Table 1.

Raw PG scores by receipt of antibiotics, P Values assessed by t-tests (Table).

Raw PG Score	Dissatisfied (Score <= 25th percentile)			Satisfied (Score > 25th percentile)		
	No Antibiotics	Antibiotics	P	No Antibiotics	Antibiotics	P
Overall Visit Mean (SD)	64.3 (14.9)	66.7 (11.0)	0.346	95.9 (5.5)	96.5 (5.1)	0.254
Clinician, Mean (SD)	54.7 (24.4)	64.5 (16.9)	0.015	98.3 (4.8)	99.1 (3.3)	0.046

antibiotics were dissatisfied than for those patients who received antibiotics. Antibiotic stewardship strategies to communicate appropriate prescribing while preserving patient satisfaction are needed in pediatric urgent-care settings.

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Automated Prediction of Surgical Site Infection Coronary Artery Bypass (CABG) Grafting Surgery

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Background: In 5 hospitals located in Belo Horizonte city (>3,000,000 inhabitants) a focused survey on surgical site infection (SSI) was performed in patients undergoing CABG surgery. We statistically evaluated such incidences to enable study of the prediction power of SSI through pattern recognition algorithms, in this case the multilayer perceptron (MLP) artificial neural networks. **Methods:** Data were collected between July 2016 and June 2018 on SSI by the hospital infection control committees (CCIHs) of the hospitals involved in the research. We collected all data used in the analysis during their routine SSI surveillance procedures. The information was forwarded to the NOIS (Nosocomial Infection Study) Project, which uses the SACIH (Automated Hospital Infection Control System) software to collect data from a sample of hospitals participating voluntarily in the project. After data collection, 3 procedures were performed: (1) a treatment of the collected database for use of intact samples; (2) a statistical analysis on the profile of the hospitals collected; and (3) an assessment of the predictive power of 5 types of MLP (ie, backpropagation standard, momentum, resilient propagation, weight decay, and quick propagation) for SSI prediction. MLPs were tested with 3, 5, 7, and 10 hidden layer neurons and a database split for the resampling process (65% or 75% for testing and 35% or 25% for validation). They were compared by measuring the AUC (area under the curve; range, 0–1) presented for each of the configurations. **Results:** From 666 initial data, only 278 were able for analysis. We obtained the following statistics: 9.35% manifested SSIs; length of stay varied from 1 to 119 days, with ~40% staying between 10 and 19 days; 15.1% of the patients died. Regarding the prediction power of SSI, the experiments have a maximum value of 0.713. **Conclusions:** Despite the considerable loss rate of >50% of the database samples due to the presence of noise, it was possible to have a relevant sampling to evaluate the profile of hospitals in Belo Horizonte. In addition, for the predictive process, although some configurations had results equal to 0.5, others reached 0.713, which indicates that the automated SSI monitoring framework for patients undergoing coronary artery bypass grafting surgery is promising. To optimize data collection and to enable other hospitals to use the SSI prediction tool (available at www.sacihweb.com), a mobile application was developed.

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Automated Risk Analysis of Surgical Site Infection in Hip Arthroplasty Surgeries

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Background: In 7 hospitals in Belo Horizonte, a city with >3,000,000 inhabitants, a survey was conducted between July 2016 and June 2018, focused on surgical site infection (SSI) in patients undergoing arthroplasty surgery procedures. The main objective is to statistically evaluate such incidences and enable a study of the prediction power of SSI through pattern recognition algorithms, the MLPs (multilayer perceptron). **Methods:** Data were collected on SSI by the hospital infection control committees (CCIHs) of the hospitals involved in the research. All data used in the analysis during their routine SSI surveillance procedures were collected. The information was forwarded to the NOIS (Nosocomial Infection Study) Project, which used SACIH automated hospital infection control system software to collect data from a sample of hospitals participating voluntarily in the project. After data collection, 3 procedures were performed: (1) a treatment of the database collected for the use of intact samples; (2) a statistical analysis on the

profile of the hospitals collected; and (3) an assessment of the predictive power of 5 types of MLP (backpropagation standard, momentum, resilient propagation, weight decay, and quick propagation) for SSI prediction. MLPs were tested with 3, 5, 7, and 10 hidden layer neurons and a database split for the resampling process (65% or 75% for testing and 35% or 25% for validation). The results were compared by measuring AUC (area under the curve; range, 0–1) presented for each of the configurations. **Results:** Of 1,246 records, 535 were intact for analysis. We obtained the following statistics: the average surgery time was 190 minutes (range, 145–217 minutes); the average age of the patients was 67 years (range, 9–103); the prosthetic implant index was 98.13%; the SSI rate was 1.49%, and the death rate was 1.21%. Regarding the prediction power, the maximum prediction power was 0.744. **Conclusions:** Despite the considerable loss rate of almost 60% of the database samples due to the presence of noise, it was possible to perform relevant sampling for the profile evaluation of hospitals in Belo Horizonte. For the predictive process, some configurations have results that reached 0.744, which indicates the usefulness of the structure for automated SSI monitoring for patients undergoing hip arthroplasty surgery. To optimize data collection and to enable other hospitals to use the SSI prediction tool (available in www.sacihweb.com), a mobile application was developed.

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Awareness of Antimicrobial Stewardship Interventions Within a Community Hospital Network

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Background: A system of 3 community hospitals in New Jersey has actively engaged in antimicrobial stewardship since November 2014. Consultations with infectious diseases specialists are mandatory for patients with sepsis, severe sepsis, septic shock, patients on 3 or more antibiotics, and for those diagnosed with *Clostridioides difficile* infection (CDI). A multidisciplinary team meets monthly and has begun to improve the appropriateness of antibiotics use and to reduce antibiotic days of therapy per 1,000 patient days. Recently, we participated in a targeted assessment program (TAP) for CDI, and we identified areas of opportunity for antimicrobial stewardship. **Methods:** The TAP survey was emailed to a wide distribution of employees in the hospital, primarily nurses, physicians, and others with a variable range of experience and for those working in the intensive care units and on the wards. Ultimately, the numbers of responses were 60 in hospital A, 88 in hospital B, and 124 in hospital C. **Results:** In hospital A, most respondents were nurses or nurse assistants or technicians (63%), and most of the total individuals surveyed worked outside the intensive care unit setting. In hospital B, nurses or nurse assistants or technicians comprised 69% of all responses. Hospital C had the highest percentage of physicians who responded (31%). One theme for all hospitals was that a little more than half of those surveyed felt that for patients with new or recent CDI infections, antibiotics prescribed for infections were reviewed by clinicians. Less than half of respondents believed that education was being given to patients and families about the risks of CDI from antibiotics. With regard to high-risk CDI antibiotics, there was a general lack of knowledge that these were being monitored. For example, survey respondents felt that this was always monitored on clindamycin by only 33% of respondents in hospital A, 40% in hospital B, and 42% in hospital C. With regard to strategies to reduce the unnecessary use of fluoroquinolones, the response of "always" ranged from 35% to 47% of the time. **Conclusions:** Even though hospitals may have robust antimicrobial stewardship programs, it is important to survey frontline staff. Although all of the antimicrobial stewardship interventions, such as monitoring high-risk-CDI antibiotics, reducing high-risk CDI antibiotics, among others, are performed, there may be lack of knowledge that these initiatives are even being implemented. In this TAP against CDI, we found opportunities to share data with respondents to increase awareness of antimicrobial stewardship to further combat hospital-acquired infections.

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Bacterial Colonization of Waiting Rooms in a Newly Constructed Children's Outpatient Clinic: Construction Through 6 Months After Opening In Waiting Rooms

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Background: Healthcare-associated infections (HAIs) represent an ongoing problem for all clinics. Children's clinics have waiting rooms that include toys and activities to entertain children, possibly representing reservoirs for HAIs. This study focuses on a newly constructed children's outpatient clinic associated with a teaching hospital. We studied waiting room bacterial colonization of floors and play devices from the last phase of construction through 6 months of clinical use. **Methods:** Waiting room areas on the first 2 floors of the facility were studied due to high patient volume in those areas. In total, 16 locations were sampled: 11 on floors and 5 on play items. Using sterile double-transport swabs, all locations were sampled on 5 separate occasions over 2 months during the last phase of construction and 13 times over 6 months after the clinic was opened. After collection swabs were placed on ice, transported to a microbiology lab, and used to inoculate Hardy Diagnostics Cdiff Banana Broth (for *Clostridium difficile* - Cdiff), CHROM MRSA agar (for methicillin resistant *Staphylococcus aureus* - MRSA), *Pseudomonas* isolation agar (for *Pseudomonas* spp and *P. aeruginosa*), and tryptic soy agar to detect *Bacillus* spp. Media were incubated for 48 hours at 37°C and were scored for bacterial presence based on observation of colonies or change in the medium. **Results:** During the construction phase, waiting-room-floor bacterial colonies were dominated by *Bacillus* spp, and first-floor waiting rooms had nearly 7 times more colonies than those on the second floor ($P < .05$). A similar pattern was observed for *C. difficile* and MRSA. No *Pseudomonas* spp were observed during construction. Once patients were present, *Bacillus* spp contamination dropped for the first floor, but increased for the second floor. All other bacterial types (*C. difficile*, MRSA,

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