

**LAC+USC MEDICAL CENTER
DEPARTMENT OF INFECTION PREVENTION AND CONTROL
POLICIES AND PROCEDURES**

Subject: BACTERIOLOGIC AND ENDOTOXIN MONITORING OF HEMODIALYZERS		Original Issue Date: 10/2001	Effective Date: 7/2022
		Supersedes: 7/2009	
<u>Departments Consulted:</u> Acute Hemodialysis Unit Department of Nursing Microbiology Laboratory	<u>Reviewed & Approved By:</u> Paul Holtom MD, Hospital Epidemiologist Noah Wald-Dickler MD, Associate Hospital Epidemiologist Chair and Vice-Chair, Infection Control Committee		<u>Approved By:</u> Brad Spellberg, MD Chief Medical Officer

Purpose:

To ensure water and the proportioned dialysate exiting the dialyzer do not exceed AAMI (Association for the Advancement of Medical Instrumentation) standards for bacterial contamination and endotoxin presence.

*Additional non-dialysis environmental water sampling procedures may be found in the separate Water Management Plan.

Procedure

Hemodialysis (HD)

Total viable microbial counts should not exceed 200 CFU/ml and endotoxin concentration should be less than 2EU/mL. The bacterial and endotoxin levels are evaluated monthly. When the microbial count is above 50 CFU/ml or the endotoxin levels is above 1 EU/ml, the machine is disinfected and cultures repeated. It is the responsibility of the user to monitor the bacteriology of the system to determine ongoing compliance with the standards.

- Identify dialyzer dialysate port from the dialysis machine that provides dialysate.
- The Renal Dialysis Equipment Technician (RDET) will obtain the dialysate and water source samples. Each sample collected will be labeled and sent to an outside contracted laboratory. Each dialysate and water source sample will be identified and placed in a box with ice. A log will be maintained by the RDET and kept in the Diagnosis and Treatment (D&T) B2C113 with documentation of each sample collection date.
- The microbiological and endotoxin results will be documented in a binder and available for review by Epidemiology. The outside laboratory will call D&T B2C113 for any results that exceed the standards. Log documentation will be maintained by the RDET and kept in D&T B2C113. Epidemiology will review the results with the Nurse Manager or Designee of the area and the RDET if any results exceed AAMI standards. The identified machine will not be used until disinfection is completed by the RDET and a second culture is obtained, and results are within normal limits. If the second culture results are out of range, Epidemiology will meet with the Medical Director and the Nurse Manager to determine further interventions.

- **SAMPLE COLLECTION PROCEDURE**

1. Remove any hose or tubing connected to the sampling port.
2. Flush sampling port for a minimum of two minutes.

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3. Collect sample midstream in a sterile container
4. Change gloves between each collection.
5. Label sample with name of the machine and serial number, dialysates or water source, date and time. Place sample in special shipping box with ice.
6. Complete the laboratory request for routine culture online.
7. All dialysate and water source samples will be collected once a month in two separate days to cover all 20 dialysis machines.

PROCEDURE FOR ACID/BICARBONATE WAND DISINFECTION

All bicarbonate wands are disinfected weekly.

1. A bleach mixture of 5cc (Sodium Hypochlorite of 8.25%) to 4 liters of Reverse Osmosis (RO) water and will be used to disinfect the bicarbonate wands.
2. Fill the container with the bleach/water solution.
3. Place bicarbonate wands in container, ensure wands are fully submerged in the bleach/water solution.
4. After one-hour dwell time, rinse wands three times with RO water.
5. Check for residual chlorine content using an appropriate test reagent. Follow the manufacturer's instructions.
6. If positive, repeat rinsing until a negative chlorine test is obtained.
7. Hand clean bicarbonate wands for drying in a designated wand container.
8. Schedule for cleaning: all acid/ bicarbonate wands are disinfected weekly.
9. Weekly wand cleaning is documented in the Weekly Cleaning Log.

Revision

4/02, 1/05, 7/09, 9/13, 7/22

REFERENCES

AAMI Standards and Recommended Practices, Dialysis, 2015 Edition
 CDC Morbidity and Mortality Report, Recommendations for Preventing Transmission of Infections Among Chronic Hemodialysis Patients, April 27, 2001/50(RR05); 1-43
 APIC Elimination Guide: Guide to the Elimination of Infections in Hemodialysis, 2010