CENTRAL VENOUS CATHETER SELECTION GUIDELINES FOR SURGICAL PATIENTS

SUMMARY
Selection of an appropriate central venous catheter (CVC) should be based upon the patient’s severity of illness and the anticipated use of the catheter. When the current CVC does not meet the patient’s needs or provide adequate access to the central circulation, the catheter should be exchanged over a guide wire for an appropriate catheter.

RECOMMENDATIONS
• A dual-lumen large bore CVC should be in place in all patients who require operative procedures UNLESS each of the following criteria are met:
  ➢ the scheduled procedure is considered to be minor
  ➢ blood transfusion or volume resuscitation will not be necessary
  ➢ a triple lumen CVC or two (2) large bore peripheral IV’s are in place
• A 9 French introducer should be inserted in patients who require a pulmonary artery catheter for hemodynamic monitoring.
• Triple lumen CVC’s are appropriate in those patients who no longer require large volume resuscitation or blood product transfusion.
• CVC’s should be removed as soon as possible based upon the patient’s stability and need for continued vascular access (Level III).

INTRODUCTION
An algorithm for the appropriate selection and utilization of CVC’s in the surgical patient population is presented. For details on appropriate insertion techniques and maintenance of such catheters, refer to the Intravascular Catheter Guidelines.

LITERATURE REVIEW
There is insufficient data to support either Level I or Level II recommendations regarding the selection of central venous catheters in the surgical patient population. Catheter choice should be determined based upon the anticipated requirements of the patient with regards to need for volume resuscitation, invasive monitoring, or blood transfusion. Patients with poor peripheral intravenous access will likely require central venous catheterization for this indication alone.

Mermel et al. has presented a comprehensive, evidence-based medicine review of central venous catheter infection-related issues, which the reader is strongly encouraged to review (1).

REFERENCES
Surgical, trauma, or burn patient

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Is patient going to OR?**

- Yes
  - Is volume resuscitation or blood transfusion likely?
    - Yes
      - Double-lumen large bore central venous catheter
    - No
      - Is right heart catheter necessary?
        - Yes
          - 9F Introducer
        - No
          - Is patient in resuscitation phase?
            - Yes
              - Double-lumen large bore central venous catheter
            - No
              - Is peripheral access feasible?
                - Yes
                  - Peripheral IV catheter
                - No
                  - Triple lumen catheter

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**For patients requiring surgery**

Large bore central venous catheters are necessary for any patient who may require volume resuscitation or blood transfusion while in the operating room.

Patients scheduled for such procedures should have a dual-lumen large bore central venous catheter in place prior to going to the operating room.

For patients scheduled to undergo "minor" operative procedures with minimal risk for blood loss or hemodynamic instability, triple lumen catheters are acceptable.