



Fig. 1.

patients meeting the laxative alert criteria, with 43.3% order attempts randomized to the existing CCDS and 56.7% to the CCDS-LA. Of order attempts via the CCDS-LA, 50.0% were completed, compared to 64.2% of orders completed via the existing CCDS (22.1% relative reduction in test completion; $P = .0525$). **Conclusions:** We demonstrated substantially fewer completed *C. difficile* tests among patients receiving laxatives who were randomized to modified laxative-alert CCDS. Although our result did not reach statistical significance, the trend toward reduced inappropriate testing prompted the CCDS-LA alert to be adopted hospital-wide following completion of the test period. Further analyses of the pre- and postintervention periods are required to determine whether this intervention significantly impacts testing rates over time, as well as to determine the durability and safety of the CCDS-LA. Additional analyses are also needed to assess the impacts on hospital-onset CDI rate and the associated costs.

Funding: None

Disclosures: None

Doi:10.1017/ice.2020.604

Presentation Type:

Poster Presentation

A Self-Reflection Stewardship Workshop Improves Resident Physician Understanding of Ambulatory Antibiotic Stewardship

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Background: Antibiotic stewardship programs (ASPs) have traditionally focused on inpatient prescribing, but they are now mandated to involve ambulatory settings. We developed and tested an educational tool in resident physicians to empower outpatient providers to perform self-reflection stewardship (SRS) to improve their antibiotic use. Results of the first SRS workshop are reported. **Methods:** A 90-minute SRS workshop focusing on the evaluation and management of sinusitis in ambulatory care was developed for PGY 2-3 internal medicine residents. Participants received a 15-minute didactic on the evaluation and management of adults with sinusitis, including typical microbiology, differentiation of bacterial sinusitis, and guideline recommendations on antibiotic treatment. In a computer lab, participants were instructed how to review charts of patients they had treated with antibiotics for sinusitis during the past year using the SlicerDicer application in Epic. Over 1 hour, they worked in pairs to complete and discuss a self-reflection inventory for 5 patients from each of their respective reviews. They evaluated pertinent history, comorbidities, presenting symptoms and signs, diagnostic testing performed, and a self-assessment of the subsequent antibiotic prescribing, including appropriateness of using an antibiotic, antibiotic choice and duration. In addition, they reflected on potential patient and prescriber challenges. Residents then identified common themes and developed a personal improvement plan for antibiotic prescribing for sinusitis. The last 15 minutes were spent debriefing with ASP faculty on reasons for overprescription of antibiotics for URIs and individual improvement plans. Residents completed workshop evaluations using a Likert scale and open-ended comments. **Results:** In total, 26 residents participated. All (100%) agreed or strongly agreed that the SRS workshop improved their understanding of how to obtain data on their own practice habits. Moreover, 23 (88%) agreed or strongly agreed that the workshop improved their understanding of when to prescribe antibiotics and how to practice antibiotic stewardship in the outpatient setting. Also, 20 participants (77%) agreed or strongly agreed that the SRS workshop helped them gain insight into reasons why they might overprescribe antibiotics in the outpatient setting. Furthermore, 25 (96%) agreed or strongly agreed that the SRS workshop helped them identify at least 1 way they could improve their antibiotic prescribing in the outpatient setting. **Conclusions:** The SRS workshop was well received by residents and offers a tool to empower primary care resident physicians to access their own antibiotic prescribing data, perform a structured self-reflection, and enhance their understanding of antibiotic stewardship in the ambulatory setting. SRS is a potential tool to improve ambulatory antibiotic use.

Disclosures: None

Funding: None

Doi:10.1017/ice.2020.605

Presentation Type:

Poster Presentation

A Simple Cleaning Intervention to Prevent Transmission of Carbapenemase-Producing Enterobacterales from Hospital Sinks

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Background: A prolonged outbreak of carbapenemase-producing *Serratia marcescens* (CPSM) was identified in our quaternary healthcare center over a 2-year period from 2015 through 2017. A reservoir of IMP-4-producing *S. marcescens* in sink drains of clinical hand basins (CHB) was implicated in propagating transmission, supported by evidence from whole-genome sequencing (WGS). We assessed the impact of manual bioburden reduction intervention on further transmission of CPSM. **Methods:** Environmental sampling of frequently touched wet and dry areas around CPSM clinical cases was undertaken to identify potential reservoirs and transmission pathways. After identifying CHB as a source of CPSM, a widespread annual CHB cleaning intervention involving manual scrubbing of sink drains and the proximal pipes was implemented. Pre- and postintervention point prevalence surveys (PPS) of CHB drains performed to assess for CPSM colonization. Surveillance for subsequent transmission was conducted through weekly screening of patients and annual screening of CHB in transmission areas, and 6-monthly whole-hospital PPS of patients. All CPSM isolates were assessed by WGS. **Results:** In total, 6 patients were newly identified with CPSM from 2015 to 2017 (4.3 transmission events per 100,000 surveillance bed days [SBD]; 95% CI, 1.6–9.4). All clinical CPSM isolates were linked to CHB isolates by WGS. The CHB cleaning intervention resulted in a reduction in CHB colonization with CPSM in transmission areas from 72% colonization to 28% (ARR, 0.44; 95% CI, 0.25–0.63). A single further clinical case of CPSM linked to the CHB isolates was detected over 2 years of surveillance from 2017 to 2019 following the implementation of the annual CHB cleaning program (0.7 transmissions per 100,000 SBD; 95% CI, 0.0–3.9). No transmissions were linked to undertaking the cleaning intervention. **Conclusions:** A simple intervention targeted at reducing the biological burden of CPSM in CHB drains at regular intervals was effective in preventing transmission of carbapenemase-producing Enterobacterales from the hospital environment to patients over a prolonged period of intensive surveillance. These findings highlight the importance of detailed cleaning for controlling the spread of multidrug-resistant organisms from healthcare environments.

Funding: None

Disclosures: Jason Kwong, Austin Health

Doi:[10.1017/ice.2020.606](https://doi.org/10.1017/ice.2020.606)

Presentation Type:

Poster Presentation

A Single Case Outbreak of Nipah Encephalitis From India in May–June 2019

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Background: Nipah encephalitis outbreaks mostly involve multiple patients. We report a case of Nipah virus encephalitis (NVE), which had no documented secondary cases in spite of many having prolonged and close contact with the patient. **Methods:** A 21-year-old male was admitted with NVE on May 30, 2019. Before the confirmatory report, there was close contact with multiple healthcare workers (HCWs), defined as exposure for >1 hour to the patient or his immediate environment and/or exposure to body fluids. We conducted extensive contact tracing of all HCWs who had come into close contact with the proven NVE case from the time of admission to the time of discharge. This contact tracing included those who had nursed him before the diagnosis with usual standard precautions and those who had nursed him after the diagnosis with full PPE. These HCWs were reviewed daily for fever and respiratory symptoms. All those who developed these symptoms within the 3

weeks of exposure where tested for NEV with a throat swab using RT-PCR. This testing was conducted twice over 3 days to confirm negative results. For the close family contacts that were asymptomatic, both throat swab and serum for Nipah IgM were tested. **Results:** In total, 169 HCW contacts were identified at our hospital. Of these, 94 were at high risk according the predetermined criteria and others were low-risk contacts. Moreover, 7 HCWs developed fever and respiratory symptoms within the defined surveillance period; 5 had symptoms before the diagnosis (using only standard precautions) and 2 were in contact with full PPE after the diagnosis. All of these symptomatic contacts were tested for NEV (throat swab and serology), and all were negative. The family members of the patient (his mother and aunt) who had cared for him throughout his illness period of 12 days before the diagnosis were also tested and were seronegative for NEV. **Conclusions:** This NEV case had very low transmission capability; even close family members who cared for him for 12 days without any precautions and had exposure to urine (which was positive for NEV) did not contract the disease. The absence of overt respiratory involvement and young age of the affected patient could have contributed to low transmissibility both prior to hospitalization and during the hospitalization.

Funding: None

Disclosures: None

Doi:[10.1017/ice.2020.607](https://doi.org/10.1017/ice.2020.607)

Presentation Type:

Poster Presentation

A 6-Year Review of Carbapenemase-Producing Organisms in Alberta, Canada

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Background: This review describes the epidemiology of carbapenemase-producing organisms (CPO) in both the community and hospitalized populations in the province of Alberta. **Methods:** Newly identified CPO-positive individuals from April 1, 2013, to March 31, 2018, were retrospectively reviewed from 3 data sources, which shared a common provincial CPO case definition: (1) positive CPO results from the Provincial Laboratory for Public Health, which provides all referral and confirmatory CPO testing, (2) CPO cases reported to Alberta Health, and (3) CPO surveillance from Alberta Health Services Infection Prevention and Control (IPC). The 3 data sources were collated, and initial CPO cases were classified according to their likely location of acquisition: hospital-acquired, hospital-identified, on admission, and community-identified. Risk factors and adverse outcomes were obtained from linkage to administrative data. **Results:** In total, 171 unique individuals were newly identified with a first-time CPO case. Also, 15% (25 of 171) were hospital-acquired (HA), 21% (36 of 171) were hospital-identified (HI), 33% (57 of 171) were on