

# Smart use of care bundles (HII4) and NICE quality standards to reduce incidence of surgical site infections

Manjula Natarajan\* (DIPC) Dina El-Zimaity (Consultant Microbiologist), Pam Howe (Lead ICN), Jennie Lovell (ICN) and Katrina Ruffea (Surveillance Nurse)

**Background:** National Institute for Health and Clinical Excellence has estimated that 5% of all surgical procedures are associated with Surgical Site Infection (SSI). Acute Trusts are under scrutiny from commissioners to drive the SSI rates down for all categories of surgery, making this a quality improvement requirement.

## Aim:

- Use High Impact Intervention 4 (HII4) as a monitoring tool and care bundle to demonstrate improvements in practice
- Correlate with SSI surveillance rates
- Use HII4 and SSI rates and MDT discussions to change practice
- Use face-to-face presentation mode to surgeons to challenge and change practice
- Use ICNet to gather data for SSI and HII4
- Monitor and demonstrate continuous improvement in theatre practice, compliance with NICE quality standards

## Methods:

- SSI Module completed by Surveillance Nurse
- Surveillance Nurse also completes HII4 during module if there are any infections
- HII4 data collated and presented to Surgical teams by DIPC and Infection Control team
- Gaps in compliance with H114 are highlighted, recommendations and change in practice is agreed with surgical team
- Final results of SSI surveillance along with evidence in change in practice presented to surgical team by DIPC

Figure 1. Breast Surgery and H114, CASE STUDY 1

Patient no	1	2	3	4	5	6	7	8	9	10	TOTAL
MRSA Screen	Yes	Yes	Yes	100%							
Pre-op shower documented	No	No	No	0%							
BMI documented	30	37	35	46	36	41	26	24	21	31	100%
Hair removal with clippers	n/a	n/a	n/a								
Skin prep 2% Chlorhex with 70% Alc/Pov iodine	No	No	No	Yes	No	No	No	No	No	No	10%
Prophylactic Antibiotics	Yes	Yes	Yes	100%							
Temp >36	Yes	Yes	Yes	Yes	Yes	Yes	No	35.6	Yes	Yes	90%
SATS>95%	Yes	Yes	Yes	Yes	No	94%	Yes	Yes	Yes	No	80%
Glucose <8	n/a	No	n/a	n/a	No	9.2	n/a	n/a	n/a	Yes	33%
Wound dressing checked and documented	Yes	Yes	Yes	100%							
Dressing left in situ for a minimum of 48hrs.	Yes	Yes	Yes	100%							
TOTAL	80%	60%	70%	70%	60%	80%	70%	80%	80%	70%	

## Recent case studies:

### 1) Breast Surgery:

- 2013-SSI surveillance showed 5.5% infection rate (above national benchmark)
- No particular themes relating to teams, but most were MSSA
- HII4 revealed gaps in practice (fig 1- pre-operative shower, glucose control and variable skin prep)
- Initially defensive team willing to engage change practice after viewing evidence
- Early 2014 SSI module showed reduction of SSI rate to 2%

### 2) C-Sections SSI surveillance

- 2013 Quarter 2 SSI rate was found to be 10%, against national average of 8.6%
- 50-60% of patients had large BMI
- HII4 audit showed lack of compliance with care bundle- no pre-op shower, and lack of education for post-op wound management by patients
- Evidence based discussion with clinical team resulted in change in practice, i.e.- use of pre-op hibiscrub for electives and wipes for emergencies
- Wound care leaflets developed and implemented
- 2014 Quarter 2 SSI rate has reduced to 3.3%

### 3) Trust- wide use of H114

- Although rates of SSI were under national average in colorectal surgery, HII4 audit identified sub-optimal wound care practice, and improved outcomes
- Routine use of HII4 in Orthopaedics helped reduce SSI from 2.4% in THR in 2011 to 1.2% in 2012
- Use of HII4 in radiology improved compliance in care bundle and reduced procedure related infections in angiography
- Data collection for HII4 is consistent as Surveillance Nurse uses DOH saving lives protocol
- Results are always discussed face to face and evidence based challenge of theatre practice results in ownership by Clinicians and improved outcomes for patients

## Future and Conclusion:

ICNet is useful tool to aid in SSI surveillance and we are currently piloting use of ICNet to collate and analyse data for H114 (Figure 2)

Figure 2: screen shot of HII4 set up on ICNet

- Reduction in SSI- benefits for patient experience and outcome well established
- Kettering approach to use HII4 is time consuming, but rewarding
- It is now core business in surgical directorate to monitor theatre practice to improve outcome



HII4, manual or ICNet

NICE compliance

Evidence to change practice, reduction in SSI