additional cases were detected with onset dates following staff member decolonization. Moreover, 13 of the 14 *emm* 82 isolates were found to be identical by WGS. Infection control observations identified lapses in staff wound care and hand hygiene practices in the residential and outpatient settings of the facility. **Conclusions:** This investigation details a large GAS outbreak in an LTCF associated with asymptomatic carriage in residents and staff that included patients who had only received care in the outpatient portion of the facility. The outbreak was halted following decolonization of a staff member and improvements in infection control, including in the outpatient setting. Outpatient services, particularly wound care, provided by LTCFs should be considered when investigating LTCF-related GAS cases and outbreaks.

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Poster Presentation

Investigation of Pansusceptible *Pseudomonas aeruginosa* Meningitis Cases in Patients With External Ventricular Devices

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Background: During a 2-month period at an academic medical system, 4 cases of pansusceptible *P. aeruginosa* (PsA) meningitis were identified among neuroscience intensive care unit (NSICU) patients with an external ventricular device (EVD). **Methods:** We reviewed microbiology data for the previous 2 years to determine background PsA rates and to identify additional cases of PsA meningitis. A case was defined as the isolation of PsA from a CSF specimen. We convened a multidisciplinary group of stakeholders to review medical records of case patients and to conduct a series of observational rounds. Scalp swab specimens were collected from NSICU patients to detect possible skin colonization. Pulsed-field gel electrophoresis (PFGE) analyses were performed on PsA isolates from the 4 case patients and 5 patients with PsA isolates from other body sites. **Results:** There was no hospital-wide increase in PsA incidence, and no patient without an EVD had PsA cultured from CSF. Infections occurred, on average, 10 days (range, 6–15 days) after EVD insertion. Cases were geographically dispersed in the NSICU and did not share common staff. None of the PsA isolates were genetically related and all scalp cultures were negative. Observations included multiple opportunities for contact with water sources: sinks in proximity to the head of the bed, storage of supplies next to sinks, reuse of bath basins, and use of dilute peroxide to clean surgical wounds. Multiuse shampoos, conditioners and lotions, not approved for hospital use, were found on the unit. Furthermore, 3 of 4 patients received cefazolin >24 hours after 6 of their 7 neurosurgeries for an average of 4.7 days (range, 0.8–4 days). Care practices were changed to mitigate contact between EVD sites and environmental water sources, and extended cefazolin surgical prophylaxis was discontinued. EVD practices were revised, and clinical teams had their competency confirmed. No additional cases have been identified in the 16 months following these interventions. **Conclusions:** This cluster of EVD infections was likely caused by patient care practices that resulted in independent introductions of PsA from multiple nonsterile or contaminated water sources. Antibiotic selection of PsA by extended use of cefazolin perioperative prophylaxis may have also contributed. EVD care practices should be designed to limit contact between and EVD insertion sites and nonsterile water sources or potentially contaminated care supplies. To substantiate performance improvement efforts and ensure interinstitutional comparability, a practical, standardized EVD-associated infection surveillance definition is needed.

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Investigation of Surgical Site Infection Outbreak Among Neurosurgical Patients

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Background: The infection control service of a private hospital in Belo Horizonte, Brazil, performs continuous surveillance of surgical patients according to the CDC NHSN protocols. In a routine analysis of the neurosurgical service, we identified a subtle increase in the incidence of surgical site infection (SSI): in 5 months (June–October 2018), 6 patients developed an SSI. From January 2017 until May 2018, there were no cases of infection in neurosurgery, which led us to suspect an outbreak. **Methods:** A cohort study was used to investigate the factors associated with risk of SSI. We investigated the following variables: ASA score, number of hospital admissions, age, preoperative hospital length of stay, duration of surgery, wound class, general anesthesia, emergency, trauma, prosthesis, surgical procedures, surgeon. Furthermore, 9 key steps were followed to investigate the outbreak: case definition (step 1), search for new SSI cases (step 2); confirmation of the outbreak (step 3); analysis of SSI cases by London Protocol (step 4); analysis of the cohort data (step 5); inspections in the surgical ward (step 6); qualitative and quantitative reports sent to the neurosurgical departments (step 7); continuing with active surveillance (stage 8); announcement of research findings (step 9). **Results:** The outbreak was confirmed: SSI incidence in the pre-epidemic period (January–May 2018) was 0 of 218 (0%); in the epidemic period (June–October 2018), SSI incidence was 6 of 94 (6.4%) ($P < .001$). We identified 3 SSI etiologic agents: 2 *Klebsiella pneumoniae*, 2 *S. aureus*, and 1 *Serratia marcescens*. It was unlikely that there was a common source for the outbreak. We identified the following risk factors: second or third hospital admissions (RR, 3.7; $P = .041$), and preoperative hospital length of stay: SSI patients (4.3±5.7 days) versus control patients (0.7 ± 2.1 days) ($P = .048$). None of the surgeons presented an SSI rate significantly different from each other. We used the London protocol to identify antibiotic prophylaxis failures in most cases. **Conclusions:** New cases of infections can be prevented if the length of preoperative hospital stay becomes as short as possible and, most importantly, if antibiotic prophylaxis does not fail.

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