Ensure that 2% chlorhexidine gluconate in 70% isopropyl alcohol solution is used for skin preparation (if patient sensitive, use povidone-iodine)

What is recommendation based on

For most SSIs, the source of the invading pathogen is thought to be the patient’s skin. Consequently, optimisation of preoperative skin antisepsis is required to decrease postoperative infections. The focus of this intervention is the removal of both the transient and resident flora on the skin. Although transient microorganisms can be readily removed by soap and water, the use of antiseptics is required to remove the resident flora prior to surgery. This can involve the use of antiseptics such as chlorhexidine and povidone-iodine. The antimicrobial activity of different antiseptics needs to be considered as there may be a requirement for a residual action to provide additional protection during the surgical procedure itself. Chlorhexidine is known to have a persistent effect and combined with alcohol which is fast drying make 2% chlorhexidine in 70% isopropyl alcohol a suitable product. The National Institute of Health and Clinical Excellence (NICE) guideline recommends that the site is prepared immediately prior to incision using a suitable antiseptic such as chlorhexidine or povidone iodine.

The DH high impact intervention, states that ‘Patient’s skin has been prepared with 2% chlorhexidine gluconate in 70% isopropyl alcohol solution and allowed to air dry. (If the patient has a sensitivity povidone-iodine application is used). On reviewing the background evidence, this recommendation is based on evidence from Darouiche et al ‘Chlorhexidine–Alcohol versus Povidone–Iodine for Surgical-Site Antisepsis’. In this study a total of 849 subjects (409 in the chlorhexidine–alcohol group and 440 in the povidone–iodine group) were involved with the overall rate of SSI being significantly lower in the chlorhexidine–alcohol group than in the povidone-iodine group. The suitability and benefits of using 2% chlorhexidine gluconate in 70% isopropyl alcohol solution have also been demonstrated in other studies.
It is concluded therefore that this is a key recommendation to minimise SSI. The recommendation given results from all evidence considerations and after applying the framework described in Appendix 2.

References:


(33) Maiwald M, Widmer AF, Rotter ML. Chlorhexidine is not the main active ingredient in skin antiseptics that reduce blood culture contamination rates. Infect Control Hosp Epidemiol 2010 Oct;31(10):1095-6.


<table>
<thead>
<tr>
<th>Recommendation for review</th>
<th>Ensure that 2% chlorhexidine gluconate in 70% isopropyl alcohol solution is used for skin preparation (if patient sensitive, use povidone-iodine).</th>
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<tbody>
<tr>
<td>Grade of recommendation (based on review of evidence)</td>
<td>Category 1B</td>
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| Health impact contribution (based on Healthcare Quality Strategy for NHSScotland) | **Safe:** Not implementing this recommendation may put the patient at risk of harm  
**Effective:** This recommendation reduces the risk of SSI  
**Efficient:** This recommendation reduces the risk of introducing infection complications, resulting in releasing time for other care and a reduction in associated NHS costs  
**Equitable:** This recommendation promotes a standard of care for all patients that may result in a reduction in avoidable personal and NHS costs which is beneficial to all  
**Timely:** This recommendation fits with the natural flow of preoperative patient care  
**Person Centred:** This is a person centred activity to reduce harm and that allows for meaningful and beneficial interaction between the patient and healthcare worker |
| Expert opinion/consultation and practical considerations | Measurement and feedback (Y/N/?):  
Potential for measurement through e.g. observation  
Easily implemented within current culture and will improve the quality of care now  
Potential for consistent delivery  
Easily implemented based on reliably available resources/products/prompts  
Stealth integration into natural workflow/logical clarity of concept (also see Cause & Effect Chart)  
Unambiguous  
Potential for applicability to a wide range of settings  
Avoids unintended consequences/perverse behaviour  
Potential for congruency in design and meaning, with HCW, trainer and observer training and education  
| Feasibility and sustainability (Y/N/?):  
Easily implemented within current culture and will improve the quality of care now |
| Applicability and reach (Y/N/?):  
Potential for consistent delivery  
Easily implemented based on reliably available resources/products/prompts  
Stealth integration into natural workflow/logical clarity of concept (also see Cause & Effect Chart)  
Unambiguous  
Potential for applicability to a wide range of settings  
Avoids unintended consequences/perverse behaviour  
Potential for congruency in design and meaning, with HCW, trainer and observer training and education  
| Training and informing (Y/N/?):  
Potential for measurement through e.g. observation |
| Is this a key recommendation? | Yes |