in Infection Control and Epidemiology (APIC) Basic Principles of an Outbreak Investigation, to conduct the epidemiological investigation of the outbreak.Results: All 15 CVCs required replacement, and 1 case of bacteremia was recorded. We suspect that the underlying cause was related to changes in the manufacturing process of hubs along with the product used to prepare the hubs prior to access (Table 1). Conclusions: Following an outbreak investigation process to investigate a noninfectious related outbreak can ensure that a thorough and comprehensive investigation is being completed. Early recognition of an outbreak is essential to recognition of the outbreak and the implementation of mitigation strategies. Inconsistent reporting of adverse events related to mechanical issues with the catheters may have contributed to a delay in recognition.
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Presentation Type:
Poster Presentation
Using Data Collected from a Commercial Sensor System to Inform Mathematical Models of Healthcare-Associated Infections
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Background: Hospital-acquired infections are commonly spread through the movement of healthcare professionals (HCPs). Computational simulations provide a powerful tool for understanding how HCP behavior contributes to these infections, but how well they reflect the real world rests on a number of critical parameters. Our goal is to provide accurate, fine-grained estimates of real HCP movement and interaction parameters suitable for simulating the potential spread of pathogens over different types of inpatient facilities. **Methods:** We obtained a commercial data set with 44 million deidentified elements compiled from >27,000 HCPs from >30 job types. The data were collected over 27 months from >20 facilities of varying size using a proprietary electronic sensor system. Each observation recorded an HCP visiting 1 of 12,000 rooms (38% being patient rooms) and consisted of the entry and exit time stamps, hand hygiene behavior, and for many rooms, their (x, y) geometric coordinates within the facility. From these data, we can reconstruct the behavior (including location and hand-hygiene adherence) of each instrumented HCP across multiple shifts. **Results:** Distributions describing various aspects of HCP behavior (eg, arrival rates and dwell times) were derived using HCP job function, department or unit assignment, type of shift (day vs night), time of day, facility size, and staffing of facility. In a similar fashion, we constructed HCP cross-table transition probabilities using job type, room type, department type, unit type, and facility type. These distributions were used to generate reasonable HCP movement and behavior patterns in a simulation environment. Distributions of dwell time were, for the most part, heavy tailed, but they varied by type of job and facility: dwell times over all facilities, job types, and room types averaged ~339 seconds (SD, 495 seconds), with a mean of maximums by job type of ~37,168 seconds. However, these distributions differ within job type but across facilities (ie, nurses in 1 facility averaged 397 seconds, but 277 seconds in another) and within facility but across job type. For example, physicians averaged 292 seconds, whereas nurses averaged 397 seconds and physical therapists averaged 861 seconds. **Conclusions:** Our results provide a unique resource for disease modelers who wish to build meaningful simulations of the transmission of hospital-acquired infections. The scale and diversity of the data gave us the unique capability to provide, with confidence, distinct parameter sets for different types and sizes of healthcare facilities across a wide range of situations.
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Presentation Type:
Poster Presentation
Utilizing a Risk-Based Criteria Framework to Identify Infection Prevention and Control Risks in Australian Dental Settings
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Background: A dental practitioner must comply with the Dental Board of Australia's guidelines on infection control. In this project, we developed a risk-based criteria framework to assess a practitioner's infection prevention and control (IPC) systems and processes. This project allowed for the provision of the highest standard of infection control continuing education and advice relevant to the needs of members of the Australian Dental Association (NSW Branch). **Methods:** A review of 1,050 continuing professional development (CPD) IPC course evaluation forms was conducted to determine the key IPC areas that participants have the most difficulty with. All core IPC documents that practitioners are expected to understand and comply with were determined and any regulator- and profession-led compliance checklists were collated. These data were consolidated to generate a risk-based criteria framework that was then applied to 99 private, office-based, dental practices to determine IPC compliance. **Results:** After the review of 99 dental practices, the total aggregate compliance score was 78%, and the 15 key IPC areas were ranked from highest to lowest. These data assisted with the development of a full-day IPC course focusing on the top 5 risks in each category. The five areas of opportunity identified were Hand Hygiene (52%), Surgical Procedures and Aseptic Technique (59%), Documentation, Policy and Knowledge (61%), Sharps (72%), Steam Sterilisers (72%). **Conclusions:** This project identified key IPC risks for office-based dental practices from the capture of performance-based data. This data formed a targeted education framework that prioritized areas of opportunity to improve IPC standards in Australian dental practices.
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Poster Presentation
Utilizing Telemedicine During Outbreak Events to Reduce Exposure Risk
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Background: As of October 2019, the United States has seen the greatest number of annual measles cases reported since 1992, of