Purpose
Evidence supports earlier timing of antibiotics in sepsis results in lower mortality rates. The purpose of this study was to identify the correlation of an EM pharmacist has on time to antibiotic administration in sepsis compared to times without.

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. Men and women greater than 18 years of age meeting sepsis criteria in the ED at an urban hospital between October 1, 2018-June 30, 2019 (pharmacist-absent) and October 1, 2019-June 30, 2020 (pharmacist-present) were included in this study. Patients with an initial time of sepsis recognition outside of an EM pharmacist shift and incomplete sepsis bundle were excluded. Antibiotics for sepsis must have been ordered by an EM physician and administered in the ED. A total of 198 patients were included. Of these, 123 patients were in pharmacist-absent and 75 in pharmacist-present groups. The primary outcome measure was the median time (in minutes) to antibiotic administration from the time of sepsis recognition. Key secondary outcome measures included the median time (in minutes) to sepsis bundle completion, the proportion of patients who received antibiotics with pseudomonal coverage, the proportion of patients who received an antibiotic in less than 1 hour, the proportion of patients who received a broad-spectrum antibiotic, and in-hospital mortality. Data are expressed as two-sided alpha values, time to outcomes as medians utilizing Wilcoxon rank sum, and other secondary outcomes using Fisher's exact test.

Results
The median time to antibiotic administration in sepsis decreased from 33 minutes in pharmacist-absent to 28 minutes in pharmacist-present groups (p-value<0.05). The median time to sepsis bundle completion decreased from 40 minutes in pharmacist-absent to 30 minutes pharmacist-present groups (p-value<0.05). Patients receiving antibiotics in less than 1 hour, pseudomonal coverage, and broad-spectrum antibiotics were comparable between groups. There was no detectable difference in patient mortality.

Conclusion
The correlation of an EM pharmacist present resulted in a statistically significant reduction in time to antibiotic administration in sepsis. Although there was no detectable difference between study groups who were administered sepsis antibiotics within the Surviving Sepsis guideline recommended time frame of 1 hour, sepsis outcomes are highly dependent on time to antibiotic administration and sepsis bundle completion. Determining the clinical implications of the presence of an EM pharmacist requires further study.