Policy Name:	Policy Number:
PALLIATIVE EPIDURAL AND INTRATHECAL INFUSION	**2-0283**
	Effective Date: **DECEMBER 16, 2020**
Approved By: Executive Team	Date Revised: Click here to enter a date.
Reason for Revision: Click on item below and select item from list. **CONTENT- Enter BELOW Reason for change Ex: Combined Policy ## and ##.** New policy.	Next Date for Review: December 16, 2023
Section: Section 02 - Pain and Symptom Management	Page No: **Page 1 of 12**

Policy

OBJECTIVES

- To provide consistent practice for the maintenance and management of epidural and intrathecal infusion lines in palliative patients to relieve or reduce severe pain.

APPLICABILITY

This policy applies to all Agape employees, students, volunteers, and other persons acting on behalf of Agape at the Agape Hospice.

POLICY ELEMENTS

1. Points of Emphasis

1.1 Epidural and intrathecal infusion management is an advanced care competency.

1.2 Palliative patients with epidural and intrathecal infusions may be cared for only by nursing staff who demonstrate competency in the advanced practice of epidural and intrathecal infusion management after receiving the required training:

a) Care of epidural and intrathecal catheters includes:

i. Monitoring of patient and infusion system;
ii. Physician notification;
iii. Set-up and changing of epidural and intrathecal bags, tubing, filters and access needle if applicable;
iv. Management and/or repair of disconnected catheters.

1.3 An Agape attending physician must be involved as the most responsible health practitioner whenever epidural or intrathecal analgesia is used to manage pain in the palliative patient.

1.4 Sterile technique is required during any contact with the solution, tubing, dressing, or catheter site.

1.5 Discontinuation of the epidural or intrathecal therapy is at the discretion of the palliative care physician.

2. Physician Orders

2.1 The attending physician's order is required for the initiation and maintenance of epidural or intrathecal infusions. These orders must specify:

a) Route of administration (epidural or intrathecal);

b) Medication(s) and concentration(s);

c) Mode(s) of delivery:

i. Continuous;
ii. Patient controlled epidural/intrathecal analgesia (PCA) or;
iii. Continuous with the addition of PCA or PCA;

d) Bolus and/or loading dose;

e) Lockout interval;

f) Hourly maximum dose limit (optional); and

g) Monitoring parameters.

2.2 Palliative care patients receiving epidural or intrathecal infusions for pain control are not to be given additional opioids or central nervous system (CNS) depressants (e.g. anxiolytics) via another route unless specifically ordered by the attending physician.

a) Often medications can be reduced when epidural or intrathecal therapy is initiated and all medication orders will be reassessed at the time therapy is initiated by the palliative care team.

3. Medication Management

3.1 Epidural and intrathecal infusion bags are to be signed out on the narcotic record sheet and any wastage documented according to the narcotic processes in place at Agape Hospice.

3.2 Epidural and intrathecal infusions are to be delivered with an infusion pump and specific tubing designated for this purpose.

3.3 Direct bolus dosing into the epidural or intrathecal line, flushing and removal of a tunnelled or non-tunnelled catheter is physician responsibility.

a) Nursing staff may flush implanted ports for the purposes of assessing placement of non-coring needles only (See 3.4).

3.4 An Independent double check by either two (2) registered nurses, or a registered nurse and a physician is required for:

a) Initial programming of an epidural or intrathecal infusion pump; and
b) Changes to the pump program parameters.

3.5 Monitoring shall include the effectiveness of therapy as well as the infusion parameters.

3.6 The registered nurse shall document the totals and clear the pump totals at the end of each shift.

a) For patients receiving PCA, documentation will include the number of attempts as well as the number of doses received.

DEFINITIONS

Asepsis: techniques used to reduce the number of micro-organisms and prevent their spread.

Hand Hygiene: practices to which remove micro-organisms with or without soil from the hands (refers to the application of alcohol-based hand rub or the use of plain/antimicrobial soap and water hand washing).

Independent double check: a verification process whereby a second health care provider conducts a verification of another health care provider's completed task. The most critical aspect is to maximize the independence of the double-check by ensuring that the first health care provider does not communicate what he or she expects the second health care provider to see, which would create bias and reduce the visibility of an error.

REQUIRED FORMS AND EQUIPMENT REFERENCES

Neuraxial Analgesia Flow Sheet
Electronic forms location – FORMS
Hardcopy forms location – Work area file cabinet.

REFERENCES

- Appendix A – Epidural or Intrathecal Catheter Disconnection/Compromised System Integrity Decision Tree
- Alberta Health Services Calgary Zone Palliative and Hospice Care Service (2015 in draft). Palliative Epidural / Intrathecal Analgesia Resource Manual
- Alberta Health Services Invasive Infusion Line and Tubing Verification Policy
- Alberta Health Services Acute Pain Management – Epidural Analgesia – Adult Procedure
- Alberta Health Services (2012). Infection Prevention & Control Manual
- Calgary Health Region Nursing Policy & Procedure C-7: Central Venous Catheter (CVC) and Midline Catheter, Care and Maintenance

Procedure

1. Monitoring and Assessment of Patient and Infusion System and Physician Notification:

1.1 For the duration of the infusion, monitor and document assessments of parameters (listed in 1.4 below) during every 12 hour shift, and more frequently if indicated.

1.2 Ensure the **patient/family** understands:

a) The purpose of the pump;

b) The purpose of the epidural or intrathecal catheter;

c) How to use the PCA bolus button; and

d) Potential adverse effects.

1.3 Equipment and line assessment:

a) Check the epidural or intrathecal catheter site every shift to ensure:
   i. The site is free of infection;
   ii. The catheter is properly secured; and
   iii. The integrity of the catheter is maintained.

1.4 Monitor and document the following parameters at the intervals indicated in the physician's order (at a minimum) or every 12 hours:

a) Pain score;

b) Sedation score;
c) Sensory block level;
d) Motor block;
e) Respiratory Rate, 02 sat;
f) Medication name, concentration, route of administration and pump settings;
g) BP if indicated.

1.5 Notify the attending physician if any of the following are exhibited:

a) Inadequate analgesia;
b) Unanticipated changes in motor or sensory blockade;
c) Uncontrolled side effects (e.g. urinary retention, pruritus, nausea, vomiting);
d) Respiratory depression characterized by a respiratory rate of less than eight (8) breaths per minutes and sedation score of greater than one (1);
e) Hypotension – a significant drop in blood pressure immediately following bolus injections;
f) Concerns related to the epidural or intrathecal catheter;
Note: This includes but is not limited to leakage, bleeding, pain or tenderness at the insertion site, catheter migration (in or out), accidental removal of the catheter, disconnection of the catheter, exposed catheter site (dressing rolled off), or catheter occlusion;
g) Potential local anesthetic toxicity (e.g. patient complaining of numbness and tingling around his/her lips, ringing in ears, dizziness, and/or metallic taste in mouth);
h) Signs and symptoms of infection at the catheter insertion site (redness, inflammation, increased temperature, purulent exudates at catheter site); or
i) A headache that worsens with sitting, standing, and improves with lying down.

2. Tunneled Epidural/Intrathecal Catheters

2.1 General considerations:

a) Standard precautions and meticulous **hand hygiene,** as outlined by Infection Prevention and Control, shall be used at all times.
b) Solution bag, tubing and filters are to be changed every seven (7) days after they are initiated, using sterile technique, including the use of a procedure mask.
Note: If changing solution bag only, use sterile (no touch) technique.
c) Use only designated tubing identified for use with epidural and intrathecal catheters.
d) Clearly label all solution bags and tubing.
e) Epidural/Intrathecal infusion pumps are to be used for all infusions.
Note: Injection caps shall not be used in any epidural or intrathecal set-ups.

2.2 Equipment:

a) Epidural/intrathecal tubing without injection ports (yellow tubing);
b) Line label;
c) Epidural/intrathecal infusion pump;
d) 0.2 micron filter (epidural filter);
e) 0.5% chlorhexidine gluconate with 70% isopropyl alcohol (3 swabs and 2 wipes);
f) Sterile gloves;
g) Procedure mask;
h) Dressing tray or sterile field; and
i) Epidural or intrathecal solution bag with medication(s) and concentration(s) as ordered by the attending physician/anesthesiologist.

2.3 Setting up medication bag, tubing, filter and pump:

a) Perform hand hygiene.
b) Prepare the solution medication bag, tubing and pump in accordance with the manufacturers' instructions.
c) Attach 0.2 micron filter between the male and female ends of the split tubing (if not already included on tubing set).
d) Program the infusion pump according to physician's orders.
e) Ensure independent double check of pump programming performed and co-signed by another RN.
f) Prime the infusion tubing with pump.

2.4 Connecting to Epidural or Intrathecal Catheter:

a) Explain procedure to patient/family.
b) Position patient comfortably with epidural or intrathecal catheter accessible.
c) Perform hand hygiene and mask.
d) Clean work surface with disinfectant wipes.
e) Prepare sterile field, using extra drape under catheter/tubing connection.
f) Don sterile gloves.
g) Before disconnecting epidural/intrathecal catheter from current infusion line, cleanse connection between catheter and old tubing with chlorhexidine wipe for a minimum of 15 seconds and let air dry completely.
h) Disconnect old tubing.
i) Connect new tubing using sterile technique.
j) Initiate the infusion.
k) Apply line label
l) Document:

i. Medication(s);
ii. Medication concentration;
iii. Route;
iv. Pump settings;
v. Tubing change; and
vi. Medication wastage if appropriate.

2.5 Dressing change: epidural or intrathecal catheter:

a) Points of emphasis:
i. Sterile technique must be used when performing this procedure.
ii. Any securement device (e.g. Epiguard) used at the catheter exit site should only be changed or removed by a member of APS or an anesthesiologist.
iii. Only transparent vapour permeable dressings will be used.
iv. Clearly label catheter/dressing: “Epidural Catheter” or “Intrathecal Catheter”.
v. Note and document any changes in the visible length of catheter.

b) Tunneled catheter site dressings shall be changed every seven (7) days if sterile transparent vapour permeable dressing is used and whenever the integrity of the dressing is compromised.

c) Equipment:
i. Dressing tray or sterile field;
ii. 0.5% chlorhexidine gluconate with 70% isopropyl alcohol (three (3) swabs and two (2) wipes);
Note: if the patient is sensitive to antiseptic solutions, consult the attending physician for other antiseptic options.
iii. Gloves, sterile and non-sterile;
iv. Procedure mask;
v. Normal saline if required;
vi. Skin barrier wipe;
vii. Two (2) sterile transparent vapour permeable dressings (one (1) 10cm x 12cm and one (1) 6cm x 7cm);
viii. Sterile skin closure strip (if needed);
ix. Tape (for securing catheter to patient’s back); and
x. Swab for culture and sensitivity if indicated.

d) Dressing Change Procedure:
i. Explain procedure to patient.
ii. Clean work surface with approved disinfectant wipes.
iii. Mask and set up sterile field.

iv. Perform hand hygiene.
v. Don non-sterile gloves.
vi. Carefully remove old dressing and skin closure strip if present; lift transparent dressing (and any skin closure strips if present) toward the catheter insertion site to prevent dislodgment of the catheter.
vii. Remove non-sterile gloves; perform hand hygiene; don sterile gloves.
viii. Clean insertion site with normal saline if exudate is present.
Note: If a swab for a culture and sensitivity is required, cleanse insertion site with normal saline to remove exudate, apply pressure laterally towards the insertion site to obtain exudate from beneath the skin, swab the area, secure specimen, and send to lab.
ix. Clean the entrance/exit site with chlorhexidine swab. Clean in a method that uses friction, such as the hashtag method, to ensure the antiseptic cleans down several layers deep in to the skin to ensure extended "kill time" of bacteria under the dressing.
x. Repeat three times. Ensure a minimum of 30 seconds contact time, and allow to air dry completely.
xi. Use sterile gloved hand to anchor epidural or intrathecal catheter at exit site.
xii. Clean the length of the catheter that will be beneath the dressing with chlorhexidine, starting at site, and allow to air dry completely.
xiii. May apply skin closure strip to stabilize line.
xiv. Apply the larger transparent dressing.
xv. Secure the remaining catheter tubing to the patient's body using Mefix tape (to prevent dislodgement of the catheter).
xvi. To secure the catheter connection, place the connection on sterile gauze and cover with the smaller transparent dressing.

3. Implanted Epidural and Intrathecal Ports

3.1 Preparation and set-up of epidural or intrathecal infusion – General considerations:

a) Standard precautions and meticulous hand hygiene, as outlined by Infection Prevention and Control, shall be used at all times.
b) Solution bag, tubing, filter and non-coring access needle are to be changed every seven (7) days after they are initiated, using sterile technique, including the use of a procedure mask.
Note: If changing solution bag only, use sterile (no touch) technique.
c) Use only designated tubing identified for use with epidural and intrathecal catheters.
d) Clearly label all solution bags and tubing.
e) Epidural/Intrathecal infusion pumps are to be used for all infusions.
Note: Injection caps shall not be used in any epidural or intrathecal set-ups.

3.2 Equipment:

a) Epidural/intrathecal tubing without injection ports (yellow tubing);
b) Line label;
c) Epidural/intrathecal infusion pump;
d) 0.2 micron filter (epidural filter); and
e) Epidural or intrathecal solution bag with medication(s) and concentration(s) as ordered by the physician.

3.3 Setting up medication bag, tubing, filter and pump:

a) Perform hand hygiene.
b) Prepare the solution bag, tubing and pump in accordance with the manufacturers' instructions.
c) Attach 0.2 micron filter between the male and female ends of the split tubing.
d) Program the infusion pump according to the physician's orders.
e) Ensure independent double check of pump programming performed and co-signed by another RN.
f) Prime the infusion tubing with pump.

3.4 De-accessing epidural/intrathecal implanted port:

a) Equipment:
    i. Clean gloves;
    ii. 0.5% chlorhexidine gluconate with 70% isopropyl alcohol (3 swabs); and
    iii. Sterile gauze as required.
b) Procedure:
    i. Perform hand hygiene.
    ii. Don clean gloves.
    iii. Remove dressing.
    iv. Immobilize the implanted port by holding it firmly with non-dominant hand.
    v. Remove the non-coring needle with dominant hand while holding base of safety needle.
    vi. Safely dispose of needle in sharps container.
    vii. Clean the site with chlorhexidine swab and allow to air dry completely.
    viii. If not re-accessing immediately, document date and time, site assessment, care provided and patient response.

3.5 Accessing an implanted port:

Note: When infusing into an implanted epidural or intrathecal port, medication and tubing must be prepared and ready to connect prior to accessing port.

a) Equipment:
   i. Dressing tray;
   ii. 0.5% chlorhexidine gluconate with 70% isopropyl alcohol (3 swabs);
   iii. Sterile non-coring needle set (e.g. 22g ½ , ¾ or 1 inch length, depending on patient requirements);
   iv. Preservative-free normal saline (sterile pre-loaded 10mL syringe);
   v. Sterile syringe, 10 mL;
   vi. Procedure mask;
   vii. Sterile gloves;
   viii. Sterile skin closure strips; and
   ix. Transparent dressing (10cm x 12cm)

b) Procedure:
   i. Perform hand hygiene.
   ii. Explain procedure to patient.
   iii. Assess and palpate the implanted port to determine reservoir depth and depth of tissue covering implanted port.
   iv. Mask.
   v. Clean work surface with disinfectant wipes.
   vi. Set up sterile dressing tray/field and add equipment.
   vii. Perform hand hygiene.
   viii. Put on sterile gloves.
   ix. Prime non-coring needle extension with preservative-free normal saline and clamp the line.
   x. Disconnect the saline syringe and expel all but two (2) mL. Return syringe to sterile field for later use with placement check.
   xi. Attach sterile empty 10mL syringe to extension tubing.
   xii. Drape area at implanted port site.
   xiii. Clean the area with chlorhexidine swabs. Clean in a method that uses friction, such as the hashtag method, to ensure the antiseptic cleans down several layers deep in to the skin to ensure extended “kill time” of bacteria under the dressing.
   xiv. Clean three (3) times for a minimum of 30 seconds each time and allow to air dry completely.
   xv. Stabilize the port with non-dominant hand and insert the needle at 90 degree angle into the centre of the device until the needle meets the base of the reservoir.
   Note: Once inserted, the non-coring needle should not be rotated, angled or twisted.
   xvi. To confirm placement, use sterile empty syringe attached to the needle’s extension tubing and attempt to aspirate. Aspirate and discard small (1-2 mL) amount of air, clean fluid or straw-coloured fluid.

Note: If any blood is withdrawn, stop. De-access port and notify physician and document.

xvii. Attached previously prepared saline syringe and flush port with 1-2 mL of saline.

xviii. If line flushes easily with no bleb at insertion site, leave syringe attached, and secure the access needle with skin closure strips and transparent dressing.

xix. Connect previously prepared medication infusion tubing, unclamp line, and start infusion as ordered.

xx. Date and label dressing as epidural or intrathecal.

xxi. Document date and time, type of line (epidural or intrathecal), size of non-coring needle used, placement confirmation, line patency and patient response.

4. Management of Epidural/Intrathecal Catheter Disconnection/Impaired System Integrity

4.1 Disconnection or impaired system integrity of an epidural/intrathecal line is a medical emergency.

4.2 Refer to Appendix A – *Epidural or Intrathecal Catheter Disconnection/Impaired System Integrity Decision Tree* for management.

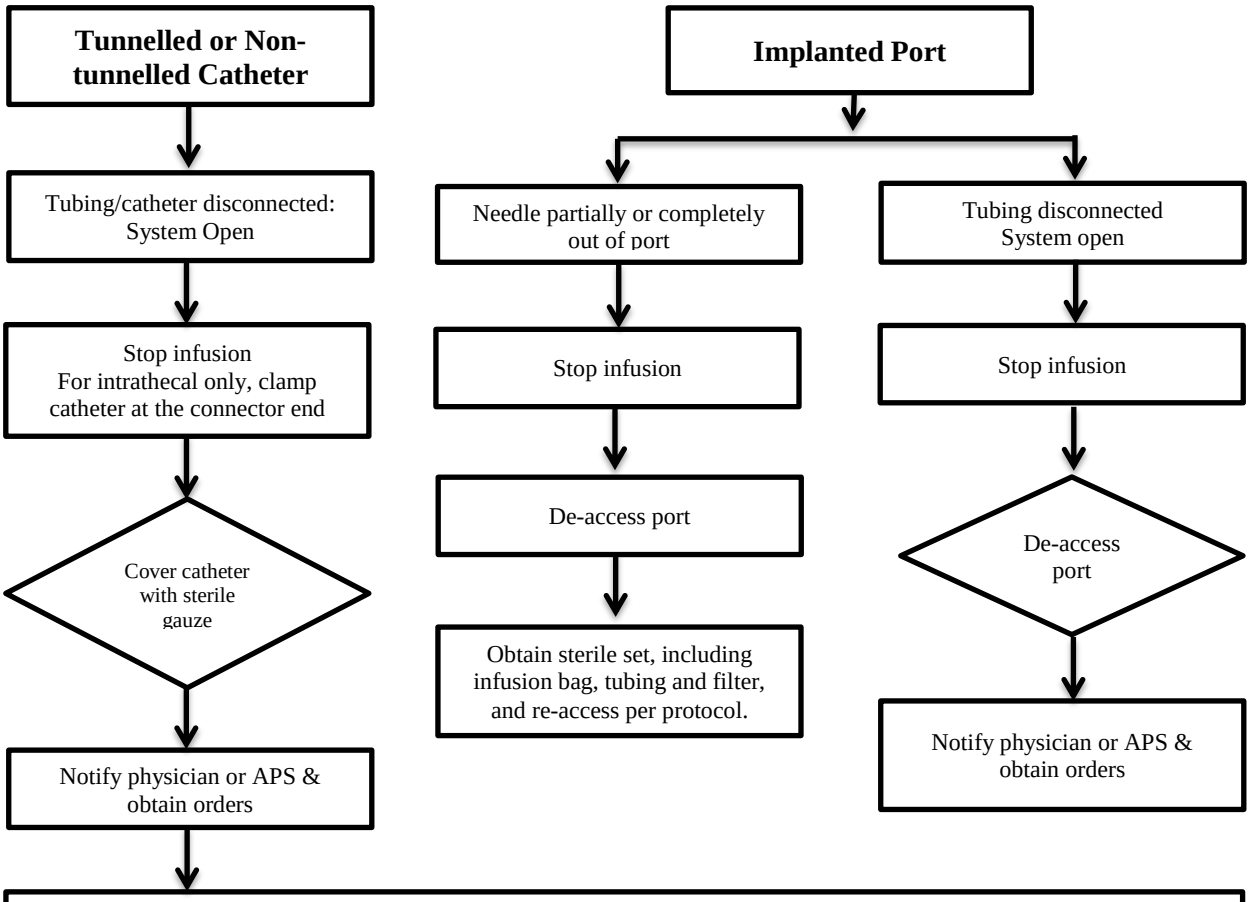
4.3 Equipment for repair (if ordered):

a) Sterile epidural or intrathecal catheter connector;
b) Sterile dressing tray;
c) Scissors (sterile);
d) 0.5% chlorhexidine gluconate with 70% isopropyl alcohol (3 swabs);
e) Sterile gloves; and
f) Procedure mask.

4.4 Follow the *Epidural or Intrathecal Catheter Disconnection/Impaired System Integrity Decision Tree.*

APPENDIX A

Epidural or Intrathecal Catheter Disconnection/Compromised System Integrity Decision Tree



If repair is ordered:

1. Set up new infusion (solution bag, tubing and filter) per protocol.
2. Obtain a sterile epidural or intrathecal connector.
3. Perform hand hygiene.
4. Mask.
5. Assemble a sterile dressing tray, sterile scissors, and chlorhexidine gluconate wipe.
6. Don sterile gloves.
7. Using sterile technique, clean 25cm of the catheter (from distal end) with chlorhexidine gluconate wipe for 30 seconds and allow to air dry completely.
8. Cut off 12.5cm of the catheter from the distal end.
9. Attach the sterile connector securely.
10. Connect the new infusion set.
11. Resume infusion.
12. Document:
    a. Date and time;
    b. Procedure completed and;
    c. Patient response.