Impact of Protocol Driven Provider Order Sets on Patient Mortality and Bundle Compliance
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Background/Purpose
Sepsis kills 270,000 people a year making it the leading cause of death in U.S. hospitals. Up to 80% of these deaths are preventable with rapid diagnosis and treatment (www.sepsis.org). In 2018 alone, Swedish Medical Center (SMC) treated 338 septic shock patients and 557 severe septic patients, making SMC one of the largest treatment centers in the Denver Metro area. As the prevalence of septic patients continue to rise, the importance of maintaining a high standard of care remains the forefront of our emergency department (ED) focus.

Order Set Design
Sepsis order sets were created in collaboration with ED physicians, pharmacists and the sepsis coordinators, then approved by the cooperate office to include sep:1 bundle elements:
• Two sets of blood cultures
• Lactate now and x1 hour
• 30 mLs/kg crystalloid fluid bolus with option to use ideal body weight
• Option for antimicrobials (more specific for source of infection)

Results/Findings/Outcomes
There is an inverse correlation between septic shock order set utilization and patient mortality. There is a positive correlation between order set utilization and sep:1 bundle compliance.
• 72% of septic shock patients received the mEDSEPBUN or mEDSEPINO2 order set
• Septic shock patients with the order set utilized were 21% more likely to have the 3-hour bundle completed
• Severe sepsis patients with the order set utilized were 109% more likely (over twice as likely) to have the 3-hour bundle completed

As the prevalence of septic shock grows it is clear that there is a need for order set utilization to standardize care and decrease patient mortality. This is imperative since the ED is the first point of contact for these patients.

Learning Objective
Understand the advantages of utilizing pre-built provider order sets based on the sep:1 bundle in the ED to ensure compliance with the bundle and decrease mortality in the septic population.

Methods
Patients reviewed were coded as septic shock upon arrival to the ED. 90% of Swedish Medical Center’s septic patients are POA.

Patients transferred from an outside hospital:
• excluded from total volume
• included in mortality rate

Patients transitioned to inpatient hospice:
• included in the total volume
• excluded from mortality rate.

Order sets included:
• septic shock ED admission
• septic shock add on (when septic shock is a consideration after initial orders have been entered).

Implications for Practice
SMC has realized this correlation and is now tracking weekly order set utilization compared to bundle compliance as seen in the example below. This allows for real time feedback and recognition for staff.

Conclusion

References
https://www.sepsis.org