



CPG	 Shared health Soins communs Manitoba		
	Policy Name: HSC - Epidural and Peripheral Nerve Block Infusions: Post-Operative Care and Management (Child)	Policy Number: 350.210.147	Page 1 of 5
	Approval Signature: Shared Health Executive	Section: 350.210 Child Health	
Level: SITE-SPECIFIC - Applies to all Shared Health staff at the site indicated in the policy name.	Date: 25/Oct/2011 R1 26/Jun/2018 R2 03/Jun/2022	Supersedes:  Health Sciences Centre Winnipeg 80.210.710	

1.0 **PURPOSE:**

- 1.1 To facilitate best practice and safety in the care and management of patients receiving medication via the epidural and/or peripheral nerve block (PNB) route.

2.0 **DEFINITIONS:**

- 2.1 **Acute Pain Service Pediatrics (APS):** Team of pediatric anesthesiologists and Nurse Clinicians providing acute pain management in the Child Health Services.

- 2.2 **Epidural:** “An epidural catheter is placed to provide pain relief to the abdomen, thorax and lower extremities by injecting medications into the epidural space, decreasing the possibility of the side effects associated with systemic opioid administration.” (AACN, 2008)

- 2.3 **Peripheral Nerve Block (PNB):** “The continuous infusion of local anesthetic through a percutaneously-placed catheter adjacent to the peripheral nerve or plexus provides prolonged anesthesia/analgesia in the distribution of the nerve or plexus. Continuous blocks are useful in patients who are expected to have prolonged need for analgesia.” (UptoDate, 2018)
- “Single-injection nerve block (sometimes called “single-shot” block) refers to a one-time injection of local anesthetic adjacent to the nerve or plexus for surgical anesthesia and/or analgesia. The duration and density of the block depends upon the dose, concentration and pharmacology of the chosen local anesthetic; clinically effective

3.0 **PRACTICE GUIDELINES:**

- All medications for administration via an epidural catheter and general orders pertaining to the epidural care will be ordered by the APS/Anesthesiologist on the pre-printed Pediatric Continuous Epidural Infusion Physician’s Order Sheet (#038A). Medications for administration via a peripheral nerve block catheter and general orders pertaining to peripheral nerve block care are to be ordered by the APS/Anesthesiologist on the Physician Order Sheet.
- 3.1.1 Additional orders for analgesics, anti-emetics, or sedatives regardless of route are to be reviewed and approved by the APS Anesthesiologist prior to administration.
EXCEPTION: Pediatric Intensive Care Unit, (PICU), Neonatal Intensive Care Unit (NICU).
- 3.2 Prior to administering medication or monitoring patients with epidurals and/or peripheral nerve blocks, nurses and physicians will receive formal instruction and education in epidural analgesia.

DISCLAIMER: Please be advised that printed versions of any policy, or policies posted on external web pages, may not be the most current version of the policy. Although we make every effort to ensure that all information is accurate and complete, policies are regularly under review and in the process of being amended and we cannot guarantee the accuracy of printed policies or policies on external web pages. At any given time the most current version of any HSC policy will be deemed to apply. Users should verify that any policy is the most current policy before acting on it. For the most up to date version of any policy please call 204-787-4881.

SH Policy Name: HSC - Epidural and Peripheral Nerve Block Infusions: Post-Operative Care and Management	Policy Number: 350.210.147	Date: 25/Oct/2011 R1 26/Jun/2018	Page: 2 of 6
---	--------------------------------------	--	-----------------

- 3.2.1 Once formal education is completed, the nurse will maintain competency through self- assessment to identify ongoing learning needs. See Appendix A.
- 3.3 If the epidural or peripheral nerve block catheter tubing becomes disconnected for any reason, verify the tube remains sterile by covering the ends with sterile gauze and notify the APS Anesthesiologist immediately.
- The patient to nurse ratio is decided based on the following criteria and discussion with the Attending Anesthesiologist/Acute Pain Service Attending:
- Associated cardio respiratory illnesses
- 3.4
- Age
 - Patients <10kg
- The patient to nurse care ratio required will be 4:1, unless otherwise specified by Acute Pain Service/Anesthesia.
- 3.5 For infants with an epidural infusion equal to or less than three (3) months of age determination of the unit for admission will be decided in collaboration with the APS and Utilization Facilitator, Child Health Managers of Patient Care or the Nursing Supervisor.
- 3.6 Infants less than twelve (12) months of age require continuous cardio-respiratory monitoring for the duration of an epidural infusion and a minimum of three (3) hours after the infusion has been stopped.
- NOTE: If patient has received a bolus medication via the Epidural catheter in the preceding 6 hours prior to removal, consultation with an APS physician is required to determine the ongoing duration of continuous cardio-respiratory monitoring.
- 3.7 Anti-hypertensive therapy for a patient with pre-existing hypertension and an epidural catheter requires consultation with the APS/anesthesiologist prior to administration of antihypertensive medications.
- 3.8 Anti-coagulation therapy for a patient with an epidural catheter may only be administered after consultation with the APS anesthesiologist.
- 3.9 Children Hospital PACU nurses are permitted to connect Epidural and Peripheral Nerve Catheters to the designated Infusion Pump while in the Children's PACU. PACU nurses must complete an independent double check or verification as per Shared Health HSC policy [350.120.311](#) HSC – Safety Control of High Alert Medications in Shared Health Facilities, prior to connecting medication tubing.

4.0 PROCEDURE:

- 4.1 The Nurse:
- 4.1.1 Completes independent double check or verification as per Shared Health HSC policy [350.120.311](#) HSC – Safety Control of High Alert Medications in Shared Health Facilities
 - 4.1.2 Verifies tubing and infusion pump are clearly labeled for Epidural or Peripheral Nerve Block use only.
 - 4.1.3 Verifies use of administration sets and tubing without injection ports/stopcocks for continuous infusions.
 - 4.1.4 Verifies specific medications and resuscitation equipment for emergency care of Epidural or Peripheral Nerve Block complications are readily available for the

DISCLAIMER: Please be advised that printed versions of any policy, or policies posted on external web pages, may not be the most current version of the policy. Although we make every effort to ensure that all information is accurate and complete, policies are regularly under review and in the process of being amended and we cannot guarantee the accuracy of printed policies or policies on external web pages. At any given time the most current version of any HSC policy will be deemed to apply. Users should verify that any policy is the most current policy before acting on it. For the most up to date version of any policy please call 204-787-4881.

SH Policy Name: HSC - Epidural and Peripheral Nerve Block Infusions: Post-Operative Care and Management	Policy Number: 350.210.147	Date: 25/Oct/2011 R1 26/Jun/2018	Page: 3 of 6
---	--------------------------------------	--	-----------------

patient care unit.

- Monitors and documents the patient's vital signs, pain score, sedation scale, sensory and motor assessments, and dressing/catheter site according to the Pediatric
- 4.1.5 Continuous Epidural Infusion Physician's order sheet #038A
- 4.1.5.1 For Peripheral Nerve blocks, monitoring and documentation of patient's vital signs, pain score and dressing/catheter site are completed hourly for 4 consecutive hours, then every 4 hours for the remainder of the infusion.
- 4.1.5.2 Following a bolus dose via peripheral nerve block heart rate, respiratory rate, blood pressure, oxygen saturations are assessed every 5 minutes x 4, then every 10 minutes x 2
- 4.1.6 Checks infusion(s) hourly, recording the volume infused during the hour on Epidural Flow Sheet Form # NS00345
- 4.1.6.1 For Peripheral Nerve Blocks documentation of hourly volumes are recording on Pain Flow Sheet II (NS01586)
- 4.1.7 Verifies the patient has a functioning IV when an epidural/peripheral nerve block catheter is in place
- 4.1.8 Assesses patient's functional ability prior to ambulation and provides assistance with mobilizing.
- 4.1.8.1 For all children with an epidural catheter.
- 4.1.8.2 For upper limb plexus nerve blocks the arm is immobilized in a sling during ambulation. For lower limb plexus nerve blocks the patient requires bed rest and if ambulated two assists are required, one being a nurse.
- 4.1.9 If leaking, re-enforces dressing and notifies APS Nurse Clinician or APS Physician on-call.
- 4.1.10 If the catheter tubing becomes disconnected for any reason, ensures the tube remains sterile by covering the ends with sterile gauze, stop the infusion and notify the APS Anesthesiologist immediately.
- 4.1.10.1 Under the direction of the APS physician (notify APS prior to taking steps to resolve air alarms), following Standard Aseptic Technique, all Epidural trained nurses can manage air alarms as required. This includes, disconnection of epidural catheter from Medication Delivery Set and "purging" of air in the line. To purge air, disconnect the epidural tubing from the catheter maintaining a sterile no touch technique (2 nurses should be present). Once disconnected, prime tubing until the air has been removed. Ensure both ends are kept sterile throughout. Once the air has been removed, reconnect catheter and resume infusion. If contamination of either end is suspected, cleanse with Chlorhexidine and allow to COMPLETELY dry prior to reconnecting.
- 4.1.10.2 Epidural trained nurses who have previously received education and completed a return demonstration can remove an epidural catheter upon receiving written order from an APS Physician. After removing an Epidural catheter, the nurse must complete the following:
1. Together with a second nurse, verify that the epidural is intact and the end of the tip is visualized.

DISCLAIMER: Please be advised that printed versions of any policy, or policies posted on external web pages, may not be the most current version of the policy. Although we make every effort to ensure that all information is accurate and complete, policies are regularly under review and in the process of being amended and we cannot guarantee the accuracy of printed policies or policies on external web pages. At any given time the most current version of any HSC policy will be deemed to apply. Users should verify that any policy is the most current policy before acting on it. For the most up to date version of any policy please call 204-787-4881.

SH Policy Name: HSC - Epidural and Peripheral Nerve Block Infusions: Post-Operative Care and Management	Policy Number: 350.210.147	Date: 25/Oct/2011 R1 26/Jun/2018	Page: 4 of 6
---	--------------------------------------	--	-----------------

2. Inspect the insertion site for infection, cover with spot band aid.
3. Monitor patient for acute bleeding at the site, pain or changes in motor status which could signify an Epidural Hematoma.
4. Document the procedure and findings in the patient's chart.

4.2 The APS Nurse Clinicians:

- 4.2.1 Removes epidural and peripheral nerve block catheters, on the order of an anesthesiologist.
- 4.2.2 Reinforces and changes the epidural dressing as needed.
- 4.2.3 Reinforces the peripheral nerve block dressing as needed and calls the APS anesthesiologist if the dressing requires changing.

4.3 The APS Anesthesiologist or designate:

- 4.3.1 Manages care of the patient and complications related to the epidural or peripheral nerve block catheters and infusions.
- 4.3.2 Administers bolus injection of medication via the epidural or peripheral nerve block catheter.
 - 4.3.2.1 Remains in the patient care area for 20 minutes after administering a bolus dose.

5.0 **REFERENCES:**

- 5.1 ASRA- American Society of Regional Anesthesia and Pain Medicine (2016).
- 5.2 Cox, F. (2001). Clinical care of patients with epidural infusions. *Professional Nurse*, 16(10), 1429-1432.
- 5.3 Health Sciences Centre Pediatric Parenteral Drug Manual. 2016.
Institute for Safe Medication Practices. (2013) Independent Double Checks: Undervalued And Misused:
- 5.4 Selective Use Of This Strategy Can Play An Important Role In Medication Safety. *Acute Care: ISMP Medication Safety Alert*. Available from:
<https://www.ismp.org/newsletters/acutecare/showarticle.aspx?id=51>
- 5.5 Melbourne RCsH. Anaesthesia and Pain Management: Epidural Infusion Melbourne2017 [Available from: http://www.rch.org.au/anaes/pain_management/Epidural_Infusion/]
- 5.6 Kingsley, C. (2001). Epidural analgesia: Your role. *RN*, 64(3), 53-58.
- 5.7 Pasero, C., Eksterowicz, N., Primeau, M., & Cowley, C. (2007). Registered nurse management and monitoring of analgesia by catheter techniques: position statement. *Pain Management Nursing*, 8(2), 48-54.
- 5.8 Trivits Verger, J. & Lebet, R. M. (Eds.). (2008). AACN Procedure manual for pediatric acute and critical care. Saunders: St. Louis.

DISCLAIMER: Please be advised that printed versions of any policy, or policies posted on external web pages, may not be the most current version of the policy. Although we make every effort to ensure that all information is accurate and complete, policies are regularly under review and in the process of being amended and we cannot guarantee the accuracy of printed policies or policies on external web pages. At any given time the most current version of any HSC policy will be deemed to apply. Users should verify that any policy is the most current policy before acting on it. For the most up to date version of any policy please call 204-787-4881.

SH Policy Name: HSC - Epidural and Peripheral Nerve Block Infusions: Post-Operative Care and Management	Policy Number: 350.210.147	Date: 25/Oct/2011 R1 26/Jun/2018	Page: 5 of 6
---	--------------------------------------	--	-----------------

5.9 UptoDate. Overview of peripheral nerve blocks. Christina L. Jeng, Robert Maniker, Marianna Crowley. Last Updated Feb 2018

6.0 RESOURCES:

- 6.1 Acute Pain Service Medical Director
- 6.2 Acute Pain Service Physicians/ Anaesthesiologists
- 6.3 Clinical Resource Nurse, Pediatric Surgery
- 6.4 Nurse Clinicians, Acute Pain Service
- 6.5 Nurse Educator, Child Health
- 6.6 WRHA Department of Pediatric Anaesthesia

DISCLAIMER: Please be advised that printed versions of any policy, or policies posted on external web pages, may not be the most current version of the policy. Although we make every effort to ensure that all information is accurate and complete, policies are regularly under review and in the process of being amended and we cannot guarantee the accuracy of printed policies or policies on external web pages. At any given time the most current version of any HSC policy will be deemed to apply. Users should verify that any policy is the most current policy before acting on it. For the most up to date version of any policy please call 204-787-4881.

SH Policy Name: HSC - Epidural and Peripheral Nerve Block Infusions: Post-Operative Care and Management	Policy Number: 350.210.147	Date: 25/Oct/2011 R1 26/Jun/2018	Page: 6 of 6
---	--------------------------------------	--	-----------------

Appendix A

For ongoing education as a self-assessed need to maintain competency nurses will do one or more of the following:

- Review the Nursing Skills on-line education on pediatric epidural catheter (insertion).
- Review Child Health reference guides available on units for epidurals and peripheral nerve blocks.
- Seek out “just in time teaching” by Clinical Resource Nurses, Nurse Educators, APS Nurse Clinicians, High Risk Anesthesia Nurse Clinician, and APS anesthetists.

DISCLAIMER: Please be advised that printed versions of any policy, or policies posted on external web pages, may not be the most current version of the policy. Although we make every effort to ensure that all information is accurate and complete, policies are regularly under review and in the process of being amended and we cannot guarantee the accuracy of printed policies or policies on external web pages. At any given time the most current version of any HSC policy will be deemed to apply. Users should verify that any policy is the most current policy before acting on it. For the most up to date version of any policy please call 204-787-4881.