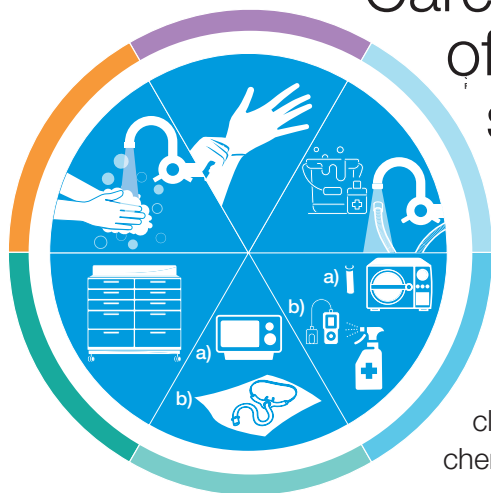


Care, cleaning and disinfection of respiratory equipment in sterile services department¹



Equipment used for respiratory therapy (e.g. items that come into contact with mucous membranes of the patient) is considered semi critical; such items should be cleaned and then receive high-level disinfection between patients.²

High-level disinfection of respiratory equipment takes place after cleaning and is typically accomplished by physical methods or chemical germicides.

Task	Description
1. Perform hand hygiene	
2. Don appropriate personal protective equipment	Don appropriate personal protective equipment as per facility protocol: PPE worn during disinfectant preparation should include surgical mask/respirator, goggles or face shield, long-sleeved fluid resistant gown or gown + apron, rubber gloves, and boots or closed work shoes.
3. Wash with detergent and Rinse clean water (Cleaning)	Wipe the external device surface with a damp cloth or disposable wipe soaked in detergent and clean water and then wipe off any remaining detergent residue with a dry lint-free cloth. <ul style="list-style-type: none"> Use mechanical action (scrubbing) and brushing, if necessary, along the edges and joints to remove visible dirt deposits and calcifications.
4a. Disinfect Physical -Heat for heat resistant equipment; e.g., steam³, hot-water	Physical methods for high-level disinfection include steam (e.g. autoclaving at lower temperature) or hot-water disinfection at least 121°C (pasteurization). Steam sterilization is an inexpensive and effective method for sterilization or high-level disinfection. ⁴
4b. Disinfect-chemicals for plastic and other parts that can be damaged by heat	If disinfectant solutions require preparation before use, this should always be performed in well-ventilated areas away from patients. Prepare a fresh cloth or disposable wipe soaked in a compatible disinfectant, such as hydrogen peroxide $\geq 0.5\%$ OR ethanol 70-90%; OR as specified by the device manufacturer, and wipe the device from top to bottom, avoiding contact with electrical connectors. <ul style="list-style-type: none"> 0.1% sodium hypochlorite (1000 ppm) should only be used according to the manufacturer's instructions if device is known to withstand use of chlorine-based agents and no ammonia-based cleaning agents or acidic body fluids (e.g. urine) are present on the device (important to remember to rinse well the rests of chlorine). Different disinfectant formulations should never be used on the same device during the same disinfection step, as this may produce toxic fumes.

Task	Description
5a. Dry	<p>Dry equipment.</p> <ul style="list-style-type: none"> Physical equipment (e.g. a washer, pasteurizer or autoclave) often has a drying feature within the machine. After pasteurization, wet equipment is typically dried in a hot-air drying cabinet, or air drying, before storage. The equipment must be inspected carefully to ensure there is no water left in the equipment.
5b. Chemical Methods	<ul style="list-style-type: none"> If using chemical disinfection, rinse with sterile or clean water (i.e. water boiled for 5 minutes and cooled). Sterile water is preferred for rinsing off residual liquid chemical disinfectant from a respiratory device that has been chemically disinfected for reuse, because tap or distilled water may harbour microorganisms that can cause pneumonia. However, when rinsing with sterile water is not feasible, instead, rinse with tap water or filtered water (i.e. water passed through a 0.2 µ filter), followed by an alcohol rinse and forced-air drying.
6. Store equipment dry in closed packages	Store equipment dry in closed packages.

1 N.B. It is recommended for all involved in sterile services to review OpenWHO course on Decontamination and sterilization of medical devices: <https://openwho.org/courses/IPC-DECON-EN> As well as refer to WHO's Decontamination and reprocessing of medical devices for health-care facilities: <https://apps.who.int/iris/handle/10665/250232>

2 Reference: <https://www.who.int/publications/i/item/infection-prevention-and-control-of-epidemic-and-pandemic-prone-acute-respiratory-infections-in-health-care>

3 However, steam sterilization is unsuitable for processing plastics with low melting points, powders or anhydrous oils.

4 Pasteurization is a non-toxic, cost-effective alternative to high-level disinfection with chemical germicides.

Equipment should be submerged for at least 30 minutes in water at a temperature of about 70 °C (less than the temperature that typically damages plastic).

Pasteurization can be accomplished using a commercial washer or pasteurizer.

Heat for heat-resistant equipment that can withstand high temperature (e.g. 80 °C); such equipment can be disinfected using a washer-disinfector; if a washer or pasteurizer is not available, use a high-end or commercial dishwasher with a "sanitize" feature that can reach 70 °C.

Please refer to quality assurance and monitoring sections in WHO Guideline for Decontamination and reprocessing of medical devices for health-care facilities: <https://apps.who.int/iris/handle/10665/250232>

