

Joint Safety Statement

November 2018

Topical application of chlorhexidine and the risks of accidental injection in regional anaesthesia and vascular access procedures

This safety statement was developed in response to reported incidents of accidental injection of chlorhexidine, when used as a skin antiseptic. The use of light-tinted chlorhexidine increases the risk of errors.

To reduce the risk of accidental injection of chlorhexidine, when used as a skin antiseptic for regional anaesthesia and vascular access procedures, and to improve patient safety, the Australian and New Zealand College of Anaesthetists (ANZCA) and the Australian Commission on Safety and Quality in Health Care jointly recommend that:

- Unless contraindicated and where possible, commercially prepared swabs or swab sticks containing chlorhexidine are recommended when chlorhexidine is required for skin preparation before administering epidural, intrathecal or other perineural injections, and before inserting central venous lines
- If topical chlorhexidine liquid is used it is dark-tinted to provide a visual cue that the liquid is non-injectable
- Skin preparation should be completed and topical antiseptic discarded or handed off before exposing sterile equipment and injectable fluids on the sterile procedure area. The skin antiseptic should remain outside the sterile area during the procedure
- After application of topical chlorhexidine, the skin must be allowed to dry completely before a procedure is performed
- Non-injectable fluids, including chlorhexidine, should never be decanted into an open container on a sterile procedure area
- Injectable medicines should not be decanted into a gallipot or other open container before preparation and injection; if this is unavoidable, any medicine that is decanted should be immediately drawn up and labelled
- Injectable medicines used are in pre-labelled, pre-filled sterile syringes where available
- When more than one solution is present in the sterile procedure area, each is labelled in accordance with the *National Standard for User-Applied Labelling of Injectable Medicines, Fluids and Lines*¹, as specified under the National Safety and Quality Health Service Standards.²

This safety statement also recommends that:

- Clinical colleges and societies liaise with their members to promote dissemination and uptake of the statement
- Health service organisations review clinical workflows and settings to identify where there are risks of accidental injection of chlorhexidine; this could be supported by identifying and analysing incident reports.

Principles

1. Section 4.1 of ANZCA's *PS51 Guidelines for the Safe Management and Use of Medications in Anaesthesia*³ (revised in 2017) states that the aims of safe administration of medications in anaesthesia are:
 - To administer the correct medication to the correct patient, in the correct dose, by the correct route, at the correct time
 - To accurately record this information in the anaesthesia record or patient's drug administration chart, and any legally required register of drug dispensing
 - To minimise the opportunities for substance abuse and/or diversion.
2. Section 5.6.2 of PS51 states that 'Drugs drawn up should be placed in an appropriate receptacle in a logical and orderly fashion'.
3. All injectable medicines should be labelled when drawn up according to the relevant national standards. This includes an understanding of the closed-practice environment (such as the operating theatre with a single patient) and the open-practice environment (such as the post-anaesthesia care unit with multiple patients).

Background

Wrong-route administration errors by the intrathecal or epidural route are a small, but highly significant, proportion of medication injection errors. Incident reporting from states and territories indicates that patient harm from wrong-route injections into the intrathecal or epidural space is infrequent, but continues to occur.

Critical incidents have been reported where chlorhexidine antiseptic solution was drawn up into a syringe and administered via the epidural route, resulting in serious patient harm. Contributing to this risk are the practices of placing chlorhexidine in an open container on the sterile field in preparation for skin decontamination, drawing up from open containers rather than from ampoules, and not labelling syringes at the time of medicine preparation.

References

1. Australian Commission on Safety and Quality in Health Care. National standard for user-applied labelling of injectable medicines, fluids and lines. Sydney: ACSQHC; 2015. Available from: www.safetyandquality.gov.au/publications/national-standard-for-user-applied-labelling/
2. Australian Commission on Safety and Quality in Health Care. National safety and quality health service standards guide for hospitals. Sydney: ACSQHC; 2017. Available from: www.safetyandquality.gov.au/wp-content/uploads/2017/11/National-Safety-and-Quality-Health-Service-Standards-Guide-for-Hospitals.pdf
3. Australian and New Zealand College of Anaesthetists. PS51 Guidelines for the safe management and use of medications in anaesthesia. Sydney: ANZCA; 2017. Available from: www.anzca.edu.au/documents/ps51-2009-guidelines-for-the-safe-administration-o.pdf