



Implementation of Evidence-Based Guidelines to Reduce Colorectal Surgical Site Infections

Gina Stevenson, MSN, RN, CIC, Leah Oppy, MPH, CIC, LaShawn Scott, DNP, RN, CCRN, CIC, Travs Davis, BSN, BA, RN, Regina Doan BSN, RN, CCRN, TCRN, CPHQ, HACP-CMS, Quiara Nance MPH, Mary Radford BSN, RN, CIC, Michael Egger, MD MPH

Background

Surgical site infections (SSI) can lead to complications including prolonged length of stay, increased hospital costs, additional procedures, readmissions, and even death. Patients are placed at an increased risk of infection in acute care settings when undergoing elective and traumatic colorectal surgeries. The Centers for Disease Control and Prevention (CDC) has published evidence-based guidelines to prevent infections related to colorectal surgeries.

Method

The aim of this project was to implement strategies to reduce the colorectal surgery SIR at a Level I trauma academic medical center to <1. In January 2021, a multi-disciplinary team was created to perform a GAP analysis and develop interventions to decrease the SIR. Evaluation of current practices revealed a lack of physician communication, inconsistent documentation, and the need to standardize care and education. Interventions began by improving physician engagement, communication, and documentation. This led to a better understanding of workflow, barriers within the perioperative phase, and opportunities for improvement. Further interventions standardized the processes for distinguishing high-risk surgeries, antibiotic availability, and pre-operative infection prevention strategies. A control phase was implemented in November 2021 to maintain results by monitoring the SIR and reviewing and submitting all colon SSIs to a Surgical QualityTeam, allowing for obstacles to be addressed and follow-up to occur as needed.

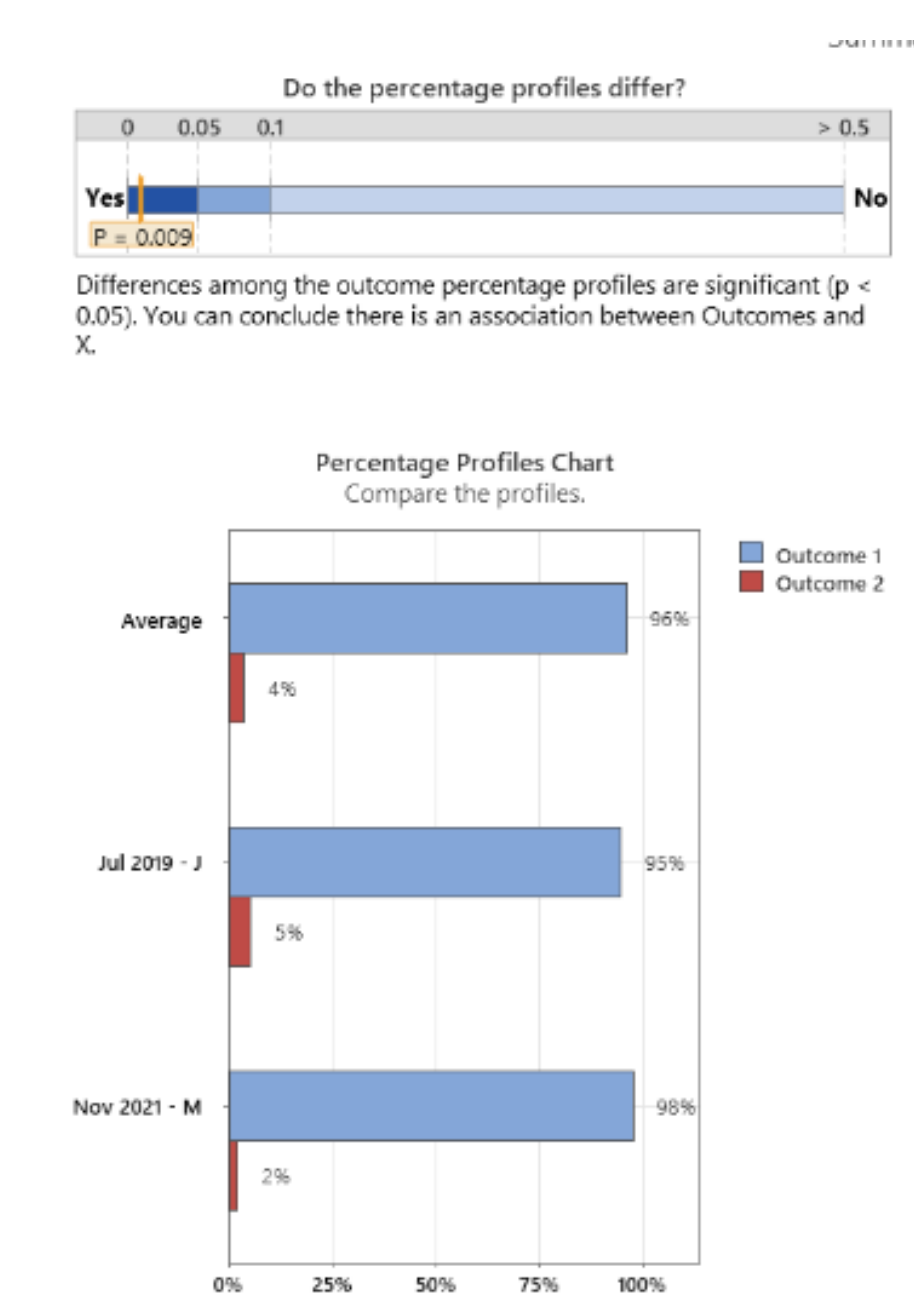
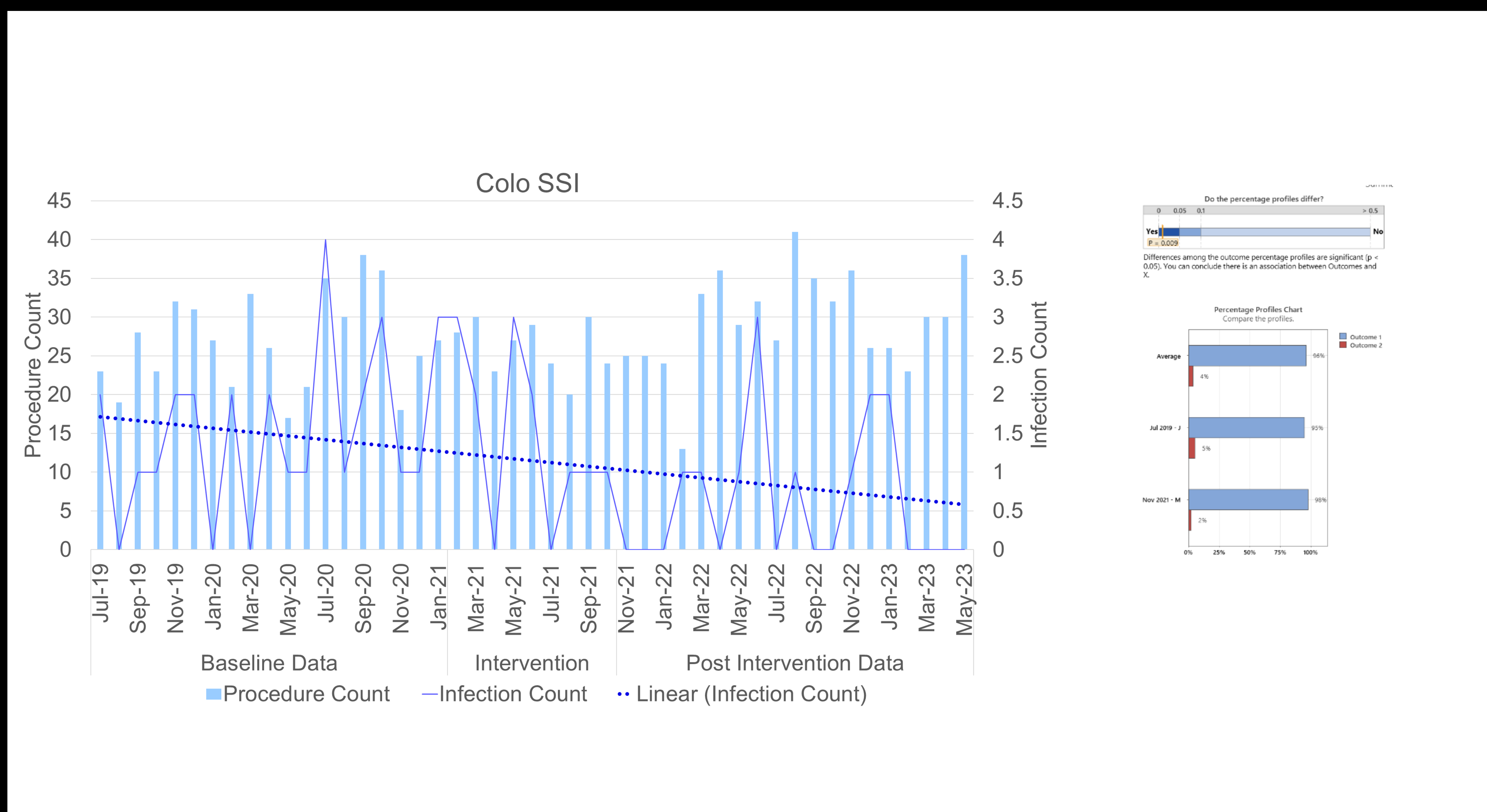
Findings

The baseline data is from July 2019-Jan 2021. There were 510 procedures, 29 infections, and the SIR was 1.717. Post intervention data is from November 2021-May 2023. There were 511 procedures, 12 infections, and the SIR was 0.751. The decrease in surgical site infections was proven to be clinically significant by performing a Chi-Square test (p=.009).

Purpose

The Standard infection Ratio (SIR) for colorectal surgery site infections for a Level 1 trauma academic medical center was 1.7 from July 2019-January 2021. This was higher than the expected number of infections and above the SIR goal of <1. A multidisciplinary team formed with the goal of decreasing the SIR to <1.

Findings



Findings

Chi-Square Test for Association: Outcomes by X Diagnostic Report

	Jul 2019 - J		Nov 2021 - M	
	Obs	Exp	Obs	Exp
Outcome 1	510	518	511	503
Outcome 2	29	21	12	20
Total	539		523	

Expected counts should be at least 2 to ensure the validity of the p-value for the test.

Literature Review

Adherence to standardized infection reduction bundle decreases colorectal ssi (Guerro, Anderson, Riall 2021). Prophylactic Antibiotics, administered intraoperatively, have been shown to reduce SSI (Min, 2022).

Conclusions

Implementation of the colorectal SSI guidelines, focusing on physician engagement and standardization of practices resulted in a reduction of surgical site infections.

Research focused on physician engagement with Infection Prevention principles is needed to continue reducing hospital acquired infections.