N8 — Catheter Care and Infection Bundle **FRONT**

Every connection and disconnection is an infection-control procedure. Do the whole bundle, every time.

When: every catheter connection, disconnection, and dressing change.

Do this

1. **Check first:** exit site, tunnel, dressing, and the patient (fever, chills) at every session [6].
2. **Masks** for patient and staff; the patient turns the head away and limits talking.
3. **Hand hygiene, gloves,** and a clean field under the catheter limbs.
4. **Clamp before opening.** Confirm both limbs are clamped before any cap comes off.
5. **Scrub the hub** with chlorhexidine (povidone-iodine if intolerant) every time the catheter is accessed or disconnected [6].
6. **Aspirate 2–5 mL** of blood and lock from each lumen before connecting, one lumen at a time [6]. A taurolidine/heparin lock must always be aspirated and discarded [7].
7. **Dressing change:** alcohol-based chlorhexidine (more than 0.5%) on the skin; exit-site ointment per your unit protocol after checking catheter compatibility; change at least weekly and whenever wet or soiled [6].
8. **Lock:** saline flush, the prescribed lock at your protocol's volume, clamp, and a new sterile cap every time.
9. **Can't reach the prescribed blood flow?** That is catheter dysfunction: check position, clamps, and flush, then follow the thrombolytic protocol.

Call the nephrologist when

- **Immediately:** fever, rigors, hypotension, or confusion during or after dialysis. **Draw two blood cultures (catheter hub and dialysis circuit) before the first antibiotic dose** [6].
- **Same day:** pus or spreading redness at the exit site; tenderness or redness along the tunnel; the cuff is visible or the catheter looks longer.
- **Before the next session:** dysfunction not fixed by bedside maneuvers or one alteplase dwell.
- **Monthly at rounds:** the patient still has a catheter — ask what the permanent-access plan is.

Don't

- Don't leave a lumen open to air — clamp first, cap every time.
- Don't infuse or flush the lock into the patient; aspirate it.
- Don't use the catheter for blood draws or medications outside dialysis unless ordered.
- Don't start antibiotics before cultures [6].
- Don't use taurolidine/heparin in a patient with heparin-induced thrombocytopenia or pork allergy [7].

N8 — Catheter Care and Infection Bundle

BACK

Why

1. Catheter patients have about 8 times the bloodstream infection rate of fistula patients (2.16 vs 0.26 per 100 patient-months) [1].
2. Units that implemented the CDC bundle (chlorhexidine, audits, competency, feedback) cut access-related bloodstream infections by 54% [2].
3. Chlorhexidine skin antisepsis roughly halved catheter-related bloodstream infection compared with povidone-iodine (RR 0.49) [3].
4. A once-weekly alteplase lock cut catheter malfunction from 34.8% to 20.0% and bacteremia from 13.0% to 4.5% over 6 months [4].
5. A taurolidine/heparin lock cut catheter-related bloodstream infection from 8.0% to 2.3% (NNT 18) in LOCK IT-100 [5,7].

Go deeper

- Mastery page: Catheter Care, Lock Solutions, and Bloodstream Infection
- All dialysis nursing reference cards

References

1. Nguyen DB, et al. National Healthcare Safety Network (NHSN) Dialysis Event Surveillance Report for 2014. *Clin J Am Soc Nephrol.* 2017;12:1139-1146. https://pubmed.ncbi.nlm.nih.gov/28663227/
2. Patel PR, et al. Bloodstream infection rates in outpatient hemodialysis facilities participating in a collaborative prevention effort. *Am J Kidney Dis.* 2013;62:322-330. https://pubmed.ncbi.nlm.nih.gov/23676763/
3. Chaiyakunapruk N, et al. Chlorhexidine compared with povidone-iodine solution for vascular catheter-site care: a meta-analysis. *Ann Intern Med.* 2002;136:792-801. https://pubmed.ncbi.nlm.nih.gov/12044127/
4. Hemmelgarn BR, et al. Prevention of dialysis catheter malfunction with recombinant tissue plasminogen activator. *N Engl J Med.* 2011;364:303-312. https://pubmed.ncbi.nlm.nih.gov/21268722/
5. Agarwal AK, et al. Taurolidine/heparin lock solution and catheter-related bloodstream infection in hemodialysis (LOCK IT-100). *Clin J Am Soc Nephrol.* 2023;18:1446-1455. https://pubmed.ncbi.nlm.nih.gov/37678222/
6. Lok CE, et al. KDOQI clinical practice guideline for vascular access: 2019 update. *Am J Kidney Dis.* 2020;75(4 Suppl 2):S1-S164. https://pubmed.ncbi.nlm.nih.gov/32778223/
7. DEFENCATH (taurolidine and heparin) catheter lock solution, prescribing information. CorMedix Inc.; DailyMed. https://dailymed.nlm.nih.gov/dailymed/fda/fdaDrugXsl.cfm?setid=13b3a61e-5a4b-4afb-8fa1-d76ebdb344d6&type=display

Reviewed by Andrew Bland, MD, FACP, FAAP · v1.0 draft 2026-09-26 · Medical Associates Dept of Nephrology.