NETS WA
Newborn Emergency Transport Service

Pneumothorax

Scope (Staff):	Nursing and Medical Staff
Scope (Area):	NETS WA

Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this disclaimer

This is a quick reference guide for transportation purposes only. For further information please refer to the CAHS Neonatology '***Pneumothorax***' Clinical Guideline.

Aim

Outline the process for investigating and diagnosing a pneumothorax along with management and associated conditions.

Risk

Failure to appropriately diagnose and treat a pneumothorax can lead to adverse outcomes for the infant.

Clinical Considerations

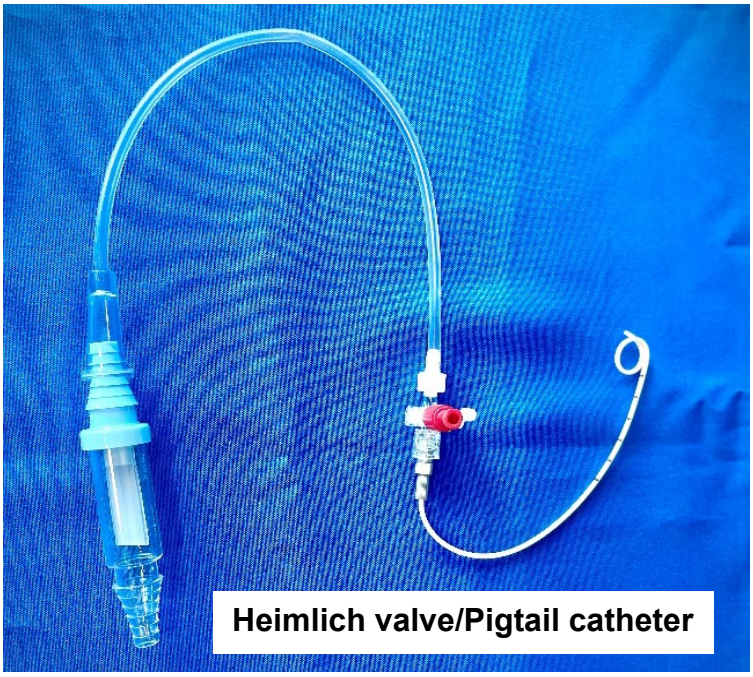
Should be considered in any ventilated baby or baby on CPAP who acutely deteriorates, **OR** any baby who:

- Has a sudden increase in work of breathing
- Worsening hypoxemia
- Worsening respiratory acidosis
- Reduced breath sounds
- Rising Transcutaneous / end-tidal Co_2
- Chest asymmetry / unequal chest rise

- Note: Nitrogen 'washout' technique is **not recommended**.

Management

- Chest X-Ray if available at referring hospital.
- Transillumination with a cold light source may be attempted.
- **For emergencies such as acute deterioration / bradycardia / hypotension, do not wait for Chest X-ray.** Needle chest with 22G or 24G cannula. Refer to CAHS Neonatology Pneumothorax guideline. [Needle aspiration kit located in **RED** Airway pouch; Chest drain kit located in **YELLOW** pouch]
- Positive pressure respiratory support can result in further deterioration by increasing the air leak and placing it under tension.
- Drain the air first to stabilise and then intubate under controlled conditions.
- For small pneumothorax / mild respiratory distress travelling via road / air: consider conservative management. (Cot O_2 to improve oxygen saturations).
- For significantly large / symptomatic pneumothorax, or for air transports, consider insertion of chest drain (pneumothorax is likely to expand with increasing altitude) (Intercostal Catheter (ICC) insertion and management).



Heimlich valve/Pigtail catheter

- Ensure appropriate drainage device fitted e.g. Heimlich Valve ± drainage bag (Appendix 1).
- Chest drain catheter must be securely fixed in position prior to transfer.
- Ventilator settings in case of air trapping / or heterogenous lung disease to be optimised to minimise further barotrauma and volutrauma while maintaining adequate gas exchange.
- Place occlusive dressing on site of NA or ICD if removed/displaced in transit. Keep emergency needling kit within reach, in case of further deterioration.

- Transcutaneous (CPAP) or end-tidal CO_2 monitoring (Intubated) should be used in all patients with Air Leaks.
- Consider ongoing pain management
- For flight transports - Discuss with on call NETS consultant and pilot of the need for flying at Sea Level. (Special Features of an Air Transport)

Related CAHS internal policies, procedures and guidelines
Neonatology Clinical Guidelines Intercostal Catheter (ICC) insertion and management Pneumothorax Special Features of an Air Transport

This document can be made available in alternative formats on request.

Document Owner:	Neonatology		
Reviewer / Team:	NETS WA		
Date First Issued:	August 2009	Last Reviewed:	July 2023
Amendment Dates:		Next Review Date:	July 2026
Approved by:	Neonatology Coordinating Group	Date:	25th July 2023
Endorsed by:	Neonatology Coordinating Group	Date:	
Standards Applicable:	NSQHS Standards: Child Safe Standards: 1,10		
Printed or personally saved electronic copies of this document are considered uncontrolled			

Healthy kids, healthy communities

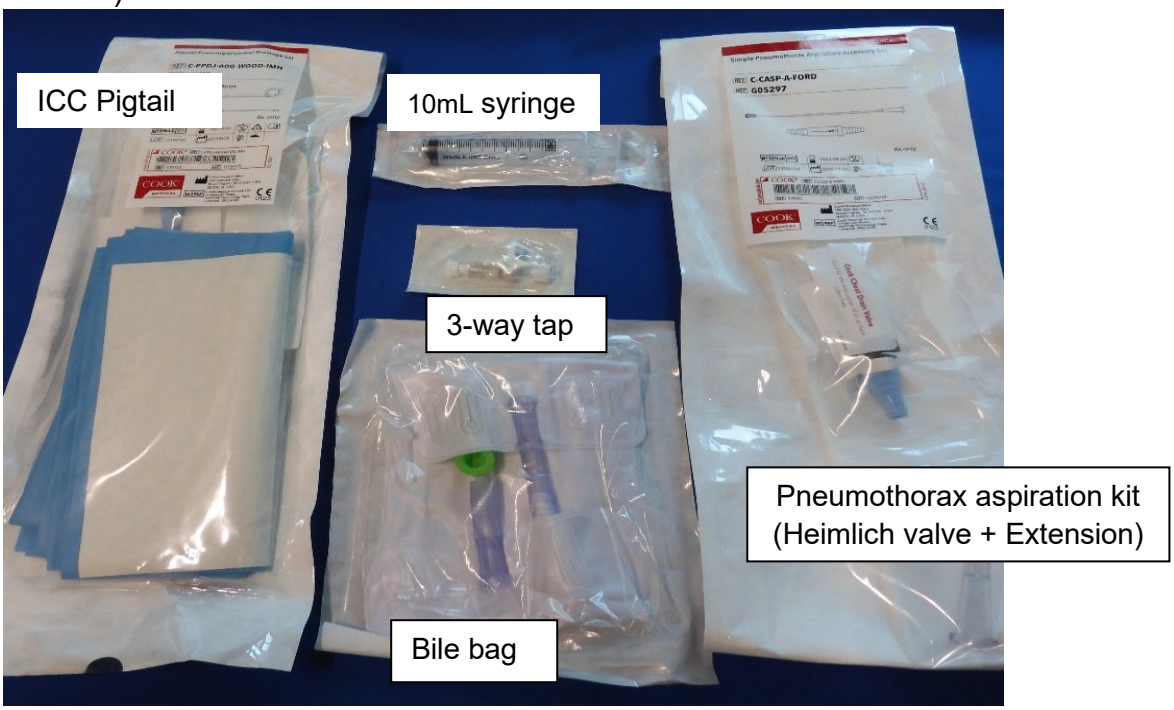
Compassion | Excellence | Collaboration | Accountability | Equity | Respect

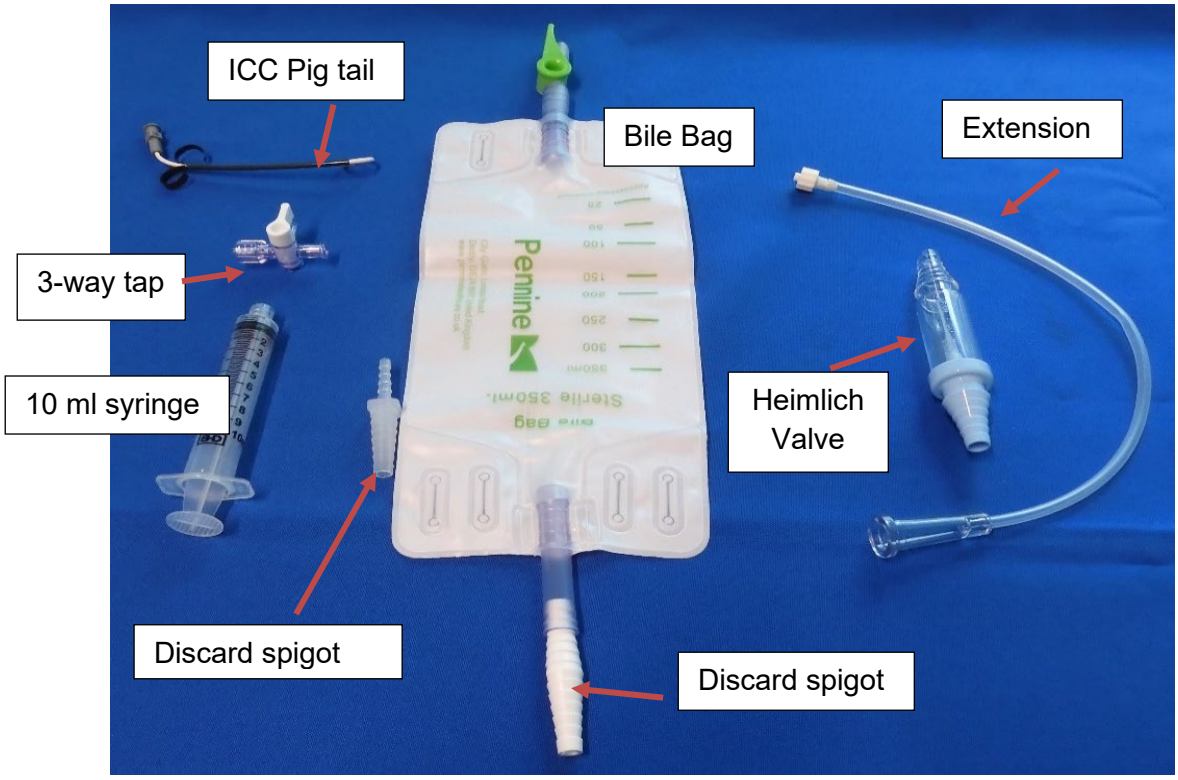
Neonatology | Community Health | Mental Health | Perth Children's Hospital

Appendix 1: ICC set up for transport

Equipment:

- 10ml luer lock syringe
- 3-way tap
- Pleural/Pneumopericardial Drainage Set (ICC Pigtail catheter)
- Pneumothorax Aspiration Kit
- Bile bag (discard spigots)





Method:

- Connect 3-way tap to ICC pig tail catheter.
- Add 10ml syringe to 3-way tap. This can be used for manual aspiration.
- Connect white connection end of Extension tubing to 3-way tap.
- Connect Heimlich valve to bile bag using clear end spigot to clear tubing and blue end spigot to extension tube.
- Make sure white tap on 3-way tap is pointing at 10ml syringe so circuit is open from pigtail catheter to bile bag.
- Important to keep green valve open for apparatus to work