

Health Advice in Workplace
Prevention of Ebola Virus Disease (EVD)

Ebola virus disease (EVD)

Causative agent

EVD is caused by infection with Ebola virus. EVD in humans has a death rate of up to 90%. Since March 2014, new cases and deaths of EVD have been continuously reported in the West Africa region.

Clinical features

EVD is a severe acute viral illness often characterized by the sudden onset of fever, intense weakness, muscle pain, headache and sore throat. This is followed by vomiting, diarrhoea, rash, impaired kidney and liver function, and in some severe cases, internal and external bleeding.

Mode of transmission

Ebola virus can spread in the community through human-to-human transmission, with infection resulting from direct contact (through broken skin or mucous membranes) with the blood, secretions, organs or other bodily fluids of infected people, and indirect contact with environment contaminated with such fluids.

An infected person may spread the disease to others after (and not before) he/she has developed symptoms and will remain infectious as long as their blood and secretions contain the virus.

Incubation Period

It ranges from 2 to 21 days.

Treatment

There is no specific treatment for the disease.

Patients must be managed in isolation facilities to prevent the spread of the infection.

Prevention

There is no licensed vaccine available for EVD.

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The Department of Health advises staff to take the following precautionary measures at their workplaces to minimise the risk of contracting and spreading Ebola Virus Disease (EVD).

A. Preventive measures in workplace

Staff:

- Maintain good personal hygiene including hand hygiene. Wash hands frequently with liquid soap and water, especially before touching your eyes, nose or mouth; or before eating; after using the toilet; and touching public installations or equipment (such as escalator handrails, elevator control panels or door knobs). When hands are not visibly soiled, disinfect hands by rubbing them with 70-80% alcohol-based handrub if hand washing facilities are not readily available. Disinfect and cover wounds properly.
- Build up good body resistance through a balanced diet, regular exercise, adequate rest, reducing stress, do not smoke and avoid alcohol consumption
- Ensure thorough cooking of food before consumption.
- To prevent the disease, it is important to avoid unnecessary travel to areas affected by EVD. Upon returning from the affected area, members of the public should observe closely the health conditions for 21 days. If he/she develops symptoms of EVD, he/she should call 999 and inform the staff about his/her condition to arrange consultation in Accident and Emergency Department. (For the update on affected area of EVD, please visit Centre for Health Protection (CHP) website http://chp.gov.hk/files/pdf/evd_affected_area.pdf).

Office management:

- Maintain environment clean and hygienic
 - Clean the workplace with detergent and water regularly and keep it dry.
 - Rubbish should be properly wrapped up and discarded into garbage bins with lids. Empty garbage bins at least once a day.
- Maintain toilet clean and hygienic
 - Keep toilets clean and dry.
 - Provide liquid soap, hand dryers/disposable paper towels for hand washing.
 - Ensure the flushing system of the toilet, and hand dryers are in proper function at all times. Flush immediately after using toilet.
- If places are contaminated by blood, secretions, vomitus or excreta etc:
 - Cleansing staff should wear appropriate personal protective equipment (PPE) including surgical mask, rubber gloves, plastic apron and eye protection (goggles/face shield).
 - Use strong absorbent disposable towels to wipe away the blood, secretions, vomitus or excreta.

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- Put the used absorbent disposable towels in a garbage bag carefully without contaminating oneself/ the environment.
- Disinfect the surface and the neighbouring area with appropriate disinfectant.
 - ◆ If places are contaminated by secretions, vomitus or excreta, use 1 part of household bleach containing 5.25% sodium hypochlorite to 49 parts of water, leave for 15-30 minutes, rinse with water and wipe dry afterwards.
 - ◆ If places are contaminated by blood, use 1 part of household bleach containing 5.25% sodium hypochlorite to 4 parts of water, leave for 10 minutes, rinse with water and wipe dry afterwards.
- After the procedures, put all the waste in the garbage bag.
- Carefully remove PPE and put them in the garbage bag, and then wash hands with liquid soap and water.
- Seal the garbage bag and dispose it properly in covered rubbish bin.
- Wash hands with liquid soap and water.

B. Environmental cleaning and disinfection if a staff is suspected to have EVD

- Cleansing staff should wear appropriate personal protective equipment (PPE) including surgical mask, water resistant gown (or plastic apron on top of disposable gown), double gloves (Inner gloves: latex or nitrile gloves; outer gloves: rubber gloves), eye protection (goggles/ face shield), cap (optional) and gumboots.
- Disinfect all potentially contaminated surfaces or items (for example, elevator control panels, door knobs, room furniture) by using 1 part of household bleach containing 5.25% sodium hypochlorite to 49 parts of water, leave for 15-30 minutes, rinse with water and wipe dry afterwards.
- If places are contaminated by blood, secretions, vomitus or excreta, enhanced measures should be taken:
 - Use strong absorbent disposable towels to wipe away the blood, secretions, vomitus or excreta.
 - Put the used absorbent disposable towels in a garbage bag carefully without contaminating oneself/ the environment.
 - Use 1 part of household bleach containing 5.25% sodium hypochlorite to 4 parts of water, leave for 10 minutes, rinse with water and wipe dry afterwards.
 - After the procedure, put all the waste in the garbage bag.
 - Carefully remove PPE and put them in the garbage bag, and then wash hands with liquid soap and water.

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- Seal the garbage bag and dispose it properly in covered rubbish bin. Then, label the rubbish bin and put it in a safe undisturbed place until the status of case is confirmed##.
- Wash hands with liquid soap and water.

If EVD is confirmed, CHP will inform the workplace as soon as possible and the waste will be collected by the Food and Environmental Hygiene Department. On the contrary, if EVD is excluded, the wastes can be disposed as usual.

For more information

Please visit the website of the Centre for Health Protection of the Department of Health at http://www.chp.gov.hk/en/view_content/34199.html

Centre for Health Protection

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Safe Use of Bleach Solution

Annex 1

Preparing and Using Diluted Bleach

1. Keep windows open when diluting or using bleach to ensure good ventilation
2. Put on personal protective gear (e.g. mask, gloves and goggles) when diluting or using bleach as it irritates mucous membranes, the skin and the airway.
3. Cold water should be used for dilution of bleach as hot water decomposes the active ingredient of bleach and renders it ineffective.
4. Bleach containing 5.25% sodium hypochlorite should be diluted as follows:
 - 1 to 99 diluted household bleach (mixing 10 ml of bleach with 990 ml of water) can be used for general household cleaning.
 - 1 to 49 diluted household bleach (mixing 10 ml of bleach with 490 ml of water) is used to disinfect surfaces or articles contaminated with vomitus, excreta and secretions.
4. Make adjustments to the amount of bleach added if the concentration of sodium hypochlorite is above or below 5.25%.
 - Calculation: Multiplier of the amount of bleach added = 5.25% concentration of sodium hypochlorite in bleach For example, when diluting bleach containing only 5% sodium hypochlorite, the multiplier is $5.25 / 5 = 1.05$. That means $10 \text{ ml} \times 1.05 = 10.5 \text{ ml}$ of bleach should be used.
 - For accurate measurement of the amount of bleach added, a measuring cup can be used.
5. Rinse disinfected articles and surfaces with water and wipe dry.
6. Cleaning tools should be soaked in diluted bleach for 30 minutes and then rinsed thoroughly before reuse. Finally, wash hands with liquid soap and water, then dry hands with a clean towel or disposable paper towel.

Precaution

1. Avoid using bleach on metals, wool, nylon, silk, dyed fabric and painted surfaces.
2. Avoid touching the eyes. If bleach gets into the eyes, immediately rinse with water for at least 15 minutes and consult a doctor.
3. Bleach should not be used together or mixed with other household detergents as this reduces its effectiveness in disinfection and causes chemical reaction. For instance, a toxic gas is produced when bleach is mixed with acidic detergents such as those used for toilet cleaning. This could result in accidents and injuries. If necessary, use detergents first and rinse thoroughly with water before using bleach for disinfection.

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4. As undiluted bleach liberates a toxic gas when exposed to sunlight, it should be stored in a cool and shaded place out of reach of children.
5. Sodium hypochlorite decomposes with time. To ensure its effectiveness, it is advised to purchase recently produced bleach and avoid over-stocking.
6. For effective disinfection, diluted bleach should be used within 24 hours after preparation.