



**Reference: HSC (SQSD) 11/20**

**Date of Issue: 7 April 2020**

**Blood control safety cannula and needle thoracostomy for tension pneumothorax**

**For Action:**

**Related documents:**

Chief Executives HSC Trusts  
Chief Executive HSCB/PHA

**Implementation:** Immediate

**SUMMARY**

NHS Improvement has issued the Patient Safety Alert **NatPSA/2020/003/NHSPS (TAB A)**

Tension pneumothorax can occur following chest trauma, respiratory disease and infection, or during resuscitation requiring invasive or non-invasive ventilation. It is a life-threatening condition resulting from a collapsed lung when air trapped in the pleural cavity compromises cardiopulmonary function.

Immediate temporary decompression is required to prevent cardiac arrest. This is commonly done by inserting a needle and cannula, usually used for intravenous access, through the chest wall into the pleural cavity (needle thoracostomy). The needle is withdrawn, and the cannula left in place to allow the trapped air to flow out.

New blood control (closed system) intravenous cannulas are increasingly used in the NHS; at least 130 trusts bought a total of three million of them in the last year. They look very similar to both traditional and standard safety cannula (with needle guard or shield) but have an extra integral septum which closes when the needle is withdrawn and stops free flow in or out of the cannula. Flow is only possible once an intravenous line or Luer-lock syringe is attached to the hub, which opens the septum.

Blood control (closed system) cannulas help prevent blood spillage, exposure and contamination, when used for their intended intravenous purpose, but they cannot be used to decompress a pneumothorax without additional equipment.

The main patient safety risks are:

- staff may select a blood control (closed system) cannula not realising its limitations for this procedure



- a blood control (closed system) cannula may wrongly be assumed to be functioning in a patient who is deteriorating rapidly
- a second needle might be introduced risking very significant damage to the lung as it reinflates.

## **ACTION**

### **Chief Executives of HSC Trusts are asked to:**

1. Identify if your organisation purchases blood control (closed system) safety cannula.
2. If it does, for all clinical areas and teams likely to undertake needle thoracostomy, including ambulances, emergency departments (EDs), intensive care units, respiratory units or any unit providing invasive or non-invasive ventilation, including units for COVID-19 patients:
  - a) Provide standard safety cannulas\* for needle thoracostomy in appropriate trays, drawers, pockets, within emergency workspaces, emergency kit bags, and resuscitation trolleys, and clearly label '*For use in tension pneumothorax*'.
  - b) Attach visible warnings/notices to cupboards, drawers, etc in these emergency workspaces, emergency kit bags, and resuscitation trolleys where blood control (closed system) cannula are stored stating: '*Do not use for tension pneumothorax*', with a direction to where standard safety cannulas can be found.
  - c) Amend labelling/checklists in store cupboards used to restock these resuscitation areas, emergency kit bags and resuscitation trolleys to ensure clear distinction between standard safety cannula and blood control (closed system) cannula.
  - d) Inform clinical and materials management staff who restock these resuscitation areas, emergency kit bags and resuscitation trolleys of these changes.

\* A minority of units may already have switched to specific thoracostomy/decompression kits and trained all local staff in their use. They can continue using them, but other units where staff may be unfamiliar with these kits should not introduce them at this time.
3. Please confirm to HSCB/PHA Alerts office at [alerts.hscb@hscni.net](mailto:alerts.hscb@hscni.net) that the alert has been disseminated and actions are underway within one week of issue.

### **Chief Executive, HSCB and PHA should:**

- Disseminate this circular to any relevant HSCB/PHA staff.

## **BACKGROUND**

Via the Royal College of Emergency Medicine Safer Care Committee an ED alerted us to their concerns about mistaken use of blood control (closed system) cannula for needle decompression. As clinical staff are unlikely to realise their selected cannula is a blood control (closed system) safety cannula, or that it will not decompress a tension pneumothorax, any impact on the patient is unlikely to be identified from reported incidents. However, specialist thoracic staff, medical device safety officers, acute and emergency frontline staff and ambulance networks confirm variation in local training and equipment and that the risks of using closed system cannula for this tension pneumothorax are poorly understood.

**Enquiries:**

Any enquiries about the content of this circular should be addressed to:

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Yours sincerely



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