

Registered Nurse Management and Monitoring of Analgesia by Catheter Techniques: Position Statement

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■ ABSTRACT:

The American Society for Pain Management Nursing believes that the administration of analgesia and the management of the associated effects are fundamental nursing responsibilities. This position statement will address the registered nurse's responsibilities for the management and monitoring of analgesia by catheter techniques in all patients of all ages and in all care settings. It will provide recommendations for the health care institution, licensed independent practitioner, and registered nurse to ensure the safe and effective implementation of these pain control methods. The position statement reinforces the American Society for Pain Management Nursing's belief that the administration of analgesia by catheter techniques is within the registered nurse scope of practice.

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The field of pain management has experienced rapid advances in research and technology over the past several years. Analgesia delivered by catheter techniques, such as intraspinal analgesia and perineural infusions, once rarely used, are commonplace in the health care arena today. However, with such growth has come a lack of clarity about the nurse's responsibilities in managing these techniques. Inconsistent policies and procedures among institutions and even between patient care areas within an institution have left nurses confused and open for liability. Nurses often report that they are able to care fully for patients receiving analgesia by catheter techniques in one patient care area but not in another. For example, registered nurses (RNs) within the same institution may be allowed to increase the rate of an epidural analgesic infusion in a neonate but are prohibited from doing so in a patient in labor. The American Society for Pain Management Nursing (ASPMN) believes that RNs, by virtue of their assessment abilities, knowledge of catheters and infusion devices, and 24-hour presence, are critical to ensuring safe and effective analgesic therapy by catheter techniques. Further, the ASPMN holds the position that personal perception or bias unsupported by scientific evidence is not adequate

BOX 1. ANALGESIA BY CATHETER TECHNIQUES

- Epidural Analgesia: Administration of analgesic(s) (e.g., opioids and local anesthetics) into the epidural space by single or intermittent bolus injection, continuous infusion, and patient-controlled epidural analgesia with or without continuous infusion. Short-term epidural analgesia is administered through a temporary catheter and external infusion device. Long-term administration is provided by either a tunneled catheter and external infusion device or implanted catheter and implanted refillable infusion device.
 - Indications for short-term epidural analgesia include postoperative pain, procedural pain, trauma pain, labor pain, and some types of nonsurgical pain (e.g., sickle cell-related lower extremity pain), cancer pain, and chronic nonmalignant pain.
 - Indications for long-term epidural analgesia include chronic (persistent) cancer pain and chronic nonmalignant pain.
- Intrathecal (Spinal) Analgesia: Administration of analgesic(s) (e.g., opioids) into the subarachnoid space (called the intrathecal space in the caudal area of the spine) by single injection for relatively brief pain control or by infusion for extended pain control. Long-term administration is provided most often by an implanted intrathecal catheter and implanted refillable infusion device.
 - Indications for short-term use include postoperative pain, procedural pain, and labor pain.
 - Indications for long-term use include chronic (persistent) cancer pain and chronic nonmalignant pain.
- Interpleural analgesia: Administration of local anesthetic by single or intermittent bolus or continuous infusion through a catheter to nerves proximal to the pleural surfaces for diffusion within the pleural cavity.
 - Indications for short-term use include some postoperative pain (e.g., biliary duct surgery) and trauma pain (e.g., after rib fracture).
 - Indications for long-term use are rare and include some types of difficult-to-manage cancer pain (e.g., brachial plexus tumor invasion, vertebral metastases) and chronic nonmalignant pain (e.g., postherpetic neuralgia).
- Perineural local anesthetic infusion: Administration of local anesthetic through a catheter or catheters inserted near the affected peripheral nerves or nerve plexus. Therapy is generally short term using an external infusion device for continuous infusion with or without patient-controlled analgesia capability. Patients are often discharged to the home setting with a portable infusion device.
 - Indications for use include postoperative pain and some types of cancer pain and chronic nonmalignant pain.

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justification for refusing to care for patients receiving analgesia by catheter techniques.

POSITION STATEMENT

It is within the scope of nursing practice for an RN to administer analgesia to patients when indicated. The ASPMN supports the role of the RN in the management and care of patients receiving analgesia by catheter techniques, including but not limited to analgesia by the epidural, intrathecal, interpleural, and perineural routes of administration, in patients of all ages and in all care settings.

BACKGROUND

The nursing profession is committed to the provision of comfort and the prevention of pain (ANA, 2001).

One key component to the provision of comfort is the administration of analgesic medications. Analgesic administration is within the scope of nursing practice and has long been identified as an essential nursing responsibility (ANA, 2005; ASA, 2002; ASPMN, 2002; Ladwig & Ackley, 2005). The RN is widely recognized as the patient's pain manager in the home, hospital, and other care settings (ASPAN, 2003; Pasero, Portenoy, McCaffery, 1999b).

Nurses have a long history of administration and management of analgesia by traditional routes of administration such as the oral, intramuscular, and intravenous routes (Pasero et al., 1999b). Advances in technology over the past several years have resulted in analgesics being administered by a variety of catheter techniques (Box 1, Analgesia by Catheter Techniques). This article

defines the role of the RN in the management and monitoring of these techniques.

Analgesic requirements vary among patients, and analgesic therapy must be individualized to meet each patient's unique needs (APS, 2003; Pasero et al., 1999b). The widespread use and popularity of patient-controlled analgesia and patient-controlled epidural analgesia in patients, including pediatric, geriatric, labor, oncology, and surgical, attests to the value of individualized therapy (Acute Pain Management Guideline Panel, 1992; American Academy of Pediatrics (AAP) & American Pain Society (APS), 2001; Grass, 2005; Halpern et al., 2004; Miaskowski et al., 2005; Pasero et al., 1999b; Pasero, 2003b; 2003c; Tobias, 2005). This is true of analgesia by all routes of administration and underscores the appropriateness of nurses being involved in ongoing management and monitoring of analgesia by catheter techniques.

In 1991 the American Nurses Association (ANA) facilitated a meeting of nurse representatives from a variety of professional nursing specialty organizations for the purpose of developing a position statement on the role of the RN in the management of analgesia by catheter techniques (ANA, 1991). This was in response to an increase in the administration of analgesia by catheter techniques nationwide. The underlying assumption was that competent RNs should have a significant role in the administration and monitoring of analgesia by catheter techniques in all patients and care settings. The ANA position statement that came from that meeting was endorsed by numerous specialty nursing organizations and state boards of nursing and has guided nursing practice in a variety of settings since its inception (Pasero et al., 1999b). Currently, there is no evidence that the administration of analgesia through catheter techniques by a competent RN poses a danger in any way to patients. The ASPMN believes that RNs, by virtue of their assessment abilities, knowledge of catheters and infusion devices, and 24-hour presence, are, in fact, critical to ensuring safe and effective analgesic therapy by catheter techniques.

Adequate RN preparation and support accomplished through education, skill development, policy and procedure, and quality improvement activities are essential to the RN's management and monitoring of analgesia by catheter techniques (Pasero, 2003a; 2004). A collaborative approach among nursing, medicine, and other disciplines is recommended in the development, implementation, and maintenance of these processes (ASA, 2002; Bird & Wallis, 2002; Pasero, Gordon, McCaffery, & Ferrell, 1999a; Richardson, 2001).

ETHICAL TENETS

The ethical principles of beneficence (duty to benefit another) and nonmaleficence (duty to do no harm) sup-

port the RN's role in the management of medications administered by catheter techniques for pain relief. Provision 4.1 of the ANA *Code of Ethics* states that the RN "retains accountability and responsibility for the quality of practice and for conformity with standards of care" (ANA, 2001). These principles and provision oblige RNs to acquire the knowledge and expertise necessary to make appropriate assessments and responsible decisions about patient care that are based on objective and scientifically sound information. Personal perception or bias is not adequate justification for refusing to care for patients receiving analgesia by catheter techniques. The ASPMN believes that the safe administration of analgesia and the management of the associated effects are fundamental nursing responsibilities.

DEFINITIONS

Additional Education and Training for the RN: As defined by the individual RN's institution/health care facility and the board of nursing of the state in which the RN practices.

Analgesia: Absence of pain in response to a stimulus that is normally painful (Benzon, 2005).

Anesthesia: Absence of all sensory modalities (Benzon, 2005).

Catheter Techniques: All non-intravenous catheters used to provide analgesia, including but not limited to analgesia administered by the epidural, intrathecal, interpleural, and perineural routes of administration. A catheter technique may be used for any type of pain that is responsive to this method of pain control.

Infusion Device: An external or implanted pump used to administer analgesia.

Licensed Independent Practitioner (LIP): For the purposes of this position statement, this person is defined as a physician, nurse anesthetist, nurse practitioner, advanced practice nurse, or physician assistant who has been trained and authorized to provide analgesia by catheter techniques.

Management: As defined by the individual RN's institution/health care facility and the board of nursing of the state in which the RN practices. This may include reinjection of medication (bolus dose) after establishment of an appropriate therapeutic range and adjustment of drug infusion rate in compliance with an LIP's orders, treatment of side effects and complications, replacement of empty drug reservoirs, refilling implanted drug reservoirs, troubleshooting infusion device, changing infusion device batteries, tubings, and dressings, discontinuing therapy in compliance with an LIP's orders, and removing catheters.

Monitoring: As defined by the individual RN's institution/health care facility and the board of nursing of the state in which the RN practices. This includes observation of the patient's response to analgesia by catheter technique, including assessment of pain, side effects, and complications.

Pain: An intrinsically subjective experience that is multifactorial in nature and involves the interaction of physiologic, psychologic, behavioral, developmental, and situational factors for the end response of all types of pain (AAP & APS, 2001). It may be experienced by persons of all ages from the preterm neonate to the older adult.

RECOMMENDATIONS

Catheter Placement, Initial Test Dosing, and Establishment of Analgesic Dosage Parameters

Placement of a catheter or infusion device, administration of the test dose or initial dose of medication to determine correct catheter or infusion device placement, and establishment of analgesic dosage parameters for patients with pain should be done only by LIPs who are trained and authorized in the placement of catheters for analgesia by catheter techniques.

Management and Monitoring

1. An RN who has received the proper additional education and training to do so as defined by the RN's institution/health care facility and state board of nursing may manage the care of patients with catheters or devices for analgesia to alleviate pain. Management may include reinjection of medication (bolus dose) after establishment of an appropriate therapeutic range and adjustment of drug infusion rate in compliance with an LIP's orders, treatment of side effects and complications, replacement of empty drug reservoirs, refilling implanted drug reservoirs, troubleshooting infusion device, changing infusion device batteries, tubings, and dressings, discontinuing therapy in compliance with an LIP's orders, and removing catheters (Box 2, Registered Nurse Responsibilities).
2. The institution/health care facility will (Box 3, General Recommendations):
 - a. Ensure the implementation of policies, procedures, and guidelines developed with input of anesthesiologists and other physicians as indicated, nurses, pharmacists, risk managers, and other appropriate personnel. These policies, procedures, and guidelines shall outline parameters of the RN's role in the management and monitoring of analgesia by catheter technique.
 - b. Ensure the management and monitoring of analgesia by catheter techniques as defined above (no. 1) are allowed by the individual RN's state nurse practice laws and policies and are in compliance with established institution/health care facility policies, procedures, and guidelines.

BOX 2. REGISTERED NURSE RESPONSIBILITIES

- Perform systematic and comprehensive patient assessments
- Program and troubleshoot infusion devices
- Reinject, administer bolus doses
- Adjust drug infusion rates
- Treat side effects and complications
- Replace drug infusion reservoirs
- Refill implanted drug reservoirs
- Change batteries, tubings, and dressings
- Discontinue therapies
- Remove catheters
- Provide patient and family education

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Data from Pasero, C., Portenoy R. K., & McCaffery M. (1999). Opioid analgesics. In M. McCaffery, C. Pasero, pp: 161-299, *Pain: clinical manual*, 2nd ed. St. Louis: Mosby.

- c. Ensure LIP has access to a formulary containing the appropriate drugs, doses, and concentrations of opioids, local anesthetics, steroids, alpha₂-adrenergic agonists, or other documented safe medications or combinations thereof.
- d. Provide a means for nurses and other health care team members to record:
 - i. Initiation of therapy.
 - ii. Assessment of patient's response to therapy.
 - iii. Interventions performed during therapy.
 - iv. Pertinent information about medication administration during therapy.
 - v. Discontinuation of therapy.
- e. Provide initial and ongoing education of the RN who cares for patients receiving analgesia by catheter techniques that ensures the RN is able to (Box 4, Recommendations for Educational Content):
 - i. Demonstrate the acquired knowledge of anatomy, physiology, pharmacology, side effects, and complications related to the analgesia technique and medication(s) being administered.
 - ii. Assess the patient's total care needs (physiologic, emotional) while receiving analgesia.
 - iii. Use monitoring modalities, interpret physiologic responses, and initiate nursing interventions to ensure optimal patient care.
 - iv. Anticipate and recognize potential complications of the analgesia technique in relation to the type of catheter, infusion device, and medication(s) being used.
 - v. Recognize emergency situations and institute nursing interventions in compliance with established institution/health care facility policies, procedures, and guidelines and LIP's orders.
 - vi. Demonstrate the cognitive and psychomotor skills necessary for use and removal of the anal-

BOX 3. GENERAL RECOMMENDATIONS

Institution

- Ensure implementation of multidisciplinary policies and procedures related to administration of analgesia by catheter techniques.
- Ensure the registered nurse's (RN's) role is consistent with state nurse practice laws and established institutional policies and procedures.
- Ensure licensed independent practitioner (LIP) has access to a formulary containing documented safe drugs for delivery by catheter techniques.
- Provide a means for documentation of all aspects of therapy.
- Provide initial and ongoing RN education related to administration of analgesia by catheter techniques to ensure competency.
- Systematically evaluate safety and effectiveness of the administration of analgesia by catheter techniques.

Licensed Independent Practitioner

- Follow institutional policies and procedures related to administration of analgesia by catheter techniques.
- Place catheter or infusion device, administer test dose, establish analgesic dosage parameters.
- Select and order documented safe drugs for delivery by catheter techniques.
- Communicate with RN regarding patient status.

Registered Nurse

- Complete initial and ongoing institution-established educational requirements related to administration of analgesia by catheter techniques.
- Follow institutional policies and procedures related to administration of analgesia by catheter techniques.
- Communicate with LIP regarding patient status.
- Document therapies according to institutional policies and procedures.
- Participate in quality improvement activities related to administration of analgesia by catheter techniques as required by institution.

gesic catheter and infusion device when analgesia is delivered by such a device.

- vii. Demonstrate knowledge of the legal ramifications of the management and monitoring of analgesia by catheter techniques, including the RN's responsibility and liability in the event of untoward reactions or life-threatening complications.
- viii. Identify patient/family educational needs and limitations and provide the patient/family with patient-focused information/education regarding the specific catheter analgesia/infusion device using appropriate teaching methods.

BOX 4. RECOMMENDATIONS FOR EDUCATIONAL CONTENT

- Institutional policies and procedures review
- Related anatomy and physiology
- Related pharmacology
- Comprehensive patient assessment
- Use and interpretation of monitoring modalities
- Use and troubleshooting of infusion devices
- Side-effect management
- Complications and emergency situation recognition and management
- Removal of catheters
- Legal ramifications
- Patient/family education

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- f. Through its quality improvement program, systematically evaluate the administration of analgesia by catheter techniques and the nurse's role in monitoring and management of the therapies.
3. The LIP will (Box 3, General Recommendations):
 - a. Follow established institution/health care facility policies, procedures, and guidelines for the care of patients receiving analgesia by catheter technique.
 - b. Place catheter or infusion device, administer test dose or initial dose of medication to determine correct catheter or infusion device placement, and establish analgesic dosage parameters for patients with pain.
 - c. Select and order the appropriate drugs, doses, and concentrations of opioids, local anesthetics, steroids, alpha₂-adrenergic agonists, or other documented safe medications or combinations thereof.
 - d. Communicate with the RN regarding patient status or changes in status during therapy.
 - e. Document therapy in accordance with established institution/health care facility policies, procedures, and guidelines for the care of patients receiving analgesia by catheter technique.
 4. The RN will (Box 3, General Recommendations):
 - a. Complete educational requirements established by the institution/health care facility before caring for a patient receiving analgesia by catheter technique.
 - b. Follow established institution/health care facility policies, procedures, and guidelines for the care of patients receiving analgesia by catheter technique (Box 5, Components of Systematic Assessment).
 - c. Communicate with the LIP regarding patient status or changes in status during therapy.
 - d. Document therapy in accordance with established institution/health care facility policies, procedures, and guidelines for the care of patients receiving analgesia by catheter technique.

BOX 5. COMPONENTS OF SYSTEMATIC ASSESSMENT

- Pain
- *Vital signs
- Sedation level if opioids are administered
- Fetal status and response to therapy in the laboring patient
- Motor and sensory deficit
- Presence of side effects
- Presence of complications
- Insertion site and surrounding tissue for redness, tenderness, or edema
- Dressing to ensure it is intact and without leakage
- Catheter and tubing connections to ensure system is fully connected
- Infusion device to obtain history of analgesic use and insure administration is as prescribed
 - *Oxygen saturation (pulse oximetry), carbon dioxide (capnography) levels if prescribed.

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- e. Participate in quality improvement activities related to the provision of analgesia by catheter technique as required by the institution/health care facility.

Removal of Catheter

When educational criteria have been met and institutional policy and state laws allow, the RN may remove the catheter that has been used for analgesia on receipt of an order from an LIP (Box 6, Epidural Catheter Removal).

SUMMARY

Analgesic administration is within the RN's scope of practice and is an essential nursing responsibility. RNs who have received the proper education and additional training to do so may manage and monitor any patient in any setting receiving analgesia by catheter technique (Box 7, Task Force).

UNCITED REFERENCES

The following references were not cited in text, but do appear in the bibs: (*Acute Pain Management Guide-*

BOX 6. EPIDURAL CATHETER REMOVAL

Requirements

- State nursing law and institutional policy and procedure support RN catheter removal
- RN has institution-required knowledge and skills
- Licensed independent practitioner (LIP) has provided an order for catheter removal

Before Catheter Removal

- Check blood clotting studies in anticoagulated patients; report abnormal findings to LIP and do not remove catheter
- Report signs of infection
- Ensure pain is under control
- Provide appropriate alternative analgesia as indicated
- Explain removal procedure to patient

Removal

- Treat epidural catheters as hazardous waste
- Put patient in sitting or side-lying position with back arched out toward nurse
- Loosen dressing to expose site
- Apply gentle traction to remove catheter
 - Catheter should come out easily and painlessly
 - If resistance is met, reposition patient to ensure vertebral spread and try again
 - If resistance is met again, stop removal procedure and notify LIP
- Check for intact catheter tip; notify LIP if not intact
- Cleanse entry site and surrounding area with approved solution
- Cover site with band-aid (optional)
- Notify LIP of signs of infection and patient reports of pain or unusual sensations on removal
- Document procedure completion, intact tip, and patient response

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BOX 7. ASPMN POSITION STATEMENT: REGISTERED NURSE MANAGEMENT AND MONITORING OF ANALGESIA BY CATHETER TECHNIQUES TASK FORCE

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