

Breaking the waves of destruction: minimising inappropriate antimicrobial prescribing



**Anna Packer—Senior Pharmacist, Antimicrobial Stewardship
Dubbo Health Service, Western NSW Local Health District**

Background

Antimicrobial stewardship (AMS) has become an essential component of the National Safety and Quality Health Service Standards. Antimicrobial usage surveillance is a key component of AMS. The principle of antimicrobial usage surveillance or volume-based surveillance has been tested on a national scale by the National Antimicrobial Usage Surveillance Program (NAUSP). Unfortunately, rural and remote facilities are not eligible to submit data to NAUSP at this stage.

Western NSW LHD Pharmacy Departments service regional and remote hospitals without on-site pharmacists. Traditionally, these facilities have been provided monthly antimicrobial usage reports detailing stock supplied to the facility.

Antimicrobial usage reports provide information only on stock supplied to a facility but are difficult to interpret in isolation. This report does not provide guidance to administrators or prescribers on the use of that facility in comparison to one of a similar size.

Antimicrobial Usage Report:

Amoxicillin (amOXil Forte) 250mg/5mL Suspension 100mL DBH PP	
Amoxicillin (amOXil) 500mg Capsule 20 DBH PP	
Amoxicillin (amOXil) 500mg Capsule 20	
Amoxicillin 400mg/5mL Clavulanic acid 57mg/5mL (Curam Duo) Susp	
Amoxicillin 875mg Clavulanic acid 125mg (Curam Duo Forte) Tablet 10	
Amoxicillin 875mg Clavulanic acid 125mg (Curam Duo Forte) Tablet 10	20 tablet
Ampicillin (Australpen) 1g Injection 5	5 vial
cefaLEXin (Generichealth) 500mg Capsule 20 DBH PP	20 capsule
cefaLEXin (Generichealth) 500mg Capsule 20	80 capsule

What does this data mean for my facility?

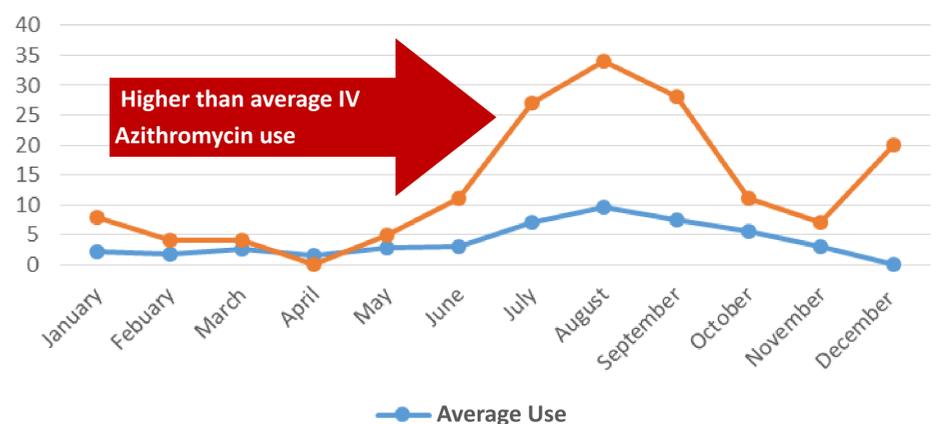
Issue: Antimicrobial usage reports provide little context and are difficult to interpret in isolation.

Aim: Improve applicability of information provided to regional hospitals and identify hospitals with areas of concern in regards to antimicrobial prescribing.

Solution: Compare antimicrobials supplied to similar sized facilities by presenting usage data in a graphical format.

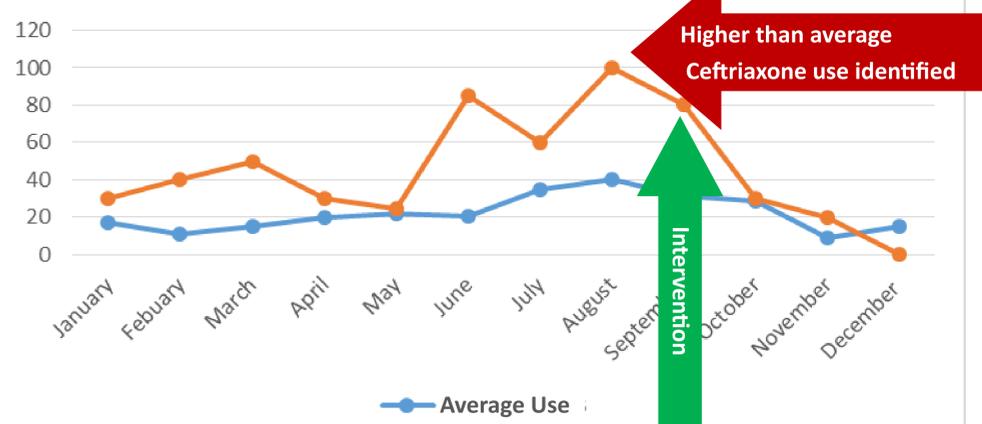
Results

2017 IV Azithromycin usage in *Pink 5* vs average for facilities with 3.1-4.5 occupied beds/day



Interventions

2017 Ceftriaxone usage in Facility *Green 5* vs average for facilities with 1.1-3 occupied beds/day



Identify antimicrobial of concern

Assess if antimicrobial is being used as per Therapeutic Guidelines

Discuss usage with prescribers and hospital executive

Provide resources to improve compliance with guideline therapy

Re-audit

Outcomes

Using volume-based surveillance of antimicrobials and comparing use at similar sized facilities enabled simple interpretation of antimicrobial usage data. Graphical representation of the data allowed interventions to be individualised and targeted at each facility.

Sustainability

The pilot project revealed that there was significant benefit in data being presented this way. However, the process of data preparation was laborious. Work is currently underway with IT to automate this data and make accessible to clinicians and executive staff. This will enable facilities to review their own usage patterns and identify areas for improvement. The AMS pharmacist and pharmacists visiting these rural and remote facilities can use this data to continue to provide targeted education and interventions to encourage appropriate antimicrobial therapy. The trial period also only looked at units supplied to the facility, further expansion of the project would ultimately include defined daily dosage per 1000 occupied bed days as per NAUSP data and World Health Organisation recommendations.