



MinSalud
Ministerio de Salud
y Protección Social

**PROSPERIDAD
PARA TODOS**

**GUIDELINES FOR PREPARATION AND RESPONSE TO THE POSSIBLE
INTRODUCTION OF CASES OF EBOLA VIRUS DISEASE (EVD) IN COLOMBIA
OCTOBER 2014**

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1. INTRODUCTION

Ebola virus disease - EVD is caused by ebolavirus, which spreads through contact with secretions from sick patients.

Since 2013 PAHO and WHO have confirmed cases of Ebola virus of indigenous origin in the West African subregion. To date, cases of infection have been confirmed mainly in the border districts of Guinea, Sierra Leone, Liberia, Senegal and Nigeria, which have led to determining the Ebola outbreak in West Africa as a **Public Health Emergency of International Concern (PHEIC)**. Temporary recommendations were promulgated, as provided in the International Health Regulations (2005), in order to reduce international propagation of Ebola.

Although there is no evidence of the presence of the Ebola virus in Colombia, or of the bats that act as reservoirs, and indigenous transmission based on this cycle being therefore not possible, the Ministry of Health and Social Protection has established the following guidelines that will allow the adoption and strengthening of measures regarding the following issues: sector and inter-sector coordination and organization, monitoring of public health, laboratory based diagnosis, risk communication, treatment of the cases, and protection of the health staff involved, in relation to the possible arrival of cases in the country.

2. SCOPE

These guidelines will direct the actions required for risk management, in the light of the possible entry of EVD cases into the country, by strengthening the local, territorial and national capacities for the monitoring, prevention and control of cases within the framework of **Public Health Emergency of International Concern (PHEIC)**, as determined by the World Health Organization (WHO).

3. OBJECTIVES

1. To guide the development of strategies and mechanisms of sector and inter-sector coordination for risk management in the event of the introduction of EVD cases in the country.
2. To guide the formulation and implementation of communication strategies and risk awareness, including information, mobilization and social communication measures to prevent the risk of transmission of this disease.
3. To detect and warn in a timely manner, the potential threat represented by Ebola cases entering the country.
4. To direct the preparation and response processes, on a sector and inter-sector basis, in relation to the risk of the Ebola virus reaching the country.
5. To guide prevention and control measures to be implemented for the eventual medical care of Ebola cases under appropriate biosafety conditions.

4. REGULATORY FRAMEWORK

- Law 1523 of 2012, “establishing the National Disaster Risk Management System”.
- Law 9 of 1979, “defining Health Measures”, stipulating “epidemiological monitoring and control” under Title VII.
- Decree 1601 of 1984 “partially regulating Titles III, V and VII of Law 09 of 1979, with regard to port health and epidemiological monitoring of aircraft, vessels and terrestrial vehicles”.

- Decree 3518 of 2006, “creating and regulating the Public Health Monitoring System, and laying down other provisions”.
- Decree 2323 of 2006 “partially regulating Law No. 9 of 1979, relating to the National Network of Laboratories, and providing other legal requirements”.
- Decree 4107 of 2011 “defining the structure and functions of the Ministry of Health and Social Protection”.
- Decree-Law 1295 of 1994 “regulating the General Occupational Risk System”.
- Decree 1443 of 2014 “providing the implementation of the Occupational Health and Safety Management System (OHSMS).
- International Health Regulations 2005
- Circular 040 of 2014: Health Sector participation in the Process of Disaster Risk Management.

5. SCOPE OF APPLICATION

These guidelines are to be enforced throughout the country and they involve the following entities: government authorities, local health entities, members of the General System of Social Security in Health, the Ministry of Foreign Affairs, the Ministry of Labor, Migración Colombia, the National Health Institute, the National Institute for Surveillance of Food and Drugs, the Military Forces, the National Police, the Civil Aviation Authority, the Maritime Director General and the National Institute of Legal Medicine and Forensic Sciences.

6. CONTEXT

6.1 Background

Ebola virus was first detected in 1976, in a village close to the Ebola River, located in the Democratic Republic of Congo (formerly Zaire), from which the disease takes its name. Since 1994 nine epidemic episodes have been documented in Gabon, the Democratic Republic of Congo, Congo, Uganda and South Sudan, with a total of 1,458 cases reported historically in these outbreaks, 921 deaths and a global fatality rate of 63.1%.

The current epidemic is characterized by first affecting West Africa and involving five countries simultaneously; a rapid increase of infected cases; high mortality caused by the viral strain; serious difficulties relating to epidemic containment due to the internal problems of each of the countries concerned and the habits of the population.

6.2. Etiology

The ebolaviruses, Marburgvirus and Cuevavirus, make up the Filoviridae (filovirus) family. There are five species of ebolavirus:

- Bundibugyo Ebolavirus – (BDBV);
- Zaire Ebolavirus (EBOV);
- Reston Ebolavirus (RESTV);
- Sudan Ebolavirus (SUDV) and
- Taïforest Ebolavirus (TAFV).

The BDBV, EBOV and SUDV species have been associated with large outbreaks of EVD in Africa, unlike the RESTV and TAFV species. The RESTV species, found in the Philippines and China can infect humans, but so far no cases of human illness or death accountable to this virus have been reported (1).

Fruit bats, particularly types *Hypsignathus monstrosus*, *Epomops franqueti* and *Myonycteris torquata* (of the Megachiroptera order) are the possible natural hosts of the Ebola virus in Africa; therefore, the geographical distribution of Ebola virus and that of the above bats can coincide, meaning circulation of the virus is enzootical. These bats inhabit Africa, Asia and Oceania, but have not been found in America or Europe, where only bats of the order Microchiroptera exist (2).

Although non-human primates have been a source of infection for humans, it is believed that they are not the virus reservoir but rather, accidental hosts, like the human population.

Ebola virus is introduced into the human population through close contact with organs, blood, secretions or other bodily fluids of infected animals. In Africa, there have been documented cases associated with the handling of infected chimpanzees, gorillas, fruit bats, monkeys, antelope and porcupines, found dead or sick in the jungle.

The virus then spreads in the community through transmission from person to person by direct contact (through mucous membranes or solutions of continuity of the skin) with organs, blood, secretions, or other bodily fluids of infected persons, or through indirect contact with materials that have been contaminated by such liquids.

Burial ceremonies where mourners have direct contact with the deceased person can also be the cause of transmission. Men can still transmit the virus through semen up to seven weeks after clinical recovery.

Infection of health-workers while treating patients with EVD is frequent. This occurs when precautions for infection control are overlooked, especially when these workers do not take personal protective measures.

Ebola virus is classified as a Risk Group 4 pathogen, so it needs to be handled on an equivalent level of biosafety (BSL-4); for this reason, samples must be processed in a high containment laboratory.

WHO recommends the following laboratory tests:

- Reverse transcription polymerase chain reaction (RT-PCR);
- Virus isolation by cell culture.

On account of their low specificity, rapid tests are not recommended either to confirm or to rule out cases, so such procedures are discouraged.

6.3. Epidemiological scenarios for virus transmission

The main risk factor for propagation of the Ebola virus in the world remains intercontinental travel, given that infected travelers in areas with virus circulation can incubate the disease and develop symptoms consistent with EVD after arrival (3).

The incubation period (interval from infection to the onset of symptoms) ranges from 2 to 21 days (the average being 8 to 10 days) during which **the patient is not contagious**. Patients are contagious as long as their blood and secretions have the virus, being able to isolate in semen up to 7 weeks after onset of the disease.

Actions to be implemented by the States are adopted on the basis of transmission risk classification, determined by WHO, as follows:

- States with active transmission.
- Unaffected states sharing a land border with any affected state and states with at least one possible or confirmed case.
- All other states without cases (**Colombia is in this category**).

The risk of Ebola spreading to the country is low, due to limited international travel on the part of travelers from countries with active transmission, but the main threat lies in the untimely detection and lack of control of an imported case.

As a result, Colombia embraces WHO recommendations for all States without cases of Ebola, which are:

- General international trade or travel should not be banned, although the restrictions defined in these recommendations should be applied with regard to travel of EVD cases and their contacts.
- States should provide travelers to affected or high-risk areas relevant information on the risks, measures to minimize them, and tips on how to act in case of possible exposure.
- States must be prepared to detect, investigate and respond to instances of EVD, including guaranteed access to qualified laboratories for EVD diagnosis, and when necessary, the capacity to manage travelers from infected areas arriving at international airports or main terrestrial frontiers with febrile symptoms of unknown origin.
- The general public must have accurate and relevant information about the outbreak of EVD and the measures to reduce the risk of exposure.
- States should be prepared to facilitate the evacuation and repatriation of citizens (e.g. health professionals) who have been exposed to the Ebola virus.

6.4. Description of the disease

EVD is an acute and severe viral disease, with a case-**fatality rate** varying from 50 to 90% (1).

6.4.1. Clinical manifestation and clinical course

Ebola patients typically experience sudden onset 8-10 days after exposure (an average of 4–10 days has been observed in earlier outbreaks; range 2-21 days).

Because these non-specific symptoms appear particularly early, the disease can often be confused with other infectious diseases. In non-fatal cases, patients may have fever for several days and may get better between days 6 and 11.

The initial signs and symptoms are nonspecific, the following being the most common:

- Fever
- Chills
- Myalgia
- General malaise
- Anorexia, asthenia and fatigue.
- Erythematous maculopapular and diffuse rash usually affecting the face, neck, trunk and arms, with or without scaling.

After 5 days other symptoms develop, such as:

- Frequent conjunctival injection
- Severe diarrhea, nausea, vomiting and abdominal pain
- Chest pain, dyspnea

- Headache, confusion, seizures and cerebral edema
- Petechial ecchymotic syndrome, bruising and mucosal bleeding
- Pregnant women may experience spontaneous abortions

Patients with the worst prognosis develop more severe clinical signs during infection and usually die between days 6 and 16 from complications, such as multiple organ failure and septic shock.

6.4.2. Pathogenesis

Ebola virus enters the body via the mucous membranes, skin lesions or parenterally, and infects many cell types, including monocytes, macrophages, dendritic cells, endothelial cells, fibroblasts, hepatocytes, adrenal cortical cells and epithelial cells.

Incubation period may be related to the route of infection (e.g., 6 days for direct blood contamination versus 10 days for indirect contact). Ebola virus migrates from the initial infection site to regional lymph nodes and then to the liver, spleen and adrenal glands. Hepatocellular necrosis occurs and is associated with impaired coagulation factors and subsequent coagulopathy. Adrenal necrosis can also occur and is associated with hypotension and impaired steroid synthesis. Ebola virus seems to trigger a release of proinflammatory cytokines and vascular leakage with subsequent impairment of coagulation, resulting in shock and Multisystem Organ Failure - MOF.

6.4.3. Lab Results

All laboratory tests must be conducted following the laboratory safety guidelines described herein, including protocols for sampling and transport of patients suspected of Ebola. In general, laboratory tests should be minimized, as necessary for patient care.

Entrance laboratory results may often include:

6.4.3.1. Blood count and coagulation tests

- Leukopenia and lymphopenia followed later by neutrophilia with left shift.
- Thrombocytopenia is decreased in the range of 50,000 to 100,000.
- Prolongation of prothrombin time (PT) and partial thromboplastin time (PTT). The fibrin degradation products are elevated, consistent with disseminated intravascular coagulation (DIC).

6.4.3.2. Liver function

- High Amylase, reflecting pancreatic involvement (inflammation / infection).
- Elevated liver transaminases (ALT and AST).

6.4.3.3. Kidney function

- Proteinuria may be present.

6.4.4. Initial evaluation of confirmed or suspected patients

Patients who are suspected of having Ebola should be treated as soon as possible, taking the necessary biosafety precautions to prevent transmission of the virus.

Patients with fever coming from countries currently affected by the outbreak of Ebola may have other potentially fatal infectious diseases which must be considered in the differential diagnosis; therefore, the evaluation of the febrile illness in a recent traveler should include a thorough history record and route of exposure.

6.4.5. Treatment

There is no approved treatment for EVD. Clinical procedures should focus on the support of complications such as hypovolemia, electrolyte imbalance, hemodynamic instability, refractory shock, hypoxia, hemorrhage, septic shock, multiple organ failure and DIC.

Recommended care includes volume repletion, maintaining adequate blood pressure (with vasopressors if necessary), maintenance of oxygenation, pain control, nutritional support, treatment of secondary bacterial infections and preexisting comorbidities.

Infection prevention and control measures are a critical part of clinical management; keeping always in mind that all fluids and clinical samples are potentially infectious; biosafety should be, therefore, maximized.

6.4.6. Vaccines

There are no approved vaccines available for EVD. Several candidate vaccines are being developed.

6.4.7. Differential Diagnosis

Given the nonspecific clinical manifestations associated with this disease, differential diagnosis with the following diseases should be performed: malaria, typhoid fever, dengue, Chikungunya fever, shigellosis, cholera, leptospirosis, plague, rickettsial disease, relapsing fever, meningitis and meningococemia, hepatitis and other viral hemorrhagic fevers, depending on the epidemiological profile of the region where the case is suspected.

7. COMPONENTS TO BE DEVELOPED

In order to facilitate the preparation and response processes in relation to possible health affectation in the population in the event of the Ebola virus reaching the country, the Ministry of Health and Social Protection is in charge of leading sector and inter-sector coordination and organization to ensure an appropriate response to this risk.

Based on the above, the following factors are defined:

1. Sector and inter-sector coordination and organization
2. Monitoring of public health
3. Laboratory diagnosis
4. Risk communication
5. Treatment of cases
6. Protection of health staff

7.1. Sector and inter-sector coordination and organization

For the support of inter-sector coordination, it is essential to involve the different coordination instruments available to the National System for Disaster Risk Management, such as the Province, District and Municipal Risk Management Councils,

in order for them to be able to carry out the required inter-sector activities in the best possible manner.

Objective: To coordinate and organize on a sector and inter-sector basis, the implementation of health promotion actions, illness prevention and response to the possible introduction of Ebola cases in the country.

Activities:

- In the health sector, the Strategic Committee on Health of the Ministry of Health and Social Protection carries out monitoring, follow-up, evaluation and decision making, associated with risk awareness of EVD. It also takes measures to reduce the risk implied by the introduction of the virus in the country and performs activities for preparation and case management.
- Once EVD is determined as an alert concerning national public health, the National Emergency Operations Center for Health (COEN-SALUD) must be activated, under the leadership of the Deputy Minister of Public Health and Service Provision, as an integral part of the framework of National Strategy for the Response to Emergencies of the National Disaster Risk Management System
- The provinces, districts and municipalities must ensure venues and scenarios of **sector articulation**, for the adoption and implementation of these guidelines, taking into account the responsibilities of the Emergency Regulating Center (CRUE), public health areas, service provision and insurance, among others, for the formulation and adoption of contingency plans.
- Similarly, the provinces, districts and municipalities must adopt and implement mechanisms and strategies for **inter-sector coordination and organization** through Disaster Risk Management Councils, Local Councils for Zoonoses, Port Health Committees and Epidemiological Monitoring Committees.
- Local authorities must formulate, implement and make communities aware of sector contingency plans, including an approach of impact and risk scenarios, response organization, organization of functional groups (transportation, security, communications, management of corpses, epidemiological monitoring, service provision, governance maintenance), call-down lists, alerts, alarms, identification of Health Provision entities IPS, identification of staff to care for EVD cases, inventory of resources, formulation of needs, among others.
- Local authorities must identify other sectors which should be involved in contingency planning regarding the possible introduction of Ebola virus, defining responsibilities, as well as people responsible in each sector.
- Local authorities must form, train and equip immediate response teams (sector ERI), which must be made up of staff with training in biosafety and management of patients with EVD.
- The Ministry of Health and Social Protection MSPS, jointly with the National Health Institute INS and experts will train the occupational risk management entities in biosafety and self-care measures.

7.2. Monitoring of Public Health

7.2.1. Monitoring and alert detection

Objective: To maintain accurate and up-to-date information on the global EVD situation.

Activities:

- The Ministry of Health and Social Protection monitors, through the National Focal Point (CNE), the necessary sources for the detection of cases and worldwide behavior of Ebola virus. This search and continuous systematic gathering of information, is carried out on a 24 hour basis, 7 days a week, being the only official contact with other liaison offices in other countries.
- Local Health Offices must continuously review the information released by the CNE, in relation to the development of the EVD epidemic, sharing such information at a sector and inter-sector level.

Alert detection will be accomplished through two mechanisms:

- The identification of rumors or warnings coming from health institutions, through immediate notification from the IPS involved in the treatment of the case. Health entities must follow the flow chart established for notification purposes, for all relevant events in public health.
- The identification of rumors or warnings coming from formal or non-formal entities outside the health sector, such as Migración Colombia, the Ministry of Foreign Affairs, among others. Health events must be reported to the CNE, who will conduct further coordination. Email: cne@minsalud.gov.co; Mobile: 3213946552.

7.2.2. Epidemiological Monitoring

Objective: To detect the presence of cases in a timely manner, as provided by the Public Health Monitoring System, in the framework of International Health Regulations (2005), calling for adequate alert and response actions.

For the timely and sensitive detection of possible cases, Port Health staff, Health Services Providers, Municipal and Province Health Offices and all sectors involved must be aware of the definitions regarding cases and contacts and must adopt such definitions at any of the following levels: monitoring of the points of origin, monitoring of the points of entry and monitoring of the institutions providing health services (IPS).

- **Monitoring of points of origin:** detection of possible cases or contacts is undertaken at this point in countries where the presence of the virus has been confirmed.
- All Colombian consulates in the world have been equipped with a tool to assess the information supplied by international citizens applying for visas to Colombia, in order to understand and evaluate the risk of exposure they might face in their home countries.
- **Monitoring of points of entry:** Colombian immigration staff have information to detect cases suspected of Ebola. This process has two different phases: one is the report on board the means of transport, and the other, is the inland interview of the traveler while filling out the appropriate survey form.
- **Monitoring of Institutions Providing Health Services (IPS):** If the case or contact is not detected in the previous points, manifestation is likely to occur, at this

point, in the emergency room of any health providing entity, IPS. For detection purposes, it is essential to ask about the individual's travel background in a country affected by EVD (epidemiological link).

The following definitions shall apply, for the development of epidemiological monitoring:

CASE DEFINITION: People who meet clinical conditions compatible with EVD and have the epidemiological link with the disease. Cases are classified as suspected or confirmed, as follows:

Suspect case: Any living person with fever over 38° C in adults and higher than 37.5° C in children between 0 and 12, or a deceased person whose death is of unknown origin and who during the last 21 days has:

- Had contact with cases suspected or confirmed of EVD.
- Resided or traveled to places where transmission of EVD is active.
- Directly manipulated bats or nonhuman primates from areas with active transmission of the virus.

Confirmed case: suspect cases with confirmatory laboratory diagnostic tests for infection with Ebola virus, processed in the laboratories of the Reference Centers designated by WHO for Colombia.

DEFINITION OF CONTACTS: The circumstances that define the contact have been adapted from the following documents: “Ebola virus disease, implications of its introduction in the Americas PAHO” and Case Definition for Ebola Virus Disease (EVD) by the Center for Disease Control and Prevention - CDC¹.

“Contact” is defined as a living individual who meets at least one of the following criteria:

- Percutaneous or mucous membrane exposure to blood or bodily fluids of a patient with EVD, including seminal fluid, without suitable personal protective equipment – PPE.
- Processing of blood or bodily fluids of a patient with confirmed EVD without proper PPE or without taking standard biosafety precautions
- Having touched clothing or bedding of a patient with EVD without appropriate PPE
- Having been breast fed by a patient with EVD
- Direct physical contact with a suspected or confirmed EVD case or corpse without proper PPE.
- Cohabitation with a suspected or confirmed EVD patient
- Another close contact with patients with EVD in health centers or in the community (close contact is defined as being approximately 1 meter from an EVD patient or inside the patient's room for an extended period of time (e.g., health workers, household members).

Unknown Exposure: this refers to a person who has been in a country with active Ebola virus transmission in the last 21 days and does not meet any of the above criteria.

¹ Please refer to:

- <http://www.cdc.gov/vhf/ebola/hcp/case-definition.html>
- http://www.paho.org/ecu/index.php?option=com_content&view=article&id=1262:la-opsoms-llama-a-paises-de-las-americanas-a-estar-vigilantes-y-prepararse-ante-la-potencial-introduccion-del-virus-del-ebola-&Itemid=360

Activities:

- **Epidemiological monitoring strategies:** These strategies consist in case research and field research.

EVD case investigation

The only criterion to conduct an EVD case investigation is strict compliance with its definition. It is essential to consider the entirety of the clinical history and the importance of the background for the detection of cases. If a case with **clinical suspicion and epidemiological link** is detected, the specific contingency plan of the institution providing health service should be immediately activated.

Research must be conducted taking the following into account:

- 1) **Immediate report of the case:** this should be done in parallel with the National Focal Point (CNE) through the following email address: cne@minsalud.gov.co (Mobile phone 321-394-6552) and the Emergency Response Team (ERI) of the National Health Institute, email: eri@ins.gov.co, in the event of the identification of a case suspected of EVD. The report must be made on the basic safety data sheet under Code 607.
- 2) **In-patient case management:** when EVD is suspected, the specific contingency plan should be activated, including activation of alerts and alarms, call-down lists, activation of treatment protocols or EVD transmission control, activation of the Hospital Emergency Committee, verification of the response capacities in essential services such as hospitalization, intensive care units (ICU), clinical laboratory, among others. The occupational health area must inform the pertinent occupational risk administrator (ARL) and must also ensure strict implementation of biosafety measures by health workers. The Infection Control Committee is responsible for patient safety. Treatment of a suspect case should ensure the correct use of personal protective equipment at all times.

In the event of a suspected case reaching an IPS, it must be reported to the Emergency Regulating Center (CRUE) for subsequent referral for care to the centers defined in the province or district service network.

- 3) **Gathering of information for case investigation:** In order to guide the investigation and follow-up of cases and contacts, the enclosed survey (see Annex 1) shall be completed.

The above-mentioned survey shall be filled out by the health staff of the institution selected as reference for EVD, in order to reduce the number of new contacts with the patient. Upon completion, the survey shall be immediately forwarded to the National Focal Point (CNE) of the Ministry of Health and Social Protection, through the following email address: cne@minsalud.gov.co and to the National Health Institute, email: eri@ins.gov.co.

Field investigation:

In the presence of a confirmed or suspected case of EVD, the National Health Institute will activate the emergency response team – ERI that will lead the implementation of the field investigation protocol and focus control. This team will coordinate the investigation of the case and the search for contacts to prevent further transmission of the virus in humans.

Follow-up of contacts shall be undertaken by ERI through the corresponding Regional Health Office under national supervision and written follow-up reports shall be generated, which must in turn be sent to the ENC of the MSPS and the National Health Institute (cne@minsalud.gov.co; eri@ins.gov.co), using the forms established for this purpose (Annexes 1 and 2).

Should the contact show fever or other symptoms suggesting EVD, the specific contingency plan shall be activated, including transport under biosafety conditions.

For monitoring of contacts, active surveillance shall be performed during 21 days after the last possible date of exposure. At this point, surveillance measures are competency of the Health Office at the contact's place of residence. The local office shall record body temperature twice a day and inquire about any suspicious symptoms, by contacting the patient daily to check for signs and symptoms of the disease. No restriction of movement or labor is required at this time.

As for the follow-up of contacts with unknown exposure, passive monitoring shall be conducted for up to 21 days after the last exposure. For this kind of surveillance, the local office shall instruct the contact on the daily registration of body temperature and shall follow up by telephone twice a day. In case the contact's temperature rising (above 38° C in adults and 37.5 degrees in children) or any additional symptoms occurring, the individual must urgently contact the person or group responsible for the monitoring process and will be treated as a suspect case. Surveillance at this level is the responsibility of the Regional Health Office, located in the contact's place of residence.

In addition, the team conducting the monitoring of contacts with known or unknown exposure shall approach the individual and his family comprehensively, as follows:

- Through awareness actions to increase the perception of risk of the event
- Supplying psychosocial care and mental health to the family as a whole
- Intensifying biosecurity measures (hand hygiene, proper handling of food and utensils, avoiding intimate contact, etc.)
- Ensuring the necessary supplies for these recommendations to be followed.

All health care workers conducting monitoring processes to contacts or suspect cases must be registered by the IPS, the DTS (Regional Health Offices) and the corresponding ARL. They must also be monitored to check adherence to biosafety standards and management of personal protective equipment, as well as to provide follow-up, in case of onset of fever and other symptoms.

7.2.3. Monitoring of points of entry

It is important to remember that there are no direct flights between the countries in Africa with active transmission of EVD and our country; persons traveling from Africa to Colombia via AVIANCA, AIR FRANCE, IBERIA, LUFTHANSA or KLM first have to make stopovers in London, Paris, Frankfurt and Madrid, among others. Due to the speed of air travel, this means of transportation implies the highest risk, given that a person who is incubating the virus can enter the country and develop the disease later.

The period of incubation should be taken into account, given that various cases have been already documented in the United States and Spain.

As for international maritime and river ports, arrival of the vessel must be reported to the maritime or river authorities 48 hours in advance, in accordance with Decree 1601 of 1984, which allows preparation in case of an affected vessel, resulting in the activation of the corresponding contingency plan in each of the ports authorized by Circular 004 of 2008.

Objective: To timely detect the entry of suspected cases of Ebola in the country, in order to contain the transmission of the disease during the immigration process.

Activities:

- While applying for a visa through the Colombian consulates, especially those located in Africa, all applicants must fill out the form (Annex 2) in the country of origin. A copy of this form shall be sent to the CNE of the Ministry of Health and Social Protection (cne@minsalud.gov.co) for risk assessment and follow-up.

During immigration all international travelers, including Colombian citizens, at any point of entry, will be evaluated by the immigration officer in terms of risk levels. Should there be travelers coming from areas with active EVD transmission or showing symptoms associated with the virus, they will be referred to the health port team in charge of taking appropriate measures (Annex 3).

Port Health, Ministry of Health and Social Protection

- To coordinate training and massification of the strategies discussed in these guidelines with the different national institutions and authorities, relating to ports, migration, aviation, tourism, etc.
- To coordinate the investigation processes of possible cases and contacts identified at points of entry, with the different national authorities (ports, migration, aviation, etc.).
- To coordinate with the aviation authority submittal of the nominal data of passengers who have had contact with suspected EVD cases.
- To coordinate with various organizations providing economic and humanitarian assistance in the affected countries, the return of their workers to Colombia and the construction of the census of the people who are in these countries exercising such service activities.

Regional Health Agencies

- To maintain the Regional Port Health Committee active for coordination, articulation and operation of the strategies and mechanisms designed for communication of risk to travelers.
- To ensure the necessary means to carry out the actions referred to in these guidelines.
- To coordinate with tourism promoters and with national and international terminals, the strategies and mechanisms for communication of risk in relation to EVD.
- To immediately report any suspected case of EVD that may occur, through the course of action established for this purpose (the operators of the national and international terminals must inform the corresponding regional health entity, which should in turn inform the National Focal Point: cne@minsalud.gov or mobile phone 321-394-6552).
- To disseminate to the general community through the media the recommendation of refraining from traveling to the affected areas.
- To disseminate the recommendations and updates promulgated by WHO (<http://who.int/csr/disease/Ébola/maps/en/>), the MSPS and the INS with reference

to the development of the event, affected countries and indications of displacement to these regions.

- To conduct training regarding infection control measures to travel agencies, airlines and other authorities. Airlines must be trained on handling potential cases on board, as established by the International Air Transport Association – IATA, and in compliance with the reporting requirements established by the International Civil Aviation Organization - ICAO, which are contained in the contingency plans of each of the entry points.
- To instruct airlines operating international flights in the territory under their jurisdiction, on the delivery of the necessary information (name, address, telephone number, email and any other contact information they may have) of passengers and flight attendants who traveled with a contact or any suspected case of EVD.
- To strengthen health monitoring of travelers at international terminals and to follow up on the submittal of the Aircraft General Declaration (International Health Regulations 2005 – Annex 9).
- To make sure that the contingency plan at the point of entry is up-to-date, in relation to ESPII and together with the Emergency Regulating Center; such plan must include notification and alert systems, response coordination, identification of areas for isolation or observation, routes of transport for patients or cases, authority contacts at national or international terminals of their jurisdiction, etc.
- To update the inventory of personal protective equipment available for use, in the event of identifying a suspected case at the point of entry, in accordance with the provisions set in the contingency plan.

7.2.3.1. Management of suspected cases in the airport terminal

Once a contact or suspected EVD case has been detected on an aircraft or at the airport, it must be immediately reported to the Airport Coordination Center - CECO, Airport Health, and the area of public health monitoring of the corresponding Regional Health Office, which shall in turn immediately notify the CNE, cne@minsalud.gov.co, mobile phone 321-394-6552, and the INS, eri@ins.gov.co, proceeding with the activation of the contingency plan.

Patient isolation must be accomplished as provided by the contingency plan of each airport, or international port, as per the following guidelines:

- If a case is suspect showing symptoms (vomiting, bleeding, among others) on the aircraft, the transport means must be disinfected following the manufacturer's recommendations and in compliance with the provisions contained in WHO Guide for Aviation Hygiene and Sanitation, available at:
http://apps.who.int/iris/bitstream/10665/78037/1/9789275317037_spa.pdf?ua=1.
- The use of 0.5% chlorine solutions, available for cleaning surfaces contaminated with feces, splashes of blood or any body fluids is recommended, while the 0.05% chlorine solution is to be used for the hands, with or without gloves, and for skin, floor, clothing and equipment.

If the suspected case of Ebola developed symptoms on the airplane, contact follow-up shall be made of the flight crew and all passengers seated 4 rows in front, 4 rows to the side, 4 rows behind and on the sides of the chair where the suspected patient was seated, adhering to the recommendations established by RAGIDA², available at

² Risk Assessment Guidance for Infectious Diseases Transmitted on Aircraft. Part 2: Operational Guides. Second edition. November 2009

<http://www.ecdc.europa.eu/en/publications/layouts/forms/PublicationDispForm.aspx?List=4f55ad51-4aed-4d32-b960-af70113dbb90&ID=332>

During the flight, contact with the suspected passenger must be limited to the minimum required to reduce risk of transmission; cabin crew attending the traveler must use personal protective equipment available on the aircraft, e.g. ICAO Universal Kit of precaution (<http://www.capsca.org/CAPSCARefs.html>) and take extreme biosafety measures.

- Cleaning of the aircraft should be executed by workers with appropriate personal protective items.
- The airline shall have a complete list, with contact information, of all crew members and passengers, available for the health authority, if it is required within three months from the date of identification of the suspected case.

7.2.3.2. Management of suspected cases at maritime terminals

In the case of international seaports, the provisions laid down in the International Health Regulations 2005 and Circular 004 of 2008 of the Ministry of Social Protection shall apply. All vessels arriving at Colombian ports are requested to submit the Maritime Declaration of Health (Revision of the International Health Regulations, Annex 8) fully filled out.

When a passenger or crewmember meets the definition of contact or suspected case, the following activities must be carried out:

- The crew must report to the captain of the ship.
- The captain must immediately report the health event to the Port Captaincy, where the ship is to dock; this port authority must in turn immediately notify the Regional Health Office of the jurisdiction.
- The Regional Health Office of the jurisdiction, jointly with other port authorities and port operators, shall put the contingency plan into effect, as a Public Health Emergency of International Concern - PHEIC.
- The crew must transfer the suspected case or contact to the place defined for isolation. If the vessel does not have such facility, the individual shall be placed in a cabin only for that person, maintaining minimum possible contact (limiting the number of people who have contact with the traveler or crewmember).
- Vessels should be equipped with personal protective equipment, available to staff who will be in contact with the affected passenger or crew member. Such elements should at least include a surgical mask and eye protection (mono-goggles or a face shield), gloves and a disposable gown covering the whole body (skin and clothing).
- Keep an updated list of staff or travelers who were in contact with the contact or suspect case, identifying all the personal protective equipment used by each contact.
- Solid waste produced in the area of isolation should be considered contaminating medical waste (biological risk) and incinerated, if the boat offers this possibility. Otherwise, it should be packed taking all the necessary precautions, and delivered on shore, informing health authorities of the delivery of such waste.
- Once the boat docks (at the place designated for such purpose) evacuation of the affected crewmember or traveler must be performed, as prescribed in the PHEIC contingency plan of the port. In any case, disembarkation of the EVD suspected travelers or crewmembers should be carried out assuring that healthy travelers or crewmembers do not come into contact with the person. The health personnel performing the medical evacuation should always use personal protection items.

- Disembarkation of those affected should be accomplished with adherence to biosafety standards by the health staff appointed and trained for this purpose, in articulation with the Emergency Regulatory Center (CRUE) of the municipality or province, the health authorities of the jurisdiction and port facilities.
- The transfer of the affected people will be made to the IPS designated for the handling of EVD cases, by a transport means with a trained staff.
- If a suspect case shows symptoms (vomiting, bleeding, among others) inside a vehicle, cleaning and disinfection of the means of transportation should be carried out, in accordance to the vehicle's cleaning and disinfection manual. The use of 0.5% chlorine solutions is recommended for surfaces that have been contaminated with excrements, splashes of blood and bodily fluids, while 0.05% available chlorine solutions should be used for hands, with or without gloves, and for skin, floor, clothing and equipment.
- Passengers, crewmembers and cleaning staff that have been classified as contacts of a suspect case should be identified and registered as such by the Health Office on the EVD case investigation form (Annex 1) and they should be handled in accordance with the descriptions previously provided for contact monitoring.
- The maritime agency shall keep a complete list of all the crewmembers and passengers (with contact information), available for the health authorities, should it be required, within three months after the date of identification of the first suspect case (Annex 4).

Finally, it is important to remind the Health Offices identified in Circular 004 of 2008, that all measures taken on board should also be recorded on the health control certificate found under Annex 3, IHR 2005.

Repatriation of cases to the country

Colombian international patients with confirmed diagnosis of EVD will be evaluated for repatriation. The Ministry of Health and Social Protection will create a repatriation committee for EVD cases, involving the INS, the Ministry of Foreign Affairs, Migración Colombia, the Air Force and any other agent whose participation is deemed necessary. Each case will be examined individually in the repatriation committee convened by the MHSP for that specific purpose. If repatriation is requested by any aid agency or any legal person, such request must be addressed in writing to the Ministry of Health and Social Protection.

7.3. Laboratory Diagnosis

Objective: To ensure the integrity of the patient's clinical management and proper collection, handling, processing and transport of the samples of the cases suspected of EVD, in order to reduce the risk of exposure.

The Ebola virus is classified as a Risk Group 4 pathogen, and as a result, should only be processed on an equivalent level of biosafety (BSL4). This level indicates that samples of patients involve a high biological risk; therefore, procedures for collection, handling, processing and transport (even within the hospital) must be conducted under maximum biosafety standards

Laboratory personnel must be trained in the process, with extreme biosafety measures, during the collection of samples of suspected or confirmed EVD patients.

The INS shall conduct training in specimen collection to the IPS staff designated for the handling of such process, at the IPSs responsible for treatment of cases. These guidelines shall be followed:

Specimen Collection:

- While caring for suspected EVD cases, once the patient has been isolated, samples will be collected by the IPSs predefined by the DTS for treatment of such cases.
- The collection tubes must be plastic and with a vacuum system. Once the sample has been collected with all the protection elements and measures required, the tube containing the sample must be held using an absorbent cloth soaked in 0.5% sodium hypochlorite to remove any remaining blood.
- The volume of each sample to be sent must not exceed 50 ml, so the use of two sample tubes for subsequent forwarding and processing is recommended.
- It is important to remember that disinfection of the elements used in the process must be performed with 0.5% hypochlorite solution.
- In the case of a deceased patient suspected of EVD, autopsy is contraindicated, so the only suggestion is to take an oral swab.
- Due to virulence of the pathogen, samples coming from suspected EVD patients should not be stored in the IPSs and/or province laboratories.

Samples to be collected:

Samples will be collected in Colombia only for guidance of clinical in-hospital management and for confirmation from the international reference laboratory.

Samples for testing to guide clinical management of cases:

- Health workers caring for the patient should inform their institution's laboratory about the delivery of a sample, which should be transported from the room where the patient is kept in isolation to the laboratory, by means of the triple packaging system.
- Basic tests can only be processed in laboratories with automatic analysis equipment which allows the use of tubes with lid, in order to avoid the generation of aerosols or splashes. If the laboratory does not have this kind of equipment, this type of testing should not be performed.
- Given the risks associated with the handling of a sample, laboratory testing for clinical follow-up of these cases should be minimized.
- The samples will be processed by the laboratory staff, taking extreme biosecurity and containment measures, previously described herein.
- The lid of the tube containing the sample should not be removed at any time during handling.
- The recommendation is the performance of basic tests such as blood count, liver enzymes, renal profile (creatinine, urea), glucose, as well as other minimally required tests, depending on each patient's clinical condition. These will be collected in the established tubes, following the protocols designed for this kind of analysis, in each institution's laboratory, in accordance with the guidelines of sample collection for this event.
- Arterial blood gases should only be conducted if they are processed in the area of patient confinement, in the context of a closed practice.
- Blood bank testing should not be performed. It is recommended to have "0" group RH negative blood available, in case a transfusion is necessary
- The analysis equipment used for performing laboratory tests must be immediately disinfected with sodium hypochlorite or any other disinfectant in the proper concentration, following the recommendations contained in the manufacturer's instructions.

- Similar to sample collection, the tubes used during laboratory test processing for monitoring and follow-up of the patient must be handled with an absorbent cloth soaked with 0.5% sodium hypochlorite to remove any traces of blood on the tube.
- After processing, test tubes must be disinfected on the outside and introduced in leakproof autoclavable biohazard bags inside plastic containers of rigid walls, equally autoclavable, fully labeled. These containers should be sterilized by the moist heat (autoclave). The area should coordinate with the company handling biological residue in order to proceed with immediate incineration.

Samples for EVD diagnosis and molecular differentials (performed by the INS only)

- Two tubes of whole blood must be collected in lavender lid tubes or dry tubes. No centrifugation or refrigeration should take place while it is immediately forwarded to the National Reference Laboratory (INS). Packaging of samples for EVD diagnosis and forwarding should be carried out according to the norms for transportation of infectious material, category A (as prescribed in the WHO Guidelines for the Transport of Infectious Substances)³. (Available at: http://www.who.int/csr/resources/publications/biosafety/WHO_CDS_EPR_2007_2_SP.pdf).
- Personnel transporting such material must have international certification, as consignors of dangerous goods.
- Colombia has determined that all samples of a suspect case of Ebola shall be forwarded by the National Reference Laboratory (INS) to the collaborating WHO center, for the processing of specific tests for Ebola virus and testing for differential diagnosis of the disease.

Network of diagnostic laboratories

This network consists of:

- Laboratories of the care centers designated for case management
- Province Public Health Laboratories
- National Health Institute (INS) – Laboratory of Virology
- Collaborating WHO Centers

Responsibilities and People Responsible

It is important to remember that the handling of samples by the laboratory should always adhere to principles of biosafety in order to prevent biological accidents, even if the diagnosis is not conclusive for any infectious virus. Similarly, the number of people who come into contact with the sample should also be limited.

The responsibilities of the network laboratories, at each level, are described below:

- The IPS designated by the DTS for case management: must have trained staff to collect samples (whole blood and/or serum), to pack them and transport them to the processing area, according to the instructions supplied.
- The Public Health Laboratory –LDSP is responsible for packaging and sending the biological samples to the national laboratory of reference, as infectious material Category A (according to the WHO guidelines for the transport of infectious substances)³.

³ Guía sobre la reglamentación relativa al Transporte de sustancias infecciosas Medecine 369; 5 August 1, 2013

National Health Institute - Laboratory of Virology:

- To check where the courier hired to transport the sample to the Collaborating WHO Center operates.
- Before proceeding to deliver any samples of a suspected case of EVD, in exercise of its role as the national reference laboratory, the INS must hold a meeting with the collaborating WHO center, the Ministry of Health and Social Protection and PAHO to discuss the feasibility of the operation.
- To package and mail the sample to a collaborating WHO center, chosen after the meeting, in compliance with shipment protocols of infectious material Category A (as per the WHO Guide for the transport of infectious substances)³.
- To fill out the delivery document for the forwarding of samples, duly signed by the certified packager, as established by the WHO protocol.

7.4. Risk Communication

Objective: To communicate, with accuracy and timeliness, to the community, health care workers and other sectors involved, on topics which facilitate prevention, preparation and management actions in the event of an emergency, caused by the introduction of Ebola Virus Disease, EVD, in the country.

Activities:

- The Ministry of Health and Social Protection and the National Health Institute will coordinate risk communication actions, involving all stakeholders.
- Risk communication will be aimed at citizens, health services and other sectors; it will include relevant information about the event, as well as prevention and control measures to contain its propagation.
- Information regarding confirmed cases will only be disclosed to the media by the Minister of Health and Social Protection or his delegate.

Health Sector

- Disseminate these guidelines and annexes to all actors of the system

Other sectors

- National System for Disaster Risk Management
- Disseminate to consulates, migration, ports, airports and entry points, humanitarian organizations, religious people/missionaries and productive sectors, all information related to the subject of Ebola: Ebola ABC, countries with active virus transmission, informative documents to travelers.
- Diffusion will be extended to the following actors: Migración, Ministry of Education, Civil Aviation Authority, Ministry of Foreign Affairs, Armed Forces, among others.

General information related to EVD can be found at the link of the Ministry of Health and Social Protection:

<http://www.minsalud.gov.co/salud/publica/PET/Paginas/enfermedad-Ébola.aspx>

or the National Focal Point:

<http://www.minsalud.gov.co/salud/publica/ED/Paginas/centro-nacional-enlace-home.aspx>.

7.5. Case treatment

Objective: To provide timely health care under special biosafety conditions, to any suspected or confirmed patient of EVD.

Prioritized cities for the care of the first EVD cases

- Bogotá DC
- Cartagena
- Barranquilla
- Medellín
- Cali
- Buenaventura
- Cúcuta
- Pasto

IPSS designated for care of contacts and cases of EVD infection:

The IPSS in charge of treating suspected or confirmed cases will be those defined by the Regional and Local Health Offices, with the support of the Ministry. The initial selection must take into account the recommendations of treatment prescribed by WHO.

The IPSS will develop, implement and evaluate the specific contingency plan designed for dealing with cases of EVD, applying the guidelines and clinical care algorithms defined for this event.

Under no circumstances should the patient be transferred to another area of the IPS. From that moment, the area must be isolated from the rest of the institution, until the arrival of the Emergency Response Team of the Regional Health Office. At the same time, the National Focal Point (Cell phone 321-394-6552) and the National Health Institute should be alerted.

7.5.1. Management of health service provision at the local level

Regional Health Offices shall conduct the following activities:

- Identify the IPSS with EVD case management capacity, in accordance with the provisions set in these guidelines, especially those IPSS with qualified Pediatric Intensive Care Units and Adult Intensive Care with isolation.
- Identify the availability of means of transportation for cases of EVD that guarantee the biosafety conditions required.
- Ensure the availability and adequacy of instruments for the treatment of EVD cases, in biosafety conditions.
- Ensure the availability and adequacy of items for the collection, packaging and shipment of samples of cases of EVD, in biosafety conditions.
- Ensure the existence of local Immediate Response Teams for support in dealing with cases of EVD.

7.5.2. In-hospital patient management

In Colombia, Ebola cases and contacts will be treated in the designated IPSS; therefore, they must have trained staff for the purpose of handling cases of EVD, under biosafety conditions.

Other recommendations:

It is necessary to apply and strengthen the following guidelines, while treating contacts and cases, regardless of the signs and symptoms they may present:

- All cases and contacts presenting symptoms compatible with EVD should be transferred to the confinement area of the predefined IPS, and should be accommodated in individual, ideally negative pressure rooms, which is an indirect indicator of the installed capacity of these institutions.
- Entrance of non-essential staff into areas where patients with hemorrhagic fever are cared for should be restricted.
- There should be a system to keep the records of all the people who come into contact with the patient (personnel in charge and visitors).
- Isolation required for this event is standard; in case of conducting aerosol-generating procedures, airborne insulation (Mask N95) should be used.

Use of Personal Protective Equipment by health staff and visitors

- Remove PPE before leaving the isolation area.
- Perform frequent hand washing.
- Designate personnel dedicated to monitoring the correct use of PPE.
- Assign exclusive staff, clinical or non-clinical, to areas for care of patients with hemorrhagic fever.
- Require all visitors and health workers to rigorously use personal protective equipment and perform hand washing, following hand washing protocol, before entering the rooms or areas defined for patient isolation.
- Ensure regular and rigorous cleaning of the environment, decontamination of surfaces and equipment, and proper handling of used linen and hospital waste.
- Ensure secure processing of laboratory samples of patients with suspected or confirmed hemorrhagic fever.

Comply with the WHO recommendations regarding:

- Patient location, staff assigned and visitors.
- Cleaning of the environment and proper management of the bedding.
- Hand hygiene, personal protective equipment and other precautions.
- Safe injections and handling of sharp objects
- Cleaning of the environment and proper management of the bedding.
- Hospital waste and residue management.

This information is available at:

http://www.who.int/csr/resources/publications/ES_WHO_CDS_CSR_EPH_2002_12.pdf

In general, all institutions providing health services must comply with the minimum required contained in the Registration Manual for Qualification Providers of Health Service, Resolution 2003 of 2014, in relation to the detection, prevention and risk reduction of infection, established in the Standards of Priority Processes for ALL SERVICES (pages 30 and 31). This information is available at:

http://www.minsalud.gov.co/Normatividad_Nuevo/Resoluci%C3%B3n%202003%20de%202014.pdf

- There should be procedures, guides or manuals orienting measurement, analysis and improvement actions to educate assisting staff and visitors in the application of standard isolation precautions, biosafety norms in services, specifying protection elements and barriers, depending on the nature of each service and the identified risk; use and reuse of medical devices, comprehensive handling and management of the residues generated during health providing and other activities; asepsis and

antiseptics regarding the physical plant, health equipment, patients, medical instruments and equipment.

- IPS treating contacts and cases of EVD must adhere to the guidelines laid down in Resolution 4445 of 1996 in relation to the temporary location of dead bodies and comply with the conditions and requirements of personal protection.

7.5.3. Transportation of patients to the designated IPSs

The following means of transportation will be used for cases of EVD:

7.5.3.1. Land

- Suspected or confirmed cases identified at the international airport will be transported with the coordination of CRUE to the designated IPS, following the biosecurity measures designed to handle these patients.
- It is recommendable that transportation of these patients be carried out on a stretcher with portable isolation on predefined ambulances.
- The escort of a police vehicle is recommended to ensure safety and free circulation.

7.5.3.2. Air

The MSPS, with the cooperation of the National Center for Personnel Recovery of the Air Force, shall define the actions to be taken for the air transportation of these patients.

7.5.4. Handling of Dead Bodies

Objective: To promptly detect deaths of suspected or confirmed EVD cases and thereby reduce the risk of transmission of the disease.

In the case of a deceased patient meeting EVD criteria, taking of an oral swab is suggested, for post mortem confirmation. An autopsy is contraindicated in this situation.

Activities:

- The corpse should be kept intact; staff without the necessary personal protection should limit manipulation. During handling and disposal of the cadaver, staff should use PPE at all times, which includes gloves, hood, coveralls, waterproof gowns, surgical masks, goggles with anti-fog visor and closed shoes.
- The body must not be embalmed and no additional treatment carried out.
- It should be disinfected with 0.5% hypochlorite solution, placed in mortuary bags resistant to liquid filtration, which must be properly closed and placed in a closed coffin before burial.
- Incineration is recommended when conducted under appropriate biosafety conditions.
- During handling and disposal of the corpse, staff must use PPE at all times, which includes gloves, hood, coveralls, waterproof gowns, surgical masks, eye protection (preferably with anti-fog visor) and closed shoes.
- The staff for the handling and disposal of bodies must be supervised by health authorities.

- In the case of home deaths, it is important to train the staff responsible for carrying out inspection reports of corpses to investigate background information concerning recent travel when death occurred for no apparent cause.
- If it is established that a deceased person meets the criteria for EVD, the specific contingency plan for the handling of corpses suspected of EVD must be activated. This begins with a report of the case to the National Focal Point and to the National Health Institute and it should be formulated by the Institute of Legal Medicine and Forensic Sciences, with the accompaniment of the Ministry of Health and Social Protection and the INS. The Regional Health Offices and Regional Legal Medicine Offices will implement these contingency plans, having as main goal transmission prevention of the disease.

7.6. Protection of Health Workers

7.6.1. Personal Protection Equipment

Colombian legislation mandates the provision by employers of suitable personal protective items that comply with quality requirements of manufacture (they must have technical sheets of the items meeting the quality standards set by the American National Standards Institute, ANSI, and The Colombian Institute of Technical Norms and Certification, Icontec). Fulfillment of biosafety regulations in the workplace is required, as well as compliance with specific safety norms associated with the type of risk workers are exposed to.⁴

IPs shall adopt measures to prevent and control risks to workers; as well as prevention, preparation and response to emergencies in accordance with the provisions of the Management System in Occupational Health and Safety SG-SST (Articles 24 and 25 of Decree 1443 of 2014).

In the case of Ebola, the risk of viral transmission is represented by infectious material consisting of any biological fluid including blood and respiratory secretions, among others; therefore, in order to determine the types of personal protection required, the following issues should be considered:

- Standard precautionary measures
- Contact Precautions
- Although there is no evidence supporting viral infection by air, this kind of transmission must be considered in special situations, such as the generation of biological aerosols (e.g. sneezing or orotracheal intubation), or when implementing certain medical techniques with instruments that generate aerosols. In such cases, air insulation is to be used.

The proper use of personal protection equipment can be consulted at the following link: <http://www.cdc.gov/HAI/pdfs/ppe/ppeposter148.pdf>

Standard Isolation

Early identification of EVD cases is not always possible because the initial symptoms may be nonspecific. For this reason, it is important that health care workers take consistent standard precautions with all patients, regardless of their diagnosis, at all times during professional practice. These standard precautions include:

- Hand washing

⁴ as provided in: Law 9 1979 (Art. 85, 122), 1979 2400 Resolution (Art. 176, 177, 178, 179, 180, 182, 183, 185), 614 Decree 1984 (art. 9, 24), 1989 1016 Resolution (Art, 11), 1295, 1994 Decree (56, 57, 58, 59, 60, 62, 84, 91).

- Safe handling of sharp-cutting instruments
- Use of PPE according to risk
- Cleaning and disinfection of the environment, spilled secretions, and reusable safety equipment.

Isolation of direct contact with the patient

- Restriction of the number of staff dedicated to patient care.
- Limit to the number of visits.
- Maintenance of a logbook to keep records of the staff in charge of patient care and visitors.
- Use of PPE by both health personnel and visitors.
- Hand washing.
- Use of surgical masks, eye protection preferably with anti-fog visor, waterproof apron, gloves and closed shoes, before entering the patient's room.
- Removal of PPE before leaving the isolation area. Special care should be taken when removing PPE to avoid contact with eyes and mucous membranes.
- Designation of staff dedicated to monitoring the correct use of PPE in both health staff and visitors.
- In general, the use of disposable PPE is recommended. When such equipment is not available, the following items can be reused after disinfection:
 - Eye Protection: must first be washed with soap and water and then disinfected with 70% alcohol.
 - Waterproof gowns or aprons that cannot be sent to the hospital laundry should be disinfected with 0.05% hypochlorite.

7.6.2. References

1. Ébola virus disease. (septiembre de 2014). World health organization. Recuperado el 15 de septiembre de 2014, de World health organization: <http://who.int/mediacentre/factsheets/fs103/en>
2. Instituto de Investigacion para el Desarrollo. (2009). Recuperado el Agosto de 2014, de Instituto de Investigacion para el Desarrollo: <https://es.ird.fr/la-mEDIATECA/fichas-cientificas/los-murcielagostransmitirias-directamente-el-Ébola-al-hombre>
3. Organización Mundial de la Salud. (09 de 08 de 2014). OMS. Obtenido de OMS: http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=26414+&Itemid=999999&lang=es%20.