



Should Chlorhexidine Gluconate (CHG) 4% be diluted for patient skin cleansing?

What are CHG skin cleansing advantages?

CHG cleansing results in a persistent reduction in density of microbial skin colonization.ⁱⁱ This is no small effect. CHG cleansing reduces risk by several log factors and a 1-log reduction reduces bacteria 90%.ⁱ

Daily bathing with CHG ensures that patients will have low baseline bacterial skin presence. It would compensate for deficiencies in skin antiseptics, minimize inadvertent contamination, and decrease other avenues of cross contamination.ⁱⁱ The residual effect of CHG on the patient may also reduce the risk of colonization and subsequent infection.ⁱⁱⁱ

What do studies say about diluting?

Evidence indicates diluting CHG will allow for higher bacterial load remaining on the skin.^{iv} Applying CHG directly to the skin will achieve levels needed to inhibit the growth of *Staphylococcus aureus*. Maintaining a high skin surface concentration is an important factor in a decolonization regimen.^v

Are there any studies determining CHG concentrations?

Dilution of chlorhexidine correlated directly with its bactericidal activity when tested. Three different aqueous chlorhexidine gluconate solutions were tested (group 1: 4%, group 2: 2%, and group 3: 0.4%). CHG 4% was used as a base and dilutions were made with sterile water to obtain the additional concentrations. After 2 minutes, groups 1 and 2 had similar reductions in bacterial load, while group 3 had a significantly higher bacterial load (33%).^{iv}

In a second study, Dr. Edmiston instructed volunteers to apply 4% CHG soap to their body using a clean wash cloth. Effective CHG levels were achieved after using the CHG as directed. The skin isolates of CHG after a single application with 4% CHG (range of 17.2 to 31.6ppm) were up 6 times the amount needed to kill staphylococcal skin isolates (MIC* = 4.8ppm).^v

*Minimum Inhibitory Concentration

Apply Hibiclens directly to moist skin, or apply using wet washcloth to achieve CHG levels to decrease skin colonization and resulting bioburden.

This synopsis of a published article has been compiled by Molnlycke Health Care US, LLC as a service to healthcare professionals. It does not contain the complete text and Molnlycke Health Care makes no representation as to its completeness in addressing all issues in the article.

References: **i.** Log Reduction Fact Sheet, Healthy Facilities, Advanced Technologies **ii.** Effectiveness of Chlorhexidine Bathing to Reduce Catheter-Associated Bloodstream Infections in Medical Intensive Care Unit Patients, Susan C. Bleasdale, MD, et al, ARCH INTERN MED/VOL 167 (NO. 19), OCT 22, 2007 **iii.** Impact of daily chlorhexidine baths and hand hygiene compliance on nosocomial infection rates in critically ill patients, Michel Fernando Martínez-Reséndez MD, et al, American Journal of Infection Control 42 (2014) 713-7 **iv.** Time-dependent effect of chlorhexidine surgical prep, D.J. Stinner, C.A. Krueger, B.D. Masini, J.C. Wenke, Journal of Hospital Infection 79 (2011) 313e316 **v.** Preoperative Shower Revisited: Can High Topical Antiseptic Levels Be Achieved on the Skin Surface Before Surgical Admission? Edmiston, et al., J Am Coll Surg. 2008 Aug;233-9.

The Molnlycke, Mepilex, Safetec and Hibiclens trademarks, names and logo types are registered globally to one or more of the Molnlycke Health Care Group of Companies. Distributed by Molnlycke Health Care US, LLC, Norcross, Georgia 30092. © 2017 Molnlycke Health Care AB. All rights reserved. 1-800-843-8497. MHC-2016-24691

