

# Antimicrobial Therapy for Urinary Tract Infections in the Emergency Department: A retrospective audit

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## Background and Aim

Urinary tract infections (UTIs) are a common infection seen in Emergency Departments.<sup>1</sup> Diagnosed UTIs are managed with antimicrobials either empirically or with directed therapy if urine specimen results with sensitivities are available. The aim of this audit was to review prescription of antimicrobial therapy for UTIs within the emergency department (ED) and to identify the appropriateness of prescribing according to national guidelines.

## Method

A retrospective audit of antimicrobial prescribing by ED doctors was conducted by an ED pharmacist over a total of 4 weeks.

Patients with diagnoses of pyelonephritis, UTI and cystitis were included in the audit.

Antimicrobial prescribing was assessed using the National Antimicrobial Prescribing Survey tool to determine antimicrobial appropriateness and alignment with the Therapeutic Guidelines (TGs).<sup>2</sup> This included empirical prescribing as well as directed prescribing if urine specimen cultures were available.

A sample of cases were co-assessed by an emergency physician.

## Results

FIGURE 1 - APPROPRIATENESS OF ANTIMICROBIAL

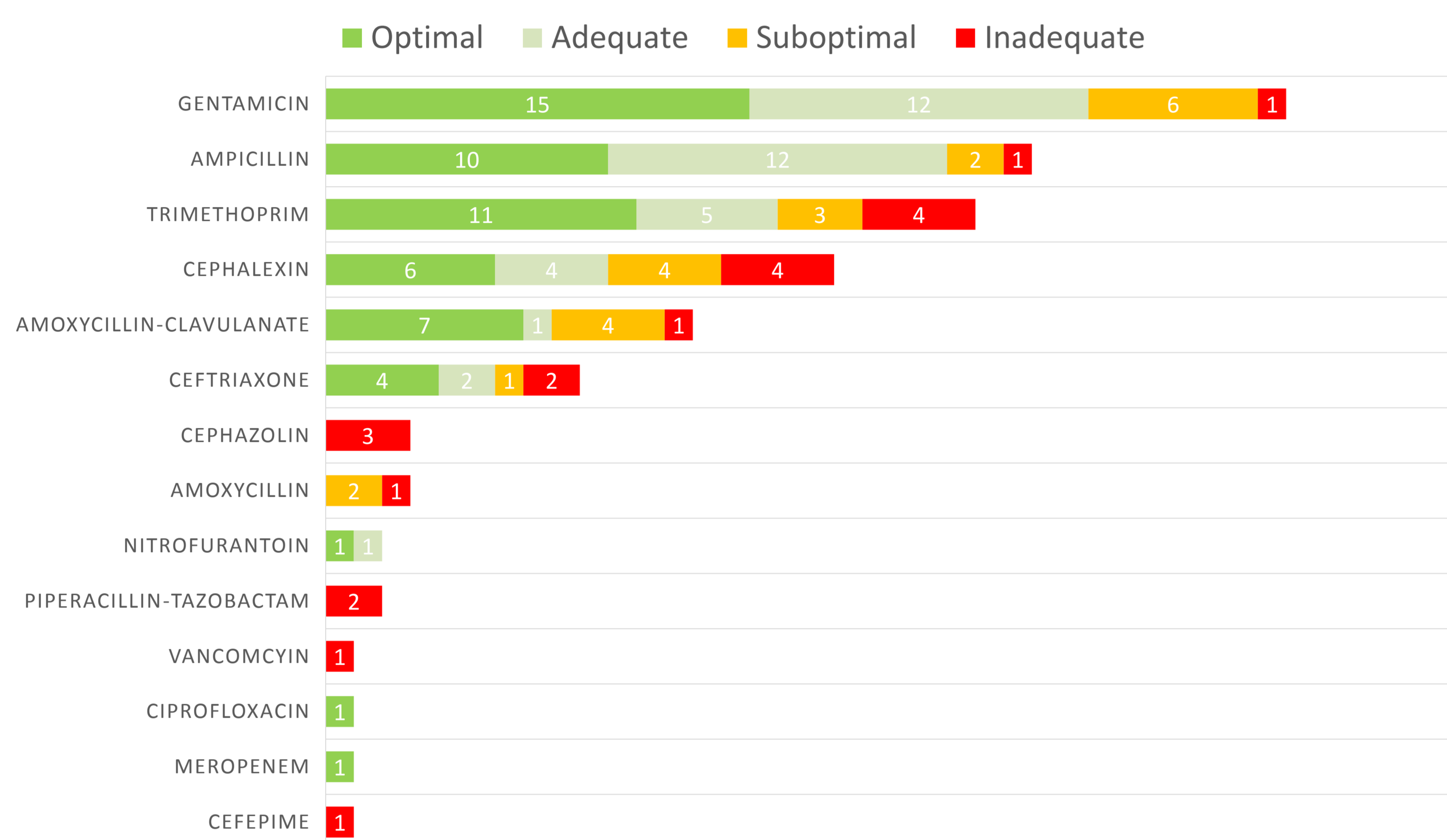
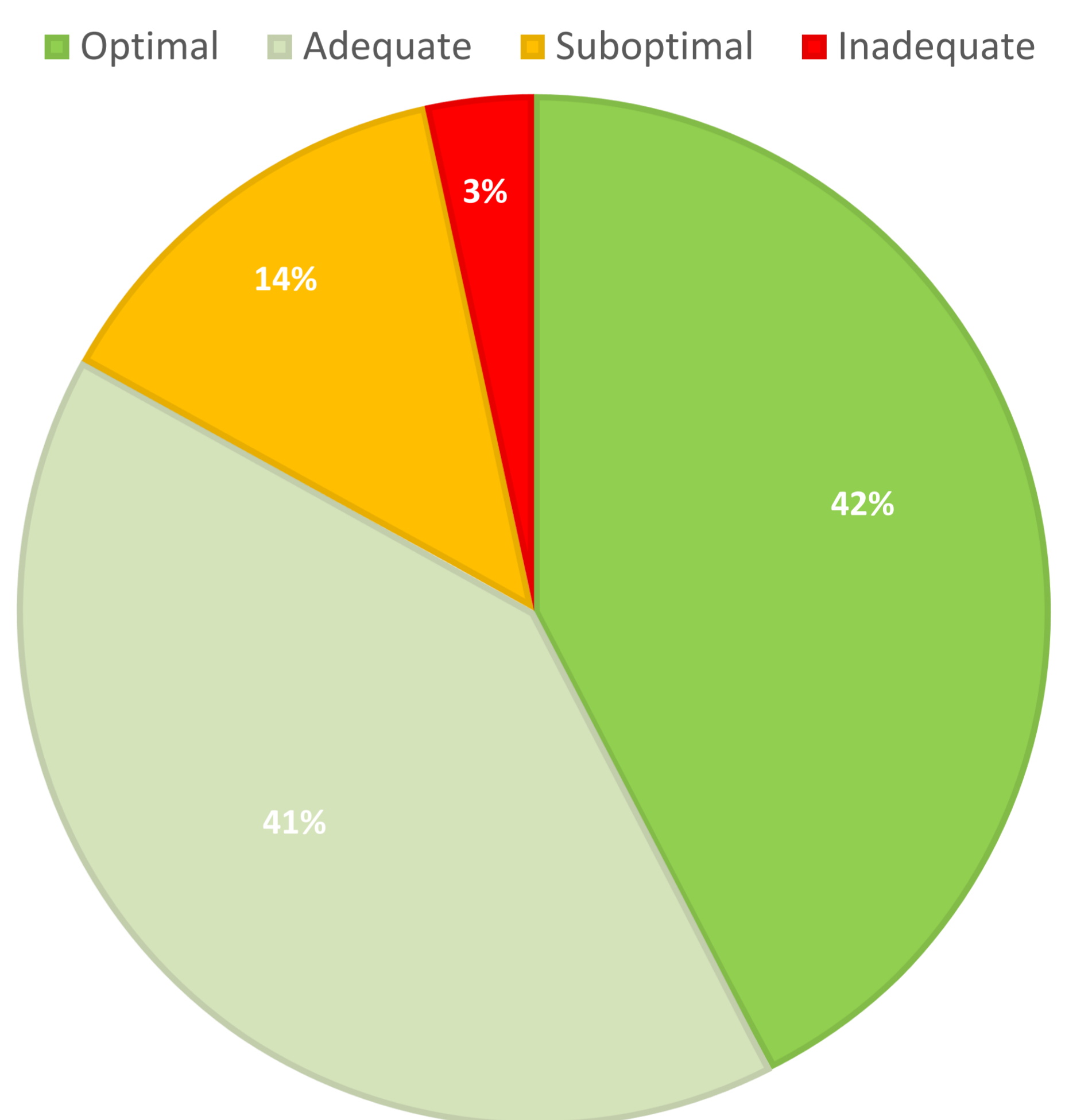


FIGURE 2 - DATA FOR GENTAMICIN & AMPICILLIN COMBINED



### Antimicrobial Selection Issues (see Figure 1)

- Incorrect dosage, duration or frequency often led to orders being rated as suboptimal or inadequate despite appropriate selection

### Intravenous Antimicrobial Issues (see Figure 2)

- Overtreatment of simple cystitis with IVs
  - Associated risks with unnecessary cannulation
- Under and over dosing of gentamicin
- Under dosing of ampicillin

### Oral Antimicrobial Issues (see Figure 3)

- Insufficient dose, frequency or duration of course for patients diagnosed with pyelonephritis.
- total of 6 patients who had no indication for any antimicrobial treatment.

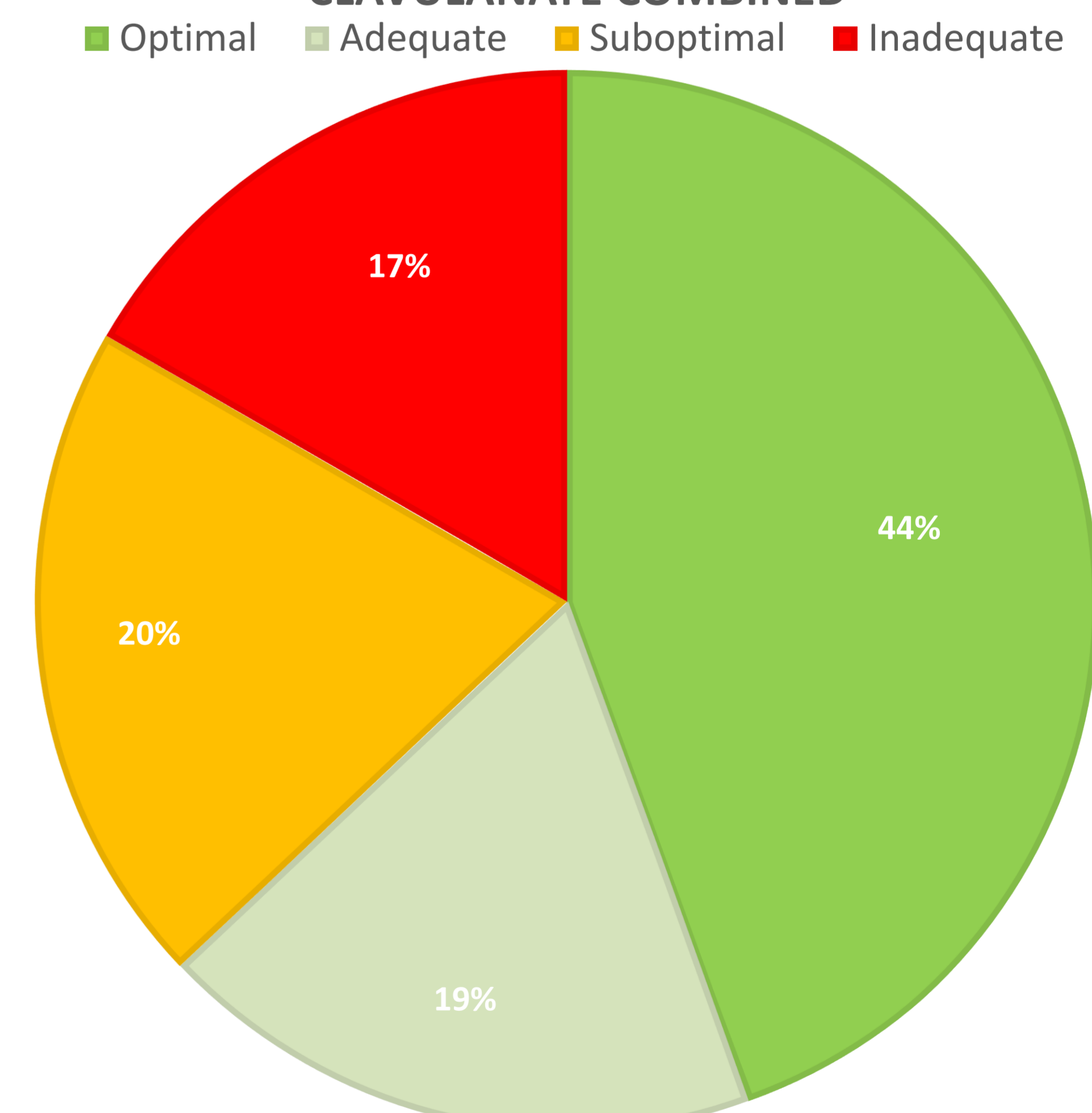
### Prescribing around Extended-Spectrum Beta-Lactamases (ESBLs)

- 3 patients with known ESBLs were prescribed beta-lactam antibiotics

### Prescribing for pregnant women

- Prophylaxis was not documented as discussed in any of the 3 eligible pregnant patients assessed despite being recommended in the TGs as acute pyelonephritis is associated with adverse maternal and foetal outcomes<sup>3</sup>

FIGURE 3 - DATA FOR TRIMETHOPRIM, CEPHALEXIN & AMOXYCILLIN-CLAVULANATE COMBINED



## Conclusion

ED doctors often selected appropriate antimicrobials, however significant deviation from consensus guidelines is observed regarding dose, duration and frequency possibly resulting in treatment failure and/or representations. There was a lack of appropriate prescribing in several key cohorts – patients with known colonisation with ESBL and pregnant women.

Pharmacists are ideally placed to optimize antimicrobial prescribing and stewardship in the ED.

References  
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