Policy:
1. Registered Nurses who have specialized training, knowledge and skills in intraspinal pain management can provide care for a client with an intraspinal catheter (epidural or intrathecal).
2. A CarePartners Nurse Manager will be notified by the CCAC a minimum of 48 hours prior to a client coming on to service with an intraspinal line.
3. Intraspinal analgesia must be initiated in the hospital and the client must be monitored for a minimum of 72 hours prior to discharge by hospital staff.
4. There must be 24 hour on-call support by the attending anesthetist while the client is on service.
5. Nurses must have an appropriate phone or pager number to contact an anesthetist 24 hours/day, 7days/week and anesthetist commitment to respond to nurse within 1 hour.
6. A physician’s order must be in place specifying the route, the medication being administered, the dosage, the rate per hour along with bolus dose amount and maximum bolus frequency if applicable.
7. Clients who are to receive intraspinal pain management will have undergone a full therapeutic trial of opioids and adjuvant medication and will have found that other methods of analgesia do not provide satisfactory pain management.
8. The intraspinal catheter must be tunneled or implanted.
9. All lines must be labeled (i.e.: labeled epidural or intrathecal). This is to aid in the identification of the type of line the client has in place.
10. The client’s family must be able to provide the client with full support at home while client is receiving the intraspinal infusion.
11. The client and client’s family must have received initial training in hospital regarding intraspinal pain management.
12. Dressings and tubing are changed a minimum of once per week by the RN.
13. Nursing visits should include a minimum of one or two visits the initial day client is at home. The frequency of nursing visits to be determined based on the client’s requirements.
14. An ambulatory pump is used to administer continuous analgesia which allows the client to push a button and self-administer a pre-programmed and limited number of boluses if breakthrough doses as needed. The community nurse will reprogram the pump if the physician orders changes to the infusion rate.
15. Clients will have an alternate method of analgesia in the home in the event of a pump failure.
16. No alcohol based products will be used to manage the intraspinal infusion due to the potential for neurotoxicity.
17. The nurses will document on the intraspinal flowsheet for epidural and intrathecal lines.

**Background:**
In home care intraspinal analgesia involves the administration of local anaesthetics [ie: Bupivacaine (Marcaine), Lidocaine (Xylocaine) and/or opioids (ie: morphine, hydromorphone, Fentanyl or Sufantanil)] into the intraspinal space via an ambulatory infusion pump. There are two routes by which intraspinal analgesia can be delivered. It can be delivered through the epidural space or the intrathecal space. This method of pain management is used when all other multimodal pain management avenues has been explored. Intraspinal analgesia can be very useful for clients when:
1) Pain does not respond to conventional analgesics given via oral, parenteral or topical routes.
2) Side effects limit the ability to increase the dose of opioids or other medications that can treat pain by conventional routes.
Recommendations:
The Nurse Manager should advocate for client discharge from hospital mid week as opposed to Friday or the weekend.

Equipment:
- Medication as ordered
- Cassette tubing
- Providone-iodine or Chlorhexidine swabs (Note: Do not use alcohol based products with intraspinal lines)
- Clear transparent dressing
- Pump and pump cassette
- Sterile gauze
- Non-sterile gloves (and mask if required)
- Waste receptacle

Procedure:

Checking the pump:
Perform pump check daily, preferably at the same time every day (in order to accurately count the total rescue bolus doses used in a 24 hrs)

1) Record total number of bolus dose on a flow sheet
2) Check residual volume in cassette. (Is it time to change cassette? Is new cassette ordered? Is current cassette medication expired?)

Dressing Change: (Change dressing once a week and prn)
1) Perform hand hygiene.
2) Apply mask if required (A mask is worn if the nurse has an upper respiratory tract infection).
3) Don non-sterile gloves.
4) Remove old dressing. (Don sterile gloves if you need to remove a difficult dressing)
5) Remove gloves and perform hand hygiene.
6) Observe catheter site and tunnel area for redness, drainage, pain and or swelling. Report any sign or symptoms of infection immediately to the responsible physician. Swab for C&S if signs and symptoms of infection present.
7) Check integrity of sutures if applicable.
8) Using no touch aseptic technique, use a circular motion with chlorhexidine swab from the center of the catheter outward to cleanse the area around the catheter.
9) Allow to air dry (do not blow on or fan area).
10) Don sterile gloves.
11) Place sterile gauze underneath filter (if applicable).
12) Apply new dressing and transparent dressing to cover entire system. Ensure a good seal is maintained on all sides of the dressing.
13) Remove gloves and perform hand hygiene.
14) Clearly mark the type of catheter i.e.: intrathecal or epidural and date of dressing change.
15) Measure and document length of catheter.
16) Document the procedure, your findings and the client’s response on the intraspinal flowsheet for epidural and intrathecal lines.

Note: If the client wants to have a shower the dressing must be covered completely with saran or a plastic bag to protect the dressing from getting wet. Encourage sponge baths, as it is important to keep the area as dry as possible. If the client is going to shower, try and incorporate the dressing change as soon as possible after the shower.
**Tubing and Filter Change:** (Change tubing and filter once a week or prn)
1) Perform hand hygiene.
2) Put pump on stand by mode.
3) Clamp existing infusion tubing.
4) Remove existing infusion tubing from cassette. Avoid contamination.
5) Take new infusion tubing and attach to cassette immediately.
6) Prime new tubing with cassette medication solution.
7) Attach a new filter to the other end of new infusion tubing using aseptic technique.
8) Prime filter with cassette solution.
9) Clean the intraspinal catheter connector with a gauze soaked with a sterile solution (ie: chlorhexidine without alcohol) for 3 minutes.
10) Allow to dry. Do not blow or fan area.
11) Remove old infusion tubing.
12) Attach newly primed infusion tubing to connector immediately.
13) Release clamp on tubing.
14) Restart pump and infusion.
15) Document the procedure on the intraspinal flowsheet for epidural and intrathecal lines.

**Drug Cassette Change:**
1) Perform hand hygiene.
2) Record the residual volume of the cassette on the intraspinal flowsheet for epidural and intrathecal lines.
3) Stop the infusion.
4) Clamp infusion tubing.
5) Unlock pump (on CADD) and remove old cassette.
6) Check new cassette to verify medication, concentration, name of client, and expiration date.
Section: Medication Administration  
P&P: *Intraspinal Pain Management*

7) Install new cassette and relock pump with key (on CADD pump).
8) Reset residual volume.
9) Open clamp.
10) Restart pump.
11) Document cassette change and pump settings on intraspinal flowsheet for epidural and intrathecal lines.

**Assessing and Monitoring an Intraspinal Line:**
Assessment of intraspinal line and client should be done on every visit

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Rationale</th>
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</thead>
<tbody>
<tr>
<td>RESPIRATORY/SEDATION</td>
<td>Rate below 8/min indicates danger. Respiratory depression can occur at any time. It can also occur with no change in rate but change in depth. Rate and/or volume drop is due to depression of respiratory centers by opioids carried through CNS.</td>
</tr>
<tr>
<td>• Respiratory rate: (depth and rate), contact doctor if respiratory rate falls below 8/min</td>
<td></td>
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<tr>
<td>Level of Sedation:</td>
<td>Signs and symptoms of hypoxia are rapid breathing, cyanosis, poor co-ordination, lethargy, poor judgment, air hunger, dizziness, headache, mental and muscle fatigue. Note any obvious cyanosis (later sign), it is important to have frequent assessment of respiratory rate together with sedation. Teach client’s family to assess client when</td>
</tr>
<tr>
<td>• Monitor using sedation scale</td>
<td></td>
</tr>
<tr>
<td>• Based on client’s condition, report increased sedation to MD</td>
<td></td>
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</tbody>
</table>
### Medication Administration

**P&P: Intraspinal Pain Management**

<table>
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<tr>
<td>nurse is not at the client’s home.</td>
<td></td>
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<tr>
<td><strong>HYPOTENSION</strong>&lt;br&gt;Monitor BP (on every nursing visit)</td>
<td>May be due to vasodilation below level of block, change in epidural block or hypovolemia. Defined as lower limit of systolic pressure below 80mmHg or a drop in same of 30 mmHg below pre-epidural baseline BP. Fluid bolus may be indicated (ordered by MD)</td>
</tr>
<tr>
<td><strong>MOTOR/SENSORY/PAIN LEVEL</strong>&lt;br&gt;Motor Sensory: Note ability to move upper or lower extremities depending on site of intraspinal catheter&lt;br&gt;• Call MD for any significant loss of sensation and or decrease in extremity strength&lt;br&gt;• Check cold sensation with alcohol swab or ice cube on every visit.</td>
<td>Be aware of the expected level of block, and if the level is changing. Clients should be able to sense heat, cold and touch. Clients should have full use of extremities (depending on catheter placement). Bilateral assessment must be performed to check for patchy one sided blocks. Clients may report feeling numbness or heaviness in their arms or legs depending on site of catheter. May need to protect client until the return of motor, sensory function (i.e.: pressure points, position limbs).</td>
</tr>
<tr>
<td>Level of Pain Control:</td>
<td>Increase in pain may be due</td>
</tr>
</tbody>
</table>
### Assessment | Rationale
--- | ---
Assess using pain scale at rest and with activity. Notify anesthetist if pain increases. | to inadequate dose, tachyphylaxis, or interruption of infusion- check catheter for any kinks. Use the pain scale. Questions to ask: Are you comfortable at rest? Yes---No? Are you comfortable on activity? Yes---No?  
CATHETER SITE  
Observe catheter site. Monitor client’s temperature daily. | To detect early infection, catheter migration, blockage, catheter connection breakage, shearing. Note any general malaise, reduction in pain relief, neurological deficit, chills stiff neck. Note redness, inflammation, pain and discharge at catheter site.  
BRADYCARDIA | Monitor pulse to determine if it is within normal parameters.  
URINARY RETENTION:  
Assess bladder distention. Notify anesthetist. | Client should be able to pass urine normally if thoracic epidural. If catheter inserted in the lumbar region client may have difficulty initiating flow or may not be able to void. Common when opioids are administered in the lumbar region. May require catheterization.  
NAUSEA AND VOMITING: | Due to spread of drug to
### Medication Administration

**P&P: Intraspinal Pain Management**

#### Assessment | Rationale
--- | ---
Antiemetic as ordered  Report inadequate effect  Supportive measures. | Vomiting center of the medulla.  Uptake maybe vascular or through CSF.

**PURITIS**
Assess for symptom related to opioid.  Ensure no rash or redness.  Administer Benadryl with doctor's orders. | Not an allergy, but may mimic allergic response.  Should be little or no rash or redness.  Tends to develop on face and trunk.

**BLOOD or CSF in catheter:**
Notify anesthetist immediately | **If blood or CSF in catheter do not give medication.** Call Anesthetist.

**SPINAL HEADACHE:**
Notify anesthetist | Could indicate punctured meninges  Maybe aggravated by standing or sitting.

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**Documentation**

- Document using the CarePartners *Intraspinal Flow Sheet* on every visit.
  - Visiting nurse document on every visit
  - Shift nurses document every four hours and prn.
• Documentation required: Level of pain (use of pain scale), amount of pain medication administered (continuous and bolus), respiratory rate, level of sedation, blood pressure, pulse, motor/sensory status, nausea and vomiting, headache, urine output, condition catheter site, side effects from medication.