PURPOSE
Policies and procedure for the safe administration of intrathecal chemotherapy.

POLICY STATEMENTS
Intrathecal chemotherapy orders are to be written by:
   - a physician and countersigned by a pharmacist, OR
   - a pharmacist and countersigned by a physician, OR
   - 2 physicians

At least 1 of the physicians writing or co-signing the order will be an attending oncologist, oncology fellow or oncology clinical associate who has received additional education and training in ordering and administration of cytotoxic chemotherapy.

The pharmacist writing or co-signing the order must have received additional education and training in ordering and preparation of cytotoxic chemotherapy.

Informed consent is required prior to the LP procedure and administration of Intrathecal chemotherapy. A written consent is required for procedures done in the operating room or in the radiology suite.

No other medications, other than sedation and resuscitation medications are allowed in the treatment area where the procedure is being done. Syringes containing medications must be properly labeled with drug name, dose and dilution.

PRACTICE LEVEL/COMPETENCIES
Competencies for the physician ordering or administering Intrathecal chemotherapy and for RN assisting with Intrathecal chemotherapy double checking procedure and administration:
   - Be knowledgeable about pediatric cancer diagnosis and treatment, hematopoiesis and immune response, treatment modalities, and psychosocial issues in pediatric oncology as attained through education and experience.
   - Be able to teach patients/families about their diagnosis, treatment and the cancer experience.
   - List and describe chemotherapy agents used for intrathecal therapy, special labeling requirements of Intrathecal doses, special administration considerations, and toxicity and symptom management.
   - Describe clinical trials and the role of the Children’s Oncology Group.
   - Be familiar with BCCH sedation guidelines and care of patient having a lumbar puncture (pre-, during and post-procedure).
   - Be knowledgeable of safe handling guidelines for cytotoxic agents and waste products.

In addition, the physician must be competent in performing the lumbar puncture procedure.

EQUIPMENT
   - Supplies and equipment for lumbar puncture (tray, needles, cleansing agent, sedation/analgesia medications)
   - Personal Protective Equipment:
      - Gloves: Nitrile or Latex gloves with long cuffs that can extend over cuff of gown sleeves
      - Gown: Disposable low-permeable gown with solid front and long sleeves with cuffs
      - Eye and face protection: Fluid resistant mask with eye shield or goggles
   - IT chemotherapy in syringe
   - Patient chart with protocol, physician order

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<tr>
<th>PROCEDURE</th>
<th>Rationale</th>
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<td>1. CHECK chart for written order for intrathecal chemotherapy.</td>
<td>Intrathecal chemotherapy is included in many pediatric oncology treatment protocols and requires physicians order.</td>
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<td>2. PROVIDE patient/family teaching as required.</td>
<td>Reduces anxiety.</td>
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3. **OBTAIN** assistance of child life therapist as required.  

To assist with psychological preparation of patient and assist with non-pharmacological pain management strategies.

4. **PLAN** timing for lumbar puncture (LP) with physician performing procedure.  

**NOTE:** if child is having procedure done in the oncology clinic, coordinate timing with oncology clinic procedure nurse and complete appropriate pre-procedure checklist.  

**NOTE:** if the procedure is being done in the OR or Radiology department, confirm appointment time with the appropriate department and complete pre-operative checklist. Ensure physician performing procedure is aware of time and contact clinic procedure nurse to determine if s/he will be available. If s/he is not available, accompany patient to the OR/Radiology to double check Intrathecal chemotherapy with physician.

5. **APPLY** local anesthetic cream (EMLA, ametopp) to LP site as required.  

Provides pain management.

### Lumbar Puncture Landmarking

- If possible, have child stand up, it is easier to find the proper site from a standing position.
- Have the child stand or lay with their back to you. Facing the child’s back, place your index finger at the top of each iliac crest (the top of each hip).
- Without removing your index fingers, draw an imaginary line between your two fingers and apply a generous amount local anesthetic cream along the midline, approximately ½ inch above and below this spot.
- Cover with transparent dressing.

6. **ENSURE** Intrathecal chemotherapy dose is available and stored in Intrathecal chemotherapy bin

Segregates Intrathecal chemotherapy from other parenteral formulations.

7. **BRING** Intrathecal chemotherapy and patient chart into procedure room. **ENSURE** no other drugs, other than those required for sedation/analgesia or resuscitation, are taken into the procedure room.

Reduces risk of administering incorrect drugs via the intrathecal route.
**NOTE:** If procedure is done in the OR or Radiology, bring the following supplies with you:

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<tr>
<td>a.</td>
<td>appropriate requisitions for CSF specimens</td>
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<tr>
<td>b.</td>
<td>in-patient and out-patient charts with protocol and physician order for Intrathecal therapy</td>
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<td>c.</td>
<td>personal protective equipment (PPE)</td>
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8. **VERIFY** Intrathecal chemotherapy with the physician who will be administering dose against the chemotherapy protocol and physicians order. **VERIFY** the following:

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<tr>
<td>a.</td>
<td>patient name and unit number</td>
</tr>
<tr>
<td>b.</td>
<td>drug name</td>
</tr>
<tr>
<td>c.</td>
<td>dose</td>
</tr>
<tr>
<td>d.</td>
<td>route</td>
</tr>
<tr>
<td>e.</td>
<td>timing</td>
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<tr>
<td>f.</td>
<td>method of administration</td>
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Best practice for ensuring correct drug for correct patient at correct time via correct route.

9. **ASSIST** physician to prepare sedation/analgesia medications. Physician to **LABEL** sedation/analgesia syringes with drug name, dose and dilution.

Safe medication preparation and administration practices.

10. **ASSIST** physician to prepare LP tray as needed.

11. **OBTAIN** assistance of 2nd RN.

2 RNs are required: 1 to assist with positioning/holding and 1 to monitor patient and document vital signs.

12. **PERFORM** Pre-procedure huddle (if not already done) and Time-Out procedure.

Verification of patient identification, procedure, consent, appropriate fasting, patient weight, drug allergies to ensure patient safety.

13. **PLACE** Intrathecal chemotherapy syringes on sterile drape beside LP tray.

Syringes are not considered sterile

14. **ASSIST** with administration of sedation and analgesia as required. Refer to Sedation Guidelines for monitoring requirements.

15. **DON** personal protective equipment.

Routine safe handling precautions.

16. **ASSIST** with lumbar puncture procedure as required.

17. **NOTE:** If LP not successful, chemotherapy will not be administered. Physician to inform clinical pharmacist of failure to administer dose and either return dose to pharmacy or dispose in biohazard container, as instructed by the pharmacist.

Final verification to ensure correct drug for correct patient at correct time via correct route.
needle over 1-2 minutes.  

**NOTE:** For LPs done in interventional radiology, the oncology physician and RN perform this step and must remain in the room throughout the procedure. The radiologist will inject the chemotherapy dose once the oncology physician and RN have verified the contents of the syringe.

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<th>19. Physician to <strong>COMPLETE</strong> LP procedure.</th>
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<td>Routine safe handling and infection control precautions.</td>
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<th>20. <strong>DISPOSE</strong> equipment in appropriate biohazard containers.</th>
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<td>Notifies pharmacy that Intrathecal chemotherapy has been administered and other parenteral chemotherapy can now be delivered to unit for administration.</td>
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<th>21. <strong>SCAN</strong> completed sedation record to pharmacy.</th>
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<td>DOCUMENTATION on appropriate record(s):</td>
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<tr>
<td>a. physician and RN who identified patient and verified drug(s) must co-sign administration in MAR (in-patients) or physicians order sheet (out-patients)</td>
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<tr>
<td>b. RN to document time-out procedure on sticker and affix to reverse of sedation record</td>
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<tr>
<td>c. complete sedation record indicating whether Intrathecal dose was administered or not</td>
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**SCAN** completed sedation record to pharmacy indicating that procedure has been completed if patient is due to receive chemotherapy by other parenteral routes.

**REFERENCES**

BC Cancer Report to Provincial Systemic Therapy Program Committee – September 26, 2007  


