

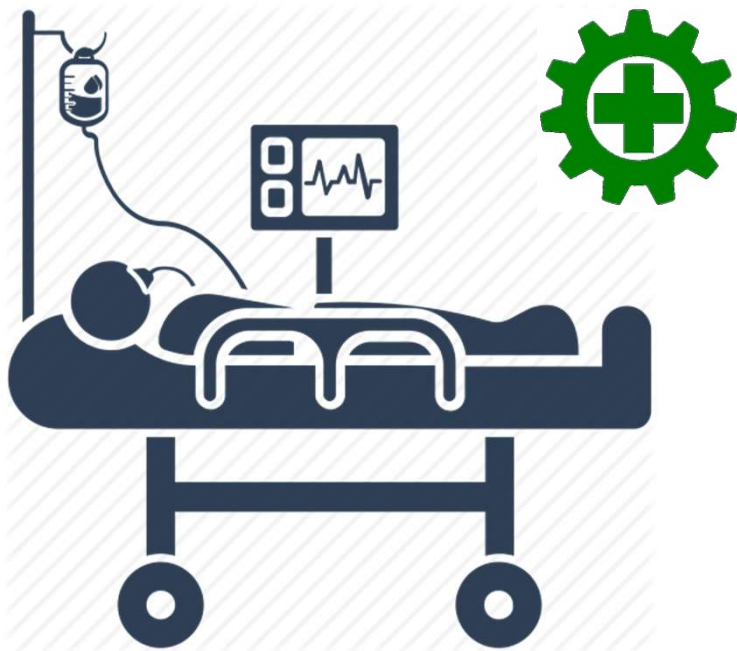
**CLEANING,
DISINFECTION,
AND STERILIZATION
PROTOCOLS in COVID19 ERA**

Cecep Yudi Permana

Medtronic
Further, Together

WHY CLEANING, DISINFECTING AND STERILIZATION ARE IMPORTANT ?

- Protect Healthcare Professional (HCP)
- Protect Next Patient
- Protect Ventilator and another equipment in ICU





- Follow your institution's infection control guidelines. **Do not attempt to sterilize or reuse single-patient use items.**
- Required cleaning and disinfection standards by the Association for the Advancement of Medical Instruments (AAMI) as well as the **Centers for Disease Prevention and Control (CDC).**
- Recommend use of EPA-registered disinfectant for Use Against SARS-CoV-2

<https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

CLEANING, DISINFECTION, AND STERILIZATION PROTOCOLS

Respiratory
Interventions & Patient
Monitoring Solutions



SURFACE CLEANING OF EXTERIOR SURFACES

Should be cleaned periodically

To clean the Ventilator and base surfaces

- Moisten a soft cloth with one of the surface cleaning agents listed or use Sani- Cloths (PDI, Inc.)
- Wipe the monitor and vents, removing any dirt or foreign substances.
- Dry all components thoroughly.
- If necessary, vacuum any cooling vents on the GUI and BDU with an electrostatic discharge (ESD)-safe vacuum to remove any dust.



- Do not allow liquid or sprays to penetrate the ventilator openings or cable connections.
- Do not attempt to sterilize the ventilator by exposure to ethylene oxide (ETO) gas.
- Do not use pressurized air to clean or dry the ventilator, including the GUI cooling vents.
- Do not submerge the ventilator or pour cleaning solutions over or into the ventilator.

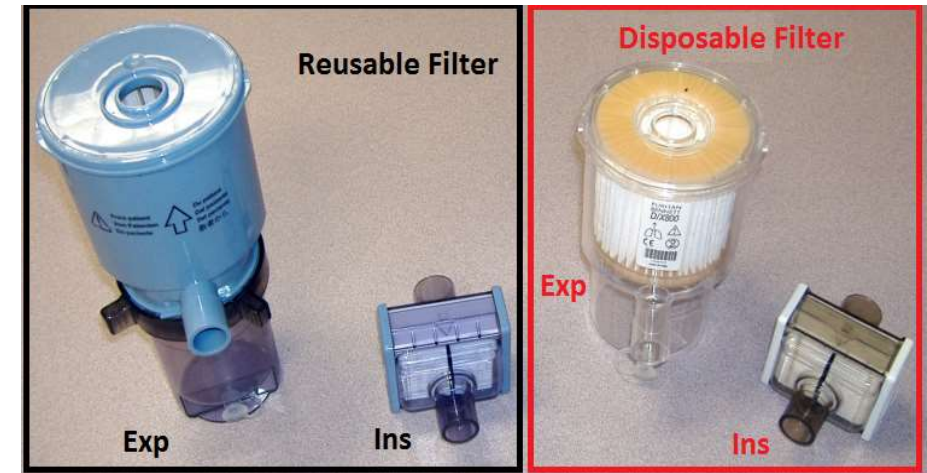
Surface Cleaning Agents

- Mild dishwashing detergent solution
- Isopropyl alcohol (70% solution)
- Bleach (10% solution)
- Window cleaning solution (isopropyl alcohol and ammonia)
- Ammonia (15% solution)



BREATHING CIRCUIT AND FILTERS

- Patient Circuit / Breathing circuit :
 - Disposable
 - Reusable



HME



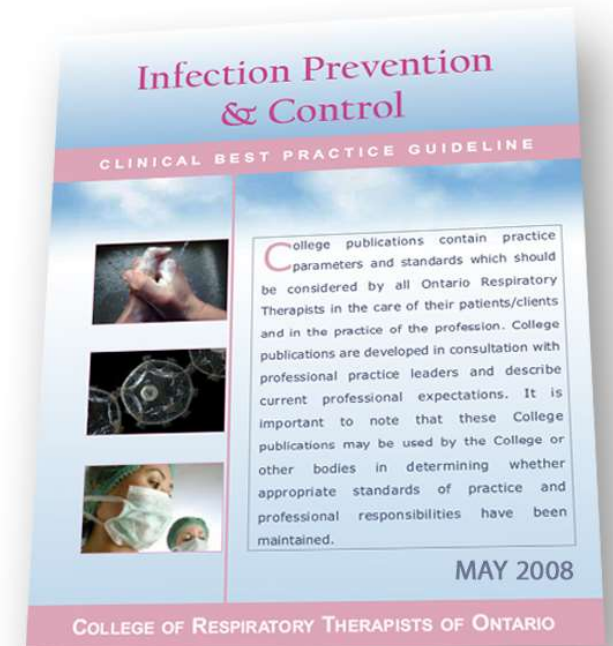
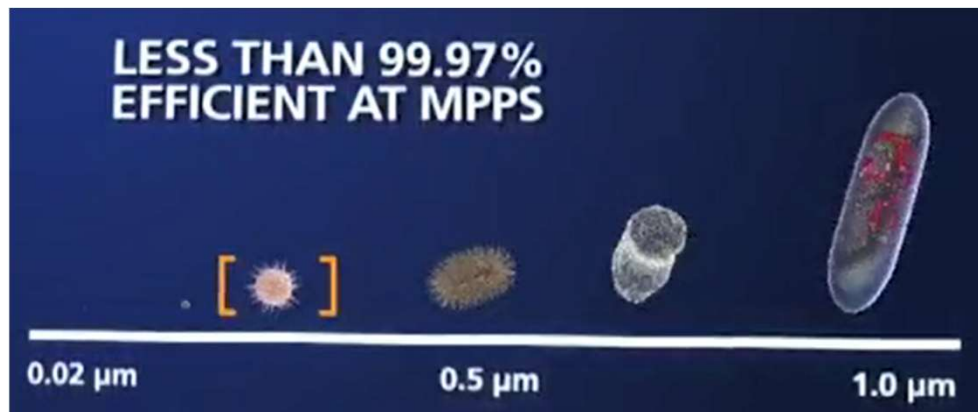
HOW TO REDUCE THE SPREAD OF VIRUS IN THE VENTILATOR

N100 + HEATED EXPIRATORY FILTER

“...the goal should be to use a system that requires minimal breaks in the ventilator circuit in order to **reduce the spread of aerosolized droplets**. This can be best accomplished by purchasing a ventilator with a **heated expiratory filtration system**.”

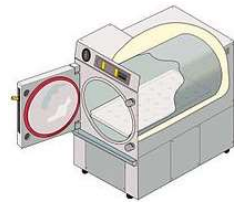


COVID19: 0.12 μm



NIOSH 100 Filter

STERILIZATION PROTOCOL



Part	Autoclave/ Pasteurization	Chemical Liquid
Patient Circuit / Tubing Reusable	Y	Y
Adapter tube/Connector	Y	Y
WYE Piece/water trap/Via	Y	Y
Catheter mount/Flexible tube	Y	Y
Chamber Humidifier	Y	Y
Bacteria Filter (ins/Exp)	Y	N

Disinfection and Sterilization Procedures

Autoclave Sterilization	Pasteurization	Chemical Disinfection
Effective sterilization occurs by steam autoclaving at 132°C (270°F) for 20 minutes for gravity displacement cycles. Follow the steam sterilizer manufacturer's instructions.	Place the parts in a heat pasteurizer at 76°C to 79°C (169 to 174°F) for 30 minutes.	Immerse the parts in disinfectant and follow the manufacturer's instructions. Acceptable disinfectants include the following or their equivalents: <ul style="list-style-type: none"> Ammonia (15% solution) Amphyl™* Bleach (10% solution) Cavicide™* Cidex™* Control III™* Isopropyl alcohol (70% solution) <p>NOTE: The exposure of the parts to more concentrated disinfectant for excessive time may shorten the life of the product.</p>

Autoclave Sterilization	Pasteurization	Chemical Disinfection
<ol style="list-style-type: none"> Disassemble the component. Clean the component parts. (See "How to Clean Components" on page 16 for details.) Wrap each component part in muslin or equivalent paper for autoclaving. Place the wrapped parts in the steam autoclave and sterilize. Inspect the sterilized parts for damage. Discard the component if you detect damage. Reassemble the component. Install the component on the ventilator. Run SST. 	<ol style="list-style-type: none"> Disassemble the component. Clean the component parts. (See "How to Clean Components" on page 19 for details.) Place parts in the heat pasteurizer and pasteurize. Inspect the pasteurized parts for damage. Discard the component if you detect damage. Reassemble the component. Install the component on the ventilator. Run SST. 	<ol style="list-style-type: none"> Disassemble the component. Clean the component parts. (See "How to Clean Components" on page 19 for details.) Place parts in the cleaning solution to disinfect. Inspect the disinfected parts for damage. Discard the component if you detect damage. Reassemble the component. Install the component on the ventilator. Run SST.
<p>NOTE: To prevent the occurrence of spots and blemishes on parts exposed to elevated temperatures, thoroughly rinse and dry parts prior to autoclave sterilization or pasteurization.</p>		

THANK YOU