

OKLAHOMA BOARD OF NURSING  
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Registered Nurse Administering, Managing and Monitoring  
Non-Obstetrical Patients Receiving Analgesia/Anesthesia by Catheter Techniques  
(Epidural, PCEA and Intrathecal Catheters) Guidelines

The Oklahoma Board of Nursing has reviewed the practice of registered nurses in administration of analgesic agents and analgesic doses of anesthetic agents via catheters/infusion devices for the purpose of pain control. These guidelines exclude the Labor and Delivery setting. [See: *Registered Nurse Monitoring Obstetrical Patients Receiving Analgesia/Anesthesia by Catheter Techniques (Epidural, PCEA and Intrathecal Catheters) Guidelines - #P-04*].

I. Definitions:

- A. **Analgesia/Anesthesia by Catheter Techniques:** Administration of medication for analgesia/anesthesia via epidural, including patient-controlled epidural analgesia (PCEA), or intrathecal catheters:
1. **Analgesia:** Insensibility to pain without loss of consciousness.<sup>1</sup>
  2. **Anesthesia:** Partial or complete loss of sensation, with or without loss of consciousness, as a result of disease, injury, or administration of an anesthetic agent, usually by injection or inhalation.<sup>2</sup>
  3. **Epidural Analgesia:** Anesthesia produced by injection of a local anesthetic into the peridural space of the spinal cord beneath the ligamentum flavum -- called also peridural anesthesia.<sup>2</sup>
  4. **Epidural Space:** The space over or on the coverings of the brain or spinal cord.<sup>2</sup>
  5. **Intrathecal:** Within the spinal canal; within a sheath.<sup>2</sup>
  6. **Intrathecal [Spinal] Anesthesia:** Anesthesia produced by injection of anesthetic into the subarachnoid space of the spinal cord.<sup>2</sup>
  7. **Intrathecal Space (or Subarachnoid Space):** The space within the spinal canal.<sup>2</sup>
  8. **Patient-Controlled Epidural Analgesia (PCEA):** A system that allows the patient to administer a fixed dose of medication [in the epidural space] by pushing a button.<sup>3</sup>
- B. **Dermatome:** A band or region of skin supplied by a single spinal nerve.<sup>3</sup>
- C. **Initial Injection:** The first medication administered by a qualified anesthesia provider.

II. Education/Training:

The Registered Nurse administering medications via the catheter route must have documented education and must assure that her/his practice is guided by agency policies and procedures with documented competency. Education and documentation of

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competency occurs on a periodic basis. The education must include, but is not limited to, the following:

- A. Anatomy and physiology of the spinal cord and column, dermatomes and location of catheter placement;
- B. Pharmacology and complications related to the analgesia/anesthesia technique and medication;
- C. Assessment of the patient's dermatome levels and total care needs during analgesia/anesthesia, including patient's vital signs, motor function, level of consciousness and perception of pain;
- D. Utilization of monitoring modalities, interpretation of physiological responses and initiation of nursing interventions to ensure optimal patient care;
- E. Anticipation and recognition of potential complications of the analgesia/anesthesia in relationship to the type of catheter/infusion device and medication being utilized;
- F. Recognition of emergency situations and implementation of nursing interventions in compliance with the anesthesia provider's or attending physician's guidelines and orders;
- G. The cognitive and psychomotor skills necessary for use of mechanical infusion devices; and,
- H. Knowledge and skills required for catheter removal.

### III. Policies and Procedures:

- A. The following policies and procedures, developed in conjunction with the anesthesia/analgesia providers, must be available in writing within the employing facility and must be available to the Registered Nurse administering epidural medications via catheter technique:
  - 1. Patient monitoring, including dermatome levels, patient's vital signs, motor function, level of consciousness and perception of pain;
  - 2. Drug administration;
  - 3. Protocols for handling potential complications or emergency situation;
  - 4. Patient-controlled analgesia;
  - 5. Infusion pump programming;
  - 6. Types of tubing and catheters used in the facility to minimize the opportunities for errors to occur, such as tubing misconnections and interconnectivity issues; and
  - 7. Catheter maintenance and removal.
- B. The initial dose and initial connection of the analgesia/anesthesia catheter/infusion device will be administered by a qualified anesthesia provider with authorization through clinical privileges to administer epidural and spinal anesthesia.
- C. The Registered Nurse assuming care of the client with an analgesia/anesthesia catheter/infusion device does not do so until the provider who placed the catheter/infusion device has verified and documented correct catheter placement, and the client's vital signs have stabilized.

- D. The Registered Nurse may adjust (titrate) dosing on a continuous basis within patient-specific dosing parameters established by an individual authorized by law to prescribe.
- E. Registered Nurses should not adjust the placement of the catheter, other than removal. Correct placement of the catheter is the responsibility of a qualified anesthesia provider.

IV. Responsibilities of the Registered Nurse Assuming Monitoring of the Care of Patients Receiving Analgesia/Anesthesia by Catheter Techniques:

- A. Following stabilization of vital signs after the initial insertion, initial injection, bolus injection, rebolus injections or initiation of continuous infusion by a licensed, credentialed anesthesia care provider, the non-anesthetist Registered Nurse in communication with the anesthesia care providers may:
  - 1. Monitor the patient’s vital signs, motor function, dermatome levels, level of consciousness, and perception of pain;
  - 2. Replace empty infusion syringes or infusion bags with new, pre-prepared solutions containing the same medication and concentration, according to orders provided by the anesthesia care provider;
  - 3. Stop the continuous infusion if there is a safety concern;
  - 4. Remove the catheter upon receipt of a specific order from a qualified anesthesia or physician provider, when educational criteria have been met and institutional policy allows;
  - 5. Initiate emergency therapeutic measure according to institutional policy and/or protocol if complications arise; and
- B. The non-anesthetist Registered Nurse should communicate any nursing assessments or changes in patient status to the anesthesia care providers as indicated by institutional policy.

V. References:

- 1. *Medline Plus® Medical Dictionary* 2014 by Merriam-Webster, Incorporated, [On-line]. Retrieved January 10, 2014, from:  
<http://www.merriamwebster.com/mobilemedlineplus/>
- 2. Venes, D., MD, MSJ. (Ed.). (2013). *Taber’s® Cyclopedic Medical Dictionary*, 22nd ed. Philadelphia: F.A. Davis Company.
- 3. Mayo Clinic. (2011, March 19). MayoClinic.org. *Pain medications after surgery*. Retrieved January 14, 2014, from  
<http://www.mayoclinic.org/pain-medications/ART-20046452>

VI. Selected Bibliography:

American Association of Nurse Anesthetists (AANA). Position Statement No. 2.8: Title: Provision of pain relief by medication administered via continuous epidural,

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intrathecal, intrapleural, peripheral nurse catheters, or other pain relief devices. Adopted by the AANA Board of Directors June 1989; Revised June 1990, 1995; Reaffirmed June 2003; Revised by AANA Board of Directors August 2011; Retrieved on January 13, 2014, from <http://www.aana.com/resources2/professionalpractice/Pages/Professional-Practice-Manual.aspx>

Association of Women's Health, Obstetric and Neonatal Nursing Clinical Position Statement. Title: Role of the Registered Nurse in the Care of Pregnant Women Receiving Analgesia and Anesthesia by Catheter Techniques. Approved by AWHONN Board of Directors 2002. Re-approved by the AWHONN Board of Directors in September 2005 and June 2007. Revised, re-titled and re-approved March 2012. Retrieved January 14, 2014.

*Dermatome Chart*. (n.d.) Retrieved January 14, 2014, from <http://www.smartimagebase.com/dermatomes/view-item?ItemID=4941>

Halpern, S. & Carvalho, B. (2009, March). Patient-controlled epidural analgesia for labor. *Obstetric Anesthesiology*, 108(3), 921-927.

Institute for Safe Medication Practices. (n.d.) Epidural-IV route mix-ups: Reducing the risk of deadly errors. *ISMP Medication Safety Alert*. Retrieved January 14, 2014, from <http://www.ismp.org/newsletters/acutecare/articles/Catheter-Misconnections.asp>

The Joint Commission. (2006, Apr 3). Tubing misconnections--a persistent and potentially deadly occurrence. *Sentinel Event Alert, Issue 36*: 1-3. Retrieved January 14, 2014, from [http://www.jointcommission.org/sentinel\\_event\\_alert\\_issue\\_36\\_tubing\\_misconnections—a\\_persistent\\_and\\_potentially\\_deadly\\_occurrence/](http://www.jointcommission.org/sentinel_event_alert_issue_36_tubing_misconnections—a_persistent_and_potentially_deadly_occurrence/)

Thyen, A., McAllister, R., & Councilman, L. (2010). Epidural pump programming error leading to inadvertent 10-fold dosing error during epidural labor analgesia with Ropivacaine. *Journal of Patient Safety*, 6, 244-246.

U.S. National Library of Medicine and the Patient Education Institute, Inc. (n.d.) X-Plain™ epidural anesthesia reference summary. Retrieved January 13, 2014 from Medline Plus website: <http://www.nlm.nih.gov/medlineplus/tutorials/epiduralanesthesia/htm/index.htm>