

2014-10-20

## **Ebola Virus Disease (EVD) and recommendations for respiratory protection**

### **What is Ebola?**

The Ebola virus causes an acute, serious illness which is often fatal if untreated. Ebola virus disease (EVD) first appeared in 1976 in 2 simultaneous outbreaks, one in Nzara, Sudan, and the other in Yambuku, Democratic Republic of Congo.

The latter occurred in a village near the Ebola River, from which the disease takes its name.

This virus is spreading from human to human.

The current outbreak in West Africa, (first cases notified in March 2014), is the largest and most complex Ebola outbreak since the Ebola virus was first discovered in 1976.

The average EVD case fatality rate is around 50%. Case fatality rates have varied from 25% to 90% in past outbreaks.

### **How is the EVD spread?**

Ebola spreads through human-to-human transmission via direct contact (through broken skin or mucous membranes) with the blood, secretions, organs or other bodily fluids of infected people, and with surfaces and materials (e.g. bedding, clothing) contaminated with these fluids.

Health-care workers have frequently been infected while treating patients with suspected or confirmed EVD. This has occurred through close contact with patients when infection control precautions are not strictly practiced.

People remain infectious as long as their blood and body fluids, including semen and breast milk, contain the virus.

### **What are the signs and symptoms of the Ebola virus in people?**

The incubation period, that is, the time interval from infection with the virus to onset of symptoms is 2 to 21 days.

Humans are not infectious until they develop symptoms. First symptoms are the sudden onset of fever, muscle pain, severe headache and sore throat. This is followed by vomiting, diarrhoea, rash, symptoms of impaired kidney and liver function, and in some cases, both internal and external bleeding.

### **Treatment and vaccines**

Supportive care-rehydration with oral or intravenous fluids- and treatment of specific symptoms, improves survival. There is as yet no proven treatment available for EVD. However, a range of potential treatments including blood products, immune therapies and drug therapies are currently being evaluated. No licensed vaccines are available yet, but 2 potential vaccines are undergoing human safety testing.

### **Prevention and control**

Good outbreak control relies on applying a package of interventions, namely case management, surveillance and contact tracing, a good laboratory service, safe burials and social mobilisation. Community engagement is key to successfully controlling outbreaks. Raising awareness of risk factors for Ebola infection and protective measures that individuals can take is an effective way to reduce human transmission. Risk reduction messaging should focus on several factors:

- Reducing the risk of wildlife-to-human transmission from contact with infected fruit bats or monkeys/apes and the consumption of their raw meat. Animals should be handled with gloves and other appropriate protective clothing. Animal products (blood and meat) should be thoroughly cooked before consumption.
- Reducing the risk of human-to-human transmission from direct or close contact with people with Ebola symptoms, particularly with their bodily fluids. Gloves and appropriate personal protective equipment should be worn when taking care of ill patients at home. Regular hand washing is required after visiting patients in hospital, as well as after taking care of patients at home.
- Outbreak containment measures including prompt and safe burial of the dead, identifying people who may have been in contact with someone infected with Ebola, monitoring the health of contacts for 21 days, the importance of separating the healthy from the sick to prevent further spread, the importance of good hygiene and maintaining a clean environment.

#### **Sundström Safety AB**

Huvudkontor/Head office: Stockholmsvägen 33 • S-181 33 Lidingö • Sweden • Tel: + 46 (0)8-56237000 • Telefax: +46 (0)8-56237020

Fabrik/Factory: Box 76 • S-340 14 Lagan • Sweden • Tel: +46 (0)8-56237000 • Telefax: +46 (0)8-56237060

Styrelsens säte./Reg. Office: Lidingö • Org nr./Reg No: 556147761201

### **Controlling infection in health-care settings:**

Health-care workers should always take standard precautions when caring for patients, regardless of their presumed diagnosis. These include basic hand hygiene, respiratory hygiene, use of personal protective equipment (to block splashes or other contact with infected materials), safe injection practices and safe burial practices.

Health-care workers caring for patients with suspected or confirmed Ebola virus should apply extra infection control measures to prevent contact with the patient's blood and body fluids and contaminated surfaces or materials such as clothing and bedding. When in close contact (within 1 metre) of patients with EBV, health-care workers should wear face protection (a face shield or a medical mask and goggles), a clean, non-sterile long-sleeved gown, and gloves (sterile gloves for some procedures).

Laboratory workers are also at risk. Samples taken from humans and animals for investigation of Ebola infection should be handled by trained staff and processed in suitably equipped laboratories.

### **Sundström Safety AB recommends the following respiratory protection:**

- SR 500 Powered Air Purifying Respirator (PAPR) with SR 510 (P3 R) particle filter and SR 561 replaceable hood.
- SR 500 Powered Air Purifying Respirator (PAPR) with SR 510 (P3 R) and Microgard protective clothing M2500, M3000 or M4000

### **Re-use of PAPR**

Since the Powered Air Purifying Respirator (PAPR) is not a single use respirator it is very important that there is a well established procedure for handling, disinfection and other maintenance, such as regular battery replacement, etc. Decontamination procedures for Ebola can vary so follow National recommendations or visit the links below for further information.

For further information concerning Ebola Virus Disease (EVD) and other Personal Protective Equipment (PPE), visit the following web sites:

World Health Organization

[www.who.int](http://www.who.int)

Department of Health and Human Services

Center for Disease Control and Prevention

[www.cdc.gov](http://www.cdc.gov)

European Center for Disease Control and Prevention

<http://ecdc.europa.eu/en/>

### **Sundström Safety AB**

**Huvudkontor/Head office:** Stockholmsvägen 33 • S-181 33 Lidingö • Sweden • Tel: + 46 (0)8-56237000 • Telefax: +46 (0)8-56237020

**Fabrik/Factory:** Box 76 • S-340 14 Lagan • Sweden • Tel: +46 (0)8-56237000 • Telefax: +46 (0)8-56237060

Styrelsens säte./Reg. Office: Lidingö • Org nr./Reg No: 556147761201