

## BACKGROUND

- Healthcare in rural areas is limited secondary to location, scarcity of providers, and inadequate transportation
- Emergency department (ED) physicians treat a variety of illnesses from simple management of otitis media infections to severe sepsis
- Antibiotic selection and dosing within the ED can be complex in the pediatric population secondary to various factors that include but are not limited to incomplete documentation of their past medical history, allergies, access to an accurate weight, calculating a dose, etc.
- Most adverse drug events that are reported in pediatric patients occur during the ordering process as incorrect dosing is common when it comes to antimicrobials
- Consequences that may result from inappropriate or untimely treatment include increased readmission rates related to untreated infection, unnecessary side effects, antimicrobial resistance and poor outcomes

## OBJECTIVES

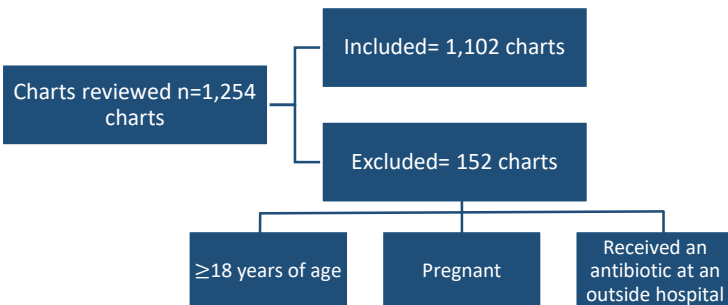
### Primary Objective:

- To assess if providers within the ED of a rural teaching hospital appropriately utilize antimicrobials for the pediatric population

### Secondary Objectives:

- To evaluate dosing for appropriateness and time to administration of the first dose of antibiotics
- To identify patients that were readmitted to the ED due to the same illness

## INITIAL SCREENING



## METHODS

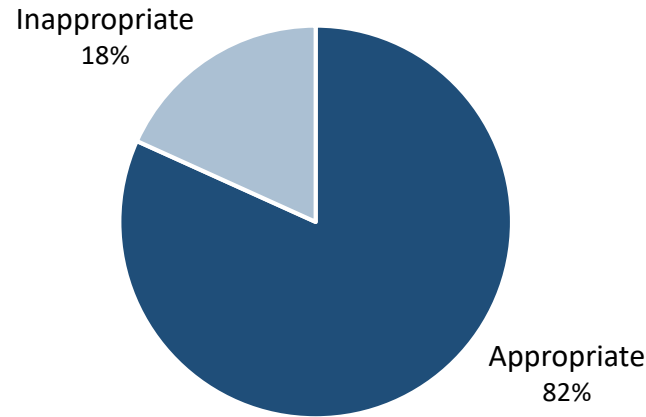
**Design:** Single center, retrospective chart review

**Performance Site:** St. Claire Regional Medical Center, Morehead, KY

**Inclusion Criteria:** Pediatric patients, those <18 years of age, who presented to the ED for care from January 1, 2017 to December 31, 2018 and received antimicrobial therapy

## RESULTS

### Antimicrobial Assessment



	2017	2018
Subtherapeutic dose	68.3%	86.6%
Supratherapeutic dose	26.8%	10.9%
Inappropriate indication	4.9%	2.5%

JAMA. 2001, 285(16): 2114-2120.

Interdisciplinary Journal of Undergraduate Research: Vol 6, Article 9.

## RESULTS

### Time to Administration

2017  
25 ± 21.9 minutes\*

2018  
23 ± 21 minutes\*

\*Average ± standard deviation

### Readmission Data

- 57 patients (5.2%) re-presented to the ED after their initial ED visit for the same illness
- 9 patients (15.7%) were readmitted to the hospital after their initial ED visit for the same illness
- 12 ± 4 days from initial ED visit to re-presentation to the hospital

## CONCLUSIONS/FUTURE DIRECTIONS

- Data suggests that pediatric patients who present to the ED at St. Claire Regional Medical Center are likely to receive an appropriate antibiotic at an appropriate dose within a timely manner
- Pediatric antimicrobial stewardship opportunities within the ED at St. Claire Regional Medical Center include developing tools to further assist with dosing optimization and empiric antimicrobial selection that is more conducive to guideline recommendations
  - Order sets
  - Dosing algorithms
  - Provider education
  - Optimize pediatric data collection at triage

## DISCLOSURES AND ACKNOWLEDGEMENTS

The authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have direct or indirect interest in the subject matter of this presentation.

- Brandy Brown, PharmD: Nothing to disclose
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