WORKING DOCUMENTS FOR NATIONAL PREPAREDNESS PLAN

EBOLA VIRUS DISEASE

Ministry of Health and Wellness

August 2014

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This document may be subject to amendments

Acronyms

CDCU	Communicable Diseases Control Unit
CDC	Centers for Disease Control and Prevention, Atlanta, USA
COMBI	Communication for Behaviour Impact
HCV	Hepatitis C Virus
HCW	Health Care Workers
HIV	Human Immunodeficiency Virus
IHR	International Health Regulations
EVD	Ebola Virus Disease
МНО	Medical & Health Officer
PHEIC	Public Health Emergency of International Concern
PH&FSI	Public Health and Food Safety Inspector
PPE	Personal Protective Equipment
SOP	Standard Operating Procedures
WHO	World Health Organization

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Executive Summary

The disease Ebola takes its name from the Ebola River situated near a village in the Democratic Republic of Congo, where the disease first appeared in 1976. Ebola Virus Disease is caused by a virus from the *Filoviridae* family (filovirus).

The present outbreak of Ebola Virus Disease (EVD) concerns four countries in West Africa, namely Guinea, Liberia, Sierra Leone and Nigeria. Further to widespread transmission of the disease, it has been declared as a Public Health Emergency of International Concern by the World Health Organisation on 8 August 2014.

In response to this event in West Africa and in anticipation of the probability of the spread of this disease to the Republic of Mauritius, a National Preparedness Plan is being prepared. The aim of this plan is to prevent and control Ebola Virus Disease in the public of Mauritius, including Rodrigues and the Outer Islands. It provides strategic orientations for actions to be taken for the prevention and containment of EVD.

The preparedness plan consists of three main parts; the preparedness phase, the mitigation phase and the recovery phase. The overall strategies include:

- A. Response planning and coordination
- B. Control at ports of entry
- C. Surveillance of incoming passengers from affected countries
- D. Hospital preparedness
- E. Laboratory preparedness
- F. Passenger Monitoring/Contact Tracing
- G. Communication and sensitization
- H. Recovery activities

This document also outlines three possible scenarios following introduction of the disease in the Republic of Mauritius, and the actions to be taken during each scenario.

The three possible scenarios are:

- 1. Introduction of the disease by incoming passenger/s from affected countries;
- 2. Localized spread of the disease to close contacts; and
- 3. Widespread transmission of the disease at community level.

The document contains protocols and guidelines most of which are based on the recommendations of the World Health Organisation and Centres for Disease Control and Prevention, Atlanta.

1 INTRODUCTION

1.1 Background

In the past, EVD has been reported primarily in remote villages in Central and West Africa, near tropical rainforests.

Ebola first appeared in 1976 in two simultaneous outbreaks, in Nzara, Sudan, and in Yambuku, in the Democratic Republic of Congo. 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).

Some species of the ebolavirus have been associated with large EVD outbreaks in Africa. The present outbreak of EVD was notified to the World Health Organization (WHO) on 21 March 2014 by the Ministry of Health of Guinea. The cases of EVD were initially reported from Gueckedou, Macenta, and Kissidougou in the forest region, an area forming the border with Sierra Leone and Liberia, and which later spread to Conakry, the capital city. On 30 March 2014, neighbouring Liberia reported its first cases of EVD followed by Sierra Leone.

The Ministry of Health of Nigeria reported its first case of EVD on 27 July 2014 in an incoming passenger from Liberia; following which several other cases have been detected in the country. National authorities in all the four above mentioned countries are working closely with WHO and its partners to ensure that this outbreak is contained.

The scale of the present outbreak is unprecedented, with reports of more than 2, 127 cases and 1, 145 deaths (as of 13 August 2014) in the four affected countries since March 2014.

On 6 and 7 August 2014, the first meeting of the Emergency Committee was convened by the Director-General of the WHO under the International Health Regulations 2005, with regard to the 2014 Ebola Virus Disease outbreak in West Africa. Subsequently on 8 August 2014, the World Health Organisation declared the outbreak as a Public Health Emergency of International Concern (PHEIC).

1.2 Definition

EVD (formerly known as Ebola haemorrhagic fever) is a severe illness which affects humans and nonhuman primates (monkeys, gorillas, and chimpanzees). EVD outbreaks can have a case fatality rate of up to 90%. The disease is caused by a virus of the filovirideae genus.

1.3 Transmission

Ebola is introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of infected animals. Such infections have primarily occurred through the handling of infected chimpanzees, gorillas, fruit bats, monkeys, forest antelope and porcupines found ill or dead specially in the rainforests.

Human-to-human transmission occurs as a result of direct contact with the blood, secretions, organs or other bodily fluids of infected people, or through indirect contact with environments contaminated with such fluids. Burial ceremonies have also contributed to the transmission process whenever mourners have had direct contact with the body of the deceased person.

As a matter of fact, once a person comes into contact with an animal that has Ebola, it can spread within the community from human to human. Infection occurs from direct contact (through broken skin or mucous membranes) with the blood, or other body fluids or secretions (stool, urine, saliva, semen) of infected people. Infection can also occur if broken skin or mucous membranes of a healthy person come into contact with environments that have become contaminated with an Ebola patient's infectious fluids such as soiled clothing, bed linen, or used needles.

1.4 Clinical Manifestations

The incubation period, that is, the time interval from infection with the virus to onset of symptoms is 2 to 21 days. It has been shown that there is no risk of transmission of the disease during the incubation period. The patients become contagious once they begin to show symptoms.

Sudden onset of fever, intense weakness, muscle pain, headache and sore throat are typical **signs and symptoms.** This is followed by vomiting, diarrhoea, rash, impaired kidney and liver function, followed by both internal and external bleeding.

Laboratory findings include low white blood cells and platelet counts, and elevated liver enzymes. EVD infections can only be confirmed through laboratory testing.

There is currently **no specific treatment** for the disease. Severely ill patients require intensive supportive care. They are frequently dehydrated and need intravenous fluids or oral rehydration with solutions that contain electrolytes.

1.5 Rationale for developing the preparedness plan

The preparedness plan consists of three main parts; the preparedness phase, the mitigation phase and the recovery phase.

The preparedness phase is covered in part one which deals with all the preparedness steps to be taken to prevent the introduction of the virus in Mauritius. The main objectives are planning and coordination, assessing the hospital capacity, procuring the necessary drugs, supplies and reagents, capacity building for active sentinel surveillance and sensitizing the relevant stake holders.

The mitigation phase is covered in Part 2 which deals with actions to be undertaken during an eventual epidemic in order mitigate disease burden and deaths due to the infection from the disease. The main objectives are on enhanced surveillance for active case search, contact tracing and isolation to break the chain of transmission and clinical management of cases to reduce morbidity and mortality.

The recovery phase is covered in Part 3 which deals with post-epidemic phase that is aimed at averting future epidemic. This will consist of brainstorming on lessons learnt with all stake holders and psychological support for the public to use the hospital by dispelling fear and myths.

2 PART ONE: STATE OF PREPAREDNESS BEFORE INTRODUCTION OF THE EBOLA VIRUS IN MAURITIUS.

The health sector must be in a state of readiness to cope with the eventual importation and public health consequences of EVD.

The main objectives are planning and coordination, assessing the hospital capacity, procuring the necessary drugs, supplies and reagents, capacity building for active sentinel surveillance and sensitizing the relevant stake holders. These objectives are covered based on the following strategies:

- A. Response planning and coordination
- B. Control at ports of entry
- C. Surveillance of incoming passengers from affected countries
- D. Hospital preparedness
- E. Laboratory preparedness
- F. Contact tracing
- G. Communication and sensitization

2.1 Response Planning and Coordination

The planning and coordination process will be directed towards developing effective mechanisms for mobilization and deployment of required resources to implement the National Preparedness Plan.

2.2 Setting up of a High Incident Command Committee

The High Incident Command Committee will oversee the planning process, trigger response activities, evaluate the operational plan and take decisions with regard to future response strategies as and when required. This High Incident Command Committee will also inform Government of new developments and liaise with external agencies for any additional support.

The High Incident Command Committee will comprise the following:

- Hon. Minister of Health & Wellness (Chairperson)
- Senior Chief Executive
- Chairperson of the National Risk Reduction and Management Centre
- Permanent Secretaries of Ministry of Health & Wellness
- Director General Health Services
- Officer-in-Charge, WHO Country Office of Mauritius
- All Directors Health Services
- Representatives of Prime Minister's Office
 - Defence and Home Affairs
 - External Communications
- Commissioner of Police
- Representative of the Ministry of Finance & Economic Development
- Supervising Officer of the Ministry of Agro Industry and Food Security
- Supervising Officer of Ministry of Local Government and Outer Islands
- Supervising Officer of Ministry of Tourism & Leisure
- Director of Civil Aviation
- Director of Port Authority
- Commissioner for Health, Rodrigues
- General Manager, Outer Islands Development Cooperation
- Adviser in Information Matters
- Director, Joint Economic Council

Other members will be co-opted as and when required.

2.3 Setting up of an Intersectoral Committee

Coordination between the health and non-health sectors is critical to define the role, functions and responsibilities of each stakeholder, achieve harmonization and minimize duplication, redundancy or contradictory activities. The Intersectoral Committee will be headed by the Honourable Minister of Health and Wellness. Members of this Committee

will include all relevant stakeholders who have collaborated with the Ministry during previous outbreaks of communicable diseases. The Committee will enroll the support of the Disaster Risk Reduction and Management Centre in the event there is widespread transmission of the disease in the country. List of stakeholders at **Annex 1**.

2.4 Setting up of Coordination Committees

2.4.1 Coordination Committee (Public Health)

The Coordination Committee (Public Health) at the level of the Ministry will include the following officers:

- Director Health Services/ Acting Permanent Secretary, Public Health (Co-Chair)
- Deputy Permanent Secretary (Procurement)
- All Regional Public Health Superintendents
- Director Public Health and Food Safety
- Principal Public Health and Food Safety Inspectors of Port, Airport and CDCU
- Director Nursing
- Chief Hospital Administrator
- Epidemiologist
- Consultant in Charge, Central Health Laboratory
- Advisor in Information Matters

Other members will be co-opted as and when required.

Periodic meetings of the Coordination Committee will be scheduled to:

- review and update operational plans and protocols;
- advise on response activities for the prevention and control of EVD;
- monitor implementation of activities and ensure preparedness at all levels;
- carry out surveillance activities and ensure a proper feedback mechanism;
- ensure the availability of additional resources, if necessary; and

• Consider legal and ethical issues that might arise during an outbreak, for example, issues pertaining to quarantine and burial.

2.4.2 Coordination Committee (Hospital Services)

The Coordination Committee (Hospital Services) at the level of the Ministry will include the following officers:

- Director Health Services/ Permanent Secretary(Hospital Services) (Co-Chair)
- Deputy Permanent Secretary (Procurement)
- All Regional Health Directors
- All Regional Public Health Superintendents
- Director SAMU Services
- Director Nursing
- Director Pharmaceutical Services
- Consultants in Charge Internal Medicine
- Consultant in Charge Central Health Laboratory
- Chief Hospital Administrator
- Advisor in Information Matters

Other members will be co-opted as and when required.

Periodic meetings of the Coordination Committee will be scheduled to:

- Monitor hospital preparedness.
- Ensure the availability of adequate resources.
- Advise about additional isolation and quarantine facilities.

2.4.3 Linkage with the Ministry of Agro Industry and Food Security

The Ebola virus outbreaks have been declared a Public Health Emergency of International concerns (PHIEC) by WHO. In order to deal with PHEIC, the Ministry of Health and Wellness has already constituted an intersect oral committee and has formulated a draft action plan on PHEIC. This coordination committee will work with the Ministry of Agro Industry and Food Security and the Wildlife Foundation to look at issues relating to the presence of Ebola virus in animals in Mauritius, importation of animal products from the affected countries and transmission of the virus from humans to the animals.

2.5 Control at Ports of Entry

Procedures are already in place at the two entry points in Mauritius, namely, the port and airport, for health profiling of incoming passengers. At these entry points, the health and travel status of individual incoming passengers is reviewed by health inspectors working at these border posts. The protocol for handling of suspected cases at airport is in **Annexes 2** and at the port in **Annex 3**. The case definition for active case detection during surveillance is at **Annex 4**.

2.5.1 Routine Procedures for Surveillance of incoming passengers from affected countries

Surveillance for active case detection among incoming passengers and crew-members is undertaken at:

- i. Airport
- ii. Sea port
- iii. Hotels and guest houses
- iv. Community-level surveillance at residence

The process consists of the following:

2.5.2 At the Airport

- 1. Boarding of the plane by the Senior Public Health and Food Safety Inspector and collection and verification of the Flight Declaration Form;
- Scrutinising the Passport and Health Declaration Form prior to passengers proceeding to the Immigration desk, and passing through the Thermal Scanner; and

3. Collection of the Health Declaration Form, and eliciting information about the health status of the traveller, as well as on possible risk of exposure to the virus while in the affected country.

2.5.3 At the Port

- 1. Boarding of ships by Public Health and Food Safety Inspector and verification of the Maritime Declaration Certificate and the ports visited; and
- 2. Collection of the Health Declaration Form, and eliciting information about the health status of the traveller, as well as on possible risk of exposure to the virus while in the affected country, at the Health Counter before proceeding to the Immigration Counter of the *Aurelie Perrine* Passenger Terminal at the Port.

Members of the staff at the Port and Airport Health Offices verbally inform the respective Regional Health Offices and the respective Principal Public Health and Food Safety Inspector at the earliest, of incoming passengers from West Africa, specifically the four high risk countries (Sierra Leone, Guinea Conakry, Liberia and Nigeria). In addition a list of incoming passengers is transmitted by facsimile to the respective health offices for follow up purposes.

The follow up process consists of the following steps:

- A first visit is carried out by Public Health and Food Safety Inspector (PH&FSI) within twenty four (24) hours of the passenger list being faxed to the respective Regional Health Offices. If passenger is at site of work, the PH&FSI of the Regional Health Office in whose catchment area the work site is located carries out this visit.
- During the first visit the passenger is briefed about the disease, namely the signs and symptoms, mode of transmission, and precautionary measures to be taken.
- An information flyer is handed over to the passenger, wherein the latter is provided with contact numbers of the Health Authorities and establishments in case of any queries or notification of any change in health status.

- During this visit, a questionnaire is filled in by the PH&FSI and faxed on same day to the Communicable Disease Control Unit, Headquarters of the Ministry of Health & Wellness on fax number2013185 with a copy to the sub-office at Beau Bassin on fax number 4547823. The questionnaire is at Annex 5.
- A follow up visit is carried out after three (3) days from the first visit. In between visits, contact is established by telephone on a daily basis.
- In the event that the passenger arrives on a Saturday, Sunday or Public Holiday, the Senior PH&FSI of the Airport and Port Health Office inform the Principal PH&FSI of the respective Regional Health Offices by telephone. The latter makes necessary arrangements so that the passenger is contacted by phone within 24 hours, followed by personal contact on the next working day.
- The passenger is visited personally once weekly for four (4) consecutive weeks following the second visit.

2.6 Hospital preparedness

The overall objective is to ensure that the hospital admitting cases of Ebola is fully prepared to manage such patients, while establishing specific protocols and guidelines for the identified procedures.

This process will include the following:

2.6.1 Identifying isolation facilities

Isolation wards have been set up on the first floor of Souillac Hospital, now known as district hospital with four bays, each consisting of three beds for male and female patients, with all amenities and facilities.

Details of isolation wards are given in **Annex 6** and layout plan are at **Annex 7** respectively.

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2.6.2 Identifying quarantine facilities

A quarantine bay has been identified on the same floor and this bay is physically separated from the isolation bays and has a partition in the middle to separate male and female patients. Presently this bay can accommodate a total of four beds. The purpose is to monitor the health status of persons who have been in unprotected contact with confirmed cases. Nursing staff will be posted in the bay on a 24 hour basis, working in 8 hour shifts.

A small space has been provided for Nursing Staff inside the bay to enable monitoring of the quarantined patients.

2.6.3 Staffing pattern

With regard to medical staff, one Medical & Health Officer (MHO) and one specialist will be posted to the isolation facility on a daily basis.

Provision has been made to ensure availability of adequate number of staff, while reckoning the need to expose the least number of Health Care Workers to the virus. Assuming all isolation bays are occupied by 12 patients, the proposed staffing pattern is as follows:

- The four isolation bays will be manned by 4 Nursing staff at a time (2 Male and 2 Female).
- An additional two nursing staff (1 Male + 1 Female) will be posted in the isolation ward to relieve officers for breaks. The staff will work on 8 hour shifts, and a total of 18 Nursing Officers will be working during 24 hours on 8 hour shifts.
- One Ward Manager will be posted in the main nursing station for supervising, recording, reporting, preparing care plans and giving treatment as prescribed by Medical Officers. Adjustment of staff will be made as and when required. Transport facilities will be provided to staff going off duty at night.

2.6.4 Stockpiling of Personal Protective Equipment (PPE)

Health workers treating patients with suspected or confirmed illness are at higher risk of infection than other groups. During an outbreak a number of important actions will help to reduce or stop the spread of the virus, and protect health workers and others in the health-care setting. These actions are called "standard and other additional precautions".

Personal protective equipment is designed to protect the wearer from exposure to the virus. Examples of PPE include gloves, gowns, goggles, face shields, masks, and respirators.

Proper use of PPEs is essential if proper protection is to be achieved. The sequence of donning and removal is specific, and staff posted in the isolation wards will be trained accordingly.

A protocol for the wearing and removal of PPEs is at **Annex 8**.

Provisions have been made to keep a buffer stock of PPEs. A list of these items is at **Annex 9**.

2.6.5 Stockpiling of drugs, equipment and consumables

No specific drugs are required for the treatment of EVD. Treatment is symptomatic and an adequate stock of medications, including intravenous fluids, analgesics, antibiotics and blood products, is available.

Medical equipment and consumables will include ventilators, suction apparatus, cardiac monitors, intravenous cannulas and syringes.

2.6.6 Development of protocols on case management and Infection Prevention and Control

In view of the specific nature of EVD and its high fatality rate, handling of patients and corpses requires specific procedures. These procedures need to be spelt out as clear protocols and guidelines for all those concerned.

In this respect, protocols and guidelines have been prepared for the following:

- 1. Isolation procedures (Annex 10)
- 2. Infection prevention and control (Annex 11)
- 3. Procedures for laboratory testing (Annex 12)
- 4. Linen and laundry services (Annex 13)
- 5. Clinical management of cases (Annex 14)
- 6. Management of clinical waste (Annex 15)
- 7. Handling of dead bodies and burial procedures(Annex 16)
- 8. Environment cleaning procedures (Annex 17 and 18)
- 9. Cleaning of Isolation bay (Annex 18)
- 10. Disinfection of Transport Vehicles (Annex 19)
- 11. Guidelines for aircraft cabin crew (Annex 20)

2.6.7 Training of staff

With a view to ensuring strict compliance to Protocols and Guidelines, training of staff and relevant stakeholders will be undertaken in the following areas:

- 1. Case definition and clinical recognition of cases;
- 2. Universal and special transmission based precautions;
- 3. Isolation procedures;
- 4. Proper use of Personal Protective Equipment;
- 5. Laboratory procedures;
- 6. Clinical waste management; and
- 7. Burial procedures.

2.6.8 Arrangements for logistic support

Logistic support in the local context will consist of providing transport facilities for the following:

- 1. Transport of staff on night shift;
- 2. Transfer of suspected cases from the airport to the isolation facility at a designated hospital/ health institution;
- 3. Transport for mobile team for assessment of suspected cases at community level;
- 4. Transfer of suspected cases detected at community level to the isolation facility;
- 5. Transfer of waste from isolation facility to burial/incineration site; and
- 6. Transfer of corpses to burial site.

Special provisions will be made for:

- 1. the driver and attendant to be separated from a suspected case during transfer;
- 2. wearing of PPEs for accompanying staff;
- 3. blended vehicle for transfer of waste; and
- 4. decontamination procedures for the transport vehicles

2.6.9 Arrangements for disposal of dead bodies

The objective of safe burial is to minimize risk of transmission of EVD to staff, family members and the local community during handling, transporting and burying the deceased.

With a view to limiting the risk, it is recommended to bury the corpse as follows:

- Immediately after the patient has died;
- In the closest available and appropriate graveyard;
- Without the involvement of family members; and
- With a trained burial team undertaking the procedure.

Furthermore, the graveyard should be ideally situated in an area with limited access. In the event that a common graveyard is being utilized, a separate area should be identified for such cases. As it is difficult to predict the period during which the body will be infective, it is recommended that the site remains undisturbed.

It has been recommended that the graveyard at Camp Diable be earmarked for burial purposes.

The prepared protocol on burial of deceased patients gives instructions on how to:

- Prepare the body of a deceased Ebola Virus Disease patient;
- Transport the infected body safely to the burial site;
- Disinfect the vehicle after transporting the body.

The protocol is at **Annex 13.**

2.7 Laboratory preparedness

Being given that the body fluids of infected patients are highly infectious, a separate laboratory is being set up at Souillac Hospital, now known as a district hospital in the isolation area to carry out tests for admitted patients. This will minimize the transport of potentially infected blood and other body fluids samples to the Central Health laboratory. The protocol for testing is at **Annex 12**.

2.8 Passenger Monitoring and Contact Tracing

Systematic contact tracing will be undertaken following the detection of a suspected /confirmed case.

This process will entail identification of contacts through questioning/interviews of suspected/confirmed cases, from hospital records or information available from other relevant and reliable sources.

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As this exercise is of prime importance for interrupting the chain of transmission and required extreme mobilisation of resources, it is imperative that full support of relevant stakeholders and active community participation be obtained. A contact tracing form has been designed and is at **Annex 21**.

2.9 Communication and Sensitization during the planning phase

Strategic communication is a well-planned and well-coordinated means of passing welldesigned messages from an individual or institution to its identified stakeholders or general public at the right time, in the right quantity and to achieve well-defined objectives.

The overall objective of communication is to sensitize stakeholders including media, public, and professional partners about Ebola Virus Disease, its evolution, precautionary measures and to advocate for community support and collaboration while at the same time increasing visibility on measures taken by authorities.

The modes of communication will differ for each level of alert and response. Accordingly, different approaches will be adopted. At the initial stage of alert, before the introduction of the virus in the country, communication will specifically target stakeholders such as healthcare workers, officers of ports of entry, travellers to affected areas and passengers arriving from those countries. In addition, the public at large will be given basic information on the disease.

Communication strategies will also cater for Rumour Information Management as follows:

- 1) Keeping of a Rumour Registry;
- 2) Appoint at least 2 persons for recording and coordinating with community and investigating team; and
- 3) Rumour Registry should be carefully maintained.

The following strategies will be used:

- 1. Press releases on the evolution of the disease and on measures taken to prevent the introduction of the disease in the country, through written, audiovisual and electronic media. These will be reviewed and updated with regular bulletins.
- 2. Targeted radio and television programmes;
- Counselling of travellers on precautionary measures through the International Vaccination Centre and through the travel agencies;
- 4. Distribution of Ebola fact sheets and case definition to doctors, in both public and private sectors;
- 5. Preparation and distribution of pamphlets on EVD and the preventive aspects;
- Preparation and distribution of leaflets on precautionary measures to be taken by staff at the airport and port. (Annex 22 – 30)
- 7. Informing Government on a regular basis;
- 8. Joint press conferences with wide representations of leadership which can help to calm to populace will be held.
- 9. Telephone hotlines will be established to answer to questions on a 24 hour basis.
- 10. A website that people can use will be established;
- 11. Frequent media appearances by the health sector leadership will be undertaken; and
- 12. Situation reports to stakeholders will be communicated on a daily basis.

2.10 Amendments to Public Health Act

Burial procedures for this specific condition will require some amendments by the introduction of regulations after consultation with State Law Office, with a view to allowing only trained professionals to handle the corpse.

2.11 Exit Screening at Airport for Outgoing Passengers under Surveillance for Ebola

Under the IHR (2005), a single case of Ebola in our territory represents a PHIEC and has to be reported to WHO, using set standard procedure. The Ministry of Health and

Wellness has already drafted a protocol for reporting and it is proposed to use this protocol for reporting cases of Ebola to WHO. (Annex)

Given that some visitors may leave the country during the incubation period of the disease and in this respect have developed symptoms prior to departure, it is proposed to introduce an exit screening for specific passengers who would be entering the country from high risk countries. A protocol for this exit screening exercise has been developed and is at **Annex 32**.

3 PART TWO EPIDEMIC RESPONSE DURING IMPORTATION AND LOCAL SPREAD OF EBOLA VIRUS

This part deals with actions to be undertaken during an eventual epidemic in order mitigate disease burden and deaths due to the disease. The main objectives are clinical management of cases to reduce morbidity and mortality and to break the chain of transmission by instituting enhanced surveillance for active case search, contact tracing and isolation of cases and contacts

Three possible local scenarios can be envisaged for the above objectives:

- 1. Introduction of the disease by incoming passenger/s from affected countries;
- 2. Localized spread of the disease to close contacts; and
- 3. Widespread of the disease at community level

3.1 Actions to contain the virus for scenario 1: Introduction of the disease by incoming passenger(s) from affected countries

This scenario provides for a case that is detected in an incoming passenger who has travelled to countries where there is transmission of Ebola virus.

Such a case can be detected in the following circumstances:

- on board a conveyance ;
- at the terminal of the Airport or Port;
- At community level.

3.1.1 Case detection and public health management at the port

In the event that the case is detected on board an aircraft the protocol laid down at **Annex 2** will be followed.

Similarly, cases detected on board a ship will be handled as at Annex 3.

Cases detected within the terminal of either the port or airport will be handled as par protocol at **Annexes 2 and 3**.

A Senior Medical and Health Officer from Dr. A.G. Jeetoo Hospital will be sent to the port area to assess the case, given that there is no doctor physically present at the port. Consideration will be given to the posting of a doctor to the port, as and when required.

3.1.2 Case detection and public health management in the community

At community level, following notification to the hotline, the Regional Public Health Superintendent will organize a team at the Regional Hospital in collaboration with RHD/Duty Manager for the initial assessment of the patient at his place of residence.

All cases will be transferred to the isolation ward at a designated hospital, in a dedicated transport vehicle, in compliance with Infection Prevention and Control procedures.

In a highly suspicious case, disinfection of the residence of the person will be carried out by mopping and cleaning with moistened cloth and disinfectant.

3.1.3 Laboratory diagnosis of cases

Laboratory diagnosis of the case will be done as per protocol detailed out at Annex 12.

Management of cases will follow the guidelines spelt out at Annex 14.

3.1.4 Contact tracing of cases

Contact tracing will be done in a systematic manner with a view to assessing the risk of exposure.

Quarantine measures will be applied for contacts, either in the form of home quarantine or hospital quarantine.

Follow up of contacts will be carried out for a period of 21 days following exposure. The purpose of control measures during this phase will be to prevent secondary cases.

Actions will include:

- Isolation of suspected cases;
- Diagnosis;
- Clinical management of suspected cases;

- Contact tracing;
- Quarantine measures;
- Disease surveillance; and
- Communication and sensitization.

3.1.5 Communication & Sensitization Strategies During Scenario 1

During scenario 1, communications will aim at informing the authorities, WHO and the public at large about the evolution of the situation. Sensitization and awareness programmes targeting close contacts and family members on precautionary measures will also be mounted.

In accordance with IHR will be notified of cases confirmed.

- Government will be kept informed on a regular basis;
- Regular press releases will be issued to the press, radio and television; and
- Pamphlets will be distributed to specific pre-identified target groups such as fellow workers, school mates and close relatives.
- The private health sector will be informed through a special correspondence as per agreement signed between the Ministry and the sector.

3.2 Actions to contain the virus for scenario 2: Localized spread of the disease to close contacts

Following active case detection, more cases will be detected in the community. The purpose of preventive measures will be to prevent further spread of the disease in the community at large.

The Incident Command and the Coordination Committees will meet to review the situation and advise on the way forward. The Minister of Health & Wellness after discussion with the Prime Minister may decide at this stage to review the chairmanship and composition of the High Incident Command Committee.

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• Field activities

Active search for other cases among the contacts and at the level of the community will entail the mobilization of rapid response teams for contact tracing and identification of potential suspected cases.

The case definition used for surveillance purposes in the community is available at **Annex 31**.

In this particular scenario, epidemiological links should be established with a confirmed case with a view to ensuring that all detected cases are linked with this index case or are secondary to other cases.

A case notification form will be introduced.

Suspected cases will be transported by ambulance dedicated for the purpose and admitted to the isolation ward at a designated hospital/ health institution and laboratory confirmation procedures will be initiated.

Quarantine procedures will be implemented in the same manner as in scenario 1.

Other public health measures to be implemented in the event the outbreak is localized in a specific region include:

- closure of schools;
- prohibition of mass gatherings in that particular region;

A control of movement of people to and from the region

The purpose of prevention and control measures will be to contain the disease within specific geographical area/s.

Actions will include:

- Isolation and management of cases;
- Quarantine of close contacts;
- Active search for other cases among the contacts and at the level of the community;

- Cordon Sanitaire if a specific region is affected;
- Communication and sensitization;
- Disease surveillance.

3.3 Actions to contain the virus for scenario 3: Widespread transmission of the disease at community level

Measures taken will aim to control further spread of the disease with a view to minimizing morbidity and mortality and also to reduce social, economic and business disturbances.

Actions will include:

- Early detection of cases and identification of contacts;
- Prompt isolation and management of cases;
- Social distancing;
- Disease surveillance; and
- Communication and sensitization.

In spite of prevention and control measures taken, more and more cases are being detected in different regions of the country.

- The incident Command will meet and will review the situation.
- Future strategies will be discussed and if the need arises, support for consultancy services will be sought from WHO.
- A multisectoral meeting will be convened to share information and to advocate for support and collaboration.
- Decision on other public health measures such as social distancing will be taken.
- The coordination committee will ensure the adequacy of response consumables, equipment, reagents and personal protective equipment.
- Redeployment of staff will be worked out.
- Logistic support will be reinforced.

- Communication strategies will be worked out as detailed below.
- Field operations will be reinforced.
- Case detection and notification will be strengthened as cases may have recourse to private health services.
- Rapid response teams will be sent to the affected regions and outbreak investigation procedures will be followed and these will include ,inter alia, the following:
 - a. Determination of the sites and facilities frequented and family and social groups exposed by outbreak-related patients during their infectious periods. Such information can be obtained from:
 - > case-patient interviews and contact investigations;
 - > medical and public health records; and
 - > Information from the facility logs or records.
 - b. Determination of the exposed cohort of persons at each site/facility who may have been present when an outbreak-related case-patient was present during his/her infectious period. Such information can be sourced from casepatient interviews and contact investigations, medical and public health records; and
 - **c.** Determination of the duration by number of hours, days, or weeks the exposed cohort of persons may have spent around an infectious outbreak-related patient.

Such activities will entail the deployment of additional staff on the field. In this respect the support of Health Surveillance Officers and Community Health Care Workers will be enrolled. This Ministry has already initiated procedures for the recruitment of additional Health Surveillance Officers.

The latter would need proper training for the detection of suspected cases.

• Home quarantine procedures will be strengthened to control the movements of contacts and to monitor their health status.

- Isolation of suspected cases
 - Isolation facilities will be reviewed and additional wards will be converted into isolation areas at any designated hospital. In this context, routine activities will be stopped and the whole hospital converted into an isolation facility.
- Epidemiological surveillance will follow the same procedure as mentioned earlier with data mentioned at scenario 2.
- Communication & Sensitization

Communication strategies will be reinforced, more so at community level. This process will entail the following:

- 1. Production and distribution of health information and communication materials such as pamphlets, posters, banners and flyers;
- 2. House to house distribution of pamphlets and counseling; and
- 3. Stepping up of health education activities at community level.

Extension of COMBI approach to all regions.

3.4 GUIDELINES FOR QUARANTINE DURING ALL THREE SCENARIOS

3.4.1 Hospital Quarantine

This procedure will apply to persons with high risk exposure.

A high risk exposure includes any of the following:

- Percutaneous, e.g. the needle stick, or mucous membrane exposure to body fluids of an EVD patient;
- Direct care or exposure to body fluids of an EVD patient without appropriate personal protective equipment (PPE);
- Laboratory worker processing body fluids of confirmed EVD patients without appropriate PPE or standard bio-safety precautions; and

• Participation in funeral rites which include direct exposure to human remains in the geographic area where outbreak is occurring without appropriate PPE.

Monitoring of health status in terms of manifestation of symptoms suggestive of EVD following exposure will be undertaken for 21 days.

3.4.2 Home quarantine

This will be considered for contacts with low exposure, as defined below:-

A low risk exposure includes any of the following:-

- Household member or other casual contact with an EVD patient; and
- Providing patient care or casual contact without high-risk exposure with EVD patients in health care facilities in EVD outbreak affected countries^{*}

Temperature recording will be done twice daily by staff of the Ministry.

Casual contact is defined as:

- a) being within approximately 3 feet (1 meter) or within the room or care area for a prolonged period of time (e.g., healthcare personnel, household members) while not wearing recommended personal protective equipment., OR
- b) Having direct brief contact (e.g., shaking hands) with an EVD case while not wearing recommended personal protective equipment.

At this time, brief interactions, such as walking or moving through a hospital, do not constitute casual contact. (Source CDC)

3.5 COMMUNICATION & SENSITIZATION FOR SCENARIO 2 AND 3

Communication within this scenario will have the same orientation as in scenario 1.

In addition, community engagement needs to be strengthened by proper advocacy with a view to identifying suspected cases and achieving behavioral changes that would reinforce control activities.

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In this respect, the Communication for Behavioral Impact (COMBI) approach would be envisaged.

Additional health education materials will be produced and distributed to relevant stakeholders.

3.6 EPIDEMIOLOGAL SURVEILLANCE FOR ALL THREE SCENARIOS OF OUTBREAKS

The purpose of epidemiological surveillance in this scenario is to confirm an outbreak, to identify all contacts and secondary cases, if any, to determine the potential threat of further spread and whether control measures are working effectively.

A case reported system will be developed for suspected/confirmed cases and also contacts.

Epidemiological surveillance will be carried out by the Communicable Disease Control Unit where all data pertaining to cases detected, suspected and confirmed, will be compiled and analyzed.

Furthermore, this process will ensure the setting up of a proper feedback mechanism to keep authorities, stakeholders, international agencies and the public informed of latest developments.

Epidemiological surveillance will be carried out on the same lines as stipulated for scenario 1.

Data compilation will include the following:

- (i) Line listing of suspected/confirmed cases;
- (ii) Line listing of contacts including those in quarantine;
- (iii) Cumulative number of cases;
- (iv) Cumulative number of deaths;
- (v) Cumulative number of Patients under treatment;
- (vi) Number of Patients hospitalized;
- (vii) Number of contacts requiring follow-up;
- (viii) Number of contacts under effective follow-up;

- (ix) Date last case notified;
- (x) Last suspected case of death;
- (xi) Geographic distribution of cases;
- (xii) Simple epidemic curve;
- (xiii) Case fatality rate; and
- (xiv) Age specific attack rates.

4 PART 3: RECOVERY PHASE

This part deals with post-epidemic phase that is aimed at averting future epidemic. This will consist of brainstorming on lessons learnt with all stake holders and psychological support for the public to use the hospital by dispelling fear and myths.

After the detection of the last case, surveillance activities including active care detection will be maintained for a period of 42 days, which is equivalent to 2 incubation periods, before the end of the outbreak is declared.

Subsequent to the end of the outbreak, it is proposed to consider resuming normal activities at Souillac Hospital (now used as a district hospital).

This process will necessitate a thorough terminal clearing and disinfection of the hospital premises.

Furthermore, a strong sensitisation campaign will be carried out to dissipate any apprehension relating to safety issues at Souillac Hospital (now used as a district hospital).
5 LIST OF ANNEXES

Annex 1: COMPOSITION OF INTERSECTORAL COMMITTEE

- 1. Hon. Minister of Health & Wellness (Chairperson)
- 2. Senior Chief Executive
- 3. Permanent Secretaries of Ministry of Health & Wellness
- 4. Director General Health Services
- 5. Officer in Charge, World Health Organization (Local Office)
- 6. All Directors Health Services
- 7. All Regional Public Health Superintendents
- 8. Director, Pharmaceutical Services
- 9. Consultant in Charge, Central Health Laboratory
- 10. Adviser, Central Health Laboratory
- 11. Adviser for Disaster Management
- 12. Advisers in Epidemiology
- 13. Health Promotion Coordinator
- 14. Director Nursing
- 15. Director Public Health & Food Safety
- 16. SHIEC Officer
- 17. Public Health & Food Safety, CDCU
- 18. Prime Minister's Office (External Communication)
- 19. Permanent Secretary, Ministry of Education and H.R
- 20. Permanent Secretary, Ministry of Agro-Industry and F. S.
- 21. Permanent Secretary, Ministry of Local Government and Outer Islands
- 22. Permanent Secretary, Ministry of Tourism and Leisure
- 23. Commissioner of Police
- 24. Commander, Special Mobile Force
- 25. Director, Government Information Services
- 26. The Secretary-General, Mauritius Chamber of Agriculture
- 27. The Chief Executive Officer, AHRIM

- 28. The Director, Mauritius Export Association (MEXA)
- 29. The Director, PSSA
- 30. The Director, Joint Economic Council
- 31. The President, Pharmaceutical Association of Mauritius
- 32. The President, Mauritius Employers' Federation
- 33. President, Private Clinics' Association
- 34. President, Private Medical Practitioners Association
- 35. President, Private Medical Laboratories Association
- 36. Representative of MACOSS

Other members will be co-opted as when required.

Annex 2: PROTOCOL FOR HANDLING SUSPECTED CASES ONBOARD A FLIGHT

The cabin crew will take a proper history from the sick passenger whether he has travelled to Guinea (Conakry), Liberia, Sierra Leone or Nigeria within the past one month and if so, will keep the sick person separate from others and provide same with a surgical mask. If mask is not tolerated, passenger to be provided with tissues and plastic bags for disposal of same for incineration thereafter. The passenger will be provided with a designated toilet for exclusive use. Air staff will wear impermeable disposable gloves when dealing with the passenger and follow hand hygiene protocols on glove removal.

Contacts (the passengers seated on adjacent seats to the sick passenger, the one sitting in front, the one behind and one on both sides will be identified by the crew. All passengers and crew who report close contact with the case will also be identified to be assessed by the Medical Team at the airport on arrival.

At airport, the plane should be channeled to a separate parking bay. All passengers except the sick traveler and the identified contacts will disembark. The medical team from the airport (Airport Medical Doctor and one Nursing Officer) will board the plane after wearing Personal Protective Equipment (impermeable gown, impermeable gloves, goggles and N95 mask).

The sick passenger will be interviewed systematically and a history on risk of exposure will be obtained:

- 1. Whether person is suffering from fever and/or any other symptoms.
- 2. Whether he has travelled or transited to Guinea, Liberia, Sierra Leone and Nigeria during the last one month;
- 3. Whether he had contact with a sick person suspected or confirmed with Ebola Virus Disease;
- 4. Whether he has visited or worked in a health institution where Ebola Virus Disease cases are being treated;
- 5. Whether he has attended any funeral rites for a case of Ebola Virus Disease;
- 6. Whether he has worked in a laboratory where tests are being carried out on Ebola Virus Disease;
- 7. Whether he/she has been in contact with sick or dead animals in the affected countries; and
- 8. Whether he has symptoms of bleeding internal or external (even without fever).

After assessment, the suspected case wearing an impermeable gown and mask will be transferred to a designated hospital Isolation Ward by an ambulance parked on the tarmac and using the fast track, accompanied by a Nursing Officer who will be wearing full Personal Protective Equipment. As soon as arrangements are being made for the transfer of the patient from the airport to the designated hospital/ health institution, the Airport Medical Officer will inform the Regional Health Director, the Medical Superintendent or Duty Manager and the Medical Officer on call and the Nursing Supervisor of the designated hospital, to take appropriate steps to receive the patient in the Isolation Ward.

The cabin of the driver of the specially designated ambulance will be separated from the passengers. The driver will wear an impermeable gown and gloves or full Personal Protective Equipment, if required, to convey the sick passenger.

The contacts mentioned above will be interviewed and followed up for 21 days. Subject to the passengers having been exposed to secretions and body fluids of the suspected case, they will be sent to the designated hospital/ health institution for quarantine.

The cabin crew or other passengers who have reported close contact with the case will be assessed by the airport medical officer and put on home quarantine with twice daily monitoring of temperature.

A. Screening of Passengers at the Airport

All passengers arriving from all international flights are being screened by Public Health & Food Safety officers while queuing up before the immigration counter. Their passports are being verified to see whether they have transited in or travelled to any of the four infected countries within the last months and their Health Declaration Forms are also checked. They are questioned about their health status. Any traveler who has visited one or more of the four infected countries recently and reporting sick would be channeled to a dedicated office in the arrival lounge. The airport medical team (Airport medical doctor and nurse) will take a detailed history and assess the patient after which the sick passenger will be transferred through a fast track to an ambulance and sent to the designated hospital/ health institution accompanied by a nursing officer.

B. Passengers Identified at the Health Counter

Passengers identified as suspect cases at the health counter will be assessed by the Airport Medical Officer in a dedicated office of the Arrival Lounge at the airport.

An assessment will be made after taking a proper history of symptoms and any risk of exposure to Ebola Virus Disease in the last one month. The suspected passenger will follow the fast track for evacuation to designated hospital Isolation Ward accompanied by a Nursing Officer wearing full Personal Protective Equipment. The designated ambulance will be parked at the identified location reserved for this purpose.

The Airport Medical Officer will inform the Regional Health Director, the Medical Superintendent or Duty Manager on call, the Medical Officer on call at designated hospital together with the Nursing Supervisor, to take appropriate steps to receive the patient in the Isolation Ward. The Regional Public Health Superintendent should also be informed.

On patient's entry to the Isolation ward, the Ward Manager (wearing full Personal Protective Equipment) will direct the patient and accompanying Nursing Officer to the proper isolation bay where beds are available.

The Medical Officer will wear full Personal Protective Equipment to make a clinical assessment of the patient in the isolation room and inform the Medical Specialist on call for the isolation ward to attend to the patient after contacting the Regional Health Director.

Annex 3: PROTOCOL FOR HANDLING OF SUSPECTED CASES AT THE PORT

- (i) At the Port, in the event there is a suspected case of Ebola Virus Disease on board a ship, it should be berthed at an isolated quay. The Duty quarantine officer will inform the Regional Public Health Superintendent of the region during working hours to arrange for a Medical Team wearing full Personnel Protective Equipment to visit and transfer the patient to the Isolation Ward at a designated hospital;
- (ii) After working hours, the duty manager of the hospital to be informed, to arrange for a Medical Team wearing full Personal Protective Equipment to visit and transfer the patient to the Isolation Ward at a designated hospital;
- (iii) Contacts to be identified by Public Health & Food Safety Inspectors with the help of crew members; and
- (iv) All asymptomatic close contacts, who would have been in contact with secretions and body fluids of the suspected case, will be sent to a designated hospital.

Annex 4: DETECTION OF EBOLA VIRUS DISEASE (EVD)

A. Suspected Ebola Virus Disease case

A person with a history of residence or travel from countries where EVD transmission is active (Sierra Leone, Guinea Conakry, Liberia and Nigeria) in the 21 days preceding onset of the following symptoms:

- Fever and any of the following:
 - ➢ headache
 - > muscle pain
 - > vomiting
 - > diarrhoea
 - > abdominal pain

OR

With inexplicable bleeding (bloody diarrhoea, bleeding from gums, bleeding into skin, bleeding into eyes and urine)

B. Probable case: to be added

C. <u>Confirmed Ebola Virus Disease case</u>

A suspected case with laboratory confirmation of Ebola infection.

Any doctor who sees a patient and who meets the above case definition for suspected case should immediately notify the Health Authorities on the following numbers:

On weekdays from 9 00 to 16 00 hours: 201 2739

This case definition will be revised as and when required.

Annex 5: QUESTIONNAIRE FOR EBOLA

Name :
Nationality:
Address in Mauritius:
Telephone Number(Landline) Mobile Mobile
Email Address
Age : Sex : Male Female
Occupation :
History of Travel :
Country/ Countries travelled to:
Specific regions visited:
Past Symptoms
Present Symptoms
Fever: Yes No Headache: Yes No
Loss of appetite: Yes No Lethargy: Yes No
Aching muscles or joints: Yes No
Breathing difficulties: Yes No Vomiting: Yes No
Diarrhoea: Yes No Stomach pain: Yes No
Difficulty swallowing: Yes No Hiccup: Yes No
Any inexplicable bleeding: Yes No Bloody diarrhoea: Yes No
Bleeding gums: Yes No Skin Bleeding: Yes No
Blood in urine: Yes No bleeding into eyes Yes No
Date of onset of symptoms :
History of Contact with a suspected, probable or confirmed case of Ebola: Yes No
With a dead or sick animal: Yes No
Whether stayed in a hospital where cases are treated: Yes No
Name of visiting officer
Date of first visitDate of second visit
Date of third visitDate of fourth visit
Any Remarks

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Annex 6: ISOLATION WARD

The Isolation Ward is located on the first floor of New Souillac Hospital (formerly Male Isolation Ward), now being used as a district hospital. The isolation ward is provided with a changing room, kitchen, and toilet with bathroom for staff on the right side of the corridor before the Central Nursing Station.

The ward has 5 bays. Four bays are reserved for isolation and one bay for quarantine. The four isolation bays are completely separated from the quarantine bay with separate accesses.

(i) Isolation Bays

A. The first two isolation bays are equipped with facilities for ventilator machines. The first bay has been earmarked for male patients and the second bay for female patients. Each bay can accommodate three beds with ensuite toilet and bathroom.

There is also provided a nursing station and an anteroom in each bay. The anteroom will be used by staff for removal of personal protective equipment and hand washing after leaving the patient's room.

In the patient's room each bed will be provided with a dedicated thermometer, stethoscope, automatic blood pressure apparatus, hand sanitizer (alcohol hand rub) and a covered pedal bin lined with double plastic bags. The mattress to be covered by disposable plastic sheet or an impermeable mattress cover.

The room will also have a sink with sensor taps and automatic liquid soap dispenser and paper towels for hand drying.

B. There are two other bays one for female and one for male patients each with three beds, but without facilities for ventilation machines. They are also provided each with a nursing station, an anteroom and ensuite toilet and bathroom for patients.

Total no. of beds in isolation bays: 6 + 6 = 12

(ii) Quarantine Bay

The quarantine bay is physically separated from the isolation bays and has a partition in the middle to separate male and female patients. On one side to the left inside the bay,

a small space will be provided for Nursing Staff monitoring the quarantined patients. The quarantine bay will accommodate two beds for male patients and two beds for female patients.

Total no. of beds in quarantine bay: 4

(iii) Anteroom

The anteroom will have a sink with sensor taps and automatic soap dispensers and provision for paper towels for hand-drying. Also an automatic alcohol hand rub dispenser will be available for hand hygiene. Large bins with cover and lined with double plastic bags will be used for collection of used disposable Personal Protective Equipment except gumboots which will be kept in a separate container with disinfectant.

(iv) Nursing Station in Isolation Bays

The nursing station will have an intercom facility for communicating with the central nursing station in the ward. It will also have an alcohol hand rub dispenser and a small cupboard with a mini fridge for keeping medications.

(v) The Central Nursing Station

It will have a direct phone line and intercom communications with the nursing stations in all the bays. It will also be provided with alcohol hand rub dispensers and stationery for record keeping.

(vi) Entry to Isolation Ward

Patients will be transported to a designated hospital by ambulance. The ambulance will not take the main entrance, but the second entrance near the Diabetes & Vascular Health Centre leading to the parking near the mortuary. The patient will take the corridor to the designated lift at basement. This lift will be solely dedicated for transfer of Ebola patients only, to the Isolation Ward on the first floor. The patient accompanied by the Nursing Staff will access the main door of the Isolation Ward and after leaving the patient in the Isolation Room; the Nursing Officer will proceed to the anteroom by the other door earmarked for this, for the removal of Personal Protective Equipment and hand hygiene.

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(vii) Entry to Quarantine Bay

Since these patients are not sick and will be ambulatory they will access the quarantine bay by the stairs at the emergency exit on the ground floor.

The ambulance transporting these patients, will take the second entrance near the Diabetes & Vascular Health Centre and park by the emergency exit door on ground floor. The Nursing Officer accompanying the person to be quarantined will proceed with his admission to the quarantine bay after having informed the Nursing Supervisor.

(viii) Procedures

All staff working in the isolation bays will change into theatre clothes first (trousers and shirts) and then put on the personal protective equipment as per protocol in the changing room.



Annex 7: OUTLAY PLAN OF ISOLATION WARD AT SOUILLAC HOSPITAL (now being used as a district hospital)

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Annex 8: PROTOCOL FOR WEARING PERSONAL PROTECTIVE EQUIPMENT

In Changing Room

- 1. Staff to put on theatre clothes (trousers and shirts) first after removing working clothes and shoes.
- 2. Put on overshoes.
- 3. Put on gum boots.
- 4. Put on disposable impermeable long sleeved disposable gown over theatre clothes.
- 5. Wear N95 mask.
- 6. Put on goggles or disposable face shield.
- 7. Wear disposable head cover.
- 8. Perform hand hygiene
 - (i) Either wash hands with soap and water if hands visibly soiled

Or

- (ii) Use alcohol hand rubs if hands not soiled.
- 9. Put on disposable impermeable gloves over cuffs of gown. Use double gloves if contact with blood or body fluids are anticipated.
- 10. Place disposable waterproof apron over gown.

While Wearing Personal Protective Equipment

- 1. Avoid touching or adjusting Personal Protective Equipment.
- 2. Remove gloves if they become soiled or damaged.
- 3. Change gloves between patients or between procedures on same patient if required.
- 4. Always perform hand hygiene before putting on new gloves.

How to Remove Personal Protective Equipment

Before removal of Personal Protective Equipment, staff to dip boots in container with disinfectant (Javel) immediately after entering the anteroom by the side door.

- 1. Peel off plastic apron and dispose in bin earmarked for this purpose.
- 2. Remove gown and roll inside-out slowly and dispose in bin.

- 3. Remove gloves and discard in bin. Perform hand hygiene with alcohol hand rub.
- 4. Remove rubber boots without touching them with the hands (with the help of a boot remover). The removed boots are placed into a container with disinfectant (Javel solution) by an attendant.
- 5. Perform hand hygiene wash hands with soap and water and dry with paper towels discard used paper towels in bin.
- 6. Remove head cover from behind.
- 7. Remove face protection
 - (a) Remove disposable face shield from behind and place in bin or remove goggles from behind and place in a separate container with disinfectant and for processing it to be secured.
 - (b) Remove mask from behind the head.
- 8. Perform hand hygiene wash hands with soap and water and use paper towels for drying. Dispose paper towels in bin.

Steps to put on Personal Protective Equipment (PPE)

- 1 Always put on essential required PPE when handling either a suspect, probable or confirmed case of VHF. Gather all the necessary items of the PPE beforehand.
- 2 The dressing and undressing of PPE should be supervised by another trained member of the team. These instructions should be displayed on the wall in the dressing and undressing room. Steps to put on essential required PPE.
- 3 Put on the scrub suit in the changing room.



4 Put on gum boots; If not available, make sure you have closed, puncture and fluid resistant shoes and put on overshoes.



OR, IF BOOTS UNAVAILABLE



5 Place the gown over the scrubs.



6 Put on face protection: 6a Put on a medical

mask.



6b Put on goggles or a face shield







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Steps to remove PPE

1 Peel off plastic apron and dispose of safely, (if the apron is to be reused, place in a container with disinfectant)



4 If wearing rubber boots, remove them (ideally using the boot remover) without touching them with your hands. Place the removed boots into a container with disinfectant.



Remove face protection: 7a Remove face shield or goggles (from behind head). Place eye protection in a separate container for reprocessing. OR



2 If wearing protective overshoes, please remove them with your gloves still on. (If wearing gum boots, see step 4).



5 Perform hand hygiene.



7b Remove mask from behind head.



3 Remove gown and gloves and roll inside-out and dispose of safely.



6 If wearing a head covering, remove it now (from behind head).



8 Perform hand hygiene.





Technique for donning and removing non-sterile examination gloves

When the hand hygiene indication occurs before a contact requiring glove use, perform hand hygiene by rubbing with an alcohol-based handrub or by washing with soap and water.

I. HOW TO DON GLOVES:





2. Touch only a restricted surface of the glove corresponding to the wrist (at the

top edge of the cuff)



1. Take out a glove from its original box

4. Take the second glove with the bare hand and touch only a restricted surface of glove corresponding to the wrist

5. To avoid touching the skin of the forearm with the gloved hand, turn the external surface of the glove to be donned on the folded fingers of the gloved hand, thus permitting to glove the second hand



3. Don the first glove

6. Once gloved, hands should not touch anything else that is not defined by indications and conditions for glove use

II. HOW TO REMOVE GLOVES:



2. Hold the removed glove in the gloved hand and slide the fingers of the unglo-ved hand inside between the glove and

the wrist. Remove the second glove by

rolling it down the hand and fold into the

first glove



3. Discard the removed gloves

4. Then, perform hand hygiene by rubbing with an alcohol-based handrub or by washing with soap and water

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Annex 9: STOCKPILING OF PERSONAL PROTECTIVE EQUIPMENT

ltem No	Items	Quantity for disposable items per month	Quantity for re-usables	
1	Disposable Surgical Gloves			
	Small			
	Medium			
	Large			
2	Disposable Surgical Gowns			
	Medium			
	Large			
	Extra large			
3	N95 Face Masks			
4	Surgical Face Masks			
5	Head Covers			
6	Shoe Covers			
7	Disposable Plastic Aprons			
8	Face Shields			
9	Goggles(USAID)			
10	Gum Boots (pairs)			
	Size 42			
	Size 43			
	Size 44			

ltem No	Items	Quantity for disposable items per month	Quantity for re-usables	
11	Long Sleeved Surgical Gloves			
	Small			
	Medium			
	Large			
12	Heavy Duty Gynecological Gloves			
13	Overalls			
	Medium			
	Large			
	Extra Large			
14	Coveralls			
	Medium			
	Large			
	Extra Large			
15	Heavy Duty Plastic Aprons			
16	Biohazard Plastic Bags			
17	Body Bags			
18	Thermal Thermometer			
19	Camera			
20				

Annex 10: ISOLATION PROCEDURES

Before entering the isolation room always wears full PPE.

Consider changing gloves if heavily soiled with blood or any body fluids while providing care to the same patient (perform hand hygiene immediately after removal).

Always change gloves and perform hand hygiene immediately after removal, when moving from one patient to another while caring for patients in the same room.

When undertaking any strenuous activity, (e.g. carrying a patient) or task in which contact with blood and body fluids is anticipated (e.g. the patient has symptoms like diarrhea, bleeding or vomiting and/or the environment could be contaminated with blood or body fluids), in addition to the above-mentioned PPE, use double gloving and wear a heavy duty impermeable apron over the gown.

Avoid aerosol-generating procedures as far as possible.

When leaving the isolation room, carefully remove and dispose of PPE (including boots) into waste containers and perform hand hygiene.

When removing PPE, be careful to avoid any contact between the soiled items (e.g. gloves, gowns) and any area of the face (i.e. eyes, nose or mouth) or non-intact skin.

Use **dedicated equipment** (e.g. thermometer, stethoscope, and BP apparatus) for each patient. Disinfect this equipment with appropriate disinfectants.

The patient's charts and records should be **kept outside the isolation room** at the Central Nursing station to avoid their contamination.

Annex 11: INFECTION PREVENTION AND CONTROL

1. Hand hygiene¹

- How to perform hand hygiene
- * Clean your hands by rubbing them with an alcoholbased formulation, as the preferred mean for routine hygienic hand antisepsis if hands are not visibly soiled. It is faster, more effective, and better tolerated by your hands than washing with soap and water.
- Wash your hands with soap and water when hands are visibly dirty or visibly soiled with blood or other body
- fluids or after using the toilet. If exposure to potential spore-forming pathogens is strongly suspected or proven, including outbreaks is the preferred means.
- * Hand washing (40-60 sec): wet hands and apply soap; rub all surfaces; rinse hands and dry thoroughly with a single use towel; use towel to turn off faucet. * Hand rubbing (20–30 sec): apply enough product to cover
- all areas of the hands; rub all surfaces until dry.

Summary indications:1

1. Before touching a patient: Clean your hands before touching a patient when approaching him/her

2. Before clean / aseptic procedure: Clean your hands immediately before accessing a critical site with infectious risk for the patient (e.g. a mucous membrane, non-intact an invasive medical device)*

3. After body fluid exposure risk: Clean your hands as soon as the task involving an exposure risk to body fluids has ended (and after glove removal)*

4. After touching a patient: Clean your hands when leaving the patient's side after having touched the patient* 5. After touching patient surroundings: Clean your hands after touching any object or furniture when living the patient surroundings, without having touched the patient*

2. Gloves

- secretions, excretions, mucous membranes, nonintact skin. . Change GLOVES between tasks and procedures on the same
- patient after contact with potentially infectious material. * Remove THEM after use, before touching non-contaminated items and surfaces, and before going to another patient. Perform hand hygiene immediately after removal.

3. Facial protection (eyes, nose, and mouth)

(eye visor, goggles) or (2) a face shield to protect mucous membranes of the eyes, nose, and mouth during activities that are likely to generate splashes or sprays of blood, body fluids, secretions, and excretions

4. Gown

 Wear to protect skin and prevent soiling of clothing during activities that are likely to generate splashes or sprays of blood, body fluids, secretions, or excretions Remove soiled gown as soon as possible, and per-form

5. Prevention of needle stick and injuries from other sharp instruments²

Handling needles, scalpels, and other sharp instruments or devices

6. Respiratory hygiene and cough etiquette Persons with respiratory symptoms should apply

- Cover their nose and mouth when coughing/sneezing with tissue or mask, dispose of used tissues and masks and perform hand hygiene after contact with respiratory
- Health-care facilities should:
- · Place acute febrile respiratory symptomatic patients at least 1 metre (3 feet) away from others in common
- · Post visual alerts at the entrance to health-care facilities instructing persons with respiratory symptoms to practise
- Consider making hand hygiene resources, tissues and masks available in common areas and areas used for

7. Environmental cleaning

 Use adequate procedures for the routine cleaning. and disinfection of environmental and other frequently

8. Linens

- Handle, transport, and process used linen in a manner which:
- Prevents skin and mucous membrane exposures and contamination of clothing.
- · Avoids transfer of pathogens to other patients and or the environment

9. Waste disposal

- Ensure safe waste management.
 Treat waste contaminated with blood, body fluids, secretions and excretions as clinical waste, in accordance with local regulations
- . Human tissues and laboratory waste that is directly associated with specimen processing should also be treated as clinical waste
- · Discard single use items properly

10. Patient care equipment

- secretions, and excretions in a manner that prevents skin and mucous membrane exposures, contamination of clothing, and transfer of pathogens to other patients or the environment.
- Clean, disinfect, and reprocess reusable equipment appropriately before use with another patient.
- leaning used instruments • Disposing of used needles and other sharp instruments.

Hand Hygiene

Carefully apply the following precautions to avoid any possible unprotected direct contact with blood and body fluids when providing care to the patient:

- > Perform hand hygiene:
- before donning gloves and wearing PPE on entry to the isolation room/area,
- before any clean/aseptic procedures being performed on a patient,
- after any exposure risk or actual exposure with the patient's blood and body fluids,
- After touching (even potentially) contaminated surfaces/items/equipment in the patient's surroundings and after removal of PPE, upon leaving the care area.

Hand hygiene should be performed within the isolation rooms/areas every time it is needed according to the above indications during care to the patient, along with change of gloves. When caring for patients in the same room, it is essential to organize the complete care to each patient before moving to the next and to perform hand hygiene between touching the patients.

Neglecting to perform hand hygiene after removing PPE will reduce or negate any benefits of the protective equipment.

How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

Duration of the entire procedure: 40-60 seconds







Wet hands with water;



Right palm over left dorsum with interlaced fingers and vice versa;



Rotational rubbing of left thumb clasped in right palm and vice versa;



Dry hands thoroughly with a single use towel;



Palm to palm with fingers interlaced;



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;

10

Use towel to turn off faucet;





Backs of fingers to opposing palms with fingers interlocked;



Rinse hands with water;



Your hands are now safe.

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How to perform hand hygiene by hand rubbing or handwashing

How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

Duration of the entire procedure: 20-30 seconds





Rub hands palm to palm;

Apply a palmful of the product in a cupped hand, covering all surfaces;





Palm to palm with fingers interlaced;

7



Backs of fingers to opposing palms

with fingers interlocked;

Right palm over left dorsum with interlaced fingers and vice versa;



Rotational rubbing of left thumb clasped in right palm and vice versa;

Rotational rubbing, backwards and

forwards with clasped fingers of right hand in left palm and vice versa;



Once dry, your hands are safe.

National Preparedness Plan Ebola Virus Disease (Discussion Paper)





GUIDE TO LOCAL PRODUCTION

This is intended to guide a local producer in the actual preparation of the formulation.

Materials required (small volume production)

REAGENTS FOR

- FORMULATION 1:
- Ethanol 96%
- Hydrogen peroxide 3%
- Glycerol 98%
- Hydrogen peroxide 3%

REAGENTS FOR

FORMULATION 2: • Isopropyl alcohol 99.8%

- Glycerol 98%
 Sterile distilled or boiled
- Sterile distilled or boiled Sterile distil cold water cold water
- 10-litre glass or plastic bottles with screw-threaded stoppers (1), or
- 50-litre plastic tanks (preferably in polypropylene or high density polyethylene, translucent so as to see the liquid level) (2), or
- Stainless steel tanks with a capacity of 80–100 litres (for mixing without overflowing) (3, 4)
- Wooden, plastic or metal paddles for mixing (5)
- Measuring cylinders and measuring jugs (6)
- · Plastic or metal funnel
- 100 ml and 500 ml plastic bottles with leak-proof tops (7)
- An alcoholometer: the temperature scale is at the bottom and the ethanol concentration (percentage v/v and w/w)
- at the top (8)

NOTE

- Glycerol: used as humectant, but other emollients may be used for skin care, provided that they are cheap, widely available and miscible in water and alcohol and do not add to toxicity, or promote allergy.
- Hydrogen peroxide: used to inactivate contaminating bacterial spores in the solution and is not an active substance for hand antisepsis.
 Any further additive to both formulations should be clearly
- Any further additive to both formulations should be clearly labelled and be non-toxic in case of accidental ingestion.
- A colorant may be added to allow differentiation from other fluids, but should not add to toxicity, promote allergy, or interfere with antimicrobial properties. The addition of perfumes or dyes is not recommended due to risk of allergic reactions.

General information

Labelling should be in accordance with national guidelines and should include the following:

- Name of institution, date of production and batch number
- WHO-recommended handrub solution
- For external use only
- Avoid contact with eyes
- Keep out of the reach of children
- Use: Apply a palmful of alcohol-based handrub and cover all surfaces of the hands. Rub hands until dry.
- Composition: ethanol or isopropanol, glycerol and hydrogen peroxide
- · Flammable: keep away from flame and heat













Production and storage facilities:

- Production and storage facilities should ideally be air conditioned or cool rooms. No naked flames or smoking should be permitted in these areas.
- WHO-recommended handrub formulations should not be produced in quantities exceeding 50-litres locally or in central pharmacies lacking specialised air conditioning and ventilation.
- Since undiluted ethanol is highly flammable and may ignite at temperatures as low as 10°C, production facilities should directly dilute it to the above-mentioned concentration. The flashpoints of ethanol 80% (v/v) and of isopropyl alcohol 75% (v/v) are 17.5°C and 19°C, respectively.
- National safety guidelines and local legal requirements must be adhered to the storage of ingredients and the final product.

METHOD: 10-LITRE PREPARATIONS

These can be prepared in 10-litre glass or plastic bottles with screw-threaded stoppers.

Recommended amounts of products: FORMULATION 1: FORMULATION 2:

- Ethanol 96%: 8333 ml
- Isopropyl alcohol 99.8%: 7515 ml Hydrogen peroxide 3%: 417 ml

Glycerol 98%: 145 ml

 Hydrogen peroxide 3% 417 ml Glycerol 98%: 145 ml

Step by step preparation:



1. The alcohol for the formula to be used is poured into the large bottle or tank up to the graduated mark



3. Glycerol is added using a measuring cylinder. As glycerol is very viscous and sticks to the wall of the measuring cylinder, it should be rinsed with some sterile distilled or cold boiled water and then emptied into the bottle/tank.



6. The solution is mixed by shaking gently where appropriate or by using a paddle.

2. Hydrogen peroxide is added using the measuring cylinder.



- 4. The bottle/tank is then topped up to the 10-litre mark with sterile distilled or cold boiled water.
- 5. The lid or the screw cap is placed on the tank/bottle as soon as possible after preparation, in order to prevent evaporation.



 Immediately divide up the solution into its final containers (e.g. 500 or 100 ml plastic bottles), and place the bottles in quarantine for 72 hours before use. This allows time for any spores present in the alcohol or the new/re-used bottles to be destroyed.

Final products:

- FORMULATION 1: Final concentrations:
- Ethanol 80% (v/v)
- Glycerol 1.45% (v/v)
- Hydrogen peroxide
- 0.125% (v/v)

- Final concentrations:
 - Isopropyl alcohol 75% (v/v)
 - Glycerol 1.45% (v/v)
 - Hydrogen peroxide
 - 0.125% (v/v)

FORMULATION 2:

Quality control

1. Pre-production analysis should be made every time an analysis certificate is not available to guarantee the titration of alcohol (i.e. local production). Verify the alcohol concentration with the alcoholmeter and make the necessary adjustments in volume in the preparation formulation to obtain the final recommended concentration



2. Post-production analysis is mandatory if either ethanol or an isopropanol solution is used. Use the alcoholmeter to control the alcohol concentration of the final use solution. The accepted limits should be fixed to \pm 5% of the target concentration (75%-85% for ethanol).



3. The alcoholmeter shown in this information pamphlet is for use with ethanol; if used to control an isopropanol solution, a 75% solution will show 77% (± 1%) on the scale at 25°C.

Injection Safety and Sharps

- Syringes, needles or similar equipment should never be reused.
- Limit the use of needles and other sharp objects as much as possible.
- Limit the use of phlebotomy and laboratory testing to the minimum necessary for essential diagnostic evaluation and patient care.
- Never replace the cap on a used needle.
- Never direct the point of a used needle towards any part of the body.
- Do not remove used needles from disposable syringes by hand, and do not bend, break or otherwise manipulate used needles by hand.
- -Dispose of syringes, needles, scalpel blades and other sharp objects in appropriate, puncture-resistant containers.

Puncture-resistant containers for sharps objects should be placed as close as possible to the immediate area where the objects are being used ('point of use') to limit the distance between use and disposal, and ensure the containers remain upright at all times.

Puncture-resistant containers should be securely sealed with a lid and replaced when three quarters full

Managing exposure to the virus through body fluids including blood

Persons including HCWs with percutaneous or muco-cutaneous exposure to blood, body fluids, secretions, or excretions from a patient with suspected or confirmed HF should immediately and safely stop any current tasks, leave the patient care area, and safely remove PPE. Remove PPE carefully according to the steps indicated in **Annex 3**, because exposure during PPE removal can be just as dangerous for nosocomial transmission of EVD. Immediately after leaving the patient care area, wash the affected skin surfaces or the percutaneous injury site with soap and water.

Accordingly, irrigate mucous membranes (e.g. conjunctiva) with copious amounts of water or an eyewash solution, and not with chlorine solutions or other disinfectants.

Immediately report the incident to the local coordinator. This is a time-sensitive task and should be performed as soon as the HCW leaves the patient care unit.

Exposed persons should be medically evaluated for other potential exposures (e.g., HIV, HCV) and receive follow-up care, including fever monitoring, twice daily for 21 days after the incident.

Any exposed person who develops fever within 21 days of exposure should notify the sanitary authorities.

HCWs suspected of being infected should be cared for/isolated, and the same recommendations outlined in this document must be applied until a negative diagnosis is confirmed.

Contact tracing and follow-up of family, friends, co-workers and other patients, who may have been exposed to Ebola virus through close contact with the infected HCW will be carried out.

Annex 12: PROTOCOL FOR LABORATORY TESTING FOR SUSPECTED CASES OF EBOLA

(Setting-up of an Isolation Ward laboratory station (IWLS) at Souillac Hospital (now being used as a district hospital)



Annex 13: LINEN AND LAUNDRY SERVICES

Linen that has been used on patients can be heavily contaminated with body fluids (e.g. blood, vomit) and splashes may result during handling. When handling soiled linen from patients, **always use full PPE.**

Soiled linen should be placed in clearly-labelled, leak-proof bags or buckets at the site of use and the container surfaces should be disinfected (using an effective disinfectant) before removal from the isolation room.

If there is any solid excrement such as faeces or vomit, scrap off carefully using a flat firm object and flush it down the toilet before linen is placed in its container.

Linen should never be carried against the body.

Linen should be then transported directly to the laundry area in its container and laundered promptly with water and detergent. A heavy duty washing machine should be used for laundering. After washing linen should be soaked in 0.05% Chlorine solution for approximately 30 minutes and then dried.

Visibly soiled linen should be incinerated.

Annex 14: CLINICAL MANAGEMENT OF CASES

- (1) Single venous puncture for the following blood tests:
- Full Blood Count
- Urea/Electrolytes
- Liver Function Tests
- Blood Culture
- Coagulation profile
- Ebola
- Malaria
- Dengue/Chikungunya

(2) Supportive and symptomatic treatment

1) Maintain adequate rehydration by oral route preferentially.

Use IV access, if indicated.

- 2) Do not use products containing salicylates or other non-steroidal antiinflammatory drugs. Use Paracetamol as antipyretics.
- 3) In the event of severe bleeding, blood and blood products will be used.

Annex15: MANAGEMENT OF CLINICAL WASTE

A. Personal protection

Heavy duty/rubber gloves, impermeable gown, closed shoes (e.g. boots) and Facial protection (mask and goggle or face shield) should be worn when handling infectious waste (e.g. solid waste or any secretion or excretion with visible blood) even if it originated from a normally sterile body cavity.

Goggles provide greater protection than visors from splashes of liquid waste.

Avoid splashing when disposing of liquid infectious waste.

A.1 Waste management procedures

- Waste should be segregated at point of generation to enable appropriate and safe handling.
- Sharp objects (e.g. needles, syringes, glass articles) and tubing that has been in contact with blood or body fluids should be placed inside puncture resistant waste containers. These should be located as close as is practical to the patient care area where these items are used. The same applies to laboratories.
- All solid, non-sharp, infectious waste should be collected using leak-proof waste bags and covered bins. Bins should never be carried against the body.
- Waste should be placed in a designated pit of appropriate depth (e.g. 2 metres or 7 feet) and filled to a depth of 1–1.5 m or 3–5 feet. After each waste load, the waste should be covered with a layer of soil 10-15 cm deep.
- An incinerator may be used for short periods during an outbreak to destroy solid waste. However, it is essential to ensure that total incineration has taken place. Caution is also required when handling flammable items.
- Placenta and anatomical samples should be buried in a separate pit.
- The area designated for the final treatment and disposal of waste should have controlled access to prevent entry by animals, untrained personnel or children
- Waste, such as faeces, urine and vomit, and liquid waste from washing, can be disposed of in the sanitary sewer. No further treatment is necessary.

Annex 16: PROTOCOL FOR HANDLING AND DISPOSAL OF DEAD BODIES AND DISINFECTION OF TRANSPORT VEHICLE

This section describes how to:

- Prepare the body of a deceased Ebola Virus Disease patient.
- Transport the infected body safely to the burial site.
- Disinfect the vehicle after transporting the body.

(i) Use safe burial practices

There is risk of transmission in the health facility when an Ebola Virus Disease patient dies because the bodies and body fluids of deceased Ebola Virus Disease patients remain contagious for several days after death.

Family and community members are also at risk if burial practices involve touching and washing the body.

(ii) Prepare the body safely

Burial should take place as soon as possible after the body is prepared in the health facility.

Health facility staff should:

- Be aware of the family's cultural practices and religious beliefs. Help the family understand why some practices cannot be done because they place the family or others at risk for exposure.
- Counsel the family about why special steps need to be taken to protect the family and community from illness.

While preparing the body in the health facility:

- The handling of human remains should be kept to a minimum.
- Only trained personnel should handle the remains.
- Full protective clothing should be worn as recommended for staff in the patient isolation area (impermeable gowns, mask, eye protection, face shield, boots and thick rubber gloves as the second pair or outer layer of gloves).
- Natural orifices should be plugged.

- Body should be placed in a zipped leak-proof body bag (mortuary sack) which should be closed securely.
- the surface of the body bag should be wiped over with sodium hypochlorite solution (0.5 % chlorine)
- The body bag containing the corpse should be placed in a second body bag and the surface wiped again with 0.5% chlorine solution.
- The body should be placed inside a lead coffin and sealed hermetically.
- It should be labeled "Highly Infectious"
- PPE should be remove immediately after and placed in the grave along with the coffin, followed promptly by hand hygiene.
- The coffin should immediately be transported to Camp Diable cemetery at an identified spot and buried promptly. The route should pass through Royal Road Union Ducray, St Aubin, Riviere des Anguilles, and Batimarais.
- The vehicle should be escorted to Camp Diable cemetery by Police.
- Personnel handling the coffin during transport and burial should wear full PPE as is worn in the Isolation Room.
- Personnel should take a closed container or sprayer with 1:10 Bleach Solution in the event of any accidental contact with infectious body fluids or to clean up any spills in the transport vehicle.
- The grave should be dug at least two (2) metres in depth
- The family should be informed that viewing the body is impossible and they should be made to understand the reason for limiting the number of people assisting the burial. Family members and public should be advised not to approach the grave site.
- The vehicle should be disinfected after transporting the body. Personnel who disinfect the vehicle should wear full PPE as is worn in the Isolation Room. The grave site should also be disinfected.

• The interior of the vehicle where the body was carried should be rinsed with 1:10 bleach solution and allowed to soak for ten (10) minutes, and then rinsed well with clean water and air dried.
Annex 17: ENVIRONMENTAL CLEANING

The following precautions should be observed:

Wearing of full PPE including heavy duty/rubber gloves, impermeable gown, apron, boots and facial protection when cleaning the environment and handling infectious waste.

Cleaning and disinfection of environmental surfaces or objects contaminated with blood, other body fluids, secretions or excretions, which should be done as soon as possible using standard hospital detergents/disinfectants (e.g. a 0.5%chlorine solution or a solution containing 1 000 ppm available free chlorine). Application of disinfectants should be preceded by cleaning to prevent inactivation of disinfectants by organic matter.

Preparing cleaning and disinfectant solutions every day. Cleaning solutions should be changed and equipment refreshed frequently while being used during the day, as they will get contaminated quickly.

Cleaning floors and horizontal work surfaces at least once a day with clean water and detergent. Cleaning with a moistened cloth helps to avoid contaminating the air and other surfaces with air-borne particles.

Allowing surfaces to dry naturally before using them again.

Cleaning should always be carried out from "clean" areas to "dirty" areas, in order to avoid contaminant transfer.

Disinfection of occupied or unoccupied clinical areas with spray (fogging) should not be carried out. This is a potentially dangerous practice that has no proven disease control benefit.

How to make chlorine solutions for environmental disintection

Example I - Using Liquid Bleach

Chlorine in liquid bleach comes in different concentrations. Any concentration can be used to make a dilute chlorine solution by applying the following formula:

 % chlorine in liquid bleach
 % chlorine desired
 ∫
 − 1 = Total parts of water for each part bleach†

Example: To make a 0.5% chlorine solution from 3.5% + bleach:

 $\frac{3.5\%}{0.5\%} \ \left] -1 = 7 - 1 = 6 \text{ parts water for each part bleach} \right]$

Therefore, you must add 1 part 3.5% bleach to 6 parts water to make a 0.5% chlorine solution.

- t "Parts" can be used for any unit of measure (e.g. ounce, litre or gallon) or any container used for measuring, such as a pitcher.
- In countries where French products are available, the amount of active chlorine is usually expressed in degrees chlorum. One degree chlorum is equivalent to 0.3% active chlorine.

Example II - Using Bleach Powder

If using bleach powder, † calculate the amount of bleach to be mixed with each litre of water by using the following formula:

 % chlorine desired
 x 1 000 = Grams of bleach powder for each litre of water

Example: To make a 0.5% chlorine solution from calcium hypochlorite (bleach) powder containing 35% active chlorine:

 $\frac{0.5\%}{35\%}] \times 1\ 000 = 0.0143 \times 1\ 000 = 14.3$

Therefore, you must dissolve 14.3 grams of calcium hypochlorite (bleach) powder in each litre of water used to make a 0.5% chlorine solution.

t When bleach powder is used; the resulting chlorine solution is likely to be cloudy (milky).

Example III - Formula for Making a Dilute Solution from a Concentrated Solution

Total Parts (TP) (H ₂ O)	=	<u>% Concentrate</u> % Dilute	-1

Example: To make a dilute solution (0.1%) from 5% concentrated solution.

Calculate TP (H₂O) = $\begin{bmatrix} 5.0\% \\ 0.1\% \end{bmatrix}$ -1 = 50 - 1 = 49

Take 1 part concentrated solution and add to 49 parts boiled (filtered if necessary) water.

Annex 18: CLEANING OF ISOLATION BAY

Health Cleaning Personnel will wear heavy duty/rubber gloves and full Personal Protective Equipment when cleaning the isolation bay. They will start by the nursing station (clean), proceed to patient's room (contaminated) and leave by the anteroom and store Personal Protective Equipment in same and place used equipment in a bin marked for this purpose.

The anteroom needs to be cleaned by another cleaning staff who will remove all bins after disinfecting their surfaces with disinfectant (Javel). The bins to be carried on a trolley and transported to the basement via the designated lift. Waste and soiled linen will be disposed of in accordance with established procedures.

The bin containing the soiled boots will be brought to an identified location near the basement. The boots to be immersed in soapy water followed by immersion in disinfectant solution (0.5% available chlorine) overnight for decontamination. After decontamination, they should be rinsed with water and then allowed to dry.

Annex 19: DISINFECTION OF TRANSPORT VEHICLE

The vehicle cleaner should wear full Personal Protective Equipment.

The interior of the vehicle should be rinsed with bleach solution diluted in strength of 1:10.

The solution should be allowed to rest for ten minutes.

The vehicle should then be rinsed well with clean water and allowed to air- dry.

Proper rinsing is advised as the solution may be corrosive to the vehicle.

Annex 20: GUIDELINES FOR AIRCRAFT CABIN CREW

- 1. It is recommended that sealed single use refresher towels be provided to each passenger.
- 2. In the event that passengers with fever, jaundice or bleeding, travelling from, or recently been in a risk area(Liberia , Sierra Leone, Guinea Conakry, Nigeria and any other countries with reported cases of Ebola Virus Disease) be detected prior to taking off, the Health Authorities at the port of embarkation should be contacted for necessary advice and action. Should such passengers be identified during the flight, they should be separated from others as much as possible (at rear end of aircraft with separate lavatory for exclusive use).
- 3. The sick person should be provided with a face mask, or tissues if cannot tolerate mask.
- 4. The sick person should be encouraged to wash hands with soap and water and /or use alcohol based hand cleaner.
- 5. Crew members caring for sick persons should wear facemasks, impermeable disposable gloves or recommended Personal Protective Equipment in accordance with International Civil Organization guidelines.
- 6. Close contacts (the passengers seated adjacent, the passenger sitting in front, behind and both sides to be identified by cabin crew members.
- 7. Hard surfaces that are visibly soiled should be cleaned and disinfected. Soft surfaces such as carpeted floor or seat cushions soiled with vomit or diarrhea should also be cleaned and thereafter covered with an impermeable material to reduce risk of spread of infection. In the event the sick passenger's clothes are soiled, he should be provided with a long sleeve disposable impermeable gown.
- 8. On flight, passengers and cabin crew are advised to practise good hand hygiene, such as washing hands with soap and water or using a hand sanitizer.
- 9. Solid waste such as gloves, towels and tissues have to be collected in closed bags, to be disposed of by incineration. Used sickness bags should be placed in sealed plastic bags, to be disposed of by incineration.
- 10. It is advisable to have an adequate stock of consumables such as disposable gloves, facemasks and hand sanitizers, on board the aircraft.
- 11. Cabin crew is advised to avoid touching eyes, mouth and nose as far as possible without washing hands.
- 12. The ground control should be informed of any health related incident before disembarkation so that precautionary measures could be taken.

Annex 21: PASSENGER MONITORING & CONTACT TRACING FORM

Health Office:.....

S/N	Name /	Sex	Age	Date of	f Day of Follow up																				
	Address/Contact Number			last contact	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
																									ļ
																									<u> </u>
																									

Tick "0" if the contact has not developed fever or bleeding

Tick "X" if the contact has died or developed fever or bleeding (complete case report form and, if alive, refer to the hospital)

Annex 22: GUIDELINES FOR PASSPORT AND IMMIGRATION OFFICERS

- 1. It is recommended to avoid unnecessary close contact with sick looking passengers.
- 2. All officers are advised to practice good hand hygiene either by regular hand washing with soap and water or by using a hand sanitizer.
- 3. Officers are advised to avoid touching eyes, mouth and nose as far as possible without washing hands.
- 4. It is recommended to always wash hands before and after taking meals and after using toilets.

Annex 23: GUIDELINES FOR HEALTH PERSONNEL AT AIRPORT

- 1. All health personnel are recommended to apply Infection Prevention Control measures at the health point.
- 2. All officers are advised to practice good hand hygiene either by regular hand washing with soap and water or by using a hand sanitizer.
- 3. It is recommended to avoid touching eyes, mouth and nose as far as possible without washing hands.
- 4. Health personnel who have been in contact with a suspected case and develop fever, severe weakness, body ache should inform the officer in charge immediately.
- 5. Follow recommended guidelines while assessing symptomatic patients.

Annex 24: GUIDELINES FOR CUSTOMS OFFICERS

- 1. It is recommended to avoid unnecessary close contact with sick looking passengers..
- 2. All officers are advised to practise good hand hygiene either by regular hand washing with soap and water or by using a hand sanitizer.
- 3. Impermeable disposable gloves should be worn by all officers when handling luggage and hands washed with soap and water after removing gloves.
- 4. Gloves are to be collected in closed bags, to be disposed of by incineration.
- 5. All workers should avoid touching eyes, mouth and nose as far as possible without washing hands with soap and water.
- 6. It is recommended to always wash hands before and after taking meals and after using toilets.

Annex 25: GUIDELINES FOR POLICE AND SECURITY OFFICERS

- 1. It is recommended to avoid unnecessary close contact with sick looking passengers.
- 2. All officers are advised to practise good hand hygiene either by regular hand washing with soap and water or by using a hand sanitizer.
- 3. Officers are advised to avoid touching eyes, mouth and nose as far as possible without washing hands.
- 4. It is recommended to always wash hands before and after taking meals and after using toilets.

Annex 26: GUIDELINES FOR AIRPORT BAGGAGE HANDLERS

- 1. It is recommended to avoid close contact with sick looking passengers.
- 2. All officers are advised to practise good hand hygiene either by regular hand washing or by using a hand sanitizer.
- 3. Impermeable disposable gloves should be worn by all officers when handling luggage.
- 4. Gloves are to be collected in closed bags, to be disposed of by incineration.
- 5. All workers should avoid touching eyes, mouth and nose as far as possible without washing hands with soap and water.
- 6. It is recommended to always wash hands before and after taking meals and after using toilets.

Annex 27: GUIDELINES FOR PERSONNEL OF DUTY FREE SHOPS

- 1. It is recommended that officers working in duty free shops avoid unnecessary close contact with sick looking passengers.
- 2. All officers are advised to practise good hand hygiene either by regular hand washing with soap and water or by using a hand sanitizer.
- 3. Officers are advised to avoid touching eyes, mouth and nose as far as possible without washing hands.
- 4. It is recommended to wash hands before and after taking meals and after using toilets.

Annex 28: GUIDELINES FOR GROUND PERSONNEL

- 1. It is recommended to avoid unnecessary close contact with sick looking passengers.
- 2. All officers are advised to practise good hand hygiene either by regular hand washing with soap and water or by using a hand sanitizer.
- 3. Officers are advised to avoid touching eyes, mouth and nose as far as possible without washing hands.
- 4. It is recommended to always wash hands before and after taking meals and after using toilets.

Annex 29: GUIDELINES FOR CATERING OFFICERS

- 1. All officers are advised to practice good hand hygiene by regular hand washing with soap and water.
- 2. All officers are recommended to avoid touching eyes, mouth and nose as far as possible without washing hands.
- 3. It is recommended not to handle food, when suffering from any infectious illness.
- 4. It is recommended to always cover nose and mouth while coughing and sneezing.
- 5. It is recommended to observe good hygienic practices while preparing and serving food.
- 6. Impermeable disposable gloves should be worn while handling food waste.
- 7. Disposable food trays/utensils should be used on the plane.
- 8. In the event that reusable utensils have been utilized on board, it is recommended that all these items be disinfected and washed thoroughly using detergent and water. The officer handling these items should wear heavy duty gloves.
- 9. All leftover food and disposables from the plane should be disposed of in sealed bags and ultimately incinerated.

Annex 30: GUIDELINES FOR AIRCRAFT CLEANING PERSONNEL

- 1. It is recommended to avoid close contact with sick looking passengers.
- 2. Workers responsible for cleaning are advised to practice good hand hygiene by regular hand washing with soap and water.
- 3. It is recommended to wear impermeable disposable gloves while cleaning aircrafts.
- 4. All frequently touched surfaces (such as table tops, headsets, arm rests, and headrests, door knobs, taps, etc.) in the aircraft should be cleaned and disinfected, wearing impermeable disposable gloves. In the event of a suspected case on board the aircraft, cleaning personnel should wear appropriate disposable Personal Protective Equipment (impermeable long sleeved gowns, plastic aprons, caps, goggles, N95 face masks, and boots).
- 5. All workers should clean hands with soap and water after gloves are removed.
- Solid waste such as gloves, used Personal Protective Equipment, used paper towels, disposable masks, and towels should be collected in closed bags to be disposed of by incineration.
- 7. All workers should avoid touching their eyes, mouth and nose without washing hands with soap and water.
- 8. It is advisable not to use compressed air to clean the airplane.
- 9. Special vacuuming procedures are not recommended while cleaning the plane.
- 10. Workers who develop fever, severe weakness, body ache should consult a doctor immediately.

Annex 31: GUIDELINES FOR SHIP DISINFECTION

- 1. Ship disinfection will be followed according the WHO Maritime declaration as stipulated by the International Health Regulations (2005).
- 2. The steps are as follows

Annex 32: EXIT SCREENING AT AIRPORT FOR OUTGOING PASSENGERS UNDER SURVEILLANCE FOR EBOLA

- 1. On the first visit or first phone call to the passenger, the Principal Public Health and Food Safety Officer will record the following information:
 - a) Date and time of departure from Mauritius;
 - b) Country of disembarkation; and
 - c) Flight details with name and number of carrier.
- 2. This information will be forwarded on the same day to the Airport Health Office.
- A daily database of outgoing passengers leaving the country before 22 days will be compiled.
- 4. This list of passengers will be communicated to the officers at the check-in counters who will inform immediately the Public Health and Food Safety Officer upon arrival of the passengers at the counters in the Departure Lounge.
- 5. The Public Health and Food Safety Officer will screen the passengers for fever and associated symptoms. Any passenger found to be sick, will be assessed by the Airport Medical Officer and if required, transferred to the Isolation Ward at the designated hospital/ health institution by ambulance accompanied by a Nursing Officer wearing Personal Protective Equipment (PPE).

Annex 33: CASE DEFINITION FOR COMMUNITY-BASED SURVEILLANCE

A. Suspected Ebola Virus Disease case:

Any person, alive or dead with the following clinical criteria: Sudden onset of high fever $\geq 38.6^{\circ}$ C and at least three of the following symptoms

- headache
- vomiting
- anorexia / loss of appetite
- diarrhoea
- lethargy
- stomach pain
- aching muscles or joints
- difficulty swallowing
- breathing difficulties

Or any person with inexplicable bleeding

OR

Any sudden inexplicable death.

OR

Having had contact with a suspected, probable or confirmed Ebola case.

References

Websites of the following organizations have been consulted in the preparation of this document:-

- ✓ World Health Organization
- ✓ Centre for Disease Control and Prevention, Atlanta, USA