

REDUCING SURGICAL SITE INFECTION IN COLORECTAL SURGERY V2

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Define Problem, Set Aim & Establish Measures

Problem Statement

Data from ACS NSQIP audits identified an unacceptable incidence of surgical site infections in General Surgery (bottom 25% compared to similar hospitals internationally) with Colorectal surgery having the highest SSI rate.

Aim Statement

20% reduction in surgical site infections (SSI) in Colorectal Surgery from 10.9% to 8.72% within 1 year from the start of intervention

Outcome Measures

% of surgical site infections for Colorectal Surgery patients

Process Measures

% compliance to each of the 7 elements of the care bundle

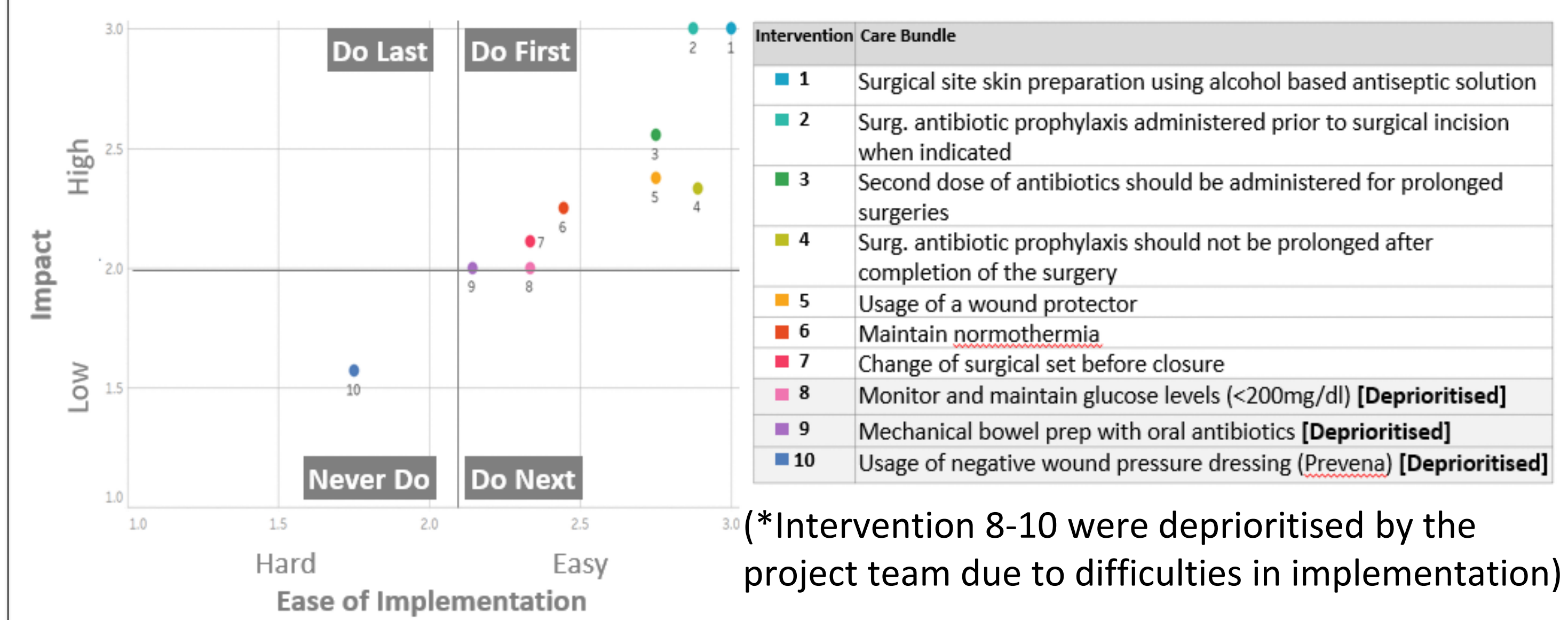
Project Scope

Inclusion Criteria

- All Elective Colorectal surgery (Open & Laparoscopic)
- All EOT Laparotomy (Laparotomy & Mini laparotomy)
 - Exploratory laparotomy (e.g. Laparotomy with ow without bowel resection, gastrectomy, liver resection, adhesiolysis)
 - Laparoscopic converted mini laparotomy colorectal cases

Analyze Problem & Select Changes

A literature review identified 10 evidence-based interventions that could potentially be included in a new surgical site infection (SSI) prevention care bundle. To determine which elements to **prioritize and implement** first, the impact vs implementation priority matrix was used by the project members to rate each proposed element on two key dimensions - the expected impact on reducing SSI risk, and the ease of implementing the intervention in our hospital setting.



Baseline data collection

Data was collected by surgeons to determine the baseline compliance rates for the 7 prioritised elements of the care bundle.

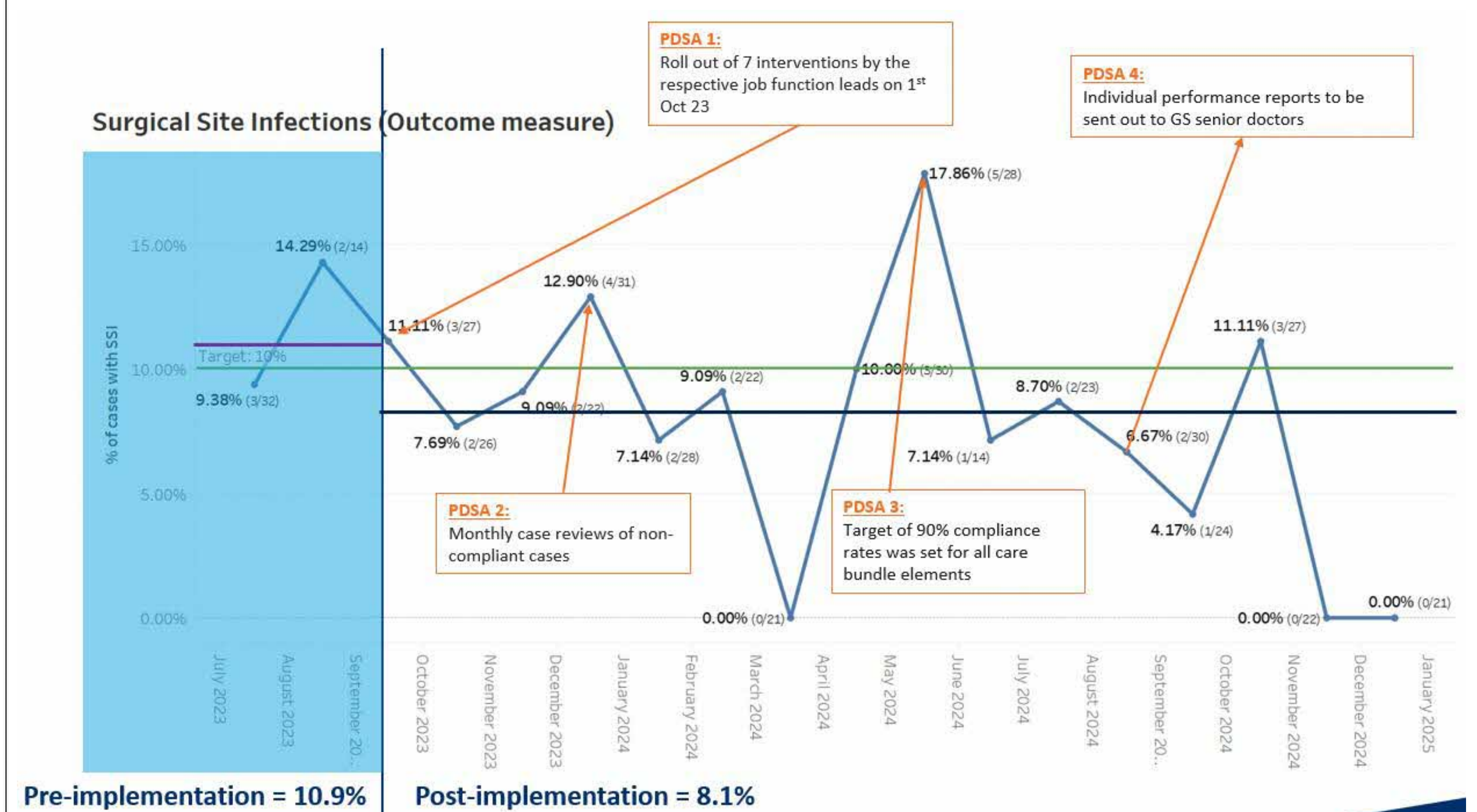
Interventions	Baseline Compliance (Aug – Sep 23)
#1 Surgical site skin preparation using alcohol based antiseptic solution	22%
#2 Surgical antibiotic prophylaxis should be administered prior to surgical incision when indicated	64%
#3 Second dose of antibiotics should be administered for prolonged surgeries	0%
#4 Surgical antibiotic prophylaxis should not be prolonged after completion of the surgery	77%
#5 Usage of a wound protector	65%
#6 Maintain normothermia compliance	81%
#7 Change of surgical set compliance	0%

Test & Implement Changes

PDSA Cycle	PLAN	DO	STUDY	ACT
1	• Roll out of 7 interventions by the respective job function leads on 1 Oct 2023	• Job function leads developed implementation plans • Communication of the implementation plan at their respective department meetings	• An average of 62% compliance was achieved	• Due to the low compliance rate, monthly case reviews were implemented for the next PDSA cycle.
2	• Monthly case reviews of non-compliant cases	• Setting up regular team meetings with project members to go through compliance rates and identify areas for improvement. • Regular reminders at GS M&M meetings	• For #3 redose of abx, it was found that there was no prompt for redosing if abx given in ED/ward.	• Redosing charts were placed in drug carts in the OT as visual reminders.
3	• Target of 90% compliance rates was set for all care bundle elements	• Select care bundle elements that are not meeting target of 90% to focus on improving. • Meet up with leads (surgery, anaesthetists and nursing) to identify drivers of low compliance.	• Implement intervention for care bundle not meeting target. For eg, #7 change of surgical set before wound closure, it was found that low compliance was due to time constraint in the OTs.	• Engaged OT and SOC listing nurses to add 30 mins to each surgical listing.
4	• Individual performance reports to be sent out to GS senior doctors	• Creation and reporting of surgeon level compliance data on a monthly basis. • Clinical lead engaged doctors with low compliance to understand their concerns and limitations.	• Improvement in compliance to the care bundle was observed	

Results

With an increase in compliance rates of the 7 elements of the care bundle, there was a corresponding overall reduction in SSI within Colorectal Surgery by **25.7%** from **10.9% (pre-implementation)** to **8.1% (post-implementation)**



Spread Changes, Learning Points

- Regular project meetings were important when reviewing care bundle compliance data and enabled continuous monitoring and shared accountability.
- Team meetings were useful as a forum for staff to share feedback on bundle implementation challenges and suggest process improvements
- Involve surgical leaders and secure buy-in for SSI guideline development and implementation to influence culture change