

THIRD EDITION

# ACCESS DEVICE GUIDELINES

## Recommendations for Nursing Practice and Education

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- distal tip for signs of jagged, uneven edges suggestive of breakage.
- m) Document observations, patient tolerance, and actions.
  - n) Contact a physician immediately if difficulty occurs in retrieving the cuff or with removal of catheter.
  - o) If tunnel infection is suspected, a cut-down procedure may be performed to remove the cuff, based on physician preference.
  - p) If there is a question of incomplete catheter removal, call the physician immediately. A chest x-ray or cathetergram is recommended.
6. Maintenance and care (see Tables 1 and 2)
- a) Dwell time: Several years
  - b) Dressing: Dressing changed 24 hours after insertion.
    - (1) Transparent dressing changed every five to seven days. Gauze and tape dressing changed every two days or as needed if wet, soiled, or nonocclusive.
    - (2) Once healed, tunneled catheters may go without a dressing unless the patient is immunocompromised (Olson et al., 2004).
- (3) Instruct patients with external catheters who shower or swim to completely cover exit site and external catheter with a waterproof covering (e.g., AquaGuard®, Cenorin, LLC). Some physicians prefer that patients with external catheters refrain from swimming because water can contain virulent organisms. Little information is available in the literature on swimming with external catheters and the increased risk of infection.
- c) Flushing: Heparin 10–100 IU/ml: 3 ml/day or 3 ml/day every other day or 5 ml three times a week or 5 ml weekly. Groshong: 5–10 ml normal saline every week.
  - d) Cap change: Every week or month depending upon use
  - e) For blood specimens: Discard 3–5 ml of blood, obtain specimen, and flush with 10–20 ml of normal saline.
7. Complications: See Section II.I and Tables 5 and 6 (Green, 2008; Hamilton, 2006).
8. Education and documentation: See Section X.
9. For a practicum on long-term venous device care, see Appendix 4.

**Table 5. Venous Access Device Insertion Complications**

| Complication  | Etiology  | Symptoms   | Clinical Intervention  |
|---|---|--|--|
| Air embolism (Lyons et al., 2008; Mirski et al., 2007)                  | Occurs when intrathoracic pressure becomes less than atmospheric pressure at the open needle or catheter  | Sudden respiratory difficulty, tachypnea; cyanosis; chest pain; apnea; hypotension; cardiac arrest; aphasia; seizures; hemiplegia; coma; a churning sound heard over the pericardium on auscultation, produced by the presence of air and blood in the right ventricle                 | Clamp catheter proximal to any breaks or leaks noted; place patient on left side in Trendelenburg position; administer 100% oxygen; attempt to aspirate air from vascular access device. |
| Brachial plexus injury (Karakaya et al., 2000; Porzionato et al., 2003) | Occurs when advancing catheter into jugular vein. This process can also injure the phrenic and laryngeal nerves.  | Tingling of fingers, pain shooting down arm, paralysis   | Observe symptoms, which usually resolve in minutes to several hours after insertion; administer analgesics as necessary. If symptoms persist, remove vascular access device.             |
| Carotid artery puncture   | Occurs when artery is punctured during percutaneous internal jugular vein catheterization   | Rapid hematoma formation; internal or external bleeding at insertion site; pallor; weak pulse; tachycardia; stroke; hypotension; upper airway impingement if trachea is compressed   | Remove needle or catheter; apply local pressure; perform chest x-ray; observe site and patient closely for several hours.  |
| Cardiac tamponade (Ahmed et al., 2009; Askegard-Giesmann et al., 2009)  | Results from cardiac compression of fluid accumulated within the pericardial sac, exerting increased pressure around the heart that restricts blood flow in and out of the ventricles. Occurs when catheter causes cardiac perforation. | May occur hours or days after insertion; anxiety; tachypnea; mild dyspnea to severe respiratory distress; light-headedness; restlessness; confusion; chest discomfort (fullness, heaviness); cyanosis; face and neck vein distention; decreased heart sounds; hypotension; tachycardia | Remove catheter and perform pericardial aspiration. May require surgery to perform pericardial window and placement of drainage tubes.   |

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