1253. Healthcare-Associated Transmission of Burkholderia cepacia Complex Associated With Externally Contaminated Nasal Spray
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Background. Burkholderia cepacia complex (Bcc) species can contaminate medical devices and supplies, and outbreaks of healthcare-associated infections. In March 2018, we investigated a cluster of 20 patients with a sinus culture positive for Bcc seen at two affiliated ENT clinics in Oregon over a 2-month period, based on reporting by a laboratory in a central laboratory external to the clinics.

Methods. We conducted an epidemiologic investigation to identify potential causes for an apparent outbreak of Bcc, including review of health records and microbiologic reports, site visits, staff interviews, and cultures of common equipment and products.

Results. 20 patients (9 were female; age range 10 to 72 years, median age 54.5 years) had new positive Bcc cultures from the sinus. The absence of cystic fibrosis, immunosuppression or sinonasal polyps in all patients, scant growth of Bcc in most cases with isolation of another organism in some, and the use of Bcc-directed antibiotics in a minority of patients suggested the presence of a contamination source. All patients had received lidocaine/phenylephrine (L/P) via multidose nasal spray atomizers prior to endoscopically-directed sinus cultures. Site visits revealed improper medication dispensing and storage practices (e.g., no expiration date for L/P stock, storage of L/P-containing atomizers at room temperature), and inadequate instrument reprocessing and environmental cleaning. Cultures of L/P in 2/3 in-use atomizers and 1/1 opened stock bottle, as well as swabs of 3/3 spray mechanisms, grew Bcc. Cultures of L/P from the unopened, refrigerated stock bottle, a flexible endoscope and a rigid endoscope did not yield Bcc. No negative clinical sequelae in these patients were reported.

Conclusion. Contaminated multidose L/P nasal spray with Bcc resulted in nosocomial transmission at these clinics. This investigation highlights the important role of laboratorians in detecting Bcc contamination events that lead to colonization, and subclinical reporting by clinicians in the outpatient setting. It also raises the question of how often such contamination events go undetected. Injection safety training needs to be broadened to “medication administration safety” training as one and only principles could have prevented this incident.

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1254. Outbreak of Mycobacterium chelonae Skin Infections Associated With Human Chorionic Gonadotropin Injections at Weight Loss Clinics
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Background. In December 2016, a dermatologist notified the Minnesota Department of Health (MDH) of three patients with skin lesions after self-administration of human chorionic gonadotropin (HCG) injections supplied by same weight loss medication dispensing and storage practices (e.g., no expiration date for L/P stock, storage of L/P-containing atomizers at room temperature), and inadequate instrument reprocessing and environmental cleaning. Cultures of L/P in 2/3 in-use atomizers and 1/1 opened stock bottle, as well as swabs of 3/3 spray mechanisms, grew Bcc. Cultures of L/P from the unopened, refrigerated stock bottle, a flexible endoscope and a rigid endoscope did not yield Bcc. No negative clinical sequelae in these patients were reported.

Conclusion. Contaminated multidose L/P nasal spray with Bcc resulted in nosocomial transmission at these clinics. This investigation highlights the important role of laboratorians in detecting Bcc contamination events that lead to colonization, and subclinical reporting by clinicians in the outpatient setting. It also raises the question of how often such contamination events go undetected. Injection safety training needs to be broadened to “medication administration safety” training as one and only principles could have prevented this incident.

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1255. First Outbreak Due to Vancomycin-Resistant Enterococcus Epidemic Clone ST796 in Europe
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Background. A large outbreak with different clones of vancomycin-resistant enterococci (VRE) affected the Bern University Hospital group for several months. The aim of this study was to describe the extent of the outbreak, using whole-genome sequencing (WGS).

Methods. Triggered by two cases of VRE bloodstream infections on our hematologic-oncology ward, an outbreak investigation was started. Microbiological diagnosis of VRE was obtained by culture and PCR, Epidemiological links were assessed by metagenomic chart review and supplemented with WGS analyses. Multiple infection control measures were implemented to avoid further transmissions.

Results. Between December 2017 and April 2018, 2,877 screening samples were obtained from 1,200 patients. Three out of six hospitals within the Bern University Hospital group were affected. Eighty-three patients (6.6%) were colonized with VRE enterococcus faecium. Of those, 76 (91.6%) had a strain carrying vanA, with 70 (84%) isolates virtually identical (separated by up to two alleles) by cgMLST and identified as MLST type ST796 (figure). The remaining seven patients (8.4%) were colonized with vanA carrying strains from five different STs. Five patients (7%) developed an invasive infection with VRE ST796. Temporo-spatial strains were found in most patients carrying the outbreak strain. In order to control the outbreak, extensive infection control measures were implemented. By April 2018 the outbreak was contained with these specific measures.

Conclusion. This VRE outbreak was characterized by a rapid intra- and inter-institutional spread of the emergent clone ST796. This clone was recently described in Australia and New Zealand but never before in Europe.1 A multi-faceted infection control led to the containment of the outbreak.

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1256. New Acquisitions of ET-12 Burkholderia cenocepacia in Adults With Cystic Fibrosis: Role of Whole Genome Sequencing in Outbreak Investigation
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Background. Transmission of Burkholderia cenocepacia ET-12 strain (ET-12Bc) can cause epidemics in the cystic fibrosis (CF) population. The Toronto Adult CF center currently follows 500 patients; 20% have infection with B cenocepacia complex (BCC), including 48 patients infected with ET-12Bc. The center adheres to the 2013 infection prevention and control guidelines and patients are also segregated by clinics. Despite this, there have been 11 new acquisitions of ET-12Bc since 2008. The objective of this study was to describe the investigation of an ET-12Bc outbreak in CF patients, using whole genome sequencing (WGS).

Methods. Investigations included multilocus sequencing (MLST) and WGS of 34 isolates (11 new ET-12Bc acquisitions, 18 isolates of known ET-12Bc patients (including all patients with hospital admissions that overlapped with new acquisitions); four isolates from CF patients in the USA and the J2315 reference strain). List of the seven MLST alleles from ET-12Bc strain J2315 was downloaded from PubMLST and used to “Blast” each of the 16 WGS databases. WGS was done using 150 bp paired-end reads on an Illumina HiSeq4000. Single nucleotide polymorphisms (SNPs) between the newly sequenced strains and J2315 were profiled.

Results. Ten patients had a hospital admission within the 2 months preceding their first ET-12Bc positive sputum culture, except for one in whom ET-12Bc was detected 12 months following hospital admission. In all isolates, the seven alleles (atpD, gdh, gyb, recA, lpxC, plcU, and atpB) matched 100% to sequence type 28 and clonal complex 31, and were identical to J2315. WGS SNP analysis confirmed that transmission occurred from known cases on the unit in 10/11 (90.9%) patients. To date, 8/11 patients with new acquisitions have died (median survival of 95 days).

Conclusion. Our investigations found epidemiological evidence suggestive of ET-12Bc transmission on the CF unit, which was confirmed by MLST and WGS SNP analysis. Compared with MLST, WGS SNP analysis had better discriminatory power and was well correlated with the identified epidemiological links between patients. Recognition of ET-12Bc transmission with associated high mortality rates has led to a change in infection control practices for post-keratoplasty endophthalmitis.

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1257. Assessing Risk Factors for an Outbreak of Burkholderia cenocepacia in Non-Cystic Fibrosis (CF) Patients
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Background. Burkholderia spp. have been associated with outbreaks of health-care-associated infections in non-CF patients, mostly attributable to point sources of contaminated solutions or medications. Fewer non-point-source outbreaks have been described.

Methods. We conducted a matched case-control (1:3) study to assess risk factors for B. cenocepacia during an outbreak that occurred in 2017 in a 738-bed university-affiliated hospital involving patients hospitalized on several ICUs and non-ICUs. Clinical isolates identified as B. cepacia complex were sequenced using sequencing of the recA allele typed by pulsed-field gel electrophoresis (PFGE). Case subjects were patients with a positive culture for the B. cenocepacia outbreak strain (PFGE pattern 17-A, recA 365) from June 1–December 31, 2017. Control subjects had negative respiratory cultures for Burkholderia spp. within 10 days of respective case’s culture dates and were hospitalized on the same unit at the same time as respective cases. Potential risk factors including procedures, devices, and medications (previously linked to point source outbreaks) were examined. A 5-day exposure window was studied for procedures and first device as this was the shortest interval noted between a case subject’s negative and first positive culture. Exact conditional logistic regression was used to high-risk factors; Mann–Whitney U and Fisher’s exact tests were used to compare demographic and clinic characteristics of case and control subjects.

Results. Seventeen cases (all with positive respiratory tract cultures) and 41 unit-matched controls were studied. Case and control subjects had similar demographic characteristics, illness severity, and comorbidities. No point source was identified. Only exposure to invasive mechanical ventilation was associated with case status (OR: 10.5, 95% CI: 1.9, 60.0, P = 0.0083). Detailed nursing care (i.e., hospital stay 52 vs. 13 days, P = 0.02) than controls, but similar in-hospital mortality (24% vs. 12%, P = 0.43).

Conclusion. These findings suggest that suboptimal infection prevention and control practices related to respiratory interventions, including cleaning and disinfection of ventilators, may have contributed to the outbreak. Reinforcement of best practices helped reduce transmission of the outbreak clone.

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1258. The Eyes Have It: Investigating a Cluster of Non-lactose Fermenting Gram-Negative Bacilli From Donor Corneal Rim Tissue
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Background. Following corneal transplant, donor corneal rim tissue is sometime used to help predict post-keratoplasty endophthalmitis.

Methods. A 12-month retrospective review of donor corneal rim cultures was performed from July 2015 to July 2016, with continual prospective monitoring of donor corneal rim cultures. The protocols used to prepare corneal donor tissues were reviewed. The standard protocol included flooding the tissue with povidone iodine followed by rinsing with a sterile saline solution and then placement in a sterile container with Optisol GS (a preservative solution with gentamycin and streptomycin). The sterile saline rinse that was normally used for processing had been on back order and had been replaced with an alternative brand throughout March 2015 to June 2016. Unopened bottles of the alternative brand of sterile saline fluid and Optisol GS were sent to an outside laboratory for bacterial culture and remaining product was temporarily quarantined.

Results. Microbiology review revealed seven donor corneal rim cultures positive for NLP Gram-negative bacilli from May to July 2016. Organisms isolated from the donor corneal rim tissue included Acinetobacter xylosidans (4), Burkholderia cepacia (3), Stenotrophomonas maltophilia (2), and Elizabethkingia meningoseptica (1). Sterility cultures of Optisol GS demonstrated no growth. Sterility cultures of the sterile saline rinse grew Gram-positive and -negative bacteria from all samples. A FDA MedWatch was submitted in July 2016, and on September 6, 2016 an FDA recall notice was published. The quarantined saline was permanently removed. No clinical infections or donor corneal rim identifications were reported.

Conclusion. Microbiologists are the front line for IC surveillance. Close partnership between the IC team and the microbiology laboratory can help identify potential outbreaks by alerting them of the growth of atypical organisms or clusters.

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1259. The Local Hospital Milieu and Healthcare-Associated VRE Acquisition
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Background. The relationship between the local hospital environment and VRE acquisition is not fully understood. The objective of this study was to identify risk factors for healthcare-associated VRE acquisition related to the local hospital milieu.

Methods. This retrospective cohort study included patients admitted to six ICUs at an academic medical center from January 1, 2012 to December 31, 2016 with negative rectal VRE cultures on admission. VRE acquisition was defined as a positive subsequent surveillance swab performed at any time after the initial negative surveillance swab during the index hospitalization. VRE colonization pressure was defined to encapsulate the circulating VRE burden during the at-risk patient’s ICU stay (patient days of VRE exposure based on concurrently colonized patients on the unit, divided by time