PAIN MANAGEMENT RESOURCE MANUAL

Includes Care of Patients Receiving Analgesia via Epidural, Intrathecal, Caudal, Subcutaneous or Nerve Block Catheters

Virginia Commonwealth University Health System

Acute Pain Service, Department Of Anesthesiology
Department Of Oncology/Palliative Care
Department Of Patient Care Services
# Pain Management Resource Manual

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Policy and Procedures Approved By:

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I. PURPOSE

Outline the general responsibilities surrounding the administration of intermittent, continuous or PCA analgesia infusions with or without local anesthetics into the epidural, intrathecal, or caudal space, or via nerve blockade.

II. POLICY

A. Only healthcare professionals verified in analgesia infusion pump operation and credentialed in care of patients with epidural, intrathecal, caudal or other indwelling catheters will care for patients with such catheters.

B. Epidural catheters may be used for the administration of analgesic agents with or without local anesthetics.

C. The Acute Pain Service (APS) and Palliative Care Service are responsible for all analgesic orders for the duration of the catheter placement, unless otherwise arranged through APS. No other sedatives, opiates, or hypnotics will be administered without the prior notification of one of these services.

D. Only preservative-free opiates and/or anesthetics are infused through the epidural, intrathecal, caudal, or nerve block catheter.

E. The APS will be responsible for changing the epidural tubing and programming the analgesia infusion pump.

F. A member of the APS will be available 24 hours a day in house or on call to assist with problems related to pain control therapy via these techniques. This patient visit will be documented in the progress notes of the patient's medical record.

G. Naloxone (Narcan®) will be available on all code carts and in PYXIS on nursing units caring for patients receiving epidural opiates. If a naloxone infusion is initiated for side effects, the infusion will be maintained on a pump which is clearly labeled "Narcan® infusion".

H. Ephedrine injection will be available on nursing units caring for patients receiving local anesthetics.

I. Patients will not routinely be monitored with pulse oximeters unless otherwise ordered. Children are the exception to the rule (see Nursing Procedure for Caring for Pediatric Patients Receiving Analgesia via Epidural, Intrathecal, Caudal or Nerve Block Catheter).

J. Rooms of patients receiving epidural opiates will be labeled with a sign clearly identifying he/she is receiving epidural opiates and to administer no sedatives, hypnotics or opiates without notifying the APS or Palliative Care Service as appropriate.

K. Heating pads or cool/cold applications should be used with extreme caution with patients receiving local anesthetics. Patient may not be aware of undesired side effects (heat/cold burns); the skin condition must be carefully monitored.

L. All patients receiving local anesthetics should be on fall precautions.
I. PURPOSE

Outline nursing responsibilities in administering intermittent, continuous and PCA analgesia with opiate and/or local anesthetic agents via epidural, intrathecal, caudal, or nerve block catheter.

II. POLICY

A. Nurses will properly follow and monitor infusion procedures for patients receiving intermittent, continuous, or PCA analgesia with opiate and/or local anesthetic agents via epidural, intrathecal, caudal or other indwelling catheter.

B. Licensed nursing personnel who are required to monitor, maintain and care for patients receiving these analgesic modalities will have access to pertinent policies and procedures relating to these therapies.

C. Only nurses verified in analgesia infusion pump operation and credentialed in care of patients with epidural, intrathecal, caudal, or nerve block catheter will care for patients with such catheters.

D. The APS nursing staff will remove epidural, intrathecal, caudal or other indwelling catheters placed for the purpose of providing analgesia.

E. Unit nurses' responsibilities include:
   1. changing medication bags
   2. changing pump batteries
   3. reinforcing dressings
   4. reconnecting/replacing catheter disconnects at hub
   5. clearing infusion tubing of air as necessary
   6. following monitoring procedures

III. ASSESSMENT OF PATIENTS RECEIVING EPIDURAL ANALGESIA

A. Ensure that the epidural patient receiving opiates has a PRN order for naloxone and that the drug is available on the nursing unit.

B. Ensure patent IV access (can be a saline lock after the first 12 hours) exists for the duration of analgesic therapy. IV access must be maintained for 4 hours after the last epidural bolus or from termination of epidural analgesia.

C. Ensure that the epidural patient receiving local anesthetics has an order for ephedrine and that the drug is available on the nursing unit for prn administration by the APS team.

D. Assess and document on the Patient Controlled Analgesia Flowsheet: pain ratings, sedation ratings, dermatome levels (if local anesthetic is used), vital signs, analgesia infusion pump function and usage, catheter insertion site and side effects, including motor function blockade per the following procedures.
1. Pain assessment:
A pain assessment will be conducted every 4 hours while a patient is awake, and documented on the Patient Controlled Analgesia Flowsheet. A 0-10 verbal scale will be utilized unless otherwise indicated.

2. Sedation assessment:
The Richmond Agitation and Sedation Scale (RASS) will be used to assess the patient's level of sedation. This will be performed every hour x 4 hours, then every 4 hours for patients receiving opioid infusions and documented on the Patient Controlled Analgesia Flowsheet. If patient is asleep with unchanged respirations, the RN may use clinical discretion and not awaken the patient. These requirements may be changed by a provider in opiate tolerant patients. Definitions of the RASS terms are located on the reverse side of the Patient Controlled Analgesia Flowsheet:

   -0 = Alert
   -1 = Drowsy (not fully alert, but has sustained awakening (>10 seconds), with eye contact, to voice)
   -2 = Light sedation (briefly awakens (<10 seconds), with eye contact, to voice)
   -3 = Moderate sedation (any movement (but no eye contact) to voice)
   -4 = Deep sedation (no response to voice, but any movement to physical stimulation)
   -5 = Unarousable (no response to voice or physical stimulation)

3. Dermatome level assessment:
A dermatome level will be assessed and documented on the Patient Controlled Analgesia Flowsheet every 4 hours if a patient is receiving local anesthetic via an epidural/intrathecal/caudal catheter, and observed to have altered sensation or decreased motor function. These levels are described on the reverse side of the Patient Controlled Analgesia Flowsheet:

   - T2 - Inner Aspect of Upper Arm
   - T4 - Nipple
   - T6 - Xiphoid process
   - T8 - Lower Rib
   - T10 - Umbilicus
   - T12 - Iliac crest

   a. Using the assessment scale above, test each general nerve region (S = Sacral, L = lumbar, T = Thoracic, C = Cervical).
   b. Using an opened, saturated alcohol swab, begin with the feet bilaterally and test all areas upward assessing for changes in sensation. (or begin at shoulders testing downward) Decreased ability to feel temperature changes or inability to bend at the knees may indicate a need to reduce or stop the local anesthetic infusion. Alternatively, testing may be done with a "micro pin" device to assess changes in ability to discern sharp vs. dull sensation.
   c. Note any new or increased acute back pain/discomfort, tingling, numbness or absent sensation and notify the appropriate services.
   d. Document patient's ability to weight-bear and ambulate.
   e. **Note: All patients with local anesthetic infusions must be on fall precautions.**

4. Assessment of analgesia infusion pump function:
The function of the analgesia infusion pump, as well as the verification of dosage (i.e., medication, concentration, given volume, residual volume, PCA dose, delay, basal rate, 1-hour limit) will be assessed every four hours and documented on the Patient Controlled Analgesia Flowsheet.

5. The nurse will document analgesia infusion pump usage (volumes) every shift.
6. **Assessment of catheter insertion site every shift:**
   An assessment should be made of the condition of the analgesia catheter insertion site and dressing every shift. If the dressing becomes loose, the dressing should be reinforced and the APS service notified. The Acute Pain Service should also be notified for:
   a. Signs of leakage
   b. Skin irritation
   c. Signs of infection
   d. Catheter problems

7. **Assessment of vital signs:**
   Vital signs should be monitored as follows:
   a. Blood pressure: every 4 hours and prior to ambulation if local anesthetic is used.
   b. Temperature: as ordered by patient's primary service.
   c. Pulse: every four hours if local anesthetic is used; otherwise as ordered by patient's primary service.
   d. Respiratory rate, depth & pattern: (counted for 1 full minute) every hour x 4 hours for opioid infusion with or without local anesthetic, then every 4 hours. A nurse may use his/her discretion to avoid waking the patient every hour if the respiratory rate is strong, even, regular and of sufficient depth. This may be altered in opiate tolerant patients.
   e. After APS bolus administration of local anesthetic, hydromorphone, morphine, or > 50 µg of fentanyl, a full set of vital signs (except temperature) should be performed every 5 minutes x 2; then every 15 minutes x 2; then return to the current assessment schedule.
   f. All vital signs should be documented on the appropriate paper or CIS notes.

8. **Assessment of side effects:**
   Presence of side effects (e.g., nausea, itching, urinary retention or vomiting) will be documented on the Patient Controlled Analgesia Flowsheet every 4 hours or whenever the patient complains. Reassessment will be documented within one hour for any interventions performed.

9. **Assessment of motor blockade:**
   If the patient is receiving local anesthetic via a catheter placed for the purpose of providing analgesia to an extremity, the patient's blocked extremity will be assessed every four hours while awake for signs of motor blockade.

**IV. ORDERS AFTER DISCONTINUANCE OF ANALGESIA INFUSION**
After the analgesia infusion is discontinued, all standing orders will be discontinued with the exception of those for vital signs, level of sedation and IV access for 4 more hours. All other orders will be obtained from the patient's attending physician. (notify appropriate service whenever an infusion is stopped).

**V. TROUBLESHOOTING**
The following procedures will be utilized in problem solving:

A. If unable to infuse the medication:
   1. Check from catheter insertion site to analgesia infusion pump for kinks.
   2. Examine the catheter insertion site for fluid leakage.
   3. Reposition patient.
   4. Check analgesia infusion pump for malfunction.
   5. Notify Acute Pain Service (or Palliative Care if appropriate) if problem persists.

B. APS will be notified of the following circumstances:
   1. Altered mental status and/or RASS sedation rating of -3
   2. Oral temperature above 102 F x 4 hours
   3. Prior to the administration of any sedatives, hypnotics or opiates which have not been approved by the APS/Palliative Care.
   4. Unrelieved pain and/or side effects
   5. Pain at the site of epidural insertion, or in the neck, back or head
   6. Redness, edema and/or drainage at the epidural site
   7. Analgesia infusion pump problem that cannot be resolved
8. Significant changes in sensory or motor exam

C. If a local anesthetic is being infused, the pump battery should be “popped” to halt the infusion, and APS should be notified immediately if patient complains of the following:
   1. Shortness of breath
   2. Muscle tremors
   3. Increased anxiety
   4. Hypotension
   5. Tinnitus
   6. Any unusual complaint

D. Criteria for stopping analgesia infusion: “Pop the battery, DO NOT turn pump off.” Page APS (#2899) immediately:
   1. Adult respiratory rate under 8 breaths/minute, or under 12/minute for children.
   2. Patient does not arouse
   3. Patient is mentally confused or disoriented (different from baseline).
   4. Patient has a dermatome level of above T4.
I. PURPOSE

Outline nursing responsibilities in administering intermittent, continuous and PCA analgesia with opiate and/or local anesthetic agents via epidural, intrathecal, caudal or nerve block catheter to pediatric patients.

II. POLICY

A. Nurses will properly follow and monitor infusion procedures for pediatric patients receiving intermittent, continuous, or PCA analgesia with opiate and/or local anesthetic agents via epidural, intrathecal, caudal or nerve block catheters. All policies and procedures previously noted for adult patients receiving these modalities apply to pediatric patients as well. This policy addresses only the exceptions or additions.

B. Patients under the age of eight years will be monitored with a pulse oximeter until 4 hours after discontinuation of the epidural, or as ordered.

C. Patients under the age of 6 months, in addition to a pulse oximeter, will also be monitored with a cardiac monitor until 4 hours after discontinuation of the epidural, or as ordered.

D. IV access must be maintained after the last analgesic bolus or from termination of analgesic therapy for 4 hours, or as ordered.

E. Any pain assessment tool which is found to be effective for the child to communicate his/her pain may be utilized. Once a successful pain assessment tool has been identified, it should be utilized consistently for this patient's pain assessments.

F. In addition to the previously mentioned criteria for stopping the analgesia infusion, pediatric patients with a respiratory rate below the normal rate (as defined by MD's orders or nurse's assessments) and/or a downward trend in O₂ saturation per pulse oximetry, are also criteria for stopping the patient's analgesic infusion. This is accomplished by "popping" the PCA pump battery. DO NOT turn the pump off.
I. PURPOSE

Decrease the likelihood of infection related to analgesia catheter disconnection and to ensure that analgesia infusion is continued.

II. POLICY

Nurses will clean and reconnect analgesia catheters disconnected from the hub.

III. EQUIPMENT

A. Betadine swabs (no alcohol swabs unless Betadine unavailable)
B. Sterile 2x2s or sterile needle
   (May substitute sterile suture removal kit containing above listed items)
C. Sterile epidural catheter hub
D. Tubing set - optional
E. Sterile gloves

IV. PROCEDURE

A. Remove old hub from analgesia infusion pump tubing.
B. Wrap the exposed end of the analgesia infusion pump tubing in a sterile 2x2 or cap with a sterile needle.
   (Analgesia infusion pump tubing only needs to be changed if it was contaminated.)
C. Scrub approximately 2 inches of the exposed end of the epidural catheter with Betadine swabs x 2. Do not use alcohol unless Betadine is unavailable on unit.
D. Allow to air dry.
E. Replace with new sterile hub.
G. Insert epidural catheter into the hub and secure it by tightening the clamp.
H. Attach analgesia infusion pump tubing to luer lock connector of hub and resume infusion.
I. PURPOSE

Safely transport or transfer patients receiving analgesia via epidural, intrathecal, or caudal catheters.

II. POLICY

Nurses will ensure that proper procedures are followed prior to transporting/transferring patients receiving analgesia via epidural, intrathecal, or caudal catheters.

III. PROCEDURE

A. Patients receiving these analgesic modalities may be transported from one location to another within MCV Hospitals without a nurse in attendance unless the following conditions exist:

   1. The patient has received a bolus within the last hour.
   2. The patient's respiratory rate is less than 12 breaths/min.
   3. The patient's level of sedation (RASS) is -3 to -5.
   4. The patient's dermatome level (if applicable) is T4 or above.
   5. The nurse/physician assesses the patient as not stable.

B. Prior to transporting/transferring a patient from one location to another, the nurse caring for the patient will:

   1. Obtain a full set of vital signs.
   2. Assess level of sedation and pain level.
   3. Assess dermatome level (if applicable).
   4. Ensure analgesia infusion pump is set correctly and functioning properly and has an adequate volume of medication.
   5. Document findings on the Patient Controlled Analgesia Flowsheet.

C. If the patient is being transferred from one unit to another, the nurse caring for the patient prior to transfer will give a full report to the accepting nurse.

D. If the patient is transferred to a diagnostic testing area, the accepting staff member is to immediately notify the patient's primary nurse in the patient's unit or the Acute Pain Service in the event of patient discomfort, change in vital signs or level of consciousness, and/or analgesia infusion pump malfunction.

E. Transferring nurse will remind accepting nurse or staff member of APS parameters.
SUBJECT: REMOVAL OF ANALGESIA CATHETER

I. PURPOSE:
Safely remove and correctly document the removal of the analgesia catheter after pain management therapy has been discontinued.

II. POLICY:
Only Anesthesiology (MDs and CRNAs) or Acute Pain Service members will remove analgesia catheters.

III. EQUIPMENT:
A. Gloves
B. Alcohol Preps
C. Band-Aid - optional
D. Analgesia Infusion Pump Key
E. Patient Controlled Analgesia Flowsheet

IV. PROCEDURE
A. Ensure that there is an order to remove the analgesia catheter.
B. If an epidural or intrathecal catheter, ask patient to assume sitting or side-lying position with back exposed and arched out.
C. If analgesia infusion pump is infusing, take final volume readings then unlock analgesia infusion pump, press OFF twice within one second to stop infusion, then re-lock analgesia infusion pump.
D. Put on gloves.
E. Gently remove tape and dressing to expose catheter site.
F. Apply gentle, steady traction to remove catheter. An epidural or intrathecal catheter will be easier to remove if patient continues to assume the arched back position. Do not pull on catheter vigorously; if resistance is met, stop and notify the APS attending.
G. After removal, check the tip of the catheter for the presence of a blue or black mark indicating that the catheter is intact. A “stim cath”, sometimes used for peripheral nerve catheters, has a metal tip. If the mark is absent, save the catheter and notify the APS attending.
H. Indwelling catheters are considered hazardous waste. Handle in accordance with established Infection Control Policies and Procedures.
I. If needed, cleanse the epidural site with alcohol prep and cover with a Band-Aid.
J. Inform patient of the availability of alternate analgesia upon request.

K. Have unit nurse dispose of remaining opiate per nursing policy and procedure.

L. Documentation:

1. Patient Controlled Analgesia Flowsheet: Complete the following information: volume of medication given and remaining, condition of epidural site, if catheter tip is intact, signature of person removing catheter.

M. Notify the APS Attending Physician for the following:

1. Difficulty or inability to remove analgesia catheter.

2. Patient experiences pain or paresthesia (tingling) during removal.

3. Absence of blue or black tip on catheter. SAVE THE CATHETER.

4. Epidural site is painful, red, swollen, or draining purulent material.
I. PURPOSE

Ensure that infusion tubing and bag containing the ordered drug(s) are loaded correctly and secured for analgesia infusion.

II. POLICY

A. VCU Medical Center currently utilizes the Baxter I-Pump; therefore, these procedures are specific for this device.

B. APS members will perform all activities for epidural and nerve catheters that require the authorized analgesia infusion pump security code. An exception is clearing the infusion line of air; this can be done by the unit nurse.

C. All licensed nurses will be responsible for initiating and maintaining IV PCA per nursing policy and procedure.

D. Nursing is responsible to ensure that a back up bag of medication is available on the unit for all infusions.

E. Analgesia infusion pumps containing a Schedule II opiate will remain locked except during initial analgesia infusion pump loading and the changing of the medication bag and/or tubing.

F. Pharmacy Services is responsible for delivering opiate analgesic medications to the nursing units.

G. Clinical Engineering is responsible for maintenance and proper operation of the infusion pumps.

H. PCA TUBING sets will be distributed by materials management.

III. EQUIPMENT

A. Analgesia Infusion Pump

B. Analgesia Infusion Keys

IV. PROCEDURE:

Refer to Quick Programming Guide.
I. PURPOSE

Clear the air from the infusion tubing prior to connecting to patient, or during an infusion when air enters the tubing, and to ensure that the analgesia infusion pump is programmed in accordance with the written order.

II. POLICY

A. APS members will perform all activities for epidural and nerve block catheters that require the authorized analgesia infusion pump security code. An exception is clearing the infusion line of air; this can be done by the unit nurse.

B. All Epidural infusion prescriptions will be written and programmed in ml or mcg (fentanyl).

C. All IV PCA orders will be programmed in milligrams, except for fentanyl orders, which will be programmed in micrograms.

D. Analgesia infusion pumps containing a Schedule II opioid will remain locked except during initial analgesia infusion pump loading and the changing of the medication bag and/or tubing.

E. Never prime tubing while connected to patient.

III. EQUIPMENT

A. Analgesia Infusion Pump

B. Analgesia Infusion Pump Key

C. Epidural/nerve block catheter analgesia infusion pump tubing set (with yellow-striped tubing)

D. IV PCA - Analgesia infusion pump air eliminating spike tubing set and anti-reflux Y-set.

E. Medication infusion bag

F. Patient Controlled Analgesia Flowsheet

IV. PROCEDURE - PRIMING  *NOTE - NEVER prime tubing while connected to patient.

A. Refer to Quick Programming Guide

B. If the infusion tubing has been disconnected from an epidural/intrathecal/caudal or nerve catheter hub in response to air in the tubing, the RN priming the tubing must have another licensed nurse immediately verify that the flushed tubing is reconnected to the appropriate catheter hub.

C. Check settings with another medication giver by pressing “enter” through all the screens and document the following on the Patient Controlled Analgesia Flowsheet:

3. Amount Remaining  7. 1 hour limit  11. Signature
4. PCA dose  8. Bolus
I. PURPOSE

Change epidural/nerve catheter/IV PCA analgesia infusion bag.

II. POLICY

A. RN and LPN medication givers validated in Analgesia Infusion Pump operation may change PCA analgesia bags. Only nurses validated in epidural infusion will change epidural bags.

B. Nurses should insure that an extra bag of ordered medication is always available on the patient’s unit for each patient receiving this therapy.

C. The Pharmacy Department will supply the epidural analgesia infusion bag to the nursing units

III. PROCEDURE

Refer to Quick Programming Guide
I. PURPOSE

Ensure analgesia infusion pump settings are correct and to determine patient's use of PCA dose in order to make appropriate changes in treatment plan or to reinforce patient teaching if needed.

II. POLICY

A. Licensed nursing personnel who are validated in analgesia infusion pump operation will obtain and document patient history and analgesia infusion pump programming every 4 hours on the Patient Controlled Analgesia Flowsheet.

B. For patients receiving basal only, the history consists of the following: given volume, residual volume, and basal rate. For IV PCA, the rate will be shown as mg/hr (or mcg/hr for fentanyl). For epidurals and nerve block catheters, the rate will be shown as ml/hr (or mcg/hr for fentanyl).

C. For patients receiving basal plus PCA, the history consists of the following: given volume, residual volume, dose, delay, basal rate, 1-hour limit and up to a 24-hour history of doses received and attempted.

D. For patients receiving PCA only, the history consists of the following: given volume, residual volume, dose, delay, one hour limit and up to 24-hour history of doses received and attempted.

E. For patients receiving PCA pain management, the number of doses and attempts will be used to determine ongoing treatment plan.

III. PROCEDURE

Refer to Quick Programming Guide.

IV. DOCUMENTATION

When patients are followed by APS:

A. The Acute Pain Service will record daily the injections in the 2 most recent 12-hour increments.

B. Nursing personnel will document analgesia infusion pump settings on the Patient Controlled Analgesia Flowsheet for all PCEA/nerve block infusions every 4 hours.
I. PURPOSE
Safely provide a single dose of analgesia in addition to the amount administered by the programmed prescription.

II. POLICY
Anesthesiologists or Acute Pain Service members will administer epidural or nerve catheter boluses.
A. The Pain Service will notify the patient's nurse that the patient is receiving a bolus. APS personnel will remain with patient during bolus administration and for several minutes thereafter, performing any vital signs measurement if required every 5 minutes. They will advise the patient’s nurse of any vital signs measurement required every 15 minutes x 2.

Only a RN may give a bolus through an analgesia infusion pump delivering intravenous or subcutaneous opiates.

III. EQUIPMENT
A. Analgesia infusion pump key
B. Patient's medication order
C. Patient Controlled Analgesia Flowsheet
D. Equipment to perform blood pressure measurement

IV. PROCEDURE
Refer to Quick Programming Guide.

V. DOCUMENTATION
To be placed on Patient Controlled Analgesia Flowsheet.
I. PURPOSE

Ensure the infusion of analgesia as ordered in an effort to maximize the patient's experience of comfort and to minimize the patient's experience of side effects.

II. POLICY

Only Acute Pain Service team members, or anesthesiologists who are knowledgeable in analgesia infusion pump operation, will perform prescription changes according to anesthesiologist's order for epidural/nerve catheter analgesia therapy. Staff nurses validated in analgesia infusion pump operation may make prescription changes in IV PCA therapy. The Acute Pain Service is responsible for insuring updated and accurate orders are placed as required in the CIS system.

III. EQUIPMENT

A. Analgesia infusion pump key
B. Patient Controlled Analgesia Flowsheet

IV. PROCEDURE

Refer to Quick Programming Guide

V. DOCUMENTATION

Patient Controlled Analgesia Flowsheet.
I. PURPOSE

An indwelling temporary catheter will be inserted as a pain control technique as determined by the Acute Pain Service.

II. POLICY

Nurses will care for patients receiving continuous or intermittent nerve blockade via catheter for pain control. The solution infused will be a local anesthetic.

III. PROCEDURE

A. Patient’s pain level will be assessed every four hours while awake.

B. Patient’s blocked extremity will be assessed every four hours while awake for signs of motor blockage.

C. Blood pressure, pulse and respirations will be obtained every four hours.

D. After a bolus of local anesthetic, vital signs will be obtained every 5 minutes x 2 then every 15 minutes x 1, then return to every four hours.

E. The Acute Pain Service (pager 2899) should be notified immediately if patient complains of shortness of breath, muscle tremors, increased anxiety, hypotension, tinnitus, numbness or itching around mouth, heavy tongue, metallic taste in mouth or any unusual complaint. If these occur, the infusion should be suspended by “popping” the pump battery or clamping the tubing of a disposable (i.e. OnQ®) pump.

F. No other narcotics, hypnotics, or sedatives should be given unless the Acute Pain Service has been notified.

G. If the patient is receiving a continuous infusion, the pump should be assessed every four hours to ensure accuracy and proper functioning.

H. Documentation will be recorded on the Patient Controlled Analgesia Flowsheet.

I. The dressing over the catheter insertion site should be inspected every shift. The Acute Pain Service should be notified for signs of leakage, skin irritation, infections, and catheter problems. If the dressing becomes loose, the dressing should be reinforced and APS notified.

J. Heating pads or cold compresses to the affected area should be used with extreme caution since the patient’s sensation level may be decreased.

K. Call APS for any questions/issues regarding the nerve catheter or therapy

M. A back up bag of medication will be available on unit at all times.

N. All local anesthetic orders will be programmed in milliliters (ml).
GENERAL POLICIES AND PROCEDURES

A. Except during analgesia infusion tubing and bag changes, the analgesia infusion pump containing Schedule II opiates will remain locked. Keys will be kept in PYXIS at all times.

B. Only physicians, RNs, LPNs, PharmDs and RPhs who are knowledgeable in the operation of the analgesia infusion pump will perform the activities that will affect opiate use and waste.

C. VCUHS will use a universal security code for the analgesia infusion pumps. Access to the security code will be limited to health professionals who are knowledgeable in the operation of the analgesia infusion pump.

D. Analgesia infusion bags will be distributed by the pharmacy in accordance with the written physician's order and Pharmacy Policies and Procedure.

E. All analgesia infusion bags will be labeled with the drug, drug strength, volume, expiration date, and lot number.

F. All analgesia infusion bags designated for epidural use will be appropriately labeled "For Epidural Use Only".

G. Licensed nursing personnel will insure that an extra bag of ordered medication is available at all times in PYXIS. These bags will be delivered to the floor by a Pharmacy Technician. Licensed nursing personnel will accept and sign the receipt for these bags.

H. Replacement bags containing drugs and/or concentrations other than mixtures prepared or purchased in bulk quantities by the pharmacy will be prepared by the pharmacy upon receipt of a written physician's order and will be delivered to the floor by Pharmacy Services where a licensed nursing person will accept and sign for receipt. The signed receipt will serve as documentation of acceptance by nursing personnel of the opiate infusion.

I. Infusion bags will be signed out to a specific patient via PYXIS. The new bag's volume will be recorded on the patient's bedside Patient Controlled Analgesia Flowsheet.

J. Licensed nursing personnel will monitor and record the patient's current PCA settings and volumes every 4 hours on the Patient Controlled Analgesia Flowsheet.

K. Bolus doses will be recorded on the Patient Controlled Analgesia Flowsheet.

L. Unused medication remaining in the infusion bag after therapy has been discontinued, or when the infusion bag is changed, will be destroyed as per Nursing Policy and Procedure. This "destroyed" amount will be documented in PYXIS.

N. The yellow copy of the Patient Controlled Analgesia Flowsheet will be returned to the pharmacy.
I. PURPOSE

Properly follow monitoring and infusion procedures for patients receiving subcutaneous infusions with or without patient controlled analgesia (PCA) for pain management.

II. POLICY

Only health care professionals verified in analgesia infusion pump operations will care for patients receiving subcutaneous infusions/PCA for pain control.

III. EQUIPMENT

A. Ordered opiate infusion bag
B. Analgesia infusion pump
C. PCA tubing - do not need anti-reflux Y-connector
D. Gloves
E. Alcohol wipes
F. 2x2’s
G. Tape
H. 27 gauge butterfly needle or specific subcutaneous infusion set.

III. PROCEDURE

A. Set up pump infusion device with ordered medication (see quick programming guide).
B. Determine site of subcutaneous infusion/PCA which may include: thighs, chest, abdomen, and the upper arms.
C. Put on gloves.
D. Wipe the insertion site with an alcohol swab and let air dry.
E. Insert the butterfly needle (27 gauge) into subcutaneous tissues, using a 30 - 45 degree angle with the bevel down. If using a subcutaneous infusion set, insert the needle at a 90 degree angle.
F. Tape the needle securely in place.
G. Apply sterile dressing.
H. Initiate infusion.
I. Change needle every 3 days and as needed.
J. Monitor subcutaneous site every shift for signs of infection or discomfort.

IV. NOTES

A. Subcutaneous infusions should be initiated and maintained with the least amount of volume possible to avoid infusing more than 2.5 cc/hr.
B. If an infusion of greater than 2.5 cc/hr is required to maintain patient's comfort, change the concentration of the opiate or change the opiate (e.g. from morphine to hydromorphone).
C. The PCA dose interval should be increased to 15-20 minutes, as absorption will not be as rapid as IV PCA.
D. A separate IV solution should not be used with subcutaneous PCA.
I. PURPOSE

Safely provide transdermal fentanyl administration.

II. POLICY

Only licensed nursing personnel will apply and/or destroy fentanyl transdermal patches.

III. PROCEDURE

A. Fentanyl transdermal patches will be applied by a licensed nurse as ordered.

B. Fentanyl transdermal patches will be applied to the trunk area (front or back) only. Do not apply to freshly shaved regions; body hair should be clipped, not shaved, if necessary.

C. The date of fentanyl patch application will be indicated on/near the patch in a way not to obscure the dosage strength of the patch.

D. If an order for a new patch strength is initiated before the old patch was scheduled to be removed, the new strength patch will be applied while removing the old strength patch at the same time.

E. Discard fentanyl transdermal patches by cutting the patch in half and disposing in the same manner as hazardous waste.

F. Nurses will document destruction of fentanyl patches per the Controlled Substance Policy

G. Note: Fentanyl patch has increased absorption with fevers and has been shown not to last 72 hours in a small population of patients.
VCU HEALTH SYSTEM
ACUTE PAIN SERVICE, DEPARTMENT OF ANESTHESIOLOGY
DEPARTMENT OF ONCOLOGY/PALLIATIVE CARE
DEPARTMENT OF PATIENT CARE SERVICES
POLICY AND PROCEDURE MANUAL

SUBJECT: NURSING CARE OF THE PATIENT RECEIVING TENS (TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION) ORIGINAL DATE: JULY 1991
REVIEW/REVISE: MAY 2012 EFFECTIVE DATE: MAY 2009

I. PURPOSE
Assure proper care of patients receiving transcutaneous electrical nerve stimulation (TENS) therapy.

II. POLICY
Nurses will assist in caring for patients receiving TENS therapy as a form of pain control.

III. PROCEDURE
A. Assess that the TENS unit leads are connected to the electrodes and stimulator every shift.
B. Assess the battery function every shift and replace batteries as needed. The TENS unit's light will blink when functioning properly.
C. Assess the patient's pain relief from the TENS unit every shift.
D. Notify physical therapy if TENS appears ineffective or if the patient has problems, complaints or concerns related to this form of therapy.
E. Assess the skin condition under the electrodes every twelve hours to determine if irritation or rash is present. This is done by lifting a corner of the electrode and assessing skin condition.
F. Patients and/or nurses may adjust the TENS unit intensity knobs to obtain an increased level of comfort.
G. Nurses may replace electrodes to a similar location on the patient’s skin if they become detached. Wash and dry skin prior to replacement.
H. Review the TENS troubleshooting sheet (in appendix) and the physical therapist's notes in patient's chart as needed for further information.
I. The physical therapist should place extra electrodes and batteries in a visible place at the patient's bedside.
I. PURPOSE

Properly monitor patients with SCS.

II. POLICY

Only nurses and physicians trained in SCS will make changes to SCS parameters.

III. ASSESSMENT OF PATIENTS RECEIVING SCS

A. Patient's incision sites will be assessed for redness, swelling, drainage and tenderness every shift.

B. Call implanting service for fever over 102 F X 4 hours or if the patient complains of severe headache, neck pain, back discomfort and/or loss of bladder or bowel control.

C. The patient may turn the SCS on/off and may adjust the rate and amplitude as needed.
I. PURPOSE

Properly monitor patients with a newly implanted port, catheter, or pump.

II. POLICY

Only nurses and physicians trained in programming pumps will make dosage changes.

III. ASSESSMENT OF PATIENTS

A. Respiratory rate and level of sedation will be checked every hour x 12, then every 4 hours.
B. No opiates, sedatives or hypnotics will be administered without first consulting the implanting service.
C. Patient data will be recorded on the appropriate flowsheet.
D. If the respiratory rate is < 8 breaths/minute and/or the patient not arousable, call the implanting or managing service and administer naloxone as ordered.
E. Record level of analgesia (0-10 verbal pain scale) every 4 hours while awake.
F. A running IV is mandatory during the first 12 hours and may then be switched to IV access (saline lock) while patient is hospitalized for procedure.
G. Patient’s surgical incisions should be assessed every shift for redness, swelling, drainage, or tenderness. Call implanting service with problems.
H. Call implanting service for temperature over 102 F x 4 hours, or if patient complains of severe headache, neck pain or back discomfort.
I. Call implanting service if patient complains of urinary retention, loss of bowel or bladder control or lower extremity weakness.
J. If local anesthetics are being infused, monitor dermatome level every 4 hours or as ordered.
SUBJECT:  Titrating Infusion Rates of Implanted Intrathecal Pumps.  ORIGINAL DATE:  JANUARY 2004
REVIEW/REVISE:  MAY 2012
EFFECTIVE DATE:  MAY 2009

I. PURPOSE

Safety titrate medication for individuals with intrathecal pain pumps.

II. POLICY

Only registered nurses and physicians trained in programming intrathecal pumps will make dose changes.

III. PROCEDURES

A. A validated titration order will be obtained.
B. The dose change will be recalculated by two licensed nurses.
C. The dose change will be reverified by pump manufacturer.
D. The dose will be changed as ordered.
E. Documentation of the dosage change will be placed in the patient’s chart.

The Palliative Care Service should be consulted if questions regarding management of these devices arise. If patients require any changes, transfer to Palliative Care Unit.
I. PURPOSE

Outline the correct procedure for refilling a Medtronic SynchroMed Pump

II. POLICY

Only nurses and physicians trained in filling and programming the pump procedure and techniques will access the reservoir. Two trained health care professionals will verify calculations and will be present for filling and programming procedures.

III. EQUIPMENT

A. ChloroPrep skin antiseptic
B. Sterile gloves
C. Medtronic SynchroMed Refill Kit
D. Medtronic SynchroMed Programmer
E. Sterile 20ml syringe containing 18ml of the prescribed medication
F. Calculator

IV. PROCEDURE

1. Check MD order
2. Record vital signs, pulse oximetry, level of consciousness
3. Wash hands
4. Explain procedure to patient
5. Perform telemetry to verify current pump settings
6. Calculate new parameter settings, if any, including rate of infusion and/or bridge bolus
7. Verify calculations with another trained health care professional. Confirm bridge bolus calculations with technical support at Medtronic (1-800-707-0933)
8. Open refill kit
9. Cleanse the pump area with ChloroPrep skin antiseptic using a back-and forth motion and friction for 30 seconds. Allow to dry for 30 seconds
10. Put on sterile gloves
11. Place fenestrated drape exposing pump site
12. Assemble extension tubing set, non-coring needle and empty 20ml syringe
13. Place template over pump aligning the edges of the template with the edges of the pump.
14. Insert the non-coring needle through the pump’s center septum until the needle touches the needle stop.
15. Open the clamp
16. Hold needle in place with gentle downward pressure (one health care provider)
17. Withdraw the fluid from the reservoir using gentle negative pressure (second health care provider). Empty the reservoir completely until air bubbles are present in the extension tubing. The amount withdrawn should approximately equal the reservoir volume indicated on the initial pump reading.

18. Close the clamp and remove the 20ml syringe.
19. Attach the filter to the sterile syringe of medication and prime the filter.
20. Attach the syringe and filter to the tubing.
21. Open clamp slowly. Medication should begin filling the reservoir.
22. Slowly (1ml/3 seconds) infuse the 18ml of medication into the reservoir, withdrawing 1-2mls after each 5ml infusing. Note color of fluid aspirated. Do not force the infusion.

23. When filling is complete, clamp the tubing.
24. Carefully remove the needle from the pump.
25. Clean skin. Apply dressing if desired.
26. Program the appropriate new parameters, i.e. reservoir volume, concentration, rate of infusion, etc.
27. Verify new parameters with second health care professional.
28. Using telemetry, update pump with the previously entered parameters. Note: Programmer printouts may fade with time. To ensure long-term legibility, photocopy printouts and include them in the patient’s permanent record.

29. Document in the patient’s record the following information:
   a. Date
   b. Time
   c. Old parameters
   d. Pump’s residual volume
   e. New parameters
   f. Next refill date
   g. How patient tolerated procedure
   h. Condition of pump site

30. Monitor patient for 15-30 minutes after completion of infusion. Record vital signs, pulse oximetry, and level of consciousness. If suspicion of misdirected infusion occurs, notify MD, initiate IV therapy, obtain naloxone and ephedrine at bedside, monitor vital signs and pulse oximetry.
I. PURPOSE

Properly change medication parameters so that the patient receives optimum analgesia.

I. POLICY

Only nurses and physicians properly trained in the Medtronic SynchroMed Pump operation will make changes.

III. EQUIPMENT

Medtronic SynchroMed Programmer.

IV. PROCEDURE

A. Perform telemetry to check pump status

B. Program the appropriate new parameters, i.e., mode and/or rate of infusion, alarms, etc., per physician’s orders.

C. Confirm new parameters with a nurse or physician knowledgeable with the SynchroMed pump.

D. Perform telemetry to update pump.

Note: Programmer printouts may fade with time. To ensure long-term legibility, photocopy printouts and include those copies in the patient’s record.

E. Document the following in the patient’s medical record:
   1. Date
   2. Time
   3. Old parameters
   4. New parameters
   5. New refill date
I. PURPOSE

Ensure safe and adequate pain control

II. POLICY

Unconventional use of a PCA pump- In situations where a patient is unable to self-administer analgesics, nurse activated dosing may be used. Examples Include:

A. Cognitively able patients who are physically unable to use PCA using available equipment (trauma to upper extremities, paralysis, rheumatoid arthritis, etc.)
B. Patients unable to understand relationship between pain, pushing the PCA button and pain relief (cognitively impaired patients- trauma, CVA, mentally retarded etc.)
C. Young children (8 or below) who are assessed to have pain but for developmental/cognitive reasons cannot use PCA. Parents will be instructed that only the nurses may push button for dose.

III. PROCEDURE:

A. Patient’s nurse during the shift assumes responsibility of assessing patient’s pain as per policy.
B. When pain is determined to be 5 or greater on 0-10 scale (discomfort becoming distressing), nurse may activate PCA button in instances when patient is unable to do so for him/herself secondary to cognitive, developmental, physical or other impairments.
C. Safety precautions of monitoring vital signs, level of sedation, signs of pain, side effects, and adverse reactions as well as response to intervention will be monitored and recorded.
D. Documentation of pump volumes, settings etc. will be assessed and recorded every 4 hours on Patient Controlled Analgesia Flowsheet as per policy (every 8 hours for IV PCA).

This method may be used in addition to a basal as a means of managing breakthrough pain, or without a basal rate as a means of maintaining analgesia around the clock with NCA dosing.

IV. RESOURCES

Acute Pain Management Service # 2899
Pharmacy –VCU Health Systems 828-1064
Pain Management Manual, McCaffery WB Saunders 1999

V. REFERENCES

Core Curriculum for Pain Management Nurses
American Society of Pain Management Nurses WB Saunders 2002
SUBJECT: Narcan IV Infusion for Opioid Side Effect Control
(nausea, pruritis, urinary retention)  

ORIGINAL DATE: NOVEMBER 2003
REVIEW/REVISE: MAY 2012
EFFECTIVE DATE: MAY 2009

I. PURPOSE

Provide the patient relief of the opioid side effects of pruritis, nausea and/or urinary retention without reversing the analgesic effect of the opioid.

II. POLICY

Naloxone (Narcan®) low dose continuous IV infusion may be used in situations where a patient is receiving opioids for pain control and has nausea or pruritis unrelieved by standard doses of appropriate medications, or has urinary retention attributed to the opioid.

III. PROCEDURE:

Low dose IV naloxone continuous infusion usually mixed as 2.5mg naloxone in 250cc D5W or 0.9% NS (resulting concentration 10mcg/ml). Infusion is started at 4ml/hr. May increase infusion by 1ml every 20 minutes until side effect is relieved or maximum dose of 8ml rate (80mcg/hr) is achieved. Beyond this rate, analgesia will likely be reversed.

IV. RESOURCES

APS - pager #2899
Pharmacy VCU Health System
Pat Coyne, RN, Palliative Care CNS - pager #4169

V. REFERENCES

Core Curriculum for Pain Management Nurses
American Society of Pain Management Nurses WB Saunders 2002
I. PURPOSE:

To describe the process by which qualified nursing staff provide care for the patient receiving pain management via a disposable pump continuously infusing a local anesthetic (e.g. “On-Q”).

II. HAZARDS AND COMPLICATIONS:

1. Patients may experience loss of motor control or sensation at/around the catheter site. Take proper measures to avoid patient injury (e.g.: protect arm with sling; use warm/cold packs with extra care to avoid burns).

2. Patient should be routinely evaluated for signs and symptoms of local anesthetic toxicity. Close the clamp and immediately notify the surgical team or APS, as appropriate, if any of the following occur:
   a. Dizziness, lightheadedness, drowsiness, confusion, anxiety, restlessness
   b. Blurred vision, ringing/buzzing in ears, numbness/tingling around mouth, fingers or toes, metallic taste
   c. Twitching or seizure activity

3. Fall risk potential

III. POLICY:

1. The registered nurse and the licensed practical nurse are designated as qualified to provide care for the patient with a disposable local anesthetic pump following education and clinical experience.

2. Patients and/or families should be informed of possible activity restrictions imposed by catheter placement.

3. Nursing documentation should be done on the PCA flow sheet, filling in the applicable columns.

4. Supplemental analgesic medications will be available for the patient receiving a local anesthetic infusion.

5. When the catheter is placed by surgeon or credentialed HCP (other than anesthesia):
   a. The catheter is secured using a transparent dressing, allowing visualization of the insertion site. The dressing/tape may be reinforced as needed, but should be changed only by the surgeon or credentialed HCP.
   b. The physician/credentialed HCP enters the pump medication order, as well as orders for adjunct analgesics.
   c. When empty, the physician, credentialed HCP or trained RN will remove the catheter and discontinue the pump. The condition of the catheter tip, time and date of removal will be documented.
   d. If the patient is to go home with the catheter in place, the physician, HCP or RN will provide verbal and written instruction.

6. When the nerve catheter is placed by anesthesia:
   a. The catheter is secured using a transparent dressing, allowing visualization of the insertion site. The dressing/tape may be reinforced as needed, but should be changed only by anesthesia or a member of the Acute Pain Service (APS).
   b. Orders, including adjunct IV analgesia if appropriate, will be placed by anesthesia or APS.
   c. APS will monitor the pump and patient, assessing analgesia status daily.
d. When infusion is complete, APS will be notified. The anesthesiologist or APS RN will remove the catheter and discontinue the pump. The condition of the catheter tip, time and date of removal will be documented.

e. If the patient is to go home with the catheter in place, the anesthesiologist or APS RN will provide verbal and written instruction.

IV. **PROCEDURE:**

1. Catheter is placed as described under “POLICY”.
2. The on/off clamp is released and the flow restrictor, if present, is taped to the patient’s skin. This assures medication delivery at the proper rate.
3. Assessment of the patient with a disposable infusion pump and catheter:
   a. Assure the on/off clamp is open. Changes will not be seen hour-by-hour in the pump volume, and fluid will not be seen moving through the tubing or catheter. Over time (frequently not until after 24 hours), the outside bag will become loose and wrinkles will form. This is normal.
   b. Check tubing for kinks. If tubing appears crimped, roll the affected area between your thumb and index finger to restore and facilitate flow through the tubing.
   c. Dressing and tape may be reinforced if not dry and intact, but should not generally be removed since catheter may be dislodged.
   d. Assist patient with securing pump device where it will not place traction on the catheter or tubing.
   e. Do not tape over the in-line filter; if obstructed, an air bubble trapped in the tubing can create an air lock, which will stop the flow of medication.
   f. Assess and document pain status per pain management policy. Administer supplemental analgesics as ordered.
   g. Assess patient at least every 8 hours for redness, swelling, or excessive leaking at catheter insertion site. Minor medication leakage, with pooling under the dressing, may normally occur. Reinforce with 4X4s as needed.
   h. Do not squeeze the pump.
   i. Do not place hot or cold therapy near the flow restrictor (will increase or reduce the flow rate).
   j. Do not reuse or refill the pump.
   k. Protect pump and catheter site from water.
   l. The infusion is complete when the delivery time has passed and the pump is no longer inflated. A hard tube can be seen and felt in the middle of the pump.

4. Adequate and appropriate education must be provided for the patient being discharged with the catheter and medication pump still in place.
   a. The manufacturer’s brochure may be used, and reviewed thoroughly with the patient/family.
   b. Current contact phone number(s) for the patient must be obtained.
   c. An accurate MCVH contact phone number for any questions/concerns must be provided for the patient. The patient should be advised to have the APS nurse paged, not to leave a message on the office voicemail.
   d. The patient should know if he is responsible for catheter removal, or if it will be done by a HCP at an upcoming appointment.

VI. **RESOURCES:**

Acute Pain Service team, Anesthesia Department.
American Society of Pain Management Nurses: Core Curriculum for Pain Management Nursing, 2002; edited by Barbara St. Marie

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