

DEPARTMENT: Ancillary Division		POLICY NUMBER: DPOTMH-HEMO-MPP-P018-(01)	
TITLE/DESCRIPTION: STERILIZATION TECHNIQUES FOR REVERSE OSMOSIS SYSTEM			
EFFECTIVE DATE: May 30, 2025	REVISION DUE: May 29, 2028	REPLACES NUMBER: QP-06	NO. OF PAGES: 1 of 10
APPLIES TO: Engineering Department Hemodialysis Unit		POLICY TYPE: Multi Disciplinary	

PURPOSE:

1. To ensure that the RO System's Membrane is free from contamination of pollutants such as bio films and biological matter and prevent serious damage to the system.
2. To ensure that the optimum performance of the system is maintained.
3. To ensure safe, Reliable and efficient system.
4. To prevent water borne infections among hemodialysis patients.
5. To identify potential hazard and prevent serious damage to the system.

DEFINITIONS:

Reverse Osmosis (RO) – Is a process in which dissolved inorganic solids (such as salts) are removed from solution (such as water). This is accomplished by household water pressure pushing the tap water through a semi permeable membrane. The membrane (which is about as thick as cellophane) allows only the water to pass through, not the impurities or contaminates. These impurities and contaminates are flushed down to drain.

Sterilization – The procedure of destroying all microorganisms in or on a given environment, such as a surgical instrument, in order to prevent the spread of infection. This is usually done by using heat, radiation, or chemical agents.

Bleaching solution – The chemical used for soaking.

Soft water – Water containing little or no dissolved salts if calcium or magnesium, especially water containing less than 85.5 parts per million of calcium carbonate.

RESPONSIBILITY: Authorized Maintenance Personnel, Hemodialysis Personnel, IPCU Personnel

POLICY:

1. The RO System shall be cleaned and sterilized every Sunday.
2. Only Authorized Maintenance Personnel is allowed to clean and sterilize the Reverse Osmosis System.
3. Cleaning and Sterilization of tanks are done per system a week.
4. Authorized Maintenance Personnel shall wear hairnet, mask, gown and gloves before cleaning tanks.





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PROCEDURE (SOP):

STERILIZATION TECHNIQUE FOR REVERSE OSMOSIS SYSTEM

1. Authorize Maintenance Personnel and Hemodialysis Technician ensures RO system is made available in the facility that makes tap water ready for use in HDU.
2. Authorize Maintenance Personnel and Hemodialysis Technician ensures that no bacteria, particles or residue are left on the equipment.
3. Authorize Maintenance and Hemodialysis Technician disinfects the RO system every Sunday.
4. Authorize Maintenance and Hemodialysis Technician changes the membrane every four (4) months.
5. Authorize Maintenance and Hemodialysis Technician changes the filters for the Red Tank and Yellow Tank Every three (3) months or whenever filters are soiled or non functional.
6. Infection and Control Personnel conducts bacteriological test for the filters every month and a Chemical Test for the Filters is done every six (6) months.





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CLEANING AND STERILIZATION OF RO SYSTEM

1. The authorized Maintenance Personnel and Hemodialysis Technician drains the Soft Water Tank.
2. The authorized Maintenance Personnel and Hemodialysis Technician places 7 gallons of bleaching solution in the tank, then adds 1,200 liters of pure water.
 - 2.1. The soft water tanks serves as the mixing tank for the solutions.
3. The authorized Maintenance Personnel and Hemodialysis Technician pulls out the membrane and sediment filter within the system.
 - 3.1. Cleans the membrane through the membrane cleaner with pure water following the standard procedure given by the supplier.
 - 3.2. Cleans the filters with pure water and ozonate it in a plastic container for five (5) minutes or changes the sediment filter if the outside surface is dirty.
4. The authorized Maintenance Personnel and Hemodialysis Technician calls the Hemodialysis Department Personnel on duty to close the ball valve of their holding tanks.
5. The authorized Maintenance Personnel and Hemodialysis Technician drains 300 liters of solution from the soft water tank to the pure tank 1 of the same system.
6. The authorized Maintenance Personnel and Hemodialysis Technician drains another 300 liters of solution from the soft water tank to the tanks 2 of the same system.
7. The authorized Maintenance Personnel and Hemodialysis Technician soaks the 3 tanks for 1 hour.
8. The authorized Maintenance Personnel and Hemodialysis Technician drains the remaining 600 liters of solution from the soft water tank to the multimedia filters, soaks for 15 minutes.
9. The authorized Maintenance Personnel and Hemodialysis Technician backwashes the multimedia filters.
10. The authorized Maintenance Personnel and Hemodialysis Technician drains the solution on the pure tank 1 and 2.
11. The authorized Maintenance Personnel and Hemodialysis Technician washes the soft water tank, the pure tank 1 and 2 with pure water until all chemical are flushed out.
12. The authorized Maintenance Personnel and Hemodialysis Technician fills the tanks with water.
13. The authorized Maintenance Personnel and Hemodialysis Technician logs on the maintenance logbook the date and time of cleaning and sterilization of the Reverse Osmosis system.






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WORK INSTRUCTION:	
KEY TASKS	PERSONNEL RESPONSIBLE
STERILIZATION TECHNIQUE	
1. Ensures RO system is made available in the facility that makes tap water ready for use in HDU.	Authorize Maintenance Personnel/ Hemodialysis Technician
2. Ensures that no bacteria, particles or residue are left on the equipment.	
3. Disinfects the RO system every Sunday.	
4. Changes the membrane every four (4) months.	
5. Changes the filters for the Red Tank and Yellow Tank Every three (3) months or whenever filters are soiled or non functional.	
6. Conducts bacteriological test for the filters every month and a Chemical Test for the Filters is done every six (6) months.	Infection Prevention and Control Personnel
	




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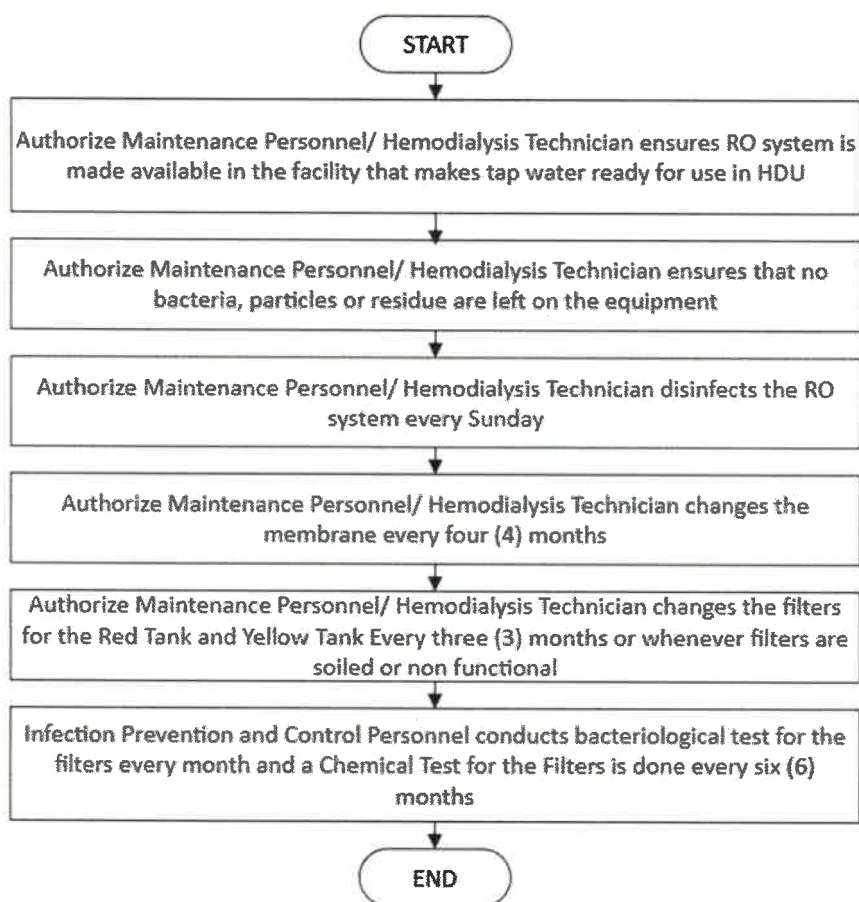
KEY TASKS	PERSONNEL RESPONSIBLE
CLEANING AND STERILIZATION OF RO SYSTEM	
1. Drains the Soft Water Tank.	Authorized Maintenance Personnel/ Hemodialysis Technician
2. Drains places 7 gallons of bleaching solution in the tank, then adds 1,200 liters of pure water.	
3. Pulls out the membrane and sediment filter within the system.	
4. Calls the Hemodialysis Department Personnel on duty to close the ball valve of their holding tanks.	
5. Drains another 300 liters of solution from the soft water tank to the tanks 1 of the same system.	
6. Drains another 300 liters of solution from the soft water tank to the tanks 2 of the same system.	
7. soaks the 3 tanks for 1 hour.	
8. Drains the remaining 600 liters of solution from the soft water tank to the multimedia filters, soaks for 15 minutes.	
9. Backwashes the multimedia filters.	
10. drains the solution on the pure tank 1 and 2.	
11. Washes the soft water tank, the pure tank 1 and 2 with pure water until all chemical are flushed out.	
12. Fills the tanks with water.	
13. Logs on the maintenance logbook the date and time of cleaning and sterilization of the Reverse Osmosis system.	
	



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WORK FLOW:

STERILIZATION TECHNIQUES





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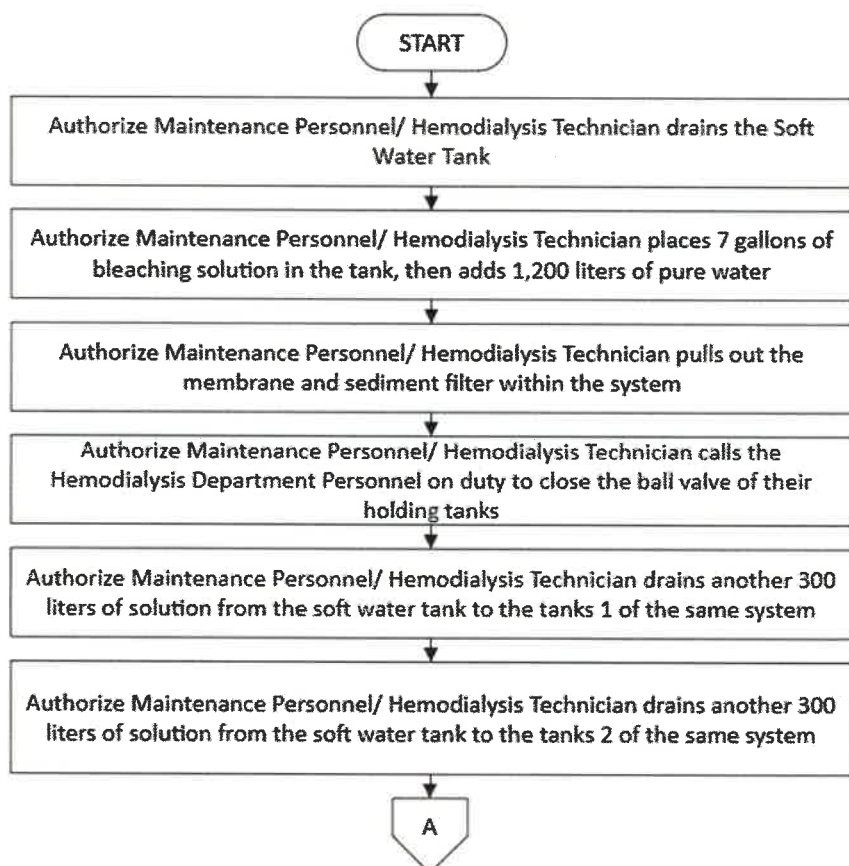
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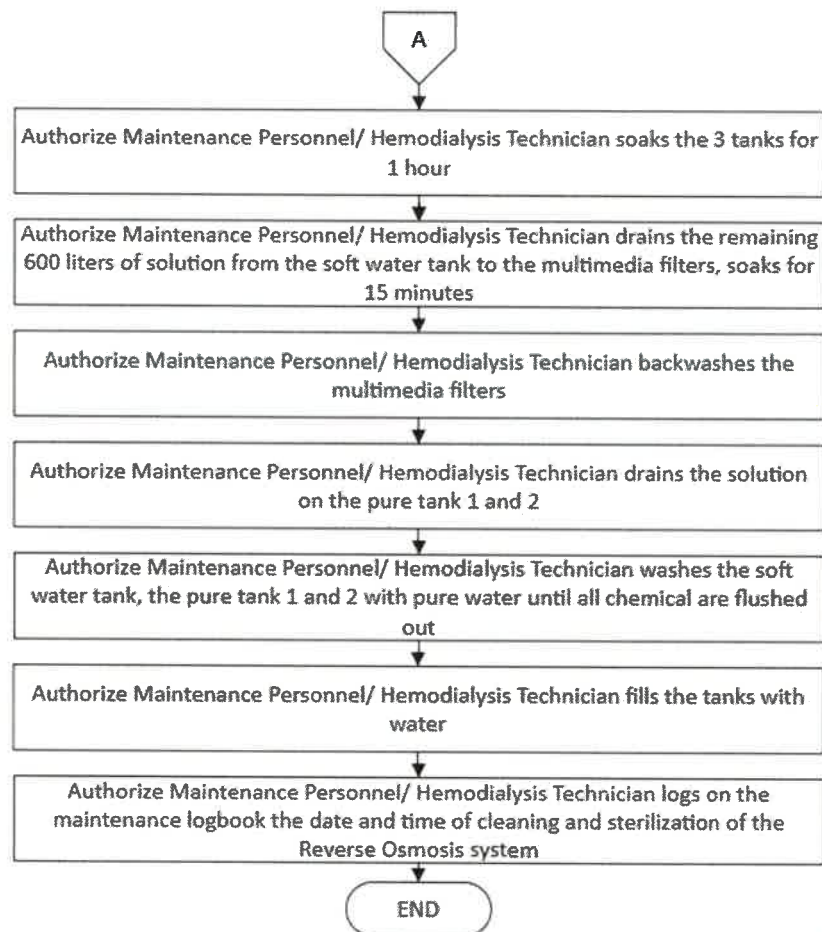
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CLEANING AND STERILIZATION OF RO SYSTEM



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FORMS: N/A
EQUIPMENT: N/A
REFERENCES: 1. <i>HEMO-QP-04</i> 2. <i>HEMO-QP-06</i>





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