

Reduction of Colon Surgical Site Infections Using a Bundled Approach in Non-Elective Colon Cases



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Description

A community hospital convened a multidisciplinary team to assess the contributing factors behind a recent increase in colon surgical site infections and to develop a targeted, evidence-based improvement plan aimed at reducing these infections in the upcoming fiscal year.



Goal

The objective of this project was to evaluate whether applying the existing elective colon surgery bundled care protocol to the non-elective colon surgery population would lead to a reduction in colon surgical site infections (SSI). Achieving a decrease in SSI rates is expected to improve patient outcomes for NM Delnor Hospital's colon surgery population by lowering postoperative complication rates, reducing hospital readmissions, and minimizing the need for unplanned returns to the operating room.



Program Outcomes

- Achieved 673 consecutive days without a colon surgical site infection (SSI)
- Achieved 979 consecutive days without an urgent or emergent colon SSI
- Successfully implemented the Non-Elective Enhanced Recovery Protocol (NEERP) across the entire Northwestern Medicine system (11 hospitals) on April 1, 2025.



Documentation

Is a stoma in the surgical field?	Yes	No	
Was isolation drape (ex: ioban) used to cover stoma?	Yes	No	N/A
Wound protector used?	Yes	No	
Dedicated wound closure tray/instrument used?	Yes	No	
All scrubbed personnel gown and glove change prior to closure?	Yes	No	
Re-draping/fresh towels around incision prior to closure?	Yes	No	
Was a TAP block performed?	Yes	No	
Was Chlorohexidine (Chg.) antiseptic irrigation used?	Yes	No	N/A
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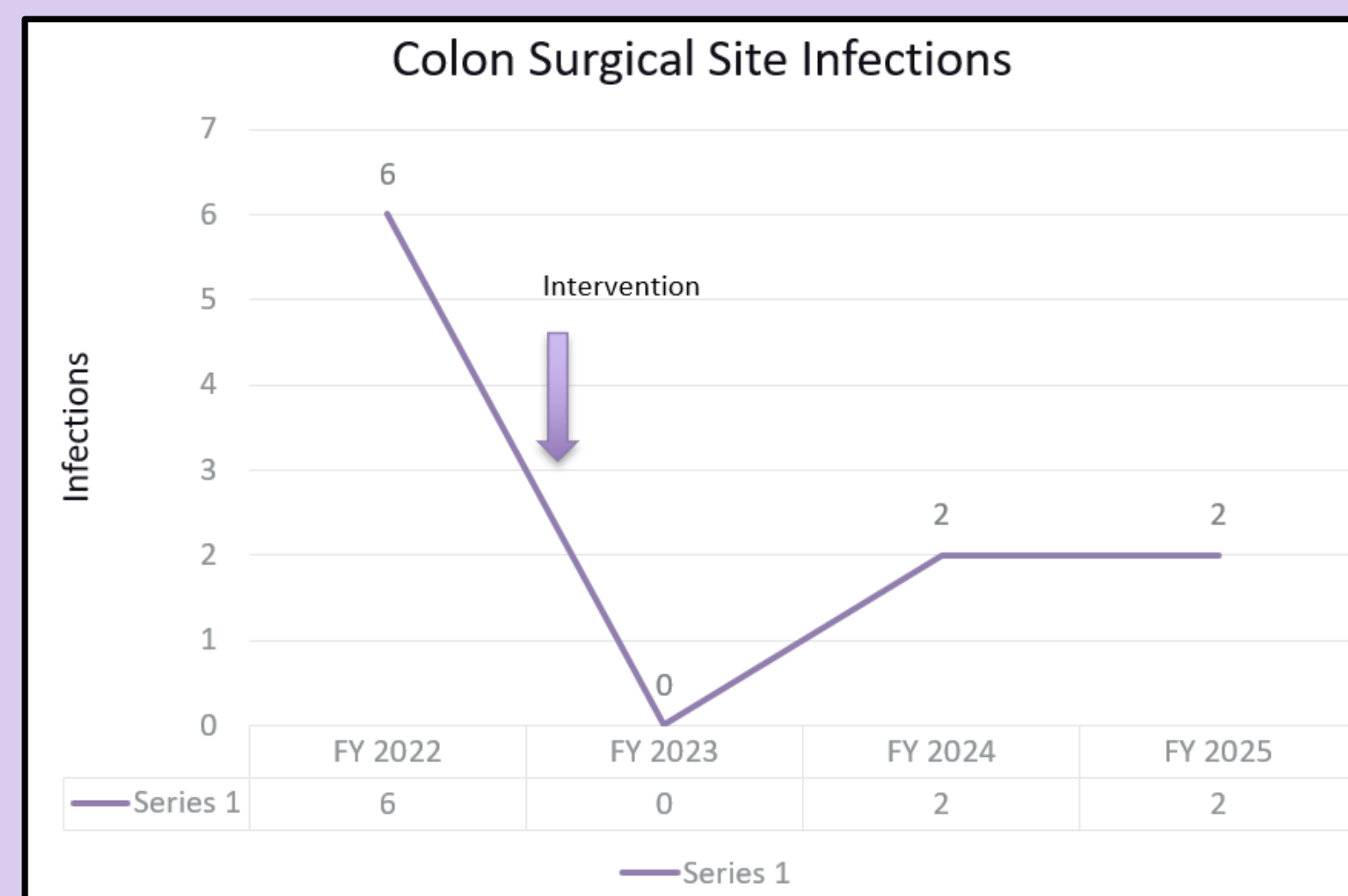
Problem

A review of colon surgical site infection (SSI) data for Fiscal Years 2021 and 2022 identified 10 CMS-reportable colon SSIs among 260 colon procedures, indicating an elevated infection burden. Further analysis showed that 7 of the 10 SSIs occurred in non-elective cases, highlighting a disproportionate impact within the urgent and emergent surgical population. During both FY21 and FY22, the hospital's Standardized Infection Ratio (SIR) for colon SSIs exceeded the expected national benchmark, signaling performance below CMS-defined targets. As a result, reducing colon SSIs has been designated as one of the hospital's top five organizational priorities to improve patient outcomes, enhance care quality.



Action Taken

- Define**
 - More of the non-elective colon surgery patients have developed an SSI
- Measure**
 - Elective colon patients that use the bundled approach have seen a reduction in SSI
- Analysis**
 - The same process used on elective colon patients could work for non-elective colon cases
- Improve**
 - Create and implement a non-elective bundle for non-elective colon cases. Collect data on metrics.



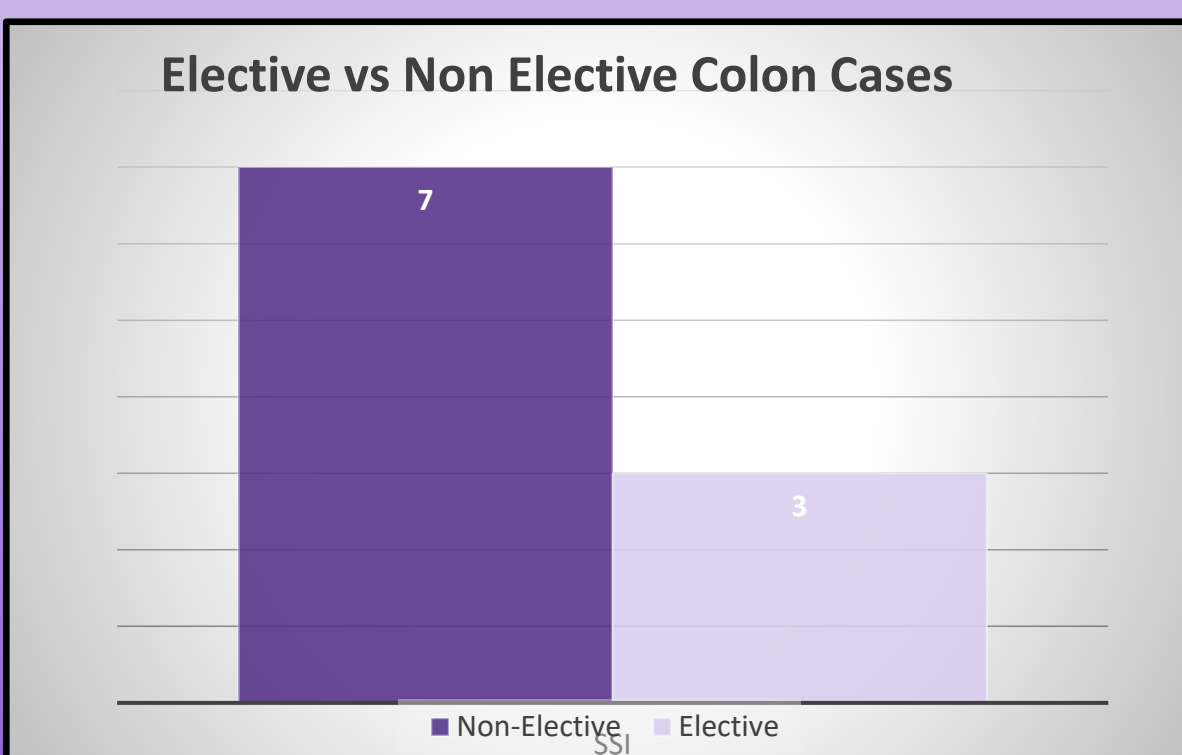
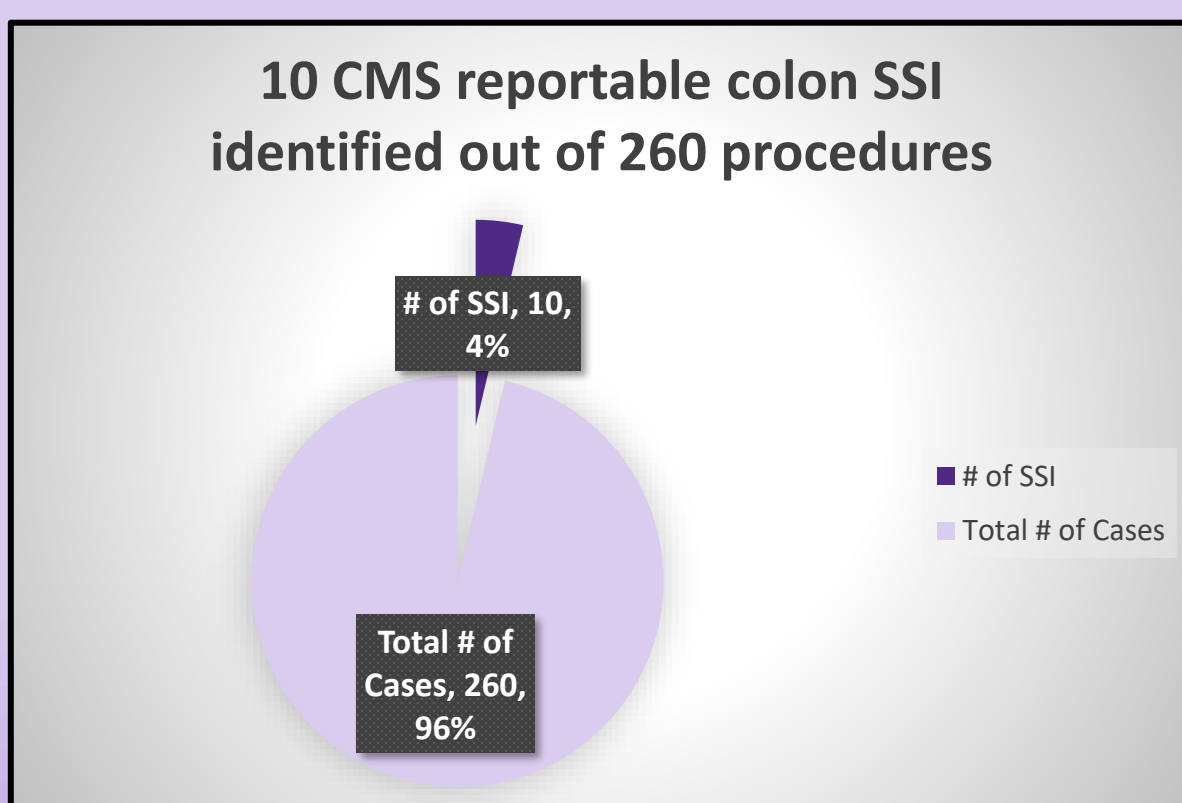
Keys to Success

- Evaluating stakeholders and having a multi-disciplinary team participate in the project
- Implementing previous protocols for our elective patients to our urgent emergent patient population
- Analyzing and improving outcomes in compliance
- Implementing robust communication with all involved
- Disseminating the data obtained
- Evaluation of opportunities when a Colon SSI occurs



Control Plan

Metric	Goal	Control Limit	Review Process	Frequency	Process Owners	Threshold for action	Recommended Action Steps
SSI reduction using Non-Elective Enhanced Recovery Protocol (NEERP)	<=3 SSI in FY24	>1 in 3 months	Clinical Quality Leader (CQL) collects and shares monthly scorecard data with surgeons, anesthesia and peri-op SME (CQL, IP, OR manager and surgeon) reviews metric fallouts Data is presented at Top 5 Colon and SSI Committee Data is presented to OR Committee	Monthly	Physician Lead: Dr. M. Pittman SME: L. Lehner & T. Halverson QI/Data: N. Kroncke	2 SSI in 3 months	Deeper dive into the colon SSI data Review all fallouts on the scorecard Identify opportunities Create plan to close identified gaps



Timing	Element	# Compliant		Percentage	
		Urgent Cases (N=21)	Emergent Cases (N=21)	Urgent Cases (N=21)	Emergent Cases (N=21)
Pre-Op	CHG bathing night before (n=18)	16	n/a	89%	n/a
	Pre-op CHG wipe	15	n/a	71%	n/a
	Diabetic Accucheck (n = 4), (n=2)	4	2	100%	100%
Intra-op	Appropriate Antibiotics	21	21	100%	100%
	Antibiotic re-dose (n= 8), (n=1)	8	1	100%	100%
	CHG skin prep	21	21	100%	100%
	Wound Protector	21	20	100%	95%
	Wound Closure Tray	21	20	100%	95%
	Gown and Glove Change	21	20	100%	95%
	Drape Change	21	19	100%	90%
	Accucheck @ 2 hours (n = 3), (n=2)	3	2	100%	100%
	Normothermia Temp > 96.8/36	21	21	100%	100%
	Irrisep Used (n = 5) (n=13) (on contaminated or higher wound class open cases)	4	12	80%	86%

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	FY23	FY24	FY25	Total
Infections	0	2	2	4
Predicted	2.853	3.002	2.229	8.085
Goal	3	3	3	9
SIR	0.00	0.666	0.897	0.495



Program Contact

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