MPHS VASCULAR ACCESS DEVICE SELECTION ALGORITHM

Considerations when assessing for the appropriate vascular access device:

Infusate characteristics
- Central Access Not Required
  - Less than 10% Dextrose
  - Isotonic Solutions
  - Osmolarity less than 600 mOsm/L
  - Meds pH between 5-9

- Central Access Required
  - More than 10% Dextrose
  - Hypo and Hypertonic Solutions
  - Osmolarity more than 600 mOsm/L
  - Meds pH below 5 & over 9
  - Inherently irritating meds (see list)
  - Early goal directed resuscitation for sepsis (ScvO2 monitoring)

Duration of therapy
- Less than 14 days
  - PIV, CVC, PICC
- 15 to 30 days
  - PICC, CVC
- 30 to 90 days
  - PICC to TUNN, CVC to TUNN
- More than 90 days
  - PICC to PORT, TUNN to PORT

Peripheral vein availability
- Poor (unsuccessful after 4 PIV attempts)
  - PICC, CVC, PICC
- Good (visible peripheral veins)
  - PICC, CVC

Diagnostics/Procedures
- CT with Contrast
- Power injectable PICC, TUNN, PORT, CVC

CKD, Dialysis, ESRD
- Prefer dorsum of hand for PIVs
- Avoid routine PICC placements for patients with serum creatinine of 2 and over (eGFR less than 30 mL/min) and must obtain clearance from vascular surgeon or nephrologist

Notes:
Sound clinical judgment should be exercised in each clinical situation. The following is assessed on a case by case basis: mastectomies with lymph node dissections, presence of AICD, pacemakers and patient’s vascular access history.

This document has been approved by the following: Vascular Access Committee, Infection Control Committee, PICC Program, Nursing PI Committee, Clinical Transformation and Nursing Management Council

Legend:
- PIV - Peripheral IV
- PICC - Peripherally Inserted Central Catheters
- CVC - Non-tunneled Central Venous Catheters
- TUNN - Tunneled Central Venous Catheters
- PORT - Totally Implantable Central Venous Catheters
- ESRD - End-Stage Renal Disease
- CKD - Chronic Kidney Disease
- ScvO2 Catheter - Central Venous Oxygen Saturation Catheter

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