

# UC Irvine

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### Title

1241. Marked Improvement in Post-Operative Craniotomy Wound Care Using 2% Chlorhexidine (CHG) Cloths for Blood Clots Removal and Hair Cleaning in a Photo-Documentation Survey

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area. Postoperatively any patient found to have (methicillin-resistant *S. aureus*) MRSA from preoperative screen or who had a history of MRSA in the past year were automatically decolonized with 5 days of intranasal mupirocin and CHG baths in addition. Compliance with *S. aureus* screening in preoperative area, results of screens and rates of THR, TKR and fusion SSI per National Health Safety Network (NHSN) definitions were monitored throughout the study period. SSI standardized infection ratios (SIR) during the study were compared with data 1 year prior to intervention date.

**Results.** Between August 2018 and January 2019, 694 THR, TKR and fusion surgeries were performed. Preoperative nursing compliance with completing the SA screen was 79.2% and percent compliance with administering/documenting nasal iodine was 77.8%. Of those screened 21.7% (126/578) were found to have SA. Only 15% ( $n = 19$ ) of SA positive PCRs were positive for MRSA. SSIs decreased in intervention period compared with preintervention (August 2017–July 2018) as shown in Table 1.

**Conclusion.** Preoperative nasal iodine has been effective and helped reduce our infection SIR to below 1. These results could be confounded by the presence of other initiatives but looks promising and large-scale studies would be helpful to make these results generalizable.

Table 1- Rates of hips/knees and fusion infection pre and post intervention

	TKR		THR		Fusion		Total	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
SSI Rate per 100 surgeries (# infections/surgeries performed)	1.36 (11/807)	0.82 (3/365)	1.53 (5/327)	1.17 (2/171)	1.61 (5/311)	0 (0/158)	1.45 (21/1445)	0.72 (5/694)
Standardized Infection Ratio	1.68	1.40	1.50	1.24	1.56	0	1.60	0.95
SSI Risk Ratio comparing post to pre (95% CI, p value)	0.60 (0.17-2.15, p=0.44)		0.76 (0.15-3.90, p=0.75)		0.18 (0.01-3.21, p=0.24)		0.50 (0.19-1.31, p=0.16)	

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

#### 1241. Marked Improvement in Post-Operative Craniotomy Wound Care Using 2% Chlorhexidine (CHG) Cloths for Blood Clots Removal and Hair Cleaning in a Photo-Documentation Survey

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**Session:** 147. HAI: Surgical Site Infections

**Friday, October 4, 2019: 12:15 PM**

**Background.** Post-operative wound care can be an important strategy to prevent surgical site infection (SSI) following craniotomy. Insufficient wound care, blood clots, and oily hair near the incision can increase SSI risk.

**Methods.** We conducted a pre-post prospective cohort evaluation of a quality improvement intervention to address inpatient post-operative craniotomy wounds at an academic hospital. A post-op wound care protocol was jointly developed by neurosurgical wound care nurses, clinicians, and infection preventionists. The protocol began on postoperative day 1, and included use of soft ties to keep adjacent hair away from the incision, use of 2% CHG cloths to clean skin and hair within 2 inches of the incision as well as the proximal 6 inches of any surgical drain, and use of 2% CHG cloths to remove blood clots. Selection of 2% CHG cloths for blood clot removal was made following comparison to several concentrations of peroxide. A twice-weekly photo-survey of all inpatients undergoing craniotomy was undertaken during the baseline period (October–December 2018) and intervention period (March–April 2019), with feedback to wound care nurses occurring during the intervention period only. The proportion of redness, extensive blood clots (>50% incision), and oily hair near the incision were compared between the baseline period and the intervention period using Fisher's exact tests.

**Results.** A total of 156 photo assessments were performed in 71 patients (101 assessments in 45 patients in the baseline period, and 55 photo assessments in 26 patients in the intervention period). Demographics, body mass index, emergent status, and prior craniotomy were similar across the baseline and intervention periods. The intervention was associated with significant reductions in redness (27.7% vs. 11%,  $P = 0.015$ ), blood clots (33.7% vs. 10.9%,  $P = 0.002$ ), and oily hair near the incision (76.7% vs. 28.6%,  $P < 0.001$ ) (Figure 1).

**Conclusion.** The care of post-operative craniotomy wounds and adjacent hair was significantly improved through a standardized protocol to remove blood clots and ensure clean skin and hair adjacent to the incision during the post-operative inpatient stay. Photo documentation and feedback to wound care nurses helped ensure protocol adherence.

## Baseline

## Intervention



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

#### 1242. Evaluation of Risk Factors for Development of Total Hip Arthroplasty (THA) Surgical Site Infections (SSI)

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**Session:** 147. HAI: Surgical Site Infections

**Friday, October 4, 2019: 12:15 PM**

**Background.** THA is one of the most commonly performed surgeries for pathologic diseases of the hip. Multiple risk factors have been identified for SSI including: female gender, previous joint surgery, hematoma, joint dislocation, intraarticular glucocorticoid injection, rheumatoid arthritis, uncontrolled diabetes, anemia, malnutrition, and an immunosuppressed state. The objective of our study is to evaluate obesity (body mass index (BMI) >30) as an independent risk factor for THA SSI and identify other risk factors for SSI

**Methods.** A retrospective case-control (1:3) matched observation study was conducted from January 1, 2014–June 30, 2016. Patients with a THA SSI were identified using NHSN definitions and 3 controls were matched for sex and month of surgery for each SSI case. Patient information was extracted through chart review including BMI, revision surgery, chronic kidney disease (CKD), diabetes mellitus (DM), anemia, malnutrition, smoking, surgery duration, steroid use, pre-operative chlorhexidine (CHG) bathing and nasal povidone-iodine (PI) compliance. Multivariate analysis using a conditional logistic regression model was performed.

**Results.** Among 906 THA, 29 patients developed an SSI with 87 matched patients over the 2.5 years. The mean age in the SSI group was 61.0 years, and 37.9% were male. Mean age in the control group was 63.1, and 40.1% were male. In both groups, the most common indications for surgery were osteoarthritis followed by osteonecrosis and malignancy. Results of multivariate analysis identified five independent risk factors for SSI (see Table 1).

**Conclusion.** Obesity (BMI >30) was identified as an independent risk factor for THA SSI as well as CKD, steroid use and revision arthroplasty. While these risk factors are not easily modifiable, noncompliance with pre-operative CHG bathing and PI administration were also identified as significant SSI risk factor. These findings emphasize the importance of evaluating patients for SSI risk factors including obesity and improving compliance with all pre-operative SSI reduction measures.

Table 1

	Odds Ratio	Confidence Interval	p-value
BMI	1.10	1.00 - 1.21	0.04
CKD	14.3	2.02 - 101.2	0.008
Steroid use	19.8	2.32 - 168.7	0.006
No CHG or PI	0.22	0.07 - 0.72	0.01
Revision	8.75	1.00 - 76.8	0.05

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

#### 1243. Continuous vs. Intermittent Intraoperative Infusion of Cefazolin on Surgical Site Infections (SSIs) and Acute Kidney Injury in Patients Undergoing Cardiac Procedures

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