Results. One hundred forty-one complex SA SSIs occurred after 23,920 operations during the pre-intervention period (July 2004 to June 2012) and 28 occurred after 11,588 operations during intervention period (July 2012 to September 2015) (rate ratio [RR] 0.41; 95% confidence interval [CI] 0.27–0.61; Figure 1). During the same period, the complex SA SSI rate after breast operations did not decrease (RR 1.96; 0.82–4.65). Neurosurgeons implemented other interventions before implementing the full bundle in period 4 (Figure 2). The rate of complex SA SSIs after NSG operations decreased significantly only after the bundle was implemented (period 1 vs. 4, RR 0.22; 0.11–0.46). During the intervention period, 53% of patients received all bundle elements appropriate for their carriage status and 39% received some bundle elements. The complex SA SSI rate decreased significantly among patients who fully adhered (RR 0.23; 0.09–0.57) and among patients who partially adhered or not adhered (RR 0.56; 0.39–0.81).

Conclusion. Despite suboptimal adherence, the complex SA SSI rate decreased after implementing the evidence-based bundle but did not decrease in the non-equivalent control. Implementation science could help improve bundle adherence.

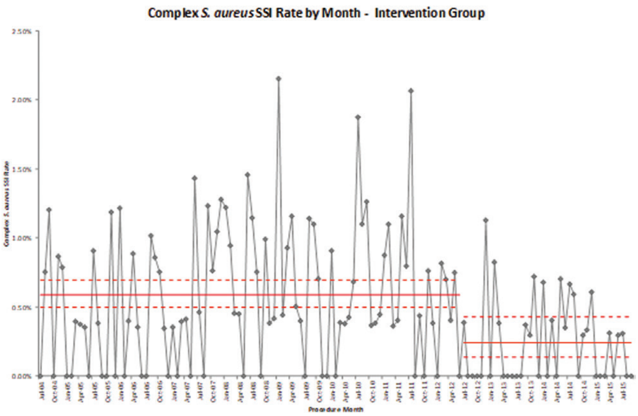

Figure 1.

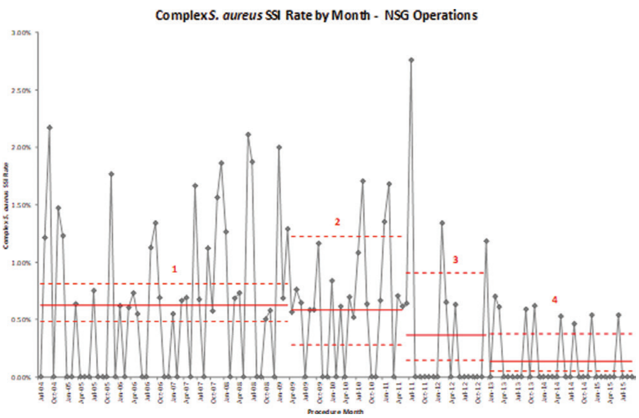

Figure 2.

Disclosures. **All authors:** No reported disclosures.

2125. Cardiovascular Daytime Varying Effect on Surgical Site Infections and 1-Year Mortality in Cardiac Surgery

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Background. Certain cardiovascular diseases show diurnal variation, with a higher incidence of myocardial infarction in the morning. Conversely, aortic valve replacement surgery performed in the afternoon provided less myocardial injury and improved patient outcomes. We therefore examined a potential daytime varying effect on surgical site infection (SSI) and 1-year mortality in cardiac surgery.

Methods. Data from the prospective, validated Swiss national SSI surveillance system with a post-discharge follow-up rate >90% from adult patients undergoing cardiac surgery in 16 hospitals were analyzed from 2009 to 2014. Patients operated during nighttime and/or as emergency were excluded. The main exposure was time (morning/afternoon) of surgery. The primary outcome was SSI incidence, defined according to CDC criteria; a secondary outcome was 1-year mortality. We fitted generalized linear and additive models (GAM) to describe daytime varying effects predicting the outcome parameters and adjust for confounding variables.

Results. Of the 16,841 surgeries included, 11,850 (70%) started between 7 a.m. and 12 a.m. while the remaining 4,991 (30%) started between 12 a.m. and 4 p.m. Baseline characteristics of morning vs. afternoon surgeries are shown in Figure 1. The overall SSI (including graft excision sites) and 1-year mortality rates were 5.9 and 4.7%, respectively. After adjustment for confounders, afternoon surgery was not associated with lower SSI (OR 1.0, 95% CI 0.99–1.0, $P = 0.42$), or 1-year mortality rate (OR 1.0, 95% CI 1.0–1.01, $P = 0.24$) than morning surgery. A GAM did not detect a relevant daytime-varying effect on SSI ($P = 0.36$, Figure 2), but an increase in 1-year mortality in function of daytime ($P = 0.02$, Figure 3). An adjusted subgroup analysis confirmed increased mortality for incision between 9 a.m. and 4 p.m. compared with 7–9 a.m. (OR 1.01, 95% CI 1–1.02, $P = 0.003$).

Conclusion. This large study did not find a decreased SSI and/or mortality rate for afternoon surgeries. Therefore, the previous findings of reduced myocardial injury due to afternoon surgery cannot be generalized to these important clinical outcome parameters.

Figure 1

	Morning (7-12 am)	Afternoon (12am-4pm)	p
n	11850	4991	
Wound Contamination (%)			0.252
Clean	11591 (97.8)	4886 (97.9)	
Clean-contaminated	33 (0.3)	20 (0.4)	
Contaminated	101 (0.9)	31 (0.6)	
Infected	125 (1.1)	54 (1.1)	
ASA score (%)			0.177
0-2	640 (5.4)	237 (4.7)	
3-5	11154 (94.1)	4734 (94.9)	
Age (med. year [IQR])	68.50 [59.90, 75.40]	68.20 [60.00, 75.20]	0.794
BMI (med. kg/m2, [IQR])	26.70 [24.10, 29.70]	26.90 [24.20, 30.10]	0.004
Duration exceeding T-Score (%)	1860 (15.7)	712 (14.3)	0.02
Sex (%)			0.447
m	8672 (73.2)	3612 (72.4)	
f	3177 (26.8)	1379 (27.6)	
OP duration (med. min. [IQR])	215.00 [175.00,265.00]	215.00 [179.00,260.00]	0.224
SAP application (med. min. [IQR])	-45.00 [-60.00,-35.00]	-50.00 [-67.00,-36.00]	<0.001
Procedure (%)			<0.001
Heart surgery (without bypass surgery, transplantation, pace-maker implantations)	5978 (50.4)	2167 (43.4)	
CABG with A. mammaria interna or A. thoracica	1065 (9.0)	482 (9.7)	
CABG with vein graft or A. radialis	4807 (40.6)	2342 (46.9)	

Figure 2

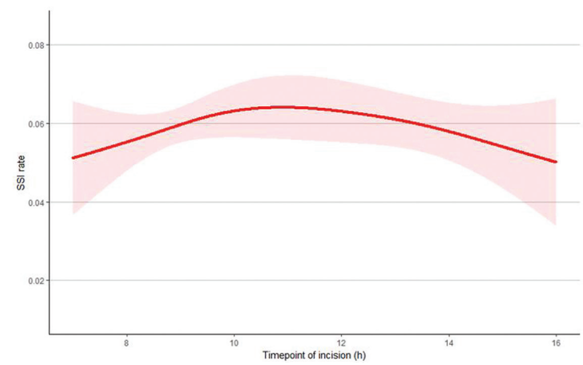
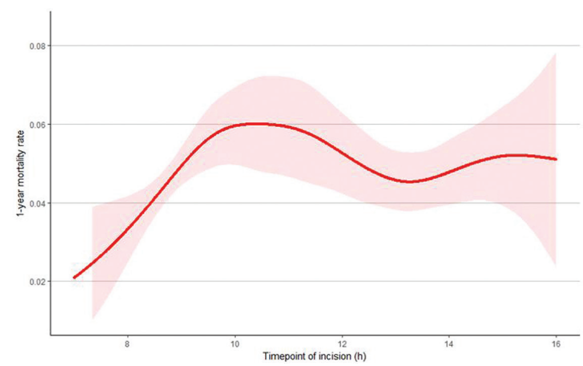


Figure 3



Disclosures. **All authors:** No reported disclosures.

2126. Comparative Effectiveness of Infection Prevention Interventions for Reducing Procedure-Related Cardiac Device Infections: Insights from the VA CART Program

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Background. Cardiovascular implantable electronic device (CIED) infections are highly morbid, thus peri-procedural prevention interventions are employed to reduce them. However, little data exists evaluating the comparative effectiveness of these prevention interventions. Thus, the objective of this study was to measure the association between infection prevention and antimicrobial prophylaxis strategies and procedure-related CIED infections among a national, multi-center cohort using a nested case–control design.

Methods. A selection of procedures entered into the VA Clinical Assessment Reporting and Tracking-Electrophysiology cohort from FY 2008–2016 underwent manual review for presence of infection and for type of prevention strategy used. The primary outcome was 6-month incidence of CIED infection. Measures of association were calculated using multivariable logistic regression.

Results. One hundred and fourteen CIED infections among 2,131 procedures were identified; 18 were superficial and 98 were deep. In a multivariable analysis, procedural factors associated with increased odds of procedure-related CIED infections included procedure complications (e.g., hematoma) and revisions (Table 1). Prevention factors associated with reduced risk included chlorhexidine (CHG) skin cleaning, pre-procedure prophylaxis with a β-lactam, and intra-procedure antibiotic washes. Infection prevention strategies that were not associated with risk reduction included: antibiotic mesh pockets, combination prophylaxis regimens (e.g., β-lactam plus vancomycin), and prolonged antimicrobial prophylaxis lasting >24 hours post-procedure.

Conclusion. Although the major driver of procedure-related CIED infections are procedural factors and complications, some infection prevention strategies are beneficial. These results should be used to inform infection prevention and antimicrobial stewardship practices in the electrophysiology laboratory.

Table 1: Factors Associated with Risk of CIED Infection

Intervention	Odds Ratio (95% CI)	*P*-Value
Procedure complication	4.3 (2.6–7.2)	<0.001
Revision	2.0 (1.3–3.1)	0.002
Pre-procedure CHG	0.40 (1.3–3.1)	0.002
Pre-procedure β-lactam	0.59 (0.38–0.72)	0.024
Antibiotic washes	0.51 (0.27–0.99)	0.045

Disclosures. **W. Branch-Elliman**, Veterans' Integrated Service Network Career Development Award: Investigator, Research grant. American Heart Association: Investigator, Research grant.

2127. The Role of Prophylactic Antibiotics for Reducing Infections Following Knee Arthroscopy

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Background. Surgical site infections (SSI) following arthroscopy are associated with considerable morbidity. Whether antibiotic prophylaxis can reduce the risk of SSI following knee arthroscopy is unclear.

Methods. We undertook a meta-analysis of studies comparing incidence of SSI in patients receiving antibiotic prophylaxis vs. no antibiotics before undergoing knee arthroscopy. We searched multiple computerized databases; data were pooled using a random effects model. We excluded knee arthroscopy studies for which the distribution of patients receiving antibiotics vs. no antibiotics was unavailable. CDC definitions for SSI were used to determine incidence of infection.

Results. Five retrospective studies including 47,548 patients met inclusion criteria; none were randomized trials. The risk of SSI in the prophylactic antibiotic group was 0.38% and in the no antibiotic group was 0.37% (pooled OR 0.99, 95% CI 0.69–1.42). There was no statistical heterogeneity.

Conclusion. The evidence to date, which is limited to retrospective studies, suggests no difference in SSI incidence with and without antibiotic prophylaxis for knee arthroscopies. Prospective studies are required to further evaluate this finding. Future research should evaluate whether antibiotic prophylaxis prevents SSI in other joint arthroscopy procedures, such as shoulder arthroscopy.

Disclosures. **All authors:** No reported disclosures.

2128. Predictors of Post-Discharge Prophylactic Antibiotics Following Spinal Fusion

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Background. Discontinuation of prophylactic antibiotics <24 hours after surgery is recommended in multiple guidelines, but prophylactic antibiotics are still prescribed at discharge for some procedures. The objective of this study was to determine the prevalence and predictors of post-discharge prophylactic antibiotic use after spinal fusion.

Methods. We established a retrospective cohort of patients aged ≥18 years undergoing spinal fusion between July 2010 and June 2015 at three teaching hospitals. We excluded patients with infections during the spinal fusion admission. Prophylactic antibiotics were identified at discharge.

Results. A total of 9,690 spinal fusion admissions were identified. The median age of patients was 57 years; 4,425 (45.7%) were male; 1,070 (11.0%) were trauma patients; and 352 (3.6%) had underlying malignancy. Antibiotic(s) were prescribed at discharge in 381 (3.9%) admissions. The most commonly prescribed antibiotics were trimethoprim/sulfamethoxazole (23.4%), ciprofloxacin (16.4%) and cephalexin (16.1%). Independent predictors of prophylactic discharge antibiotics are shown in the table.

Conclusion. Post-discharge prophylactic antibiotics were uncommon after spinal fusion. Factors associated with use included hospital, trauma, prolonged surgery time, intra-operative antibiotics, plus patient factors, including obesity, malignancy, fluid and electrolyte disorders, valvular heart disease and high American Society of Anesthesiologists (ASA) score.

Risk Factor	Odds Ratio (95% Confidence Interval)
Hospital	
1	Referent
2	2.49 (1.83, 3.41)
3	1.79 (1.36, 2.35)
Morbid obesity	1.64 (1.15, 2.36)
Hypothyroidism	1.34 (0.96, 1.87)
Fluid and electrolyte disorders	1.53 (1.13, 2.07)
Paralysis	1.71 (0.97, 2.98)
Valvular heart disease	1.83 (1.14, 2.95)
Malignancy	2.03 (1.37, 3.01)
ASA score ≥ 3	1.42 (1.13, 1.78)
Hematoma/seroma	2.40 (0.99, 5.83)
Trauma patient	1.76 (1.33, 2.33)
Cervical spinal fusion	0.78 (0.62, 1.00)
Thoracic spinal fusion	1.29 (0.97, 1.70)
Intraoperative IV antibiotics	
Cefazolin or clindamycin	Referent
Vancomycin	1.52 (1.02, 2.28)
Other IV antibiotic or >1 IV antibiotic	1.55 (1.18, 2.02)
None	3.11 (1.85, 5.25)
Surgery time ≥90 minutes	1.81 (1.10, 2.97)

Disclosures. **All authors:** No reported disclosures.

2129. Utilization of Post-Discharge Antibiotics in Spinal Fusion in a Nationwide Cohort of Commercially Insured Individuals

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Background. Discontinuation of prophylactic antibiotics within 24 hours after surgery is recommended in multiple guidelines. The objective of this study was to determine the prevalence and patterns of prophylactic post-discharge antibiotic use after spinal fusion in a geographically representative, privately insured population.

Methods. We established a cohort of patients aged 10–64 years undergoing inpatient or ambulatory surgery spinal fusion between January 1, 2010–June 30, 2015 using the Truven Health MarketScan Database. Antibiotics were identified from outpatient drug claims ≤5 days post-discharge; comorbidities were assessed ≤1 year before surgery. Patients with infection during the surgical admission or ≤30 days prior were