Safety Notice 004/14

Removal of Central Venous Access Devices (CVAD)

12 August 2014

Distributed to:

- Chief Executives
- Directors of Clinical Governance

Action required by:

- Chief Executives
- Directors of Clinical Governance
- Directors of ICU
- Directors of CICU
- Directors of Anaesthesia and Surgery
- Directors of Cancer Care
- Directors of Emergency
- Directors of Specialty Training Units
- Directors of Medical Services
- Directors of Vascular Access Teams
- Directors of Nursing and Midwifery

We recommend you also inform:

- Medical Staff
- Nursing Staff

Expert Reference Group

Content reviewed by:

- ACI

Clinical Excellence Commission

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

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

Background

Recently NSW Health received notification of an adverse event where a patient has sustained severe neurological damage post removal of a Central Venous Access Device (CVAD) due to an intravascular gas embolism. The removal of the device whilst the patient was sitting upright in a chair is believed to have been a contributory factor.

Air embolism results from the introduction of air into the circulatory system. With patients in the sitting position, negative thoracic pressure will suck air into great veins. This can occur during insertion manipulation or removal of a CVAD and cause sudden vascular collapse. Symptoms include cyanosis, hypotension, increased venous pressures, and rapid loss of consciousness.

Requirements for removal of Central Venous Access Devices

NSW Health Policy Directive PD2011_060 *"Central Venous Access Device Insertion and Post Insertion Care"* outlines the requirements for removal of CVAD. These requirements include:

- Removal of CVAD must only be undertaken by trained or supervised clinicians.
- Removal of the CVAD must be undertaken using an aseptic technique that will minimise the risk of infection.
- The patient is to be positioned supine with head slightly down (if tolerated) during CVAD removal. This is to increase the pressure in the large veins to above that of atmospheric pressure, which reduces the risk of aspirating air into the venous circulation.
- Following CVAD removal, the site must be sealed with an airtight dressing which remains insitu for at least 24 hours to reduce the risk of late air embolism.
- The patient must remain in the supine position (or Semi-Fowlers if supine not tolerated) for between 30 and 60 minutes following CVAD removal. At least one set of observations should be done during this period, as well as immediately prior to retrieving the patient to the upright position.
- The removal of the CVAD and the presence of an intact tip must be noted in the patient's health record.
- Following removal, the CVAD site will require daily review and dressing until healed.
- Routine observations are to be conducted after the removal of the CVAD.

The policy:

- Mandates the compliance of all clinical staff who insert CVADs or care for a patient with a CVAD.
- Requires Chief Executives to have assigned responsibility and personnel to implement the policy and to support line managers in their implementation of the policy in clinical areas.
- Requires Directors of Clinical Governance to promote safe practices for the insertion and post insertion care of CVADs, ensure successful implementation of the policy within their LHD/SHN and ensure clinical audit includes review of compliance with the policy.

Suggested actions by Local Health Districts/Networks

1. Ensure that this safety notice is distributed to all clinical staff involved in removal of Central Venous Access Devices and that they understand the requirements for removal of a Central Venous Access Device outlined in NSW Heath Policy Directive PD2011_060 "Central Venous Access Device Insertion and Post Insertion Care".
2. Ensure only trained or supervised clinicians remove Central Venous Access Devices.
3. Review implementation of the abovementioned policy within your LHD/SHN.
4. Provide evidence of implementation of, and the results of clinical audits which demonstrate compliance with, PD2011_060 the CEC by 1 September 2014. Results to be sent to quality@cec.health.nsw.gov.au