Correlation of antibiotic timing in sepsis with implementation of an emergency medicine (EM) pharmacist at a community hospital

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INTRODUCTION

- Annually, 1.7 million adults in America develop sepsis, and 270,000 result in death. 1 in 3 deaths in a hospital setting is associated with sepsis.
- Each hour that passes in sepsis or septic shock without antibiotic administration results in higher rates of mortality.
- The presence of an EM pharmacist may help patients with sepsis by promoting appropriate antibiotic selection and decrease time to antibiotic administration.

OBJECTIVES

Primary Endpoint:
- Median time (in minutes) to antibiotic administration from the time of sepsis recognition

Key Secondary Endpoints:
- Median time (in minutes) to sepsis bundle completion
- Proportion of patients who received a broad-spectrum antibiotic

METHODS

An internal quality improvement program in the health system provided the list of patients for this retrospective chart review of septic patients at a 590-bed community hospital with 43,000 annual emergency department (ED) visits.

A total of 198 patients were included for analysis. Of these, 123 patients were in pharmacist-absent and 75 in pharmacist-present groups.
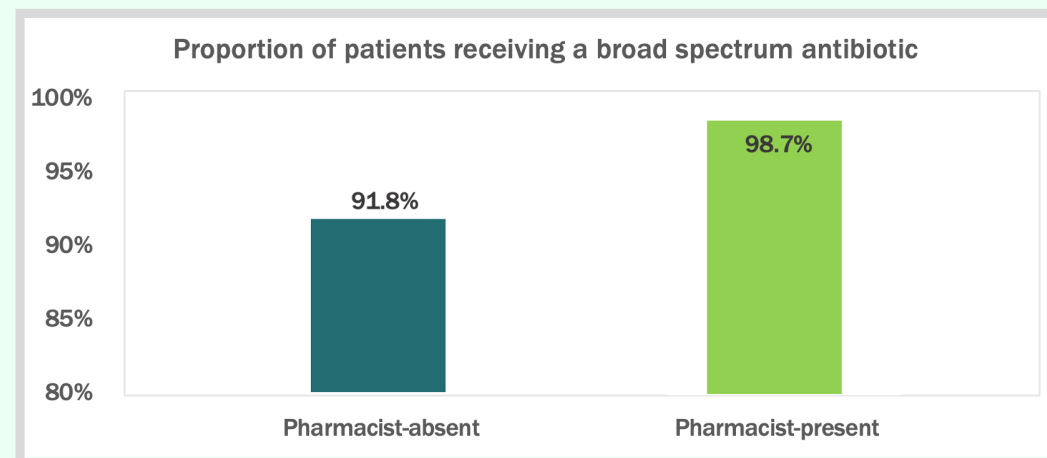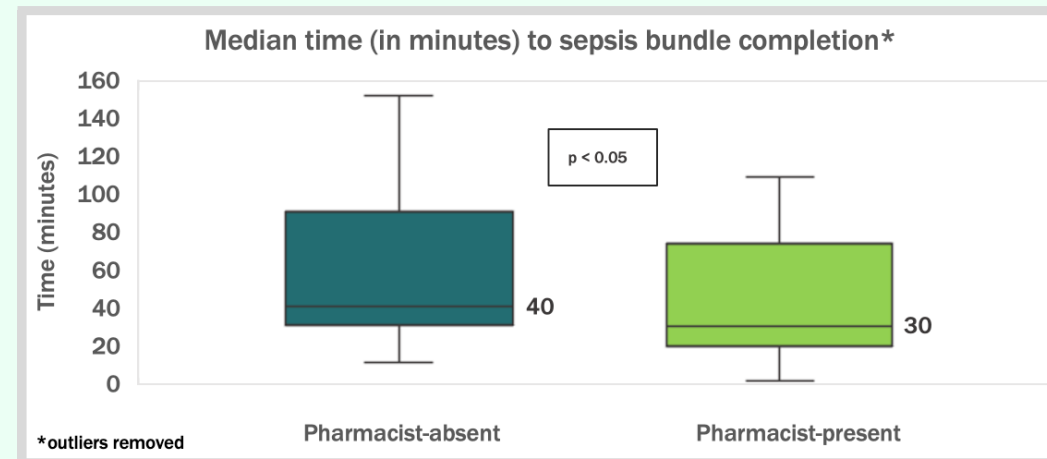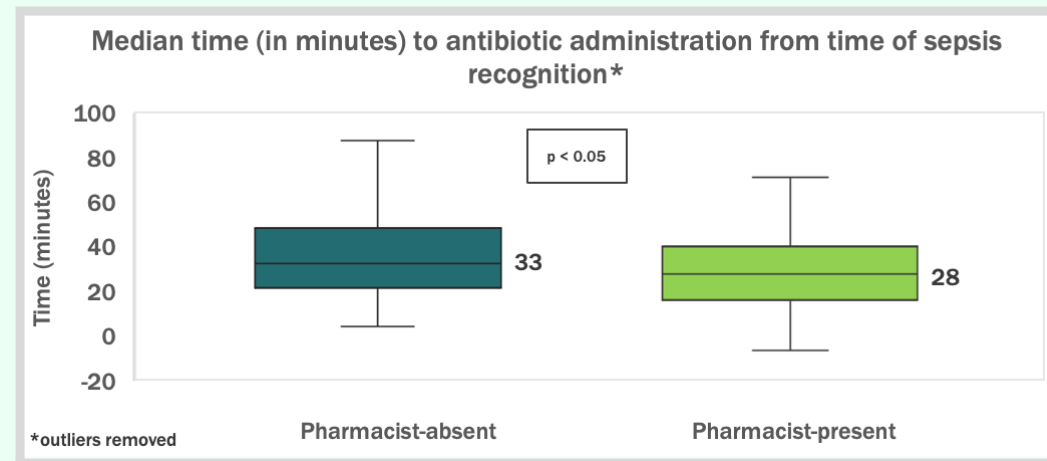
Inclusion Criteria:
- Adults >18 years of age
- Met sepsis criteria in the ED between October 1, 2018-June 30, 2019 (pharmacist-absent) and October 1, 2019-June 30, 2020 (pharmacist-present)
- Antibiotic(s) ordered by an EM physician and administered in the ED

Exclusion Criteria:
- Patients with an initial time of sepsis recognition outside of an EM pharmacist shift
- Incomplete sepsis bundle

RESULTS

Median time (in minutes) to antibiotic administration from time of sepsis recognition*

$p < 0.05$

*outliers removed

Median time (in minutes) to sepsis bundle completion*

$p < 0.05$

*outliers removed

Proportion of patients receiving a broad spectrum antibiotic

CONCLUSIONS

- The presence of an EM pharmacist significantly reduced the median time to antibiotic administration 1 and sepsis bundle completion.
- Additionally, there was a trend towards increased broad spectrum antibiotic use and a statistically significant decrease in antipseudomonal coverage (not depicted).
- The inclusion of an EM pharmacist can impact timely antibiotic administration, optimization of antibiotic selection and sepsis bundle completion.
- Determining the clinical implications of the presence of an EM pharmacist requires further study.

REFERENCES

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DISCLOSURES

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