CHLORHEXIDINE

Trade Name	Chlorhexidine
Class	Polybiguanide
Mechanism of Action	Binds to negatively charged bacterial cell walls and extramicrobial complexes, damaging cell wall and cytoplasm (depending on concentration of chlorhexidine). Bactericidal to Gram-positive and (less actively) Gram-negative bacteria, some yeast, facultative anaerobes and aerobes, HIV *(evidence is in vitro)*. Inactive against spores and acid-fast bacilli.
Indications	**Indication 1:** Skin disinfection in all babies prior to im injections, line insertion or blood tests **Indication 2:** Skin disinfection prior to aspiration of CSF from a ventricular reservoir **Indication 3:** Treatment of Staph aureus skin infection in baby **Indication 4:** To clean iv ports and connections
Contraindications	Previous anaphylactic, or localised skin reaction. Do not apply to face, eyes or inner ear.
Supplied As	Chlorhexidine 0.1% blue irrigating solution (for ELBW infants) Chlorhexidine 1% obstetric cream Chlorhexidine 2% / alcohol 70% swab Chlorhexidine 2% alcohol free swab
Dosage	**Indication 1:** Prep with chlorhexidine 2% alcohol free and leave for 60 sec to dry Repeat with each procedure, as often as needed. <28wk and <7 days – use 0.1% solution <28 wk and ≥ 7 days – use 2% swabs/sticks ≥28wks at all times – use 2% swabs/sticks **Indication 2:** Prep with pink chlorhexidine 2% and 70% alcohol swab and leave for 60 sec to dry **Indication 3:** Use chlorhexidine 1% obstetric cream as a soap lathered over baby then wash off in bath. **Indication 4:** Clean ports/tubing as needed with alcohol only swabs, or 2% chlorhexidine and 70% alcohol swabs
Interval	Single application
Administration	See under dosage section
Compatible With	Water, alcohol, cationic or nonionic surfactants
Incompatible With	Soaps and other anionic materials including bicarbonates, borates, carbonates, chlorides, citrates, nitrates, phosphates

Monitoring	For skin irritation or allergic reactions
Stability	Manufacturer's expiry
Storage	Room temperature, away from light
Adverse Reactions	Corneal damage, ototoxicity (if applied to through perforated eardrum), allergic/anaphylactic reactions. If chlorhexidine accidentally enters the eyes or ears wash out immediately with water .
Metabolism	Excreted in liver/bile largely unchanged. However, absorption through intact skin and mucous membranes is very poor for alcohol-free chlorhexidine preparations.
Comments	Chlorhexidine is most active at pH 8; activity decreases with lowering of pH. As a general rule **alcohol should not be used on skin** – the only exception is when a ventricular reservoir is being accessed. Chlorhexidine 1% obstetric cream is no longer registered in NZ but can be accessed via section 29. Please record patient name NHI and consultant on sheet provided with the product and give to ward pharmacist for compliance with re-ordering. Note that the Microshield white soap contains non-antibacterial active compound.
References	1. Evidence based clinical practice guidelines, Neonatal skin care, US association of Neonatal Nurses, 2002 2. Drugdex, Micromedex CD-ROM database, 2002 3. Parfitt K (Ed), Martindale The Extra Pharmacopoeia, 32nd Edition, 1999 4. Maki D et al, Prospective randomised trial of povidone-iodine, alcohol and chlorhexidine for prevention of infection associated with central venous and arterial catheters, The Lancet, Vol. 338, August 10th, 1991 5. Dollery C (Ed), Therapeutic Drugs 1991 6. Lund W (Ed), British Pharmaceutical Codex, 12th Edition, 1994 7. O'Neill J et al, Percutaneous absorption profile of chlorhexidine in neonates. Curr Ther Research Vol 30(3), 1982, p485-8 8. Montefiori DC et al, Effective inactivation of HIV with chlorhexidine antiseptics containing detergents and alcohol. J Hosp Infection Vol 15(3), 1990, p279-82
Updated By	M.McIlhone, N.Austin P Schmidt & B Robertshawe August 2005 A Lynn, B Robertshawe June 2012 (re-order profile) A Lynn July 2016 (remove swabstick as alcohol free no longer available) A Lynn, M Wallenstein, B Robertshawe 2021 (Remove Chlorhexidine 4% hand cleanser no longer available) A Lynn, B Robertshawe Oct 2023 (routine update)