

Regional Quality Improvement Collaborative to Reduce Surgical Site Infection in Elective Colorectal Surgery

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Introduction

Surgical site infection (SSI) refers to wound infections following invasive surgical procedures. SSI constitutes a major healthcare burden accounting for 14.5% of all hospital acquired infections in the UK and an estimated 34-226% increase in associated costs. It is also a significant cause of patient morbidity including increased length of stay, readmission, wound dehiscence, hernia, need for intensive care, as well as death. SSI is more common after colorectal surgery where wounds are frequently contaminated by bowel content and rates are reported between 8-30%.

The PreciSSlon collaborative (Preventing Surgical Site Infection across a region) is a collaboration between 7 NHS hospitals in the West of England with the aim of reducing SSI after elective colorectal surgery.

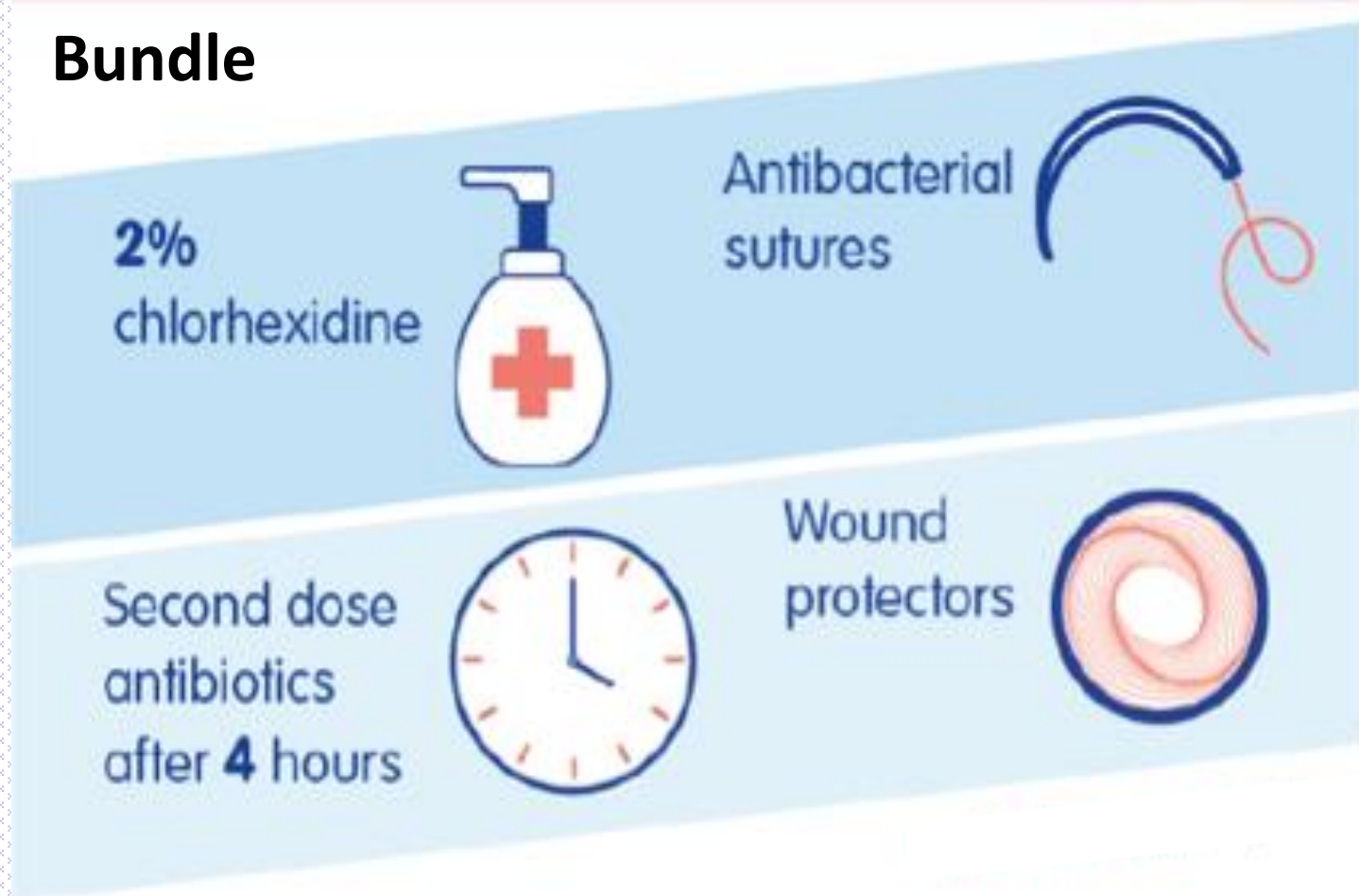
Method

The Institute for Healthcare Improvement's (IHI) Breakthrough Series collaborative model was used. Quarterly learning and sharing events with QI coaching were used to implement a mutually agreed, evidence based wound care bundle in elective colorectal surgery across the 7 hospitals.

Measures:

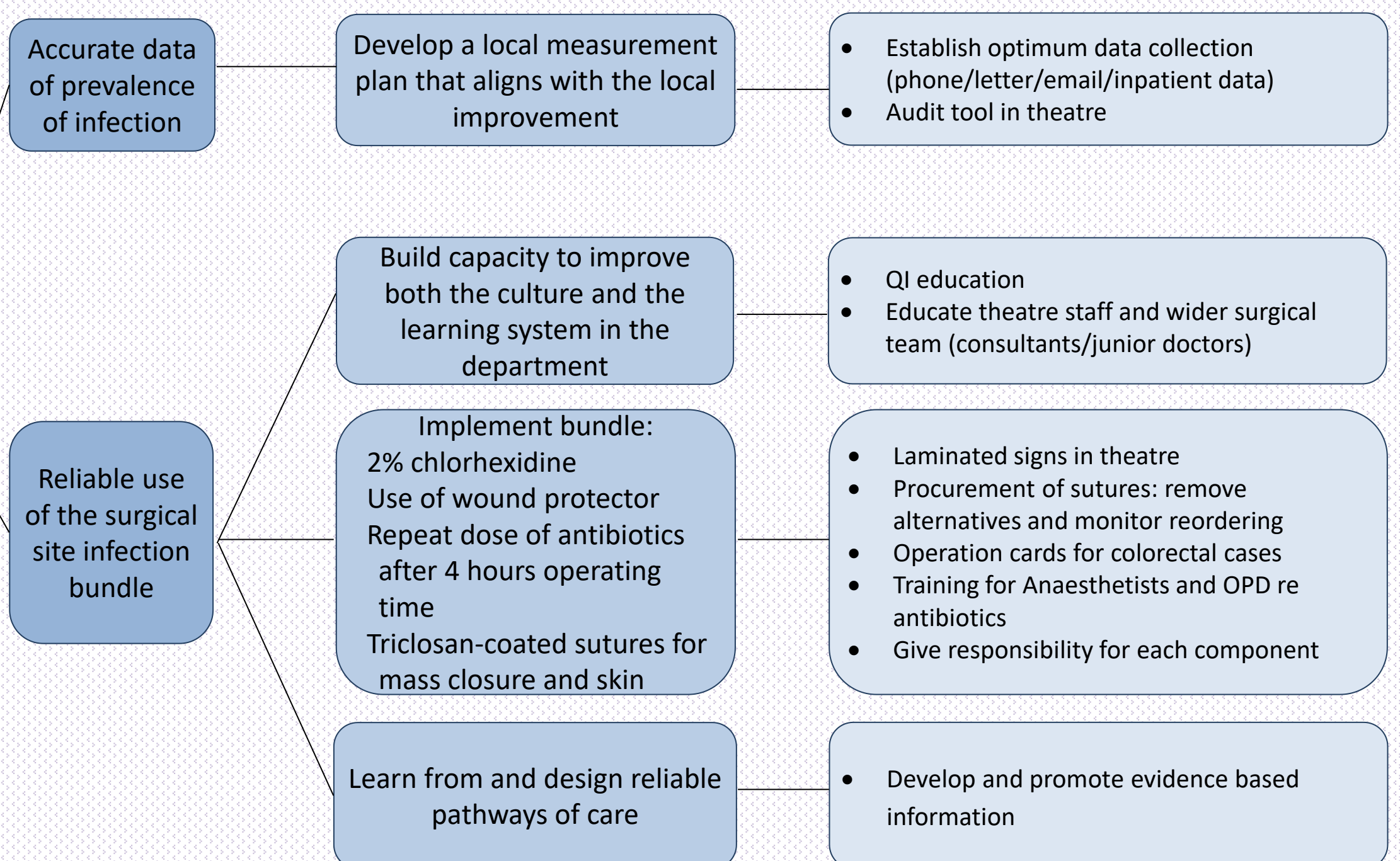
Public Health England SSI surveillance questionnaire was used to attain 30 day patient reported SSI data
Compliance with the bundle and questionnaire response rates were measured at each hospital

Bundle

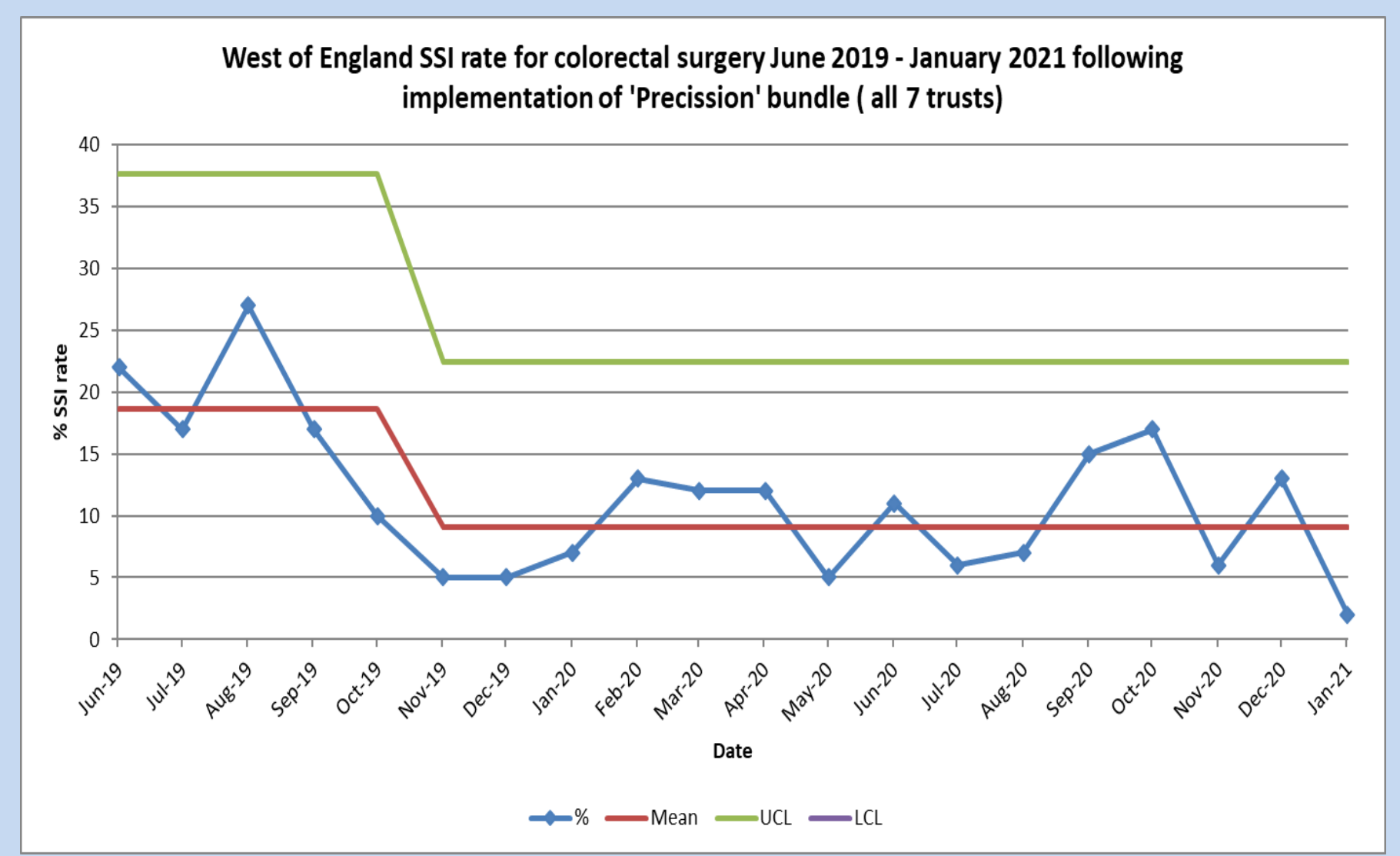
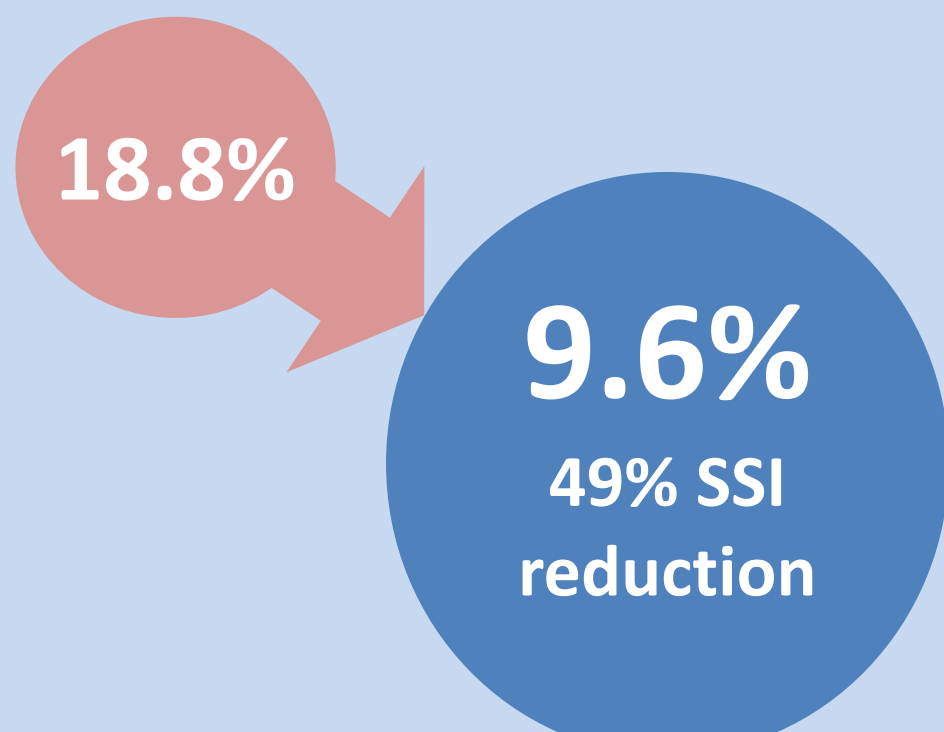


Aim

To reduce surgical site infection in colorectal surgery by 50% by March 2021



Results



Hospital	Baseline SSI (no. patients)	Post bundle SSI (no. patients)	Compliance (%)				PROMS Response rate
			2% Chlorhexidine	Antibacterial sutures	Antibiotics after 4 hours	Wound protectors	
1	15%(198)	7% (187)	89%	58%	32%	34%	74%
2	8% (128)	8.6% (197)	91%	68%	34%	33%	63%
3	22% (74)	6% (136)	100%	90%	85%	90%	100%
4	12% (44)	8.5% (193)	84%	86%	98%	83%	86%
5	30% (208)	15% (175)	100%	100%	67%	61%	0%
6	20% (197)	11% (217)	100%	100%	100%	91%	93%
7	20% (54)	7% (42)	100%	71%	100%	100%	68%
Mean	18% (903)	9% (1147)	95%	82%	73%	70%	69%



Results and Discussion

All 7 hospitals had implemented the care bundle by February 2020 and by February 2021 1,147 patients has received the intervention. Average SSI rate was reduced from 18% (n=903) to 9.5% (n=1,147), which is a 49% reduction in 30-day SSI after elective colorectal surgery across the whole region (data collection is ongoing). Patient response rate was 69%. Average compliance to each of the 4 bundle elements was high (70 – 95%) and a relationship between increasing bundle compliance and decreasing SSI rate was suggested.

We have demonstrated that using a collaborative approach to quality improvement can be effective in improving patient outcomes on a regional scale.