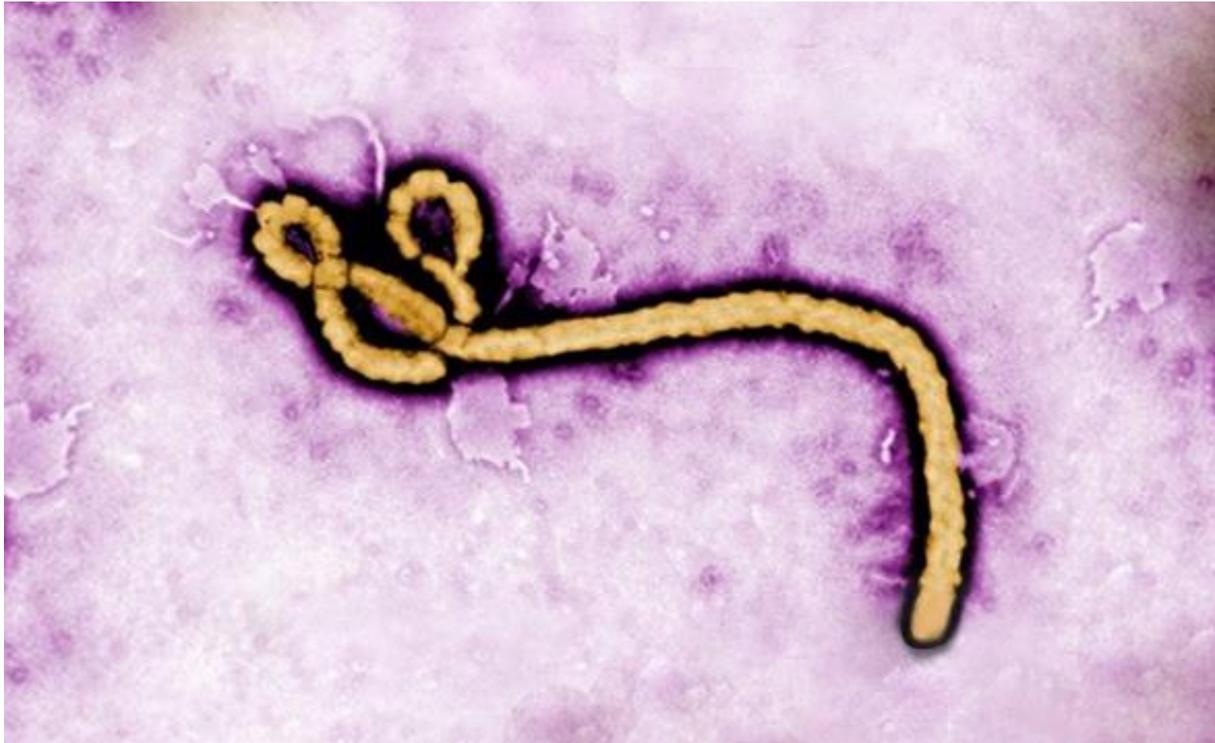


4 August 2014

## Ebola Virus Patient Advisory



### Introduction

Ebola virus was first identified in Sudan and Zaire in 1976. It belongs to the family of Filoviridae.

It causes Ebola Virus Disease (EVD), formerly known as Ebola Hemorrhagic Fever. EVD is a rare disease which causes severe, often fatal illness in humans. There are 5 different species of Ebola virus identified and isolated from different regions in Africa. The different species has different infectivity and mortality in humans. The *Zaire* species is the most virulent and can result in up to 90% mortality in humans who are infected with it.

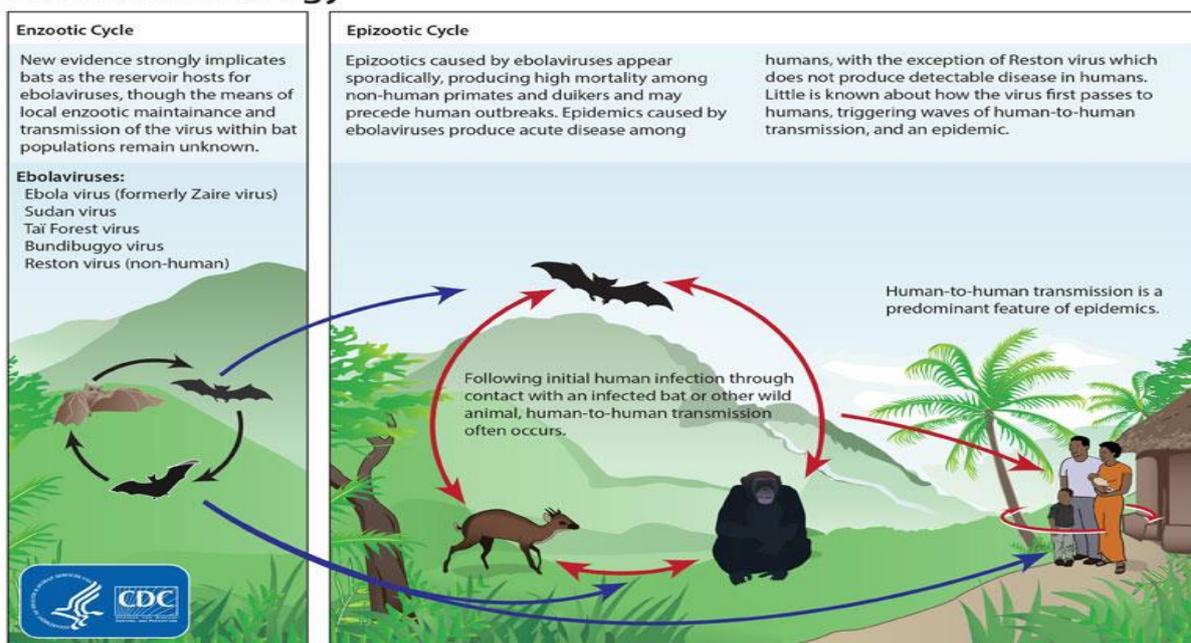
Outbreaks occur primarily in remote villages in Central and West Africa. The current outbreak of EVD in West Africa, which started in March 2014, is the largest recorded outbreak. Villages and cities in Guinea, Liberia, and Sierra Leone were affected. As of 23 July 2014, WHO reported a total of 1,201 cases including 672 deaths. This means that for every 100 persons infected, 56 cases will be fatal.



## Transmission

In an Ebola virus outbreak, the virus is transmitted through direct contact of broken skin or mucous membranes with blood, stool, urine, saliva and tissues of symptomatic persons or animals, or indirect contact with environments contaminated with such fluids. Humans may also be infected through exposure to secretions or excretions of **bats**. Infection can also be acquired through ingesting the meat of infected **primates (apes, gorilla, and chimpanzees)** and **animals**.

### Ebolavirus Ecology



(Adapted from <http://www.cdc.gov/vhf/ebola/resources/virus-ecology.html>)

## Groups at Risk of Infection

During this current outbreak, those at highest risk of infection are:

- health workers;
- family members or others in close contact with infected people;
- mourners who have direct contact with the bodies of the deceased as part of burial ceremonies; and
- hunters in the rain forest who come into contact with dead animals found lying in the forest.



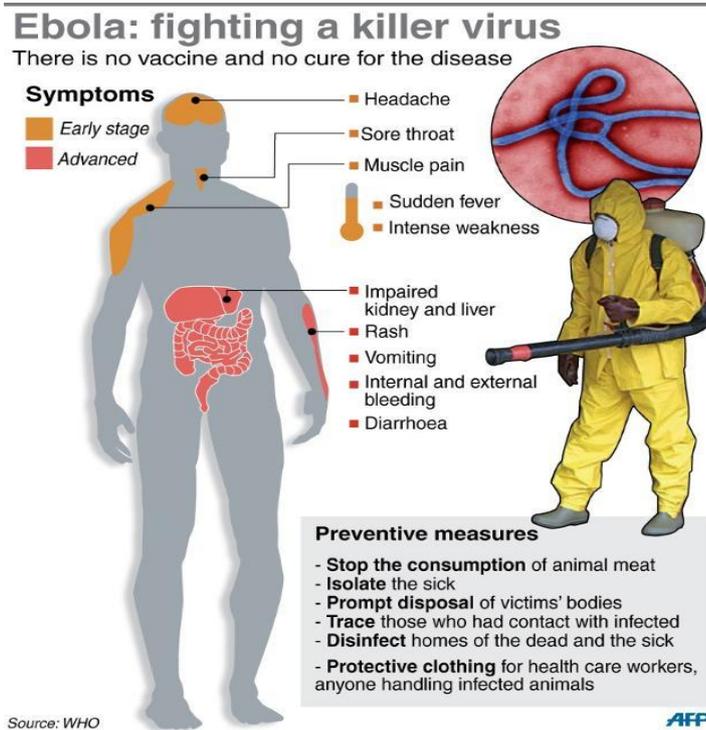
## Symptoms and Illness Progression

The incubation period of EVD varies from 2 to 21 days, usually 5 to 10 days. Patients are not contagious during the incubation period. Infected individuals become contagious only when they manifest symptoms.

Symptoms usually begin as a flu-like syndrome (sudden onset of fever, chills, general malaise, muscle pain, joint pain, headache, non-productive cough and sore throat).

Other symptoms that may follow include nausea, vomiting, diarrhea, abdominal pain, non-itchy rash.

As the illness progresses, kidney and liver function become impaired and in some cases, patients start developing internal or external bleeding.



## Diagnosis

Ebola virus infections can only be confirmed through laboratory testing, which detect:

- antibodies,
- viral antigen (ELISA assays),
- Ebola RNA by reverse-transcription polymerase chain reaction (PCR),

Viral cultures and isolation may also be performed with infected material / specimens

## Treatment

There is currently no specific treatment for Ebola virus infection. Management is supportive, which may include oxygen, blood transfusion and fluids.



## Frequently Asked Questions

### (1) How do I prevent myself from being infected?

The risk of infection can be significantly reduced by barrier techniques; through the use of wearing appropriate protective equipment, such as masks, gloves, and gowns, eye shields, and regular hand washing.

Controlling of the infection outbreak in the community is achieved via:

- strict isolation of the infected patients,
- good personal hygiene
- proper personal protective equipment for the people in contact with the patients,
- proper handling and disposal of remains.

There is currently **no** vaccine against Ebola virus infection available.

### (2) Are there any cases in Singapore?

There has not been any reported case of Ebola in Singapore. MOH's current assessment is that Ebola poses a low public health risk to Singapore since person- to-person transmission results from direct contact with bodily fluids of those infected, and there is low travel connectivity to West Africa where the current outbreak remains limited to.

### (3) Can I still travel to Africa?

The current Ebola virus outbreak in Western Africa affects Guinea, Liberia, Sierra Leone and may have spread over to Nigeria. It is advisable to defer non-essential travel plans to these countries.

### (4) What should I look out for if I need to travel to Africa?

If your travel to these countries is necessary, it is advisable that you closely monitor the advice provided by local health authorities and the WHO.

You must maintain strict hygiene standards such as hand hygiene and avoid any direct contact with patients with Ebola or unknown illnesses and any objects that may be contaminated with bodily fluids. Hospital visits are strongly discouraged.

You must also avoid contact with wild animals such as chimpanzee or gorillas (especially if the animal has been sick) and avoid eating or handling raw or undercooked animal products, such as blood and meat. Exploration of caves that may be inhabited by bats should be avoided.



If you should fall ill with symptoms described above and you have possible exposure history, consult the doctor immediately.

**(5) I just returned from Africa. What should I do?**

EVD should be considered as a possible diagnosis in individuals who presented with the following symptoms and travel history,

- A person with a **fever** (>38 C) or history of sudden onset of high fever **AND** has travelled in particular regions in **West Africa** (currently Guinea, Liberia, and Sierra Leone) **within 21 days, OR**
- A person with fever (>38 C) or history of sudden onset of high fever **AND** has cared for or come into **contact with body fluids** (blood, urine, faeces, tissues, laboratory cultures) from an individual known or strongly suspected to have EVD.

All such individuals must see the doctor immediately and may be required to undergo further investigations and management.

Family members and other close contacts of suspect cases should be vigilant for symptoms of Ebola, and should seek medical attention as soon as possible if they feel unwell.

**For individual enquiries, visit our travel clinics at:**

**Clinic**      **Raffles Medical at Raffles Hospital**  
585 North Bridge Road, Level 1  
Raffles Hospital, Singapore 188770

**Contact**      Tel: 6311 2233  
Fax: 6311 2123

**Operating Hours** Daily 8.00am - 10.00pm

**Clinic**      **Raffles Medical at Terminal 3**  
Raffles Medical @ T3  
Singapore Changi Airport  
65 Airport Boulevard, B2-01  
Singapore 819663

**Contact**      Tel: 6241 8818  
Fax: 6241 3498

**Operating Hours** Daily 24 Hours

**For corporate enquiries, contact us at 6311 1333.**

