

# ANTIMICROBIAL STEWARDSHIP

Hōtaka kaitiaki patu huakita

Together we can keep antimicrobials working

Hospital Antimicrobial Stewardship Committee  
antimicrobials@cdhb.health.nz

Health New Zealand  
Te Whatu Ora  
Waitaha Canterbury

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## Topical antibiotics<sup>1</sup> applied to the skin – usually cause more harm than good

There are very few evidence-based reasons to apply antibiotic creams or ointments to the skin. However, topical antibiotic products like mupirocin (Bactroban®), sodium fusidate (Foban®) and chloramphenicol eye ointment (applied to skin) are often viewed as benign and therefore used inappropriately. This bulletin outlines the primary indication for applying topical antibiotics to the skin and the harms that may result from their use. The Antimicrobial Stewardship and Wound Care teams encourage you to review your use of topical antibiotics to ensure you are providing the best patient care.

### TOPICAL ANTIBIOTICS ARE RARELY INDICATED

*There is no clear role for use of topical antibiotics for prevention or treatment of wound infections including those associated with surgery, burns or trauma*

#### Very limited role for specific products:

##### Mupirocin 2% ointment:

- May be applied to the nares as part of a bundle of treatments to reduce *Staphylococcus aureus* colonisation in some patients prior to surgery or with recurrent staphylococcal skin infections. If considering this, seek advice from [Infection Management](#), [Infection Prevention & Control](#), or Microbiology, or see HealthPathways:

- [Multi-drug Resistant Organisms HHP](#)
- [Recurrent Staphylococcal Infection CHP](#)

##### Chloramphenicol 1% eye ointment:

- May be used in the eye(s) for bacterial conjunctivitis but even this indication is weak as most cases resolve within 7-days without any topical antibiotic treatment<sup>2,3</sup>.
- Many of the thousands of chloramphenicol tubes<sup>4</sup> used in Waitaha hospitals each year are for application to skin for dubious reasons like ‘just-in-case’, “comfort and moisture” or “irritation”<sup>5</sup>. This is not evidence-based and should cease.

##### Fusidic acid/sodium fusidate 2% cream/ointment:

- It is difficult to see any role for these products topically.
- Draft national antibiotic guidelines<sup>3</sup> do not include them for any indication, including localised impetigo as an Auckland trial showed hydrogen peroxide 1% cream was similarly effective<sup>6</sup>.
- Resistance to fusidic acid emerges swiftly and may compromise systemic use of this agent for serious conditions like bone and joint infections.

### TOPICAL ANTIBIOTICS CAUSE HARM

*Use of topical antibiotics selects for bacterial strains that are resistant to topical and/or systemic antibiotics, e.g. topical fusidic acid use may contribute to development of infections due to MRSA<sup>7</sup>*

*Topical antibiotics can also compromise wound healing by disrupting the microbiome<sup>8</sup> and causing local skin reactions<sup>9</sup>*

- Use of topical antibiotics may make it harder to treat subsequent infections in the treated patient, and the resistant bacteria may spread to whānau and wider community.
- Avoiding non-evidence based antibiotic use helps protect this valuable resource. For example, in Aotearoa across 1999 to 2013, *S. aureus* resistance to mupirocin decreased by 61% (28% to 11%) when use of mupirocin dropped by 50% (from ~200,000 to ~100,000 units dispensed per year)<sup>10</sup>.

### HOW CAN WE BETTER HELP OUR PATIENTS?

- Check out HealthPathways on specific conditions, noting that none of the below include advice to use topical antibiotics:
  - wounds e.g. [Skin Tears](#), [Acute Skin Wounds](#), [Bite Wounds](#)
  - [Abscess](#) and [Cellulitis and Soft Tissue Infections](#)
  - [Eczema \(Dermatitis\) in Adults](#)
- Use alternatives, depending on condition, including:
  - pH-friendly moisturisers to improve skin integrity
  - appropriate dressings
  - topical antiseptics
  - oral or intravenous antibiotics
- If unsure, seek advice, e.g. from [Specialised Wound Management Nursing](#), [Dermatology](#) or [Infection Management Services](#).

<sup>1</sup> This bulletin focuses on topical antibiotics (antibacterials) applied to the skin in adult patients.

<sup>2</sup> Bpacnz, [Antibiotic guide: choices for common infections](#). Accessed May 2025.

<sup>3</sup> Due to launch later in 2025. Find out more about this mahi [here](#). If you wish to take part in the next consultation, contact antimicrobials@cdhb.health.nz.

<sup>4</sup> > 8000 tubes in 2024.

<sup>5</sup> Indications documented for use of chloramphenicol 1% eye ointment in audits of antimicrobial use conducted in Waitaha Canterbury.

<sup>6</sup> Primhak S et al., Personal communication, 2024. Research referenced [here](#).

<sup>7</sup> Williamson DA et al., NZ Med J 2015; 128(1426): 103-9. Find [here](#).

<sup>8</sup> Wang G et al., Cell Host Microbe. 2021; 29(5): 777-791. doi: 10.1016/j.chom.2021.03.003.

<sup>9</sup> Punjataewkupt A et al., Eur J Clin Micro Infect Dis. 2018; 38: 39-54 doi: 10.1007/s10096-018-3393-5.

<sup>10</sup> bpacnz, [Topical antibiotics for skin infections: should they be prescribed at all?](#) 2017. Accessed May 2025.