



EDUCATIONAL RESOURCES

 RENAL DIALYSIS

Dialysis: Surveyor Eyes

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WELCOME

- Dialysis is complex
 - What is it?
 - Environment
 - Supplies
 - Water Quality
 - Machines
 - Patient
 - Staff
 - Questions?



AAMI, CDC, Instructions for Use (IFU) Policies, Competency

- **AAMI:** Association for the Advancement of Medical Instrumentation
- **CDC:** Guidelines, Recommendations, and Resources
- Establishing chemical standards for water used in dialysis including equipment and processes
- Devices used for storage and distribution of the water
- Threshold levels of water contamination
- IFU: Instructions for use: guide how the item/equipment is used and cleaned

Dialysis



Dialysis

- Kidney failure
- Artificial process:
 - Eliminate waste & toxins
- Filtering
- Control of blood pressure and electrolytes

Main Parts of the Hemodialysis System

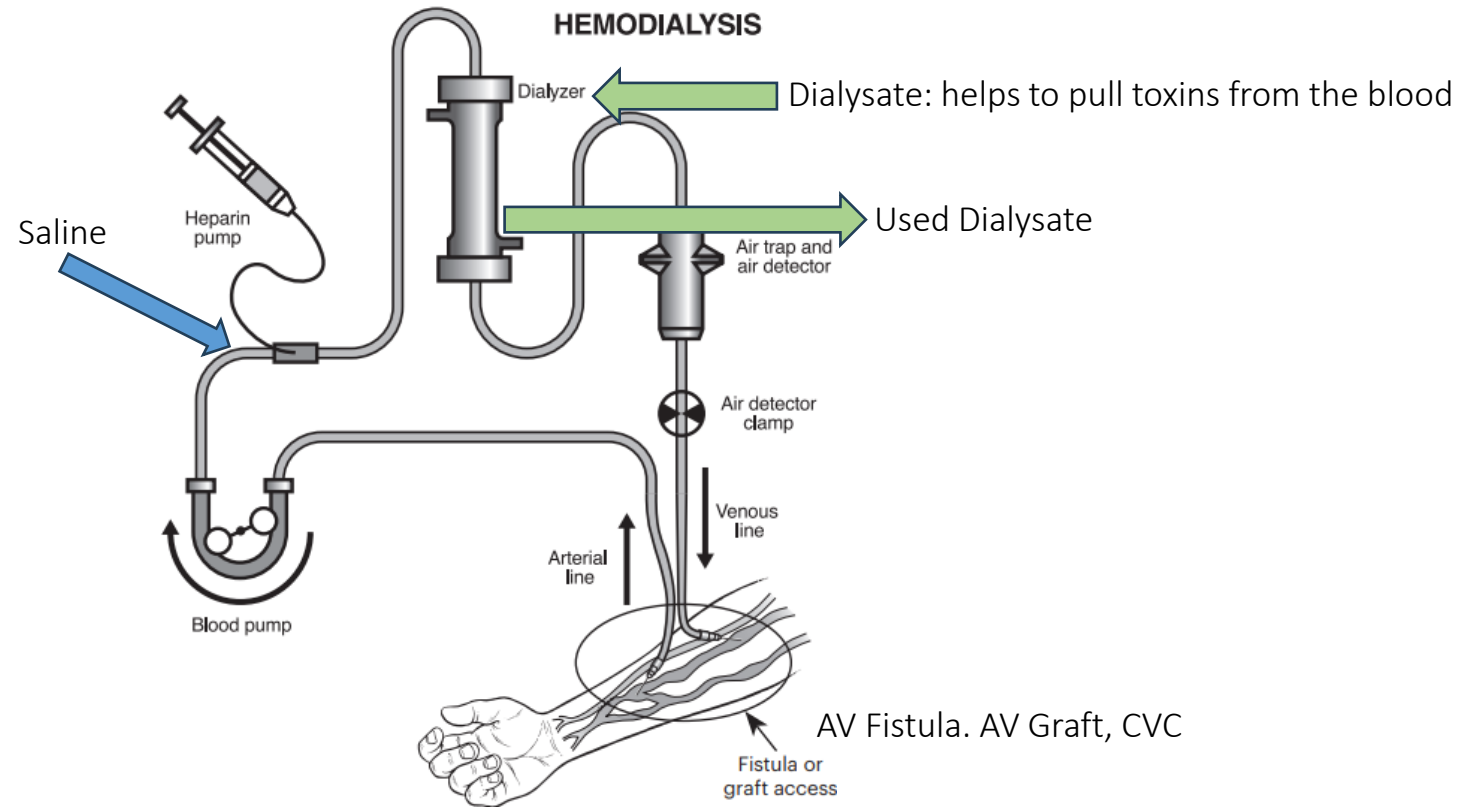
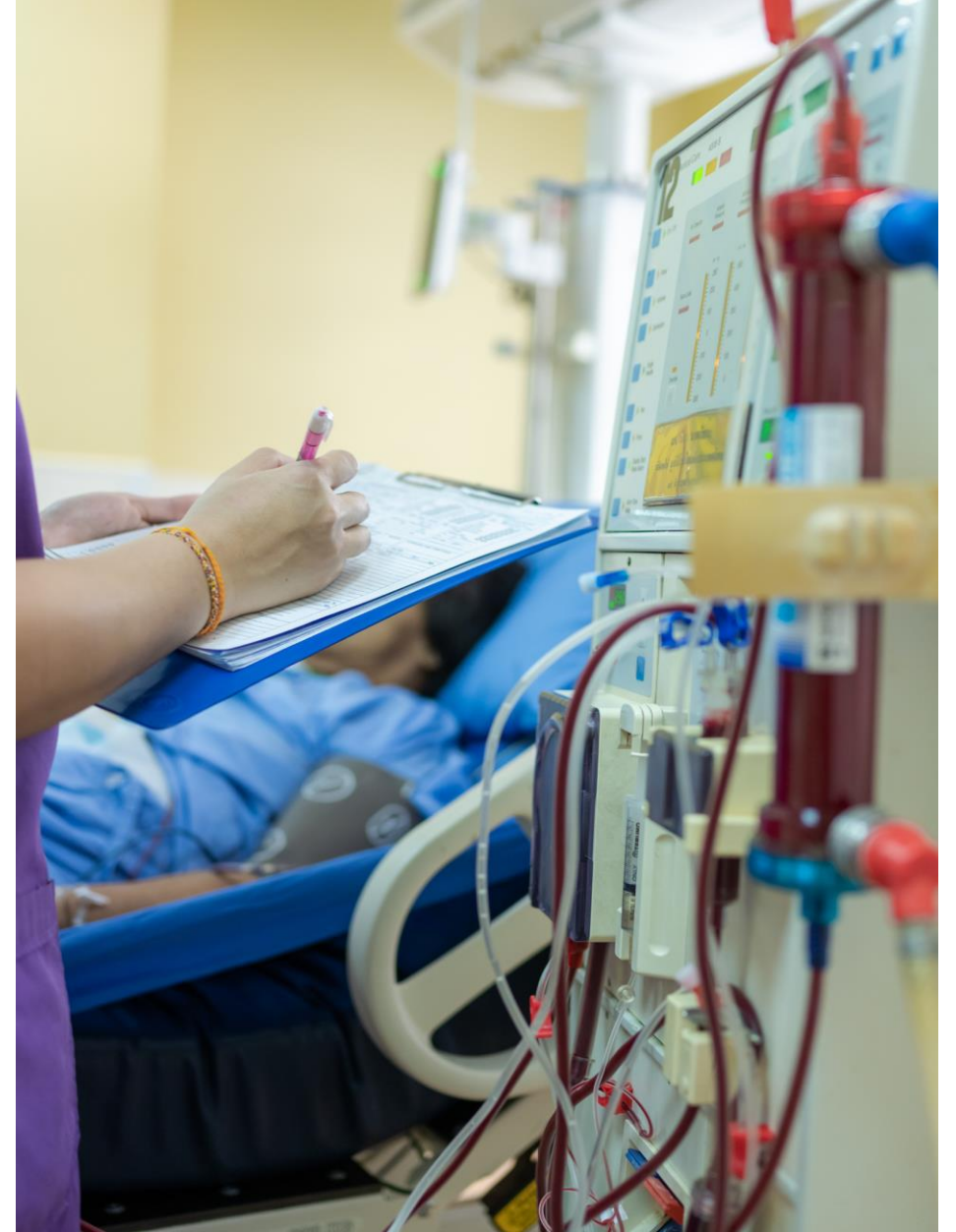


Image: <https://www.kidney.org/content/what-hemodialysis>

Dialysis

Dialyzer (filter)

- The key to dialysis:
 - Section for dialysate and section for blood
 - Divided by a semipermeable membrane which does not allow blood to pass through



Environment



Environment

- Location
- In Dialysis unit vs patient room
- Proper spacing for privacy
- Proper spacing for infection prevention



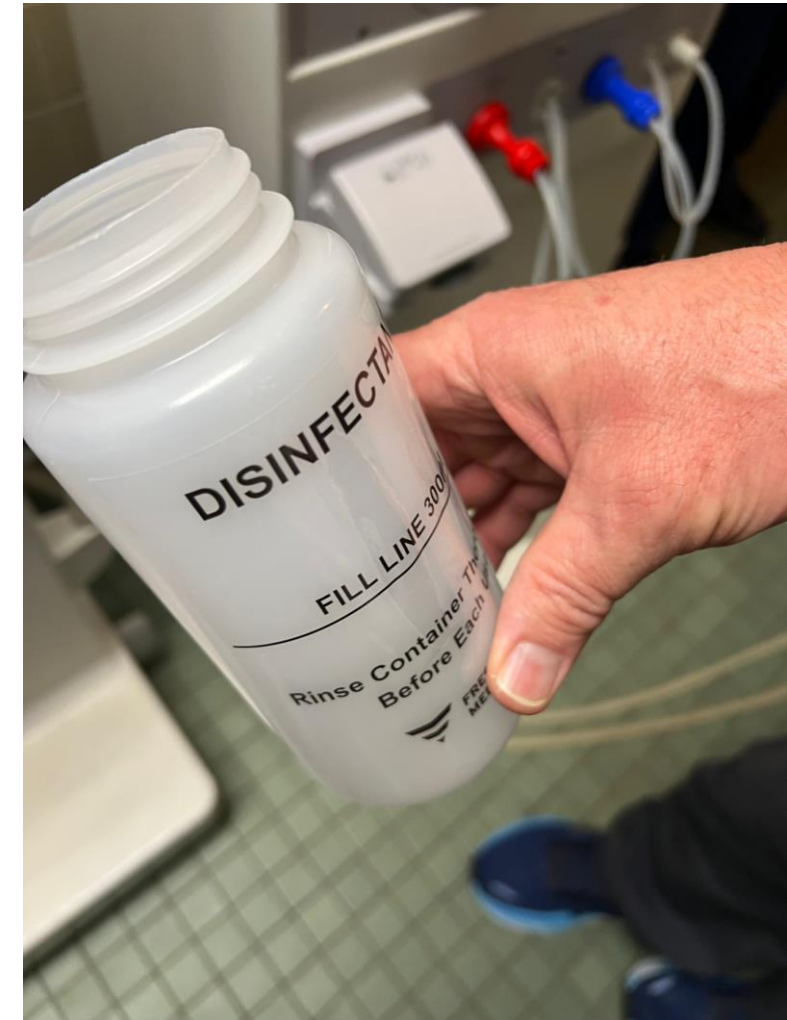
General Environment

- Exit signs
- Fire extinguishers
- Gas shut off panels
- Oxygen Cylinder Storage
- Storage in hallways (is this area designated a suite on LS drawings)
- Air Pressure:
 - Is Dirty Utility room negative pressure?
- Patient Bathrooms: Not often needed:
 - How do you get the door unlocked?
 - Is bathroom emergency pull cord wrapped around grab bar?
- Where are sharps bins and hazardous waste bins located?



Eye Wash

- Corrosive Chemicals: Bleach
 - OSHA
 - Eyewash stations and emergency showers are flushing devices required in locations where workers are handling injurious corrosive or caustic chemicals.



Eye Wash

- Accessible locations that require no more than **10 seconds** to reach. The eyewash shall be located on the same level as the hazard and the **path of travel shall be free of obstructions (no doors)** that may inhibit its immediate use
- Identified with a **highly visible sign**
- Area around the eyewash shall be **well-lit and no obstructions to use**
- Supply of flushing fluid to produce the required spray pattern for a minimum period of **15 minutes**, 1.5 liters per minute
- Fluid is **tepid**, 16° to 38° Celsius (60° to 100° Fahrenheit)
- If shut off valves are installed, provisions shall be made to **prevent unauthorized shut off**
- Once activated the valve shall **remain open** without requiring further use of the operator's hands (**single action operation**)





Surveyor Eyes

What do you see?





Surveyor Eyes

- Eye wash can't be easily reached
- Eye wash can't be used hands free in this location
- Waste water into sink where eye wash is located
- Waste water into hand washing sink (soap/towels)
- Black substance on waste pipe





Surveyor Eyes

What do you see?





Surveyor Eyes

No eye wash station and bleach is in use





Surveyor Eyes

What do you see?





Surveyor Eyes

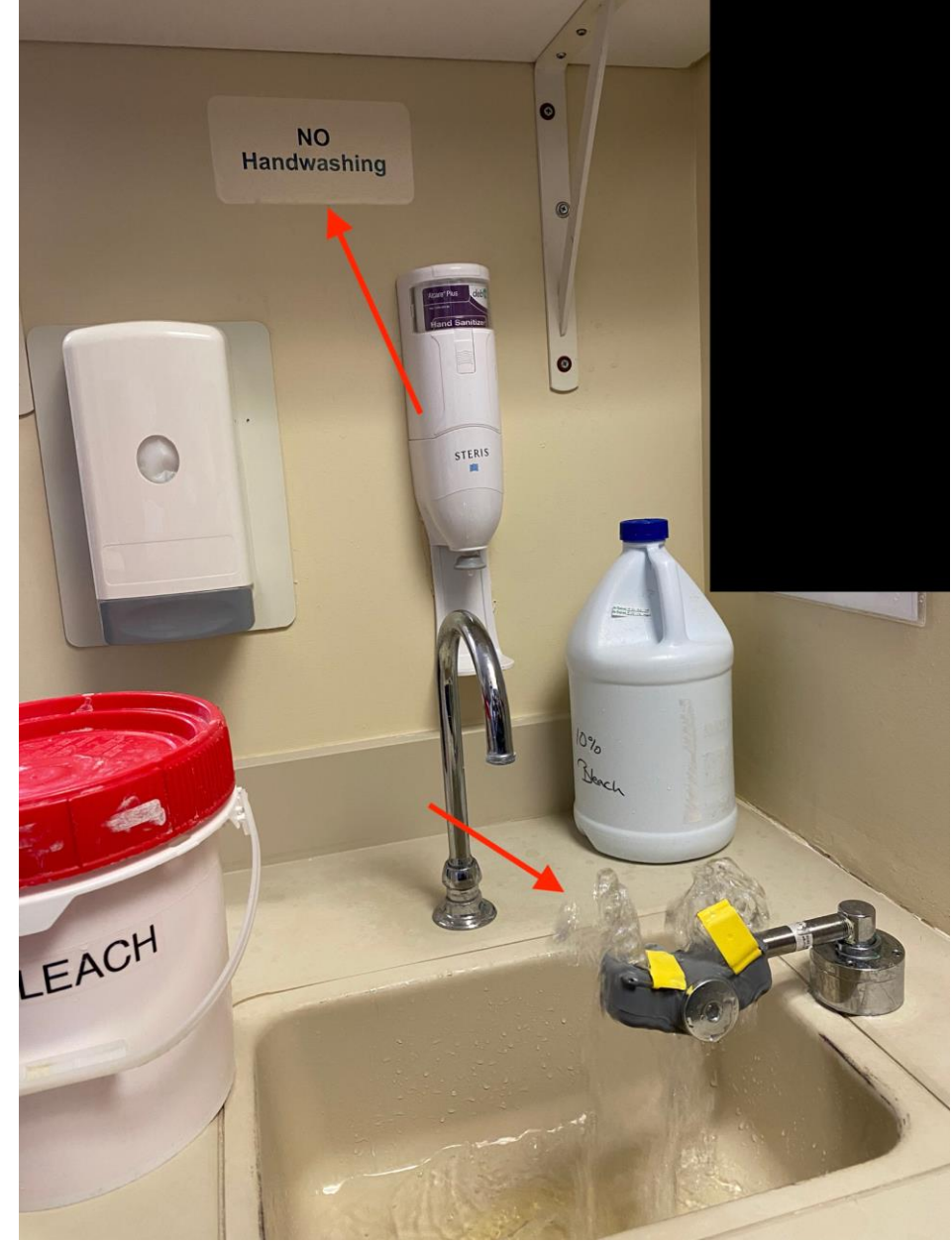
- Single nozzle for eye wash
- Can't provide 15 minutes of continuous flush to both eyes





Surveyor Eyes

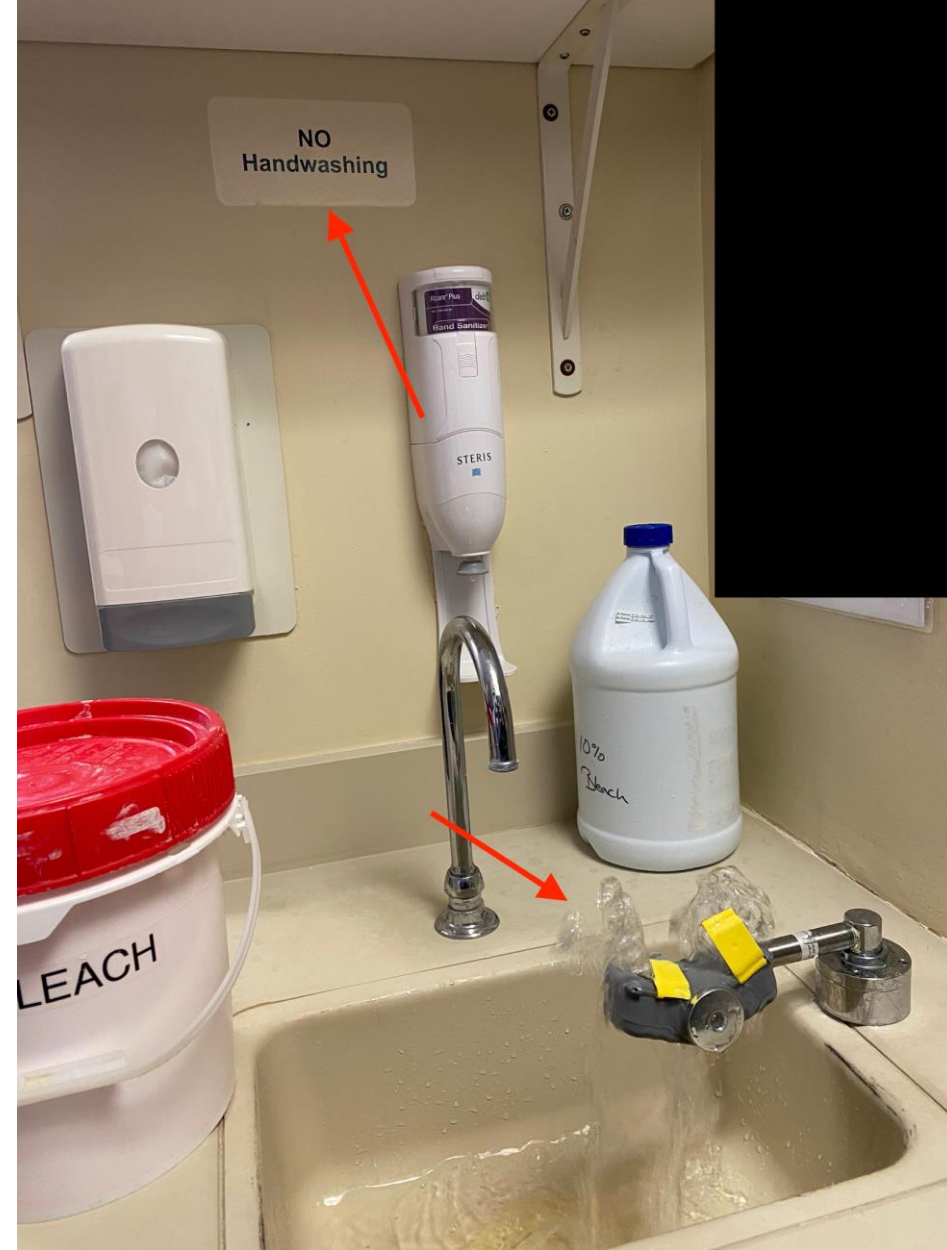
What do you see?





Surveyor Eyes

- Eye wash flow of water did not dislodge protective caps
- "No handwashing" sign but soap available
- If "no handwashing", sink is considered dirty. Cannot have eye wash in a dirty sink





Surveyor Eyes

What do you see?





Surveyor Eyes

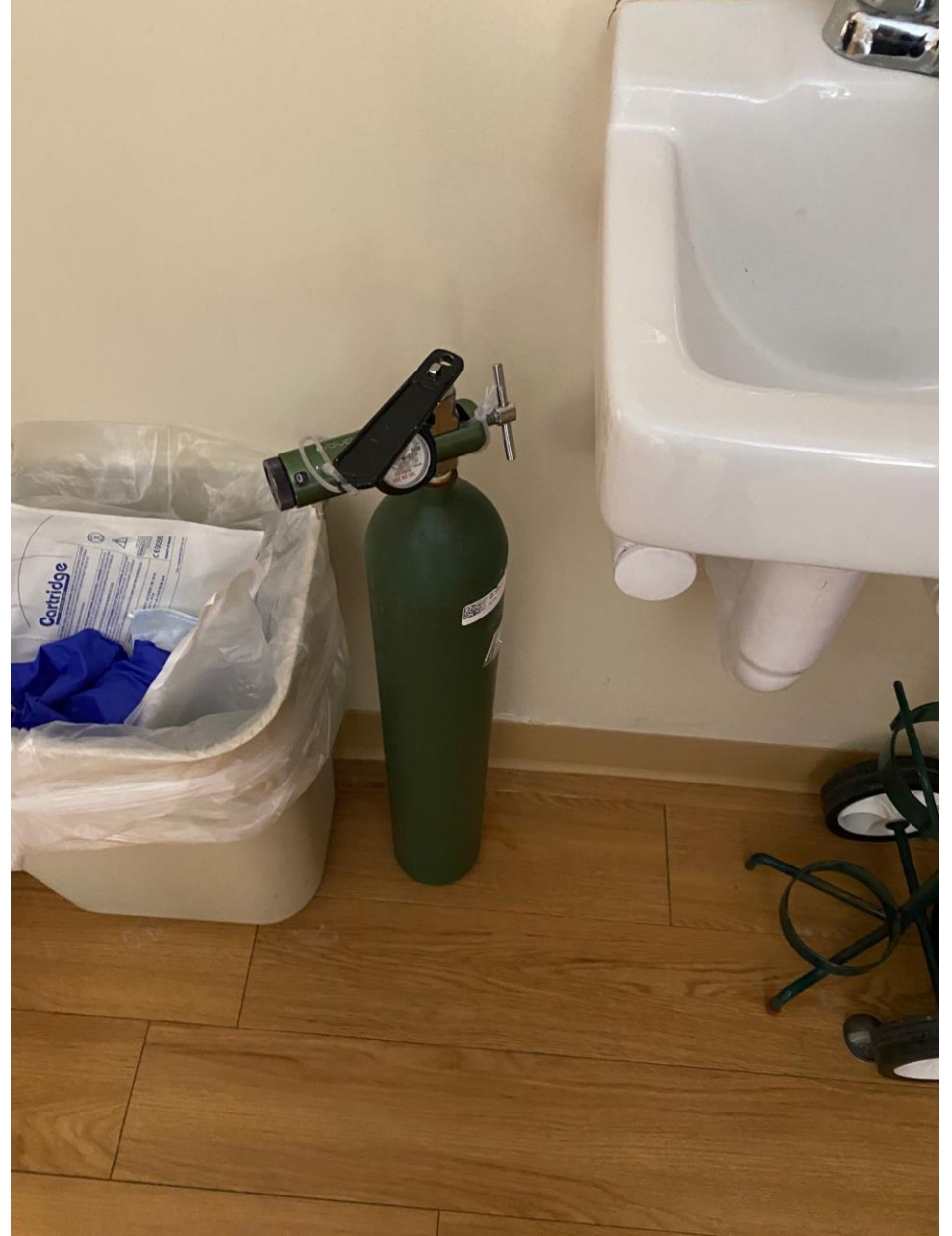
When eye wash is activated, water will flow onto the feet of person using the eye wash!





Surveyor Eyes

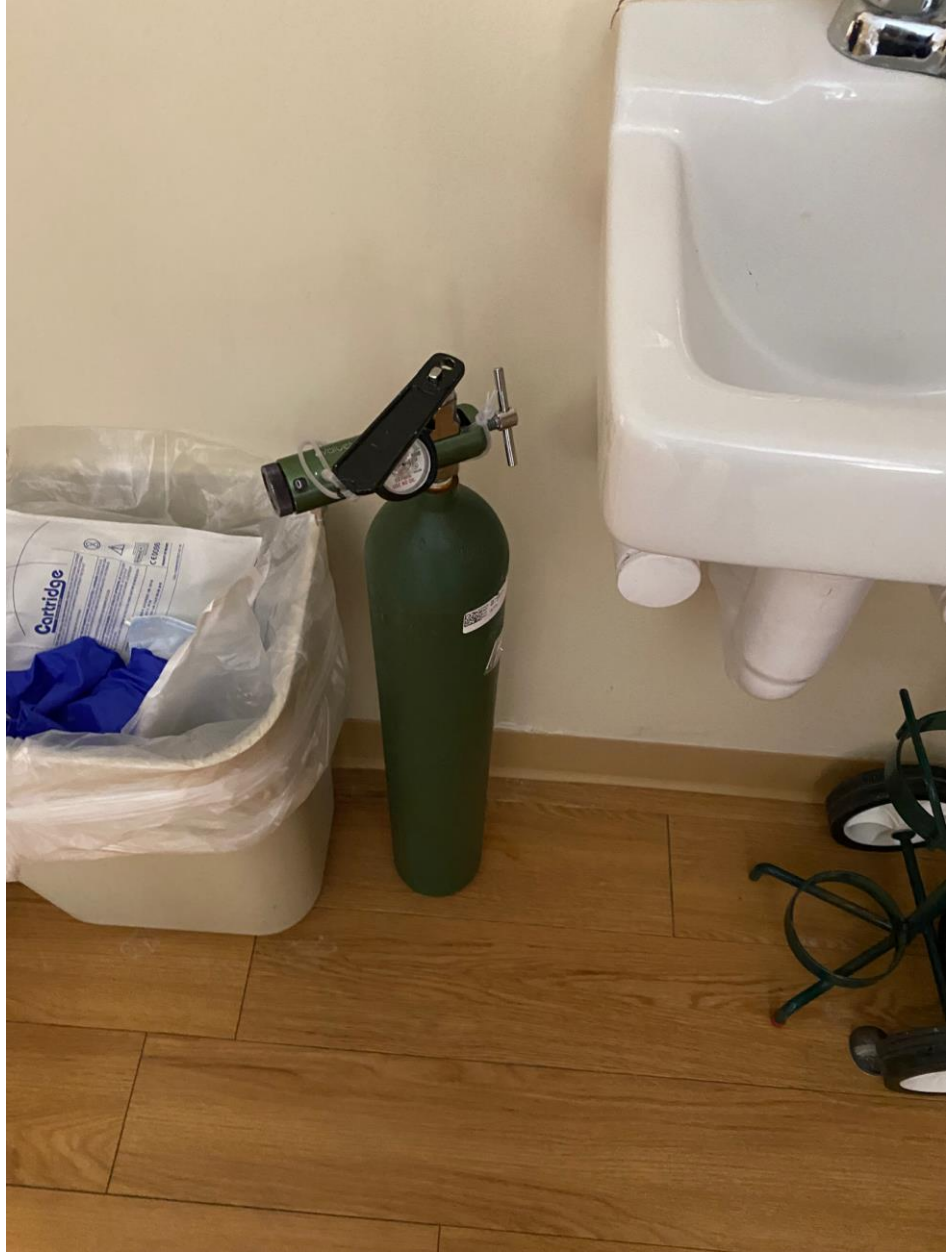
What do you see?





Surveyor Eyes

Unsecured oxygen cylinder





Surveyor Eyes

What do you see?





Surveyor Eyes

Water leak: standing water on the floor of the water treatment room





Surveyor Eyes

What do you see?





Surveyor Eyes

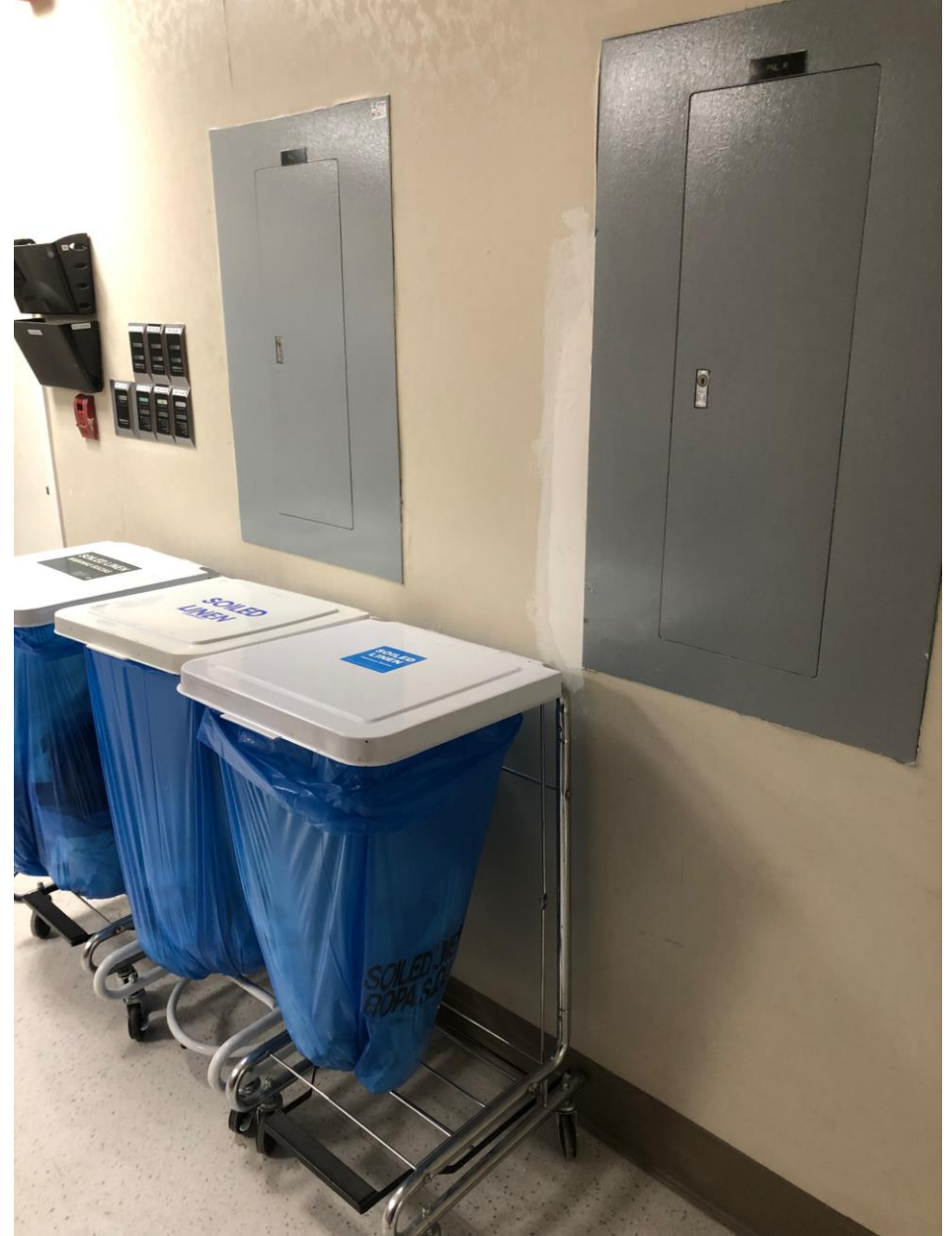
- Rusty equipment used at the patient bedside
- Single use scissors
 - There is no IFU to clean after use





Surveyor Eyes

What do you see?





Surveyor Eyes

Blocked electrical panels





Surveyor Eyes

What do you see?





Surveyor Eyes

Blocked gas shut off panels



Ask Staff

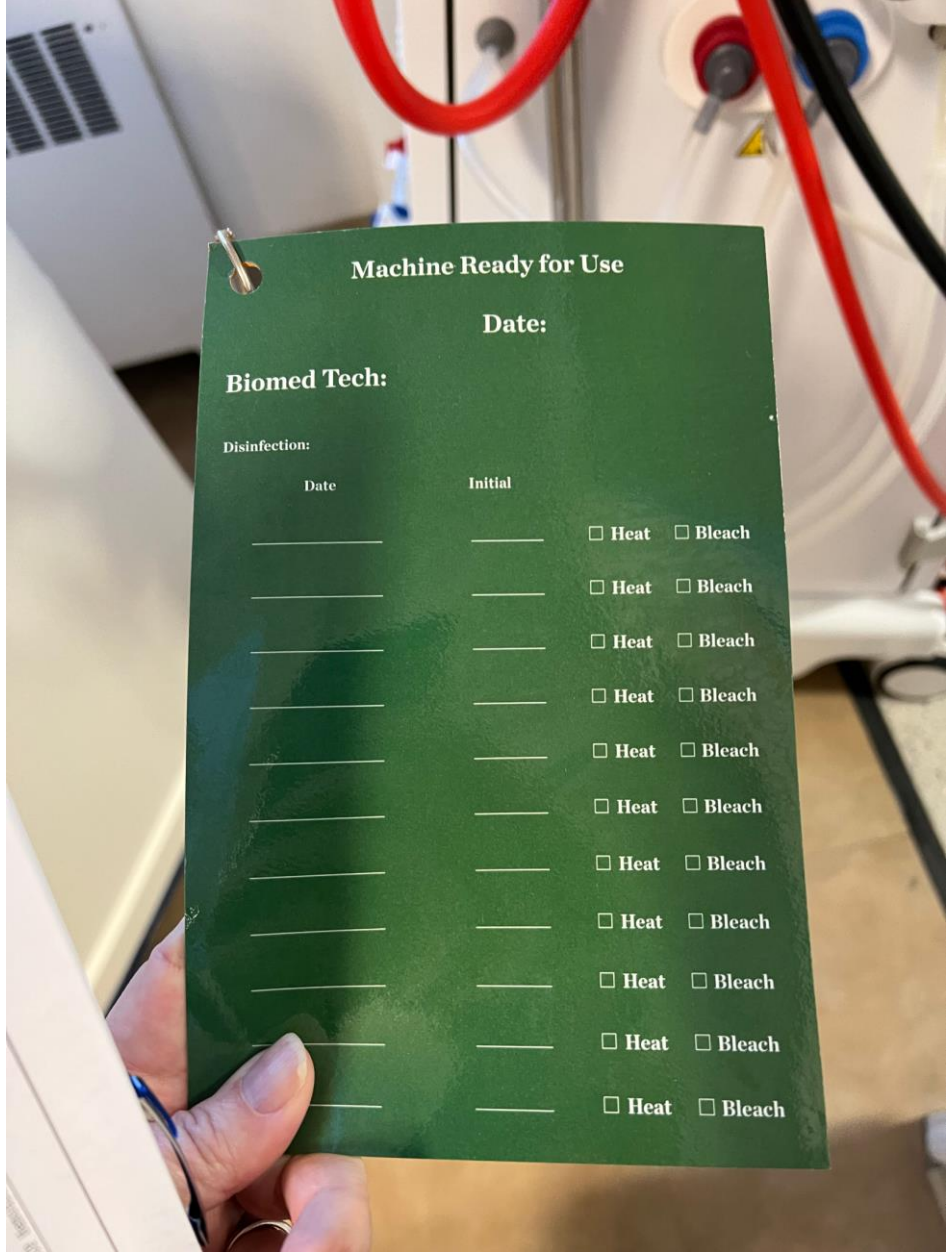
- Emergency Management Plan?
Alternative source of utilities including water supply
- Information/EMR Downtime procedures?
- Preventive Maintenance (PM)?
- Are alarms functioning properly and how are they tested?





Surveyor Eyes

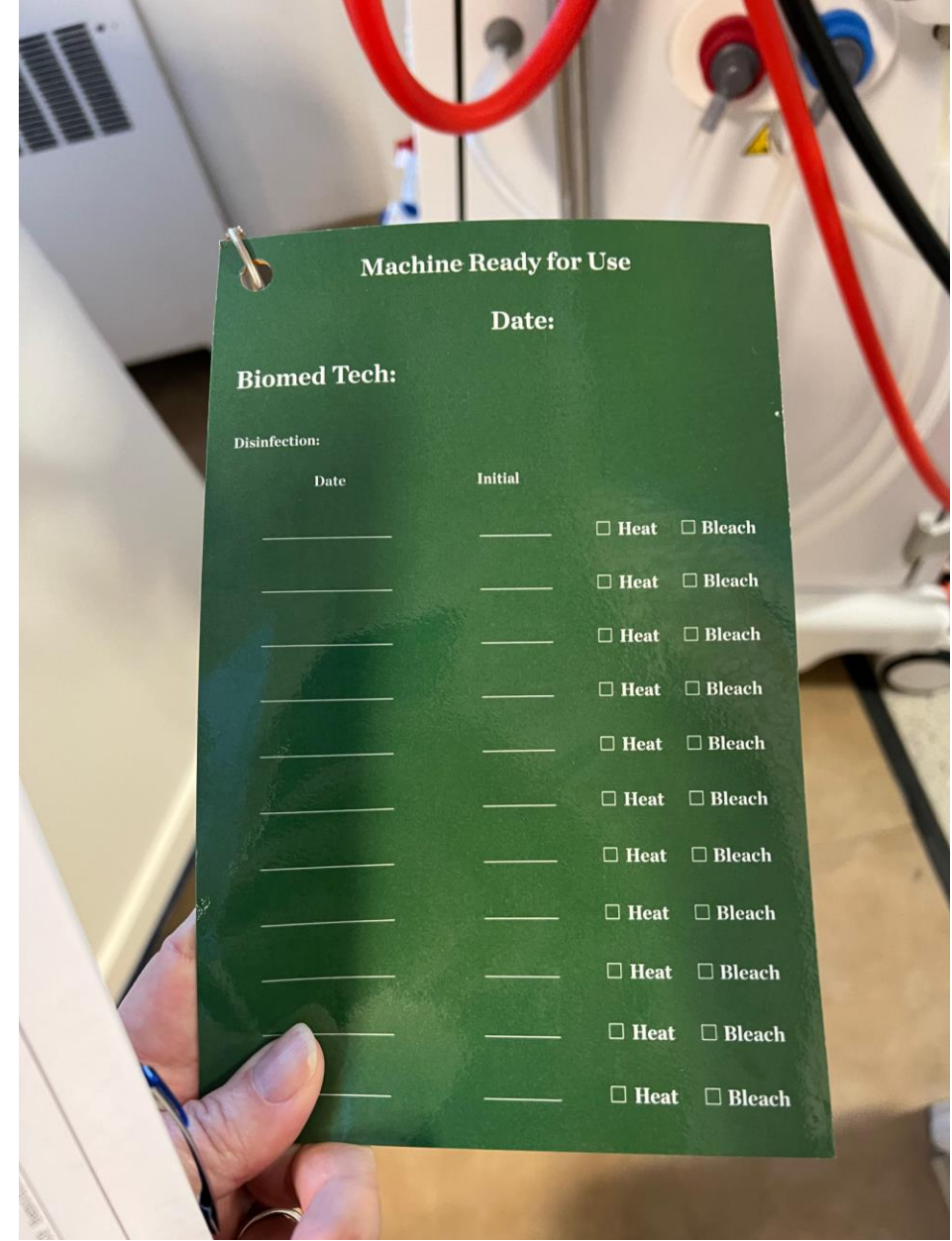
What do you see?





Surveyor Eyes

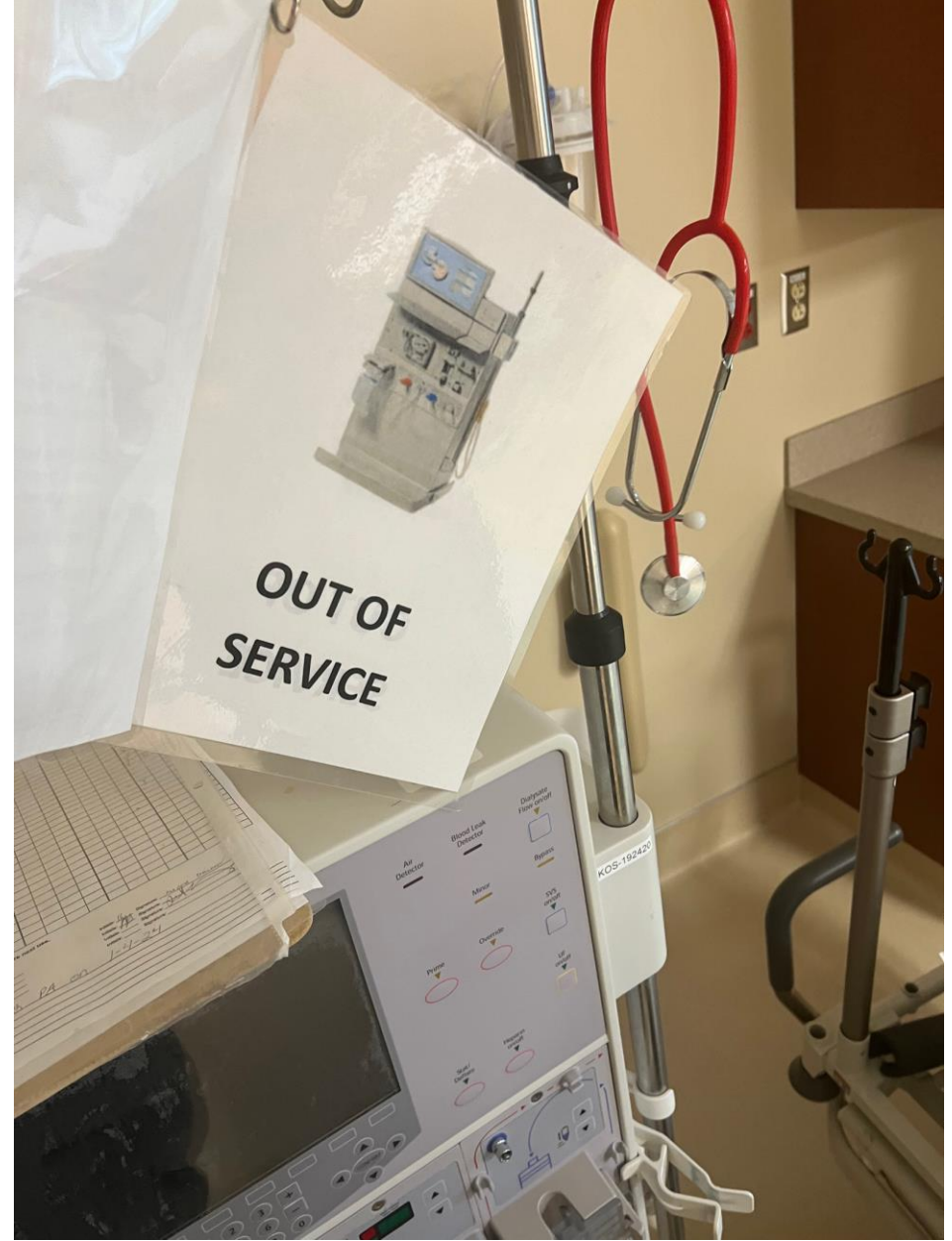
The machine tag was blank and not filled out





Surveyor Eyes

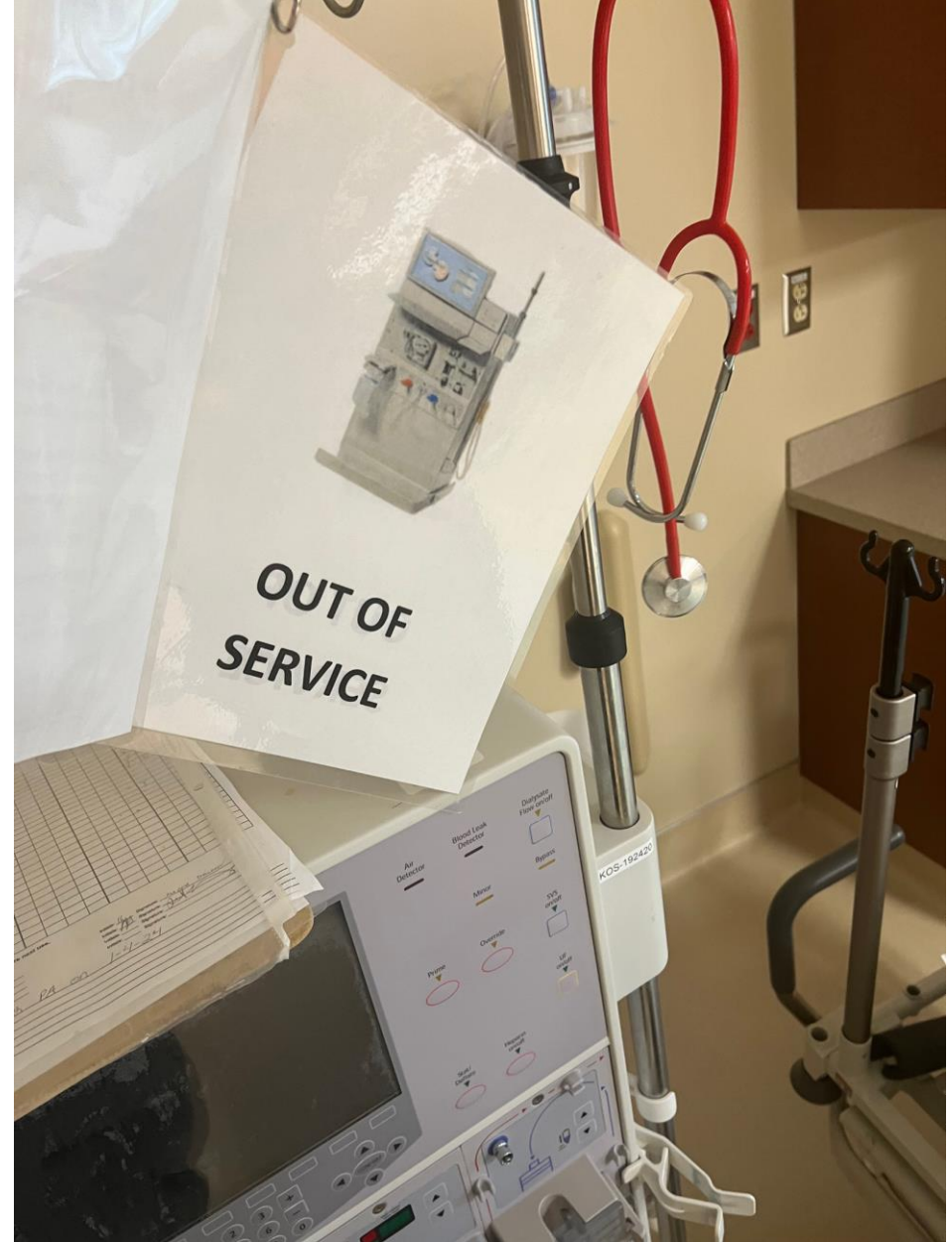
What do you see?





Surveyor Eyes

- Machine labeled as “Out of Service” was in use
- Ask: Is there a process to identify a machine as “out of service”



Patient Bathroom Dialysis Set-up

- Bedside: Patient Bathroom Set-Up
- Trip and fall hazard
- Sink: Dedicated for that purpose during treatment: disinfected after treatment
- Use of Toilet: Need air gap between end of hose and water in toilet
- Privacy and use of bathroom can be an issue if the patient is in a double room





Surveyor Eyes

What do you see?





Surveyor Eyes

Free standing and unsecured tanks can easily fall over





Surveyor Eyes

- Are patients spaced enough to allow for Infection Prevention guideline implementation?
- Where is the location of the hand washing sinks or alcohol dispensers?
- Is there an eyewash that can provide 15-min of flush where bleach is used?
- How is eyewash tested and how often? Does water dislodge caps? Can staff activate the eyewash and can speak to 15-min flush needed?
- Are extinguishers, gas shut off panels or electrical panels blocked?
- Are dirty utility rooms negative air pressure?
- If dialysis set up is in patient room: is there a trip hazard, how will sink be cleaned after use, if waste goes into toilet: is there an air gap for safety?

Supplies



Testing for Conductivity, pH, and Temperature

- Phoenix Meters & Myron Meters:
 - Verification of Conductivity, pH and Temperature
 - Checked prior to every treatment
 - Calibration Solutions: (Calibration Daily)
 - Each type of solution has a specific beyond use date
 - 30 days or 90 days from opening
 - Must be dated appropriately
- Even if the dialysis machine displays these readings, verification is required



IMAGES: news.thomasnet.com, wateranywhere.com, mesalabs.com

Documentation

- Unit was operational on Nov. 20
- No calibration of the Myron meter

Meter Number 35 Myron L Meter Log Month November

Date	No Treatments	Reading Using 14mS/cm	Calibrate Y/N	Repeat Reading	Staff Initials
1	✓				
2					
3		14.0	N	—	DMB
4					
5		14.0	N	—	M
6					
7					
8		14.0	N	—	
9					
10		14.0	N	—	M
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23		14.0	N	—	
24					HRV
25					
26					

tx given- no meter testing



Surveyor Eyes

- How is conductivity, pH and temperature measured?
- Is the machine for testing calibrated each day used?
- Where are the results documented?
- How are the different types of conductivity solutions for calibration dated once opened?
- Are the bottles that require it, dated with 3 months or 90-day expiration per the IFU?
- Is conductivity/pH checked prior to each treatment? Where is this documented?
- What would you do if the machine result and the independent test did not match? Is there a policy for this?

Test Strips

- Water Hardness
- Disinfection Chemicals
- Blood Leak
- PH
- Total Chlorine



Images: rpc-rabrenco.com, dialmedsupply.com/serim/index.html

Test Strips

- Instructions for Use
- Expiration Date
 - Manufacturer's vs BUD once opened
- Dip Time and Read Time
 - Is a timer used?
- Quality Control (QC)
 - On-line
 - Requires testing
 - Included with product
- Is color comparison chart used?

RPC

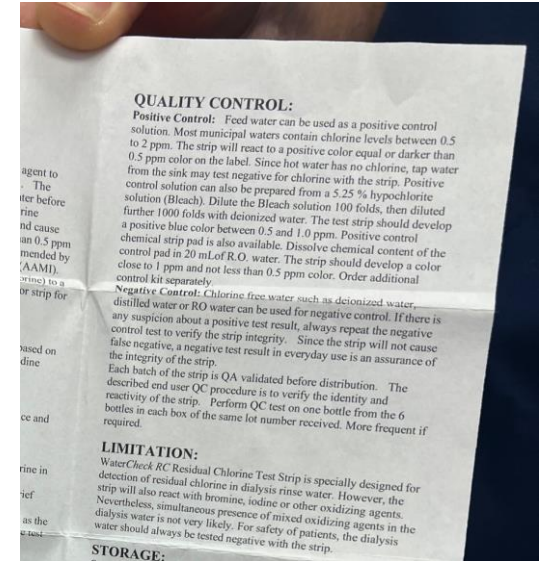
Certi-Chek™ Field Verification Program
• Certificate of Conformance •

This document represents certification of conformance with all manufacturing, quality assurance, and test procedures required for the production and final assembly of the test strip indicated. In addition to these quality assurance procedures, Certi-Chek™ testing is performed by RPC using industry accepted standard reference methods at the dialysis specific maximum allowable level for the indicated substance under test. Certi-Chek™ testing replaces the required test strip field validation called for in most instructions for Use of non-RPC test strips. This Certi-Chek™ Field Verification Program is performed in addition to the immediate post-production QC testing that is required to confirm proper manufacturing of the test strips. RPC complies with all storage and handling requirements and performs quality control testing (on a lot number basis). This product was manufactured in compliance with the requirements of the Food & Drug Administration (FDA) Quality Systems Regulation (QSR). End users of this test strip must comply with all instructions for use and storage/handling requirements.

K100-0100
Micro-X® RESIDUAL
TEST STRIPS

LOT#: EXPIRATION DATE:

CERTI-CHEK™ FIELD VERIFICATION TESTING						
Control	Acceptance Rate (# Pass/Total tested x100)	Test Value	Number of Replicates	Pass/Fail	Initials	Date
I (Positive)	100%	3 ppm	13	PASS	BL	02/09/2024



Semi-Quantitative Procedure for Feed Water and Rinse Water Total Chlorine Testing

1. Verify the test strips have not expired.
2. Rinse standard sample cup provided with water to be tested. Re-fill with approximately 20mL of test water.
3. Remove a test strip from container and close container immediately after removing a strip. Do not touch test pad at the end of the strip.
4. Immerse indicator pad of test strip in sample water and vigorously move back and forth for 10 seconds. See Figure 1. (Approximately 30-35 back and forth strokes in 10 seconds.) The indicator pad must be perpendicular to the direction of the strip movement.
5. Remove strip from water, do not shake. Wait a full 30 seconds. While waiting, fold the white plastic handle of the test strip under the aperture (as in Figure 2 below) so that it provides a consistent viewing background.

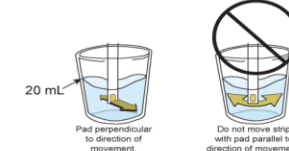


Figure 1

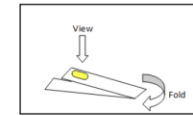


Figure 2

6. After the 30 second wait period, immediately compare the strip to the K100-0106 color chart to determine the Total Chlorine level in the sample.

Images: <https://rpc-rabrenco.com/products/>

Glucometer

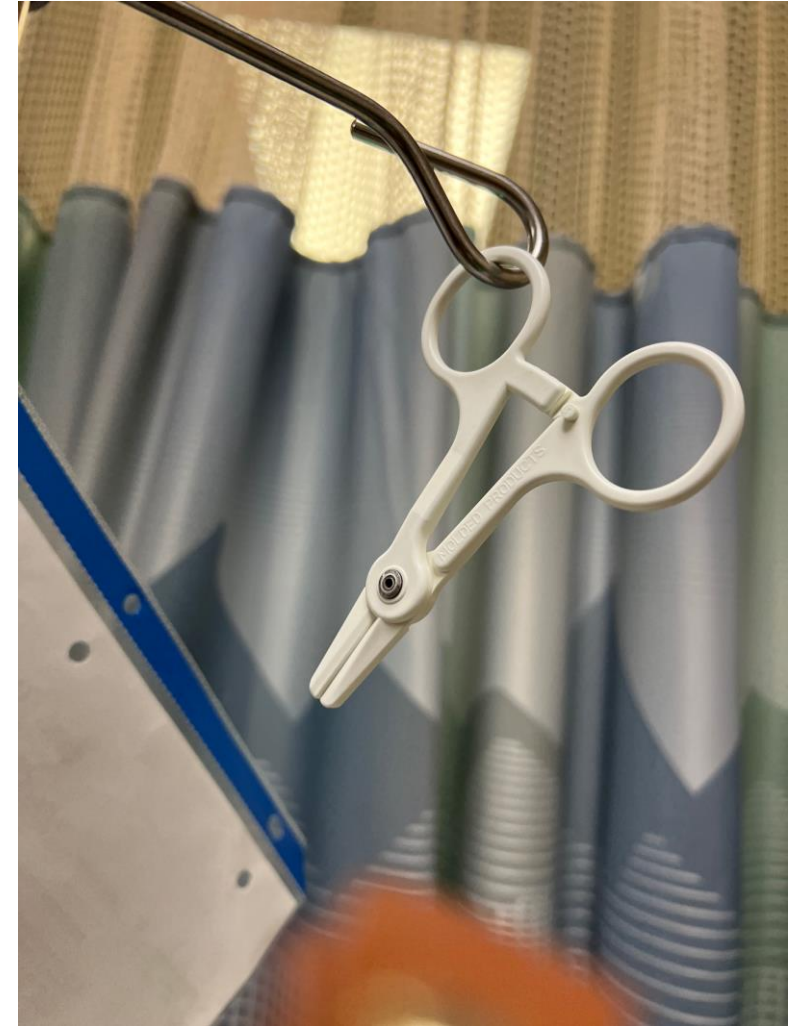
- What are the IFUs for cleaning and disinfecting?
 - Some manufacturers require a two-wipe method:
 - 1st wipe to clean the device
 - 2nd wipe to disinfect
 - What product is used for cleaning & disinfecting?
 - Are they allowed per the IFU?



Plastic Clips

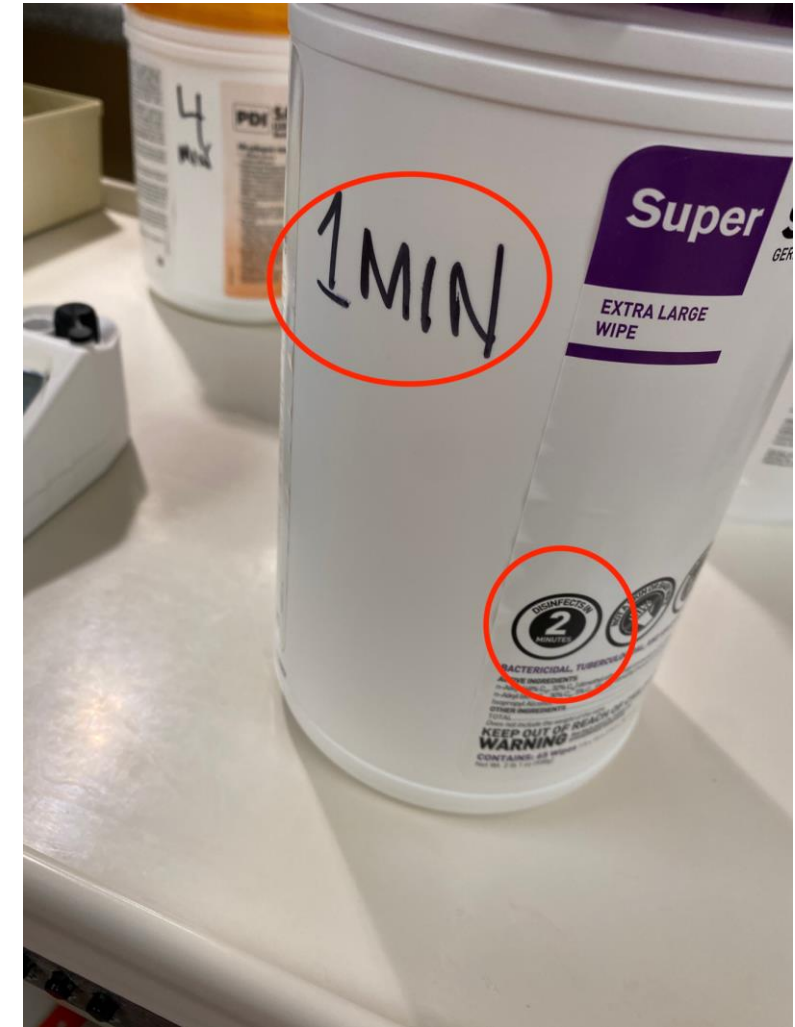
- What are the IFUs?
 - Disposable?
- How are they cleaned/disinfected?
- How is the solution made?

- Ask staff how they use them and how they clean them.
- Ask staff if they know what the instructions for use are.



Sani-Wipes

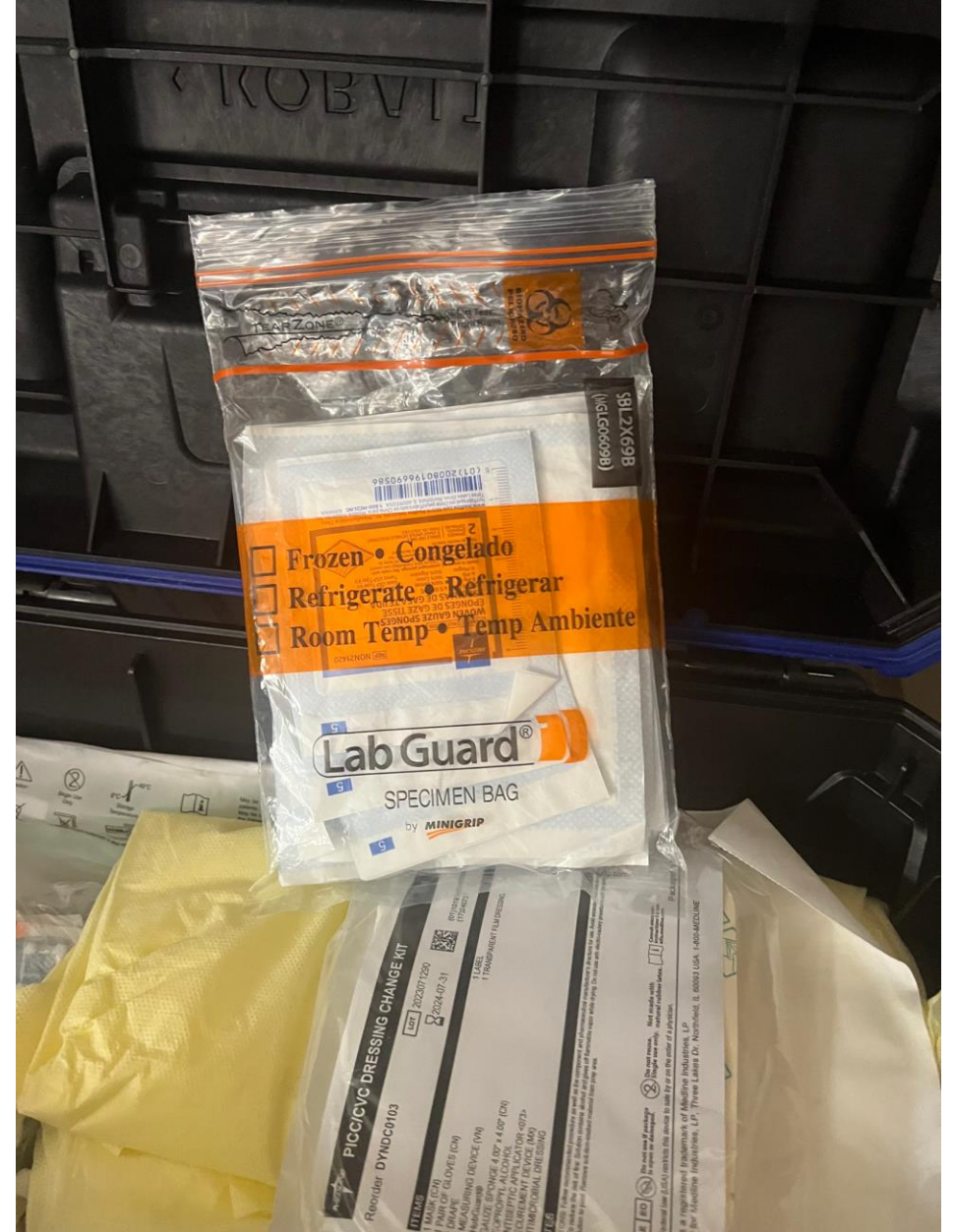
- The IFU instructs on a wet/contact time for the product to fully kill bacteria
- Not a “dry time”





Surveyor Eyes

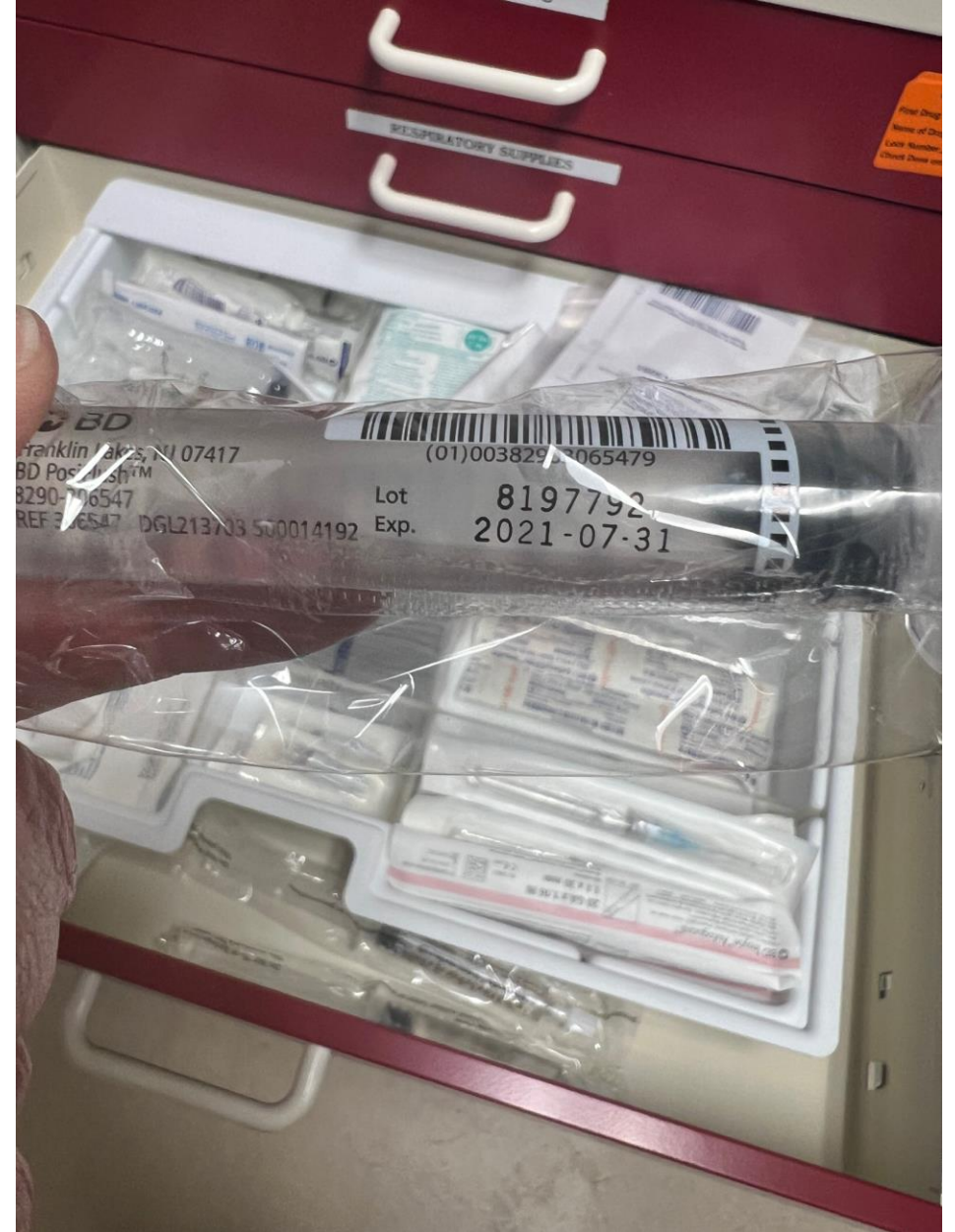
Clean supplies stored in a biohazard bag; indicates contents are contaminated.





Surveyor Eyes

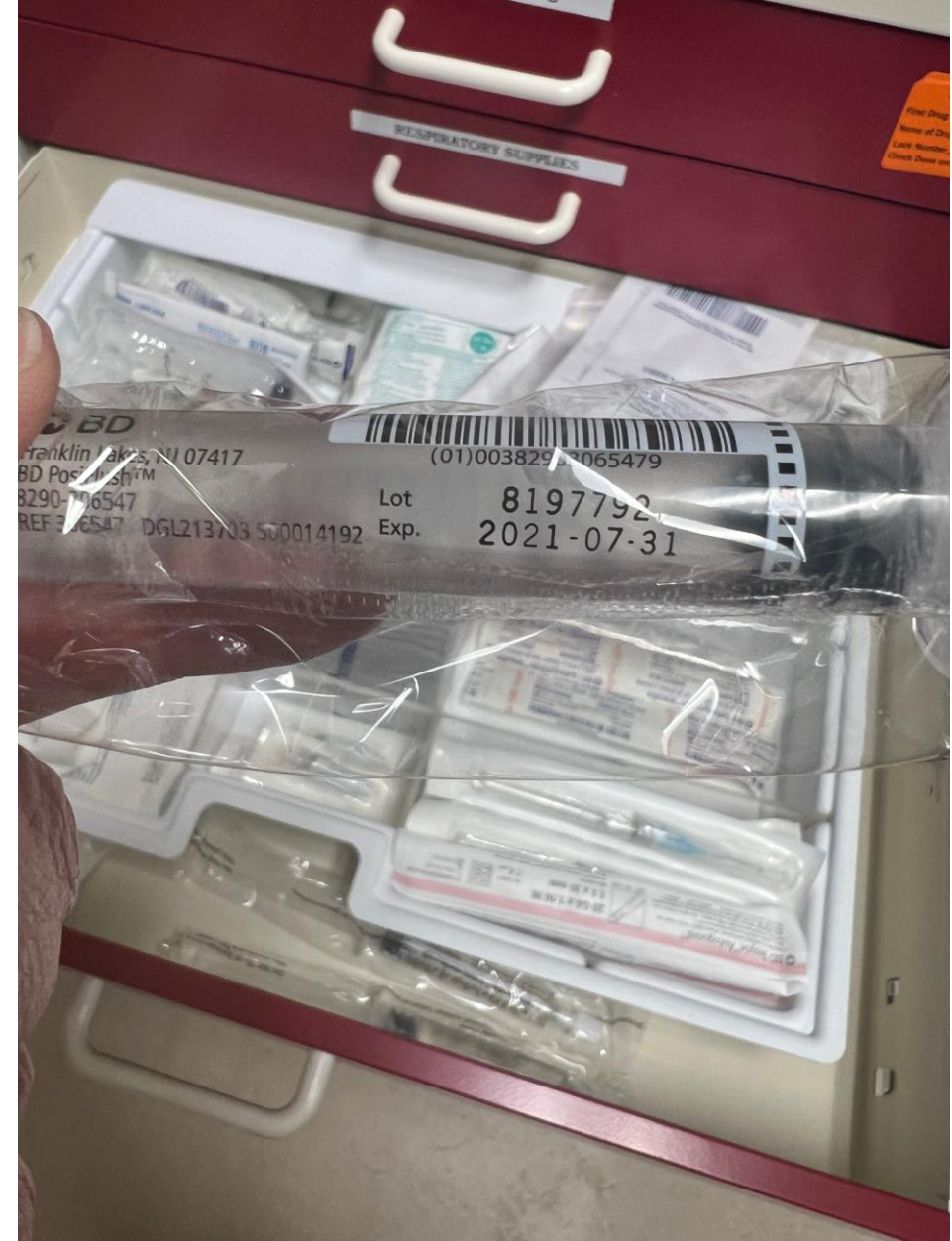
What do you see?





Surveyor Eyes

Expired supplies





Surveyor Eyes

- What type of test strips are used?
- What is expiration date? Does it require a new date once opened?
- What is dip time/swish time and when can the strip be read?
- What are the QC expectations?
 - Does staff perform a test?
 - Does the company have a download on the website?
 - Is the QC included in the package?
- How are staff trained to use the test strips?
- Where are the results documented?
- Are the results documented within the allowable parameters?



Surveyor Eyes

- Can staff speak to how the glucometer is cleaned per the IFU?
- Can staff speak to the wet/contact time for the Sani-wipes?
- Are clean dialysis supplies protected from potential contamination?
- Are supplies taken to patient treatment station not disposed of after use, disinfected after use or dedicated to single patient use?
- Are disposable (single-use) supplies discarded after use?
- Are clean items identified as biohazard?



What do these symbols mean?

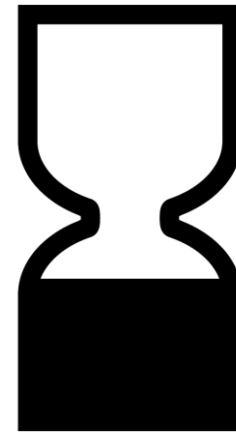




What do these symbols mean?



Single Use:
Disposable Item



Expiration
Date

Water Quality



<https://www.amerewater.com/products/sample-port-wall-box/>

Water Treatment

- Most important piece of the dialysis process
- Can't use tap water straight from the faucet
- Three Steps:
 1. Pre-Treatment
 2. Purification
 3. Distribution Loop



Step 1: Pre-Treatment

- Public supply of Water:
 - Has additives/preservatives/chlorine added
- Requires purification prior to use for dialysis
- Filters:
 1. Softener: removal of minerals, etc.
 2. Carbon tanks: removal of chlorine/chloramine

Step 2: Purification

- Accomplished by the RO
 - (Reverse Osmosis) Machine
- Everything before RO is the pre-treatment
- RO is the purification step: Removes inorganic and organic material
- Bacteria and Endotoxins

Step 3: Distribution

- **Distribution Loop:**
 - Brings the purified water to the dialysis treatment area
- All the pipes/tubing the purified water travels through to reach the dialysis machine and a chair

Water Testing

- Annually:
 - AAMI Water Analysis: (some organizations test every 6 months)
- Monthly:
 - Water Cultures & Endotoxin Testing
- Total Chlorine:
 - Central Water: Beginning of day and every 4 hours (every machine)
 - RO: After machine has run for 15 minutes:
 - Prior to treatment
 - Every 4 hours (if treatment reaches 4 hours)
 - Testing location: post carbon tank but pre-RO
- Residual Bleach:
 - After disinfection of machine
 - Daily (as a double check prior to first treatment)

Culture & Endotoxins: Testing Parameters

- Cultures: Water & Dialysate
 - Acceptable: > 50 CFU/ml
 - Action level 50-199 CFU/ml (continue but plan)
 - Unacceptable 200+ CFU/ml (stop dialysis)
- Endotoxins:
 - Acceptable: below 1
 - Action Level: 1-2
 - Unacceptable. 2+

Water Treatment Disinfection

- Water Treatment System:
 - Disinfection at least monthly or per IFU
 - Some ROs have heat disinfection: if so, may be required weekly or per IFU
- RO loops (plumbing): monthly
- If the culture/endotoxin results are elevated, is the water treatment system disinfected more frequently?
- Storage Tanks: per the IFU

Dialysis Wall Boxes and Drains



Dialysis Safety

Dialysis Wall Boxes and Drains

Dialysis wall boxes are frames recessed into the wall at each hemodialysis station that contain connections for the dialysis machine to receive acid and base concentrates and treated water, and dispose of waste products.

There are several infection prevention and control issues unique to wall boxes. They can become easily contaminated with microorganisms, which can subsequently be transferred to dialysis patients, a vulnerable group at high risk of infection.

Thus, wall boxes need to be cleaned, disinfected, and properly maintained to decrease risk of patient infections.

Wall boxes contributed to a large number of infections in patients on dialysis in this outbreak: [Multicenter Outbreak of Gram-Negative Bloodstream Infections in Hemodialysis Patients \[PDF - 10 pages\]](#) [☞](#). Summarized in the table below are infection prevention and control issues identified during the outbreak investigation, and recommended strategies for infection prevention.



<https://www.cdc.gov/dialysis/guidelines/wall-boxes.html>

Dialysis Wall Boxes

- Patient Rooms/Dialysis Unit:
 - Water Supply and Drain
- Typically connected to regular water supply and then connected to the dialysis machine through a portable reverse osmosis (RO) system. This fixture is essentially a faucet with a dead leg.
- The risk of not periodically flushing this fixture could result in stagnate water. Wall boxes need to be cleaned, disinfected, and properly maintained to decrease risk of patient infections.
- Can be easily contaminated with microorganisms, which can subsequently be transferred to dialysis patients, a vulnerable group at high risk of infection.
- These water box fixtures should be included in your Utilities Maintenance Program and Water Management Program and maintained in accordance with manufacturer requirements.





Surveyor Eyes

- **Water Treatment Process:**
 - What is the type of water treatment system used?
 - Is there a flow chart for the system?
- **What is each component of the Water Treatment Process?**
 - What does it do and how do you know it's working properly?
 - What tests are performed? (Total chlorine)
- **Water Testing:**
 - How often is testing performed for Water Quality?
 - What is the policy for allowable parameters?
 - Logs? Are there daily and monthly logs required? What is documented?
- **What happens when testing results are actionable:**
 - What actions are taken? What types of disinfection are completed?
 - Is the machine taken out of service?
 - Is there retesting?
 - Does the documentation tell the story of the actions taken?



Surveyor Eyes

- How often are cultures and endotoxin tests performed?
- When are the samples collected; before or after disinfection?
- Who collects the samples?
- How are staff trained on appropriate methods for obtaining samples?
- Can you explain the culture/endotoxin report? Are there any values out of range?
- What happens if a test is out of range?
 - Bacterial counts should be less than 50CFU/ml (what is exact number for trending)
 - What are the acceptable endotoxin levels?
- What actions were taken and documented when tests were out of range?

Machines



Machines

- Dialysis Machine
- RO (Reverse Osmosis)
 - Primary method for purifying water for dialysis



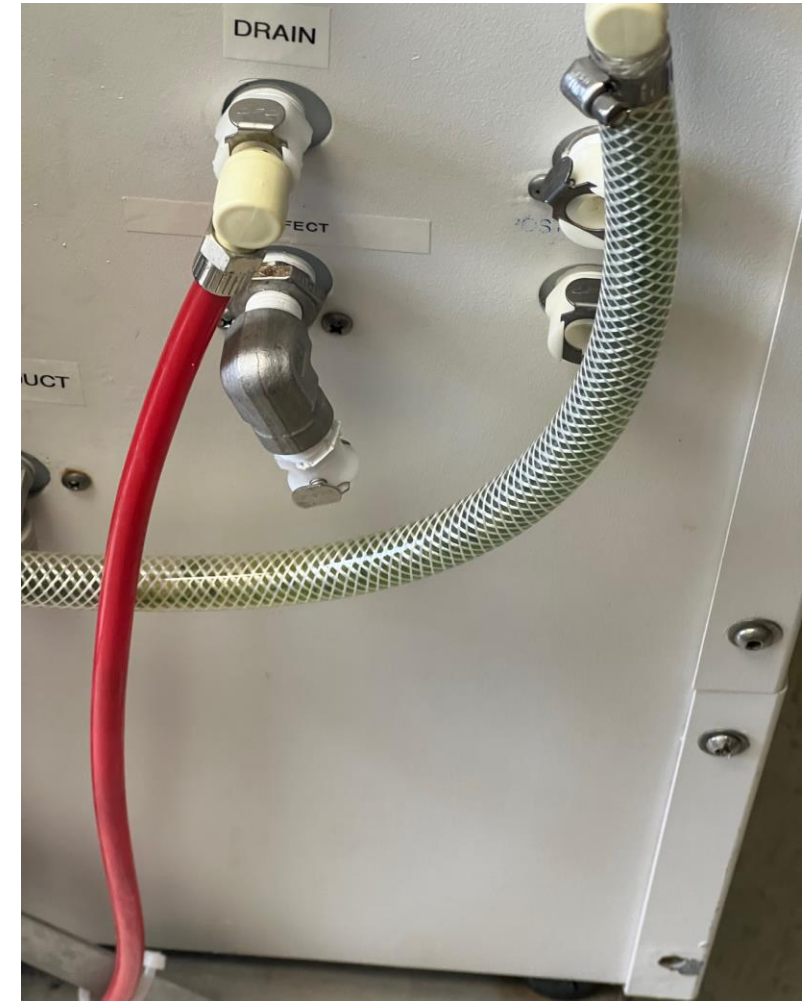
Machine Disinfection

- How often are the machines disinfected
 - Heat disinfected daily/after use
 - Per IFU
- IFU: if not used for 48hours+ must be disinfected prior to use
- Chemical Disinfection: (Bleach)
 - At least weekly
 - After treatment to HBV or unknown status
- Acid Clean: (Acetic or Citric Acid) (not disinfection)
 - Prevents build-up of bicarbonate



Inspection

- Connection hoses: how are they maintained?
- Line supplying water from the water: not disinfected when the machine is. The line should be replaced annually.



Inspection



FDA Recall

FDA U.S. FOOD & DRUG ADMINISTRATION Search Menu

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Fresenius Medical Care Recalls Some Hemodialysis Machines for Potential Exposure to Toxic Compounds

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The FDA has identified this as a Class I recall, the most serious type of recall. Use of these devices may cause serious injuries or death.

The devices described in this recall are related to the ongoing evaluation announced in the [Potential Risk of Exposure to Toxic Compounds When Using Certain Hemodialysis](#)

Medical Device Recalls

[2024 Medical Device Recalls](#)

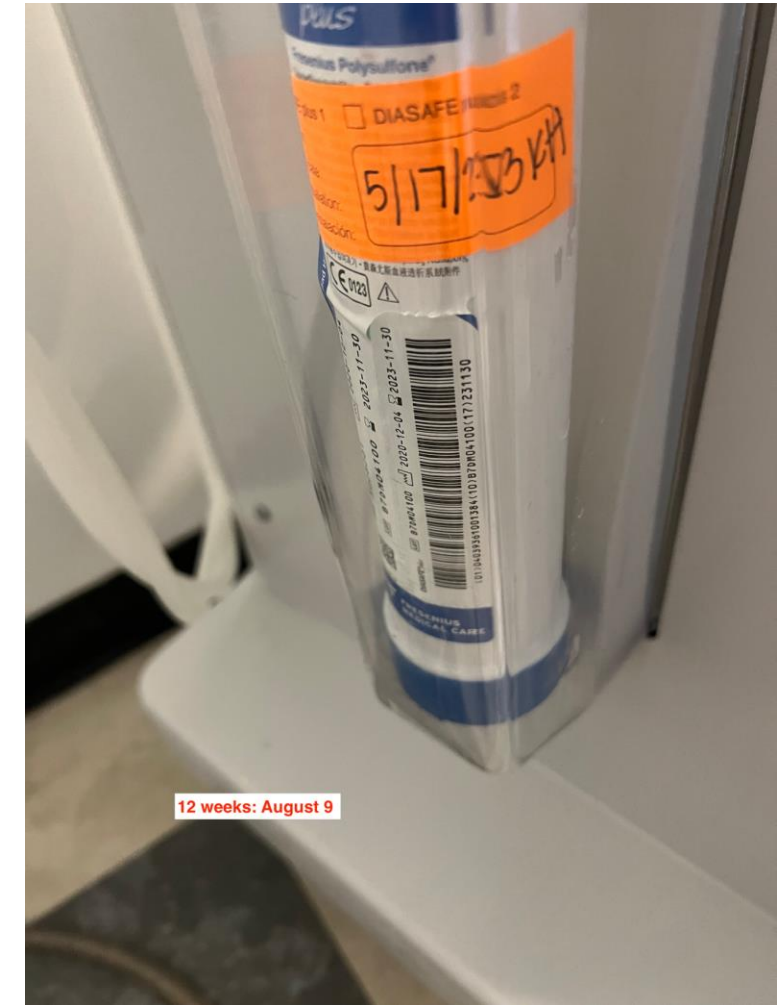
Content current as of:
10/24/2023

Regulated Product(s)
Medical Devices

<https://www.fda.gov/medical-devices/medical-device-recalls/fresenius-medical-care-recalls-some-hemodialysis-machines-potential-exposure-toxic-compounds>

Inspection: Filters

- How often are they changed?
 - 3 months
 - Manufacturer's expiration
 - Change in pressure-alarm
- How can staff tell if the filter needs changing?



Dialysis Machines: Emergency Process

- If dialysis is being given on the patient unit:
 - Is there a process to follow if the dialysis nurse becomes incapacitated?
 - Do the dialysis machines have an emergency shut down laminated guidance poster?



Wand Disinfection

- Per the IFUs:
 - Bicarb wands are to be disinfected weekly.



<https://www.ebay.com/itm/166604018613>



Surveyor Eyes

- What is the policy for frequency of disinfection of the dialysis machine?
- What do the IFUs for the dialysis machine require for disinfection?
- Is each disinfection cycle documented for each machine?
- Does the log align with the policy/IFU requirements?
- How often are the wands disinfected?

Patient





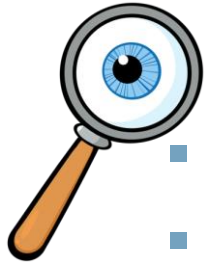
Surveyor Eyes: Consent

- Consent Policy for Dialysis
 - Not covered with the general consent to treatment
- How often is a consent needed?
- Dated/timed
- Who had informed consent discussion:
 - Risks/benefits/alternatives
- What if patient speaks another language?
- Contracted Staff: how do they know there is a consent: do they have EMR access if consent is scanned



Surveyor Eyes: HBV Status

- How often is the testing required?
- Can results come from outside facility or ESRD center?
- What happens if status is not known at the time of treatment?
- How does the machine log reflect this information?
- If results are from outside, can they be recorded by nurse or is a faxed copy of the results needed?
- How does staff know of Isolation precautions?
- Is there dedicated personnel with immune status?
- How is machine disinfected after care of patient with HBV+ or unknown status?



Surveyor Eyes: Assessment

- Hand off
- Pre-treatment assessment:
 - Policy?
 - What elements are included: vitals, pain, lung sounds, etc.?
- What does vascular site look like?
 - red, warm, tender? Is the port assessment completed?
- During treatment assessment:
 - Policy?
 - What elements are monitored and recorded? Does this follow the policy?
- Education
- Allergies

Orders

- Orders for Dialysis:
 - Are all the components included in the order?
- Is there an order to notify provider: volume ordered cannot be removed, blood pressure actionable parameters
- Protocol for K+ bath?
- Does contracted staff have access to EHR?
- Texting?
- Verbal /Telephone orders?
- Documented VO prior to treatment?
- Hypotension protocol?
- Does the treatment follow the orders?

Treatment Date: <input type="checkbox"/> Today <input type="checkbox"/> Monday <input type="checkbox"/> Tuesday <input type="checkbox"/> Wednesday <input type="checkbox"/> Thursday <input type="checkbox"/> Friday <input type="checkbox"/> Saturday <input type="checkbox"/> Sunday
Treatment Shift: <input type="checkbox"/> First Shift <input type="checkbox"/> Second Shift
Frequency: once
Length of Treatment: <input type="checkbox"/> 2.5hr <input type="checkbox"/> 3hr, <input type="checkbox"/> 3.25hr, <input type="checkbox"/> 3.5hr <input type="checkbox"/> 3.75hr <input type="checkbox"/> 4hr Other <input type="checkbox"/> hr.
Blood Flow Rate (mL/min): <input type="checkbox"/> 250 <input type="checkbox"/> 300 <input type="checkbox"/> 350 <input type="checkbox"/> 400 <input type="checkbox"/> 450 <input type="checkbox"/> 500, Other: _____
Dialysate Flow Rate (mL/min): <input type="checkbox"/> 500 <input type="checkbox"/> 800 <input type="checkbox"/> 1.5x Blood Flow Rate Other: _____
Dialyzer: <input type="checkbox"/> Optiflux 180, Other _____
Dialysate Bath: <input type="checkbox"/> 2K 2.5CA <input type="checkbox"/> 3K 2.5CA <input type="checkbox"/> 4K 2.25Ca <input type="checkbox"/> 1K 2.5CA <input type="checkbox"/> 3K 3CA <input type="checkbox"/> 2K 2CA <input type="checkbox"/> Citrate 1K 2.5CA <input type="checkbox"/> Citrate 2K 2.5CA <input type="checkbox"/> Citrate 3K 3CA Other: _____
Ultra Filtration: <input type="checkbox"/> 1 L/tx, <input type="checkbox"/> 1.5 L/tx, <input type="checkbox"/> 2 L/tx, <input type="checkbox"/> 2.5 L/tx, <input type="checkbox"/> 3 L/tx, <input type="checkbox"/> 3.5 L/tx <input type="checkbox"/> 4.5 L/tx other: _____
Use Heparin: Yes or No
Access Type/Location: (check appropriate blank)
AV Fistula: <input type="checkbox"/> Brachial R <input type="checkbox"/> Brachial L <input type="checkbox"/> Forearm R <input type="checkbox"/> Forearm L
AV Graft: <input type="checkbox"/> Brachial R <input type="checkbox"/> Brachial L <input type="checkbox"/> Forearm R <input type="checkbox"/> Forearm L <input type="checkbox"/> Chest Left <input type="checkbox"/> Chest Right
Femoral Graft: <input type="checkbox"/> Right <input type="checkbox"/> Left
Tunneled Cath: <input type="checkbox"/> IJ Right <input type="checkbox"/> IJ Left <input type="checkbox"/> Femoral R <input type="checkbox"/> Femoral L
Temporary Catheter: <input type="checkbox"/> Femoral R <input type="checkbox"/> Femoral L
Other Dialysis Access:
Patient has new Access site: <input type="checkbox"/> No <input type="checkbox"/> Yes
Access Needle Size: <input type="checkbox"/> 15g <input type="checkbox"/> 16g <input type="checkbox"/> 17g, Other: _____
Isolation Status: <input type="checkbox"/> Droplet Precautions <input type="checkbox"/> Contact Precautions <input type="checkbox"/> Airborne Precautions <input type="checkbox"/> Special Organisms, Other _____
Order Comment: Hold ultrafiltration if SBP less than _____.

<https://www.methodistmd.org>

Checklist for Dialysis Start

- Start of treatment:
 - Two patient identifiers
 - Patient consent
 - Correct equipment
 - Provider orders
 - Hep B status
 - Vascular access verified and secured
 - Time of treatment
 - Any questions or concerns



Surveyor Eyes: Policies

- Do the contracted staff follow hospital policies or dialysis company policies?
- Have the policies been adopted/approved by hospital?
- Are policies available to the dialysis nursing staff?



Surveyor Eyes: Documentation

- Is the treatment documented?
- Does it follow the order?
- Are all the assessment elements documented?
- How is the patient assessed for pain?
 - What if they are non-communicative:
 - What scale is used
- Care plan updated?
- Is the contracted dialysis documentation available in the record? All information about the patient's care must be accessible to all care givers.

Treatment Plan		Ultrafiltration
Dialyzer: <i>Rivachon 300</i>		Today's Weight:
Duration: <i>3 hr</i>		Ordered EDW:
BFR: <i>350</i>	DFR: <i>2X</i>	Weight Δ From
<i>-4W as follows</i>		Weight Δ From
Anticoagulation Type		Prime and Rinse:
Load = units	Infuse = units/hr	Other Fluids:
Dialysate:		Fluid Removal Goal
K: <i>2K</i>	Ca: <i>2.5</i>	TOTAL UF: <i>1</i>
Na: _____	HCO ₃ : _____	Staff: <i>2</i>
Mach Temp: <i>27</i>		



Surveyor Eyes: Code Cart

- Is there a Code Cart?
- How and when is it checked?
- How are contracted staff oriented to the cart and equipment?
- Do Staff know how to :
 - Call Rapid Response?
 - Call Code?

	lock & transit	Section Machine >500mmHg	Amber bags Adult & Paeds	CPA Back Board	O2 Tank Level >500psi	Lifesak 20s User Test Performed	Lifesak 20s Plugged into back of machine and led outlet (green light on)	Action Taken
1	9229640	✓	✓	✓	✓	✓	✓	NA
2								
3								
4								
5	9229640	✓	✓	✓	✓	✓	✓	N/A
6								
7								
8								
9	9229640	✓	✓	✓	✓	✓	✓	N/A
10								
11								
12	9229640	✓	✓	✓	✓	✓	✓	N/A
13								
14	9229640	✓	✓	✓	✓	✓	✓	N/A
15								
16	9229640	✓	✓	✓	✓	✓	✓	N/A
17								
18								
19	9229640	✓	✓	✓	✓	✓	✓	N/A
20								
21								
22								
23								
24								
25								
26								

CDC Tools

Hemodialysis Central Venous Catheter Scrub-the-Hub Protocol

This protocol outlines a suggested approach to preparing catheter hubs prior to accessing the catheter for hemodialysis. It is based on evidence where available and incorporates theoretical rationale when published evidence is unavailable.

Definitions:

Catheter refers to a central venous catheter (CVC) or a central line

Hub refers to the end of the CVC that connects to the blood lines or cap

Cap refers to a device that screws on to and occludes the hub

Limb refers to the catheter portion that extends from the patient's body to the hub

Blood lines refer to the arterial and venous ends of the extracorporeal circuit that connect the patient's catheter to the dialyzer

Catheter Connection and Disconnection

4. Always handle the catheter hubs aseptically. Once disinfected, do not allow the catheter hubs to touch nonsterile surfaces.
5. Attach sterile syringe, unclamp the catheter, withdraw blood, and flush per facility protocol.
6. Repeat for other limb (this might occur in parallel).
7. Connect the ends of the blood lines to the catheter aseptically.
8. Remove gloves and perform hand hygiene.

Disconnection Steps:

1. Perform hand hygiene and don new clean gloves.
2. Clamp the catheter (*Note: **Always** clamp the catheter before disconnecting. Never leave an uncapped catheter unattended.*)
3. Disinfect the catheter hub before applying the new cap using an appropriate antiseptic (*see notes*).
 - a. (*Optional*) Disinfect the connection prior to disconnection. If this is done, use a separate antiseptic pad for the subsequent disinfection of the hub.

<https://www.cdc.gov/dialysis/PDFs/collaborative/Hemodialysis-Central-Venous-Catheter-STH-Protocol.pdf>

CDC Tools

CDC Dialysis Collaborative Facility Name: _____ Date: _____ Start time: _____ AM / PM
 Day: M W F Tu Th Sa Shift: 1st 2nd 3rd 4th Observer: _____ Location within unit: _____

Audit Tool: Arteriovenous fistula/graft cannulation observations

(Use a "√" if action performed correctly, a "Φ" if not performed. If not observed, leave blank)

Discipline	Site cleaned with soap and water	Hand hygiene performed (staff)	New, clean gloves worn	Skin antiseptic applied appropriately	Skin antiseptic allowed to dry	No contact with fistula/graft site (after antiseptis)	Cannulation performed aseptically	Connect to blood lines aseptically	Gloves removed	Hand hygiene performed	Comments

Discipline: **P**=physician, **N**=nurse, **T**=technician, **S**=student, **O**=other

Duration of observation period = _____ minutes Number of procedures performed correctly = _____

<https://www.cdc.gov/dialysis/patient/index.html>

CDC Tools

Checklist: Arteriovenous fistula/ graft cannulation

- Clean site with soap and water
- Perform hand hygiene (staff)
- Put on new, clean gloves
- Apply skin antiseptic and allow it to dry
- Do not contact site (after antiseptis)
- Insert needles aseptically
- Connect to blood lines aseptically
- Remove gloves
- Perform hand hygiene



Checklist: Arteriovenous fistula/ graft decannulation

- Perform hand hygiene (staff)
- Put on new, clean gloves
- Disconnect from blood lines aseptically
- Remove needles aseptically and activate needle retraction device
- Clean gloves worn (patient and/or staff) to compress site
- Apply clean gauze/bandage to site
- Remove gloves (staff and/or patient)
- Perform hand hygiene (staff and/or patient)



<https://www.cdc.gov/dialysis/patient/index.html>

Medications



Medication Orders

- Does contracted staff have EMR access: Who pulls medications from Auto-dispenser?
 - How do they verify the medications
 - How do they verify the dialysis orders
 - How are additional orders placed
 - How do they document medication administration in MAR?
- Is bolus or flush ordered?
- Are other medications ordered
- Are there orders to hold medications until after dialysis?
- Are medications ordered prn? is there a clear indication for administration
 - If given hourly, can't be ordered as prn

Heparin Orders

- Is heparin a high alert medications: does it require double check per hospital policy?
- Anticoagulant dose administered must match the order

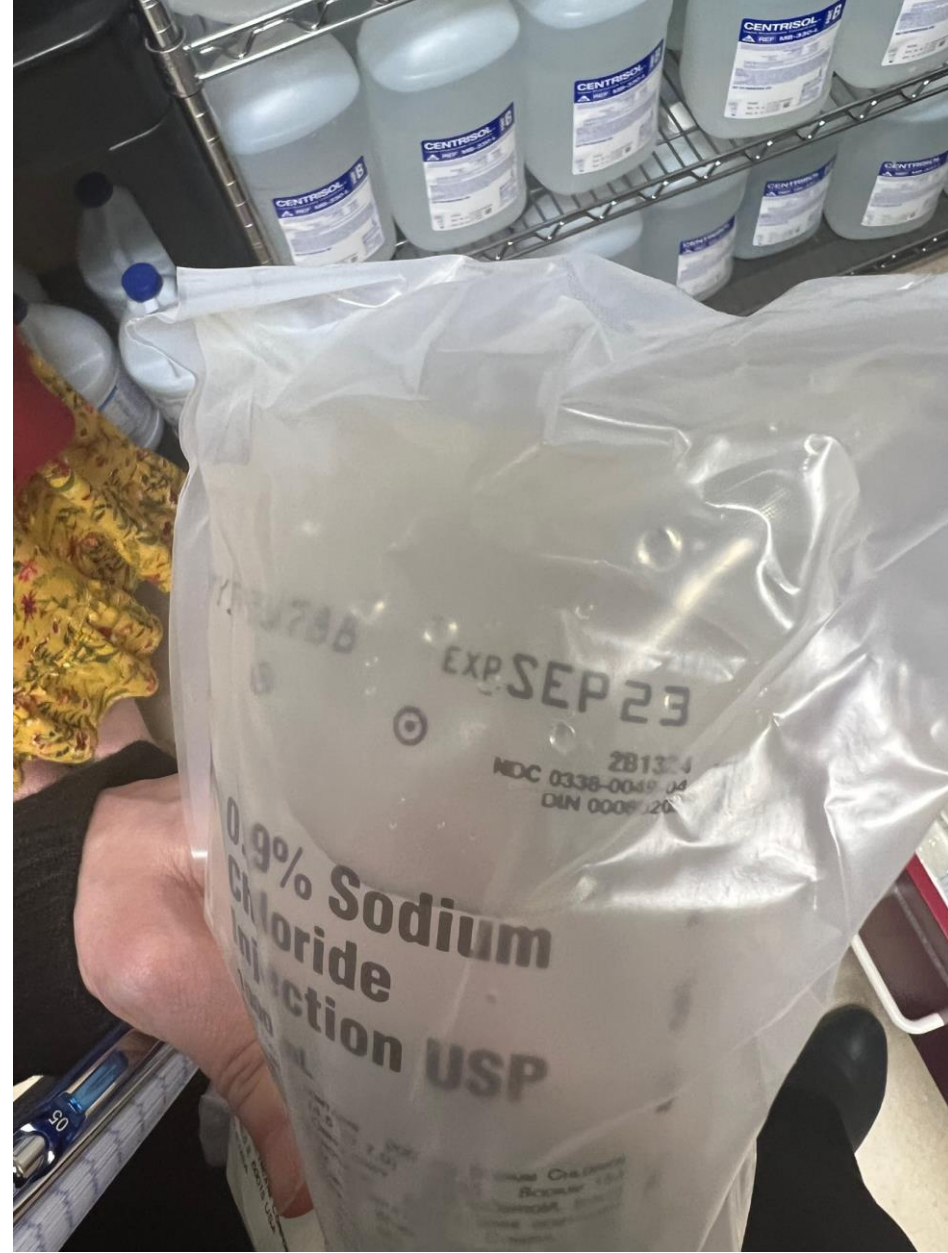
Medications		
<input type="checkbox"/>	Saline Flush	10 mL, Injection, IV Push, PRN, Other, specify in comment, Routine, T;N, Comment: GIVE IN DIALYSIS Flush dialysis line with TEGO connector
NOTE: If ordering citrasate dialysis bath DO NOT order heparin.		
NOTE: if heparin desired, please order below		
<input type="checkbox"/>	heparin	2,000 units, injection, Device, Routine, T;N, N/A, Comment: GIVE IN DIALYSIS to prime extracorporeal circuit and discard.
<input type="checkbox"/>	heparin	2,000 units, Injection, Device, Routine, T;N, once, Comment: GIVE IN DIALYSIS at
<input type="checkbox"/>	heparin	1,000 units, Injection, Device, Routine, T;N, q1hr, PRN: GIVE IN DIALYSIS, discontinue order at last hour of dialysis

<https://www.methodistmd.org>



Surveyor Eyes

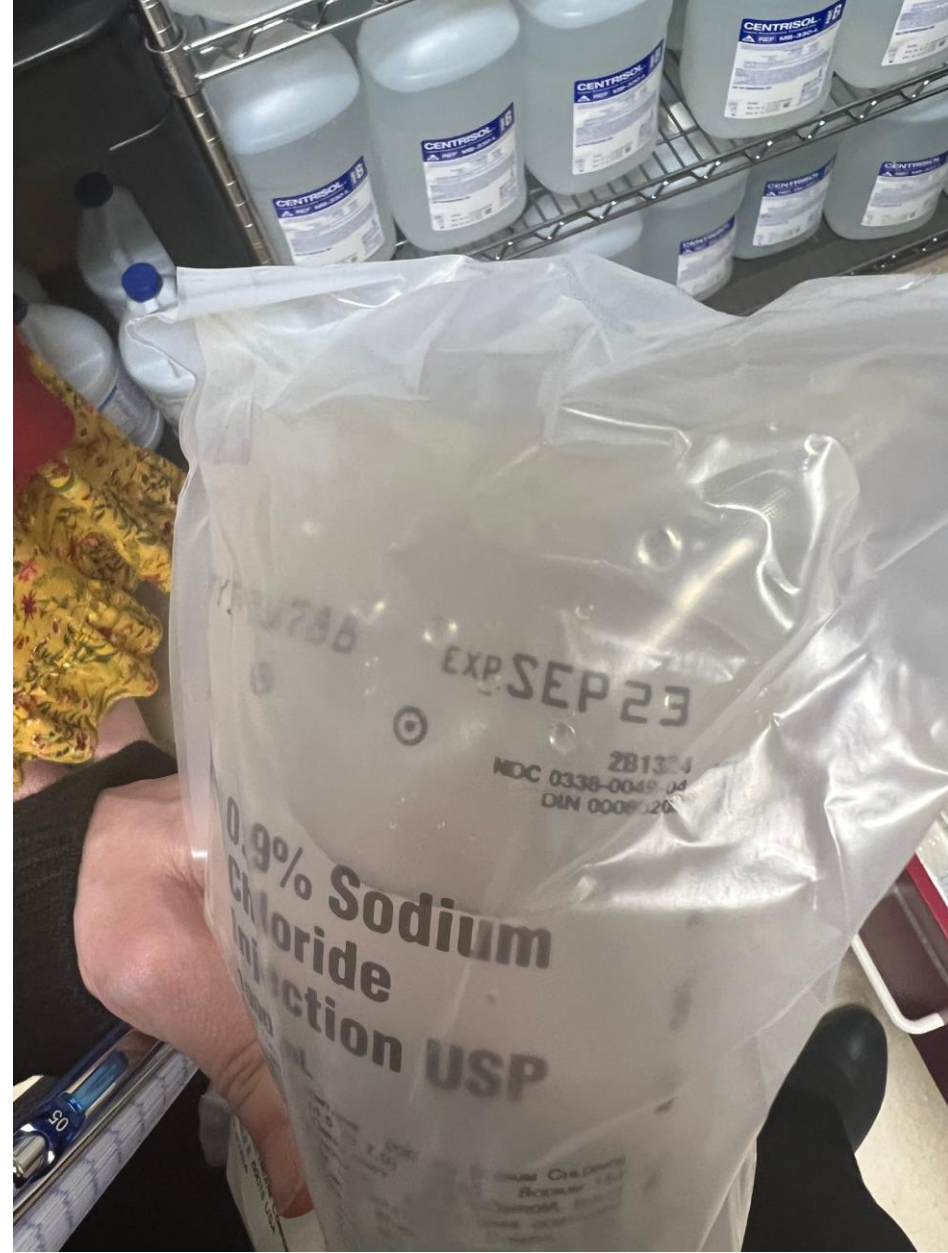
What do you see?





Surveyor Eyes

Expired Medications





Surveyor Eyes

Can this vial be used for multiple patients?





Surveyor Eyes

Vials:

- Single dose vial: Single patient use
- Multi-dose vial; if entering the patient area, must be used as single-dose vial





Surveyor Eyes

- Does contracted staff follow the hospital policy for blood administration or do they follow the contracted dialysis company policy?
- Are vitals recorded per the policy of the hospital?
- Consent for blood obtained?
- How does the two-person verification occur? What is the hospital policy?





Surveyor Eyes

What do you see?





Surveyor Eyes

- Secure Medication Room door code is written on the door frame



Infection Prevention

■ Hand Hygiene:

- Anytime equipment, patient or machine in the treatment area are touched: appropriate hand hygiene is needed

■ PPE:

- Accessing and discontinuation of access.
- When are gown and gloves required? What is the policy?



Staff





Surveyor Eyes: Dialysis Staff

- Sufficient number
- Competency: Qualified to perform duties/responsibilities assigned
 - Own staff vs Contracted staff?
 - Who is assessing?
- Techs:
 - Job description
- Waived testing competency
- BLS/ACLS
- Primary Source Verification of License



Surveyor Eyes: Dialysis Contracts

- Quality performance indicators
- Annual review
- Hospital nursing oversight
- Staff Orientation to hospital
- Staff Orientation to unit:
 - Code carts
 - How to call a code or call rapid response or fire
 - Verbal/telephone process: VORB
 - Do they have access to EMR: Who pulls the meds, who documents administration
 - Reporting adverse events

Questions?



Additional Sources

- Acute Dialysis: Survey Readiness Handbook 2nd Edition, AAMI
- Free CDC webinars for Dialysis Best Practice:
<https://www.cdc.gov/infectioncontrol/training/safe-healthcare-webinars.html>



EDUCATIONAL RESOURCES

Thank you

For questions contact:

ExpertAdvice@PattonHC.com

 RENAL DIALYSIS



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