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Background: In June 2019, the Maryland Department of Health (MDH) was notified of a hospitalized patient with *Candida auris* bloodstream infection. The MDH initiated a contact investigation to identify additional patients with *C. auris* colonization. Many of the contacts had been discharged home from the hospital and were therefore not available for screening. Healthcare facilities in Maryland, Virginia, and Washington, DC, submit patient data to a regional health information exchange (HIE) called the Chesapeake Regional Information System for our Patients (CRISP). CRISP includes a notification system that alerts providers when flagged patients have healthcare encounters. We aimed to use this system to identify discharged *C. auris* contacts on their next inpatient encounter to rapidly screen them and to detect new cases. **Methods:** *C. auris* contacts were defined as patients located on an inpatient unit on the same day, receiving wound care from the same team, or having a procedure in the same operating room on the same day as the index patient or any patients subsequently identified as having *C. auris* infection or colonization detected either during the normal course of clinical care or through screening. Contacts who remained hospitalized were screened during inpatient point prevalence surveys (PPSs). Contacts discharged to postacute-care facilities were screened by facility staff. Contacts who had been discharged home were flagged in CRISP, and MDH staff received CRISP encounter alerts when these patients were readmitted. MDH staff then contacted the admitting facilities to recommend screening for *C. auris*. Axilla and groin swabs were collected and tested by rt-PCR at the Mid-Atlantic Regional Antibiotic Resistance Laboratory Network laboratory. **Results:** As of October 8, 2019, 4,017 contacts were identified. Among these, 936 (23%) contacts at 56 healthcare facilities (33 acute-care hospitals and 23 postacute-care facilities) were screened for *C. auris*, and 10 patients with *C. auris* colonization were identified (1.1% of contacts who underwent *C. auris* screening). Of these, 6 (60%) were identified through CRISP notification and 4 (40%) were identified by PPSs conducted in acute-care hospitals. **Conclusions:** In this ongoing *C. auris* outbreak, a large proportion of colonized patients was identified using an electronic encounter notification system within a regional HIE. This approach was effective for identifying opportunities to screen contacts at their next healthcare encounter and can augment other means of case detection, like PPSs. HIEs should incorporate mechanisms to facilitate contact tracing for public health investigations.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.819

Presentation Type:
Poster Presentation

Impact of a Critical National Shortage of Cefazolin on Antimicrobial Practice at a Tertiary-Care Center in Japan

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Background: Shortages of essential medicines, a long-standing issue in healthcare, apply equally to antimicrobial agents, a group of essential drugs necessary for sustainable healthcare. The WHO categorized essential medicines into the access, watch, and reserve groups. Older antimicrobials, in particular, were categorized into the access group, meaning that these drugs are in theory widely available at an affordable cost. The shortage of essential antimicrobial agents like cefazolin leads to increased consumption of alternative antimicrobial agents with broad-spectrum activity, which often has the undesirable consequence of defeating antimicrobial stewardship efforts in inpatient settings and potentially promoting antimicrobial resistance. In Japan, cefazolin has been in critically short supply since March 2019. Cefazolin is a first-line agent against common infectious diseases and in surgical antimicrobial prophylaxis, and its shortage has substantially impacted inpatient care. The aim of the present study was to investigate changes in antimicrobial practice at a tertiary-care center in Japan following the emergence of the national cefazolin shortage in March 2019. **Methods:** Data on each antimicrobial use are logged as days of therapy (DOT) per 1,000 patient days (PD) for antimicrobial stewardship purposes at the study institution. We extracted weekly data from September 2018 to September 2019 to evaluate the impact of the national cefazolin shortage on antimicrobial use at our tertiary-care center. Changes in weekly antimicrobial use and the weekly incidence of *Clostridium difficile* infections were analyzed by interrupted time series analysis. We also investigated changes in antimicrobial practice at selected situations. **Results:** As weekly cefazolin use significantly declined after the emergence of the national shortage, use of third-generation cephalosporin (+18.9 DOT per 1,000 PD for intercept [$P < .001$] and +0.65 DOT per 1,000 PD per week for trend [$P = .037$]) and clindamycin (18 DOT per 1,000 PD for intercept [$P = .008$] and 0.12 DOT per 1,000 PD per week for trend [$P = .003$]) significantly increased. Significant changes in antimicrobial practice were also observed in surgical antimicrobial prophylaxis: third-generation cephalosporin use increased from 1.0% (31 of 3,032) to 62.9% (2,237 of 3,554) ($P < .001$). However, no significant change in the incidence of *Clostridium difficile* infection was observed during the study period: +1.72 per 10,000 PD for intercept ($P = .12$) and −0.12 per 10,000 PD per week for the trend ($P = .09$). **Conclusions:** The national cefazolin shortage had a significantly negative impact on patient care and led to increased use of alternative, broader-spectrum antimicrobials, which are not ideal choices either for prophylaxis or treatment.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.820

Presentation Type:
Poster Presentation

Impact of an Enhanced Prevention Bundle on Central-Line–Associated Bloodstream Infection Incidence in Adult Oncology Units

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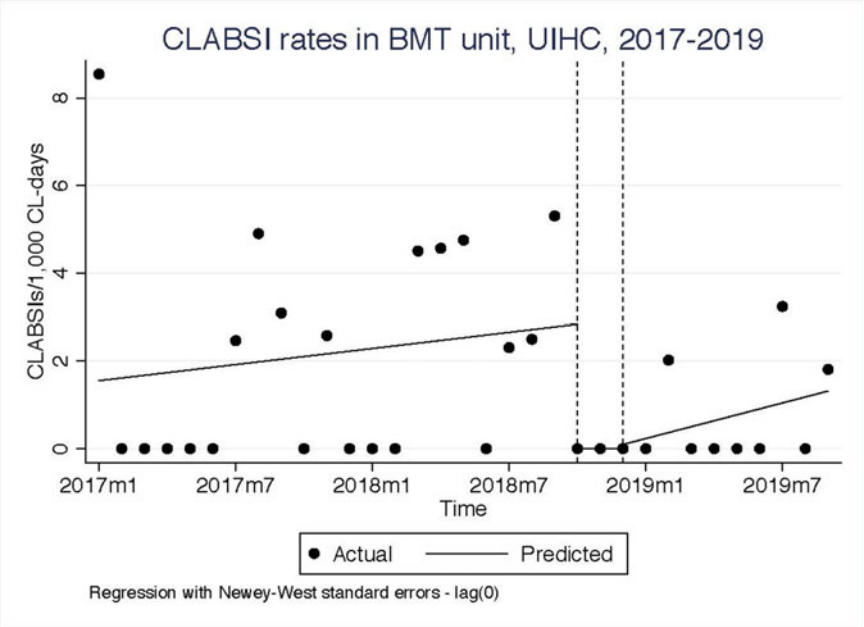

Fig. 1.

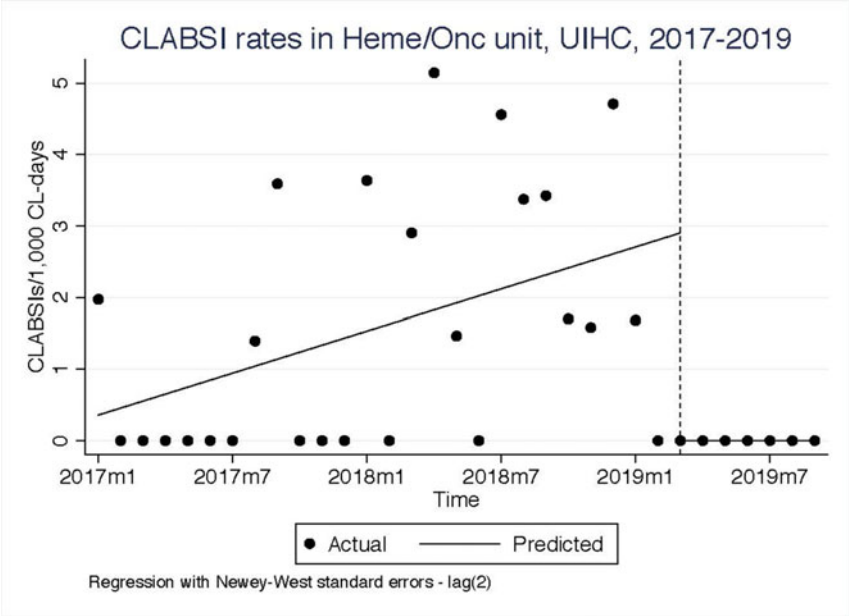

Fig. 2.

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Background: Central-line–associated bloodstream infection (CLABSI) rates have steadily decreased as evidence-based prevention bundles were implemented. Bone marrow transplant (BMT) patients are at increased risk for CLABSI due to immunosuppression, prolonged central-line utilization, and frequent central-line accesses. We assessed the impact of an enhanced prevention bundle on BMT nonmucosal barrier injury CLABSI rates. **Methods:** The University of Iowa Hospitals & Clinics is an 811-bed academic medical center that houses the only BMT program in Iowa. During October 2018, we added 3 interventions to the ongoing CLABSI prevention bundle in our BMT inpatient unit: (1) a standardized

https://doi.org/10.1017/ice.2020.821 Published online by Cambridge University Press

2-person dressing change team, (2) enhanced quality daily chlorhexidine treatments, and (3) staff and patient line-care stewardship. The bundle included training of nurse champions to execute a team approach to changing central-line dressings. Standard process description and supplies are contained in a cart. In addition, 2 sets of sterile hands and a second person to monitor for breaches in sterile procedure are available. Site disinfection with chlorhexidine scrub and dry time are monitored. Training on quality chlorhexidine bathing includes evaluation of preferred product, application per product instructions for use and protection of the central-line site with a waterproof shoulder length glove. In addition to routine BMT education, staff and patients are instructed on device stewardship during dressing changes. CLABSIs are monitored using NHSN definitions. We performed an interrupted time-series analysis to determine the impact of our enhanced prevention bundle on CLABSI rates in the BMT unit. We used monthly CLABSI rates since January 2017 until the intervention (October 2018) as baseline. Because the BMT changed locations in December 2018, we included both time points in our analysis. For a sensitivity analysis, we assessed the impact of the enhanced prevention bundle in a hematology-oncology unit (March 2019) that did not change locations. **Results:** During the period preceding bundle implementation, the CLABSI rate was 2.2 per 1,000 central-line days. After the intervention, the rate decreased to 0.6 CLABSI per 1,000 central-line days ($P = .03$). The move in unit location did not have a significant impact on CLABSI rates ($P = .85$). CLABSI rates also decreased from 1.6 per 1,000 central-line days to 0 per 1,000 central-line days ($P < .01$) in the hematology-oncology unit. **Conclusions:** An enhanced CLABSI prevention bundle was associated with significant decreases in CLABSI rates in 2 high-risk units. Novel infection prevention bundle elements should be considered for special populations when all other evidence-based recommendations have been implemented.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.821

Presentation Type:
Poster Presentation

Impact of Critical Care Consultation Requests for Avoidable Central Venous Catheters on Medical-Surgical Units

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Background: Although central-line–associated bloodstream infections (CLABSI) in US hospitals have improved in the last decade, ~30,100 CLABSIs occur annually.[1,2] Central venous catheters (CVC) carry a high risk of infections and should be limited to appropriate clinical indications.[6,7] Montefiore Medical Center, a large, urban, academic medical center in the Bronx, serves a high-risk population with multiple comobidities.[8–11] Despite this, the critical care medicine (CCM) team is often consulted to place a CVC when a peripheral intravenous line (PIV) cannot be obtained by nurses or primary providers. We evaluated the volume of CCM consultation requests for avoidable CVCs and related CLABSIs. **Methods:** Retrospective chart review was performed for patients with CCM consultation requests for CVC placement between July and October 2019. The indication for CVC, type of catheter inserted or recommended, and NHSN data were used to identify CLABSIs. CVCs were considered avoidable if a PIV was used for the stated indication and duration of therapy, with no anatomical contraindications to PIV in nonemergencies, according to the Michigan Appropriateness Guide for Intravenous Catheters (MAGIC).[6] **Results:** Of 229 total CCM consults, 4 (18%) requests were for CVC placement; 21 consultations (9%) were requested for avoidable CVCs. Of 40 CVC requests, 18 (45%) resulted in CVC placement by the CCM team, 4 (10%) were deferred for nonurgent PICC by interventional radiology, and 18 (45%) were deferred in favor of PIV or no IV. Indications for CVC insertion included emergent chemotherapy (n = 8, 44%) and dialysis (n = 3, 16%), vasopressors (n = 3, 16%), antibiotics (n = 2, 11%) and blood transfusion (n = 2, 11%). Of 18 CVCs, 9 (50%) were potentially avoidable: 2 short-term antibiotics and rest for nonemergent indications; 2 blood transfusions, 1 dialysis, 2 chemotherapy and 2 vasopressors. Between July and October 2019, 6 CLABSIs occurred in CVCs placed by the CCM team; in 3 of 6 CLABSI events (50%), the CVC was avoidable. **Conclusions:** More than half of consultation requests to the CCM team for CVCs are avoidable, and they disproportionately contribute to CLABSI events. Alternatives for intravenous access could potentially avoid 9% of CCM consultations and 50% of CLABSIs in CCM-inserted CVCs on medical-surgical wards.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.822

Presentation Type:
Poster Presentation

Impact of Diagnosed and Undiagnosed Respiratory *Pseudomonas* on VAP and VAE During Long-Term Acute Care

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Background: Clinically diagnosed ventilator-associated pneumonia (VAP) is common in the long-term acute-care hospital (LTACH) setting and may contribute to adverse ventilator-associated events (VAEs). *Pseudomonas aeruginosa* is a common causative organism of VAP. We evaluated the impact of respiratory *P. aeruginosa* colonization and bacterial community dominance, both diagnosed and undiagnosed, on subsequent *P. aeruginosa* VAP and VAE events during long-term acute care. **Methods:** We enrolled 83 patients on LTACH admission for ventilator weaning, performed longitudinal sampling of endotracheal aspirates followed by 16S rRNA gene sequencing (Illumina HiSeq), and bacterial community profiling (QIIME2). Statistical analysis was performed with R and Stan; mixed-effects models were fit to relate the abundance of respiratory *Psa* on admission to clinically diagnosed VAP and VAE events. **Results:** Of the 83 patients included, 12 were diagnosed with *P. aeruginosa* pneumonia during the 14 days prior to LTACH admission (known *P. aeruginosa*), and 22 additional patients received anti–*P. aeruginosa* antibiotics within 48 hours of admission (suspected *P. aeruginosa*); 49 patients had no known or suspected *P. aeruginosa* (unknown *P. aeruginosa*). Among the known *P.*