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Objective: Upon completion of the lecture, attendees should be better prepared to:

- Describe variables beyond percent total body surface area burned and age that may impact length of stay
- Discuss impact additional variables may have on benchmarking

Abstract:

Introduction: Length of stay (LOS) is a major contributor to hospital costs and attention is focused on decreasing LOS without negatively affecting patient care. Hospitals with burn centers have a longer average LOS compared to those without. Additionally, disparity exists among different burn centers. The National Burn Repository (NBR) has created benchmarks and adjusts LOS for percent total body surface area (TBSA) injured and age. Literature exists, associating additional factors to burn patients' LOS including comorbidities, socioeconomics, and social situations not currently included in NBR benchmarks. The Burns Quality Improvement Program (BQIP) includes a database that was created to capture and analyze additional factors, but is still in beta testing. This study was conducted to best identify factors contributing to LOS and mortality in our patients with thermal and inhalation injury by analyzing established and novel variables.

Methods: This two-year, retrospective, single-center study included all patients admitted to the burn center between January 1, 2015 and December 31, 2016. Patients were excluded if they died or lacked a thermal or inhalation injury, amongst others. Baseline demographics and other pertinent data were collected using electronic medical records. Linear regression analysis was used to identify variables independently associated with LOS.

Results: Six hundred twenty-nine patients were admitted during the inclusion period. Of these, 275 patients were excluded leaving 354 patients for analysis. Average length of stay among survivors was 16.45 days (1.9 days / %TBSA). The best multivariable model for LOS included 9 variables: TBSA, past medical history of anemia or clotting disorder, presence of acute respiratory distress syndrome, neuromuscular blockers, steroids, number of surgeries, infections, and discharge to a skilled nursing, rehabilitation, or long-term care facility ($r^2=0.896$).

Conclusions: Factors contributing most to increased LOS in our patient population included a mix of demographics, complications, and discharge disposition. Addition of variables may be warranted to future database versions.

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