patients were more likely than non-CDI patients to be older (mean age, 78.3 vs. 76.1 years, P < 0.0001), be women (64.5% vs. 58.1%, P < 0.0001), or have comorbidities (mean Charlson comorbidity index score, 4.5 vs. 1.8, P < 0.0001).

**Conclusion.** CDI incidence rates in the Medicare Advantage population were similar to those reported previously in the Medicare fee-for-service population and nationally among adults aged ≥65 years. Data are consistent with a high CDI burden among older US adults.

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2377. Social Determinants Impact Readmission Following *Clostridioides difficile* Relapse: A Index Hospital Stay in Medicare Patients

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**Session:** 251. HAI: C. difficile - Epidemiology

**Saturday, October 5, 2019: 12:15 PM**

**Background.** *Clostridioides difficile* infection (CDI) is the leading cause of healthcare-associated diarrhea and recurs in up to 30% of patients, often requiring readmission. Socioeconomic factors, such as living in a disadvantaged neighborhood may impact readmission but have not been studied.

**Methods.** We examined the relationship between neighborhood disadvantage, as measured by the Singh validated area deprivation index (ADI), and 30-day all-cause readmission risk in patients with an index hospital stay with CDI. We analyzed a random 20% sample of national Medicare claims for patients' initial index hospitalization with a CDI diagnosis in 2014 (n = 19,528) that included each patient's neighborhood ADI national percentile. The most disadvantaged neighborhoods were categorized as those in the upper 35 percentile, while the least disadvantaged was defined as those in the bottom 65% of ADI rankings. We evaluated the relationship between ADI percentile and 30-day readmission risk using multivariate logistic regression, controlling for key patient demographics, comorbidities, and hospital/stay characteristics.

**Results.** A total of 19,528 patients had an index stay with CDI, 4,899 were readmitted within 30 days. Patients from the most disadvantaged neighborhoods had a higher average rate of readmission compared with those living in the least disadvantaged neighborhoods (28% vs. 24% rate; unadjusted risk ratio = 1.16 [1.10, 1.21]). This relationship held after controlling for confounders. After adjustment, being a resident in the most disadvantaged neighborhoods was associated with a 16% increased risk of readmission (adjusted risk ratio = 1.10 [1.05, 1.16]), which was similar to the effect sizes associated with dual Medicaid-Medicare enrollment status (adjusted risk ratio = 1.09 [1.03, 1.15]) and renal failure (adjusted risk ratio = 1.14 [1.08, 1.21]).

**Conclusion.** Living in a disadvantaged neighborhood is associated with an increased 30-day readmission risk similar in magnitude to Medicaid status and renal failure in patients with index hospitalizations of CDI. Future studies should examine whether interventions such as post discharge support and care coordination for patients in disadvantaged neighborhoods may reduce readmissions in this patient population.

**Disclosures.** All authors: No reported disclosures.

2378. Corticosteroid Use Prevents Primary *Clostridioides difficile* Infection in the Setting of Broad-Spectrum Antibiotic Use Among Hospitalized Patients

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**Background.** *Clostridioides difficile* is the most common pathogen causing healthcare-associated infections in the United States and a Centers for Disease Control and Prevention’s top threat-level pathogen. The pathophysiology of *C. difficile* infection (CDI) involves neutrophil invasion of the colon associated with an inflammatory response. Previous case-control studies investigating an anti-inflammatory corticosteroid (CS) effect on CDI risk demonstrated conflicting results but were unable to control for antibiotic use. We hypothesized that CS use would decrease the risk of CDI in a well-matched, high-risk population.

**Methods.** This nested case-control study included hospitalized patients admitted to a single quaternary care hospital in the Texas Medical Center. The case population included adults who were diagnosed with CDI and received at least one dose of an antibiotic of interest (piperacillin–tazobactam, ceftepime, or meropenem) in the 90 days prior to CDI diagnosis. The control population included hospitalized adults who received one of the same antibiotics during their hospital stay but did not develop CDI in the 90 days following their first dose. Patients were excluded if they had a documented history of CDI. CS use was defined as ≥20 mg prednisone or equivalent administered in the 48 hours prior to CDI diagnosis (cases) or antibiotic start (controls). The primary study outcome was the development of CDI. A logistic regression model was developed modeling CDI diagnosis as a function of available patient covariates.

**Results.** A total of 321 patients met the inclusion criteria; 56 patients had a history of CDI, leaving a final study cohort of 265 patients (104 cases and 161 controls). Antibiotic days of therapy were significantly higher in the control group (8 vs. 6 days; P = 0.02). The odds of CDI diagnosis were lower among patients administered CS (OR, 0.17; 95% CI, 0.08–0.38; P < 0.001), which remained protective in the multivariable model after adjusting for age, gender, and invasive GI surgery within 6 months.

**Conclusion.** We observed an association between CS use and decreased risk of developing primary CDI in hospitalized patients receiving broad-spectrum antibiotics. Future studies are needed to delineate the dose and duration of CS needed to realize this effect.

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Figure 2. Characteristics of 240 C. difficile PCR positive/toxin negative patients classified according to treatment given, June–Dec 2018.

Figure 1. Alpha Diversity (Shannon Index) versus Fecal Inflammatory Markers in Hematological Patients

Figure 2A. Abundance of Collinsella and Peptoclostridium in EIA+ and EIA- Patients

Figure 2B. Plot of Effect Size (Per Permutations) of Collinsella and Peptoclostridium