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Characteristics of Hospitalized Patients with Acute Bacterial Skin and Skin Structure Infections (ABSSSI) Treated with Vancomycin and at Greatest Risk for Prolonged Hospital Length of Stay in an Integrated Delivery Network (IDN)

ABSTRACT
Background: Care for ABSSSI patients places a major financial burden on the US healthcare system, largely due to hospitalization costs. Many ABSSSI patients require hospitalization for 2 or more days. The aim of this study was to identify influential clinical characteristics associated with prolonged hospital length of stay (LOS) for ABSSSI patients treated with vancomycin in an integrated delivery network (IDN) in the US.

Methods: A retrospective study of adult patients hospitalized with a primary diagnosis of ABSSSI at 7 hospitals in an IDN between 01/01/2011 and 12/31/2015 was conducted. All patients with a primary diagnosis of ABSSSI were included in the analysis. The principal outcome of interest was inpatient hospital LOS. Multivariate logistic regression analyses were performed to identify factors associated with prolonged LOS. Covariates for consideration in the model included patient characteristics, hospitalization-related factors, and clinical characteristics.

RESULTS
Results of the multivariate analyses are shown in Table 2. Of the variables considered for inclusion into the full model, the following were found to be statistically significant and included in the final model: 1. Age ³ 65 years 2. BMI ³ 36.0 kg/m2 3. Seizure, 4. Diabetic without complication, 5. CHF, 6. COPD/Bronchitis, 7. Lower extremity ulcer

Table 2: Characteristics associated with prolonged hospital stay ≥8 days in the final model for the cohort of 651 hospitalized ABSSSI patients who received vancomycin in hospital stay day 1 or continued for ≥8 days

- Percentage
- Odds ratio
- 95% CI
- p value

- Age ³ 65 years
- Male
- Non-severe liver disease
- Neutropenia, leukocytopenia
- Other immunocompromising conditions
- Cancer
- Malignant neoplasm
- Current smoking + past smoking
- Obesity
- Lower extremity ulcer
- Diabetes without complications
- Diabetes with complications
- COPD/Bronchitis
- Cardiovascular system disease
- Male
- Non-severe liver disease
- Neutropenia, leukocytopenia
- Other immunocompromising conditions
- Cancer
- Malignant neoplasm
- Current smoking + past smoking
- Obesity
- Lower extremity ulcer
- Diabetes without complications
- Diabetes with complications
- COPD/Bronchitis
- Cardiovascular system disease

CONCLUSIONS
- Approximately 86% of ABSSSI patients were hospitalized for ≥8 days. The majority of these patients (80.3%) had one or more comorbidities. Male sex, age ≥65 years, diabetes, obesity, smoking, and lower extremity ulcer were statistically significantly associated with prolonged hospital stay (≥8 days).

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Figure 1. Distributions of demographic characteristics of 183 hospitalized ABSSSI patients who received vancomycin for in-hospital stay day 1 or continued for ≥8 days.

Figure 2. Distributions of clinical characteristics for 183 hospitalized ABSSSI patients who received vancomycin for in-hospital stay day 1 or continued for ≥8 days.

Figure 3. Factors associated with hospital stay ≥8 days of hospitalized ABSSSI patients who received vancomycin for in-hospital stay day 1 or continued for ≥8 days with hospital LOS ≥8 days (n=100) vs. <8 days (n=841).

Figure 4. Factors associated with hospital stay ≥8 days of hospitalized ABSSSI patients who received vancomycin for in-hospital stay day 1 or continued for ≥8 days with hospital LOS ≥8 days (n=100) vs. <8 days (n=841).

Table 1: Demographics and clinical characteristics of 651 hospitalized ABSSSI patients who received vancomycin. In-hospital stay day 1 or continued for ≥8 days

- Percentage
- Odds ratio
- 95% CI
- p value

- Age ³ 65 years
- Male
- Non-severe liver disease
- Neutropenia, leukocytopenia
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