

# Infection prevention and control (IPC) Guidance Summary

Ebola guidance package

August 2014



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**WHO/EVD/Guidance/IPC/14.1**

# Infection prevention and control (IPC) Guidance

## Summary

This is a summary of the infection prevention and control (IPC) measures for anyone providing direct and non-direct care to patients with suspected or confirmed Ebola virus disease (EVD) in health-care facilities (HCFs). Essential IPC measures are also included in the Table which can be used as a standalone tool. Detailed interim guidance is available at:

[http://www.who.int/csr/resources/publications/ebola/filovirus\\_infection\\_control/en/](http://www.who.int/csr/resources/publications/ebola/filovirus_infection_control/en/)

### Background

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EVD is a severe illness caused by Ebola virus<sup>2</sup>. It is highly infectious and rapidly fatal, **but it can be prevented**. It is spread through **direct contact** with body fluids such as blood, saliva, urine, semen etc. of an infected person and by contact with contaminated surfaces or equipment, including linen soiled by body fluids from an infected person. Transmission to health-care workers (HCWs), other patients, and visitors has been reported when appropriate IPC measures were not observed.

### Standard precautions for all patients

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It is not always possible to identify patients with EVD early in the course of their illness because initial symptoms may be non-specific. For this reason, it is important that HCWs at all levels carefully apply standard precautions on a consistent basis, with **all patients** – regardless of their diagnosis – in all practices and at all times.

These include:

- **hand hygiene**
- use of disposable medical examination **gloves** before contact with body fluids, mucous membrane, non-intact skin and contaminated items, and
- **gown and eye protection** before procedures and patient-care activities likely to involve contact with or projection of blood or body fluids.

In addition, regular application of best practices for injection safety and safe handling and disposal of sharp instruments, safe cleaning and disinfection of the environment and of reusable equipment, and safe laundry and waste management should be a high priority in the HCF.

### Patient placement, staff allocation, visitors

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Patients with suspected or confirmed EVD should be isolated in single **rooms** or if unavailable, in specific confined areas while rigorously keeping suspected and confirmed cases **separate**. Clinical and non-clinical personnel as well as dedicated equipment should be exclusively assigned to EVD patient care areas. Access to these areas should be restricted and visitors' access should be limited to those essential for the patient's well-being and care (e.g. child's parent). In each HCF, one staff

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member (coordinator) should be named to oversee adherence to the IPC measures and to coordinate activities and provide advice.

### *Hand hygiene, personal protective equipment and other precautions*

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All HCWs (including aides and cleaners) and visitors should be trained/instructed to use **personal protective equipment (PPE)** and perform **hand hygiene**. Instructions should be displayed at the entry of the isolation room/area. Personal clothing should not be worn while working in the patient care areas. Scrub or medical suits should be worn.

In particular, the **following precautions should be carefully applied**:

1. Perform **hand hygiene** with an alcohol-based hand-rub solution (20-30 seconds) or soap, running water and single-use towels (40-60 seconds), applying the correct technique recommended by WHO:
  - before donning gloves and wearing PPE on entry to the isolation room/area;
  - before any clean/aseptic procedures being performed on a patient;
  - after any exposure risk or actual exposure to the patient's blood and body fluids;
  - after touching (even potentially) contaminated surfaces/items/equipment;
  - after removal of PPE, upon leaving the care area.

Always perform hand hygiene with soap and water when hands are visibly soiled. Alcohol-based hand rubs should be made available at every point of care.

2. Before entering care areas, **don PPE** according to the expected level of risk and following the steps recommended by WHO. The PPE include:
  - correctly sized non-sterile examination gloves or surgical gloves;
  - disposable, long-sleeve, impermeable gown to cover clothing and exposed skin;
  - medical mask and eye protection (goggles or face shield);
  - closed, puncture and fluid resistant shoes (e.g. rubber boots).

Additional PPE, depending on performed tasks and risk assessment, may include:

- waterproof apron, if gown is not impermeable;
  - disposable overshoes and leg coverings, if boots are not available;
  - heavy duty (rubber) gloves, when performing environmental cleaning or handling waste;
  - particulate respirator (FFP2 or EN certified equivalent or US NIOSH-certified N95), when performing procedures that promote generation of aerosols.
3. Before exiting the isolation room/area, **carefully remove and dispose of PPE** (including boots) into waste containers and perform hand hygiene. When removing PPE, be careful to avoid any contact between the soiled items (e.g. gloves, gowns) and any area of the face (i.e. eyes, nose or mouth) or non-intact skin. Do not re-use disposable PPE.
  4. Carefully clean and decontaminate reusable equipment. Adhere rigorously to using dedicated equipment (e.g. stethoscopes) on a single patient only. When this is not possible, decontaminate the items between each patient contact. All waste generated during this decontamination

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process should be treated as infectious waste. Items and equipment should not be moved between isolation rooms/areas and other areas of the HCF, unless they are appropriately discarded and disposed of.

### *Injection safety and management of sharps*

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The use of needles and other sharp objects should be limited. Each patient should have exclusively dedicated injection and parenteral medication equipment which should be disposed of at the point of care and never re-used. Never replace the cap on a used needle and never direct the point of a used needle towards any part of the body. Do not remove used needles from disposable syringes by hand, and do not bend, break or otherwise manipulate used needles by hand.

Dispose of syringes, needles, scalpel blades and other sharp objects in puncture-resistant containers. They should be placed close to the “point of use” and remain upright at all times. Ensure that the containers are securely sealed with a lid and replaced when  $\frac{3}{4}$  full.

### *Environmental cleaning, waste and linen management*

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Cleaners should wear rubber gloves, impermeable gown and boots and in addition, facial protection when undertaking activities with increased risk of splashes or in which contact with blood and body fluids is anticipated, including handling of linen. Contaminated environmental surfaces or objects should be cleaned and then disinfected as soon as possible using standard hospital detergents/disinfectants (e.g. a 0.5% chlorine solution). Floors and horizontal work surfaces should be cleaned at least once a day with clean water and detergent. Spraying (i.e. fog) occupied or unoccupied clinical areas with disinfectant should not be done because it is a potentially dangerous practice with no proven disease-control benefit.

Soiled linen should be placed in clearly labelled, leak-proof bags or buckets at the site of use and the container surfaces should be disinfected before transporting directly to the laundry area and laundering promptly with water and detergent. For low-temperature laundering, wash linen with detergent and water, rinse and then soak in 0.05% chlorine for approximately 30 minutes. Linen should then be dried according to routine standards and procedures.

Waste should be segregated at point of generation to enable appropriate and safe handling. All solid, non-sharp, infectious waste should be collected in leak-proof waste bags and covered bins.

### *Safety with laboratory samples*

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Use of phlebotomy and laboratory testing should be limited to the minimum necessary for essential diagnostic evaluation and patient care. Follow WHO recommendations for procedures to safely collect blood or other samples from persons suspected or confirmed to be infected. Laboratory personnel handling potential EVD clinical specimens should wear full PPE (see above) and use particulate respirators (e.g., FFP2, or EN certified equivalent, or US NIOSH-certified N95), or powered air purifying respirators (PAPR) when aliquotting, performing centrifugation or undertaking any other procedure that may generate aerosols. All laboratory sample processing should take place under a safety cabinet or at least a fume cabinet with exhaust ventilation.

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### *Post-mortem examinations*

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Post-mortem examination should be limited to essential evaluations and performed by trained personnel. Personnel should use PPE including eye protection, mask (a particulate respirator or a PAPR if performing internal autopsy), double gloves and disposable impermeable gowns.

Specimens should be placed in clearly-labelled, non-breakable, leak-proof containers and delivered directly to designated specimen handling areas. All external surfaces of specimen containers should be thoroughly disinfected prior to transport. Tissue or body fluids for disposal should be carefully placed in clearly marked, sealed containers for incineration.

### *Movement and burial of human remains*

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The handling of human remains should be kept to a minimum.

The following precautions should be used (with some adaptations according to cultural and religious habits, if needed):

- **wear PPE** (impermeable gown, mask, eye protection and double gloves or heavy duty gloves) and rubber boots or closed puncture or fluid-resistant shoes and overshoes to handle the dead body of an EVD suspected or confirmed case;
- do not spray, wash or embalm the dead body;
- place the body in a **double bag**, wipe over the surface of each body bag with a disinfectant (e.g., 0.5% chlorine solution) and seal and label with the indication of highly infectious material;
- **remove PPE** immediately after the procedure and perform hand hygiene immediately following PPE removal.

After wrapping in sealed, leak-proof material (bag), the dead body should be immediately moved to the mortuary and placed inside a coffin if possible, and buried promptly.

### *Managing exposure to virus through body fluids*

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Persons including HCWs with percutaneous or muco-cutaneous exposure to blood, body fluids, secretions, or excretions from a patient with suspected or confirmed EVD should immediately and safely stop any current tasks, leave the patient care area, and safely remove PPE. Immediately after leaving the patient care area, wash the affected skin surfaces or the percutaneous injury site with soap and water. Irrigate mucous membranes (e.g. conjunctiva) with copious amounts of water or an eyewash solution, and not with chlorine solutions or other disinfectants.

The incident should be immediately reported to the local coordinator. Exposed persons should be medically evaluated including for other potential exposures (e.g., HIV, HCV) and receive follow-up care, including fever monitoring twice daily for 21 days after the incident.

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<b>Infection prevention and control measures for care of patients with suspected or confirmed Filovirus haemorrhagic fever in health-care settings</b>	
<b>Standard Precautions</b>	<ul style="list-style-type: none"> <li>• Use for ALL patients regardless of signs and symptoms</li> <li>• Hand hygiene – with alcohol handrub solutions or soap and running water and single-use towels               <ul style="list-style-type: none"> <li>○ Before donning gloves and wearing personal protective equipment (PPE) upon entry to the isolation room/area; before any clean or aseptic procedures is being performed on a patient; after any exposure risk or actual exposure with a patient's blood or bodily fluids; after touching (even potentially) contaminated surfaces, items, or equipment in the patient's surroundings; and after removal of PPE, upon leaving the isolation area.</li> </ul> </li> </ul>
<b>Isolation</b>	<ul style="list-style-type: none"> <li>• <b>Isolate</b> suspected cases in single isolation rooms or cohort them in specific confined areas, separate from confirmed cases. Ensure at least 1 metre (3 feet) distance between patient beds. Dedicate care equipment to suspected cases only and ideally, to each patient.</li> <li>• <b>Exclusively assign</b> clinical and non-clinical staff to care areas. Restrict access of all others to dedicated areas.</li> </ul>
<b>Assignment &amp; Access</b>	
<b>Personal Protective Equipment (PPE)</b>	<ul style="list-style-type: none"> <li>• <b>Strict use of PPE</b> <ul style="list-style-type: none"> <li>○ Prior to entering care areas, don PPE - this includes gloves, an impermeable long-sleeve gown, boots/closed-toe shoes with overshoes, and a mask and eye protection for splashes.</li> <li>○ Perform careful removal of PPE to avoid contamination of any area of the face (i.e. eyes, nose, or mouth) or non-intact skin.</li> </ul> </li> <li>• <b>Limit the use of needles and other sharp objects</b>, cover abrasions, and wear PPE.</li> <li>• <b>Dispose of sharps</b> safely in appropriate, puncture-resistant containers.</li> </ul>
<b>Injection, sharp &amp; phlebotomy safety</b>	
<b>Environmental cleaning, waste &amp; linen disposal</b>	<ul style="list-style-type: none"> <li>• <b>PPE</b> (as detailed above) including heavy duty/rubber gloves should be worn by cleaners.</li> <li>• <b>Clean surfaces</b> at least once a day with clean water and detergent and follow additional instructions below for contaminated surfaces.</li> <li>• <b>Contaminated surfaces</b> – as soon as possible, clean and then use standard hospital disinfectant (e.g. a 0.5% chlorine solution or a solution containing 1000 ppm available free chlorine).</li> <li>• <b>Soiled linen</b> from confirmed or suspected cases should be placed in clearly-labelled, leak-proof bags or buckets and transported to the laundry. Scrape away solid excrement (i.e. faeces or vomit), wash with detergent and water, rinse and then soak in 0.05% chlorine for approximately 30 minutes.</li> </ul>
<b>Laboratory safety</b>	<ul style="list-style-type: none"> <li>• <b>Ensure safe handling of laboratory samples</b>, i.e. use of PPE, safe collection and sample processes from confirmed or suspected cases.</li> </ul>
<b>Safe care of the dead</b>	<ul style="list-style-type: none"> <li>• <b>Keep the handling of human remains and dead bodies to a minimum. Wear PPE.</b></li> <li>• Only trained staff should undertake the recommended procedures for burial while taking into account cultural and religious concerns.</li> </ul>
<b>Exposure incidents</b>	<ul style="list-style-type: none"> <li>• <b>Evaluate, care for</b>, and if necessary, <b>isolate</b> health-care workers or any person exposed to blood or body fluids from confirmed or suspected patients.</li> </ul>
<b>The actions described here must be supported by: ongoing surveillance of cases, appropriately assigned roles and responsibilities, the availability of supplies, staff and visitors' training, and the effective use of reminders e.g. posters displayed in key clinical areas.</b>	
<p><b>From:</b> Interim Infection Prevention and Control Guidance for Care of Patients with Suspected or Confirmed Filovirus Haemorrhagic Fever in Health-Care Settings, with Focus on Ebola. Geneva: World Health Organization, 2014. Available at <a href="http://www.who.int/csr/resources/publications/ebola/filovirus_infection_control/en/">http://www.who.int/csr/resources/publications/ebola/filovirus_infection_control/en/</a></p>	

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