











**Draft WHO list of Personal Protective Equipment for
Infection and Prevention Control with Focus on Ebola -
CLEANING, WASTE MANAGEMENT AND, SAFE AND DIGNIFIED BURIALS**










Version 07 November 2014

Main reference







Personal protective equipment in the context of filovirus disease outbreak response rapid advice guideline: summary of the recommendations, WHO, October 2014	http://apps.who.int/iris/handle/10665/137410#sthash.84iQyJL7.dpuf
Personal protective equipment (PPE) in the context of filovirus disease outbreak response: Technical specifications for PPE equipment to be used by health workers providing clinical care for patients, WHO, October 2014	http://apps.who.int/iris/bitstream/10665/137411/1/WHO_EVD_Guidance_SpecPPE_14.1_eng.pdf?ua=1
Field situation: How to conduct safe and dignified burial of a patient who has died from suspected or confirmed Ebola virus disease, WHO, October 2014	http://apps.who.int/iris/bitstream/10665/137379/1/WHO_EVD_GUIDANCE_Burials_14.2_eng.pdf?ua=1
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, WHO, August 2014	http://www.who.int/csr/resources/publications/who-ipc-guidance-ebolafinal-09082014.pdf
Clinical management of patients with viral haemorrhagic fever: A pocket guide for the front-line health worker, WHO, March 2014	http://www.who.int/csr/resources/publications/clinical-management-patients/en/
Interagency Emergency Health Kit, WHO, 2011	http://www.who.int/medicines/publications/emergencyhealthkit2011/en/
WHO catalogue (WHO internal site)	http://intranet.who.int/tools/wcat/QuickSearch.aspx

*** Recommended
** Alternative
* Optional

Item	Generic item name	Generic item image		WHO Detailed description	Sizes	Certification or minimum testing (or equivalent)	
Eyes protection (Goggles or Face shield)	Goggles		***	Good seal with the skin of the face, Flexible PVC frame to easily fit with all face contours without too much pressure, Enclose eyes and the surrounding areas, Accomodate wearers with prescription glasses, Clear plastic lens with fog and scratch resistant, Adjustable band to secure firmly so as not to become loose during clinical activity, Indirect venting to avoid fogging, May be re-usable (provided appropriate arrangements for decontamination are in place) or disposable.	One Size	<ul style="list-style-type: none"> EU standard directive 86/686/EEC, EN 166/2002, ANSI/ISEA Z87.1-2010, or equivalent	
	OR	Face shield (full shield)		***	Made of clear plastic and provides good visibility to both the wearer and the patient, Adjustable band to attach firmly around the head and fit snugly against the forehead, Fog resistant (preferable), Completely cover the sides and length of the face, May be re-usable (made of robust material which can be cleaned and disinfected) or disposable.	One Size	<ul style="list-style-type: none"> EU standard directive 86/686/EEC, EN 166/2002, ANSI/ISEA Z87.1-2010, or equivalent
Nose and mouth protection	Mask, medical/surgical, fluid resistant, structured design	 	***	High fluid resistance, Good breathability, Internal and external faces should be clearly identified, Structured design that does not collapse against the mouth (e.g. duckbill, cup-shape)	S, M, L	<ul style="list-style-type: none"> EN 14683 Type IIR performance ASTM F2100 level 2 or level 3 or equivalent; <ul style="list-style-type: none"> Fluid resistance at minimum 120 mmHg pressure based on ASTM F1862-07, ISO 22609, or equivalent Breathability: MIL-M-36945C, EN 14683 annex C, or equivalent Filtration efficiency: ASTM F2101, EN14683 annex B, or equivalent 	
	OR	Respirator	 	*** (used for aerosols with full face shield)	Shape that will not collapse easily (e.g. duckbill, half-sphere), High filtration efficiency, Good breathability To be used only during procedures that generate aerosols of body fluids. Only to be used together with a full face shield.	range of sizes with fit test kit	NIOSH N95, EN149 FFP2, or equivalent: <ul style="list-style-type: none"> Filtration efficiency: US 42 CFR Part 84 for N95, EN149 clause 7.9.2, or equivalent Breathability: US 42 CFR Part 84 for N95, EN149 clause 7.16, or equivalent
	OR	Surgical N95 respirator	 	** (used for aerosols)	Fluid resistant, Shape that will not collapse easily (e.g. half-sphere), High filtration efficiency, Good breathability To be used only during procedures that generate aerosols of body fluids.	range of sizes with fit test kit	"Surgical N95 respirator" cleared by the US FDA, or equivalent <ul style="list-style-type: none"> Fluid resistant surgical N95 respirator with minimum 80 mm Hg pressure based on ASTM F1862, ISO 22609, or equivalent
	Alcohol-based hand rub		***	Preferably made locally (refer to main reference), Fulfils recognized standards for microbiological efficacy (ASTM or EN standards), contains 60-85% 'alcohol' depending on ingredients (ethanol or isopropanol), can be liquid, gel or foam (and HCW tolerability & acceptability has already been tested), can be in 100ml (personal) bottles (should be able to be opened with one hand, e.g. flip top bottle), 500ml bottles (preferably with wall/bed/trolley mounted bracket) or 1lt bottles	100 mL 500 mL 1 L	<ul style="list-style-type: none"> ASTM E2315 ASTM E2755 - 10 or equivalent	

		*** Recommended ** Alternative * Optional				
Hand protection	Gloves, examination, non sterile		*** (with heavy duty gloves)	Gloves, examination, nitrile, powder-free, non sterile. Cuff length preferably reach mid-forearm (e.g. minimum 280mm total length), Range of sizes Preferably, the outer glove should have long cuffs, reaching well above the wrist, ideally to the mid fore-arm. In order to protect the wrist area from contamination, the inner glove should be worn under the cuff of the gown/coveralls (and under any thumb/finger loop) whereas the outer glove should be worn over the cuff of the gown/coveralls.	S, M, L	<ul style="list-style-type: none"> • EU standard directive 93/42/EEC Class I, EN 455, • EU standard directive 89/686/EEC Category III, EN 374, • ANSI/ISEA 105-2011, • ASTM D6319-10, or equivalent
	OR					
	Gloves, surgical, length to forearm large, pair	longer than examination gloves		***	Gloves, surgical, nitrile, powder-free, single use Preferably, the outer glove should have long cuffs, reaching well above the wrist, ideally to the mid fore-arm. In order to protect the wrist area from contamination, the inner glove should be worn under the cuff of the gown/coveralls (and under any thumb/finger loop) whereas the outer glove should be worn over the cuff of the gown/coveralls.	range of sizes 5 to 8.5
Gloves, heavy-duty, rubber, pair			***	Heavy duty gloves, covering forearm. Fabric: cotton or polyester, rubber coating, waterproof, and acid resistant, minimum cuff length 15cm	M, L	<ul style="list-style-type: none"> • EU standard directive 89/686/EEC Category III, • EN 374 (AS/NZS 2161.10.1.2005) chemical resistance for AKL • EN 374 (AS/NZS 2161.10.1.2005) for biohazards Level 3 performance • EN 388 (AS/NZS 2161.10.3.2005) 4101 for abrasion, blade cut, tear and puncture • EN 420:2004+A1:2009 or equivalent
Body wear (Gown or Coverall with apron)	Scrubs, tops		**	Tunic/top, woven, scrubs, reusable or single use, short sleeved, worn underneath the coveralls or gown	S, M, L	EN 13795+A1:2013 or equivalent
	Scrubs, pants		**	Trouser/pants, woven, scrubs, reusable or single use, worn underneath the coveralls or gown	S, M, L	EN 13795+A1:2013 or equivalent
	Gown, fluid resistant, disposable, with elastic wrists		**	Single use, Length mid-calf to cover the top of the boots, Avoidance of colours which are culturally unacceptable, e.g. black, Light colours preferable to better detect possible contamination, Thumb/finger loops to anchor sleeves in place.	M, L, XL	<ul style="list-style-type: none"> • Option 1: fluid penetration resistant: EN 13795 high performance, or AAMI PB70 level 3 performance, or equivalent • Option 2: blood borne pathogens penetration resistant: AAMI PB70 level 4 performance, or equivalent
	OR					
	Coveralls, fluid resistant, disposable, with elastic wrists, ankles and hood		***	Single use, Avoidance of colours which are culturally unacceptable, e.g. black, Light colours preferable to better detect possible contamination, Thumb/finger loops to anchor sleeves in place, Different sizes available – large size especially important.	M, L, XL	<ul style="list-style-type: none"> • Option 1: blood and body fluid penetration resistant: meets or exceeds ISO16603 class 3 or above exposure pressure, or equivalent • Option 2: Blood-borne pathogens penetration resistant:meets or exceeds ISO 16604 class 2 or above exposure pressure, or equivalent
Aprons, heavy-duty, reusable		***	Heavy duty non-woven apron, Straight apron with bib, Fabric: 100% polyester with PVC coating, or 100% PVC, or 100% rubber, or other fluid resistant material, Water proof, Sewn strap for neck and back fastening Minimum basis weight: 300g/m2 covering size: 70-90 cm (width) X 120-150cm (height) Reusable (provided appropriate arrangements for decontamination are in place)	One Size	may comply with EN ISO 13688:2013 or equivalent	
Foot wear	Boots, rubber, pair		***	Nonslip sole pattern, having a PVC or polyurethane sole which is completely sealed and waterproof, Knee-high in order be higher than the bottom edge of the gown, Range of sizes available to improve comfort and avoid trauma to the feet, Materials of construction include rubber, PVC, neoprene, nitrile, polyurethane, Favor light colours to better identify possible contaminations.	Women: 37(6US), 38(7US), 40(9US) Men: 42(8US), 44(10US)	
Head cover	Hood		***	Single use, Facial opening constructed, reaching the upper part of the gown or coverall, Adjustable and immovable once adjusted, Preferably fluid-resistant.	One Size	

*** Recommended
 ** Alternative
 * Optional

Safe and Dignified Burials	Body bags (suitable for burning/cremation)		***	Cadaver bag, linear enforced, U-shape zipper and 2 zipper pulls with tie ribs. Protector Body Bag specifications: <ul style="list-style-type: none"> • Impermeable, PE (non-PVC), minimum thickness 400 microns; • Should be able to hold 100-125 kilos (200-250 lbs), • Should contain no chlorides or carbons: chlorides or carbon pollute the environment and can cause damage to retort chambers. Body bags should be non carcinogenic to health of funeral workers when used for cremations. • At least 6 handles included in the body bag to allow burial team to hand carry it safely • Heat-sealed: insure superior strength and safety, • Provide full containment of blood borne pathogens • Cracking point of 25 - 32 degrees below zero • Bag and hands should be white color 	adult 250x120cm, child 150x100cm	
	OR					
	Body bags, (suitable for burial)		***	Cadaver bag linear enforced polyethylene (PE) 300-600 microns with U-shape zipper and 2 zipper pulls with tieribs <ul style="list-style-type: none"> • Should be able to hold 100-125 kilos (200-250 lbs), • At least 6 handles included in the body bag to allow burial team to hand carry it safely • Heat-sealed: insure superior strength and safety • Provide full containment of blood borne pathogens • Cracking point of 25 - 32 degrees below zero • Bag and hands should be white color 	adult 250x120cm, child 150x100cm	
	Absorbent pad for body bags		*	Absorbent lining for body bag, used to absorb body fluids in case of contagious haemorrhagic fever, cholera.		
	Stretcher, foldable		**	Foldable stretcher, Reusable (provided appropriate arrangements for decontamination are in place) , Capacity to carry minimum 150kg, Approx. length 180cm x width 50cm (90 cm x 50cm when folded), Adjustable bands	180x 50cm	
Other items	Safety Box / Sharps container, must be labelled biohazard		***	Puncture resistant container for collecting and disposing of used disposable syringes and needles Container with 5 L capacity	5 Litres	WHO/UNICEF standard E10/IC2 AS 4031:1992 BS 7320:1990 DHHS (NIOSH) Publication No. 97-11 or equivalent
	Tape, WHO		***	WHO tape to be provided by the WHO	N/A	
	Sprayer, hand, disinfectant, portable, small		***	Compression hand sprayer 1.5L <i>Similar to Goizper IK</i>	1.5 Litres	
	Bag, disposable for biohazardous waste (PPE and clinical waste without sharps)		***	Disposal bag for bio-hazardous waste 30x50cm with "Bio Hazard" printed, autoclavable polypropylene for reusable materials (disinfection) and for disposable material (destruction)	30x 50cm	
	Chlorine in HTH (calcium hypochlorite) form, granular		***	Chlorine, HTH 65-70%, granules, packaging IATA approved or according to mode shipment	N/A	
	Sprayer, backpack		***	Backpack/Knapsack (12 liters) with leakproof lid, acid resistance, lever-operated, preferably with spray control valve, adjustable nozzle allowing in line or circular spraying. <i>Similar to Goizper IK-12BS</i>	12 Litres	
	Anti-fog spray		*	Anti-fog spray for glasses bottle of abt 100ml	100 ml	