Safety Notice 002/15

Risk of Air Embolus with Multi-Lumen Access Devices

13 May 2015

Distributed to:

- Chief Executives
- Directors of Clinical Governance

Action required by:

- Directors of Clinical Governance
- Directors of Clinical Operations
- Directors of Nursing

We recommend you also inform:

- Procurement Officers
- Biomedical engineering
- Medical staff
- Nursing staff

Expert Reference Group

- Intensive Care Coordination and Monitoring Unit (ICCMU)

Clinical Excellence Commission

Tel. 02 9269 5500
Fax. 02 9269 5599

Email: CEC-Quality@health.nsw.gov.au

Internet Website:
http://www.health.nsw.gov.au/quality/sabs

Intranet Website
http://internal.health.nsw.gov.au/quality/sabs

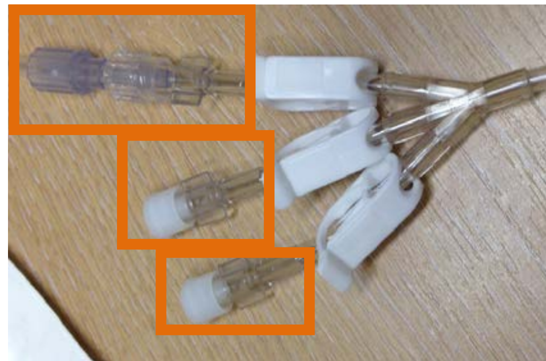
Review date

April 2019

Background

NSW Health has been made aware of a patient death following air embolus resulting from the unplanned disconnection of a multiflow extension set from IV tubing whilst still attached to a triple lumen central venous access device (CVAD).

On investigation it was found that the threads in the Luer connector were distorted. This may have happened as a result of routine checking procedures. It is important that the connections should not be loose or able to spin around. In some multiflow extension sets, tightening the connection with force can result in deterioration or distortion of the thread in the Luer connector, potentially leading to slipping and /or unplanned disconnection.



Multi-Lumen Access Device – also known as "Chook's Foot" (The boxes around connectors at risk of distortion)

State Policy and Guidelines

NSW Health policies and guidelines support practice in relation to CVAD insertion and management.

- NSW Health PD 2011_060 *Central Venous Access Device Insertion and Post Insertion Care* notes that connections should be minimised and that swabable capless valves should be used on all connections to CVADS to reduce infective and air embolus risk, available at http://www.health.nsw.gov.au/policies/pages/default.aspx
- The IC Manual *Best Practice Guidelines for Intensive Care Central Venous Access Device Post Insertion Management* recommends routine systematic assessment of a CVAD. This assessment includes ensuring that all connections are secure as part of an integrity check during infusion therapy (practice point 1 page 11). This reduces the risk of potential complications including air embolus. The IC Guideline is available at http://www.aci.health.nsw.gov.au/networks/intensive-care/clinicians/ic-manual/cvad

Practice points

- Routine checking of the security of connections to a CVAD is important and should continue.
- However, where multi lumen connectors are used, staff should be made aware of the potential risk of damage to the connector from over tightening in some multi flow extension sets.
- Staff should consider minimising the number of additional connections to a CVAD.

Suggested actions by Local Health Districts/Networks

1. Ensure that this safety notice is distributed to all relevant stakeholders.
2. Ensure relevant clinicians are trained and assessed competent when managing patients with a CVAD in accordance with NSW Health PD2011_060.
3. Conduct a local risk assessment of the use of multi-lumen access devices and ensure the implementation of appropriate practice.