

## Using the Health Quality & Safety Commission Surgical Site Infection investigation tool – a summary of practice points from Dr Arthur Morris, clinical lead, Health Quality & Safety Commission

The following points summarise the information Dr Arthur Morris provided during his webinar presentation on 7 December 2021 and include the rationale for collecting specific data.

The surgical site infection (SSI) investigation tool is available on the Commission website at: [www.hqsc.govt.nz/resources/resource-library/surgical-site-infection-ssi-investigation-tool/](http://www.hqsc.govt.nz/resources/resource-library/surgical-site-infection-ssi-investigation-tool/).

### General notes

- The Health Quality & Safety Commission (the Commission) requires district health boards (DHBs) participating in light surveillance to undertake in-depth investigations of surgical site infections (SSIs) using the SSI investigation tool. Deep and organ space infections should take priority.
- For DHBs participating in full surveillance, we encourage the use of the SSI investigation tool for deep and organ space infections.
- The SSI investigation tool lists risk factors relevant to SSI and gives an opportunity to collect data when available. There are key items, particularly related to the quality and safety markers, where the data will be available. Other items are listed as a prompt for identifying other potential contributors to SSI.
- When problems are identified, for example, incorrect timing for antibiotic prophylaxis or non-use of an alcohol skin preparation, these can be addressed through a quality improvement feedback loop to bring about change.
- Some items in the SSI investigation tool do not specifically relate to SSIs but are part of quality improvement and getting a patient's pathway right.
- Any events identified in a patient's pathway that may contribute to an SSI provide an opportunity for discussion, learning and quality improvement.

### Specific data fields

#### ***Body mass index***

Body mass index (BMI) may trigger referral in some pathways. For patients with a high BMI, interventions may be in place, such as dietitian and physiotherapist input to reduce BMI. Checking the referral has occurred is important for those with a BMI pathway. Others without such a pathway may observe a series of BMI-related SSI events and this may trigger

consideration on whether a specific pathway for high BMI patients is needed. Page 2 of the SSI investigation tool

Page 2 of the [SSI investigation tool](#) lists several items that are non-modifiable but are important, and place the patient at a higher SSI risk, eg, revision, age and ASA score.

### ***Deep vein thrombosis prophylaxis***

Deep vein thrombosis is loosely associated with SSI, because if prophylaxis is over-done there is bleeding, which can lead to a haematoma and increase the risk of SSI.

### ***HbA1c***

A DHB may not measure HbA1c and if so, there is no essential need to seek this data; but if measuring HbA1c was part of the pre-operative pathway and it was not performed, that would be something to record.

### ***Anti-staphylococcal bundle***

If an anti-staphylococcal bundle has been implemented there is the opportunity to record if there was full, partial or non-compliance. If there was non-compliance, why? Was this due to product not being available or not being provided at a pre-admission clinic? Where gaps are identified they can be corrected. If there is no anti-staphylococcal bundle the response is 'not applicable', which may prompt discussion on the merits of a bundle.

### ***Hair removal***

It is uncommon for patients to shave/remove hair from the surgical site in advance, but some patients, trying to be helpful, may do this. Hair removal increases the risk of SSI. Some pre-admission packs and information provided to patients before a procedure specifically mention not shaving the site. If a patient does shave a surgical site in advance, this is an opportunity to review the pre-operative advice being given to patients and emphasise that shaving will increase the risk of SSI.

### ***Additional vancomycin for methicillin-resistant Staphylococcus aureus***

If a patient is known to have methicillin-resistant *Staphylococcus aureus* (MRSA), it is important that vancomycin is given **in addition to** cefazolin. Vancomycin (a Gram-positive only drug) is not a substitute for cefazolin (which has Gram-negative cover, eg, *E. coli* and *Klebsiella* spp).

### ***Intraoperative preventative measures***

For items such as antibiotic cement, laminar air flow or triclosan sutures, there may be a local policy for their use. If no policy exists, this may be an opportunity for quality improvement.

### ***Tourniquets***

The tourniquet must be left uninflated for a sufficient time period for the antibiotic to reach the tissue. If the tourniquet is inflated when the antibiotic is given it is the same as not giving prophylaxis.

### ***Hypothermia***

Local Australian and New Zealand College of Anaesthetists guidelines recommend using temperature monitoring if using heating devices.

### ***Surgical dressings***

Several DHBs have a policy for managing the surgical site dressing, eg, specific instructions on when to take one off. If staff are not following the policy, it is important to know why.

### ***General practitioner management of SSI***

If a general practitioner (GP) has initially treated a wound before a patient is re-admitted, note this in the SSI investigation tool. Usually, SSIs managed in primary care are very superficial. If not superficial, the patient should be referred back to the hospital for management. In some cases, primary care tries to manage deep infection with 1–3 courses of antibiotics where it would be best for the patient to be admitted to hospital for appropriate management, eg, imaging and/or washout. This may mean education for the GP or notes in the discharge letter requesting early referral back if infection occurs.

### ***Page 6 of the SSI investigation tool***

Please note any observations in the 'Key observations and conclusion' section of the SSI investigation tool for quality improvement purposes. If there is high compliance with preventative measures, there may be nothing to note. However, if you identify gaps in a patient's pathway, especially if observed for several patients, this should trigger communication with the appropriate team member(s) to prevent these gaps from recurring.

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