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Title: Evaluation of time for de-escalation of antibiotic therapy after getting preliminary cultures in sepsis patient at a community teaching hospital

Abstract Purpose: The "Surviving Sepsis Campaign: International Guidelines for Management of Sepsis and Septic Shock: 2016" recommends de-escalation of treatment after getting the final culture and identification of causative pathogen. However, adherence to this practice remains unknown. The objective of this study was to evaluate the time to de-escalate antibiotic therapy after getting preliminary culture in sepsis patient at community teaching hospital.

Methods: Retrospective data was collected from electronic medical records (EMR) of patients admitted to St. Mary Hospital, St. Louis between November 2018 and December 2018. Patients were included in the study if they had a diagnosis of sepsis/severe sepsis or septic shock. Patients were divided in two groups based on the findings of preliminary culture: one with de-escalation within 8 hours and the other who were not de-escalated up until 3 days. The comparison was conducted for length of hospital stay (LOS) and developing Cdiff infection due to overuse of antibiotics. Statistical analysis was conducted using Student's T-test and non-parametric tests to compare two or more than two groups.

Results: There was a significant difference ($p < 0.0001$) in LOS between the group of patients who were de-escalated within 8 hours after getting preliminary culture and the group of patients who were not deescalated up until 3 days.

Conclusion: This study suggest that de-escalation after getting the preliminary culture is beneficial in reducing the LOS and thus reducing overall health care cost. As sample size of this study was small, further research with large sample size is required to understand these effects.