

Health Information

Home Respiratory Equipment Cleaning Guide

This document is intended for Patients and Families for use at home

The goal of the cleaning guide is to properly handle, clean and disinfect home respiratory care equipment used in the home/home like environment. Cleaning and disinfecting decreases the risk of the equipment becoming a potential source of infection.

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1. Cleaning Your Hands

Hands are known to carry disease-causing germs that can easily spread from one person to another. The most important thing you can do to prevent the spread of germs is to clean your hands, especially before and after providing care and when handling any equipment

- You may clean your hands by washing with plain soap and water or by using at least a 70% alcohol-based hand rub.
- Alcohol-based hand rub is a fast and efficient way of killing germs on your hands.
- Plain soap and water is recommended when hands are visibly soiled with food, dirt or blood & body fluids, during food preparation and following removal of gloves when caring for someone with diarrhea and/or vomiting.
- Hand cream - Remember to use hand cream often to keep your skin healthy

CLEAN YOUR HANDS OFTEN, ESPECIALLY WHEN PERFORMING THE FOLLOWING:

- before and after handling any equipment
- before and after any patient care procedures
- before you prepare, serve or eat food
- after you use the bathroom
- after coughing, sneezing or blowing your nose
- if they are visibly dirty
- after contact with any body fluids (e.g., mucus, urine, stool, blood)
- before and after removing gloves

How to Handwash



1. Wet hands with warm water



2. Apply soap and lather thoroughly



Vigorous rubbing of hands (steps 3 & 4) must take at least 15 seconds



3. Rub palms, spaces between fingers, backs of hands and wrists



4. Rub fingers, fingertips and thumbs



5. Rinse under running water

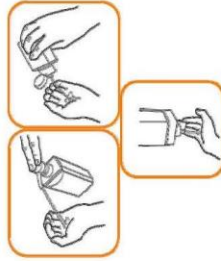


6. Pat hands dry with paper towel



7. Turn off tap with paper towel

How to Use Alcohol-based Hand Rub



Hands must remain moist with product for at least 15 seconds

1. Apply product to palm of one hand



2. Rub all the surfaces of your hands and wrists

3. Include fingertips and thumbs



4. Rub until hands are completely dry

2. Equipment – General Information

- Respiratory Equipment used in the Community is dedicated to that client only
- Clients are responsible to have the equipment available for the procedures that are done in the home
- Staff required to do a procedure on a client will use the client’s equipment
- Clients are responsible for maintaining, cleaning and storing equipment
- Clients are responsible for having their own solutions for respiratory care and equipment in the home
 - We recommend using distilled water which can be purchased at grocery stores and pharmacies to use for filling nebulizers and humidifiers, for using as suction rinse solutions, for stoma care, and for rinsing equipment after cleaning and disinfection
 - We do not recommend home made saline or home made sterile water to be used
 - We recommend sterile normal saline which can be purchased from medical supply companies or pharmacies to use for tracheal instillation and stoma care if indicated
 - All solutions must be discarded after 24 hours of use and should not be left open at any time – keep the cap clean and re-cap as soon as possible

Always follow manufacturer’s instructions for use (MIFU)

- Always follow manufacturer’s instructions for cleaning and disinfecting all respiratory equipment carefully

***What should
you do
at home?***

- ✓ **WASH YOUR HANDS** with soap and water if your hands are visibly dirty or in the presence of diarrhea; otherwise clean your hands with Alcohol Based Hand Rub (ABHR)
- ✓ Good personal hygiene
- ✓ Safe food preparation
- ✓ Basic home cleanliness – work environment such as counters, sinks, etc. that are used for cleaning items, must be cleaned and disinfected first (with household cleaners/disinfectants), before cleaning equipment begins

3. Cleaning the Equipment

Counters and sinks or any surfaces where you will be working, must be cleaned and disinfected first. Make sure your work environment is clean prior to cleaning your equipment.

Cleaning is the physical removal of organic material or visible dirt from equipment and environmental surfaces

Cleaning will remove most germs, but will not destroy them. Cleaning must always be done before disinfecting because an item that has not been cleaned cannot be disinfected.

STEPS FOR CLEANING EQUIPMENT

- a. Use a mild non-lotion dish soap with water and friction
- b. Wash equipment by hand after use, in hot soapy water using a mild detergent that you would use to do your dishes
- c. Rinse item well with distilled water
- d. If item does not require disinfection, allow equipment to air dry on a clean towel/ paper towel/ cloth or hang to dry, depending on the equipment used
- e. Prepare for disinfection if required: for example a suction canister

Refer to the following recommendations for cleaning and disinfection of equipment:

For cleaning hard to reach internal surfaces such as an inner cannula or a small tubing or connector, use Q-Tips or pipe cleaners and discard Q-Tips/pipe cleaners immediately after usage.

Refer to the chart as a guide for you to know:

- when to clean an item
- when to disinfect an item
- when to replace an item

4. Disinfecting the Equipment

- 👍 Always follow MIFU (Manufacturer's Instructions for Use) for cleaning & disinfection
- 👍 Ensure that the equipment can be adequately cleaned and can withstand the type of disinfection required

To disinfect means to destroy disease-causing germs. Most respiratory equipment requires disinfection

Below are listed two examples of products that are recommended for household equipment disinfection. If an alternative method of disinfection is recommended by the manufacturer, please document the instructions in the space provided.

- 5.25% Sodium Hypochlorite Solution (Household Bleach) – which will be used diluted with water
- 3% Hydrogen peroxide solution – which will be used full strength and not diluted

A) HOUSEHOLD BLEACH → 5.25%, 1:50 dilution

To make a 1:50 dilution of household bleach: see table below on how much bleach to add to the water to make the appropriate concentration of diluted bleach solution

Equipment Disinfection Volumes Table

Household Bleach (1 part)	Tap Water (50 parts)
1 teaspoon (5 mL)	1 cup (250 mL)
4 teaspoons (20 mL)	4 cups (1 litre)
6 tablespoons (90 mL)	16 cups (4 litres)
9 tablespoons (135 mL)	24 cups (6 litres)

BLEACH - IMPORTANT POINTS

- ✓ **Clean first THEN use bleach to disinfect**
- ✓ **Make fresh bleach solution every day that you use it (using table above)**
- ✓ **Discard the remainder solution after use**
- ✓ **Use warm tap water for maximum effectiveness and to decrease fumes**
- ✓ **Wearing gloves is recommended to protect your hands**
- ✓ **Keep out of reach of young children and confused adults**
- ✓ **Remember that bleach may cause staining to fabrics and carpets, and may corrode metal**

STEPS FOR DISINFECTING EQUIPMENT

- a.** Item must be cleaned first as per cleaning instructions
- b.** Soak in a mixture of 1 part bleach to 50 parts water for 5 minutes
- c.** Rinse with distilled water
- d.** Let equipment parts dry on a clean towel/paper towel/cloth or hang to air dry
- e.** Discard any remaining solution

B) HYDROGEN PEROXIDE: → 3% strength on the label & comes in a brown bottle; use full strength

STEPS FOR DISINFECTING EQUIPMENT

- a. Item must be cleaned first as per cleaning instructions
- b. Soak in full strength hydrogen peroxide solution for 30 minutes
- c. Rinse with distilled water
- d. Let equipment parts dry on a clean towel/paper towel/cloth or hang to air dry
- e. Discard any remaining solution

- ✓ **Use fresh solution every day (using these instructions)**
- ✓ **Discard the remainder solution after use every time**
- ✓ **Keep out of reach of young children and confused adults**

5. How to Use Respiratory Equipment Cleaning Chart

- Identify pieces of equipment that you are cleaning
- Check the chart (see below) for instructions on how often to clean and/or disinfect the equipment
- Refer to **pages 6 to 9** on how to clean and disinfect equipment (there are some items for example oxygen tubing that only requires the external surfaces to be wiped down)
Follow chart recommendations (refer to pages 10 to 15)

a) Oxygen Supplies

EQUIPMENT	CLEAN	DISINFECT	REPLACE
Oxygen Tubing	Wipe tubing with a clean, damp washcloth to remove dust or debris - Weekly	Not necessary	Change when damaged or becomes stiff or brittle or permanently soiled
Oxygen Bubble Bottle	Weekly or when refilling with water	Weekly	Change when damaged or permanently discoloured
Oxygen Nasal Prongs (Nose pieces)	Wipe tips and tubing with clean, damp washcloth or an alcohol swab– Daily	Not necessary	Recommend to change weekly or change when damaged, stiff, or soiled
Oxygen Mask	Wipe with a clean damp washcloth or an alcohol swab - Daily	Not necessary	Recommend to change weekly or change when damaged, brittle or stiff or when elastic loses shape or permanently soiled
Oxygen Concentrators, Liquid Oxygen Reservoirs, Suction Generators, Oxygen Cylinders and Regulator Compressors	Follow vendor/ manufacturer’s guidelines for external cleaning and filter replacement	Not necessary	Contact vendor when not working properly
Various Respiratory Connectors (oxygen entrainment adapters, one-way valves, tubing)	Weekly Use Q-Tips or pipe cleaners to reach hard to clean areas such as the inside of a connector. Discard Q-Tips/pipe cleaners after use	Not necessary	Change when damaged, or permanently discoloured

	Equipment	Manufacturers’ Instructions
Notes		

b) Aerosol Delivery Devices

EQUIPMENT	CLEAN	DISINFECT	REPLACE
Aerochamber	Weekly	Not necessary	Replace when not functioning properly, or as recommended by manufacturer
Small Volume Nebulizer including mouthpiece	Daily Rinse after each use with tap water	Weekly	If not functioning properly, ensure that you are following correct usage guidelines or replace

Notes	Equipment	Manufacturers' Instructions

c) Tracheostomy Supplies

EQUIPMENT	CLEAN	DISINFECT	REPLACE
Tracheostomy Mask	Daily and when visibly soiled	Weekly	When damaged or discoloured. When the elastic band loses its shape and no longer holds the mask in place, or is soiled
Corrugated tubing – Water will collect in the tubing; do not drain this condensation back into the humidity bottle. Drain condensation collected in the tubing into the garbage/ container. Avoid the tubing touching the garbage can	Weekly	Weekly Hang to dry before reusing	When damaged or discoloured
Nebulizer Humidity Bottle – Use distilled water Use until empty Clean before refilling to the fill line Empty, clean and air dry when not in use	Weekly	Weekly	When damaged or not functioning properly
Tracheostomy Ties	Change ties daily Hand wash before reuse	Not necessary	When Velcro not adhering or permanently soiled/damaged
Tracheostomy Inner Cannula	Daily Follow vendor/ manufacturer’s guidelines. Use Q-Tips or pipe cleaners to thoroughly remove all debris inside and out and discard Q-Tips/pipe cleaner after use	Follow vendor/ manufacturer’s guidelines	Allow inner cannula to dry Keep your clean, spare inner cannulas in a clean covered container or in a plastic bag. Replace if damaged or brittle
Speaking Valves	When visibly soiled Follow vendor/ manufacturer’s guidelines	Follow vendor/ manufacturer’s guidelines	Follow vendor/manufacturer’s guidelines
Tracheal Cannula/Stent	Follow vendor/ manufacturer’s guidelines	Follow vendor/ manufacturer’s guidelines	Follow vendor/manufacturer’s guidelines
Bivona Tracheostomy Tube	Follow manufacturer’s guidelines for cleaning at home	Follow manufacturer’s guidelines for cleaning at home	Follow AHS guidelines for replacement

	Equipment	Manufacturers’ Instructions
Notes		

d) Suction Supplies

ITEM	CLEAN	DISINFECT	REPLACE
Suction Catheter	Clean as follows: After each suction pass, rinse water through the suction catheter and tubing When procedure is complete, use suction to rinse water through the suction catheter and tubing, and then suction air through the tubing to dry the inside Wipe the outside of the catheter with an alcohol swab Store in its paper covering (sleeve) between uses	Not necessary	Every 12 hours or when damaged
Long Suction Tubing	Weekly To enhance cleaning you can suction soapy water through the tubing followed by rinse water	Weekly Hang to Dry	When damaged or unable to clean thoroughly
Suction Canister	Daily	Weekly	When damaged
Yankauer Suction/ Nasal Aspirator	Daily After each suction pass, rinse water through the device When procedure is complete, use suction to rinse water through the suction catheter and tubing, and then suction air through the tubing to dry the inside Wipe the device with a clean tissue or paper towel Store in its paper covering (sleeve) between uses	Weekly	Discard when permanently damaged or discoloured.
Rinse Water Container for suctioning	Use disposable paper cup Discard after use	Not necessary	After each use

Notes	Equipment	Manufacturers' Instructions

e) BiPAP/CPAP Equipment

ITEM	CLEAN	DISINFECT	REPLACE
BiPAP/CPAP Mask	Follow manufacturer’s instructions for use Wipe daily with a clean damp cloth or use a wipe specifically designed for the mask	Do not disinfect as per manufacturer’s instructions	Every 6 months or when damaged
BiPAP/CPAP Mask Headgear	Follow manufacturer’s instructions for use Weekly or when visibly soiled Not necessary to detach the mask from the headgear. Can be cleaned as one unit	Do not disinfect as per manufacturer’s instructions	When Velcro® does not stick well and does not work properly
BiPAP/CPAP Machine	Follow manufacturer’s instructions for use	Not necessary	Call vendor for any concerns related to function of BiPAP machine
BiPAP/CPAP Humidifier Chamber	Daily Follow manufacturer’s instructions for use Empty, clean and air dry when not in use	Not recommended as per manufacturer’s instructions	Replace when damaged
BiPAP/CPAP Circuit	Weekly Follow manufacturer’s instructions for use (MIFU) <u>Note:</u> Hang to dry if necessary	Not recommended as per manufacturer’s instructions	Replace when damaged

Notes	Equipment	Manufacturers’ Instructions

f) Ventilator Equipment

ITEM	CLEAN	DISINFECT	REPLACE
Ventilator Circuits and Accessories	Follow manufacturer’s instructions for use (MIFU)	As per manufacturer’s instructions for use	Follow manufacturer’s instructions for use (MIFU)
Flex Tube	Daily	Weekly	Replace when damaged
Humidifier Chamber	Daily As per manufacturer’s instructions for use (MIFU) Empty, clean and air dry when not in use	Not necessary	Replace when damaged
Manual Resuscitator/ LVR’s	As per manufacturer’s instructions for use (MIFU)	Do not disinfect	When no longer working properly

	Equipment	Manufacturers’ Instructions
Notes		

IMPORTANT FACTS

Follow manufacturer’s guidelines for any room humidifier, air purifier, furnace humidifier and filter cleaning/maintenance

Water stagnation occurs when water stops flowing:

- **There is an increased risk of contamination when water is allowed to sit**
- **Do not allow water to sit whenever the equipment that requires water in not in use**
- **Do not top up any water bottle devices**
- **Always discard remaining water, clean, then refill**

Quick Reference for Equipment Cleaning and Disinfecting

Note to User(s):

Your Health Care Professional will review this list with you and identify the pieces of equipment that you will be using in your home - please refer to the User Guide for detailed instructions.

Refer to the User Guide for recommended replacement frequency.

EQUIPMENT		CLEAN	DISINFECT
Oxygen Supplies			
<input type="checkbox"/>	Oxygen Tubing	Yes	
<input type="checkbox"/>	Oxygen Bubble Bottle	Yes	Yes
<input type="checkbox"/>	Oxygen Nasal Prongs	Yes	
<input type="checkbox"/>	Oxygen Mask	Yes	
<input type="checkbox"/>	Oxygen Concentrators, Liquid Oxygen Reservoirs, Suction Generators, Oxygen Cylinders and Regulator Compressors	Yes	
<input type="checkbox"/>	Various Respiratory Connectors	Yes	
Aerosol Delivery Devices			
<input type="checkbox"/>	Aerochamber	Yes	
<input type="checkbox"/>	Small Volume Nebulizer including mouthpiece	Yes	Yes
Tracheostomy Supplies			
<input type="checkbox"/>	Tracheostomy Mask	Yes	Yes
<input type="checkbox"/>	Corrugated tubing	Yes	Yes
<input type="checkbox"/>	Nebulizer Humidity Bottle	Yes	Yes
<input type="checkbox"/>	Tracheostomy Ties	Yes	
<input type="checkbox"/>	Tracheostomy Inner Cannula	Yes	
<input type="checkbox"/>	Speaking Valves	Yes	Yes
<input type="checkbox"/>	Tracheal Cannula/Stent	Yes	Yes
Suction Supplies			
<input type="checkbox"/>	Suction Catheter	Yes	
<input type="checkbox"/>	Long Suction Tubing	Yes	Yes
<input type="checkbox"/>	Suction Canister	Yes	Yes
<input type="checkbox"/>	Yankauer Suction/ Nasal Aspirator	Yes	Yes
BiPAP/CPAP Equipment			
<input type="checkbox"/>	BiPAP/CPAP Mask	Yes	
<input type="checkbox"/>	BiPAP/CPAP Mask Headgear	Yes	
<input type="checkbox"/>	BiPAP/CPAP Machine	Yes	
<input type="checkbox"/>	BiPAP/CPAP Humidifier Chamber	Yes	
<input type="checkbox"/>	BiPAP/CPAP Circuit	Yes	
Ventilator Equipment			
<input type="checkbox"/>	Ventilator Circuits and Accessories	Yes	Yes
<input type="checkbox"/>	Flex Tube	Yes	Yes
<input type="checkbox"/>	Humidifier Chamber	Yes	
<input type="checkbox"/>	Manual Resuscitator/ LVRs	Yes	

6. References

APIC Text of Infection Control and Epidemiology – 4th Edition, Volume 2,
Chapter 56: “Home Care”, and Chapter 67: “Respiratory Care Services”

APIC Text of Infection Control for Home Care and Hospice, second Edition/Respiratory
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Section XI / Disinfection and Sterilization, Fourth Edition (2012)
“Susceptibility of Antibiotic-Resistant Bacteria to Disinfectants”, page 1208 – 1209

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Chapter 99/ Prevention of Infections in Home Health/ pages 1463-1464