

PreciSSlon: a collaboration to reduce surgical site infection after elective colorectal surgery

HSJ awards application: Supporting information

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1. PreciSSlon bundle element compliance across hospitals

The table below shows compliance with each bundle element for each hospital. To note: Average compliance across the region is between 70% and 95% for each element of the PreciSSlon bundle. Some elements were easier to measure and some were easier to implement; for example it is not always possible to use a wound protector.

Hospital	Chlorhexidine	Antibacterial sutures	2 nd dose antibiotics after 4hrs	Wound protector
1	89%	58%	32%	34%
2	91%	68%	34%	33%
3	100%	90%	85%	90%
4	84%	86%	98%	83%
5	100%	100%	67%	61%
6	100%	100%	100%	91%
7	100%	71%	100%	100%
Mean all hospitals	95%	82%	73%	70%

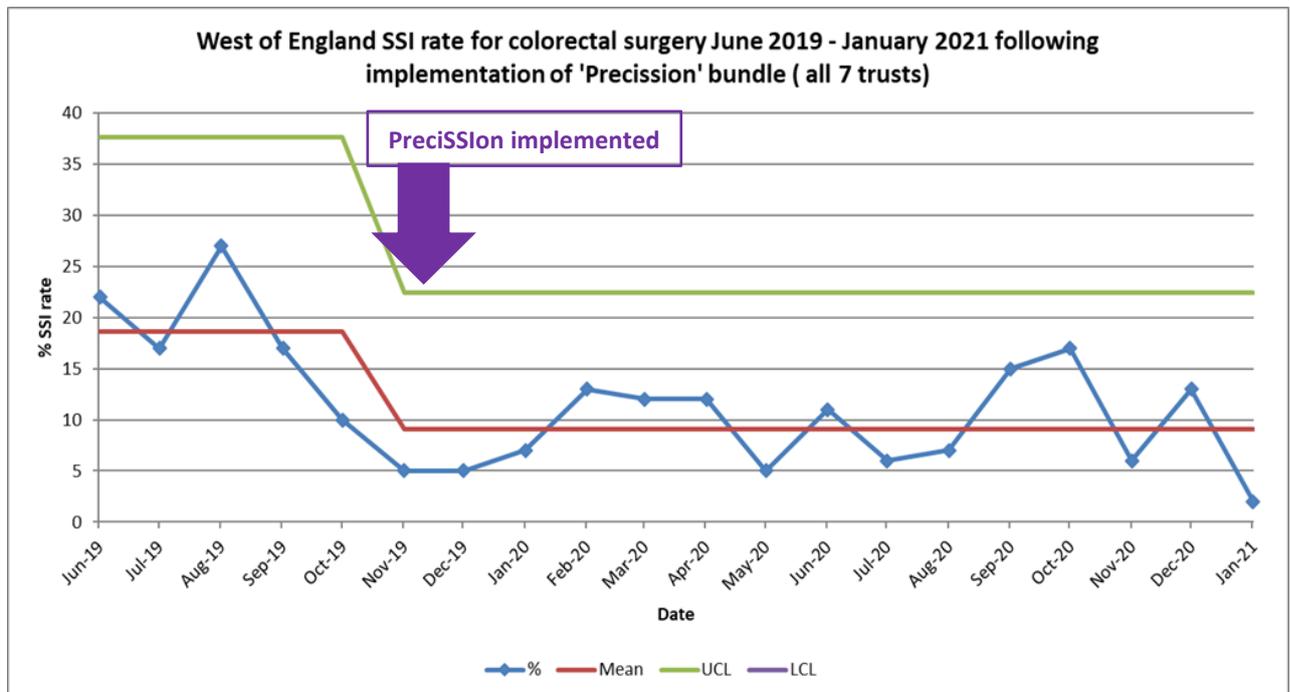
2. Surgical Site Infection (SSI) rate across hospitals

Average SSI rates before and after implementation of bundle for all hospitals. To note: Hospital 2 has had a 4% SSI rate since August 2020.

Hospital	Baseline SSI (no. patients)	Post bundle SSI (no. patients)	Response rate
1	15%(198)	7% (187)	74%
2	8% (128)	8.6% (197)	63%
3	22% (74)	6% (136)	100%
4	12% (44)	8.5% (193)	86%
5	30% (208)	15% (175)	N/A
6	20% (197)	11% (217)	93%
7	20% (54)	7% (42)	68%
Mean all hospitals	18% (903)	9% (1147)	81%

3. SPC chart

This chart demonstrates the decrease in combined SSI rates across the region following implementation of PreciSSlon bundle.



4. Engagement with the PreciSSlon Collaborative

A Tweet from a member of the collaborative celebrating the March 2021 PreciSSlon event.



5. PreciSSlon video for theatre nurses

The video was created to explain how Theatre Nurses play a vital role in preventing SSI and how the PreciSSlon Bundle can help.

View the video here: <https://vimeo.com/460466609> and a more generic 'explainer' video for the PreciSSlon project here: <https://vimeo.com/463380575>



6. PreciSSlon promotional and feedback posters

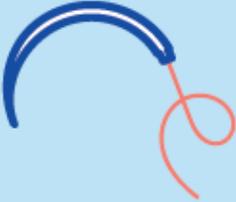
Promotional posters for display in operating theatres and other areas were produced and shared with the collaborative, as well as editable posters to display data to encourage engagement with the project.

PreciSSlon

Preventing Surgical Site Infection across a Region

Surgical Site Infections (SSI) are a common complication following colorectal surgery and cause pain and discomfort for patients. They can lead to a longer stay in hospital and sometimes a subsequent return to theatre, and can result in extra pressure on emergency departments. Through PreciSSlon, we can beat Surgical Site Infection together.

These evidence-based measures should be used in all patients undergoing major colorectal resection:

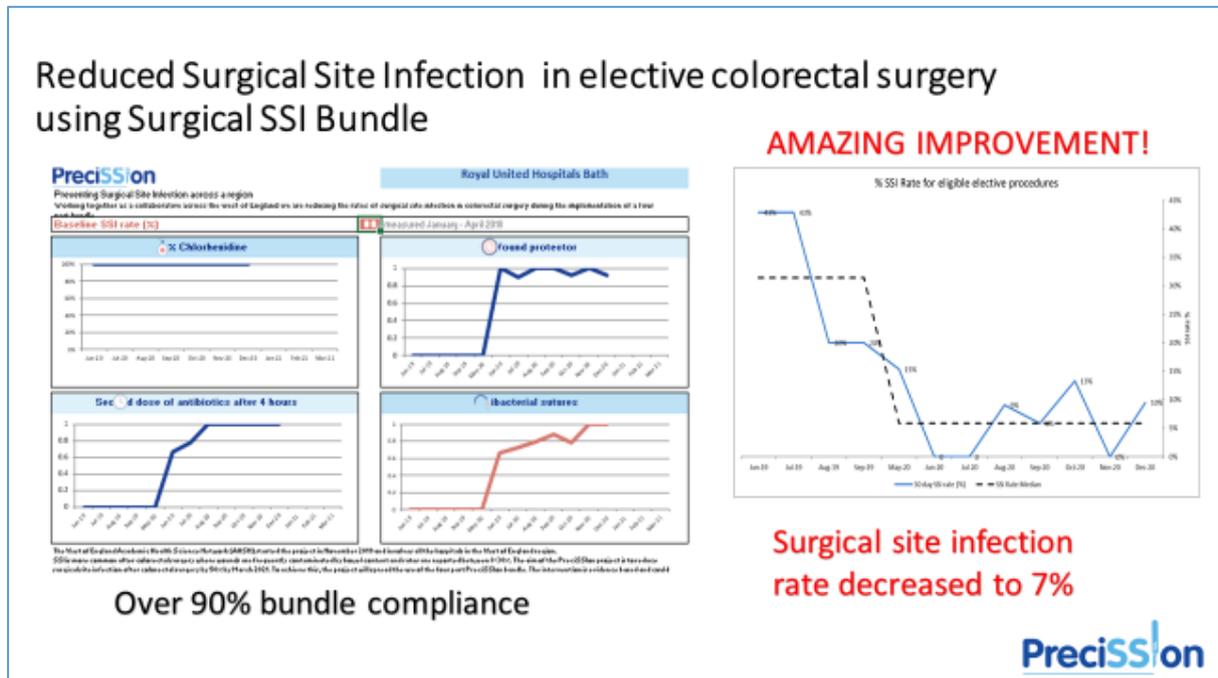
- 2% chlorhexidine 
- Antibacterial sutures 
- Second dose antibiotics after 4 hours 
- Wound protectors 

Contact your **Trust project team/surgical lead** at:

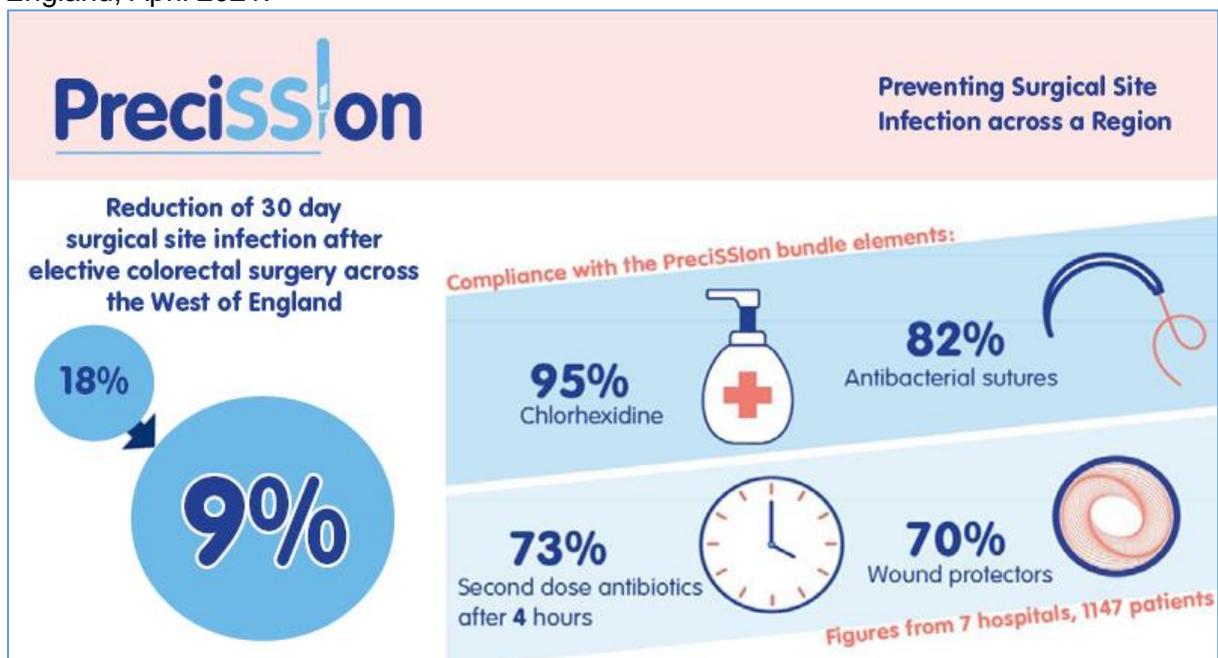
Contact the **West of England AHSN Team** at: contactus@weahsn.net

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Example of poster feedback to individual hospitals showing improvements:



Twitter card celebrating the reduction in SSI rates and compliance figures across the West of England, April 2021:



7. Surgical wound healing questionnaire sent to patients

Surgical wound healing questionnaire

Dear Patient,

We are monitoring all patients with surgical wounds, to detect patients who develop wound infections after surgery.

We would be grateful if you could complete this questionnaire and return it in the pre-paid envelope.

Have you had any problems with the healing of your wound?

Yes Please continue with this questionnaire
No You do not need to continue with any further questions.

Did the problems with your wound arise when you were in hospital?

Yes
No

Since you were discharged from hospital after your operation have you noticed any of the following symptoms?

Has there been any discharge or leakage of fluid from any part of the wound?

Yes
No

If yes, was it either: Clear or blood stained
Yellow/green (pus)
Other – please specify _____

Please tick any of the following additional symptoms that applied to your wound:

Pain or soreness in addition to the discomfort experience following the operation
Redness or inflammation spreading from the edges of the wound
The area around the wound felt warmer/hotter than the surrounding skin
The area around the wound became swollen
The edges of any part of the wound separated or gaped open

Did any health care worker take a sample from your wound to send to the laboratory?

Yes
No

PLEASE TURN OVER

If you saw a health care worker because of these symptoms, please indicate who you saw from the list below –

- GP []
- District Nurse []
- Midwife []
- Doctor or Nurse at the hospital []
- Other – please specify []
- Did not see anyone about my wound []

Please tell us the date you noticed these symptoms.
If you cannot remember the exact date, please give an approximate date ___/___/___

Have you been prescribed antibiotics for an infection in the wound?

- Yes []
- No []
- If yes, who prescribed them? _____

Have you been readmitted to hospital with an infection of the surgical wound?

- Yes []
- No []
- If yes, which hospital? _____

Other comments

8. PreciSSlon toolkit

The toolkit was produced to support teams with implementing the bundle and data collection in their hospital teams.

The toolkit is available to download here: [PreciSSlon-Implementation-Toolkit-v5.0.pdf \(weahsn.net\)](https://weahsn.net/PreciSSlon-Implementation-Toolkit-v5.0.pdf)



9. References

Morbidity associated with SSI

Wick EC, Shore AD, Hirose K, et al. Readmission Rates and Cost Following Colorectal Surgery. *Dis Colon Rectum*. 2011;54(12):1475-1479. doi:10.1097/DCR.0b013e31822ff8f0.

Sandy-Hodgetts K, Carville K, Leslie GD. Determining risk factors for surgical wound dehiscence: a literature review. *Int Wound J*. 2015;12(3):265-275. doi:10.1111/iwj.12088.

Itatsu K, Yokoyama Y, Sugawara G, et al. Incidence of and risk factors for incisional hernia after abdominal surgery. *Br J Surg*. 2014;101(11):1439-1447. doi:10.1002/bjs.9600.

Kirkland KB, Briggs JP, Trivette SL, Wilkinson WE, Sexton DJ. The Impact of Surgical-Site Infections in the 1990s: Attributable Mortality, Excess Length of Hospitalization, And Extra Costs. *Infect Control Hosp Epidemiol*. 1999;20(11):725-730. doi:10.1086/501572.

Astagneau P, Rioux C, Golliot F, Brücker G. Morbidity and mortality associated with surgical site infections: Results from the 1997-1999 INCISO surveillance. *J Hosp Infect*. 2001. doi:10.1053/jhin.2001.1003.

Nationally reported SSI data

Public Health England. *Surveillance of Surgical Site Infections in NHS Hospitals in England: 2016 to 2017*; 2017. <https://www.gov.uk/government/publications/surgical-site-infections-ssi-surveillance> nhs-hospitals-in-england. Accessed November 26, 2018.

Public Health England. *Surveillance of Surgical Site Infections in NHS Hospitals in England: April 2018 to March 2019, 2019* [07/05/2020]. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/854182/SSI_Annual_Report_2018_19.pdf

<https://gettingitrightfirsttime.co.uk/>

Surgical Site Infection rates with 30 day follow-up

Pinkney TD, Calvert M, Bartlett DC, Gheorghe A, Redman V, Dowswell G, et al. Impact of wound edge protection devices on surgical site infection after laparotomy: multicentre randomised controlled trial (ROSSINI Trial). *BMJ* 2013;347:f4305.

Blazeby J. Bluebelle pilot randomised controlled trial of three wound dressing strategies to reduce surgical site infection in primary surgical wounds. *BMJ Open*. 2020;10:e030615.

Limon E, Shaw E, Badia JM, Piriz M, Escofet R, Gudiol F, et al. Postdischarge surgical site infections after uncomplicated elective colorectal surgery: impact and risk factors. The experience of the

VINCat Program. *J Hosp Infect*. 2014;86:127–32.

50% of SSIs occur in the community

The community burden of surgical site infection following elective colorectal resection Lydia Newton¹ | Ffion Dewi¹ | Angus McNair² | Dawn Gane¹ | Jodie Rogers¹ | Harry Dean¹ | Anne Pullyblank¹ DOI: 10.1111/codi.15420 *Colorectal Disease*. 2020;00:1–8.

The Evidence for implementing a bundle of care after elective colorectal surgery

H.F. Dean, E. King, D. Gane, D. Hocking, J. Rogers, A. Pullyblank. Introduction of a care bundle effectively and sustainably reduces patient-reported surgical site infection in patients undergoing

colorectal surgery. Department of Colorectal Surgery, North Bristol NHS Trust, Bristol, UK *Journal of Hospital Infection* 105 (2020) 156e161

Effectiveness of care bundles in reducing SSI

Do surgical care bundles reduce the risk of surgical site infections in patients undergoing colorectal surgery? A systematic review and cohort meta-analysis of 8,515 patients Judith Tanner, PhD,^a Wendy Padley, MSc,^b Ojan Assadian, MD,^c David Leaper, MD,^c Martin Kiernan, MPH,^d and Charles Edmiston, PhD,^e Nottingham, Leicester, Huddersfield, and London, UK, and Milwaukee, WI
<http://dx.doi.org/10.1016/j.surg.2015.03.009> *Surgery*, Volume 158, Number 1; 66-77

World Health Organisation SSI Bundle in WHO Checklist

9. Haynes AB, Weiser TG, Berry WR, Lipsitz SR, Breizat A-HS, Dellinger EP, et al. A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global Population. *N Engl J Med*. 2009 Jan 29;360(5):491–9. 20. Weiser TG, Haynes AB, Dziekan G, Berry WR, Lipsitz SR, Gawande AA, et al.

Estimated costs of a SSI

www.gettingitrightfirsttime.co.uk/wp-content/uploads/2017/08/SSI-Report-GIRFT-APRIL19e-FINAL.pdf

Jenks PJ, Laurent M, McQuarry S, Watkins R. Clinical and economic burden of surgical site infection (SSI) and predicted financial consequences of elimination of SSI from an English hospital. *J Hosp Infect*. 2014;86(1):24-33. doi:10.1016/j.jhin.2013.09.012.

Guidelines on the prevention of surgical site infection

World Health Organization (WHO). Global Guidelines for the Prevention of Surgical Site Infection. 2016. 43.

National Institute for Health and Clinical Excellence (NICE). Surgical site infections: Prevention and treatment. NICE Guideline NG125. 2019.