Introduction:
Spontaneous bacterial peritonitis (SBP) accounts for ≥24% of the bacterial infections that occur in patients with cirrhosis, and SBP has a high mortality rate (20% to 50%). Albumin infusion has been shown to improve the outcome of SBP. The aim of this study is to examine the impact of albumin infusion on hospital length of stay (LOS) for cirrhotic patients with SBP.

Methods:
We utilized a nationwide Electronic Health Record data set (Cerner Health Facts®) to extract real-world data on adult patients (≥18 years old) with cirrhosis and SBP who received antibiotics and admitted between January 1, 2009, and April 30, 2018. International Classification of Diseases (ICD-9/10) codes were used to identify cirrhosis and SBP. We used laboratory data for calculation of the Model for End-stage Liver Disease Sodium (MELD-Na) score and vital signs data for calculation of the quick Sepsis Related Organ Failure Assessment (qSOFA) score at baseline for each encounter. A generalized linear model was used to assess the relationship between albumin infusion and hospital LOS.

Results:
There were 2,131 encounters that identified patients with SBP and cirrhosis, of which 1,661 survived hospitalization. Albumin was infused within 24 hours of admission ('early albumin') in 43% (n=718), after 24 hours in 31% ('late albumin', n=517), and not administered in 26% ('no albumin', n=426). MELD-Na was higher at presentation in early albumin cases versus late- or no-albumin cases (mean 24.0 and 19.5). Unadjusted LOS was lower in patients receiving early albumin (8.7 days versus 10.4 days). Risk-adjusted analysis demonstrated that early albumin led to a 17.5% reduction in LOS (95% CI 12.6%-22.2%, p = <0.0001).

Conclusion:
In these real-world data, albumin infusion within 24 hours of admission in patients with cirrhosis and SBP was associated with a shorter hospital stay despite more severe illness. Early albumin may not only improve clinical outcomes but may also reduce the costs of hospitalization in cirrhotic patients with SBP.