infection prevention among GPs, and dental care clinics. In 4 cases (ie, 3 GPs and 1 dental care clinic), we stopped using the autoclave because of lack of proof of proper maintenance.
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Poster Presentation

**Reporting Surgical Site Infections (SSIs) Using Different Surveillance Systems— Complexity of Infection Matters**

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**Background:** In Alberta, Canada, surgical site infections (SSIs) following total hip (THR) and knee replacements (TKR) are reported using 2 data sources: infection prevention and control (IPC), which surveys all THR and TKR using NHSN definitions and the Canadian *International Classification of Disease, Tenth Revision* (ICD-10-CA) codes, and the National Surgical Quality Improvement Program (NSQIP), which uses a systematic sampling process that involves an 8-day cycle schedule, modified NHSN definitions and current procedural terminology (CPT) codes. We compared the similarities and discrepancies in THR/TKR SSI reporting. **Methods:** A retrospective multisite cohort study of IPC and NSQIP THR/TKR SSI data at 4 hospitals was performed. SSI data were collected between September 1, 2015, and March 31, 2018. Demographic information and complex and total SSIs reported by IPC and NSQIP were compared for both THR and TKR surgeries. To determine whether both data sources reported similar trends over time, total SSIs by quarter were compared. Univariate analyses using a *t* test for age and the $\chi^2$ test for gender for complex SSIs and total SSIs was performed. The Pearson correlation and the Shapiro-Wilk test were used to assess the THR and TKR trends between the 2 data sources. A *P* value of <.05 was considered significant. **Results:** Following the removal of duplicates and missing data, 7,549 IPC and 2,037 NSQIP patients, respectively, were compared. Age, gender, and other demographic parameters were not significantly different. Total THR and TKR SSIs per 100 procedures using NSQIP data were significantly higher than the same rates using IPC data: THR, 2.25 versus 0.92 ($P < .05$) and TKR, 3.43 versus 1.26 ($P < .05$). Both IPC and NSQIP data indicated increasing total THR SSI rates over time, but with different magnitudes ($r = 0.658$). For total TKR SSI, the IPC rate decreased, whereas the NSQIP rate increased over the same period ($r = 0.374$). When superficial SSIs were excluded, the rates reported between IPC and NSQIP data by hospital and by procedure type were more comparable, with trends toward higher rates reported by NSQIP for THR than for TKR: THR, 1.19 versus 0.68 ($P = 0.15$) and TKR, 0.92 versus 0.80 ($P = .68$). **Conclusions:** Different approaches used to monitor SSIs following surgeries may lead to different results and trend patterns. NSQIP reports total SSI rates that are significantly higher than the IPC Alberta orthopedic population predominantly as a result of increased identification of superficial SSIs. Because the diagnosis of superficial SSIs may be less reliable, SSI reporting should focus on complex infections.
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**Resistance Trends in Pathogens Causing Healthcare-Associated Infections in Multiple Hospitals in Saudi Arabia, 2007–2016**

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**Background:** Studying temporal changes in resistant pathogens causing healthcare-associated infections (HAIs) is crucial in improving local antimicrobial and infection control practices. We analyzed 10-year trends in resistance in pathogens causing HAIs in a tertiary-care setting in Saudi Arabia and we compared such trends with those of the US NHSN. **Methods:** We performed a pooled analysis of surveillance data that were prospectively collected between 2007 and 2016 in 4 hospitals of the Ministry of National Guard Health Affairs. Definitions and methodology of HAIs and antimicrobial resistance were based on NHSN methods. Consecutive NHSN reports were used for comparisons. **Results:** In total, 1,544 pathogens causing 1,531 HAI events were included. Gram-negative pathogens (GNPs) were responsible for 63% of HAIs, with a significant increasing trend in *Klebsiella* spp and a decreasing trend in *Acinetobacter* spp. Methicillin-resistant *Staphylococcus aureus* (27.0%) was consistently less frequent than NHSN reports. Vancomycin-resistant *Enterococci* (20.3%) more than doubled during the study, closing the gap with the NHSN. Carbapenem resistance was highest for *Acinetobacter* (68.3%) and *Pseudomonas* (36.8%). Increasing trends of carbapenem resistance were highest for *Pseudomonas* and *Enterobacteriaceae*, closing the initial gaps with the NHSN. With the exception of *Klebsiella* and *Enterobacter*, multidrug-resistant (MDR) GNPs generally decreased, mainly due to the decreasing resistance to cephalosporins, fluoroquinolones, and aminoglycosides. **Conclusions:** The current trends probably reflect multiple local interventions to reduce HAIs and MDR as well as the heavy use of carbapenems and vancomycin. Our main challenge remains to further enhance the newly launched antimicrobial stewardship practices.
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