



Fig. 1.

NHSN hospitals, whereas resistant GPPs including MRSA and VRE were significantly less frequent than in NHSN hospitals. **Conclusion:** Compared with American hospitals, GNPs that contribute to DA-HAIs in Saudi hospitals show more resistance. The higher resistance rates in *Klebsiella* and *Escherichia coli* are alarming and call for effective antimicrobial stewardship programs.

**Funding:** None

**Disclosures:** None

Doi:10.1017/ice.2020.809

### Presentation Type:

Poster Presentation

### Highly Local *Clostridioides difficile* Infection (CDI) Pressure as Risk Factors for CDI

Talal Riaz, The University of Iowa Abhijeet Kharkar, The University of Iowa; Nabeel Khan, The University of Iowa; Philip Polgreen, University of Iowa; Alberto Segre, Department of Computer Science; Daniel Sewell, University of Iowa; Sriram Pemmaraju, University of Iowa

**Background.** Colonization pressure at the unit level is known to be a risk factor for *Clostridioides difficile* infections in hospitals. Because *C. difficile* colonization is not routinely detected in clinical practice, only patients identified as having *C. difficile* infection (CDI) are included in these pressure calculations. We used data from the University of Iowa Hospitals and Clinics (UIHC) to determine whether highly local CDI pressure, due to patients in nearby rooms, is more strongly correlated with CDI than unit-level CDI pressure. **Methods:** We designed a base logistic regression model using variables known to be risk factors for CDI: age, antibiotic/gastric acid suppressor use, low albumin, prior hospitalization, comorbidities. To the base model, we add 2 measures, mean colonization pressure (MCP) and sum colonization pressure (SCP) of CDI at the unit level to obtain new models. To the base model, we also added CDI colonization pressure by considering CDI cases at different distance thresholds from the focal patient. Distances between patient rooms were extracted from hospital floor plans. **Results:** Adding unit-level CDI colonization pressures to the base model improved performance. However, adding CDI colonization pressures due to roommates and due to patients at different distances improved the model

much more (Table 1). The top (resp. bottom) row shows in-sample (resp. out-of-sample) C-statistics for the base model, the base model with unit-level MCP, the base model with roommate MCP, and the base model with MCP from patients are different distances added as separate features. C-statistics for the base model and the base model with unit CDI pressure (SCP and MCP) are compared in Fig. 1 with C-statistics from the base model with CDI pressure from patients at distances  $D = 0, 1, 2, 3, 4, 5, 10, 15, 20$  hops (1 hop = 5–6 meters). **Conclusions:** Our results support the hypothesis that unit CDI colonization pressure is a risk factor for CDI. However, by incorporating spatially granular notions of distances between patients in our analysis, we were able to demonstrate that the true source of CDI pressure at the UIHC is almost exclusively attributable to roommates and patients in adjacent rooms.

**Funding:** None

**Disclosures:** None

Doi:10.1017/ice.2020.810

### Presentation Type:

Poster Presentation

### Hospital Infections by *Stenotrophomonas maltophilia*: Results in Five Years of Multicentric Study

Luciana Tanure, UniBH (Centro Universitário de Belo Horizonte); Rafaela Pinho, Centro Universitário de Belo Horizonte – UniBH; Mayra de Oliveira, Centro Universitário de Belo Horizonte – UniBH; Daniela Ribeiro, Centro Universitário de Belo Horizonte – UniBH; Jose A. Ferreira, Federal University of Minas Gerais- UFMG Bráulio Couto, Centro Universitário de Belo Horizonte – UniBH; Carlos Starling, Vera Cruz Hospital

**Background:** *Stenotrophomonas maltophilia* is an emerging pathogen responsible for high morbidity and mortality rates. Hospital infections caused by this bacteria, especially in intensive care centers, are concerning for the health system, given that the microorganism is multidrug resistant to most antimicrobials available. **Objective:** Therefore, the present study is built from an analysis of the variables related to nosocomial infections caused by *S. maltophilia* in hospitals in Brazil, to display points of major concern. **Methods:** We used the data collected by the Infection Prevention and Control Service to clarify the incidence rate of *Stenotrophomonas maltophilia* in Brazilian hospitals as well as the gross lethality of these infections and the profiles of infected patients. We collected and analyzed epidemiological data from 10 hospitals in Brazil for the period July 2014 to June 2019 according to the CDC NHSN protocol. **Results:** In 5 years, 93 *Stenotrophomonas maltophilia* infections were diagnosed in the hospitals analyzed. Overall, 61 occurred in men (66%) and 32 occurred in women (34%). Furthermore, 47 cases (51%) occurred in adult ICUs; 19 cases (20%) followed vascular surgery; 9 (10%) cases occurred in the neonatal ICU; 7 (8%) cases were from the medical clinic; and 11 (12%) were from other clinics. The incidence rate was 1.2 cases for 10,000 hospitalizations, ranging from 0.0 to 2.8 (Fig. 1). Patients' ages ranged from 0 to 90 years, with a mean of 55 years (SD, 26 years) and a median of 64 years. Time between admission and diagnosis of infection was 1 to 102 days, with a mean of 24 days (SD, 21 days) and a median of 17 days. The gross lethality for *S. maltophilia* infection was 43 of 93 (46%) (95% CI, 35.8%–56.9%). The frequencies of specific infections were as follows (Fig. 2): pneumonia, 26 (28%); tracheobronchitis, 22 (24%); primary bloodstream infection, 18 (19%); skin and soft-tissue infection, 13 (14%); local infection, 7 (8%); vascular access infection, 3 (3%);