

Appropriate and safe use of chlorhexidine in healthcare settings

Key points

Chlorhexidine-containing antiseptic and disinfectant products are widely used in health care, aged care and in the community.

This guidance outlines considerations for the appropriate and safe use of chlorhexidine in healthcare settings.

There is emerging evidence that some microorganisms have developed tolerance and resistance to chlorhexidine. This may impact the effectiveness of chlorhexidine products that are used as antiseptic or cleaning agents in health care.

Appropriate use of chlorhexidine will:

- minimise the risk of the emergence of further chlorhexidine tolerance and resistance
- ensure the continued usefulness and effectiveness of chlorhexidine-containing products as part of infection prevention and control and patient and healthcare worker safety measures.

Background

Chlorhexidine is a broad-spectrum antiseptic, with activity against gram-positive and gram-negative bacteria, fungi, and viruses. Susceptible microorganisms are rapidly killed in the presence of chlorhexidine.

In hospitals, chlorhexidine-containing products are routinely used for [hand hygiene](#) and skin antisepsis. Some surgical dressings, medical devices (such as central venous lines) and lubricants also contain chlorhexidine. Many over-the-counter (OTC) products used in the community, such as mouthwash, shampoos, ointments, and throat lozenges, also contain chlorhexidine (see **Table 1**).¹

Table 1: Products that may contain chlorhexidine²

In hospital settings
<ul style="list-style-type: none"> • Skin antiseptic wipes • Hand gels and hand wash solutions • Surgical skin antiseptics • Surface disinfectants used for cleaning • Pre-surgery wash sponges and wipes • Lubricant preparations • Mouthwash • Central venous lines • Surgical dressings and mesh.
In community settings
<ul style="list-style-type: none"> • Hand gels and washes • Mouthwash, toothpastes, and other mouth products • Disinfectants or antiseptics • Shampoo, body wash, sponges and wipes • Skin creams, ointments, and cleansers • Antiseptic throat lozenges and sprays • Nasal sprays • Cosmetics.

Note: This list is not exhaustive. New products containing chlorhexidine are frequently released, so it is essential to read all labels carefully prior to use to check ingredients.

The emergence of chlorhexidine resistance

Tolerance and resistance to chlorhexidine has been reported in a range of gram-negative and gram-positive bacteria species. These include *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Mycobacterium* species, *Pseudomonas aeruginosa*, *Acinetobacter baumannii*, *Escherichia coli*, *Enterococcus faecalis* and *Candida albicans*.¹

There is increasing concern about chlorhexidine resistance because of emerging evidence of resistance to peptide antimicrobials, such as colistin, in *Enterobacterales*.³ Whilst evidence is currently limited, it has been suggested that chlorhexidine resistance may promote antimicrobial cross-resistance.³



Why is appropriate and safe use of chlorhexidine important for infection prevention and control?

Chlorhexidine plays an important role in infection prevention and control in health care.

Chlorhexidine-containing products are often recommended as effective antiseptic agents for [peripheral](#) and central venous cannulation, surgical procedures, and in dentistry. Increasing resistance to chlorhexidine, however, may limit its usefulness in reducing the risk of infection for both patients and healthcare workforce.⁴

Considerations for the appropriate and safe use of chlorhexidine

The following strategies should be used by healthcare organisations and their workforce to ensure the appropriate and safe use of chlorhexidine^{4,5}:

- audit and assess procurement and use of chlorhexidine-containing products in the organisation
- keep an up-to-date registry of chlorhexidine-containing products used in the organisation and regularly review the ongoing need for these products
- review and update existing infection control and environment cleaning protocols that include chlorhexidine-containing products
- ensure that the clinical use of chlorhexidine-containing products is always clinically indicated
- follow the manufacturer's Instructions for Use and use products in accordance with local and/or state/territory policies and procedures and the [Australian Guidelines for the Prevention and Control of Infection in Healthcare](#)
- check for chlorhexidine allergy among patients and the workforce
- avoid contamination of sterile procedure setup
- consider using alternative disinfectant products listed on the Australian

Therapeutic Goods Register for surface cleaning.

Prior to admission, patients may be required to use chlorhexidine-containing products as part of their clinical care (e.g. pre-operative decolonisation). These regimens should be regularly reviewed for clinical need.

In perioperative settings, there are risks associated with neurotoxicity when chlorhexidine-containing products are used as skin preparation for regional anaesthesia and other procedures.⁶ Appropriate procedures should be in place to prevent the cross-contamination of solutions intended for neuraxial injection with disinfectant preparations.⁶ Further guidance on the use of topical chlorhexidine-containing products for regional anaesthesia and vascular access procedures is available from the [Commission's website](#).

Managing chlorhexidine allergy



Allergic reactions to chlorhexidine are rare

The following actions should be undertaken to minimise the risk of a chlorhexidine allergic reaction in patients²:

- document chlorhexidine allergy or sensitivity in the patient's medical record
- advise treating clinicians of chlorhexidine allergy during clinical handover and prior to any procedures, dental treatment, blood tests or x-rays
- ensure alternate antiseptic and disinfectant products are available for use
- check product labels carefully to ensure chlorhexidine is not included in the ingredient list.

If a patient or member of the workforce is allergic to chlorhexidine and has been exposed, medical treatment should be sought immediately. Organisational processes for the reporting adverse events also should be followed.

Appropriate and safe storage of chlorhexidine-containing products

Chlorhexidine-containing products should be stored in a manner that ensures the ongoing efficacy of the product. Products should be stored⁵:

- in accordance with manufacturer's Instructions for Use and instructions provided in the relevant product's material safety data sheet
- out of the reach of children
- in a closed container at room temperature, away from heat, moisture, and direct light.

Chlorhexidine-containing products should not be kept frozen and if combined with alcohol, should be stored away from open flames, heaters, and other electrical devices.

Patients who are provided with chlorhexidine-containing products should be educated on how to correctly use and store them.

Chlorhexidine-containing products that are out of date or are no longer needed should be disposed of in a safe and appropriate manner according to local waste disposal practices. Sustainable disposal of these products should be considered to minimise the impact of chemical waste on the environment. Consult with the hospital pharmacy department or the [Return Unwanted Medicines scheme](#) for information on sustainable practices for the disposal of pharmaceutical waste.

References

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