

Chlorhexidine Products and Uses in Health Care

In 2013, the World Health Organization (WHO) included 7.1% chlorhexidine digluconate (which delivers 4% chlorhexidine) for umbilical cord care in its Model List of Essential Medicines for Children, given chlorhexidine's proven efficacy in reducing neonatal mortality in community and primary care settings in developing countries.^{1,2} Chlorhexidine has been used as an antiseptic for more than 50 years in both humans and animals. It is available in different concentrations and for various indications. The 7.1% concentration that is used for umbilical cord care is a novel formulation. This document lists other existing presentations and their intended use in health care settings (table 1) as well as a summary of trials that have used different formulations and applications of chlorhexidine to improve newborn health (figure 1).

In addition, figure 1 provides a summary of the trials that have studied application of chlorhexidine in other concentrations to reduce neonatal mortality in developing countries. As can be noted, these other methods of application have yielded mixed effects, which contrast with the consistent neonatal mortality reduction effect seen in trials using 7.1% chlorhexidine digluconate for umbilical cord care.^{1,2}

Figure 1. Clinical trials conducted in developing countries that measured chlorhexidine's effect on neonatal mortality^{3,4,5,6,7}

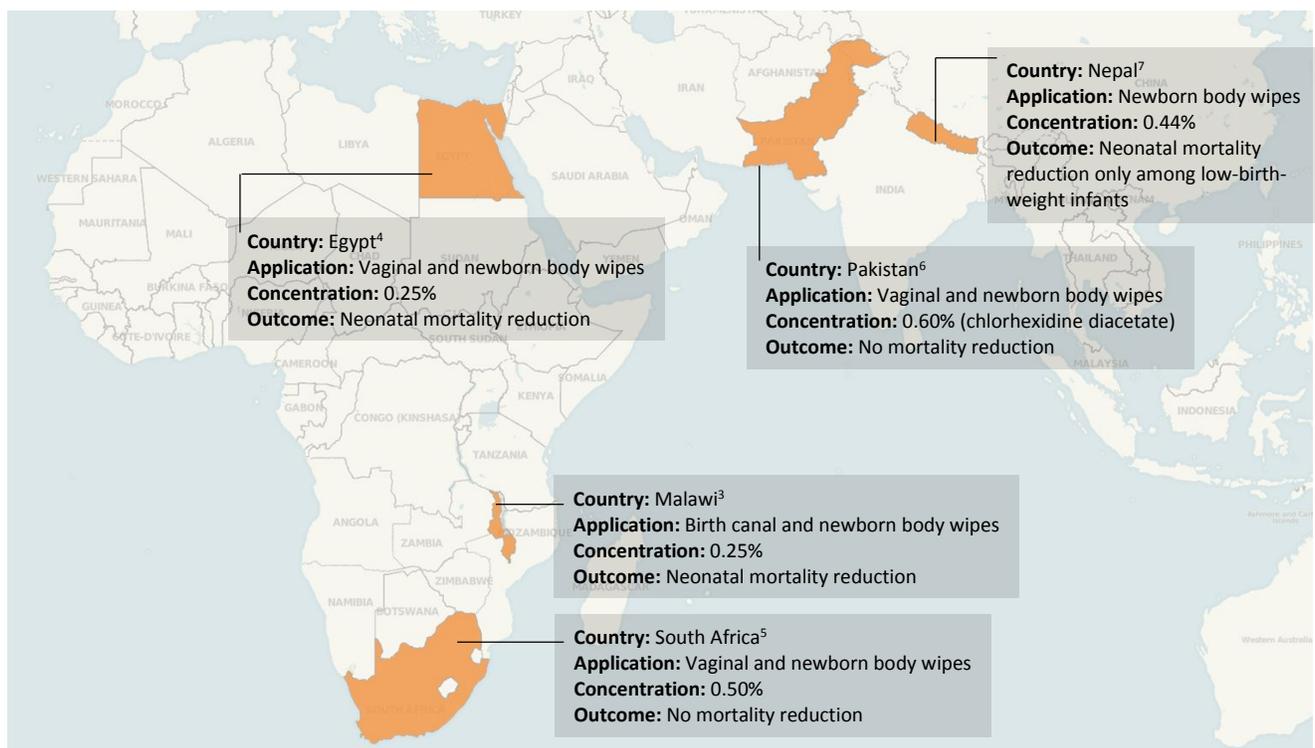


Table 1. Examples of Chlorhexidine Products and Health Care Uses

Product	Concentration of chlorhexidine gluconate/diguconate	Alcohol ingredient	Health care uses
Topical medicines (gel or liquid)	7.1%	None	Umbilical cord care to prevent cord infection and/or sepsis and reduce neonatal mortality.
Topical solution (liquid, cloth, sponge applicators, swab sticks)	2% , 3.15%, 4%, or 5%	Isopropyl alcohol (alcohol-free cloths available)	Skin preparation for surgery, invasive procedures, central lines to prevent hospital-acquired infections
Scrub solution (liquid detergent)	2% or 4%	Isopropyl alcohol	<ul style="list-style-type: none"> • Preoperative bathing, general skin cleansing to prevent hospital-acquired infection • Preoperative hand scrub and hand disinfection to prevent the spread of microorganisms
Irrigation solution (chlorhexidine and cetrimide)	0.015% or 0.05%	None	Irrigation of wounds to prevent infection
Topical cream (chlorhexidine and cetrimide)	0.1%	Cetostearyl alcohol	Wound cleaning (over-the-counter first-aid cream) to prevent infection
Washcloth	2%	None	Daily bathing in intensive care unit (ICU) patients to prevent hospital-acquired infection
Gauze dressing	0.5% (chlorhexidine acetate)	—	Wound or burn dressing to prevent infection
Catheter dressing (gel pad, foam disk, semi-permeable transparent dressing)	2%	None	Catheter dressings to prevent hospital-acquired infection
Hand rub (gel)	0.5% or 1%	Ethanol	Hand sanitizing to prevent the spread of microorganisms
Dental solution (oral rinse or spray)	0.12% or 0.2%	Ethanol	<ul style="list-style-type: none"> • Decontaminate oral cavity to prevent ventilator-associated pneumonia • Periodontal disease and mucositis treatment
Concentrated stock solution	20%	None	Preparation of dilutions for skin cleansing and general disinfection

— Not available.

Notes

1. Imdad A, Bautista RM, Senen KA, Uy ME, Mantarin III JB, Bhutta ZA. Umbilical cord antiseptics for preventing sepsis and death among newborns. *Cochrane Database Syst Rev*. 2013;5(CD008635).
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4. Bakr AF, Karkour T. Effect of predelivery vaginal antiseptics on maternal and neonatal morbidity and mortality in Egypt. *J Womens Health (Larchmt)*. 2005;14(6):496–501.
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6. Saleem S, Rouse DJ, McClure EM, et al. Chlorhexidine vaginal and infant wipes to reduce perinatal mortality and morbidity: a randomized controlled trial. *Obstet Gynecol*. 2010;115(6):1225–32.
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