



Clinical Practice Procedures: Respiratory/ Emergency chest decompression – tube thoracostomy

Policy code	CPP_RE_EDTT_0722
Date	July, 2022
Purpose	To ensure a consistent procedural approach to emergency chest decompression – tube thoracostomy.
Scope	Applies to Queensland Ambulance Service (QAS) clinical staff.
Health care setting	Pre-hospital assessment and treatment.
Population	Applies to all ages unless stated otherwise.
Source of funding	Internal – 100%
Author	Clinical Quality & Patient Safety Unit, QAS
Review date	July, 2025
Information security	UNCLASSIFIED – Queensland Government Information Security Classification Framework.
URL	https://ambulance.qld.gov.au/clinical.html

While the QAS has attempted to contact all copyright owners, this has not always been possible. The QAS would welcome notification from any copyright holder who has been omitted or incorrectly acknowledged.

All feedback and suggestions are welcome. Please forward to: Clinical.Guidelines@ambulance.qld.gov.au

Disclaimer

The Digital Clinical Practice Manual is expressly intended for use by appropriately qualified QAS clinicians when performing duties and delivering ambulance services for, and on behalf of, the QAS.

The QAS disclaims, to the maximum extent permitted by law, all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages and costs incurred for any reason associated with the use of this manual, including the materials within or referred to throughout this document being in any way inaccurate, out of context, incomplete or unavailable.

© State of Queensland (Queensland Ambulance Service) 2022.

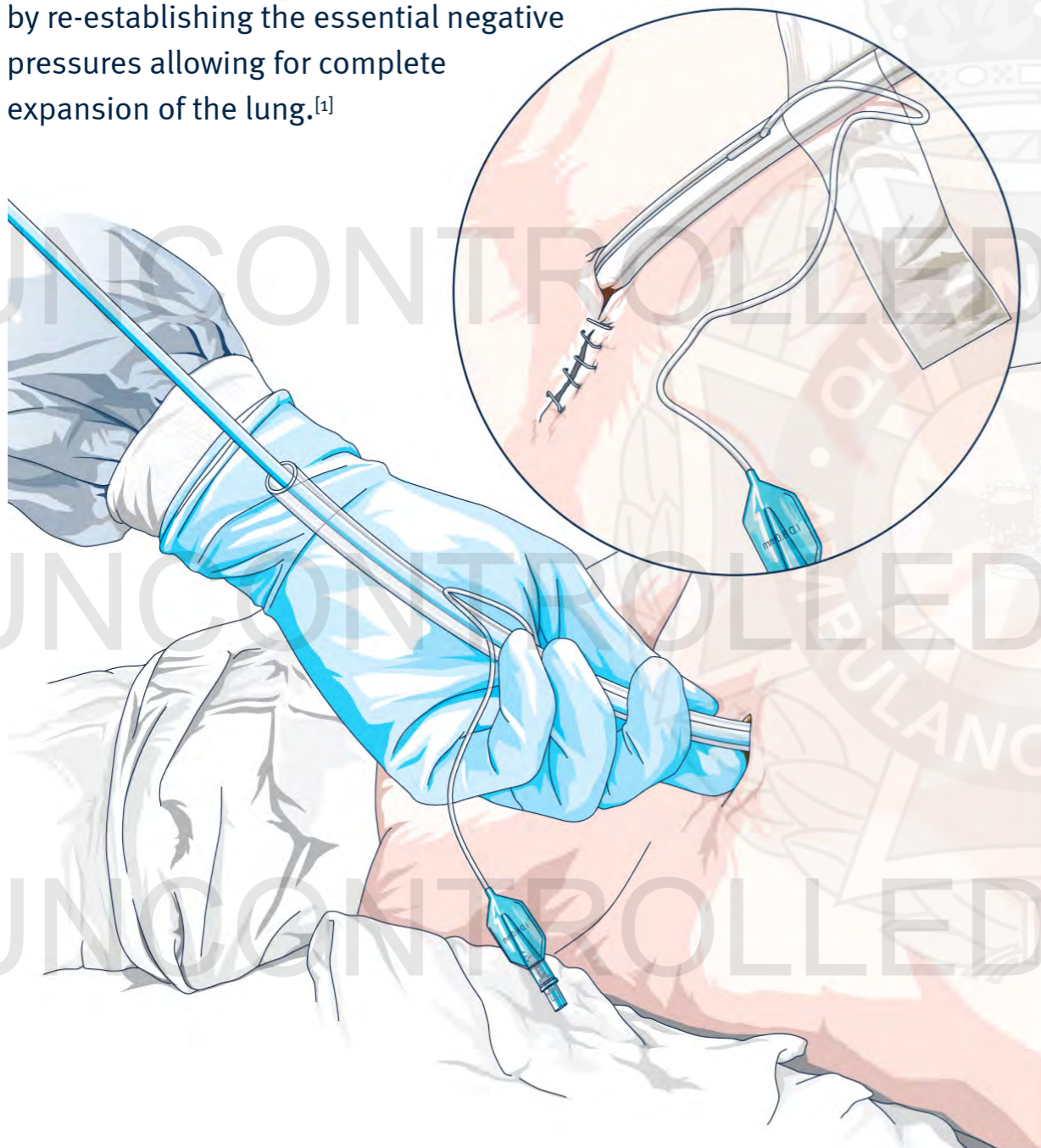


This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives V4.0 International License

You are free to copy and communicate the work in its current form for non-commercial purposes, as long as you attribute the State of Queensland, Queensland Ambulance Service and comply with the licence terms. If you alter the work, you may not share or distribute the modified work. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/deed.en>

For copyright permissions beyond the scope of this license please contact: Clinical.Guidelines@ambulance.qld.gov.au

Tube thoracostomy is an invasive procedure that involves the insertion of a sterile tube into the pleural space to remove pathological collections of fluid and/or air. An appropriately placed chest tube will facilitate normal ventilation by re-establishing the essential negative pressures allowing for complete expansion of the lung.^[1]



Indications

- 2 or more air/blood reaccumulations following initial decompressive finger thoracostomy
- Obese patients requiring chest decompression
- Transport time to an appropriate health facility greater than 30 minutes
- Suspected haemothorax/pneumothorax in the non-ventilated, cardio-respiratory compromised patient

Contraindications

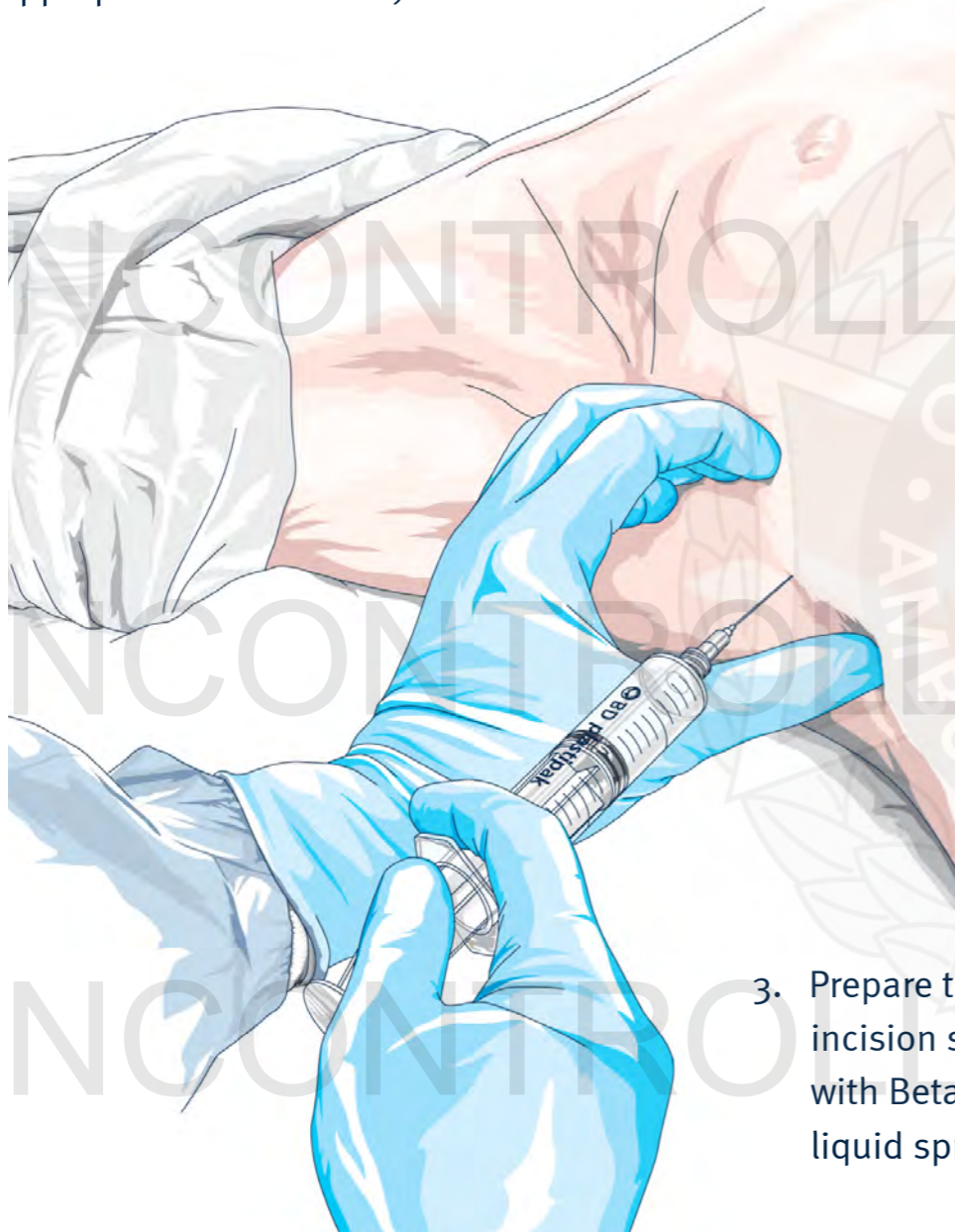
- Nil in this setting

Complications

- Extrapleural placement^[2]
- Life-threatening injury to the heart, great vessels, or damage to the lung^[3]
- Haemorrhage from vessel injury
- Infection

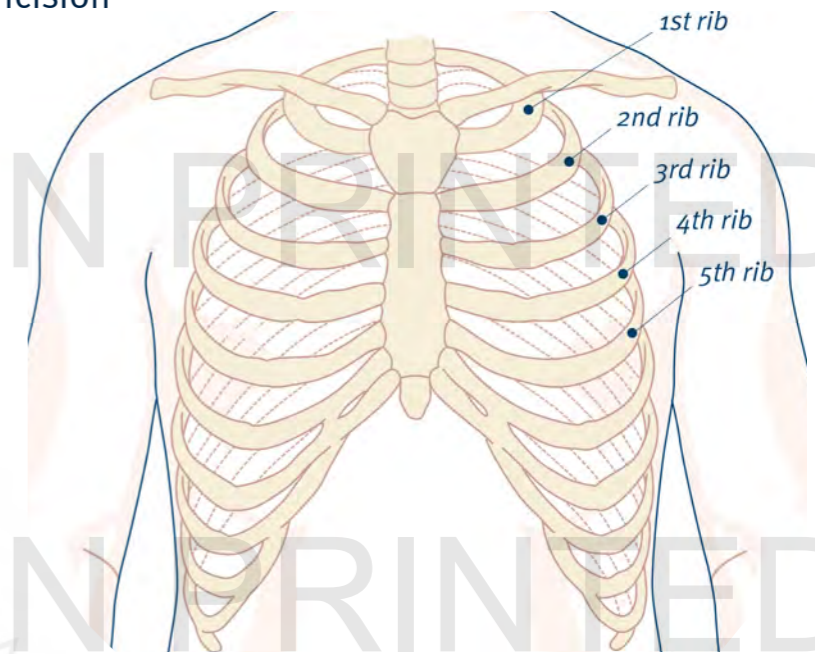
Procedure – Emergency chest decompression – Tube thoracostomy

1. Apply required infection control measures (refer to the *QAS Infection Control Framework*).
2. Unless anaesthetised, infiltrate the proposed incision site (subcutaneous tissue down to the pleura) with lignocaine 1%. (15–20 mL may be required to achieve appropriate anaesthesia).



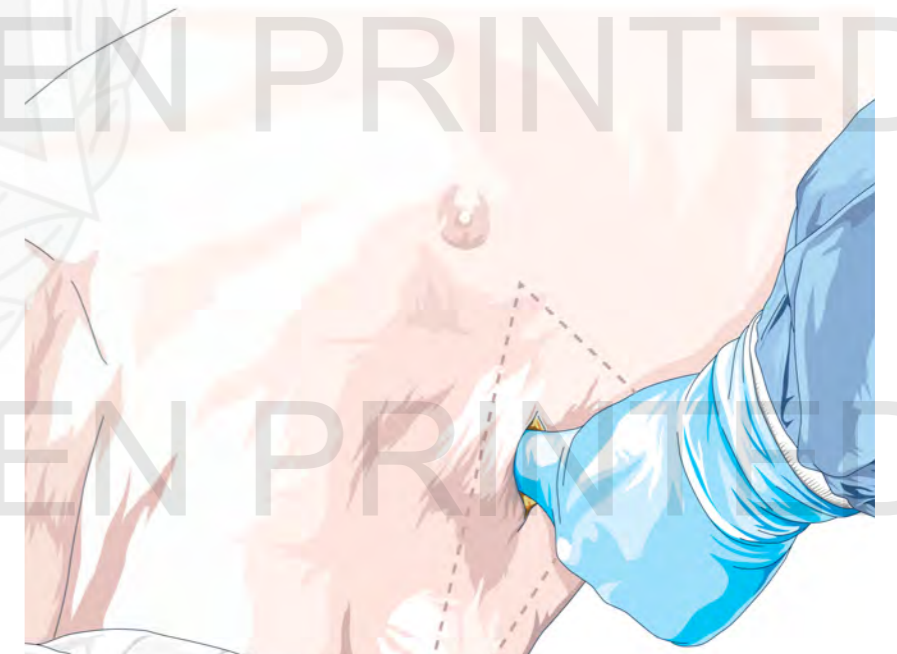
3. Prepare the incision site with Betadine® liquid spray.

4. Identify appropriate incision site (4th intercostal space, anterior to the mid axillary line) and ensure you are within the 'triangle of safety'.



5. Perform a finger thoracostomy in the 4th intercostal space anterior to the mid axillary line (refer to *CPP: Respiratory/Emergency chest decompression – finger thoracostomy*).

6. Perform a finger sweep to assess for the release of air and/or blood and lung inflation or deflation.

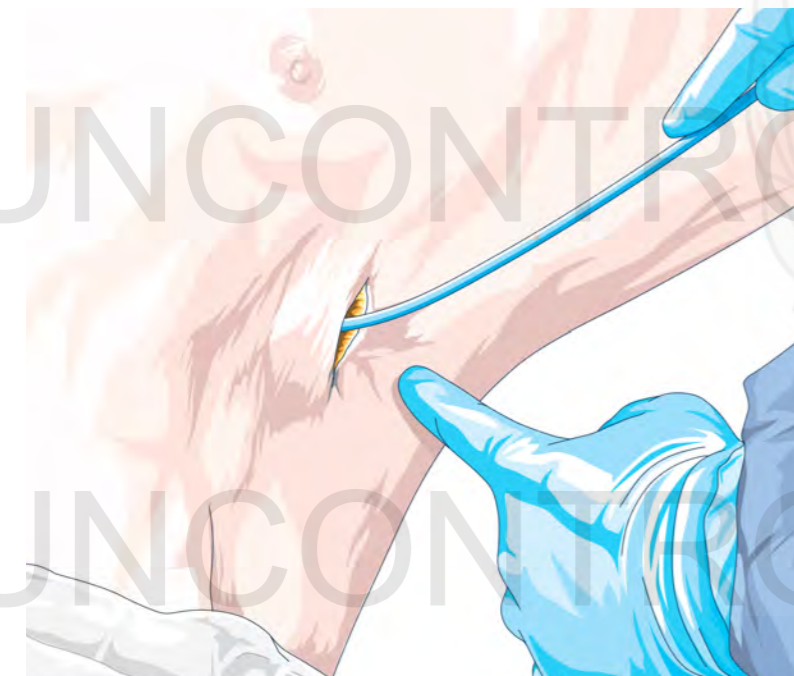
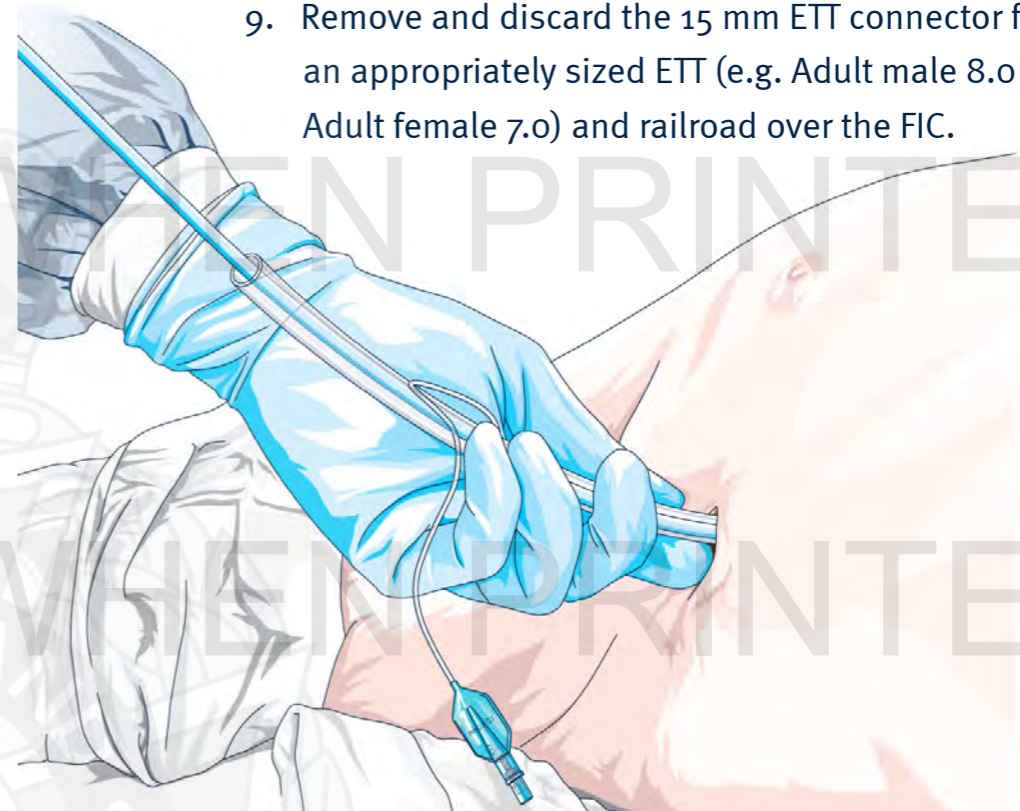


Procedure – Emergency chest decompression – Tube thoracostomy

7. Alongside the finger, gently insert a sterile Frova Intubating Catheter (FIC) 5 cm past the finger into the pleural space. If resistance is felt, do not force advancement but rather gently rotate the FIC before reattempting advancement.

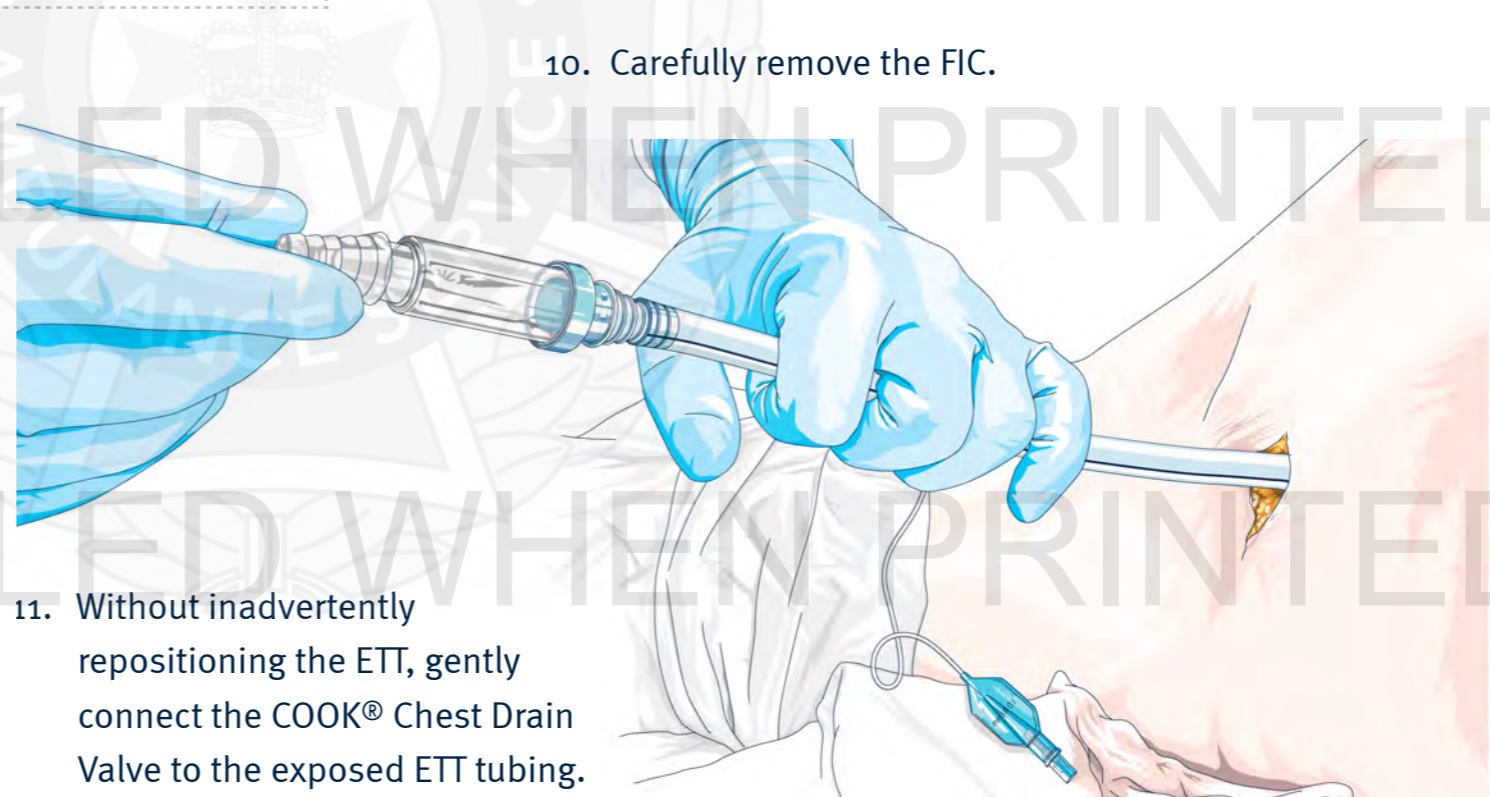


9. Remove and discard the 15 mm ETT connector from an appropriately sized ETT (e.g. Adult male 8.0 / Adult female 7.0) and railroad over the FIC.



8. Carefully remove the finger from the chest cavity while being careful not to dislodge the FIC.

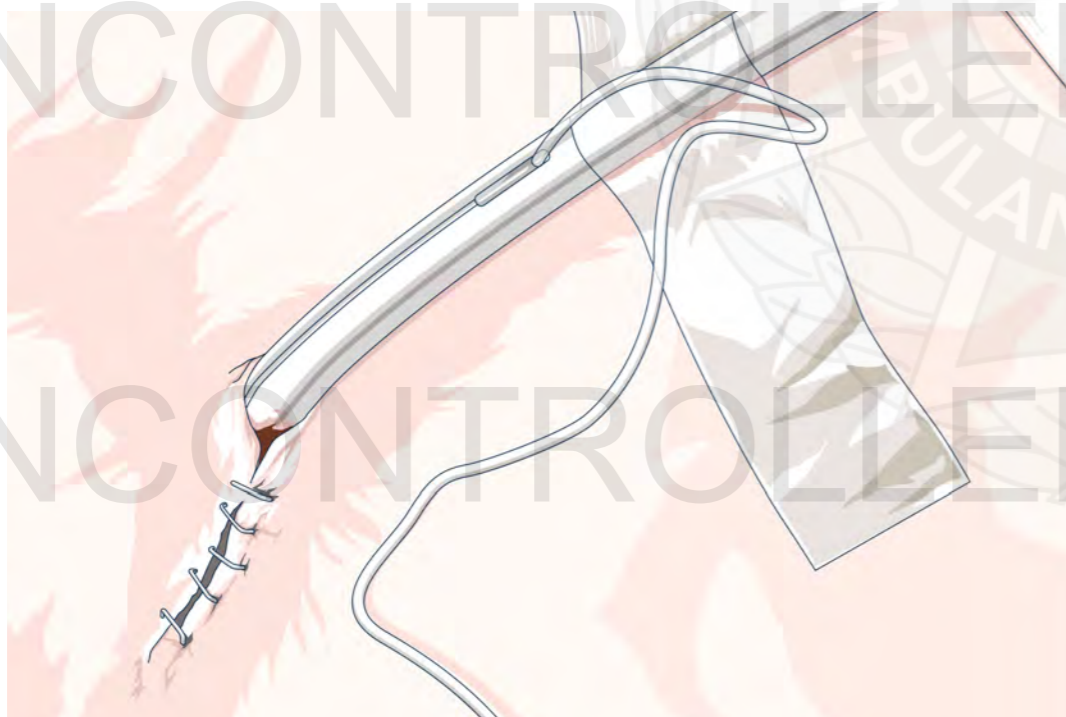
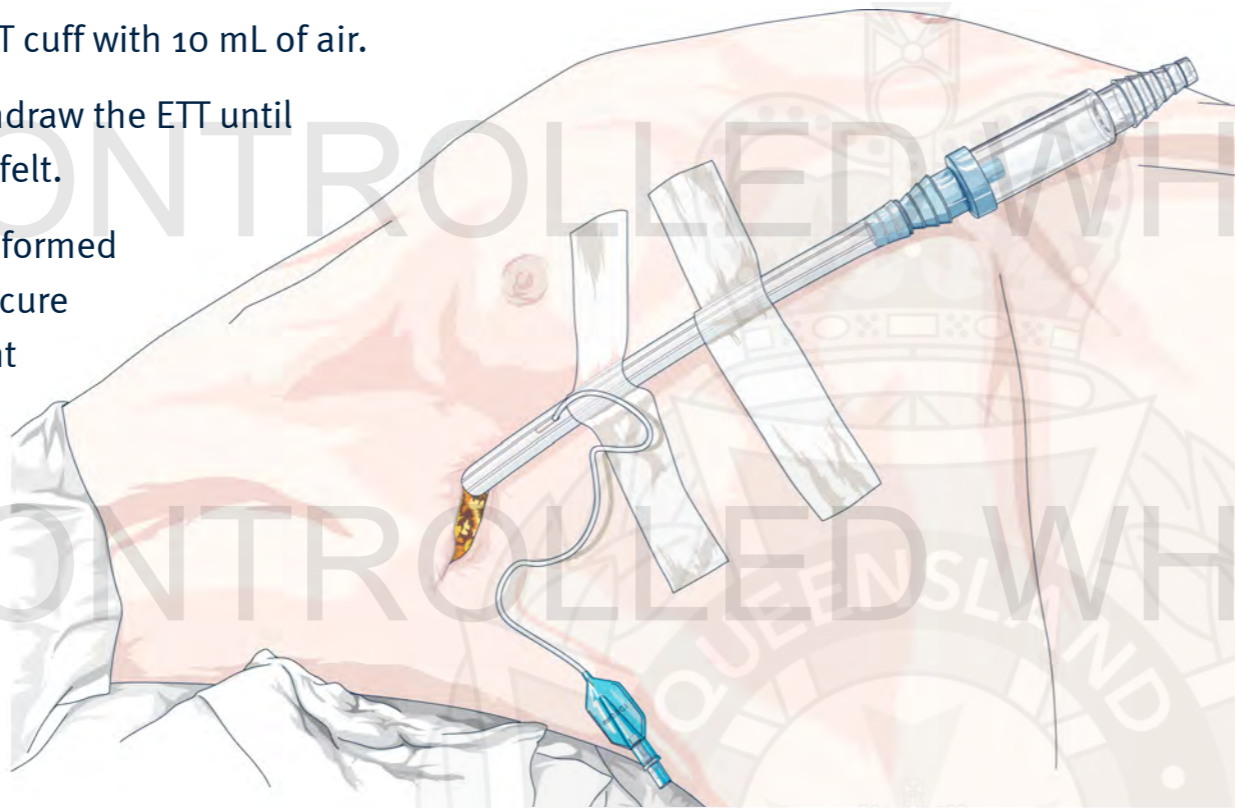
10. Carefully remove the FIC.



11. Without inadvertently repositioning the ETT, gently connect the COOK® Chest Drain Valve to the exposed ETT tubing.

Procedure – Emergency chest decompression – Tube thoracostomy

12. Inflate the ETT cuff with 10 mL of air.
13. Carefully withdraw the ETT until resistance is felt.
14. Using the preformed ETT angle, secure on the patient chest with tape.



15. Close the thoracostomy wound with staples.
16. Consider covering the thoracostomy wound with additional tape or dressings.

Additional information

- Eye protection must be worn by all clinicians. The potential of blood and body fluids exposure during the procedure is **HIGH**.
- Sterile gloves must be worn for all surgical procedures (refer to *CPP: Other/Donning and doffing of medical gloves*).
- The clinician must ensure that all chest decompression devices (cannulas and Pnuemodarts®) are removed prior to inserting a finger into the thoracostomy incision.
- Frequently check for development of a tension pneumothorax, especially if the patient is receiving positive pressure ventilation.
- If the ICC is actively draining blood, consider connecting the COOK® Chest Drain Valve to a disposable draining bag (Urimaax™).