrease by a percentage point due to the EVD outbreak)
- Ghanaian troops stationed in Liberia and will be coming home soon
- High number of Hajj pilgrimage with as many as 5,000 to 6,000 pilgrims per year
- Ghanaian fishermen returning from affected countries

3. Preparedness and response goals/objectives:

    a. Strengthen active surveillance, early detection, investigation and reporting capacity
    b. Ensure adequate supplies for reliable laboratory diagnostic capacity
    c. Enhance public information and education and social mobilization
    d. Provide prompt and effective case management and psychosocial support
    e. Protect the health of health care workers involved
    f. Reinforce infection prevention and control capacities
    g. Ensure effective coordination of preparedness and response activities at all levels

4. Key Intervention Areas (to be grouped according to each goal, indicating what is in place and what is the gap)

There are key intervention areas that require urgent attentions that need to be addressed. These are as follows:
Key interventions outlined in our detailed preparedness and response plans include the following underlisted.
Health education/social mobilization

- Screening at points of entry
- Isolation of suspected, probable and confirmed cases
- Diagnosis and confirmation of cases
- Case management

- Contact tracing
- Burial and safe disposal of death from Ebola virus disease
- Psychosocial support for the cases and the relatives
- Social Mobilization

Detailed plan available.
Estimated to cost about 25 million Ghana cedis ¢25,000,000.00

Points of entry

There are numerous border crossing points. The ground crossing points are many and there are numerous points that are not manned. These are Kotoka International Airport, 56 land borders / ground crossing with Elubo, Aflao and Paga being the major routes and the sea borders are Tema and Takoradi are the major points of entry

There are measures for screening at the borders / points of entry. The resources needed to manage the entry borders are:

- Staff for public health issues and case management
- Resources for screening (material and logistic)
- Isolation unit
- Quarantine facilities contacts of cases
- Ambulance on standby at the heavy entry points and the regions

Detection of suspected cases, investigation, and case diagnosis

Measures for detection of suspected cases, investigate, and make diagnosis is about three million Ghana cedis (¢3,000,000.00)
The airport clinic is capable of isolating suspected cases, collecting blood samples and transfer to Noguchi Memorial Institute for Medical Research. Dedicated ambulance is needed for transfer of cases and also the need for holding places. Similar logistics are required to be established in other entry points.

Contact tracing

Contact tracing would require about two million cedis (¢2,000,000.00)
Tracing of all the contacts of cases is crucial for early case detection, and timely containment of secondary and tertiary cases. Contact tracing form available (forms contain personal identification, place of residence, signs and symptoms and contact of cases
There are community health nurses and disease control officers in the districts and municipality. Where the case was picked these staff would be those to do the contact tracing.
Disease control officers would be in the lead for the process. The resources needed for to undertake these activities include the following:

- Staff
- Transport and other logistics
- Data capture and data management

Isolation for case management, treatment centres

Measures need be put in place to get places of isolation for case management, treatment centres
All health facilities are requested to have isolation centres and also the regions require at least one treatment centre per region.
Three treatment centres at strategic areas – Accra / Tema area, Kumasi and Tamale
There is the need dedicated ambulances to transport confirmed cases to treatment centres and one standby ambulance per region.
We need to undertake simulation exercises to test our preparedness and response plans. This will be done in all the regions, districts, points of entry. Issues to be addressed include who commands operations if we have a case? At national – Director Public Health; Regions – Regional Director Health Services; response teams to be formed, trained and deployed.
Other logistics required include accommodation for health workers, how to support organization of shifts for health workers, how to provide links with heads of clinical care, prevention, infectious diseases

Isolation facilities

Major health facilities (Regional hospitals, district hospitals, poly clinics, teaching hospital) to establish areas for isolation of suspected cases

Treatment Centre

A number of dedicated treatment centres to be established, and all these required resources and indeed are resource intensive.
We need to strengthen infection prevention and control measures and these require more PPEs, and basic infection prevention and control (IPC) materials)
Consider mobile treatment centres
Source external assistance to establish treatment centres, including training, incentives for health workers, management of treatment centres

Safe burial practices

Burial practices that bring the community members in close contact of a person who died of ebola is a risk for further spread of the outbreak. Measures need be put in place for safe burial and disposal off soiled linen and other products. Appropriate methods of burial to be adopted. This include cremation, training of burial teams, procurement of products for burial and disposal off soiled linen. Role of the family, psychosocial support, legal considerations should all be appraised. We need to address cultural practices, and ensure supportive actions/Support system

We propose and plan to institutionalize monthly briefings with partners. Planning and Coordination meetings of the Inter-ministerial Committee and its technical working groups

(NCC and NTCC). Resources would be needed for data management, regular information to the public.

Security support and logistics

There is the need for security support to protect the cases, and logistics and other resources for management of cases and to protect the environment and keep people away from infectious areas.

Multiple scenarios need to be considered and appraised as detail as possible and this include detection of indigenous case, imported case, situation where one enters the country incubating (infected but not yet sick); person enters the country already with symptoms.

Public education, staff orientation and training

Separate target audience from means of communication we would use the following to conduct public education, general staff orientation and training of frontline staff to manage the cases are critical points.

Mass Media and Institutional channels would be used for public education and behavioural change communication. Other media of communication that would be used are the households, care takers of patients, personal and interpersonal communication, health workers, and schools. Establishment of call centers

Ebola poses serious public health and security threat, prepare and invest in its prevention and containment

Introduction and allowing Ebola to spread in the country has the tendency to disrupt all the socio-economic activities of the country. Business activities will come to a standstill, productivity would be severely affected and lives would be lost.

We need to be well prepared and on high alert

Investment in strengthening the health system, looking beyond Ebola

LOGISTICS REQUIREMENT FOR GHANA PREPAREDNESS AND RESPONSE PLAN FOR EBOLA VIRUS DISEASE

Thematic Area	**Logistics/Items Required**
• Screening at points of entry	• Non-contact / walk through thermometers • Hand Held Thermometers • PPEs (gowns, goggles, gloves, masks, boots) • Health Declaration Forms • Trained and motivated staff • Ambulance

• Isolation of suspected, probable and confirmed cases	• Isolations Units in each region • Thermometers, Sphygmomanometers, Stethoscopes • Disinfectants - Bleach • Print Case definitions, Case-investigation, contact tracing and recording forms • Trained and motivated staff • Ambulance
• Diagnosis and confirmation of cases	• Laboratory reagents including Primers • PPEs (gowns, goggles, gloves, masks, boots) • Mobile Lab from WHO • Trained and motivated staff
• Case management	• Procure and pre-position medicines and non-medicines (Bleach, Hand sanitizer, IV Fluids, Analgesics, Antimalarials, Antibiotics etc) • PPEs (gowns, goggles, gloves, masks, boots) • Print SOPs guidelines on IPC, for burials, treatment protocol and algorithms on clinical diagnosis • Trained and motivated staff • Ambulance
• Contact tracing	• PPEs (gowns, goggles, gloves, masks, boots) • Bleach • Trained and motivated staff • Pickups and motorbikes
• Burial and safe disposal of death from Ebola virus disease	• PPEs (gowns, goggles, gloves, masks, boots) • Disinfectants / Bleach • Trained and motivated staff • Cremation cost
• Psychosocial support for the cases and the relatives	• Trained and motivated staff • Operational cost for movement and sustenance
• Social Mobilization	Printing of IEC Material (Posters, key messages, leaflets, banners Posters, Flyers) Airtime Develop Audio message TV and radio announcements

1.0. Introduction

Ebola haemorrhagic fever first appeared in 1976 in two simultaneous outbreaks, in Nzara, Sudan, and in Yambuku, Democratic Republic of Congo (DRC). The latter was in a village situated near the Ebola River, from which the disease takes its name. The Ebola virus belongs to the Filoviridae family (filovirus) and is

comprised of five distinct species: Zaïre, Sudan, Côte d'Ivoire, Bundibugyo and Reston. Zaïre, Sudan and Bundibugyo species have been associated with large Ebola haemorrhagic fever (EHF) outbreaks in Africa with high case fatality ratio (25–90%) while Côte d'Ivoire and Reston have not.

Information from the World Health Organization (WHO) indicate confirmed outbreak of Ebola Virus Disease in Guinea and neighbouring countries. As of 2 April 2014, a total of 134 suspected cases including 84 deaths (case fatality ratio 62.6%) had been reported from 6 districts including Conakry the capital of Guinea. The Ministry of Health and Social Welfare (MOHSW) of Liberia has also reported seven (7) suspected cases including three deaths and confirmed two (2) as of 31 March, 2014. Sierra Leone has identified 2 suspected cases, both of whom died. Both suspected cases reported by Sierra Leone had travelled to Guinea before the onset of the illness.

This plan would guide the multi-sectoral response in Ghana to the threat of Ebola Virus Disease outbreak and covers the objectives, key activities with time frame and a budget.

4.0. Budget

Thematic Area	Logistics/Items Required	QUANTITY	UNIT COST	TOTAL COST	COMMENTS
Screening at points of entry	Non-contact / walk through thermometers (Thermal scanner)	1	50,000	50,000	Immediate
	Hand Held Infrared Thermometers	20	700	14,000	Immediate
	Health Declaration Forms	50,000	5	250,000	Immediate
	Subtotal GHC			314,000	
Isolation of suspected, probable and confirmed cases	Refurbishment of Isolations Units in each region	10	20,000	200,000	Immediate
	40 footer isolation unit	3	900,000	2,700,000	Immediate
	Thermometers digital	2,000	25	50,000	Immediate
	Thermometers mercury	2,000	500	1,000,000	Immediate
	Stethoscopes	2,000	250	500,000	Immediate
	BP Apparatus digital	2,000	100	200,000	Immediate
	BP Apparatus mercury	2,000	150	300,000	Immediate
	Weighing scale	2,000	50	100,000	Immediate
	Bed	100	500	50,000	Immediate

Thematic Area	Logistics/Items Required	QUANTITY	UNIT COST	TOTAL COST	COMMENTS
	Blanket	4,000	50	200,000	Immediate
	Bed sheets	4,000	50	200,000	Immediate
	Macintosh	4,000	10	40,000	Immediate
	Bed Pan	2,000	30	60,000	Immediate
	Bed side Cabinet	100	250	25,000	Immediate
	Disinfectants - Bleach (0.5%)	1,500		-	
	Disinfectants - Bleach (1%)	1,500		-	
	Print Case definitions	100,000	2	200,000	
	Print algorithm (A 3 Size)	10,000	5	50,000	
	Print Case-investigation forms,	100,000	2	200,000	
	print contact tracing	20,000	2	40,000	
	Print recording forms	20,000	2	40,000	
	Print SOPs for case management	10,000	20	200,000	
	Print SOPs for lab	5,000	20	100,000	
	Print WHO manual for case management	10,000	30	300,000	
	Mobile isolation van	3	750,000	2,250,000	
	Ambulance	5	250,000	1,250,000	
	Subtotal GHC			10,255,000	

Thematic Area	Logistics/Items Required	QUANTITY	UNIT COST	TOTAL COST	COMMENTS
Diagnosis and confirmation of cases	Laboratory reagents including Primers (kit to do 40 patients samples)	75	6,000	450,000	Immediate
	Laboratory equipments	1	100,000	100,000	
	PPEs (gowns, goggles, gloves, masks, boots)	10,000	500	5,000,000	
	Mobile Lab from WHO	3	500,000	1,500,000	
	Courier Services	2,000	50	100,000	
				7,150,000	
Case management	Procure and pre-position medicines (IV Fluids, Analgesics, Antimalarials, Antibiotics etc)	1	100,000	100,000	
	Procure and pre-position non-medicines (Hand sanitizer, guaze, cotton wool, plaster, giving set, tourniquet)	1	100,000	100,000	
	Pickups	7	150,000	1,050,000	
	Motorbikes	100	5,000	500,000	
				1,750,000	
	Cremation cost	1,000	2,000	2,000,000	

Thematic Area	Logistics/Items Required	QUANTITY	UNIT COST	TOTAL COST	COMMENTS
	Cremation Plant	3		-	
	Subtotal GHC			2,000,000	
Public education and Social mobilisation	Printing of IEC Material (Posters, key messages, leaflets, banners Posters, Flyers, stickers)	5	100,000	500,000	Immediate
	Bill boards	50	10,000	500,000	Immediate
	T-Shirts	10,000	15	150,000	
	Placement of adverts (Print)	100	1,500	150,000	
	Develop Video spots	50	3,000	150,000	
	Develop Audio message spots with jingles	100	1,500	150,000	
	TV and radio announcements with jingles	100	3,000	300,000	
	Advocacy session	60	5,000	300,000	
	Special media engagements	10	5,000	50,000	
	Subtotal GHC			2,250,000	
Training	National and Regional Training of trainers (TOT) (5 per Region + 15 at HQ)	65	1,000	65,000	Immediate
	District Trainings	1,080	1,000	1,080,000	Immediate

Thematic Area	Logistics/Items Required	QUANTITY	UNIT COST	TOTAL COST	COMMENTS
	Orientation for non-medical staff (Security, Orderlies)	12,960	100	1,296,000	Immediate
	Training of ambulance staff	648	1,000	648,000	Immediate
	Subtotal GHC			1,145,000	Immediate
Contact tracing and follow-up	Follow-upsuspected cases at community level	20,000	500	10,000,000	
				-	
Operational cost for movement and sustenance	Fuel	1,000			
	outbreak investigation	300	1,000	300,000	
	Monitoring and supervsion	30	1,000	30,000	
	TOTAL GHC			**35,194,000**	

INTRODUCTION

1.1. Brief Country Profile

Ghana is located in West Coast of Africa. It shares boundaries with Togo to the east, la Cote d'Ivoire to the west, Burkina Faso to the north and the Gulf of Guinea, to the south. The country lies between Latitude: 5 degrees, 36 minutes north and Longitude: 0 degrees, 10 minutes east. The coastline**:** 539 km and an a**rea** -total area of 238,540 km2 with land area of 230,020 km2.

Figure 1: Map of Ghana: Showing Location

Half of the country lies less than 152 meters (500 ft.) above sea level, and the highest point is 883 meters (2,900 ft.). The 537-kilometer (334-mi.) coastline is mostly a low, sandy shore backed by plains and scrub and intersected by several rivers and streams, most of which are navigable only by canoe. A tropical rain forest belt, broken by heavily forested hills and many streams and rivers, extends northward from the shore, near the Cote d'Ivoire frontier. This area, produces most of the country's cocoa, minerals, and timber. North of this belt, the country varies from 91 to 396 meters (300-1,300 ft.) above sea level and is covered by low bush, park-like savannah, and grassy plains.

The climate is tropical. The eastern coastal belt is warm and comparatively dry; the southwest corner, hot and humid; and the north, hot and dry. There are two distinct rainy seasons in the south-May-June and August-September; in the north, the rainy seasons tend to merge. A dry, north-easterly wind, the Harmattan, blows in January and February. Annual rainfall in the coastal zone averages 83 centimeters (33 in.).

The manmade Volta Lake extends from the Akosombo Dam in south-eastern Ghana to the town of Yapei, 520 kilometers (325 mi.) to the north. The lake generates electricity, provides inland transportation, and is a potentially valuable resource for irrigation and fish farming.

The country has an estimated population of about 24,233,431(2010 Population and Housing Census) with an average population density 102 (varying from 1,205 per km2 in Greater Accra Region to 35 per km2 in the Northern Region. There are over one hundred ethnic groups - each with its own unique language. English, however, is the official language, a legacy of British colonial rule.

The country is divided into ten administrative regions and 170 decentralized districts. The government is a presidential democracy with an elected parliament and independent judiciary.

Figure 2: Map of Ghana: Administrative Regions and Capitals

The principal religions are Christianity, Islam and Traditional African.

Economy

Ghana's economy has a dominant agricultural sector (small scale peasant farming) absorbing 55.8% (Ghana Living Standards Survey 5) of the adult labour force, a small capital intensive mining sector and a growing informal sector (small traders and artisans, technicians and businessmen).

Health

Life expectancy is estimated at 56 years for men and 57 years for women, while adult literacy rate (age 15 and above) stands at 65%.

The mission of the Ministry of Health is to contribute to socio-economic development and wealth creation by promoting health and vitality, ensuring access to quality health, population and nutrition services for all people living in Ghana and promoting the development of a local health industry. This mission puts the concept of health beyond the confines of curative care to other socio-economic determinants of health.

The poor environmental conditions that Ghanaians live in, work and go to school has a major impact on their well-being. The poor air, water and soil quality in the country due to improper disposal of waste, emission of dangerous gases from industries and vehicles, and smoke from burning of waste and bush fires pose serious threat to public health. Despite this situation, the measures for controlling

these problems have not been effective. Infrastructure for waste management has not kept pace with the population growth. Only a third of the waste produced in the urban centers are collected leaving the rest to pollute the environment. Access to potable water is also a problem. Less than half of the population in the country has access to potable water, leaving the rest to streams and rivers, which are often contaminated with organic and inorganic substances. The situation is much pronounced in communities located around mining areas where well known substances such as Cyanide flow to pollute water bodies. Thus our poor life style and environmental factors manifest in a high level of morbidity and mortality trends in the country most of which are preventable.

As most developing countries, Ghana can be described as being in epidemiologic transition characterised by high burden of infectious (communicable) diseases, rising incidence of non-communicable diseases, slow but gradual reduction in child mortality, and an ageing population. Even though Malaria accounts for about 30-40% of outpatient visits and about 20% of all deaths in the country, epidemic prone diseases continue to be major public health problems. Frequent outbreaks of Cholera, Cerebra-spinal meningitis and Yellow fever are among the top causes of deaths and disability each year. Other emerging diseases of epidemic potential that pose serious health security include SARS (2003), Avian Influenza (2005-2006), Pandemic H1N1 2009, (2009-2010), Lassa fever (2012) and currently evolving outbreaks of Ebola Viral Disease

2.0. Ebola Viral Disease

The Ebola virus belongs to the Filoviridae family (filovirus) and is comprised of five distinct species: Zaïre, Sudan, Côte d'Ivoire, Bundibugyo and Reston.
Ebola first appeared in 1976 in two simultaneous outbreaks, in Nzara, Sudan, and in Yambuku, Democratic Republic of Congo (DRC). The latter was in a village situated near the Ebola River, from which the disease takes its name.

Epidemiology

Ebola haemorrhagic fever (EHF) is a febrile haemorrhagic illness which causes death in 25-90% of all cases. The Ebola virus is comprised of five distinct species: Bundibugyo, Ivory Coast, Reston, Sudan and Zaire.

Natural host of Ebola virus

In Africa, fruit bats, particularly species of the genera *Hypsignathus monstrosus, Epomops franqueti* and *Myonycteris torquata*, are considered possible natural hosts for Ebola virus. As a result, the geographic distribution of Ebolaviruses may overlap with the range of the fruit bats.

Ebola virus in animals

Although non-human primates have been a source of infection for humans, they are not thought to be the reservoir but rather an accidental host like human beings.

Transmission

Ebola is introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of infected animals. In Africa, infection has been documented through the handling of infected chimpanzees, gorillas, fruit bats, monkeys, forest antelope and porcupines found dead or ill in the rainforest.

Later Ebola spreads in the community through human-to-human transmission, resulting from close contact with the blood, secretions, organs or other bodily fluids of infected people. Burial ceremonies where mourners have direct contact with the body of the deceased person can also play a role in the transmission of Ebola. Transmission via infected semen can occur up to seven weeks after clinical recovery.

Health-care workers have frequently been infected while treating Ebola patients. This has occurred through close contact without the use of correct infection control precautions and adequate barrier nursing procedures. For example, health-care workers not wearing gloves and/or masks and/or goggles may be exposed to direct contact with infected patients' blood and are at risk.

Signs and symptoms

EHF is a severe acute viral illness often characterized by the sudden onset of fever, intense weakness, muscle pain, headache and sore throat. This is followed by vomiting, diarrhoea, rash, impaired kidney and liver function, and in some cases, both internal and external bleeding. Laboratory findings show low counts of white blood cells and platelets as well as elevated liver enzymes. People are infectious as long as their blood and secretions contain the virus. Ebola virus was isolated from seminal fluid up to the 61st day after the onset of illness in a laboratory acquired case.

The incubation period (interval from infection to onset of symptoms) varies between 2 to 21 days. During EHF outbreaks, the case-fatality rate has varied from outbreak to outbreak between 25% and 90%.

Diagnosis

Differential diagnoses include, malaria, typhoid fever, shigellosis, cholera, leptospirosis, plague, rickettsiosis, relapsing fever, meningitis, hepatitis and other VHFs.
Ebola virus infections can only be diagnosed definitively in the laboratory by a number of different tests:

- enzyme-linked immunosorbent assay (ELISA)
- antigen detection tests
- serum neutralization test
- reverse transcriptase polymerase chain reaction (RT-PCR) assay
- virus isolation by cell culture.

Tests on samples from patients are an extreme biohazard risk and should only be conducted under maximum biological containment conditions.

Treatment and vaccine

Severe cases require intensive supportive care. Patients are frequently dehydrated and in need of intravenous fluids or oral rehydration with solutions containing electrolytes. No specific treatment or vaccine is yet available for EHF.

2.1. Current Situation

The emergence of the Ebola virus disease outbreak in Guinea, Sierra Leone and Liberia remains a serious PH concern, Primary and secondary viral transmissions continue to occur in both urban and rural communities. New cases and deaths attributable to Ebola virus disease (EVD) continue to be reported by the Ministries of Health in the three West African countries of Guinea, Liberia, and Sierra Leone and recently Nigeria
Between 31 July and 1st Aug 2014, 163 new cases of EVD, including 61deaths, were reported from the four WA countries, as follows:

- Guinea, 13 new case and 12 deaths
- Liberia, 77 new cases with 28 deaths;
- Sierra Leone 72 new cases and 21 deaths
- Nigeria 1 case and no death

These numbers include laboratory-confirmed, probable, and suspect cases and deaths of EVD

Cumulatively as of 9th August 2014 a total of 1,848 Cases including 1,014 deaths resulting in fatality rate of 54.9%.
The cases distribution are as follows:

- Guinea, 506 cases (362 confirmed) & 373 deaths;
- Liberia, 599 cases (158 confirmed) & 323 deaths;
- Sierra Leone, 730 cases (656 confirmed), & 315 deaths.
- Nigeria, 13 cases (0 confirmed), 10 probable, & 2 deaths;
- In Ghana as of 13 August 2014) a total of 45 suspected cases have been investigated and tested at the laboratory (Noguchi Memorial Institute of Medical Research and all tested negative to Ebola and other Viral Haemorrhagic Fevers

3.0. Framework For Preparedness and Response

This plan would guide the multi-sectoral response in Ghana to the threat of Ebola Virus Disease outbreak and covers the objectives, key elements of the plan including activities (with time frame) and a budget. It has been developed using a framework recommended by the WHO and FAO and is revised under five key thematic areas:

1. Planning and Coordination
2. Surveillance, Situation Monitoring and Assessment

3. Case Management
4. Social Mobilization and Risk Communication
5. Logistics, Security and Financial Resources

Although these themes provide a convenient framework to organize Ebola Virus Disease related activities, during implementation they may not be mutually exclusive, with some overlap in the actions.

3.1. General Objective

To improve on existing preparedness and response structures and mechanisms established to to effectively detect and manage any Ebola Virus Disease outbreak that may emerge in the country.

3.2. Key Elements of the Plan

Key elements of the plan are presented under the five thematic areas under the sub-headings: specific objectives/functions, structure/composition and activities.

3.2.1. Planning and Coordination

All planning and coordination activities will take place under the auspices of NADMO located within the Ministry of the Interior. NADMO is the recognized agency charged with the multi-sectoral management of responses to all disasters (including human health). NADMO was, for example, a key part of Ghana's comprehensive response planning during the outbreaks of SARS in 2003, Avian Flu in 2005 and Pandemic Influenza H1N1 in 2009.

Specific objectives and functions

- Providing high level political support for the development and implementation of the national Ebola Virus Disease plan
- Providing policy and strategic direction
- Ensuring involvement and commitment of all sectors
- Coordinating and providing enabling environment and resources for effective and efficient implementation of the plan

Structure

1. National Coordinating Committee

The existing National Disaster Committee of NADMO shall serve as the National Coordinating Committee (NCC) to perform the functions as spelt above.

Composition:

The committee shall consist of the following members:

- Minister of interior, who shall be the Chairman
- Representatives (not below the level of Chief Director) of the Ministries of Interior, Finance, Health, Food and Agriculture, Transport and communications, Information, Employment and Social Welfare, Local Government and Rural Development, Defence, Environment Science and Technology
- Development partners and the Resident Coordinator of the UN System shall be part of the committee
- The National Coordinator of NADMO shall be the Secretary to the Committee.

The committee shall meet as frequently as necessary to address the challenges of the threat of Ebola Virus Disease

2) National Technical Coordinating Committee

A technical sub-committee of the NCC, the National Technical Coordinating Committee (NTCC), shall be constituted to perform the following functions:

- Provide technical backup to NCC
- Plan and execute technical preparedness and response actions (surveillance, prevention/ containment/ health system's response and communication) for Ebola Virus Disease
- Monitor, provide technical support and evaluate performance

The NTCC shall consist of:

- Minister of Health, as Chairman
- Technical heads of all relevant MDAs, including Nuguchi Memorial Institute of Medical Research, the Military, Police, the private sector and the Ghana Red Cross Society
- WHO, FAO shall provide technical support to the NTCC
- The committee shall meet at least weekly initially or as determined by chairman

3. Regional and District Committees:

Similar structures shall be established to perform equivalent functions at different administrative levels. Regional Coordination Committee (RCC), Regional Technical Coordination Committee (RTCC) and District Coordination (DCC) and District Technical Coordination Committee (DTCC) are to be established using NADMO's existing structures in collaboration with Regional and District Administrations and relevant technical MDAs.

Summary of Key Actions: Planning and Coordination

1. Establishment and activation of NCC by/within NADMO as the high level overall coordinating agency for Ebola Virus Disease preparedness and response (this includes identification/allocation of resources necessary for the operation of the NCC).

2. Establishment of the NTCC of relevant technical partners by the NCC to take primary responsibility for planning and actual implementation of steps outlined by the preparedness and response plan (this includes identification/allocation of resources necessary for the operation of the NTCC).

3. Establishment and activation of regional and district coordinating bodies/committees by NADMO to coordinate and manage preparedness and response at those levels.

4. Establishment of a national operations center and regional and district operations centers consistent with the appearance of foci of infections within the country.

5. Advises the President on Ebola Virus Disease, and all actions implemented under the plan.

3.2.2. Surveillance, Situational Monitoring and Assessment

The purpose of epidemiological surveillance is early detection and confirmation of the outbreak, to identify all cases and contact subjects, to detect patterns of epidemic spread, to estimate the potential for further spread of the disease, and to determine the effectiveness of control measures.

Surveillance Objectives:
The first thematic area is surveillance, situation monitoring and assessment which has the following objectives:

- To put in place a sensitive surveillance system countrywide for early detection and appropriate response to Ebola Viral Disease (EVD)
- To build national and regional capacity for detection and adequately respond to new Ebola Viral Disease (EVD)
- To strengthen laboratory capacity to confirm suspected cases of Ebola Viral Disease (EVD)

Structure and Composition

The MOH shall be the lead sector ministry responsible for establishing systems for surveillance, situation monitoring and assessment activities of the outbreak in humans. The Disease Surveillance Department of Public Health Division shall co-ordinate the surveillance activities on behalf of the Ministry of Health. The structures of the Ghana Health Service from community to national levels shall be employed to investigate and respond to any rumours or suspected cases of Ebola Viral Disease (EVD).

At the community level, Community Based Surveillance Volunteers shall report any unusual events or rumours to sub-district and district health officers who will undertake initial investigations according to national IDSR guidelines and report to regional health directorate and national disease surveillance department. The Disease Surveillance Department will then inform the National Coordination Committee and the Minister of Health. Appropriate specimens shall be taken and transported to NMIMR using specified procedures. WHO shall then be informed and additional support requested as indicated.

Other MDAs such as Immigration, Port Health, Civil Aviation, Customs, Excise & Preventive Service, the private sector, environmental health etc. shall be part of the surveillance system. Game and Wildlife Services Department of Ministry of Land and Natural Resources the Veterinary Division of Ministry of Food and Agriculture shall use its structures to maintain surveillance in animals.

Activities

- Develop procedures for effective surveillance (case detection and hold up, notification and transport) at Points of Entry, Health Facilities and Communities
- Develop Passenger screening procedures (e.g. use of maritime declaration of health forms) at all Points of Entry
- Develop and make available case definitions, case-investigation, reporting and feedback forms and protocol for data management procedures
- Develop and distribute SOPs and protocols for sample collection storage and shipment (DSD ensure distribution to regions and districts);
- Strengthen capacities at all levels for collection, storage and transport of specimen, the minimal first step of Ebola Viral Disease (EVD) diagnostics
- Sample collection kit and transport media to be made available to regions and districts;
- Ensure immediate and weekly reporting for Acute Viral Haemorrhagic Fever, with zero reporting where applicable; using the fastest means of communication (email, phone calls etc.)
- Conduct IDSR training for National, Regional and District Rapid Response Teams, with an emphasis on Ebola Viral Disease (EVD);
- Conduct training for core health staff including HW at points of entry and orientation for other staffs, (using the IDSR framework) at all levels;
- Finalize and distribute educational resource materials on surveillance of Ebola Viral Disease (EVD) (e.g., case definition, fact sheets, specimen collection guidelines)

- Strengthen the services of the Disease Surveillance Department to serve as the focal point for data collection and storage and assist the dissemination of the information to all appropriate parties
- Develop procedures for active surveillance of wildlife: Bats, monkeys and other primates, antelopes, pigs etc
- Conduct active Ebola surveillance in wildlife (Monkeys and other primates, Bats, Antelopes, Pigs, etc.)
- Develop protocol for sample collection, packaging, storage and transport (Human)
- Provide and manage quarantine facilities at all Points of Entry and regions
- Reactivate Public Health Emergency Management Committees and Rapid Response Teams all levels (National, Regional, District)
- Conduct regular monitoring and supervision at all levels (Regional, District and Sub-districts)

3.2.3. Case Management

It is known epidemiologically that Ebola infection is not highly communicable and most patients infect a limited number of persons only or do not transmit the infection and that large outbreaks usually occur once cases enter health care system where hygiene standard is poor. Physical contact with skin and mucous membranes of patients is said to be responsible for most human transmissions. It is believed that a few individuals play a major role in transmission because of particularly high infectiousness or more frequent interactions in the community

The case management objectives:

1. To set up isolation facilities to manage cases
2. To ensure that clinicians have adequate information, knowledge and skill to be manage cases
3. To ensure that every district, regional and teaching hospitals have the capacity to take the appropriate specimen and send to designated laboratory centres for Ebola Viral Disease confirmation
4. To provide prompt and standard treatment for persons with VHF and reduce risk of transmission within health care settings
5. To stockpile medicines, non-drug consumables, protective equipment and other logistics for effective response

Case management structure and composition

The MOH is responsible for establishing and implementing systems for the prevention and containment of Ebola Viral Disease (EVD). The Case Management sub-committee shall be made up of Agencies in the Ministry of Health [GHS (PHD, ICD, PHRL), Korle-Bu Teaching Hospital, 37 Military hospital; National Ambulance Service, National Blood Service and NMIMR.

During an outbreak, Korle-Bu, Komfo Anokye, Tamale, Cape Coast Teaching hospitals, all regional and selected district hospitals, Military and Police Hospitals shall be supported as referral centres for management of EVD cases. The public,

private, faith-based health institutions, Red Cross/Crescent and security health care providers shall be part of the health system response and management.

In the regions, the selected facilities will have EVD Response Core Team trained to manage cases.
The Noguchi Memorial Institute for Medical Research (NMIMR) is designated as laboratory for diagnosis of suspected cases.
Whenever a suspected case is reported in a health facility, the appropriate isolation procedures shall be instituted, including infection control measures, barrier nursing etc using protective gears. The necessary specimens shall be taken and transported to NMIMR and appropriate management procedures instituted according to national treatment protocols. The Disease Surveillance Department shall immediately be notified even before confirmation of the reported case.

Key Activities

1. Designate, equip and operationalize isolation facilities at National, Regional and selected district level and all Points of Entry.
2. Develop, Print and Distribute the following Guidelines and Protocol
    a. Guidelines for Infection prevention and control measures
    b. Algorithm of patient flow in health facilities and referral
    c. Treatment protocol
    d. Fact sheets
    e. SOP for burial of the dead
3. Train health staff
    a. Select and train core clinical case management teams on Standard Operating Procedures (SOPs) regarding case management, treatment guidelines, infection prevention and control protocol, use of PPE, specimen collection and transport
    b. Conduct Orientation of General staff in health facilities
4. Strengthen infection control systems in all facilities
    a. Train health staff on guidelines for Infection Prevention and Control
5. Procure and supply medicines and non-drug consumables for case management
6. Dispose the dead bodies under strict supervision

3.2.4. Social Mobilization and Risk Communication

Goal
The main goal of this plan is to reduce the threat of an outbreak of Ebola in Ghana by addressing "at risk groups" and "at risk behaviours" among the Ghanaian population. The aim is to increase the level of knowledge on the causes, symptoms and modes of prevention of the disease including on what needs to be done if one suspects that they are ill with Ebola. As the strategy needs be of national scope with specific focus on key risk groups everybody in Ghana needs to be

knowledgeable of a possible outbreak of Ebola in the country, and as such the total population in communities, become crucial actors in responding to mitigate such an outbreak.

Specific Objectives

- To raise awareness on and build knowledge on pandemic influenza and other potential pandemic diseases
- To promote behavioural change which, will reduce the risk of transmission
- To ensure coordinated and consistent routine and emergency communication between authorities in all sectors, within and between government agencies, with other organizations and with the public

Structure and Composition

A Communication sub-committee shall be established with the Ministry of Information as the lead agency. Senior level representatives comprising Ministry of Information as Chair, NADMO, the Media, NCCE, OCHA, Health Promotion Department of MOH/GHS and WHO shall be the other members.
Similar structures shall be formed at different administrative levels.

Key Activities

The following actions would have to be taken in order to support the prevention and control activities being undertaken. These included the following:

1. Advocate for nationally coordinated action to address a comprehensive prevention strategy with an additional component looking into preparedness and response to;
2. Initially provide information
3. To address rumors and reduce panic, fear and stigmatization
4. Address key "at risk" audience groups (such as people who consume bat meat, antelope, monkeys and other primates in other words "bush meat", those who frequently travel across borders, those handling the sick and the dead – if the outbreak occurs in Ghana)
5. Address key "risk behaviours" (consumption/preparation of "bush meat", and other habits such as shaking hands, handling dead bodies, treating the sick etc)
6. To ensure that the communication strategy is participatory to ensure that individuals, communities, organizations and policy makers are all active partners in achieving the change at the various levels.
7. Strengthen capacity and skills of agencies and institutions responsible for Ebola response and prevention
8. Support the frontline health workers including other frontline partners at the district and regional levels with appropriate communication materials including audio visuals to enable them carry out targeted activities to

ensure that enough awareness is created about the disease to ensure that people minimise the risk of contracting and spreading the disease.

The priority behaviours that would be promoted are:

1. Avoid hunting, handling or eating "bush meat" such as bats, antelope, monkeys, gorillas, chimpanzees etc.
2. Washing hands with soap and plenty of water at key times (after coming home (from work, school, market etc.)
3. Treatment of Ebola during an outbreak
   - ✓ Report to the nearest health facility/ or stay at home and inform the nearest health facility, when you have any of the following symptoms along with a sudden onset of high fever
     - Vomiting
     - Diarrhoea
     - Headache
     - Skin rash and red eyes
     - Bleeding through the body openings, i.e eyes, nose, gums, ears and anus
   - ✓ Care givers to protect themselves and avoid direct contact with the bodily fluids of sick individuals and keep children away from sick family members and do not share utensils and clothes of sick family members
   - ✓ Traditional practices of touching, cleaning and caring for dead bodies to be avoided during an outbreak.

The main actors to be targeted as agents of change are:

1. Media
2. Households – All family members but particularly men and women and cares of the young. As them men engage in hunting while women engage in the handling and preparation of the meat.
3. Other contact/carers of patients ***(who are normally left out of education/ hygiene promotion activities)*** e.g. taxi drivers who transport the patients to the hospitals/health centres –
4. Schools – pupils, Teachers, SHEP Coordinators and Circuit Supervisors
5. Food vendors (Chop Bars), restaurants, hoteliers and chop bar operators/cafeterias
6. Market traders especially market women who sell food smoked meat or bush meat-both seaters and roamers
7. Hunters
8. Community leaders /chiefs and queen mothers /religious leaders /assembly men
9. Community Based organisations

10. Organisers of Funerals and durbars and other gatherings (particularly in light of the upcoming Easter celebrations
11. District Assemblies – health services /environmental heath

The Channels for the key messages are:

1. **Mass Media channels:** such as television, radio, printed press,
2. **Institutional channels:** including recognized public and private bodies such as the Government Ministries with outreach workers (e.g. MLGRD/EHSD, Ghana Health Service, Ministry of Education/GES, National Disaster Management Organisation etc), networks of development workers, NGOs, etc., for the dissemination of correct and timely information on Ebola towards a coordinated response including enforcement of regulations and by-laws.
3. **Social media channels:** such as the use of the Internet, SMS text messages etc.
4. **Socio-traditional and socio-cultural channels:** Opinion leaders (customary chiefs, queen mothers, religious leaders, notables, intellectuals, organized groups etc.) and other informal networks through the various forms and opportunities of traditional popular communication such as durbars, community/village meetings, collective work in the fields, vigils and wakes, talks, baptisms, markets, marriages, funerals, naming ceremonies, marriage ceremonies, journeys in public transports, churches and mosques etc.
5. **Inter personal communication (IPC) channels** – through Community Based Volunteers, CSOs e.g. Ghana Red Cross (GRC), Mothers Clubs and Assembly Agents in workshops, Group discussions, Forum Theatre, Door to door outreach, Peer to Peer outreach etc.
6. **Proximity Media channels:** such as Community Information Centres (CIC) - PA systems, Mobile Vans – videos and community outreach, Community Radio (Talk shows with phone-ins and Jingles, life presenter mentioning), Posters depicting key desirable behaviours and information.

Communication Materials to be used for the campaign include:

1. Posters
2. Brochures
3. Fact sheets
4. SMS
5. Radio/TV announcement
6. Job aids (advocacy sheet for community leaders)

Monitoring of the activities

All activities will be monitored and frequently assessed to ensure that the desired outcomes and impact are being achieved.

3.2.5. Logistics, Security and Financial Resources

Ebola Virus Disease, especially due to the type Zaire, accounts for a high attack and case fatality rates. Effective control of these major public health events calls for a rapid response. Available resources such as essential case management supplies and well-trained personnel need to be deployed rapidly and managed with available information and financial resources to contain the Ebola Virus Disease outbreaks before it reaches uncontrollable proportions.

The establishment of an effective emergency supply chain can support to complement containment or control efforts.

All available resources immediately available and needed will be used whilst steps are taken to procure additional ones to meet gaps with support from Central government and partners. Efforts should be made to ensure items procured meet international standards whether procured locally or at the international level.

Security risks, if any, will be reviewed and responded to accordingly. Regular Security Briefs should be provided to all relevant institutions in the country and UN offices at the beginning of the outbreak. The national security institutions should timely and regularly review the security implication of the outbreak situation

Structure and Composition

The Office of the Chief Director of Ministry of Health shall lead in the logistics, security and financial thematic area and supported by relevant MOH divisions- Procurement and Finance.
The rest are National Security Agencies, Ghana Red Cross Society (GRCS), and UN System.

Functions:

The thematic area of Logistics, Security and Financial resources has the following **functions**;

(a) Logistics

1. Establish logistics requirements from all thematic areas and estimate cost of needed procurement required
2. Using different scenarios based on Attack Rates (assuming outbreaks) estimate Drugs and non-drugs consumables) requirement
    a. Check stock levels and identify gaps
    b. Procure and ensure distribution of logistics to sites as and when needed

c. Put in place a monitoring mechanism on the adequate usage of logistics

3. Identify potential support from both internal and external sources
4. Develop procedure for supplies/logistics management (pre and during outbreaks)
    a. Quantities for pre-positioning
    b. Restocking points
    c. Reorder time frames etc

(b) Security

1. Determine the security requirement to respond to an Ebola outbreak and estimate the cost, namely:
    a. Enforcement of possible Travel restrictions
    b. Enforcement of ban of consumption of bat meat and visit to game reserves
    c. Enforcement of contacts quarantine and isolation of cases
2. Develop protocols to clarify the roles of security agents, (CEPS, Police and Military) and NADMO with cost
3. Reference the appropriate sections of PH Act (Act 851) relevant for enforcement

(c) Financial

1. Main source of funds will primarily come from Ministry of Health to implement the preparedness and response plan whilst taking steps to source funds and other logistics from partners such as WHO, UNICEF, Ghana Red Cross Society etc
2. NADMO through its financial and resource mobilization mechanisms will augment and fill financial and logistical gaps.

Activities
(Please this may change depending on areas used for costing)

- Stockpile case management logistics and other consumables/supplies
- Conduct training of identified personnel on monitoring of stocks

Provide resources for post-recovery phase of outbreak

4.0. Budget

Thematic Area	Logistics/Items Required	QUANTITY	UNIT COST	TOTAL COST	COMMENTS
Screening at points of entry	Non-contact / walk through thermometers (Thermal scanner)	1	50,000	50,000	Immediate
	Hand Held Infrared Thermometers	20	700	14,000	Immediate
	Health Declaration Forms	50,000	5	250,000	Immediate
	Subtotal GHC			314,000	
Isolation of suspected, probable and confirmed cases	Refurbishment of Isolations Units in each region	10	20,000	200,000	Immediate
	40 footer isolation unit	3	900,000	2,700,000	Immediate
	Thermometers digital	2,000	25	50,000	Immediate
	Thermometers mercury	2,000	500	1,000,000	Immediate
	Stethoscopes	2,000	250	500,000	Immediate
	BP Apparatus digital	2,000	100	200,000	Immediate
	BP Apparatus mercury	2,000	150	300,000	Immediate
	Weighing scale	2,000	50	100,000	Immediate
	Bed	100	500	50,000	Immediate
	Blanket	4,000	50	200,000	Immediate
	Bed sheets	4,000	50	200,000	Immediate
	Macintosh	4,000	10	40,000	Immediate
	Bed Pan	2,000	30	60,000	Immediate

Thematic Area	Logistics/Items Required	QUANTITY	UNIT COST	TOTAL COST	COMMENTS
	Bed side Cabinet	100	250	25,000	Immediate
	Disinfectants - Bleach (0.5%)	1,500		-	
	Disinfectants - Bleach (1%)	1,500		-	
	Print Case definitions	100,000	2	200,000	
	Print algorithm (A 3 Size)	10,000	5	50,000	
	Print Case-investigation forms,	100,000	2	200,000	
	print contact tracing	20,000	2	40,000	
	Print recording forms	20,000	2	40,000	
	Print SOPs for case management	10,000	20	200,000	
	Print SOPs for lab	5,000	20	100,000	
	Print WHO manual for case management	10,000	30	300,000	
	Mobile isolation van	3	750,000	2,250,000	
	Ambulance	5	250,000	1,250,000	
	Subtotal GHC			10,255,000	
Diagnosis and confirmation of cases	Laboratory reagents including Primers (kit to do 40 patients samples)	75	6,000	450,000	Immediate
	Laboratory equipments	1	100,000	100,000	
	PPEs (gowns, goggles, gloves, masks, boots)	10,000	500	5,000,000	
	Mobile Lab from WHO	3	500,000	1,500,000	
	Courier Services	2,000	50	100,000	

Thematic Area	Logistics/Items Required	QUANTITY	UNIT COST	TOTAL COST	COMMENTS
				7,150,000	
Case management	Procure and pre-position medicines (IV Fluids, Analgesics, Antimalarials, Antibiotics etc)	1	100,000	100,000	
	Procure and pre-position non-medicines (Hand sanitizer, guaze, cotton wool, plaster, giving set, tourniquet)	1	100,000	100,000	
	Pickups	7	150,000	1,050,000	
	Motorbikes	100	5,000	500,000	
				1,750,000	
	Cremation cost	1,000	2,000	2,000,000	
	Cremation Plant	3		-	
	Subtotal GHC			2,000,000	
Public education and Social mobilisation	Printing of IEC Material (Posters, key messages, leaflets, banners Posters, Flyers, stickers)	5	100,000	500,000	Immediate
	Bill boards	50	10,000	500,000	Immediate
	T-Shirts	10,000	15	150,000	
	Placement of adverts (Print)	100	1,500	150,000	
	Develop Video spots	50	3,000	150,000	
	Develop Audio message spots with jingles	100	1,500	150,000	

Thematic Area	Logistics/Items Required	QUANTITY	UNIT COST	TOTAL COST	COMMENTS
	TV and radio announcements with jingles	100	3,000	300,000	
	Advocacy session	60	5,000	300,000	
	Special media engagements	10	5,000	50,000	
	Subtotal GHC			2,250,000	
Training	National and Regional Training of trainers (TOT) (5 per Region + 15 at HQ)	65	1,000	65,000	Immediate
	District Trainings	1,080	1,000	1,080,000	Immediate
	Orientation for non-medical staff (Security, Orderlies)	12,960	100	1,296,000	Immediate
	Training of ambulance staff	648	1,000	648,000	Immediate
	Subtotal GHC			1,145,000	Immediate
Contact tracing and follow-up	Follow-upsuspected cases at community level	20,000	500	10,000,000	
				-	
Operational cost for movement and sustenance	Fuel	1,000			
	outbreak investigation	300	1,000	300,000	
	Monitoring and supervsion	30	1,000	30,000	
	TOTAL GHC			**35,194,000**	