Vein Preservation and Hemodialysis Fistula Protection

People with chronic kidney disease[1] (CKD) or a disease like diabetes, hypertension, lupus, or polycystic kidney disease that can damage the kidneys could develop **kidney failure** requiring dialysis. Hemodialysis is done with a *vascular access*—an arteriovenous fistula (usually in an arm), an arteriovenous graft (in an arm or leg), or a central venous catheter. Patients have only a few sites where an access can be created. *The dialysis access is a patient's lifeline and must be protected*.

Patients with CKD may be taught to protect their forearm veins. A patient who comes for blood draws or tests may ask you to **avoid using the forearm veins** (unless emergency IV access is needed). **Please respect this request** and look for another site, because in people with CKD:

- Veins in *both* arms that could be used for hemodialysis vascular access MUST be preserved.
- Venipuncture or IV placement could damage these veins so they can't be used for hemodialysis access.
- Subclavian vein catheterization can cause central venous stenosis, which can make it impossible to use that side of the body for hemodialysis access—cutting the patient's access choices in half

If a CKD patient has a working hemodialysis access:

- **DO** rotate venipuncture sites
- **DO** use the dorsum of the hand of the non-access arm for venipuncture and IV infusions
- **DO** draw labs at the time of hemodialysis when possible
- **DO** coordinate with the surgeon and anesthesiologist when the non-access arm is the primary surgical site, to avoid using the patient's hemodialysis vascular access
- **DO NOT** use the hemodialysis access limb for blood pressure readings (use the other arm or a thigh or ankle cuff for blood pressure readings)
- **DO NOT** use the hemodialysis access limb for blood draws, IV therapy, or an arterial line
- **DO NOT** use the hemodialysis access for diagnostic studies or treatments
- **DO NOT** use the cephalic veins of either arm for blood draws, IV fluids, or IV drug infusions
- **DO NOT** place a subclavian catheter or a PICC line (place an internal jugular line, instead)

If the patient has CKD or is at risk for CKD, whether or not he/she is on dialysis:

- **DO** use the dorsum of the hand for venipuncture and IV infusions
- **DO** rotate venipuncture sites
- **DO** use a manual blood pressure device
- **DO NOT** use the cephalic veins of either arm for blood draws, IV fluid therapy, or drug infusions
- **DO NOT** place a subclavian catheter or a **PICC line** (place an internal jugular line, instead)

If you are unsure whether a patient with CKD has a hemodialysis access:

- Ask the patient or family member who is with them
- Call their referring nephrologist or primary care physician
- **Perform a nursing assessment including both upper extremities to see if the patient has a hemodialysis access. Look for the access (surgical anastomosis site), feel for a thrill and listen for a bruit.**

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1 If you do not know whether a patient has CKD, check with the patient or a family member, ask the referring physician, or determine an estimated glomerular filtration rate (GFR), which is a measure of kidney function. You can find a GFR calculator online on the website of the National Kidney Disease Education Program: www.nkdep.nih.gov. A GFR <60 suggests CKD. *Serum creatinine alone should not be used to determine kidney function*.

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