

excluded. Univariate logistic regression and chi-square tests were used to compare antibiotic utilization for operative factors, demographics and comorbidities.

Results. The analysis included 174,202 fusion procedures, with 51.5% of surgeries involving the cervical spine, 81.3% involving 1–2 vertebral levels, and 53.05% using an anterior approach. The median patient age was 52 years and 55.3% were female. Post-discharge prophylactic antibiotics were used in 13,611 (7.8%) of surgeries, with cephalexin (39.2%) and levofloxacin (10.5%) the most commonly prescribed. Post-discharge antibiotic use decreased significantly from 2010 to 2015 (8.3% of procedures in 2010 vs. 7.7% in 2015; $P < 0.001$; Cochran-Armitage test), was higher in rural areas (8.8% of rural vs. 7.6% of urban/suburban patients; $P < 0.001$), and differed by U.S. region (8.5% South, 8.1% West, 6.9% North Central, 6.6% Northeast; $P < 0.001$). Patients prescribed prophylactic post-discharge antibiotics had more comorbidities including obesity, diabetes, pulmonary disease, hypertension, and psychoses (all $P < 0.001$). Post-discharge antibiotic use varied by surgical approach (9.6% anterior/posterior, 9.2% posterior only, 6.8% anterior only; $P < 0.001$) and spine region (9.4% lumbar, 6.7% cervical, 6.7% multiple regions, 6.1% thoracic; $P < 0.001$), and was more common when >2 vertebral levels were involved ($P < 0.001$).

Conclusion. Post-discharge antibiotic prophylaxis following spinal fusion surgery was associated with geographic, operative and patient factors.

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2130. Impact of Sarcopenic Obesity on Surgical Site Infection After Gastric Cancer Surgery: A Retrospective Study of 1,038 Patients

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Background. Recent studies have shown that body composition is an important factor affecting surgical outcomes. In this study, we investigate the effect of sarcopenic obesity on surgical site infection (SSI) after gastric cancer surgery.

Methods. We performed a retrospective cohort study of 1,038 patients who underwent gastric cancer surgery between January 2015 and December 2015 at tertiary care hospital in Seoul, Korea. Visceral fat area (VFA) and total abdominal muscle area (TAMA) were assessed at preoperative staging computed tomography scan. Sarcopenic obesity was defined as high VFA/TAMA ratio and receiver operating characteristic (ROC) curves were used to determine the threshold of VFA/TAMA ratio to predict SSI after gastric cancer surgery. Multivariate logistic regression analysis was used to identify independent risk factors for SSI.

Results. Of the 1,038 eligible patients, 58 patients (5.6%) developed SSI. The average value of VFA/TAMA is 2.69 ± 1.43 in non-SSI group and 3.38 ± 1.34 in SSI group ($P < 0.001$). By using ROC curve, the cut-off value of VFA/TAMA to predict SSI is 3 (AUC 0.653; sensitivity 67%, specificity 61%). Multivariate analysis indicated that smoking (odds ratio (OR), 1.99; 95% confidence interval (CI), 1.1–3.62; $P = 0.024$), total gastrectomy (OR, 2.45; 95% CI, 1.36–4.42; $P = 0.003$), stage III, IV cancer (OR, 2.58; 95% CI, 1.44–4.63; $P = 0.001$) and sarcopenic obesity (OR, 2.85; 95% CI, 1.6–5.06; $P < 0.001$) were independent risk factors for SSI after gastric cancer surgery. In sarcopenic obesity patients, the incidence rate of Clavien–Dindo score IIIa or higher postoperative complication (7.1% vs. 4%; $P = 0.028$), mean days of postoperative hospital stay (8.42 ± 7.93 vs. 7.12 ± 3.54 ; $P < 0.001$), and the incidence rate of delayed complications requiring re-admission within 30 days (6.1% vs. 2.7%; $P = 0.007$) were statistically significantly higher than those of the nonsarcopenic obesity patients.

Conclusion. Sarcopenic obesity is an independent risk factor for the development of SSI after gastric cancer surgery. In addition, sarcopenic obesity is associated with high incidence of postoperative complication, prolongation of postoperative hospital stay and an increase of re-admission rate within 30 days.

Disclosures. All authors: No reported disclosures.

2131. A Pre-operative Nursing Implemented Methicillin-resistant *Staphylococcus aureus* Decolonization Protocol to Decrease Surgical Site Infections

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Background. Surgical site infections (SSIs) are the most common and expensive healthcare-acquired infection. Implementation of processes to prevent SSI can be difficult due to coordination of patients, providers, pharmacists, and nurses in ensuring all steps are completed before surgery. Thus, the objective of this nurse-driven process improvement project at a veterans affairs (VA) hospital, which averages 6,000 simple to complex surgeries per year, was to implement a cost-effective and practical decolonization protocol to decrease methicillin resistant *Staphylococcus aureus* (MRSA) SSIs across all surgical case types.

Methods. Starting May 15, 2017 a new MRSA decolonization protocol was initiated for ALL surgery cases except eye. Pre-operative clinic nurses complete MRSA nasal screening and provide detailed pre-operative showering instructions which include a focus on preventing recontamination of the skin after showers. Before surgery, nurses provide intranasal Povidone-Iodine treatment. The surgery pharmacist ensures MRSA positive patients receive pre-operative vancomycin and cefazolin if antibiotics are indicated for the surgery.

Results. For fiscal years (FY) 2012–2016 prior to protocol implementation, annual MRSA SSI rates ranged from 0.24–0.11 SSIs per 100 surgery cases; the average SSI rate for this time period 0.17. After protocol implementation there were zero MRSA SSIs in FY17 quarter 3 lowering the FY17 SSI rate to 0.09 SSIs per 100 surgery cases (see Figure 1.) Since implementation only 1 MRSA SSI has been identified making the last 4 quarter SSI rate 0.04 per 100 surgery cases (see Figure 2). This represents a 76% improvement in the 1 year MRSA SSI rate (0.04) compared with the previous 5 years MRSA SSI rate average.

Conclusion. Initial protocol results suggest that practical nursing interventions should be considered for implementation to decrease MRSA surgical site infections.

Figure 1

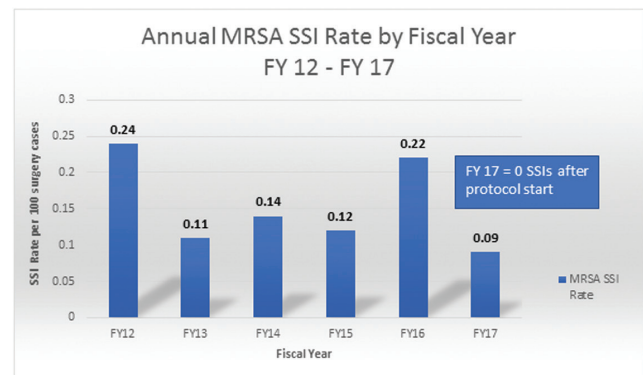
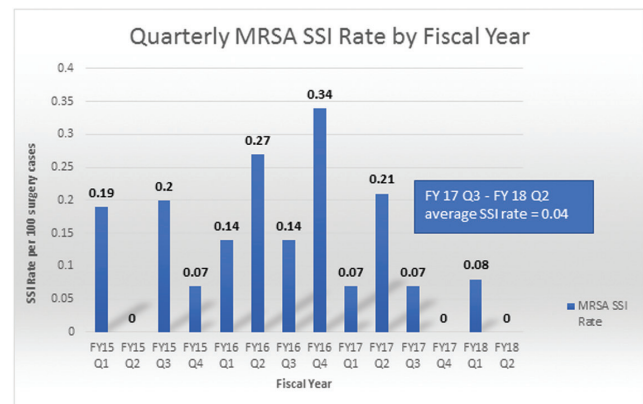


Figure 2



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2132. Infections After Pediatric Ambulatory Surgery: Incidence and Risk Factors

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Background. Approximately 3 million pediatric ambulatory surgical procedures are performed each year in the United States; however, little is known about the incidence of and risk factors for surgical site infections (SSI) after pediatric surgical procedures performed in these settings. Therefore, we aimed to describe the epidemiology of SSI in children after ambulatory surgery.

Methods. We conducted a prospective, observational study in a single health-care network with three ambulatory surgical facilities (ASF) and one hospital-based facility. We enrolled children <18 years who had an ambulatory surgical procedure between June 2012 and December 2015. Data on follow-up care were collected via a structured telephone interview (30–45 days post-surgery) and review of the electronic health record (EHR) 60 days post-surgery. We identified SSIs 30 days after surgery by applying 2010 National Healthcare Safety Network (NHSN) definitions. We also developed a broader definition of possible infectious events associated with surgery up to 60 days after surgery.

Results. We enrolled 8,502 surgical encounters; 64% occurred at the hospital-based facility. Three procedure categories (soft tissue excision, hernia, scrotal/testicular) accounted for 56% of encounters at ASFs. We identified 21 NHSN defined SSIs (2.5 SSIs per 1,000 surgical encounters). In adjusted analysis, there was no difference between hospital-based facility and ASF SSI rates (OR 0.7; 95% CI 0.2–2.3). Using the broader definition, we identified 404 surgical encounters with strong or some evidence of possible infection (48 per 1,000 surgical encounters). There was poor agreement of possible infections identified via parent interview vs. EHR. In multivariable analysis using the broader definition, older age and black race were associated with a reduced risk.

Conclusion. Using a rigorous surveillance definition, the incidence of surgical site infections was low after pediatric ambulatory surgery although our data suggest there may be additional infectious complications that are not captured by the NHSN definition. Given the annual rate of pediatric ambulatory surgery, even a low rate of infection may result in a significant medical burden.

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2133. *Cutibacterium acne* Surgical Site Infections: Case Series From a University-Affiliated Hospital Network

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Background. *Cutibacterium* (formerly *Propionibacterium*) *acne*, residing on skin, hair follicles, and sebaceous glands, can persist in the dermal layer despite standard surgical skin preparations. Traditionally considered a colonizer, it's been increasingly recognized as a cause of surgical site infections (SSI). We aimed to gain further clinical insight into *C. acne*'s role in SSI.

Methods. *Study design:* retrospective chart review. *Study Time:* January 1, 2013–December 31, 2017. *Study Setting:* three hospitals within University of Wisconsin Health network. *Case identification:* all patients with ≥1 postoperative culture positive for *C. acne*. We defined SSI by CDC criteria, and collected basic demographic and relevant clinical variables.

Results. We identified 77 patients with *C. acne* postoperative cultures: neurosurgical (61%), orthopedic (17%), cardiothoracic (9%), general surgery (8%), and other surgical departments (5%). Forty-six (60%) of the patients were male. Time from surgery to positive culture was median 24 days (range: 1–670), with > 30 days in 36% patients. Infection and colonization were present in 77 and 23% of the patients, respectively. Infected patients were more likely to have wound infection on examination (OR 5.8 [1.4–27.9, *P* = 0.004), but had no significant difference in temperature, leukocytosis, or C-reactive protein compared with colonized patients. Additional surgeries for debridement, implant revision, or device re-implantation were needed in 62% of the patients. Length of hospital stay due to SSI was prolonged by median 6 days (range 0–33). Median antibiotic duration was 2 weeks, with 25% patients receiving antibiotics for ≥6 weeks. Infection outcomes included cure (86%), chronic infection (3%), transition to hospice (3%), and recurrence (8%). All six patients with recurrences had neurosurgeries and did not receive antibiotics after the initial positive culture (infection not recognized).

Conclusion. SSI caused by *C. acne* are associated with significant morbidity, especially in patients undergoing implant-related neurosurgical or orthopedic procedures. Due to low virulence and slow-growing properties, time to infection may be prolonged, and traditional inflammatory markers may be lacking. Early recognition of infection, while challenging, is crucial to improving postoperative patient outcomes.

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2134. Risk of Surgical Site Infection Following Carpal Tunnel Release in the Operating Room vs. Clinic-Based Procedure Room Within a Veterans Affairs Medical Center

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Background. A clinic-based procedure room (PR) is a less restrictive environment compared with the traditional operating room (OR). PRs are increasingly being used for minor surgical procedures. Carpal tunnel release (CTR) is one of the most common surgical procedures in the U.S. Veteran population. It is unknown if there is a difference in the incidence of surgical site infection (SSI) among patients who undergo CTR in the PR vs. OR.

Methods. Patient records were queried using Current Procedural Terminology codes from a single Veterans Affairs Medical Center that underwent clean, elective CTR from October 2014 through April 2017 were reviewed. Demographic and clinical data were obtained through chart extraction. Multivariate logistic regression was used to assess the association between infection and patient demographic characteristics, clinical characteristics, and operating environment. The National Healthcare Safety Network definition for SSI was used.

Results. A total of 312 procedures were included in the analysis; 221 procedures in the OR and 91 in the PR. Mean age was 63 years; 88% male. Sixty-four (21%) smoked, 80 (26%) were diabetic. Mean BMI was 32.9 kg/m². The overall infection rate was 2.88%. After adjusting for covariates, procedure setting was not associated with risk of SSI (*P* = 0.53; OR = 0.43; 95% CI: 0.03–5.94). Same-wrist revision CTR was a significant predictor of SSI (*P* = 0.02; OR = 28.21; CI: 1.84–434.57). CTR performed in the OR had a similar risk for SSI compared with CTR performed in the PR. The mean total cost of CTR in the OR was \$4,254 as compared with the PR total cost of \$417.

Conclusion. The rate of SSI following primary and revision CTR in a high morbidity U.S. Veteran population was 2.88%, much higher than in nonveteran populations with lower morbidity. Other studies have found that pre-procedural optimization of modifiable risk factors such as blood glucose control, smoking status and weight is important. There was no difference in rate of SSI between the OR and PR environments. Revision CTR appears to be higher risk for SSI. A larger sample size is important to validate these findings. Minimally invasive procedures performed in a PR could lead to greater patient satisfaction, access to surgery, higher efficiency, and a 10-fold cost-savings.

Disclosures. All authors: No reported disclosures.

2135. Costs vs. Earnings in Colon Surgery and Coronary Artery Bypass Grafting Under a Prospective Payment System: Sufficient Financial Incentives to Reduce Surgical Site Infections?

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Background. Little is known about actual hospital earnings in patients with and without surgical site infections (SSI) under a prospective payment system. To exemplify respective financial incentives for hospitals to prevent SSI, we aimed to compare hospital costs and earnings in colon surgery and coronary artery bypass grafting (CABG) patients, with and without SSI.

Methods. Based on a national and validated SSI surveillance cohort, we performed a nested financial analysis at a participating tertiary care center in Switzerland. Consecutive patients with colon operations and CABGs from January 2015 through December 2016; and from January 2015 through October 2016, respectively, were included. Co-primary outcome measures were actual hospital costs and earnings under a prospective payment system (SwissDRG), stratified by SSI status. Ascertainment of SSI status was performed as part of a standardized follow-up protocol at 1 month and one year after surgery.

Results. In colon surgery (*n* = 229), the median costs were \$68,796 (interquartile range [IQR], \$39,600–\$95,217) with SSI and \$26,556 (IQR, \$18,282–\$54,230) without SSI (unadjusted *P* < 0.001; adjusted *P* = 0.001). In CABGs (*n* = 433), the median costs were \$117,170 (IQR, \$57,329–\$201,953) with SSI and \$48,855 (IQR, \$40,053–\$67,860) without SSI (unadjusted *P* < 0.001; adjusted *P* < 0.001). In colon surgery, the median earnings were –\$10,738 (IQR, –\$33,275 to –\$3,492) with SSI and –\$2,223 (IQR, –\$13,009 to \$4,917) without SSI (unadjusted *P* = 0.001; adjusted *P* = 0.038). In CABG, the median earnings were –\$25,050 (IQR, –\$54,060 to –\$10,882) with SSI and –\$2,485 (IQR, –\$11,597 to \$3,375) without SSI (unadjusted *P* < 0.001; adjusted *P* < 0.001).