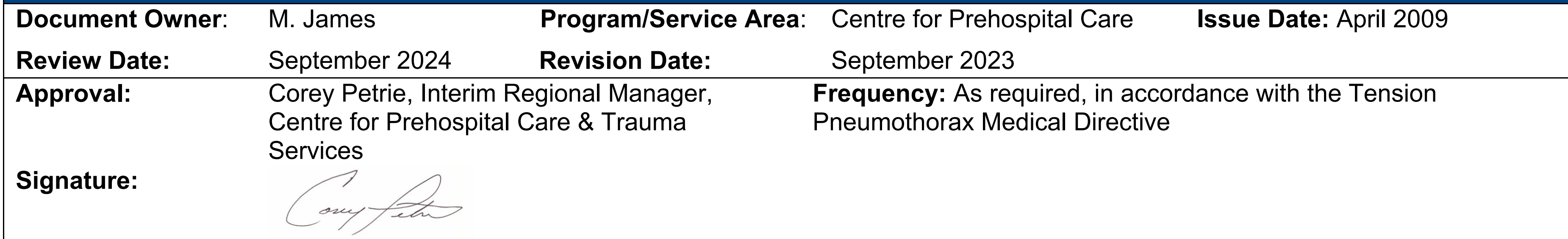
Centre for Prehospital Care
Health Sciences North

STANDARD WORK - NEEDLE THORACOSTOMY



Document Owner:	M. James	**Program/Service Area**:	Centre for Prehospital Care	**Issue Date:** April 2009
Review Date:	September 2024	**Revision Date:**	September 2023	
Approval:	Corey Petrie, Interim Regional Manager, Centre for Prehospital Care & Trauma Services	**Frequency:** As required, in accordance with the Tension Pneumothorax Medical Directive		
Signature:				

Purpose: To ensure a consistent standardized practice for needle thoracostomy.

	Content	Details / Visual Component
1.	Ensure that the patient qualifies for needle thoracostomy.	***Mandatory patch point has been removed for this procedure. ***
2.	Communicate the need for the needle thoracostomy, and its effects to the patient and family members whenever possible	This is the one important clinical trauma scenario when breathing is managed before airway /intubation. Pleural decompression should be completed prior to intubation or bag valve mask (BVM) ventilation if possible/recognized.
3.	Attach the appropriate gauge needle to the 10cc syringe.	14 gauge, 3 inch needle (adult) - 16 gauge, 2 inch needle (pediatric)
4.	**Primary Insertion site:** Insert the needle into fourth intercostal space-anterior axillary line at the superior border of the fifth rib on the affected side. **Secondary Site:** Second intercostal space, mid-clavicular line at the superior border of the third rib on the affected side, puncturing the parietal pleura while aspirating for free air.	The intercostal nerve, artery and vein lie at the inferior border of the ribs posteriorly, therefore hemorrhage is less likely to occur if paramedics landmark the superior border of the third rib. Primary site has been proven to have less chances of displacement. If unable to utilize primary site, Paramedics can opt to utilize secondary site.
5.	Remove the needle and syringe. There may be a rush of air out of the needle.	
6.	Secure the catheter in place using tape around the base of the hub.	

	Content	Details / Visual Component
7.	Place the Asherman chest seal over the catheter, pinching the flutter valve and visualizing the catheter in an upright position, ensuring it hasn't been inadvertently kinked.	During transport, both the catheter position and the patient presentation should be re-evaluated continuously
8.	Document the procedure on the patient care record as per the Ministry of Health and Long Term Care Emergency Health Services Branch Ambulance Call Report Documentation Standards and your Service Provider policy, which includes: • name of the skill • time of attempt • site of attempt • associated equipment used	
9.	Document patient condition before and after needle thoracostomy	Potential complications include: • hemorrhage due to lacerated intercostal vessels • subsequent pneumothorax in the event of an improper initial diagnosis lacerated lung

Expected Outcome: Successfully perform a needle thoracostomy.