

- Forearm loop AVG or proximal forearm AVF (eg, proximal radiocephalic, proximal vessel, and perforator combinations) or brachiocephalic, per operator discretion
- Brachiocephalic AVF or upper arm AVG, per operator discretion

B) A patient's ESKD Life-Plan includes an anticipated *limited duration* (eg, <1 year) on HD:

- Forearm loop AVG or brachiocephalic AVF (with high likelihood of unassisted maturation)
- Upper arm AVG

C) A patient urgently starts HD without prior sufficient time to plan for and/or create an AV access and has an anticipated *limited duration* (eg, <1 year) on HD:

- Early or standard cannulation loop AVG (forearm or upper arm location), or CVC, *per operator discretion and patient's clinical needs*

Note: The choice of upper extremity location of an AVG should be based on the operator's discretion and best clinical judgment considering the patient's ESKD Life-Plan, due to inadequate evidence to demonstrate a difference between forearm versus upper arm AVG patency or complication outcomes (including infections, hospitalizations, and mortality).

D) A patient urgently starts HD without prior sufficient time to plan for and/or create an AV access and has an anticipated *long duration* (eg, >1 year) on HD:

- PD catheter, and follow above algorithm (A) if PD not a long-term option *or*
- Forearm early cannulation loop graft; when AVG fails, follow above algorithm (A) *or*
- CVC if high likelihood of rapid AVF maturation and usability success, then follow above algorithm (A)

E) All AV access options in the upper extremity have been exhausted and patient's ESKD Life-Plan includes a *long duration* (eg, >1 year) on HD, the following may be considered based on individual patient circumstances and operator's best clinical judgment and expertise:

- Lower extremity AVF or AVG or HeRO Graft (Merit Medical)

While a suggested stepwise approach to AV access site selection is provided (Figs 1.1-1.6), *modification of the approach is encouraged as necessary to consider the individual's ESKD Life-Plan and circumstances, and follow the below key principles, given available suitable vessels:*

- Distal first to proximal next approach
- Always preserve the integrity of vessels for future vascular access options
- Nondominant extremity in preference to dominant, *only if choices are equivalent*

Statements: CVC Locations

3.2 KDOQI considers it reasonable to choose the site (location) of the CVC after careful consideration of the patient's ESKD Life-Plan as follows (*Expert Opinion*):

- Upper extremity before lower extremity, *only if choices are equivalent*
- There are valid reasons for CVC use (Guideline Statement 2.2) and its duration of use is expected to be limited (eg, <3 months):
 - AV access is likely to be ready for use in near future—consider preferential use of tunneled cuffed CVC in opposite extremity to anticipated AV access
 - Transplant is anticipated in near future (ie, preserve iliac vessels)—consider preferential use of tunneled cuffed right IJ catheter

Note: See below guidance for more details on CVC location.

- Some experts support that in urgent dialysis start situations, under limited use circumstances (eg, <1 month) and transplant is *not* an option, use of a tunneled, cuffed femoral CVC is acceptable (unless contraindicated) until the AV access or PD catheter can be quickly created and used. Use of the femoral vein preserves the upper extremity vessels for future AV access creation.

Note: Contraindications to femoral vein CVC include femoral or iliac vessel pathology or prior surgery/reconstruction; hygienic reasons (eg, chronic unresolved diarrhea), morbid obesity (BMI > 35 kg/m²), or other difficult vein access.

- When there are valid reasons for CVC use (Guideline Statement 2.2) and duration of use is expected to be prolonged (eg, >3 months) *without* anticipated use of AV access, CVC may be placed in the following locations in order of preference:
 - Internal jugular
 - External jugular
 - Femoral
 - Subclavian
 - Lumbar

Note: In the absence of contraindications, prior pathology (eg, central stenosis) or intervention (eg, pacemaker) CVC insertion on the right side is preferable to the left side due to more direct anatomy. If one side has pathology that limits AV access creation but allows for CVC insertion, this side should be used for the CVC to preserve the other side for AV access creation.

Guideline 4. AV Access Types and Materials

Statements: Novel AV Access Types and Materials

- 4.1 KDOQI suggests that the choice of material for an AVG should be based on the nephrologist's or operator's discretion and best clinical judgment since the current evidence does not demonstrate that one graft material or modification thereof is**