

## CHECKLIST 1

# Care, cleaning and disinfection of oxygen concentrators



## Between patients

Always read and follow the instructions and recommendations of the manufacturer's manual

Consumables associated with oxygen delivery are generally intended as **single use devices**. They should be treated as infectious<sup>1</sup> material and disposed of accordingly. Disposal of patient interface, tubing, water bag and water chamber, for example, should be done as per facility standard operating procedures for infectious/biohazardous waste management.

## DURING OXYGEN THERAPY (same patient)

Before starting any hygiene tasks, please take preventative measures to ensure that:

All electrical medical equipment are disconnected from power supply while tasks are being done; and, activities are performed away from the medical wards, preferably in biomedical workshops.

Task	Description
1. Humidifier must be washed, rinsed, and disinfected daily <sup>2</sup>	Oxygen bubble humidifier (non-heated bottle) must be washed, rinsed, and disinfected daily when used for the same patient and disposed after use. <ol style="list-style-type: none"><li>1. Empty the water from the humidifier.</li><li>2. Rinse the humidifier flask under running water.</li><li>3. Fill in with proper distilled water or <b>cold</b> boiled water within the scale between the top scale line and the lowest one.</li><li>4. Do not use tap water, even if it is safe drinkable water.</li><li>5. Do not use bottled water, even distilled, which <b>has been stored in warm conditions</b>. (These conditions allow bacterial growth in the water and increase the risk of patient infection).</li></ol>
2. Inspect and clean air intake filter (1-2 times per week)	<ol style="list-style-type: none"><li>1. Pull the filter gently out and replace with spare one.</li><li>2. Put the filter in cool, soapy water and swirl gently to remove debris.</li><li>3. Remove from soapy water and place it in shady area until completely dry.</li><li>4. Store the spare filter until next cleaning is needed.</li></ol>
3. Inspect the bacterial filter weekly	Do not wash the bacterial filter in water. This filter should be cleaned or changed by the maintenance department as per manufacturer's instructions.

## BETWEEN PATIENTS

After each patient use, the concentrator must be disconnected, cleaned, disinfected, and stored appropriately in a clean environment before use on another patient

Task	Description
1. Perform risk assessment prior to entry of room	Consider the patient care tasks that will need to be performed or additional risks that may be encountered during disconnection of the device.
2. Perform hand hygiene	
3. Don appropriate personal protective equipment (PPE)	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.
4. Disconnect the device	Turn off the device and disconnect from the patient and the power.

Task	Description
<b>5. Dispose of single use patient interface (e.g. nasal cannula, masks) tubing</b>	Ideally, dispose of single use patient interface, nasal cannula tubing in designated infectious material/biohazardous waste container.
<b>6. Move the oxygen concentrator to a well-ventilated area for cleaning</b>	Move the oxygen concentrator away from patients and other equipment to a designated well-ventilated space where cleaning and disinfection of the device can be performed.
<b>7. Change gloves</b>	Discard gloves in appropriate waste container, perform hand hygiene, and don new gloves.
<b>8. Wash humidifier</b>	Wash the humidifier in warm water using a mild detergent. Rinse the humidifier and allow to air dry completely.
<b>9. Wipe the external device surfaces from top-to-bottom with detergent (Cleaning)</b>	Wipe the external device surfaces (all parts including flowmeter, controls and LEDs, from top-to-bottom including controls) 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.  To avoid permanent damage, do not use excessive amounts of liquids to clean the device.  Use mechanical action (scrubbing) and brushing, if necessary, along the edges and joints to remove visible dirt deposits and calcifications.
<b>10. Prepare disinfectant solutions</b>	Should always be performed before use, in well-ventilated areas away from patients.
<b>11. Wipe with disinfectant</b>	Prepare a fresh cloth or disposable wipe soaked in a compatible disinfectant. Wipe the device from top to bottom, ensuring surfaces of sensors/cables are wiped while avoiding contact with electrical connectors.  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.  Do not use different disinfectant formulations during the same disinfection step, this may produce toxic fumes.
<b>12. Remove PPE- wash hands</b>	Doff, discard PPE and perform hand hygiene.
<b>13. Store cleaned oxygen concentrator and disinfect before new use</b>	Ensure cleaned oxygen concentrator is stored in an area where there is low risk of contamination between uses, and that at least 1 minute of contact time has elapsed after the application of the disinfectant before it is used on next patient.
<b>14. Stored devices should be cleaned twice a month</b>	If device is not in use, it should be cleaned as above twice per month.

1 <https://www.who.int/news-room/fact-sheets/detail/health-care-waste>

2 <https://www.primedeq.com/blog/cleaning-disinfection-and-proper-maintenance-of-oxygen-concentrators/>

