

ORAL ABSTRACTS

524. National estimates of incidence, recurrence, hospitalization, and death of nursing home-onset *Clostridium difficile* infections — United States, 2012

Jennifer C. Hunter, DrPH^{1,2}; Yi Mu, PhD¹; Ghinwa K. Dumyati, MD, FSHEA³; Monica M. Farley, MD^{4,5,6}; Lisa G. Winston, MD⁷; Helen L. Johnston, MPH⁸; James I. Meek, MPH⁹; Lucy E. Wilson, MD¹⁰; Stacy M, DVM, MPH, DACVPM^{11,12}; Zintars G. Beldavs, MS¹³; Erin C. Phipps, DVM¹⁴; John R. Dunn, DVM, PhD¹⁵; Jessica a. Cohen, MPH^{1,16}; Nimalie D. Stone, MD, MS¹; L. Clifford McDonald, MD, FACP, FSHEA¹; Fernanda C. Lessa, MD¹; ¹Centers for Disease Control and Prevention, National Center for Emerging and Zoonotic Infectious Diseases, Division of Healthcare Quality Promotion, Atlanta, GA; ²Centers for Disease Control and Prevention, Division of Scientific Education and Professional Development, Epidemic Intelligence Service, Atlanta, GA; ³University of Rochester Medical Center, Rochester, NY; ⁴Emory University School of Medicine, Atlanta, GA; ⁵Medicine/Infectious Diseases, Emory University School of Medicine, Atlanta, GA; ⁶Atlanta Veterans Affairs Medical Center, Decatur, GA; ⁷University of California, San Francisco, School of Medicine, Department of Medicine, San Francisco, CA; ⁸Colorado Department of Public Health and Environment, Denver, CO; ⁹Connecticut Emerging Infections Program, Yale School of Public Health, New Haven, CT; ¹⁰Maryland Department of Health and Mental Hygiene, Baltimore, MD; ¹¹Minnesota Department of Health, St. Paul, MN; ¹²Centers for Disease Control and Prevention, Office of Public Health Preparedness and Response, Career Epidemiology Field Office Program, St. Paul, MN; ¹³Acute & Communicable Disease Prevention, Oregon Health Authority, Portland, OR; ¹⁴New Mexico Emerging Infections Program, Albuquerque, NM; ¹⁵Tennessee Department of Health, Nashville, TN; ¹⁶Atlanta Research and Education Foundation, Atlanta, GA

Session: 62. *Clostridium difficile*: Epidemiology, Risk Factors, and Impact
Thursday, October 9, 2014: 2:00 PM

Background. Nursing home residents are at high risk of *Clostridium difficile* infection (CDI) due to advanced age and frequent healthcare exposures. However, the national burden of CDI occurring in this setting is not well characterized. We analyzed population-based surveillance data to estimate national incidence, recurrence, hospitalization, and death among patients with onset of CDI in nursing homes.

Methods. Population-based CDI surveillance data from 10 U.S. geographic areas, encompassing 348 nursing homes, were used to identify nursing-home onset (NHO) CDI cases, defined as: 1) *C. difficile*-positive stool by either toxin or molecular assay during 2012 in a surveillance area resident at least one year of age without a positive test in the prior 8 weeks, and 2) *C. difficile*-positive stool was collected in a nursing home or ≤3 days after hospital admission from a nursing home. Medical record review was performed on a random sample of cases. A regression model was used to calculate incidence controlling for identified predictors of high NHO-CDI incidence that vary by region. Sampling weights were used to estimate national burden of infections and numbers of hospitalizations, recurrences and deaths among NHO-CDI cases.

Results. A total of 3,513 NHO-CDI cases were identified. Among 272 cases with full medical record review, median age was 82 years (range: 21–106), 60% were female, 77% received antibiotics in the 12 weeks prior to *C. difficile*-positive specimen, and 57% were discharged from a hospital in the month prior. After adjusting for age and diagnostic testing methods, the national estimate for annual NHO-CDI incidence was 115,811 (95% CI: 97,159–134,121) cases. Among NHO-CDI cases nationwide, we estimated that 31,644 were hospitalized within 7 days of positive specimen (95% CI: 25,872–37,415), 21,103 recurred 14–60 days after previous positive specimen (95% CI: 14,720–27,487), and 9,053 died within 30 days (95% CI: 6,874–11,231).

Conclusion. NHO-CDI is associated with substantial morbidity and mortality. Most patients were exposed to antibiotics and had onset of disease within a month after hospital discharge. Strategies to reduce antibiotic use in acute and long-term care settings may lead to decreases in CDI with onset in nursing homes.

Disclosures. J. I. Meek, CDC Emerging Infections Program: Investigator, Research grant and Salary