



An Audit of Antibiotic Stewardship in Open Fractures

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Purpose

The RBWH ETC is a major trauma center in Queensland and has an antibiotic prophylaxis guideline to guide initial management in patients presenting with open fractures.

Prompt administration of the correct antibiotic within 3 hrs of injury and expeditious surgical debridement are essential for reducing infection and antimicrobial resistance rates.

The aim of this quality improvement audit was to assess the level of ETC guideline adherence and to investigate subsequent health outcomes.

Methods

A clinical retrospective audit was undertaken to review all RBWH ETC trauma presentations from July 2019 to 2020 with one or more compound fractures requiring surgical fixation. Their progress post-ETC was tracked to investigate for the development of wound infection or osteomyelitis.

The patient list was obtained from the trauma data repository. Data was reviewed using ieMR.

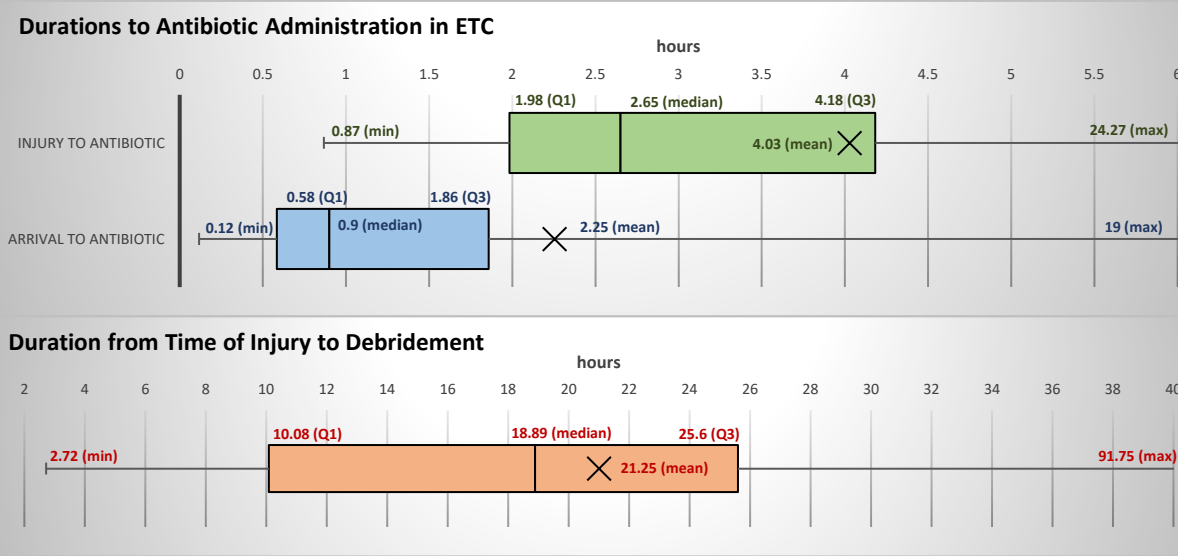
Results

59 patients presented with open fractures, of whom 59% received antibiotics within 3 hrs of injury.

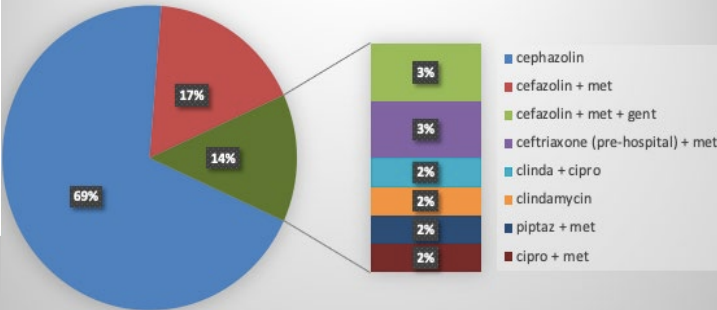
83% did not receive debridement within the recommended 8 hrs, and of these 23% received the correct antibiotics to cover for heavy contamination as recommended by the guideline.

Of the 16% of patients that had gross wound contamination documented, 75% received adequate antibiotic coverage as per the ETC guideline.

6 patients (10%) experienced a subsequent wound infection. Of these, 4 patients did not receive antibiotics within the recommended 3 hrs, and 4 did not receive surgery within 8 hrs.



Initial Antibiotic Choice in ETC for Open Fractures



Conclusions

More emphasis needs to be placed on rapid administration of correct antibiotics for patients with open fractures as soon as possible after ETC arrival, with many not currently receiving them within 3 hrs of injury.

Most of these patients are not receiving debridement within 8 hrs of injury. According to the current ETC guideline, these patients should be receiving additional antibiotics to cover for heavy contamination.

Following this audit, the ETC guideline is currently being re-designed to be clearer and thus better facilitate rapid decision making.