COVID-19 v6

World Health Organization

Operational Support & Logistics
Disease Commodity Packages

Agent's Biosafety Level: (to be confirmed): BSL2, Virus culture BSL3

Epidemic Potential: High

Last Update: 1 December 2020

Related links: COVID-19 [LINK]

Managing Epidemics Handbook [LINK]

SURVEILLANCE	Sample Collection	Diagnosis		
		Polymerase Chain Reaction (PCR)	Immunoassay	Culture
Laboratory confirmation of a COVID-19 case will trigger an thorough investigation. Because there currently is not a PCR test available testing may take several days or longer, WHO's recommended strategy is to begin an investigation immediately, thus requiring immediate operational support and supplies.	Upper and lower respiratory samples (nasopharyngeal and sputum samples)	Commercial rRT-PCR kits are available; See interim nCoV laboratory guidance below	Not yet available	Viral transport medium

Note: Many diagnostics supplies are also used for **Case Management** purposes, but have been included only in **Surveillance**.

Laboratory testing for COVID-19 is in development

PREVENTION & CONTROL	Travel & Trade	Vaccine	Triage / Screening (PPE)
Based on current information it is assumed that COVID-19 is a zoonotic disease with human-to-human transmission occurring through droplets or contact. This human-to-human transmission may occur due to breaches in IPC practices. Thus, a central focus of any prevention/control strategy is protecting health care workers with appropriate IPC supplies and ensuring basic health logistics at responding facilities.	Animal source has not yet been identified	Several vaccine candidates are in development.	Standard precautions with an emphasis on hand and respiratory hygiene, plus additional precautions - specifically droplet and contact precautions. Airborne-related precautions are only required for aerosol-generating procedures. Personal protective equipment (PPE) for screening and for at-risk healthcare workers at healthcare facilities

Please see WHO technical guidance for COVID-19 [LINK]

Please see WHO technical guidance on PPE for COVID-19 [LINK]

R&D Blueprint [LINK]

CASE MANAGEMENT	Treatment			Personal Protective Equipment (PPE)
	Aetiological	Supportive		
There is no specific treatment or vaccine for COVID-19; however, R&D efforts for COVID-19 are ongoing. WHO guidance on COVID-19 case management is in development.	Several candidates are under consideration for evaluation. On outbreak-specific basis, the Monitored Emergency Use of Unregistered Interventions (MEURI) may be considered. Please refer to most recent WHO guidance.	Oxygen Therapy with use of pulse oximeter highly recommended. Mechanical ventilation of severe cases (40%). Invasive ventilation and intensive care of critical cases.	Antibiotics, Pain/fever relief	PPE for at-risk healthcare workers at healthcare facilities. Respiratory (standard, droplet IPC); airborne-related precautions for aerosol-generating procedures. Possibly Home Care Kits for home isolation of asymptomatic or mildly symptomatic cases (in the case of a large outbreak).

Key outbreak control activities considered for material supply

- **Supportive treatment** (oxygen, hydration, antibiotics & fever/pain relief) to reduce mortality.
- **PPE** and other materials for the establishment of IPC measures at health care level to reduce transmission.

Note: Products for **Surveillance**, **Prevention & Control**, and **Case Management** are undergoing rapid, continuous development and refinement. For greater clarity, please refer to most recent applicable WHO technical guidance.

INTERVENTION		COMMODITY	TECHNICAL DESCRIPTION		
SURVEILLANCE	Sample Collection	Triple packaging boxes	Triple packaging boxes for transport	Guidance on regulations for Transport of Infectious Substances 2019 - 2020	[LINK]
		Viral transport medium	Viral transport medium with swab. Medium 1ml, 2ml or 3ml	• Comply with the CLSI standard M40-A (for the Quality Control of Microbiology Specimen Transport Devices). • Compatible with molecular and cell culture techniques.	
		Sharps container boxes	Puncture resistant container for collection and disposal of used, disposable and auto-disable syringes and needles. 5 L capacity accommodating approximately 100 syringes. Boxes to be prominently marked.	• WHO performance specification E10/IC.1 • WHO/UNICEF standard E10/IC.2 or equivalent	
	Diagnostics	Criteria for selection of specific diagnostic tests may include historical efficacy, adherence to any existing Target Product Profiles, ease of use, necessary throughput, distribution and logistics requirements, and manufacturer production capacity. For some pathogens, consideration may need to be given to the presence of mutations in targeted gene sequences or proteins. WHO can advise on the selection of tests on a case by case basis as determined by a specific event.		Technical guidance for COVID19 is available online	[LINK]
PREVENTION & CONTROL	Triage / Screening (PPE)	Gloves, examination, non-sterile	Gloves, examination, nitrile (preferable), latex, polychloroprene or PVC, powder-free, non-sterile. (e.g., minimum 230mm total length). Minimum thickness 0.05mm. Sizes S, M, L.	• EN 455, • EN 374, optional additional: • ASTM D6319, D3578, D5250, D6977, or equivalent set of standards	
		Mask, medical - healthcare worker	Medical mask, good breathability, internal and external faces should be clearly identified, at least 95% droplet filtration with fluid resistance or at least 98% droplet filtration with or without fluid resistance	Fluid resistant masks: • EN 14683 Type IIR, • ASTM F2100 Level 2 or 3, • YY 0469, with at least 98% bacterial droplet filtration, or alternative equivalent standard Non-fluid resistant mask: • EN 14683 Type II • YY/T 0969, with at least 98% bacterial droplet filtration, or alternative equivalent standard	
		Mask, medical - patient	Medical mask, good breathability, internal and external faces should be clearly identified	• EN 14683 Type I, • ASTM F2100 Level 1, • YY 0469 or YY/T 0969, if bacterial droplet filtration is below 98% or alternative equivalent standard	

	Oxygen concentrator	Device concentrates oxygen from ambient air. Mobile on four antistatic swivel castors, two with brakes. Flowrate, continues and adjustable. Oxygen purity: 93 % ±3 %. Output pressure: 0.04 - 0.07 MPa. Noise level < 60 dB. Integrated oxygen concentration and pressure sensors. Four-step filtering of air-intake, including bacterial filter. All filters replaceable. Display panel with audio/visual alarms for: "low oxygen concentration" (<82 %); "high/low pressure" (0.1/0.23 MPa), "power failure", "occlusion" (no flow). Accessories and spare parts should be available to ensure at least one year of operation.	WHO-UNICEF Technical Specifications and Guidance for Oxygen Therapy Devices, 2019	[LINK]
	Pulse oximeter	Compact portable device to monitor the haemoglobin oxygen saturation and to calculate the pulse rate for a patient. Finger-tip, hand-held or tabletop; battery powered or line powered. SpO2 detection to include the range: 70–100%. SpO2 resolution: 1% or less. Pulse rate detection to include the range: 30–240 bpm. Pulse rate resolution: 1 bpm or less. Complies with ISO 80601-2-61:2011, or equivalent.		
	Flow-splitter, for oxygen supply	Flow splitter for diversification of the oxygen delivery. Each outlet with an independent flowmeter for independently controlled oxygen flow rates. Full scale is graduated in litres per minute. The device is connected to a single, or double, oxygen supply (e.g., concentrator).		
	Flowmeter, Thorbe tube	The Thorpe tube flowmeter is composed of inlet and outlet ports, a regulator, a valve and a clear tapered measuring tube. It is suitable for connection with various medical gas sources, such as centralized system, cylinders, concentrators or compressors. Pressure-compensated flowmeter versions, suitable for specific flow ranges.		
	Humidifier, non-heated	The humidifier is inserted in the inspiratory line of a breathing circuit to add moisture to the breathing gases for administration to a patient. The bubbling bottle humidifier is a sealed container filled with water and connected inline into the breathing circuit. The medical gas mixture flows through the water inside the bottle and is enriched in humidity. This type of humidifier does not heat the gas. To be compatible with oxygen concentrator, including necessary hose connectors.		
	Nasal prongs	Oxygen cannulae are plastic tubes shaped as two prongs delivering air/oxygen mixture into the nasal cavities and connected with an oxygen administration circuit. Cannulae can be designed for low-flow applications (0–15 L/min range in general). Oxygen and air/oxygen mixture compatibility, as per ISO 15001. Different sizes: Adult, paediatric, neonatal.		
	Catheter	Flexible nasal catheter with multiple holes (6 to 12 lateral eyes) at distal end. Oxygen and air/oxygen mixture compatibility, as per ISO 15001. Proximal end with connector. Sterile, single use. Diameter: 8 Fr. Length: 40 cm with lateral eyes, sterile, single-use		
	Oxygen mask	Connection tube, reservoir bag and valve, high-concentration, non-sterile, single use. Different sizes: Adult, paediatric.		
	Venturi mask	Venturi mask, w/ percent O2 Lock+ 1.5 - 2.0 m tubing, non-sterile, single use. Different sizes: Adult, paediatric.		
	Ventilator for intensive care unit (adult and paediatric)	• Tidal volume: 20 - 1500 mL. • Respiratory rate: up to 60 breaths per minute. • SIMV Respiratory Rate (preferable). • CPAP/PEEP up to 20 cm H2O. • Pressure support up to 40 cm H2O. • FiO2 between 21 to 100 % • I:E Ratio and I:E Inverse Ratio Modes of ventilation: • Volume controlled. • Pressure controlled. • Pressure support. • Synchronized intermittent mandatory ventilation (SIMV) (preferable) • CPAP/PEEP Alarms are required: FiO2, pressure, PEEP, apnoea, occlusion, high respiration rate, disconnection System alarms required: power failure, gas disconnection, low battery, vent inoperative, self diagnostics. If alarm silencing feature is incorporated, it must be temporary and clearly displayed when activated. Air and externally supplied oxygen mixture ratios fully controllable. Medical air compressor integral to unit, or turbine in-built preferred (alternatively external air compressor) with inlet filter. Possibility for using external low-pressure oxygen (approximately 20 psi), as source (preferable)	Compliance to the following international standards or to regional or national equivalent (including the technical tests for safety and performance from accredited laboratory or third party) for (latest version recommended but compliance to previous standards versions could be accepted): • IEC 60601-1:2005 Medical electrical equipment - Part 1: General requirements for basic safety and essential performance • IEC 60601-1-2:2014 Medical electrical equipment – Part 1-2: General requirements for basic safety and essential performance – Collateral standard: Electromagnetic compatibility – Requirements and tests. • ISO 80601-2-12:2020 Medical electrical equipment – Part 2-12: Particular requirements for basic safety and essential performance of critical care ventilators. • ISO 80601-2-74:2017 Medical electrical equipment – Part 2-74: Particular requirements for basic safety and essential performance of respiratory humidifying equipment. • ISO 80601-2-79:2018 Medical electrical equipment – Part 2-79: Particular requirements for basic safety and essential performance of ventilatory support equipment for ventilatory impairment. • ISO 18562-1:2017 Biocompatibility evaluation of breathing gas pathways in healthcare applications – Part 1: Evaluation and testing within a risk management process (if applicable). • ISO 20789:2018 Anaesthetic and respiratory equipment – Passive humidifiers (if applicable). (Technical specifications for invasive and non-invasive ventilators for COVID-19 Interim Guidance 15 April 2020)	
	Ventilator for transport (adult and paediatric)	Medical air compressor integral to unit, with inlet filter or high performance turbines. External low-flow oxygen (preferable). If oxygen high-pressure input port (> 35 psi). Each high-pressure input port with a filter having a pore size ≤ 100 µm. Oxygen-air mixture accuracy of 4%. Oxygen consumption with 660 L (E) tank: - 104 minutes with 16 L/min, FiO2 50%. - 280 minutes with 6 L/min, FiO2 50%. Internal function testing/leak testing. Event log for errors traceability (preferable). All parts withstand high disinfection procedures. Ventilation modes: Pressure control ventilation (PCV). Volume control ventilation (VCV). Synchronized intermittent mandatory ventilation (SIMV) (preferable). Pressure support ventilation (PSV) (preferable). Pressure regulated volume control (PRVC) (or similar preferable). Non-invasive ventilation (CPAP/ BiPAP). Monitored and controlled parameters (by user) : Air and externally supplied oxygen mixture ratios fully controllable. FiO2: 21–100%. Tidal volume: 20–1000 mL (preferable). Inspiratory pressure: 0–40 cmH2O. I:E ratio. RR: 10–60 breaths/min, minimum. Alarms, related to gas delivered (visual and audible) : High/low FiO2. High/low flow. High/low inspiratory pressure. Breathing circuit disconnect. Apnoea.Alarms, related to equipment operation (visual and audible) : Gas supply failure. Power failure. Low battery.	Compliance to the following international standards or to regional or national equivalent (including the technical tests for safety and performance from accredited laboratory or third party) for (latest version recommended but compliance to previous standards versions could be accepted): • IEC 60601-1:2005 Medical electrical equipment - Part 1: General requirements for basic safety and essential performance • IEC 60601-1-2:2014 Medical electrical equipment – Part 1-2: General requirements for basic safety and essential performance – Collateral standard: Electromagnetic compatibility – Requirements and tests. • ISO 10651-5:2006 Lung ventilators for medical use – Particular requirements for basic safety and essential performance – Part 5: Gas-powered emergency resuscitators. • ISO 80601-2-74:2017 Medical electrical equipment – Part 2-74: Particular requirements for basic safety and essential performance of respiratory humidifying equipment. • IEC 60601-1-2:2014 Medical electrical equipment – Part 1-2: General requirements for basic safety and essential performance – Collateral standard: Electromagnetic compatibility – Requirements and tests. • ISO 18562-1:2017 Biocompatibility evaluation of breathing gas pathways in health-care applications – Part 1: Evaluation and testing within a risk management process (if applicable). • ISO 20789:2018 Anaesthetic and respiratory equipment – Passive humidifiers (if applicable).	[LINK]

	Supportive Treatment	Ventilator for sub-acute care (adult and paediatric)	Medical air compressor or turbine in-built, with inlet filter. Possibility for using external low-pressure oxygen (approx. 20 psi) as source (preferable). If oxygen high pressure input port (> 35psi [2.4bar]). Oxygen-air mixture accuracy of 4%. Oxygen consumption with 660 L (E) tank: • 104 minutes with 16 L/min, FiO2 50%. • 280 minutes with 6 L/min, FiO2 50%. Oxygen conserve feature (preferable). Internal function testing/leak testing. Event log for errors traceability (preferable). Capability to work with dual-limb breathing circuits. Capability to connect to an active humidifying system. Ventilation modes: Non-invasive ventilation. It must include at least one mandatory and invasive ventilation mode. Pressure control ventilation (PCV). Volume control ventilation (VCV). Pressure support ventilation (PSV). Synchronized intermittent mandatory ventilation (SIMV) (preferable). Pressure regulated volume control (PRVC) (or similar preferable). Monitored and controlled parameters (by user): Air and externally supplied oxygen mixture ratios fully controllable. FiO2: 21–100%. Tidal volume: 50–1000 mL (preferable). Inspiratory pressure: 0–40 cmH2O. I:E ratio. RR: 10–60 breaths/min, minimum. PEEP: at least 0–20 cmH2O. Alarms, related to gas delivered (visual and audible): High/low FiO2. High/low flow. High/low inspiratory pressure. Breathing circuit disconnect. Low minute volume (preferable). Apnoea. Alarms, related to equipment operation (visual and audible): Gas supply failure. Power failure. Self-diagnostics failure alarm. Low battery.	Compliance to the following international standards or to regional or national equivalent, (including the technical tests for safety and performance from accredited laboratory or third party), for (latest version recommended but compliance to previous standards versions could be accepted): • IEC 60601-1:2005 Medical electrical equipment - Part 1: General requirements for basic safety and essential performance • IEC 60601-1-2:2014 Medical electrical equipment – Part 1-2: General requirements for basic safety and essential performance – Collateral standard: Electromagnetic compatibility – Requirements and tests. • ISO 10651-5:2006 Lung ventilators for medical use – Particular requirements for basic safety and essential performance – Part 5: Gas-powered emergency resuscitators. • ISO 80601-2-74:2017 Medical electrical equipment – Part 2-74: Particular requirements for basic safety and essential performance of respiratory humidifying equipment. • ISO 18562-1:2017 Biocompatibility evaluation of breathing gas pathways in healthcare applications – Part 1: Evaluation and testing within a risk management process (if applicable). • ISO 20789:2018 Anaesthetic and respiratory equipment – Passive humidifiers (if applicable).	
		High-flow nasal cannula (HFNC) (adult and paediatric)	Capability to generate a high flow of mixed room air and oxygen. Capability to use oxygen from an oxygen concentrator or cylinder. In-built air compressor/turbine/piston. Easy to operate user interface, with displayed parameters clearly visible. The mixed room air and oxygen should be warmed up to 37 °C and 100% RH. Controls to be easy to operate, numbers and displays to be clearly visible. It should have a humidity compensation system. Noise level < 35 dB at mid pressure range. Trigger sensitivity range: 1–10 cmH2O, increments of 1 or automatic. Monitored and controlled parameters (by clinical user): FiO2: 21–100 % (preferable). Flow up to: 50 L/min (minimum). Alarms, related to gas delivered (visual and audible): Incorrect temperature/humidity. System leakage or blockage. High/low FiO2 (preferable). Alarms, related to equipment operation (visual and audible): Lack of water. System failure. Air filter to be replaced. Power failure. Low battery (if applicable).	Compliance to the following international standards or to regional or national equivalent, (including the technical tests for safety and performance from accredited laboratory or third party), for (latest version recommended but compliance to previous standards versions could be accepted): • IEC 60601-1:2005 Medical electrical equipment - Part 1: General requirements for basic safety and essential performance • IEC 60601-1-2:2014 Medical electrical equipment – Part 1-2: General requirements for basic safety and essential performance – Collateral standard: Electromagnetic compatibility – Requirements and tests. • ISO 18562-1:2017 Biocompatibility evaluation of breathing gas pathways in healthcare applications – Part 1: Evaluation and testing within a risk management process. • ISO 20789:2018 Anaesthetic and respiratory equipment – Passive humidifiers. • ISO 17510:2015 Medical devices – Sleep apnoea breathing therapy – Masks and application accessories.	
		Laryngoscope, adult/child	Instrument used to expose and view the larynx and surrounding areas during orotracheal and nasotracheal intubation. It consists in a large cylindrical, hollow, slightly ribbed handle with a threaded head consistent of different types and sizes of blades. Each blade has fibre optics or a single bulb. The bulb is of at least 2.7 V Halogen light and is removable for cleaning. Handle is 28 mm diameter and battery powered with two standard alkaline dry cell batteries (1.5 V, type C (LR14)). • Blades, Macintosh type (curved): No. 2, length 90 - 110 mm, for child. No. 3, length 110 - 135 mm, for small adult. No. 4, length 135 - 155 mm, for adult. • Blades, Miller type (straight): No. 1, length 100 mm. • Heavy-walled plastic or metal case. • Instruction of use, troubleshooting and maintenance (English, French, Spanish). • Supplied with six compatible batteries in total. • Four extra halogen bulbs.	ISO 7376:2009 or equivalent	
		Laryngoscope, neonate	Instrument used to expose and view the larynx and surrounding areas during orotracheal and nasotracheal intubation. It consists in a large cylindrical, hollow, slightly ribbed handle with a threaded head consistent of different types and sizes of blades. Each blade has fibre optics or a single bulb. The bulb is of at least 2.7 V Halogen light and is removable for cleaning. Handle is 19 mm diameter and battery powered with two standard alkaline dry cell batteries (1.5 V, type AA (LR6)). • Blades, Macintosh type (curved): No. 0, length 55 mm, for newborn. No. 1, length 70 mm, for infant. No. 2, length 90 mm, for child. • Heavy-walled plastic or metal case. • Instruction of use, troubleshooting and maintenance (English, French, Spanish). • Supplied with six compatible batteries in total. • Four extra halogen bulbs.	ISO 7376:2009 or equivalent	

CASE MANAGEMENT		Endotracheal tube	Without cuff, sterile, single-use. It consists in a thin, flexible, transparent and single hollow cylinder, with an anatomical curvature Magill-type of 37.5°, black and legibly depth markings and graduation in centimetres, with radio-opaque continuous line mark, with cuff and pilot balloon, with a standard connector in the proximal end. The proximal end of the tube safely fits the connector from which size is selected according to the tube size. The connector is straight and double-ended, with the proximal end being an outer, standard 15 mm internal diameter, conical tip that allows the tube to be connected to the ventilation system (breathing circuit or manual resuscitator). The distal end of the tube is open and beveled (obliquely cut), atraumatic, with Murphy's eye. The endotracheal tubes are standard in all aspects: dimension (at least following sizes: 2, 2.5, 3, 3.5 4 and 5), markings and connectors.	
		Endotracheal tube (with cuff)	With cuff, sterile, single-use. It consists in a thin, flexible, transparent and single hollow cylinder, with an anatomical curvature Magill-type of 37.5°, black and legibly depth markings and graduation in centimetres, with radio-opaque continuous line mark, with cuff and pilot balloon, with a standard connector in the proximal end. The proximal end of the tube safely fits the connector from which size is selected according to the tube size. The connector is straight and double-ended, with the proximal end being an outer, standard 15 mm internal diameter, conical tip that allows the tube to be connected to the ventilation system (breathing circuit or manual resuscitator). The distal end of the tube is open and beveled (obliquely cut), atraumatic, with Murphy's eye. The cuff, situated at the distal end of the tube, provides an airtight seal between the tube and the tracheal wall. It seals the lungs against the liquid secretions sloshing around in the upper airway. And, it ensures that the environment below the cuff can be pressurised and ventilated with a carefully controlled gas mixture. The cuff has a low pressure in order to avoid inadequate pressure on the tracheal mucous membrane to prevent damage or even necrosis. It typically has a capacity of 10 mL. The cuff is inflated via a small-bore inflation tube welded to the outside of the tracheal tube or built into its wall. The pilot balloon indicates the cuff distension. One end is connected to the cuff through a thin inflation tube located close to the proximal end. The other end has a spring-loaded, one-way valve that maintains a pre-set pressure in the circuit, and has Luer tip connector for syringes. The endotracheal tubes are standard in all aspects: dimension (at least the following sizes: 4,5, 6, 7, 8, and 9), markings and connectors.	• ISO 5361:2016; • ISO 10993-1:2018; • ISO 11135:2014 or equivalent
		Endotracheal tube introducer, Bougie	Blue or yellow tube with graduated marking. Curved tip with distal rounded smooth tip. Sterile, single use. Diameter: 10 Fr. and 15 Fr., Length: 60 cm to 70 cm.	• ISO 5361:2016; • ISO 10993-1:2018; • ISO 11135:2014 or equivalent
		Endotracheal tube introducer, Stylet	Flexible and malleable guide (stylet). Soft and round end-tip. Shaped as needed. Graduated marking. Manufacturer name and tube size are indicated on the tube. Sterile, single use. Diameter: 10 Fr. and 14 Fr., Length: 30 cm to 45 cm.	
		Colorimetric end tidal CO2 detector	Sizes compatible with child and adult endotracheal tube. Single use.	ISO 5367:2014 or equivalent
		Resuscitator, adult	Compressible self-refilling ventilation bag, maximum capacity: approximately 1300 mL. Oxygen reservoir bag complete. Non-rebreathing patient valve with pressure limiting valve, patient connector outside/inside diameter: 22/15 mm. Inlet valve with nipple for 02 tubing. Masks, silicon, in 3 sizes (Adult: adult small, adult standard, adult large)	ISO 10651-4:2002 or equivalent
		Resuscitator, child	Compressible self-refilling ventilation bag, child, capacity: 500-700mL. Oxygen reservoir bag complete. Non-rebreathing patient valve with pressure limiting valve, patient connector outside/inside diameter: 22/15 mm. Inlet valve with nipple for 02 tubing. Masks, silicon, in 3 sizes (Infant: small infant, infant standard, and large infant)	[LINK]
		Oropharyngeal airway, Guedel, sterile, single use	One-piece, semi-rigid, curved plastic tube. To be inserted through the oropharynges to facilitate airway management. Guedel type. Flange surface is permanently marked with tube size/length in mm, and the manufacturer or supplier's name. Bite resistant. Proximal (or buccal) end straight and reinforced. Distal end semi-rigid, curved, with atraumatic soft rounded edges. Adult sizes: 2, 3, 4 and 5	• EN12181 • ISO 5364; • ISO10993-1 or equivalent
		Nasopharyngeal airway	Sterile, single-use. A Nasopharyngeal Airway is recommended for use as an airway adjunct in the semi-conscious or unconscious patient with an intact gag reflex. Individually packaged sterile with a conveniently attached surgical lubricant for quick access to facilitate ease of insertion. Flexible and soft material for maximum patient comfort. Rounded tip allows for gentle insertion. Trumpet design for secure placement. Diameter and size labelled according to standards. Range of sizes from 20 Fr to 36 Fr.	
		Suction devices	Portable suction devices / aspiration pumps used to evacuate secretions and liquids from the nasal cavity or from high airways. Devices capable to resist high level disinfection procedures. Aspiration pumps are varied in vacuum level and flow capacity. Anti-bacterial filter and containers should be available, if applicable.	
		Compound sodium lactate solution	Compound solution of sodium lactate (Ringer's lactate), injection solution, w/o IV set and needle, 1000ml	
		Infusion giving set	Infusion giving sets for adult and pediatric use to be considered. IV catheters and scalps veins covering all range of sizes to be considered. Stopper/closing cones, 3-way stopcock and other devices needed to complete the infusion line to be considered	
		Paracetamol	Paracetamol, 500mg, tablets	
		Gloves, examination, non-sterile	Gloves, examination, nitrile (preferable), latex, polychloroprene or PVC, powder-free, non-sterile. (e. g., minimum 230mm total length). Minimum thickness 0.05mm. Sizes S, M, L.	• EN 455, • EN 374, optional additional: • ASTM D6319, D3578, D5250, D6977, or equivalent set of standards
		Gloves, surgical, sterile	Gloves, surgical, nitrile (preferable), latex, polyisoprene, or polychloroprene, sterile, powder-free, single use. Gloves should have long cuffs, reaching well above the wrist, ideally to mid-forearm. minimum thickness 0.10mm. Sizes ranging 5.0 - 9.0	• EN 455, • ASTM D3577, Sterility • United States Pharmacopeia, • EN ISO 11607, or alternative equivalent set of standards

PPE Health Care Facilities	Goggles, glasses protective	Good seal with the skin of the face, Flexible PVC frame to easily fit with all face contours with even pressure, Enclose eyes and the surrounding areas. Accommodate wearers with prescription glasses. Clear plastic lens with fog and scratch resistant treatments. 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.	• EN 166, • ANSI/ISEA Z87.1, or alternative equivalent set of standards
	Face shield	Made of clear plastic and providing good visibility to both the wearer and the patient. Adjustable band to attach firmly around the head and fit snuggly 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.	• EN 166 (if reusable), or alternative equivalent set of standards
	Fit test kit	To evaluate effectiveness of seal for tight fitting respiratory protection devices	OSHA 29 CFR 1910.134 Appendix A
	Particulate respirator	Good particle filtration (minimum 94% or 95%), good breathability with design that does not collapse against the mouth (e.g. duckbill, cup-shaped), may be tested for fluid resistance (NIOSH/FDA surgical N95, EN 149 FFP2+Type IIR, GB 19083 Grade/Level 1)	Fluid resistant respirator: • NIOSH 42 CFR 84, FDA minimum "surgical N95" • EN 149, minimum "FFP2" and EN 14683 Type IIR • GB 19083, minimum "Grade/Level 1", or alternative equivalent standard Non-fluid resistant respirator • NIOSH 42 CFR 84, minimum "N95" • EN 149, minimum "FFP2" • GB 2626, minimum "KN95" or alternative equivalent set of standard
	Mask, medical - healthcare worker	Medical mask, good breathability, internal and external faces should be clearly identified, 95% droplet filtration with fluid resistance or at least 98% droplet filtration with or without fluid resistance	Fluid resistant masks: • EN 14683 Type IIR, • ASTM F2100 Level 2 or 3, • YY 0469, with at least 98% bacterial droplet filtration, or alternative equivalent standard Non-fluid resistant mask: • EN 14683 Type II • YY/T 0969, with at least 98% bacterial droplet filtration, or alternative equivalent standard
	Mask, medical - patient	Medical mask, good breathability, internal and external faces should be clearly identified	• EN 14683 Type I, • ASTM F2100 Level 1, • YY 0469 or YY/T 0969, if bacterial droplet filtration is below 98% or alternative equivalent standard
	Scrubs, tops	Tunic/tops, woven, scrubs, reusable or single use, short sleeved (tunic/tops), worn underneath the coveralls or gown.	
	Scrubs, pants	Trouser/pants, woven, scrubs, reusable or single use, worn underneath the coveralls or gown	
	Apron, heavy duty	Straight apron with bib, Fabric: 100% polyester with PVC coating, or 100% PVC, or 100% rubber, or 100% reusable and biodegradable material, or other fluid resistant coated material, Waterproof, sewn strap for neck and back fastening or single-material cut film, Minimum basis weight: 300 g/m2, Thickness: 200 - 300 microns, optional Covering size: 70 - 90 cm (width) x 120 - 150 cm (height), Reusable (provided appropriate arrangements for decontamination are in place) or biodegradable	• EN ISO 13688 • EN 14126 and partial protection (EN 13034 or EN 14605) • EN 343 for water and breathability or alternative equivalent set of standards If biodegradable; • EN 13432 • ASTM D6400
	Apron, disposable	Single-use straight sleeveless protective apron, for use in healthcare settings Seamless liquid proof and stain resistant Comfortable to wear, apron has back- and neck-band strips attached (4 in total) Both back- and neck-band can be adjusted/fastened Color: white Material: polyethylene (PE) or biodegrdable or compostable material Size: 85 x 145 cm (w x l) (+/- 15%) Thickness, at not less than: 50 um Can resist water and disinfectant (ethanol 70% and chlorine solution 0.5%)	Product performance testing if biodegradable, • EN 13432, • ASTM D6400 or alternative equivalent set of standards
	Gown, isolation	Single use, disposable, made of nonwoven material, length mid-calf. Sizes S, M, L May also be reusable, woven, length mid-calf, sizes S, M, L. Critical zones may be more fluid resistant than non-critical zones.	• AAMI PB70 (Level 1-3), • ASTM F3352 • EN 13034 - Type PB [6] (stitched gown), with minimum hydrostatic head of 50 cm H2O • AAMI PB70 Level 4 or • ISO 16604 Class 5 or alternative equivalent set of standards
	Gown, surgical	Single use, disposable, nonwoven material, length mid-calf, sterile or non-sterile. Critical zones may be more fluid resistant than non-critical zones. Or Single use, woven material, length mid-calf, sterilizable. Critical zones may be more fluid resistant than non-critical zones.	• AAMI PB70 • ASTM F2407 • EN 13795 • EN 13034 - Type PB [6] (stitched gown), with minimum hydrostatic head of 50 cm H2O • YY/T 0506, or alternative equivalent set of standards • EN 556, if sterile, or alternative equivalent set of standards
	Alcohol-based hand rub	Bottle of 100ml & 500ml, at least 80% ethanol or 75% isopropyl alcohol (v/v)	• ASTM E2755, or • EN 1500 or alternative equivalent set of standards Optional: • ASTM E1115, or • ASTM E1174
	Handwash	Bottle of 100ml & 500ml	• EN 1499 • ASTM E1174

		Bio-hazard bag - 20L	Disposable autoclavable bag for biohazard waste. Material: High density polyethylene (HDPE) or Polypropylene (PP). Capacity: Approximately 20L Size: 45 cm (width), 50 cm (length) (+/- 10%) Thickness: minimum 0.038 mm (1.5 mil) Color: red or yellow Autoclave ability - temperature resistant up to 121° C Printed with a sterilization patch that darkens when subject to steam. Puncture, tear and lead resistant. Leak proof, flat bottom seal. Black imprint "Biohazard" and tri-sickle logo according to U+2623 on one side	• ASTM 1922 Tear Resistant • ASTM 1709 Dart Impact Test • Temperature Resistant test at 121° C
		Bio-hazard bag - 50L	Disposable autoclavable bag for biohazard waste. Material: High density polyethylene (HDPE) or Polypropylene (PP). Capacity: Approximately 50L Size: 60 cm (width), 82 cm (length) (+/- 10%) Thickness: minimum 0.038 mm (1.5 mil) Color: red or yellow Autoclave ability - temperature resistant up to 121° C Printed with a sterilization patch that darkens when subject to steam. Puncture, tear and lead resistant. Leak proof, flat bottom seal. Black imprint "Biohazard" and tri-sickle logo according to U+2623 on one side	• ASTM 1922 Tear Resistant • ASTM 1709 Dart Impact Test • Temperature Resistant test at 121° C
		Safety box	SAFETY BOX, needles/syringes, 5 L capacity, cardboard for incineration, box-25	Biohazard label as per WHO PQS E010/011
		Soap	Liquid (preferred), powder and bar	
		Gloves, cleaning	Glove should have long cuffs, reaching well above the wrist, ideally to mid-forearm. Minimum 280 mm total length. Sizes S, M, L. Reusable. Heavy duty gloves, high cracking, puncture and abrasion resistant Powder free, seamless, and entirely waterproof Made of nitrile, synthetic rubber (no latex), K Knit inner lining facilitates slide-in and removal Cleanable with water and disinfectant (resisting both ethanol solutions 70% and chlorine solutions 0.5%) Material thickness, at level of the fingers, not less than: 0.38 mm Length not less than: 30cm Supply co-packed as one left/right pair	• EN 388 • ANSI 105 • EN 374-1, EN 374-2 (at least Level 2) • EN 374-4 and EN 374-5 • EN 420 + A1 or alternative equivalent set of standards
		Hand drying tissue	50 to 100 m roll	
		Chlorine	NaDCC, granules, 1kg, 65 to 70% + measurement spoon	