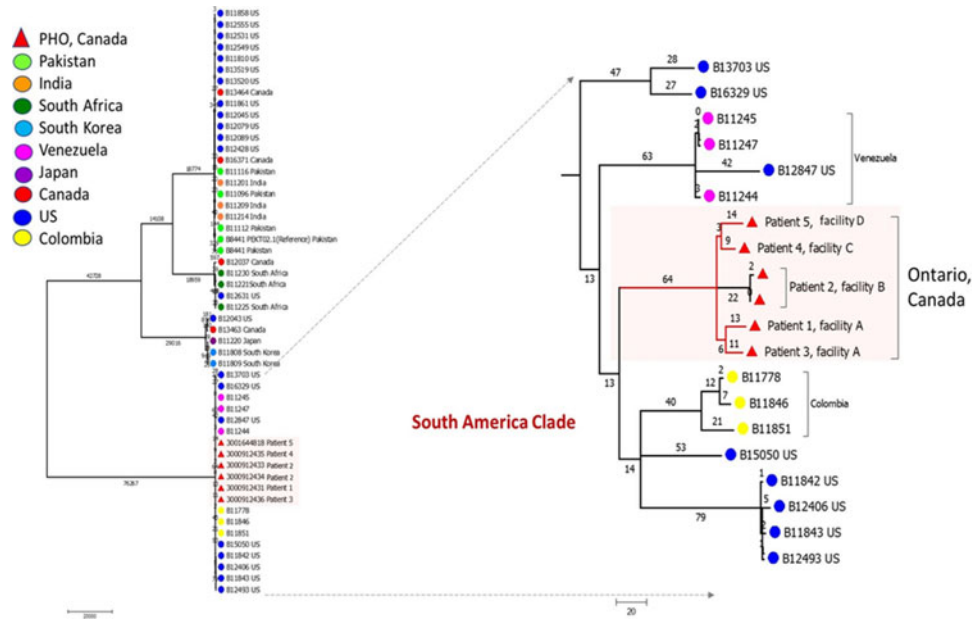

Fig. 1. Phylogenetic tree of *Candida auris* based on whole-genome sequencing

Presentation Type:
Top Rated Posters

Assessing the Efficacy and Unintended Consequences of Utilizing a Behavioral Approach to Reduce Inappropriate *Clostridioides difficile* Testing

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Background: Effective strategies to improve diagnostic stewardship around *C. difficile* infection (CDI) remain elusive. Electronic medical record-based solutions, such as 'hard' and 'soft' stops, have been associated with reductions in testing, but may not be sustainable due to alert fatigue. Additionally, data on the potential for undertesting, missed diagnoses, and the implications regarding patient harm or clusters of transmission are limited. In this study, we assessed the efficacy of a behavioral approach to diagnostic stewardship, while monitoring for unintended consequences. **Methods:** This quality improvement study was conducted January 2018–May 2019; baseline period: January–April 2018, implementation period: May–December 2018, sustainment period: January 2019–May 2019. First, we conducted an internal analysis and identified 3 barriers to appropriate testing: clinician's perceived risk of CDI, inconsistent definition of diarrhea, and lack of involvement of nurses in diagnostic stewardship. A multidisciplinary team to address these barriers was then convened. The team utilized the Bristol stool scale to improve the reliability of diarrhea description, and created a guideline-concordant testing algorithm with clinicians and nurses. The primary outcome was the number of tests ordered. The secondary outcomes were the proportion of inappropriate tests and the proportion of delayed tests. Delayed tests were defined as CDI-compatible diarrhea based on the algorithm where the test was sent >24 hours after symptom onset. **Results:** During the baseline period, we detected no significant change in number of tests ordered month to month, with 194.2 tests ordered per month on average. During the postimplementation period, the number of tests ordered decreased by ~4.5 each month between January 2018 and May 2019 ($P < .0001$). The proportion of inappropriate tests steadily decreased from 54% to 30% across the 3 study periods, and the number of delayed testing changed from 11% to 1% then increased to 20% in the sustainment period. There were no cases of toxic megacolon associated with delayed testing. **Conclusions:** The decision to test for CDI is complex. Interventions that address this issue as a simple 'right' and 'wrong' fail to address the root cause of CDI overdiagnosis, and they have no embedded mechanism to detect unintended consequences. Our study demonstrates that by taking a behavioral approach and addressing clinicians' safety concerns, we were able to sustain a significant reduction in testing. We could not determine the significance of the increase in delayed testing given the low numbers; however, further studies are needed to evaluate the safety of CDI reduction strategies through diagnostic stewardship only.

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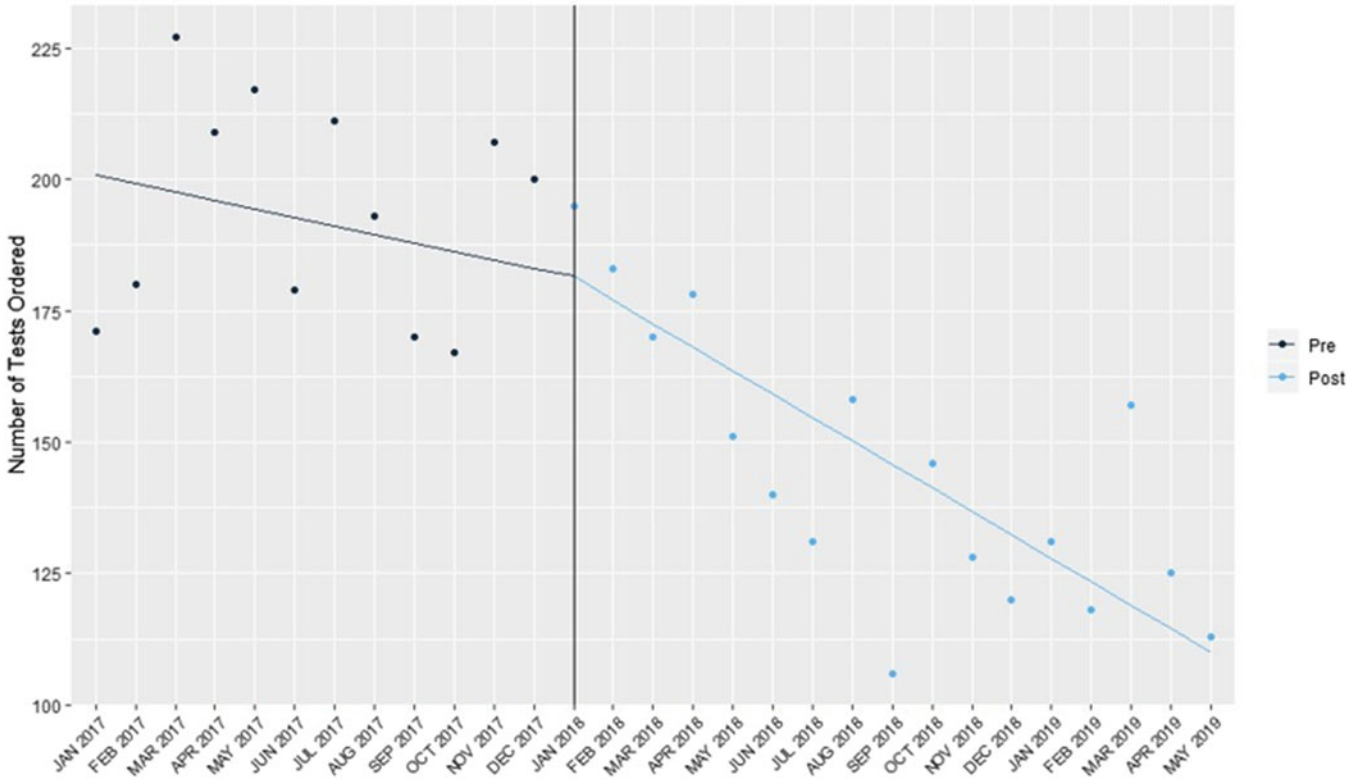

Fig. 1.

Presentation Type:
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Characteristics Associated with Death in Patients with Carbapenem-Resistant *Acinetobacter baumannii*, United States, 2012–2017

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Sandra Bulens, Centers for Disease Control and Prevention

Background: Carbapenem-resistant *Acinetobacter baumannii* (CRAB) is an important cause of healthcare-associated infections with limited treatment options and high mortality. To describe risk factors for mortality, we evaluated characteristics associated with 30-day mortality in patients with CRAB identified through the Emerging Infections Program (EIP). **Methods:** From January 2012 through December 2017, 8 EIP sites (CO, GA, MD, MN, NM, NY, OR, TN) participated in active, laboratory-, and population-based surveillance for CRAB. An incident case was defined as patient's first isolation in a 30-day period of *A. baumannii* complex from sterile sites or urine with resistance to ≥1 carbapenem (excluding ertapenem). Medical records were abstracted. Patients were matched to state vital records to assess mortality within 30 days of incident culture collection. We developed 2 multivariable logistic regression models (1 for sterile site cases and 1 for urine cases) to evaluate characteristics associated with 30-day mortality. **Results:** We identified 744 patients contributing 863 cases, of which 185 of 863 cases (21.4%) died within 30 days of culture, including 113 of 257 cases (44.0%) isolated from a sterile site and 72 of 606 cases (11.9%) isolated from urine. Among 628 hospitalized cases, death occurred in 159 cases (25.3%). Among hospitalized fatal cases, death occurred after hospital discharge in 27 of 57 urine cases (47.4%) and 21 of 102 cases from sterile sites (20.6%). Among sterile site cases, female sex, intensive care unit (ICU) stay after culture, location in a healthcare facility, including a long-term care facility (LTCF), 3 days before culture, and diagnosis of septic shock were associated with increased odds of death in the model (Fig. 1). In urine cases, age 40–54 or ≥75 years, ICU stay after culture, presence of an indwelling device other than a urinary catheter or central line (eg, endotracheal tube), location in a LTCF 3 days before culture, diagnosis of septic shock, and Charlson comorbidity score ≥3 were associated with increased odds of mortality (Fig. 2). **Conclusion:** Overall 30-day mortality was high among patients with CRAB, including patients with CRAB isolated from urine. A substantial