

**Key:**  
PIV—Peripheral Line  
CVAD—Central Venous Access Device

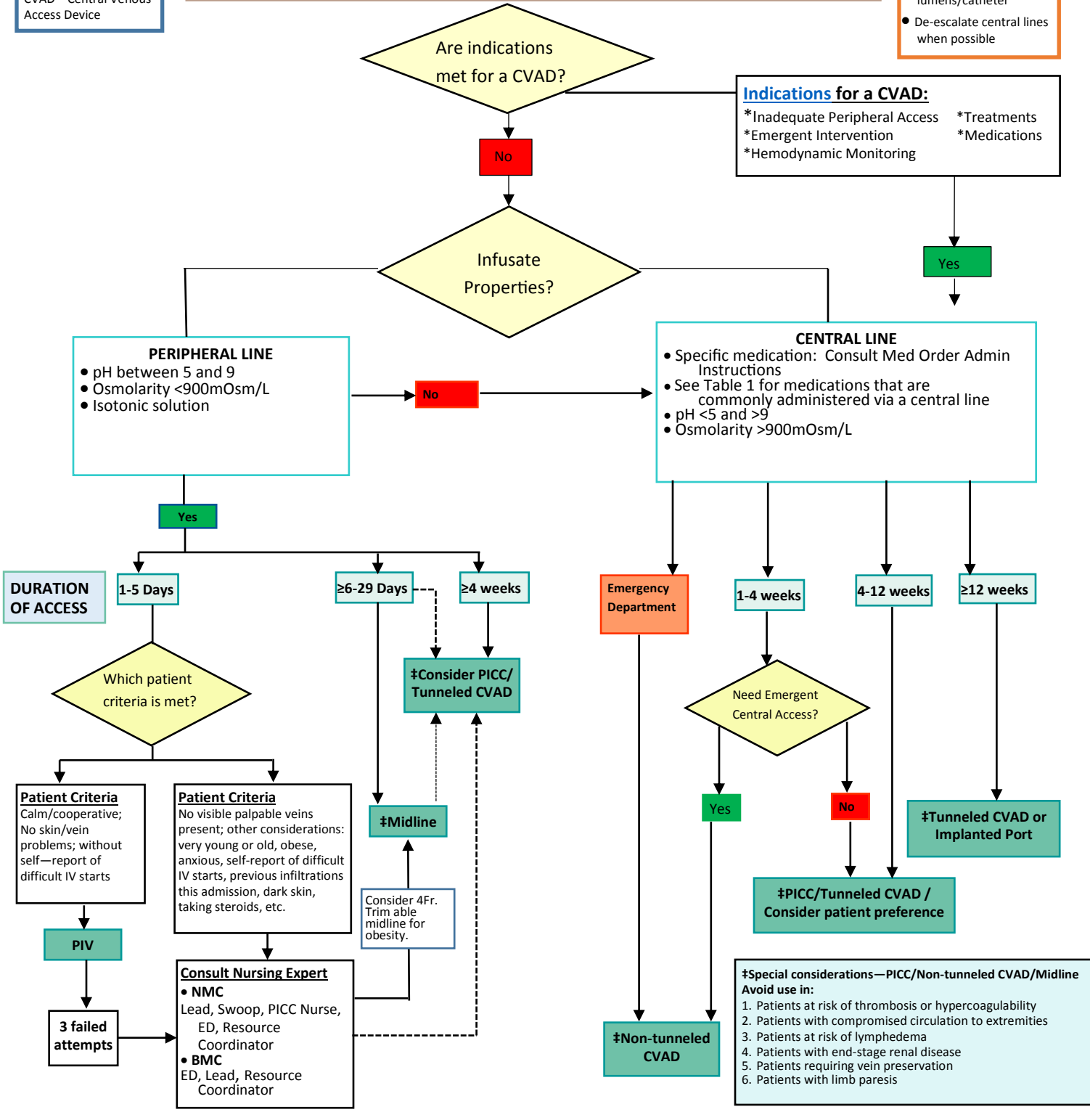
**Vascular Access Device (VAD) Algorithm Guideline** (excludes Pediatrics and NICU)

**Considerations:**

- Minimize the number of lumens/catheter
- De-escalate central lines when possible

**Indications for a CVAD:**

- \*Inadequate Peripheral Access
- \*Emergent Intervention
- \*Hemodynamic Monitoring
- \*Treatments
- \*Medications



**Citations:**

1. Chopra, V. et al. "Michigan Appropriateness Guide for Intravenous Catheters (Michigan Appropriateness Guide for Intravenous Catheters (MAGIC): Results from a Multispecialty Panel Using the RAND/UCLA Appropriateness Method." *Ann Intern Med* 163.6 (2015): S1-40
2. O'grady, Naomi P. et al. "Guidelines for the prevention of intravascular catheter-related infections." *Clinical Infectious Diseases* 52.9 (2011): e162-e193
3. Ryder, M. "Device selection: A critical strategy in the reduction of catheter-related complications." *Nutrition* 12.2 (1996): 143-145.
4. Santolim, T.Q. et al. "The strategic role of the nurse in the selection of IV devices." *British Journal of Nursing* 21.21 (2012): S28-S32
5. Horattas, M. C., et al. "Changing concepts in long-term central venous access: Catheter selection and cost savings." *American Journal of Infection Control* 29.1(2001): 32-40.

# Indications for CVAD Placement

## Inadequate Peripheral Access

- ◆ 3 failed peripheral attempts by 2 persons (total) — **2 experienced persons, not learners — by experienced operators — PICC/SWOOP/Lead**
- ◆ Agreement by 2 persons of inadequate peripheral veins

## Treatments

- ◆ Plasmapheresis
- ◆ Apheresis
- ◆ Emergent hemodialysis access
- ◆ Continuous renal replacement therapy
- ◆ IL2
- ◆ Therapeutic hypothermia
- ◆ Therapeutic active warming for which CL access is required

## Emergent Intervention

- ◆ Transvenous cardiac pacing
- ◆ **Shock**
- ◆ **Rapid Massive Transfusion**

## Hemodynamic Monitoring

- ◆ CVP monitoring
- ◆ Pulmonary artery catheter
- ◆ Introducer for one of the above

## Medications

- ◆ Anticipated length of IV antibiotic or other medication therapy  $\geq 6$  days
- ◆ Antineoplastic medications
- ◆ Complex IV therapies including need for multiple IV meds/fluids
- ◆ See Table 1 for medications that are commonly administered via a central line
- ◆ **Required for surgery by nature of surgery — i.e., excessive blood loss**

**Table 1**

**Please consult the medication order administration instructions for information regarding which medications should be infused via a central line only.**

**In general, the following medications are infused via a central venous catheter.\*** (Most other medications (NOT on the table below) can be infused via a midline or a peripheral line.)

<b>Amiodarone</b> Concentrations >2mg/mL	<b>Calcium chloride (central line or deep vein preferred)</b>
<b>Dextrose &gt;20%</b> (in emergent situations peripheral administration may occur in concentrations up to 50%)	<b>Epoprostenol</b>
<b>Hypertonic saline</b> ( <i>recommended</i> for 3% and <i>required</i> for 7.5% and 23.4%)	<b>Potassium concentrations &gt;0.1 mEq/mL</b>
<b>most TPNs</b> (some with lower concentrations can be given peripherally)	<b>Vasopressors (central line preferred):</b> Dopamine, epinephrine, norepinephrine, phenylephrine, vasopressin
<b>Vesicant infusions &gt; 60 minutes</b> Dactinomycin, daunorubicin, doxorubicin, epirubicin, idarubicin, mechlorethamine, mitomycin C, trabectedin, verteporfin, vinblastine, vincristine, vindesine, vinorelbine	

**\*This list is not all inclusive and may change. Consult the MAR, Lexicomp, and/or a pharmacist if there are questions.**