

the state licensing authorities receive a specific complaint. Many states, including Pennsylvania, do not have continuing IPC education requirements for dental providers. In 2018–2019, the Philadelphia Department of Public Health (PDPH) received and responded to multiple complaints and concerns related to IPC practices at dental clinics. Complaints were investigated in collaboration with the Pennsylvania Department of State (PADOS). **Methods:** Unannounced site visits were conducted at 7 Philadelphia dental clinics from December 2018 through September 2019 as part of the public health responses. Clinic evaluations and observations by PDPH certified infection preventionists focused on (1) IPC policies and procedures, (2) staff IPC training, (3) hand hygiene, (4) personal protective equipment, (5) instrument reprocessing and sterilization, (6) injection safety, and (7) environmental cleaning and disinfection. The CDC and the Organization of Safety, Antisepsis and Prevention (OSAP) checklists were adapted for this purpose. **Results:** Most dental practices we visited were small, unaffiliated, owner-operated clinics. The most common gaps we identified were associated with instrument reprocessing and sterilization practices, including inadequate separation between clean and dirty work areas, limited space and availability of sinks, inappropriate use of glutaraldehyde products for instrument cleaning (n = 3, 43%), extended reuse of cleaning brushes (n = 5, 71%), sterilization or storage of sterilized instruments without appropriate packaging (n = 2, 29%), lack of spore testing or reviewing results (n = 2, 29%), and lack of documentation of sterilizer run cycles and maintenance (n = 7, 100%). Additionally, most clinics did not have well-developed IPC policies and procedures, and staff IPC trainings were neither documented nor conducted annually. Alcohol-based hand sanitizer was often not available at the point of use. **Conclusions:** In Philadelphia, dental clinics often lacked IPC support and oversight. Lapses across multiple key IPC domains were common. These findings suggest that public health may have a role in providing IPC support to unaffiliated dental clinics. Licensing entities can also serve a role in improving IPC practices by more widely mandating continuing IPC education as part of the dental license renewal process.

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Poster Presentation

Standardized Antimicrobial Administration Ratio (SAAR) Clinical Outcomes Assessment in a Large Community Healthcare System

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Background: Research on the association between the standardized antimicrobial administration ratio (SAAR) and clinical outcomes is lacking. **Objective:** We compared SAAR and patient outcomes in 97 acute-care facilities affiliated with a large health-care system. **Methods:** Facilities were classified using the broad-spectrum hospital-onset (BSHO) SAAR for medical, surgical, and medical-surgical wards as low, moderate, or high antimicrobial use: low use SAAR, <0.8; moderate use SAAR, 0.95–1.05; and high-use SAAR, >1.2. Data were included from patients aged ≥18 years who were discharged between the first quarter of 2018 and the second quarter of 2019, had nonmissing matching criteria,

BMI between 10 and 90, and at least 1 BSHO medication administered in a medical, surgical, or medical-surgical ward. Patients were matched for gender, age group, BMI category, year and quarter of discharge, ICU stay, and diagnosis-related group (DRG). Eligible drugs included all routes for cefepime, ceftazidime, doripenem, imipenem/cilastatin, meropenem, and piperacillin/tazobactam and IV only for amikacin, aztreonam, gentamicin, and tobramycin. Outcomes were evaluated in a pairwise manner using *t* tests or χ^2 tests. **Results:** Each of the 3 study groups consisted of 6,327 patients, 51% of whom were men; average age, 63 years; 70% of whom were obese or overweight, and 19% of whom had an ICU stay. The most common DRG code was infectious and parasitic diseases (57%) followed by digestive system (9%), respiratory system (7%), and kidney and urinary tract (6%). High antibiotic use was associated with longer length of stay and a higher estimated cost per visit. Low antibiotic use was associated with higher rate of mortality and a lower rate of readmissions compared to moderate use. The low-usage group did not exhibit a statistically significant difference in mortality, readmissions, or rate of *C. difficile* compared to the high-usage group. **Conclusions:** The optimal antibiotic utilization group varied among outcomes. Further evaluation of outcomes is needed for the SAAR to understand the ranges and the relationship between the measure and clinical outcomes.

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***Staphylococcus* spp Resistance to Chlorhexidine: Is There Any Impact Related to the Routine Use for Hand Hygiene?**

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Background: Although guidelines recommend the use of chlorhexidine gluconate (CHG) for hand hygiene (HH), the impact of its routine use on antimicrobial resistance is not clear. **Objective:** To analyze the impact on the CHG susceptibility among isolates obtained from hands of HCW during its routine use for HH. **Methods:** We conducted a crossover study at 4 medical-surgical wards of a tertiary-care hospital in São Paulo, Brazil. In 2 units (intervention group), we established routine use of CHG for HH. For the other 2 units (control group), regular soap was provided. The availability of alcohol formulation for HH was not changed during the study. Every 4 months we swapped the units, ie, those using CHG changed for regular soap and vice versa. At baseline, we cultured the hands of HCWs. Only nursing staff hands were investigated. For hand culturing, HCWs placed their hands inside a sterile bag containing a solution of phosphate-buffered saline, Tween 80, and sodium thiosulfate. After the solution incubated overnight,

it was inoculated onto brain-heart infusion. Next, it was plated on McConkey and Mannitol agar. MALDI-TOF was used for identification. Agar dilution was performed for *Staphylococcus* spp. We selected all *Staphylococcus* spp with MIC \geq 8 and performed inhibition of efflux pump test. For isolates that showed a decrease of 2 dilutions, we searched the gene *qacA/B* by polymerase chain reaction. **Results:** We obtained 262 samples from HCW hands yielding 428 isolates. The most frequent genera were *Staphylococcus* spp (58%), *Acinetobacter* spp (8%), *Enterobacter* spp (8%), *Stenotrophomonas* spp (5%), *Klebsiella* spp (4%), *Pseudomonas* spp (3%), and others (14%). *Staphylococcus* spp were less frequent in the intervention compared to control group (43% vs 61%; OR, 0.48; 95% CI, 0.29–0.69; $P = .005$). Among all *Staphylococcus* spp, the proportion of chlorhexidine resistance (RCHG; MIC \geq 8) was 12%. All resistant isolates recovered susceptibility after inoculation with pump-efflux inhibitor. For pump-inhibited isolates, 53% had the gene *qacA/B* amplified by PCR. We did not investigate RCHG among gram-negative isolates. There was a nonsignificant increase in *Staphylococcus* spp RCHG in the intervention group (4% to 6%; $P = .90$). Healthcare-acquired infection rates did not change significantly during the intervention. The consumption of CHG increased from 7.3 to 13.9 mL per patient day. **Conclusions:** We did not detect a significant difference in RCHG during the routine use of CHG for HH, although we observed increasing resistance. Further investigation is needed to clarify other reasons for increasing MIC to CHG.

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STOP-BSI: Reducing Methicillin-Resistant *Staphylococcus aureus* Bloodstream Infections in Oncology Patients

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Background: Hospital-acquired methicillin-resistant *Staphylococcus aureus* bloodstream infections (MRSA BSIs) are associated with serious morbidity and mortality in immunocompromised patients. Of all MRSA BSIs at our academic medical center, 63% occurred in the oncology units. A multidisciplinary team was formed to address the improvement opportunity: the clinical nurse specialist, hospital epidemiologist, unit leaders, nurse champions and representatives from infection prevention, pharmacy and information technology. The goal was to decrease the incidence of hospital-onset MRSA BSI in the oncology wards by 10 infections in 2016 by implementing daily chlorhexidine (CHG) bathing and weekly nasal povidone-iodine antiseptics in July 2016. **Methods:** The strategically targeting oncology with povidone-iodine nasal antiseptics and bathing with CHG *Staph* reduction initiative (STOP-BSI) was a quality improvement project consisting of daily CHG baths for all oncology patients and nasal povidone-iodine on admission and weekly thereafter. Nurses and patient care technicians were trained on how to administer CHG treatments. Education was also provided to patients on how to use CHG bath wipes to self-administer the nasal antiseptics. Education resources were created to help answer concerns of the staff, patient, or family, and an escalation process was developed

for treatment refusal. CHG bath audits were performed to measure compliance and to identify barriers to the process. **Results:** By the end of 2016, the number of infections decreased by 5 on the oncology units. The number of infections continued to decrease each year. The bone marrow transplant (BMT) unit decreased from 8 infections in 2015 to 3 in 2018. The hematology oncology unit infections decreased from 5 infections in 2015 to 0 in 2018. The medical oncology unit infections decreased from 2 infections in 2015 to 0 in 2018. The CLABSI rates per 1,000 line days trended downward after some time. **Conclusions:** Implementing daily CHG baths and weekly povidone-iodine nasal antiseptics reduced the number of MRSA BSI infections in the oncology population. The CLABSI rates decreased after barriers to the process were removed.

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Strategy for Increasing Alcohol Gel Consumption Based on Realistic Simulation, Opinion of Healthcare Workers, Structure Adequacy and Change in Alcohol Product

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Background: Healthcare-related infections (HAIs) imply higher morbidity and mortality, length of hospitalization, and costs to institutions and the health system. An important practice for HAI control is hand hygiene. Due to the need for greater adherence to the practice of hand hygiene, as well as understanding about behavior and motivations related to actions associated with infection control, we conducted this study based on inquiry and intervention. **Objectives:** To describe the increase in adherence to hand hygiene through a multimodal strategy based on realistic simulation, inquiry, change of alcohol and training on actions related to infection control. **Methods:** In May 2018, a survey was administered to healthcare workers (HCW) regarding structure, process, and behavior related to hand hygiene. Training was also performed, which simulated a bed marked with GloGerm (later revealed with the application of black light), performing tasks by professionals, and completing a test. In November 2018, the structure of hand hygiene and points at which the alcoholic product was offered were redefined, and the alcohol-based product and its dispensers were exchanged. In December 2018, an educational campaign on hand hygiene and change disclosure was held. In February 2019, a new survey was applied to employees. Alcohol consumption was measured per patient day in the periods and compared with the historical average. **Results:** In the first application of the survey, 263 HCW reported dissatisfaction with hand hygiene structure (46% preferred water and soap). Most reported that training and structure would improve adherence. The training took place for 540 HCWs from many different professional positions. Alcohol gel consumption had a sustained increase from an