Background. Breast surgery is considered a clean surgery; however, surgical site infection (SSI) rates are higher than predicted. Postoperative drains remain *in situ* for several days with an inevitable bacterial colonization and increased risk of SSI.

Methods. We conducted a randomized controlled trial from October 2016 to January 2018 in a Mexican cancer center with high SSI prevalence. We included women with elective breast cancer surgery. Patients were randomized to control (standard drain care) or intervention (occlusive dressing with chlorhexidine 2% at the drain exit site). Perioperative management was standardized for both groups. Patient follow-ups were performed on a weekly basis for at least 30 days. Fluid cultures were performed at the first and second week as standardized in the laboratory. At the time of drain removal, the inner portion was sectioned and cultured by Maki's semi-quantitative technique. Bacterial quantification was performed using 16 s rRNA-qPCR assay. Culture results of drain fluid and tubing were compared between groups.

Results. We included 104 patients with 167 surgical drains. Patients' clinical characteristics (i.e., age, body mass index, comorbidities, clinical stage, preoperative risk, neoadjuvant therapy) were similar in both groups, with no statistical differences. Bulb fluid cultures at the first postoperative week were positive in 42.9% of the control group compared with 27.6% of the antiseptic group ($P = 0.04$). Cultures from the second week assessment were positive in 79.4% of the control group vs. 53.5% of the antiseptic arm ($P = 0.001$). Cultures from drain-tubes were positive in 70.2 and 43.8% ($P = 0.001$) of the control and antiseptic group, respectively (Figure 1). Eleven patients developed an SSI, three (15.4%) from the intervention group, and eight (15.8%) from the control group ($P = 0.11$). Eighty-four pathogens were isolated from the control group samples at week 1 vs. 52 from the intervention group. *Staphylococci* spp. were the most common microorganisms in Week 1, 61.9% control and 35% intervention group.

Conclusion. Local antiseptics provide an opportunity to test simple, safe, and low-cost interventions that may reduce drain bacterial colonization after breast surgery and potentially decrease infectious complications. Our microbiology findings question breast tissue sterility.

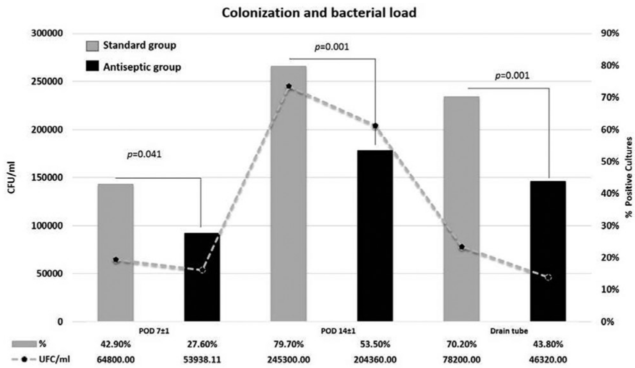

Figure 1. Colonization rates (%) and bacterial load (CFU/ml) in the bulb fluid at the 7th and 14th postoperative day (POD); and in the drain tube at removal.

Disclosures. **F. Rivera-Buendía**, 3M: Donated the dressings used, Research support. **D. Vilar-Compte**, 3M: Donated the dressings used, Research support.

2123. High Utilization of Post-Discharge Antibiotics After Mastectomy in a Nationwide Cohort of Commercially Insured Women

Margaret A. Olsen, PhD, MPH[1]; Kate Peacock, MPH[1]; Katelin B. Nickel, MPH[1]; Victoria Fraser, MD, FIDSA, FSHEA[2]; David K. Warren, MD, MPH, FIDSA, FSHEA[1] and the CDC Prevention Epicenter Program; [1]Division of Infectious Diseases, Washington University School of Medicine, St. Louis, Missouri, [2]Department of Medicine, Washington University School of Medicine, Saint Louis, Missouri

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Background. Prophylactic antibiotics are commonly prescribed at discharge for mastectomy, despite many guidelines recommending discontinuation 24 hours after surgery. The objective of this study was to determine the prevalence and patterns of post-discharge prophylactic antibiotic use after mastectomy in a geographically representative, commercially insured population.

Methods. We identified a cohort of women aged 18–64 years undergoing mastectomy between January 2010 and June 2015 using the Truven Health MarketScan Databases. Patients with evidence of an infection during the surgical admission or 30 days prior were excluded. Post-discharge antibiotic use was identified from outpatient drug claims within 5 days post-discharge. Univariate logistic regression was used to compare antibiotic use by reconstruction type and geographic factors.

Results. The analysis included 43,391 mastectomy procedures. The median age was 52 years; 37,687 (86.8%) patients resided in an urban/suburban area; 27,264 (62.8%) of mastectomy procedures involved immediate reconstruction (IR) and 39,825 (91.8%) patients had a diagnosis of breast cancer or carcinoma *in situ*. Post-discharge prophylactic antibiotics were used in 16,493 (38.0%) surgeries. The most commonly prescribed antibiotics were cephalexin (59.0%), cefadroxil (9.6%), clindamycin (8.3%), and trimethoprim/sulfamethoxazole (TMP/SMX) (7.5%). Antibiotic use did not change significantly from 2010 to 2015 for mastectomy only ($P = 0.064$) or mastectomy + IR ($P = 0.1912$; Cochran–Armitage test). Mastectomy patients with IR were more likely to be prescribed antibiotics (50.7% of IR vs. 19.8% of mastectomy only; $P < 0.001$). In mastectomy only and mastectomy + IR, antibiotic use varied by U.S. region (Figure 1). Among mastectomy + IR, the type of post-discharge antibiotic prescribed differed by U.S. region (Figure 2). In mastectomy + IR, TMP/SMX use increased from 2010 to 2015 (3.3% of procedures in 2010 vs. 5.7% in 2015; $P < 0.001$; Cochran–Armitage test).

Conclusion. Post-discharge prophylactic antibiotic use is common after mastectomy and varies by reconstruction status and U.S. region. Regional variation in prescribing practices is potential targets for antimicrobial stewardship interventions.

Figure 1.

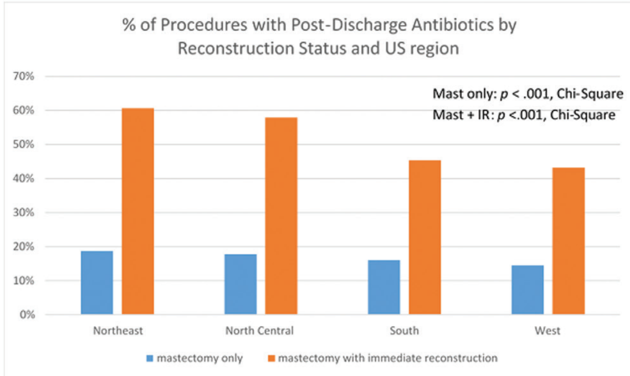
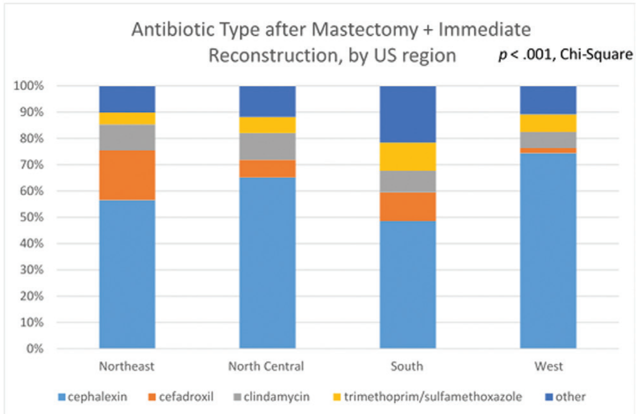


Figure 2.



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

2124. A Bundled Intervention Was Associated with Decreased Risk of Complex *Staphylococcus aureus* Surgical Site Infections among Patients Undergoing Clean Operative Procedures

Hsiu-Yin Chiang, PhD[1,2]; Marin Schweizer, PhD[2,3,4]; Melissa Ward, MS[5]; Nicolas Noiseux, MD[6]; Jeremy Greenlee, MD[7]; Mohammad Bashir, MBBS[8]; Daniel Diekema, MD, FIDSA, FSHEA[2]; Ambar Haleem, MD[2]; Rajeshwari Nair, PhD, MBBS, MPH[2] and Loreen Herwaldt, MD, FIDSA, FSHEA[2,4]; [1]Big Data Center, China Medical University Hospital, Taichung City, Taiwan, [2]Department of Internal Medicine, University of Iowa Carver College of Medicine, Iowa City, Iowa, [3]Iowa City VA Healthcare System, Iowa City, Iowa, [4]Department of Epidemiology, University of Iowa College of Public Health, Iowa City, Iowa, [5]University of Iowa Carver College of Medicine, Iowa City, Iowa, [6]Department of Orthopedics, University of Iowa Carver College of Medicine, Iowa City, Iowa, [7]Department of Neurosurgery, University of Iowa Carver College of Medicine, Iowa City, Iowa, [8]Department of Cardiothoracic Surgery, University of Iowa Carver College of Medicine, Iowa City, Iowa

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Background. Our previous multicenter study suggested that a bundled intervention was associated with lower rates of complex *S. aureus* surgical site infections (SA SSIs) among patients undergoing cardiac or orthopedic operations in community hospitals. We aimed to evaluate the effect of this bundle in patients undergoing neurosurgical (NSG) operation, cardiac operation, or hip/knee arthroplasty at an academic health center.

Methods. This pragmatic quasi-experimental study included adult patients who underwent one of the procedures between June 1, 2012 and September 30, 2015 except those whose operations were done to treat infection. The bundle involved screening patients for SA nasal carriage, decolonizing carriers with intranasal mupirocin and chlorhexidine-gluconate bathing, and perioperative prophylaxis with vancomycin and cefazolin for patients who carried MRSA. The primary outcome was complex SA SSIs. To analyze changes in SSI rates, we used Poisson regression in time-series analysis. We used breast operations as a non-equivalent control group.

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.

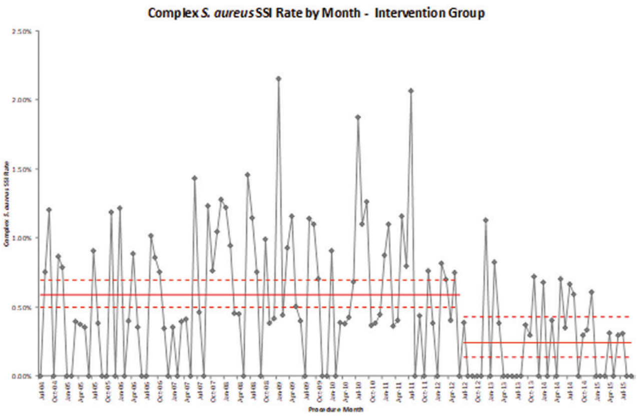

Figure 1.

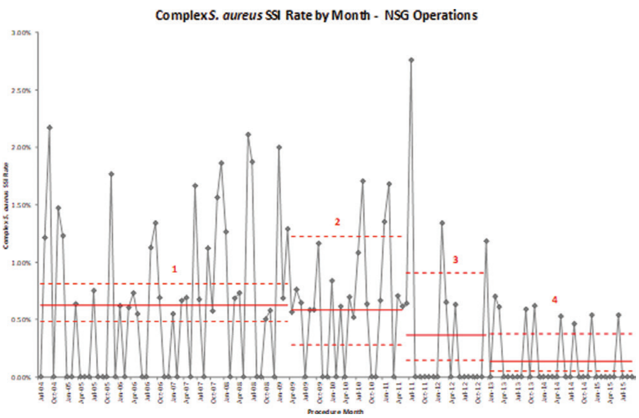

Figure 2.

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

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

Rami Sommerstein, MD[1]; Jonas Marschall, MD[2]; Stefan P Kuster, MD MSc[3]; Nicolas Troillet, MD, MSc[4]; Thierry Carrel, MD[5]; Friedrich Eckstein, MD[6], Andreas F. Widmer, MD, MS[7] and Swissnoso; [1]Department of Infectious Diseases, Bern University Hospital, University of Bern, Bern, Switzerland, [2]Infectious Diseases and Hospital Epidemiology, University Hospital Bern, Bern, Switzerland, [3]Infectious Diseases and Hospital Epidemiology, University Hospital Zurich, Zurich, Switzerland, [4]Infectious Disease Hospital Epidemiology, Valais hospital, Sion, Switzerland, [5]Cardiovascular Surgery, Bern University Hospital, Bern, Switzerland, [6]Department of Cardiac Surgery, University Hospital Basel, Basel, Switzerland, [7]Infectious Diseases, University of Basel Hospitals and Clinics, Basel, Switzerland

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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, pacemaker 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

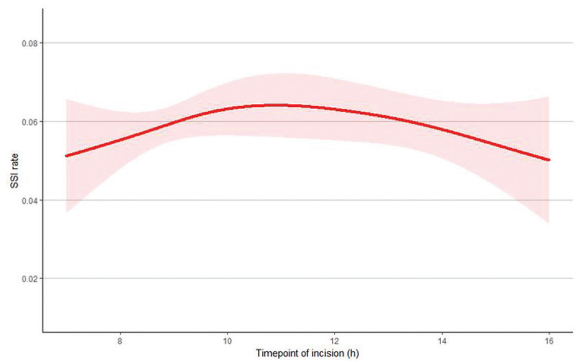
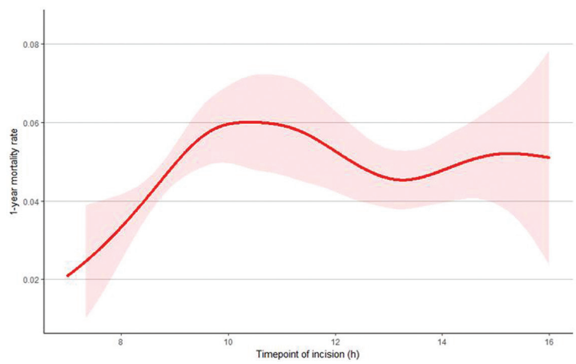


Figure 3



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