

# Best Practice Message

June 2021

## Focus of Efficacy: Amoxicillin and Amoxicillin + Clavulanic acid

We are still doing well!

### Practice changing moments

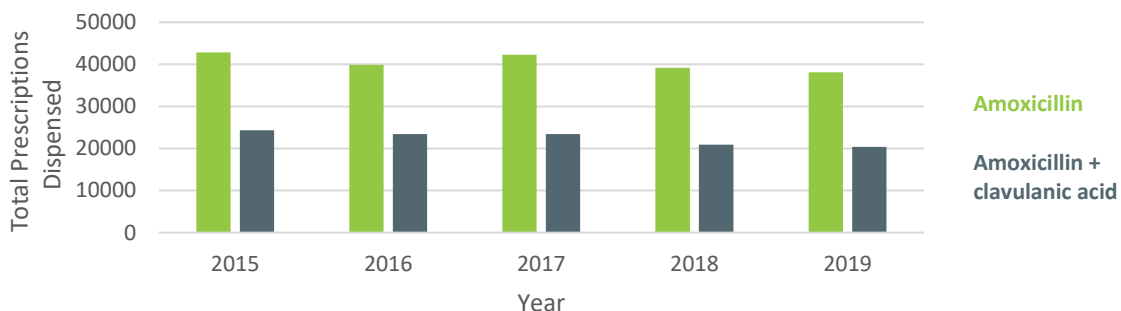
- Amoxicillin + clavulanic acid should be reserved for infections likely, or known to be, caused by amoxicillin-resistant beta-lactamase-producing strains and is indicated for:
  - Animal or human bites
  - Diabetic foot infections
  - Mastitis in males or non-lactating females

### Background

Antimicrobial resistance is emerging as a problem worldwide. Overuse of antibiotics is a major contributor to antimicrobial resistance.<sup>1</sup> The preservation of broad-spectrum antibiotic use has been the topic of several initiatives nationwide.

In Hawke's Bay a particular focus has been using amoxicillin rather than amoxicillin + clavulanic acid when appropriate, which resulted in a decrease in the use of amoxicillin + clavulanic acid. Reassuringly, Hawke's Bay continues to use more amoxicillin alone. Amoxicillin is active against certain Gram-positive and Gram-negative microorganisms. It is inactivated by penicillinase producing organisms including those produced by *Staphylococcus aureus* and by common Gram-negative bacilli such as *Escherichia coli*. The addition of clavulanic acid makes the combination active against beta lactamase producing bacteria resistant to amoxicillin, as it inactivates beta-lactamases. The combination product should be reserved for amoxicillin-resistant beta-lactamase-producing strains.<sup>2,3</sup>

**Graph 1: Hawke's Bay Prescriptions Dispensed Amoxicillin vs. Amoxicillin + clavulanic acid**



**A note on the data:** Data comes from the Pharmaceutical Collection. Antibiotics prescribed but not dispensed or dispensed on a practitioner supply order (PSO) are not included. The reason the antibiotic was prescribed is not known, therefore no judgement on the appropriateness or otherwise can be drawn.

### Focus on Equity

While in general there is a push for a reduction in antimicrobials, the picture of inappropriate prescribing of antibiotics is likely a mixture of over- and under-prescribing. Māori have a greater burden of infectious disease and are likely under-prescribed antibiotics relative to health need.<sup>4</sup>

### When to use amoxicillin in primary care

There is often increased prescribing of antibiotics in winter compared to summer, which may indicate that these are being prescribed for viral respiratory infections such as colds and flu.<sup>1</sup> In most cases of upper respiratory infections antibiotics are not indicated.<sup>5</sup>

Conditions where amoxicillin is the first-choice antibiotic<sup>6</sup>:

- Acute exacerbations of chronic obstructive pulmonary disease
- Suspected or confirmed pneumonia
- Acute otitis media
- Group A streptococcal pharyngitis in patients at high risk of rheumatic fever (or penicillin V or IM benzathine benzylpenicillin tetrahydrate)
- Persistent or severe sinusitis
- Dental abscess (or metronidazole)
- Prophylaxis of infective endocarditis prior to invasive dental procedure

### Tools available:

- NZF for dosing recommendations: [https://nzf.org.nz/nzf\\_1](https://nzf.org.nz/nzf_1)
- NZF for Children for dosing recommendations for children: [https://www.nzfchildren.org.nz/nzf\\_1](https://www.nzfchildren.org.nz/nzf_1)
- Thalamus interactive dispensing data dashboard: <https://thalamus.nz/>
- Atlas of Healthcare Variation: Community use of antibiotics PHO analysis: <https://public.tableau.com/app/profile/hqi2803/viz/PHOanalysis/Antibiotics2018>
- bpac<sup>nz</sup> Antibiotics guide: <https://bpac.org.nz/antibiotics/guide.aspx>
- *Choosing Wisely* resources: <https://choosingwisely.org.nz/professional-resource/asid/>

### References

1. Health Quality and Safety Commission. Atlas of Healthcare Variation: Community use of antibiotics: Available from: <https://www.hqsc.govt.nz/our-programmes/health-quality-evaluation/projects/atlas-of-healthcare-variation/community-use-of-antibiotics/> (accessed June 2021).
2. New Zealand Formulary (NZF). Antibacterial drugs. 2021. NZF v108. Available from: [https://nzf.org.nz/nzf\\_2893](https://nzf.org.nz/nzf_2893) (accessed June 2021).
3. GlaxoSmithKline NZ Ltd. Augmentin datasheet 9 Nov 2019. Available from: <https://www.medsafe.govt.nz/profs/datasheet/a/Augmentintabsusp.pdf> (accessed June 2021).
4. Metcalfe S, Bhawan S, Vallabh M, et al. 2019. Over and under? Ethnic inequities in community antibacterial prescribing. *NZMJ* 132(1488).
5. bpac<sup>nz</sup>. 2018. Cold season: managing without antibiotics. Available from: <https://bpac.org.nz/2018/cold-season.aspx> (accessed June 2021).
6. bpac<sup>nz</sup>. March 2019. Antibiotics: choices for common infections. Available from: <https://bpac.org.nz/antibiotics/bpacnz-antibiotics-guide.pdf> (accessed June 2021).

### Acknowledgements:

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**Disclaimer:** The information and advice contained in this document is based upon evidence from available resources at our disposal at the time of publication, and reflects best practice. However, this information is not a substitute for clinical judgment and individualised medical advice. Health Hawke's Bay accepts no responsibility or liability for consequences arising from use of this information.