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Poster Presentation

Burden and Trends of Hospital-Associated Community-Onset (HACO) Infections From Antibiotic Resistant and Nonresistant Bacteria

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Background: Studies on the effectiveness of hospital-based interventions often measure hospital-onset infections as the outcome of interest. However, hospital-associated infections may manifest after patient discharge (classified as hospital-associated community-onset, HACO), and the epidemiology may vary by antibiotic resistance (AR) profile. We examined the epidemiology and trends of HACO infections of AR and non–antibiotic-resistant (non-AR) bacteria. **Methods:** We included clinical community-onset (CO) cultures (obtained sooner than or on day 3 of hospitalization) yielding the bacterial species of interest among hospitalized patients in 260 hospitals in the Premier Healthcare Database from 2012 to 2017. HACO infections were defined as CO cultures in a patient who had a previous hospitalization in the same hospital within 30 days. We examined methicillin resistance among *Staphylococcus aureus* (MRSA), vancomycin resistance among *Enterococcus* spp (VRE), carbapenem resistance among *Enterobacteriaceae* (*E. coli*, *Klebsiella* spp, and *Enterobacter* spp) (CRE), extended-spectrum cephalosporin resistance suggestive of extended-spectrum β-lactamase (ESBL) production in *Enterobacteriaceae*, carbapenem resistance among *Acinetobacter* spp (CRAsp), and carbapenem resistance among *Pseudomonas aeruginosa (*CRPA). We described the proportion of CO infections that were HACO, the proportion of HACO infections from sterile sites, overall HACO rates, and annual trends for sensitive and resistant phenotypes. Generalized estimating equation regression models that accounted for hospital-level clustering were used to estimate annual trends controlling for hospital characteristics and month of discharge. **Results:** The rate of HACO infections by pathogen ranged from 0.78 to 38.76 per 10,000 hospitalizations; 7%–34% were sterile site infections (Table 1). For each bacterial pathogen, a significantly higher proportion of AR CO infections had a previous hospitalization compared to non-AR CO infections (all χ^2, $P < .05$). The annual trends for AR and non-AR HACO infections between 2012 and 2017 were significantly decreasing for most pathogens, except ESBL HACO infections. **Conclusions:** Even when using a definition limited to readmission to the same hospital, HACO infections occur commonly with differing rates by pathogen and antibiotic resistance profile. Although these rates are decreasing for most of the pathogens studied, improving surveillance and identifying prevention strategies for these infections are necessary to further reduce the burden of hospital-associated infections.

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***Candida auris* and Carbapenemase-Producing Organism Prevalence in an Extended Stay Pediatric Hospital, Chicago, Illinois, 2019**

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Antibiotic Resistant and Non-Antibiotic Resistant Hospital-Associated Community-Onset (HACO) infection rates and trends

Pathogen	% of all CO infections with prior hospitalization (i.e., HACO)	% of HACO infections from a sterile site	Overall Rates of HACO cases per 10,000 hospitalizations	Annual trends in HACO rates, 2012-2017
MRSA	16.4%	26.65%	15.63	-4.22% (-6.22, -2.17)
Methicillin-sensitive *S. aureus*	11.8%	34.42%	11.47	-3.39% (-5.38, -3.39)
VRE	42.9%	14.44%	6.80	-9.25% (-11.83, -9.25)
Vancomycin sensitive *Enterococcus*	21.2%	16.38%	18.48	-4.51% (-6.55, -4.51)
CRAsp	32.3%	11.57%	0.78	-7.97% (-12.66, -3.03)
Carbapenem non-resistant *Acinetobacter* spp	21.9%	28.18%	1.12	-5.44% (-9.94, -0.72)
CRPA	29.0%	7.47%	2.56	-0.24% (-4.26, 3.94)
Carbapenem non-resistant *P. aeruginosa*	21.2%	12.14%	11.01	-3.08% (-5.06, -1.07)
CRE	31.3%	13.29%	0.96	-4.78% (-10.87, 1.73)
ESBL	21.8%	14.13%	8.71	+4.90% (2.27, 7.59)
non-ESBL Enterobacteriaceae	11.6%	16.61%	38.76	-3.09% (-4.35, -1.81)

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Background: *Candida auris* and carbapenemase-producing organisms (CPO) are multidrug-resistant organisms that can colonize people for prolonged periods and can cause invasive infections and spread in healthcare settings, particularly in high-acuity long-term care facilities. Point-prevalence surveys (PPSs) conducted in long-term acute-care hospitals in the Chicago region identified median prevalence of colonization to be 31% for *C. auris* and 24% for CPO. Prevalence of *C. auris* colonization has not been described in pediatric populations in the United States, and limited data exist on CPO colonization in children outside intensive care units. The Chicago Department of Public Health (CDPH) conducted a PPS to assess *C. auris* and CPO colonization in a pediatric hospital serving high-acuity patients with extended lengths of stay (LOS). **Methods:** CDPH conducted a PPS in August 2019 in a pediatric hospital with extended LOS to screen for *C. auris* and CPO colonization. Medical devices (ie, gastrostomy tubes, tracheostomies, mechanical ventilators, and central venous catheters [CVC]) and LOS were documented. Screening specimens consisted of composite bilateral axillae and groin swabs for *C. auris* and rectal swabs for CPO testing. The Wisconsin State Laboratory of Hygiene tested all specimens. Real-time polymerase chain reaction (PCR) assays were used to detect *C. auris* DNA and carbapenemase genes: *bla*KPC, *bla*NDM, *bla*VIM, *bla*OXA-48, and *bla*IMP (Xpert Carba-R Assay, Cepheid, Sunnyvale, CA). All axillae and groin swabs were processed by PCR and culture to identify *C. auris*. For CPO, culture was only performed on PCR-positive specimens. **Results:** Of the 29 patients hospitalized, 26 (90%) had gastrostomy tubes, 24 (83%) had tracheostomies, 20 (69%) required mechanical ventilation, and 3 (10%) had CVCs. Also, 25 (86%) were screened for *C. auris* and CPO; 4 (14%) lacked parental consent and were not swabbed. Two rectal specimens were unsatisfactory, producing invalid CPO test results. Median LOS was 35 days (range, 1–300 days). No patients were positive for *C. auris*. From CPO screening, *bla*OXA-48 was detected in 1 patient sample, yielding a CPO prevalence of 3.4% (1 of 29). No organism was recovered from the *bla*OXA-48 positive specimen. **Conclusions:** This is the first documented screening of *C. auris* colonization in a pediatric hospital with extended LOS. Despite a high prevalence of *C. auris* and CPOs in adult healthcare settings of similar acuity in the region, *C. auris* was not identified and CPOs were rare at this pediatric facility. Additional evaluations in pediatric hospitals should be conducted to further understand *C. auris* and CPO prevalence in this population.

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***Candida auris* in the US Department of Veterans' Affairs (VA)**

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Background: *Candida auris* is an emerging pathogen with high mortality and challenges in detection. *C. auris* healthcare-associated infections are now being reported worldwide. Most isolates are resistant to fluconazole, and some show resistance to all 3 classes of antifungals. Herein, we describe *C. auris* surveillance in the VA. **Methods:** Cultures were identified using VA data sources for *C. auris* isolates and surveillance cultures (axilla and groin) performed January 1, 2010, through October 15, 2019. Chart reviews were performed for patients with *C. auris*, including isolate susceptibilities and antifungal treatment. **Results:** Overall, 6 *C. auris* isolates from 3 patients at 2 VA hospitals (located in the Midwest and Northeast) were identified. From a single patient, 3 urine isolates were identified June–July 2018, and they were susceptible to all antifungals tested (voriconazole, posaconazole, micafungin, itraconazole, flucytosine, caspofungin, anidulafungin, amphotericin B, and fluconazole). No antifungal treatment was received (presumed colonization). *C. auris* surveillance cultures for 32 additional patients at this facility between July 10, 2018, and July 19, 2018, were negative. From a second patient (admitted November 9, 2018), 2 *C. auris* blood isolates were identified at the same facility, first on February 3, 2019, and they were susceptible to all antifungals tested (same as above). The infection was deemed healthcare associated, and the patient received 2 weeks of micafungin. On October 11, 2019, *C. auris* was identified again (susceptibilities as above) and another course of micafungin was started. A third patient from a different VA hospital had a *C. auris* sputum isolate (September 5, 2018, susceptibilities not reported), which was not treated with antifungals. This patient with tracheostomy had a documented history of *C. auris* colonization from a non-VA long-term care facility. This VA facility screened 3 additional patients for "rule out *C. auris*" between July 2018 and March 2019, finalized as *C. parapsilosis* (1 blood and 1 wound isolate) and *C. tropicalis* (1 blood isolate). At 2 other VA facilities, 3 patients had *C. auris* surveillance cultures performed in 2019, which were negative. Additionally, at least 65 isolates of *C. haemulonii*, which can be difficult to distinguish from *C. auris*, have been identified from 51 unique individuals at 24 other VA facilities since 2010. **Conclusions:** Two VA facilities have identified cases of *C. auris* infection and colonization. Additional awareness is needed because *C. auris* can be difficult to identify using traditional biochemical methods and may be resistant to standard treatment. According to the CDC, screening of close healthcare contacts should be considered for patients with newly identified *C. auris* infection or colonization. Early and accurate diagnosis are important for improving outcomes and reducing transmission of this rapidly emerging pathogen.

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***Candida auris* Infection Among Patients With Cancer in an Oncology Center in Eastern India**

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Background: The multidrug-resistant fungus *Candida auris* is emerging as a major cause of healthcare-associated infection