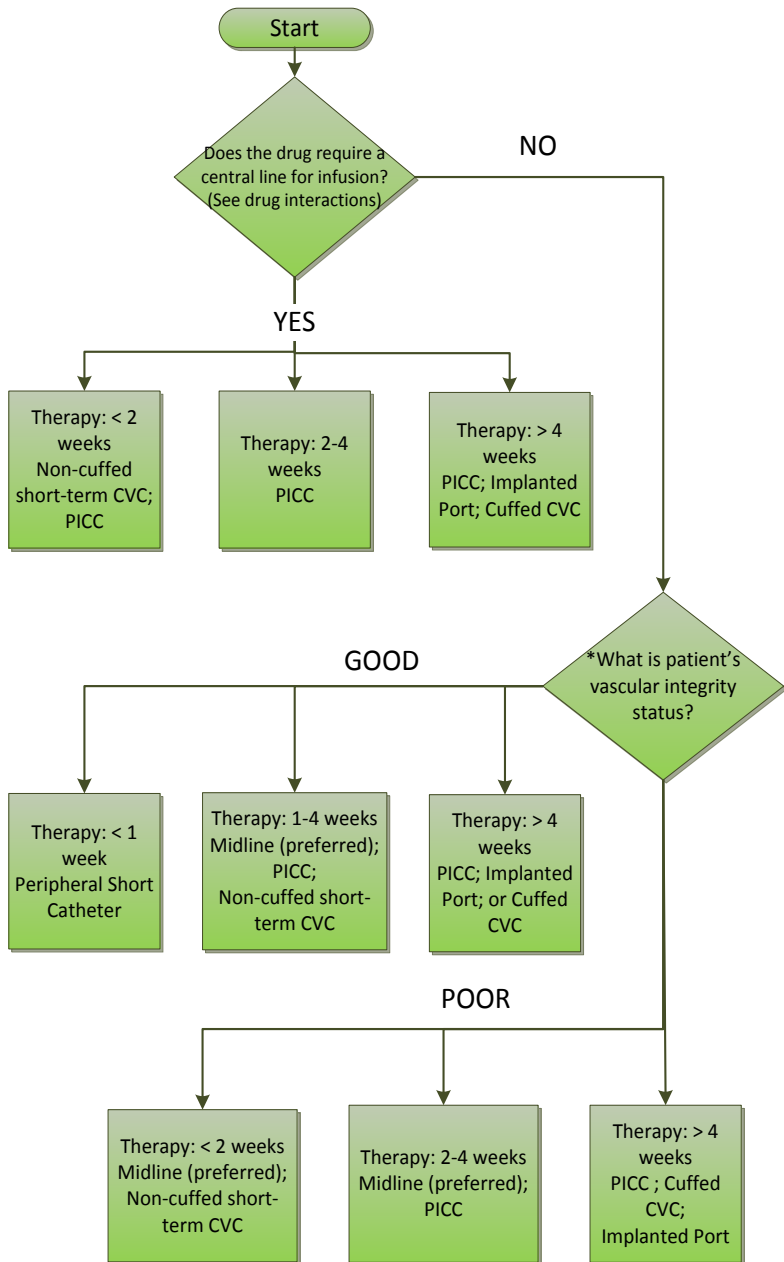


# Adult Elective IV Catheter Selection Algorithm



**Peripheral Short Catheter Insertion Plan:**  
The following steps should be followed prior to ordering an alternative if a peripheral short catheter is appropriate:

- RN attempts twice to start PIV (use vein viewing technology as available/appropriate).
- RN has unit/facility expert attempt twice.
- If unsuccessful, RN will contact Physician or LIP for alternative.

**Note:** No more than 4 total attempts to be made by RN and unit/facility experts.

**Best Practice: Evidence, Guidance & References:**

**Lumens: Infection rates increase w/each added lumen.**

- Use the fewest # lumens possible to lessen risk of infection.

**Location: Studies suggest higher infection rates with femoral and internal jugular (IJ) lines.**

**Best suited to Power-PICCs**

- Patients who are likely to need CT scans or MRI.
- ICU patients.

**Suitable for Non-Power Injectible PICCs**

- Patients whose primary line need is prolonged IV medication or TPN (PICC only).
- Patients with readily available peripheral venous access or for whom contrast studies are unlikely or contraindicated.
- Selected patients whose therapy is initiated in outpatient setting.

**Advisories for Midline Catheters:**

- Refer to Irritant & Vesicant drug list for possible drug restrictions, especially in the case of patients admitted with an existing midline that may be pH restricted. Hyperosmolarity is a consideration. Refer to the link below: <http://media.sentara.com/MediaManager/sentaradotcom/VesicantsIrritants9-14.pdf>

**Contraindications for Patients with Renal Dysfunction (GFR < 45):**

- Nephrology consultation is recommended unless patient is not a dialysis candidate. PICCs are relatively contraindicated in patients with anticipated future need for hemodialysis. A PICC may be placed if clearance is obtained from a nephrologist, vascular surgeon, or interventionalist. The clearing physician must document appropriately in the EMR.
- When central line is required, avoid subclavian site access to minimize risk of subsequent subclavian stenosis.

**Relative Contraindications for Patients with Thrombocytopenia and Coagulopathy:**

- Subclavian access will be considered a last resort for central line access for patients with thrombocytopenia or other coagulopathies. In this group of patients, only physicians should place subclavian lines.
- If platelet count < 20K or if INR ≥ 2, then, if clinically feasible, defer central or midline venous access until platelet count and coagulation abnormality are corrected.
- If platelet count is between 20K and 50K, documentation indicating that benefit exceeds risk of line placement is recommended before line placement.

**Considerations for Intubated Patients Regarding IJ or Subclavian Central Lines:**

- PICCs are preferred to minimize risk of line infection.

**Considerations for PICC and Midline Candidates:**

- Assess for history of axillary lymph node dissection with or without mastectomy (sentinel node biopsy alone is not a contraindication for PICC).
- Assess for history of pacemaker/defibrillator/port.
- Assess for history of upper extremity DVT and/or vascular surgical procedures on the prospective PICC or midline insertion site. If history is positive, avoid the affected site.
- Assess coagulation status if indicated.
- Avoid with contracted upper extremities.

**Considerations for Cardiac Patients:**

- For total artificial heart patients, venous access procedures should be discussed in advance with transplant cardiologist or surgeon (757-388-2831).
- Patients with pacemakers or ICDs should have PICCs placed on contralateral side. Midlines may be placed on either side; the side contralateral to pacemakers or ICDs is preferred.

**Considerations for Oncology Patients: (Please see separate Oncology Algorithms)**

Clinical Process Improvement  
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Vic Wilson, Developer