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Background. Contaminated duodenoscopes used in endoscopic retrograde cholangiopancreatography (ERCP) have been implicated in carbapenem-resistant Enterobacteriaceae infections. Multi-locus sequence typing (MLST) can identify outbreaks with rare pathogens, but it is unclear how well it can link transmission of common Enterobacteriaceae, e.g., ceftriaxone-resistant (CRO-R) Escherichia coli. Our Infection Control Unit (IC) was alerted to a suspicious number of CRO-R E. coli blood stream infections in patients who had undergone ERCP in the Spring of 2014. IC investigated an association with duodenoscopes and made recommendations for surveillance and reprocessing in accordance with CDC guidelines.

Methods. We identified all blood cultures positive for CRO-R E. coli collected January 2014–June 2015. A case was defined as the first CRO-R E. coli positive blood culture from a unique patient who had undergone ERCP within 90 days prior. Controls were CRO-R E. coli blood cultures from unique patients who did not undergo ERCP or did so after bacteremia. Duodenoscopes used for ERCP were abstracted from the medical record. We evaluated clonal relationships by MLST and single-nucleotide polymorphism (SNP) analysis. Resistance gene and mobilizing vector analysis provided were strain resolution.

Results. We identified 52 blood cultures positive for CRO-R E. coli during the study period. Twenty-eight met the case definition and 11 were controls. Thirty of the 39 isolates belonged to MLST-131. Eleven of these isolates were from patients exposed to the same duodenoscope within 90 days prior to bacteremia. CTXM-15 was found in 10 of the exposed cases. The odds ratio of bacteremia with E. coli MLST-131 if exposed to this duodenoscope was 4.6 but was not statistically significant (95% CI 0.5–4.2). Hitting distance SNP trees showed common ancestry but not clonality among the cases (separation <500 chromosomal SNPs, <1000 plasmid SNPs).

Conclusion. The implicated duodenoscope was removed from use despite inability to confirm clonality. The study was underpowered to demonstrate statistical significance because our cases involved highly prevalent strains of CRO-R E. coli. While genotypic analysis suggests an outbreak, in outbreaks due to common pathogens a high level of suspicion should dictate intervention.

Disclosures. All authors: No reported disclosures.

459. An Outbreak of Pseudomonas aeruginosa Infection in Coronary Artery Bypass Graft Patients Related to Endoscopic Vein Harvesting Equipment.

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Background. Duodenoscopy, done 700,000 times annually, is potentially life saving in biliary and pancreatic disease. ERCP is prone to device associated infections due to a complex elevator mechanism and slim margin of safety in scope reprocessing with a high microbial burden. Nosocomial infections are difficult to detect without a marker organism or antibiotic phenotype. A cluster of ESBL infections was detected by electronic surveillance in 2015 and prospective electronic surveillance of ERCP procedures was begun.

Methods. Utilizing electronic surveillance, a line listing of ESBLs from the prior year was made, and antibiotic phenotypes examined. After chart review, one phenotype Pattern A clustered with ERCP. Scopes were quarantined and cultured; isolates were sent out for E. coli and Pseudomonas aeruginosa, and gene sequencing patients and providers were notified; patients were offered rectal screening, additional scopes and new AERs purchased; double scope AER reprocessing with peracetic acid was centralized for five hospitals in the healthcare system; centralized weekly scope microbial sampling and monitoring after reprocessing was implemented 10/2015 using CDC guidance of March 2015, and prospective electronic surveillance of ERCP procedures was begun.

Results. Twenty-two types of ESBLs were found. Scope, environmental, and AER cultures were negative. Pattern A organisms were clonal. 235 patients of 274 exposed underwent screening with no additional pattern A isolated. Prevalence of ESBL colonization in this cohort in New England was 11%. Scope reprocessing sampling and cultures were positive in 2015 for low concern organisms 5% of cultures, and one positive culture for an organism of high concern. Currently culture positivity was 1.3%, with 0% organisms of high concern for 18 months. Contamination of the culture media did occur rarely initially, and subsequently controlled by protocols. Prospective electronic surveillance has identified no additional clusters.

Conclusion. Electronic infection control surveillance will detect device associated infections, aid the investigation, and monitor procedures prospectively. The CDC guidance for weekly sampling and surveillance was easily implemented in an initial investment of training, additional scopes, and lab support; expected positivity will be < 2%.

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460. The Burden of Acinetobacter baumannii in the Intensive Care Unit of a Teaching Hospital in Kuwait Over a 3-Year Period.

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Background. Acinetobacter baumannii is often endemic in several ICUs worldwide. Once it is established, it is difficult to eradicate. This study was undertaken to...
determine the burden of multi-drug-resistant A. baumannii infections in ICU of Mubarakar hospital, Kuwait over 3 years period.

**Methods.** A. baumannii infections/colonization of ICU patients attended by infection prevention (IP) team at our hospital over a period of 3 years, January 2014 to December 2016, were included in the study. Outbreak size, mortality, source and outbreak control measures were carefully recorded. The isolates were identified and tested for their susceptibilities by semi-automated VITEK-2 system. The clonality of the isolates was determined by molecular typing methods using REP−PCR DiversiLab or pulsed-field gel electrophoresis.

**Results.** A total of 164 episodes of infections/colonization was encountered. Of these, 84 (51.2%) were proven cases of sepsis. In 2014, 2015 and 2016, 26/13, 37/32 and 21/35 episodes of infection/colonization, respectively were recorded. During this period, 2 outbreaks each involving 9 and 13 patients in 2014, 3 outbreaks involving 11, 15 and 20 patients in 2015, and 16/93.6, 5 (14%) and 59 + 18.1, IHMA, Inc.: Employee, Salary.

**Non-ICU (533)**

| Drug       | North America | Latin America |
|------------|---------------|---------------|
| Tegacycline| 1/95.9        | 2/9/94        |
| Amikacin   | 4/9/89        | 6/93.6        |
| Cefepime   | 2/90.5        | 32/62.2       |
| Ceftazidime| 16/88.6       | 16/56.2       |
| Levofloxacin| 1/91.6       | 3>5/41       |
| Meropenem  | 0.12/96.4     | 8/85.3        |
| Pip-Tazo   | 128/88.5      | 128/69.3      |

**Conclusion.** Klebsiella spp. infections are becoming a treatment challenge due to several resistance mechanisms, particularly β-lactamases. Decreased activities among all agents were observed among Klebsiella spp. isolates collected in LA compared with NA. Infections with Klebsiella spp. were identified locally and antimicrobial susceptibility testing was done using broth microdilution according to CLSI guidelines at participating institutions in NA and LA. CLSI or FDA (tigecycline) breakpoint criteria were applied to define susceptibility status.

**Disclosures.** All authors: No reported disclosures.

### 461. In Vitro Susceptibility Profiles of Klebsiella spp. Isolated from ICU and non-ICU Wards in North and Latin America (TEST-2016)

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**Background.** Klebsiella spp. are one of the most frequently isolated Gram-negative pathogens infecting seriously ill patients in intensive care units. Increasing resistance mechanisms associated with this species group has led to the inclusion of K. pneumoniae as a member of the ESKAPE pathogens as determined by the Infectious Disease Society of America (IDSA). Regional variations of susceptibility to several classes of antimicrobial agents can provide appropriate guidance when selecting appropriate antimicrobial therapy. Data from Tigecycline Evaluation Surveillance Trial (TEST) program 2012-2016 were used to determine antimicrobial susceptibility patterns in Klebsiella spp. in patients in ICUs and non-ICUs in both Latin America (LA) and North America (NA).

**Methods.** Klebsiella spp. isolates were identified locally and antimicrobial susceptibility testing was done using broth microdilution according to CLSI guidelines at participating institutions in NA and LA. CLSI or FDA (tigecycline) breakpoint criteria were applied to define susceptibility status.

**Results.** Susceptibility by region and patient location are shown in the following table.

| Drug     | North America | Latin America |
|----------|---------------|---------------|
| Tigecycline| 1/95.9        | 2/9/94        |
| Amikacin  | 4/9/89        | 6/93.6        |
| Cefepime  | 2/90.5        | 32/62.2       |
| Ceftazidime| 16/88.6       | 16/56.2       |
| Levofloxacin| 1/91.6       | 3>5/41       |
| Meropenem | 0.12/96.4     | 8/85.3        |
| Pip-Tazo  | 128/88.5      | 128/69.3      |

**Conclusion.** Klebsiella spp. infections are becoming a treatment challenge due to several resistance mechanisms, particularly β-lactamases. Decreased activities among all agents were observed among Klebsiella spp. isolates collected in LA compared with NA. Infections with Klebsiella spp. were identified locally and antimicrobial susceptibility testing was done using broth microdilution according to CLSI guidelines at participating institutions in NA and LA. CLSI or FDA (tigecycline) breakpoint criteria were applied to define susceptibility status.

**Disclosures.** All authors: No reported disclosures.

### 462. An Increase in Invasive Infections due to Corynebacterium striatum at an Academic Medical Center

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**Session:** 56. HAI: Outbreaks

**Background.** After identifying an increase in invasive infections due to Corynebacterium striatum (CS) in 2016, we evaluated the epidemiology of C. striatum (CS) infections in our system.

**Methods.** We reviewed microbiology records to determine the number of patients with cultures growing CS from 1/1/14 to 12/31/16. Prior to 11/2015, dipherthithers identified from sterile body sites were sent to a reference lab for identification (ID); beginning in 11/2015, MALDI-TOF was used by the microbiology lab for CS ID. Two infectious diseases physicians reviewed charts of all 2016 cases using a standardized data collection tool and determined whether patients had infection vs. colonization.

**Results.** We identified 3, 6, and 50 patients with cultures growing CS in 2014, 2015, and 2016, respectively. Thirty-six (72%) of the patients in 2016 were felt to have true infection. Skin and soft-tissue infections and osteomyelitis were the most common sites (Figure). The majority of infected patients were immunocompetent, had community-acquired (CA) infections, received antibiotics in the prior 60 days, and required prolonged courses of antimicrobial treatment (Table). No epidemiologic link was identified for nosocomial or CA infections.

**Conclusion.** The notable increase in clinically significant CS infections at our institution warrants further investigation. Whole genome sequencing may offer insight into whether a specific clone is responsible for more invasive disease.

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### 463. Control of Cat Flea Infestation in Neonatal and Pediatric Intensive Care Units

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**Background.**...