

Sepsis patients who have cultures obtained after FAD (represented in the AF cohort) had less positive-cultures, shorter TFAD, a trend toward longer ICU and hospital LOS, and perhaps higher risk of *C. difficile* infection, and mortality” Cascone et al (2019).

Abstract:

Background: Previous research has illustrated the importance of collection of microbiologic cultures prior to first antimicrobial dose (FAD) in septic patients to avoid sterilization of pathogens and thus allowing confirmation of infection, identification of pathogen(s), and de-escalation of antimicrobial therapy. There is currently a lack of literature characterizing the implications and clinical courses of patients who have cultures collected after FAD.

Methods: In this single-center, retrospective chart review of 163 sepsis cases in the emergency department, the primary outcome was positive-cultures from appropriate sources. Secondary outcomes included time to FAD (TFAD); ICU and hospital lengths of stay (LOS); rate of antibiotic restart; secondary infection rate; readmission; and mortality. Cases were divided based on culture timing relative to FAD: culture-first (CF) or antimicrobial-first (AF) cohorts.

Results: Cultures were more frequently positive in the CF cohort vs. AF cohort overall (80.4% vs. 46.7%,  $p < 0.005$ ). TFAD was greater in the CF cohort (202 min vs. 153 min,  $p = 0.036$ ) and these cases trended toward shorter ICU and hospital LOS (6.8 days vs. 8.4 days,  $p = 0.122$ ; 11.5 days vs. 13.5 days,  $p = 0.218$ ). Antibiotic restart was less frequent in the CF cohort (10.7% vs. 17.8%,  $p < 0.005$ ). *C. difficile* infection and mortality trended toward lower incidence in the CF cohort, and readmission rates were similar. Conclusions: Sepsis patients who have cultures obtained after FAD (represented in the AF cohort) had less positive-cultures, shorter TFAD, a trend toward longer ICU and hospital LOS, and perhaps higher risk of *C. difficile* infection, and mortality.

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## Blood culture contamination quality improvement project

### Reference:

Cascone, V.J., Cohen, R.S., Dodson, N.P. and Cannon, C.M. (2019) Implications of culture collection after the first antimicrobial dose in septic emergency department patients. *The American Journal of Emergency Medicine*. February 12th. .

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