

# PATHCHAT

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Endorsed by the Ampath Infectious Diseases Peer Group

## CURRENT UPDATE on the EBOLA VIRUS OUTBREAK

Guinea is currently experiencing an outbreak of Ebola, which – as of 1 April – includes a suspected 127 cases to date, with 83 recorded deaths (case fatality rate of 65%). The areas of Guinea involved in the outbreak are Guékédou, Macenta, Kissidougou and Nzérékoré. These are largely rural forested areas of Guinea. There have been no confirmed cases to date in more populous areas. Further cases have been found in Sierra Leone and Liberia on the borders of the affected areas of Guinea. There are additional possible cases being investigated in Dabola Prefecture and Conakry. The viruses isolated from this outbreak align most closely with the Zaire strain of the Ebola virus. At this stage, the World Health Organisation (WHO) has not recommended any travel or trade restrictions to this area. While the risk of the importation of Ebola from this outbreak to South Africa is low, the National Institute for Communicable Diseases (NICD) recommends maintaining a high index of suspicion for people fulfilling the following case definition:

Acute onset of a febrile illness in people who have visited or been resident in Guinea, Sierra Leone or Liberia in the 21 days prior to the onset of illness;

**AND**

who have been in contact with suspected or confirmed patients with Ebola;

**OR**

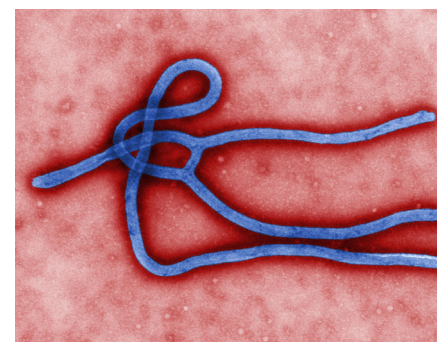
have been hospitalised in Guinea, Sierra Leone or Liberia, or who might have unexplained multisystem disease in the absence of malaria.

It is important to note that only patients fulfilling the above case definition will be tested for Ebola. Please always contact the laboratory pathologist before requesting this testing as we will then clear this with the NICD and arrange for the samples to be correctly collected and packaged prior to transport. We will also ensure that you receive the correct request slip from the NICD to fill in so that there are no delays in testing.

### History and epidemiology:

Ebola haemorrhagic fever is one of the most virulent viral illnesses experienced by mankind. It is sporadically transmitted to humans who handle sick or dead wild animals found on the forest floor, such as the great apes, bats, porcupines and forest antelope. Once in the human population, it is transmitted to people caring for ill people via direct contact with the body fluids, tissues and blood of the sick person. Incorrect handling of deceased people is also a source of further transmission of this virus. The Ebola virus has been found in the semen of men who have recovered from the infection for up to 61 days following exposure. Healthcare workers are at high risk of infection when handling sick patients without using adequate infection control procedures.

There are five species of the Ebola virus: Bundibugyo, Côte d' Ivoire, Zaire, Sudan and Reston. The most severe disease with the highest mortality rate is associated with the Zaire species with recorded case fatality rates of between 83 and 90%. The Ebola virus gets its name from the river in DRC where it was first encountered.



Ebola was first described in 1976 following two large epidemics in Nzara, Sudan with 284 cases and 151 deaths, and in Yambuku in Zaire with 318 cases and 280 deaths. The next significant epidemic occurred in Kikwit in the DRC (formerly Zaire) in 1995 with 315 cases and 250 deaths. Since then there have been numerous outbreaks in Uganda, Sudan, DRC, Gabon, and the current outbreak for the first time in Guinea. Sporadic cases have also been encountered in other countries, such as Russia in 1996 and again in 2004 following laboratory accidents. In each outbreak, there was only one case and each died. In 1996, a nursing sister in Johannesburg died of Ebola following exposure to the blood of a clinician who had travelled from Gabon and who subsequently turned out to be infected with the virus.

### Clinical presentation:

The incubation period varies from 2 to 21 days. Most patients experience an acute onset of fever, marked weakness and myalgia, with a headache and sore throat. This is followed shortly by vomiting and diarrhoea, rash, and impaired renal and hepatic function. At this stage, evidence of haemorrhage may occur.

Laboratory investigations will likely show low white cell counts, low platelet counts, and elevated ALT and AST.

### Differential diagnosis:

Malaria, typhoid, shigella, cholera, rickettsia, leptospirosis, borreliosis, bacterial septicaemia and hepatitis (including HSV hepatitis).

### Diagnosis:

Serology (usually IFA and ELISA), PCR testing, and viral isolation in culture. As this is one of the so-called formidable pathogens, this work is done under maximum biohazard containment in a P4 laboratory.

### Treatment:

Treatment is largely intensively supportive as there is no specific antiviral drug management for this infection. Healthcare workers caring for patients with Ebola need to practice good infection control. At the most basic level, which will prevent most infection by blood-borne pathogens, this includes hand hygiene, the use of personal protective equipment to prevent contact with blood and bodily fluids, safe injection practices with prevention of sharps injuries, and some environmental controls. The WHO has a document detailing the infection control practices required to prevent further transmission of filovirus infections in the healthcare setting.

The following links will direct you to the WHO infection control recommendations, the NICD Communique containing the Ebola alert and the NICD specimen request form for viral haemorrhagic fever.

- [http://www.who.int/csr/bioriskreduction/interim\\_recommendations\\_filovirus.pdf?ua=\)](http://www.who.int/csr/bioriskreduction/interim_recommendations_filovirus.pdf?ua=)
- [http://www.nicd.ac.za/assets/files/NICD-NHLS%20Communicable%20Disease%20Communiqu%C3%A9\\_Mar%202014.pdf](http://www.nicd.ac.za/assets/files/NICD-NHLS%20Communicable%20Disease%20Communiqu%C3%A9_Mar%202014.pdf)
- [http://nicd.ac.za/assets/files/VHF\\_test\\_request\\_form.pdf](http://nicd.ac.za/assets/files/VHF_test_request_form.pdf)

### References available on request