 <p>PHILIPPINE HEART CENTER INCIDENT COMMAND POST</p>	Document Type	Document Code:
	<p>GUIDELINES</p>	GL-ICP-048
		Effective Date:
		June 2020
Document Title	Revision Number:	
<p>INTERIM GUIDELINES FOR CLEANING AND DISINFECTION OF MECHANICAL VENTILATORS DURING COVID-19 PANDEMIC</p>	0	
	Page:	
		2 of 3

I. OBJECTIVES

To describe the protocol for the safe disinfection of mechanical ventilators used in COVID-19 wards/ ICU.

II. DESCRIPTION

COVID-19 pandemic is an infectious disease which is caused by novel coronavirus. It is a highly contagious disease which now has spread across the globe to around 200 countries, in a short period of three months and has affected more than 2.1 million individuals and has caused death in more than 145 thousand patients. It can present as a mild infection (such as common cold) to a serious respiratory illness (such as pneumonia). The droplets of saliva and the discharge from the nose of the infected person while sneezing are the main sources for the spreading of coronavirus. There is no particular treatment or vaccine available for this disease at present. The seriously ill patients suffering from COVID-19 need respiratory support, as their lungs get damaged by the coronavirus leading to breathing difficulties. Ventilators are needed in such cases for supplying adequate oxygen (O₂) into their lungs and also removing the carbon dioxide (CO₂), as a lifesaving supportive measure. The ventilators are one of the most vital medical devices needed to keep these critically ill COVID-19 patients alive. Proper decontamination of mechanical ventilation is of primary importance in infection control and prevention of further viral spread to other patient and healthcare workers.

III. REQUIREMENT


Mechanical ventilator

70% alcohol

Appropriate PPE (FFP2 (N95) or FFP3 masks, isolation gown, gloves, face shield)

IV. CLEANING AND DISINFECTION OF MECHANICAL VENTILATORS

1. Respiratory Therapists shall don appropriate PPEs when entering the COVID-19 ward/ ICU where the mechanical ventilator is located.
2. All disposable parts of the mechanical ventilator shall be disposed properly at the designated waste container (yellow trash bin), e.g. single patient use flow sensor, tubings, etc.
3. To clean and disinfect a mechanical ventilator, wipe down the controls and entire outside of the equipment with a compatible disinfectant, like 70% alcohol or according to the cleaning and disinfecting protocol as described in the respective device's operator's manual.

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		Revision Number:
		0
		Page:
		3 of 3

4. Turbine driven ventilators (e.g. Hamilton C1 and C2) are protected by HEPA filter which guards against contamination of the internal gas path from the environment. The HEPA filter does not specifically require changing after the ventilator has been used on a COVID-19 patient. It is sufficient to change the HEPA filter according to the service plan.
5. All removable and reusable mechanical ventilator parts, e.g. exhalation cover and membrane, shall be disassembled and packed in yellow plastic bag and properly labelled. The parts shall be brought to the third floor workroom for disinfection and cleaning.
6. Mechanical ventilators are recommended to have bacterial and viral filters on both inspiratory and expiratory (hydrophobic) ports.
7. Respiratory Therapists shall follow the proper doffing protocol before exiting the COVID-19 ward/ ICU after disinfecting the mechanical ventilator/s.
8. Mechanical ventilators at the COVID-19 ward/ ICU shall remain in the said places after Sanosil disinfection or its equivalent, unless otherwise indicated, e.g. Preventive maintenance or pulled out when defective.
9. Pulling out of reusable and disposable mechanical ventilator parts shall commence after Sanosil disinfection or its equivalent.

V. References:

1. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7198404/>
2. https://www.ncbi.nlm.nih.gov/books/NBK214359/pdf/Bookshelf_NBK214359.pdf
3. https://www.hamilton-medical.com/en/E-Learning-and-Education/Knowledge-Base/Knowledge-Base-Detail~2020-03-11~Safe-use-of-Hamilton-Medical-ventilators-on-patients-with-highly-infectious-diseases~dda177b6-01c7-47e0-95f0-794433572166~.html#DataTables_Table_0=od3