Health Quality & Safety Commission New Zealand
Kupu Taurangi Hauora o Aotearoa

Surgical site infection improvement programme (SSIIP)

Quarterly SSI investigation review meeting

26 October 2022

SSII Surgical Site Infection Improvement Programme

Opening karakia

E te huinga
Whāia te mātauranga, kia mārama
Unuhia te anipā,
te nguha, kia mahea
Kia whai take ngā mahi katoa
Tū māia, tū kaha
Aroha atu, aroha mai
Tātou i a tātou katoa
Hui e tāiki e

For this gathering
seek knowledge, for understanding
draw out the anxiety
and uncertainty, clear it away
have purpose in all that you do
stand tall, be strong
let us show respect
for each other.
It is complete

Agenda

Welcome and introductions Opening karakia	Amanda Wood Jeanette Bell
Case study	Bobbye Buckland, Nelson Marlborough district
VLAD (variable life-adjusted display)	Amanda Wood
SAC (severity assessment code) examples	Ruth Barratt
SSI investigations data	Jeanette Bell
Upcoming dates	Amanda Wood
Closing karakia	Jeanette Bell

Case study

Bobbye Buckland

Clinical Nurse Specialist, Infection Prevention

Te Whatu Ora – Health New Zealand Nelson Marlborough

Health Quality & Safety Commission New Zealand
Kupu Taurangi Hauora o Aotearoa

Nelson Infection Prevention

- Nelson Infection Prevention (IP) were invited to the orthopaedic team monthly meeting:
  - to discuss SSII
  - can a member of the orthopaedic team assist IP with the SSII investigations?

How you can help us to better help you

- Focus (prioritisation level in health districts)
- Infection prevention and control (IPC) staff capacity (implications for resources)
- Surgeon and other key stakeholder engagement
- Quality improvement (implications for future improvement)

They said …

‘YES’

Next steps

- Orthopaedic team identified a member of their team who could assist with the investigations
- IP met with the chosen team member
- The surgical site investigation tool was explained
- The quarterly summary tool was also explained but will be filled out by the IP team for submission

How it will work in a perfect world

- When an infection that meets programme requirements is identified, the IP team sends information to national monitor
- A copy of data from national monitor is sent to the orthopaedic team member for investigation using the tool

How it will work in a perfect world

- The team member completes the tool and adds key observations and conclusions that are fed back to the entire orthopaedic team and IP team
- IP attends orthopaedic team meetings to discuss infections face to face

Case study

- 63-year-old male
- Right total hip joint replacement, organ space SSI
- Discharge date: 2 June 2022
- Readmission and treatment of SSI: 9 June 2022
- Organisms grown from wound swabs and tissue samples

SSI risk factors

- ASA = 3
- Patient age >60 years
- Body mass index >40
- Patient has sleep apnea; a referral for CPAP with repeat heart function test to follow

ASA = American Society of Anesthesiologists; CPAP = continuous positive airway pressure.

Risk factors identified

- Intraoperative temperature noted to be <36 degrees

What went well

- No problems identified postoperatively
- Uncomplicated surgical procedure

Causative organism

- Anti-staphylococcus bundle was completed
- Grew *Staphylococcus aureus*
  - × 2 wound swabs
  - × 1 tissue swab
- Grew *Enterobacter aerogenes*
  - × 1 tissue swab

SSI summary findings

Per the orthopaedic registrar via the investigation tool

- Intra-operative temperature drop to 35.3 degrees. Temperature recorded on chart twice.
- If temperature considered an increased risk of infection, then more regular temperature recording may be indicated to ensure it is kept within normal limits.
- However, need to ensure method of warming not increasing contamination.

Quality Improvement

Follow-up discussion regarding patient warming

- Per discussion with day stay unit
  - Pre-warming is occurring for each patient undergoing major surgery using a BARRIER EasyWarm.
  - This is applied in day stay. The patients bring it to the theatre with them.

Quality Improvement

Follow-up discussion regarding patient warming

- Per discussions with the orthopaedic charge nurse
  - Intraoperative warming is being done using a HotDog patient warming system, upper half of body
  - No warming is done under the body because of concerns about burning.

Questions and discussion

VLAD report

- Tool to monitor risk of orthopaedic SSI in your district
- Provides SSI risk information in addition to quarterly SSIIP and quality and safety marker (QSM) dashboard reports
- Trigger tool that helps detect an increase in SSI risk
- Displays a visual coloured status box that reflects the current risk of an increase in SSI for each district
- https://reports.hqsc.govt.nz/ssi-ortho-tool/

reports.hqsc.govt.nz/ssi-ortho-tool/#!/

Infections | Methodology

DHB

Select DHB

Auckland

Enter password

Show chart

Surgical site infection orthopaedic variable life-adjusted display chart

Download
Data (csv)
Metadata (csv)

The surgical site infection (SSI) variable life-adjusted display (VLAD) chart is a way of tracking orthopaedic SSIs in your district health board (DHB). It shows **cumulative expected against observed infections** in your DHB. It was developed to support DHBs using both full and light surveillance monitoring. The model for DHBs using full surveillance monitoring is risk-adjusted while the model for DHBs using light surveillance monitoring is not. The status boxes provide a warning or alert of increases in SSI risk.

Together, the VLAD chart and the status boxes give a picture of performance against expected while also serving as a system to detect an increase in SSI risk.

At a glance:

The jagged black **VLAD line** tracks the outcome of each orthopaedic procedure. When a procedure results in an infection, the VLAD line goes down and when there is a procedure with no infection, it goes up. The VLAD chart **shows cumulative excess or avoided infections**.

The **status box** indicates the following:

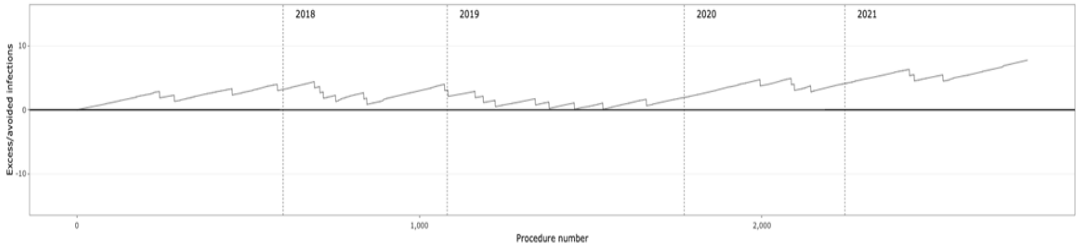
- If the status box is red and says 'Alert', there has been a statistically significant increase in SSI risk. The red dot on the chart marks when the cumulative increase in SSI risk exceeded the threshold for statistical significance.
- If the status box is yellow and says 'Warning', there may have been an increase in SSI risk, but it is not yet statistically significant. The yellow dot on the chart marks when the cumulative increase in SSI risk exceeded the warning threshold. A series of yellow dots is a series of procedures that remain above the warning threshold. They will show as a yellow line. This is a period of time when the SSI risk is still increased.
- If the status box is green and says 'Normal', there is no indication of an increase in SSI risk.
- The status is calculated based only on procedures occurring in the 12 months before the most recent procedure in each DHB.

Auckland

Status box

Normal

VLAD chart



What to do:

The status box above the chart will either be red, yellow or green.

- If the box is red, there has been a statistically significant increase in SSI risk. This is an opportunity to review your SSI investigation tool findings for common themes or gaps in process. The Commission's infection prevention and control team will be in touch to find out what support you need.
- If the box is yellow, there may have been an increase in SSI risk, but it is not yet statistically significant. This is a signal to monitor your data closely.
- If the box is green, there is no indication of an increase in SSI risk.

Published April 2022

Using the VLAD report

- View the chart each quarter and check the colour of the box above the graph.

Using the VLAD report

- If the box is green, the numbers of SSI are ‘within normal limits’, and there is no indication of an increase in SSI.

Using the VLAD report

- If the box is yellow, there may have been an increase in SSI compared with baseline.
  - This is a signal to monitor your data closely.

Using the VLAD report

- If the box is red, the risk of SSI has increased by 50 percent or more compared with baseline.
  - This is an opportunity to review your SSI investigation tool findings for common themes or gaps in process.

Severity assessment code (SAC) examples

1. Orthopaedic SSI specific – part of SSI investigation
2. All healthcare-associated infections

ORTHOPAEDIC SSI RISK AND EVENT SEVERITY ASSESSMENT TOOL 3 December 2021				
Screenshot	**Risk Severe**	**Risk Major**	**Risk Moderate**	**Risk Minor**
	SAC 1	**SAC 2**	**SAC 3**	**SAC 4**
All Events	Death or permanent severe loss of function	Permanent major or temporary severe loss of function	Permanent moderate or temporary major loss of function	Requiring increased level of care
Surgical site infection (SSI) events	SSI resulting ***in permanent disability*** (e.g. amputation, fused joint) ***or death***	SSI leading ***to ICU/HDU/higher acuity care or transfer to another hospital for treatment*** of SSI, sepsis or Girdlestone procedure*	SSI that may ***delay discharge, requires surgical intervention, or requires re-admission for further non-surgical management*** such as antimicrobial therapy or joint aspiration	SSI ***requiring additional non-surgical management only*** (e.g. antimicrobial therapy, aspiration) ***and resulting in minimal harm without an increased length of stay***

- Girdlestone procedure involves removing part of the ball of the thigh bone or femur, allowing it to fuse with the hip socket (acetabulum) in the straight leg position.

Healthcare-associated infection Severity Assessment Code (SAC) examples 2022–23

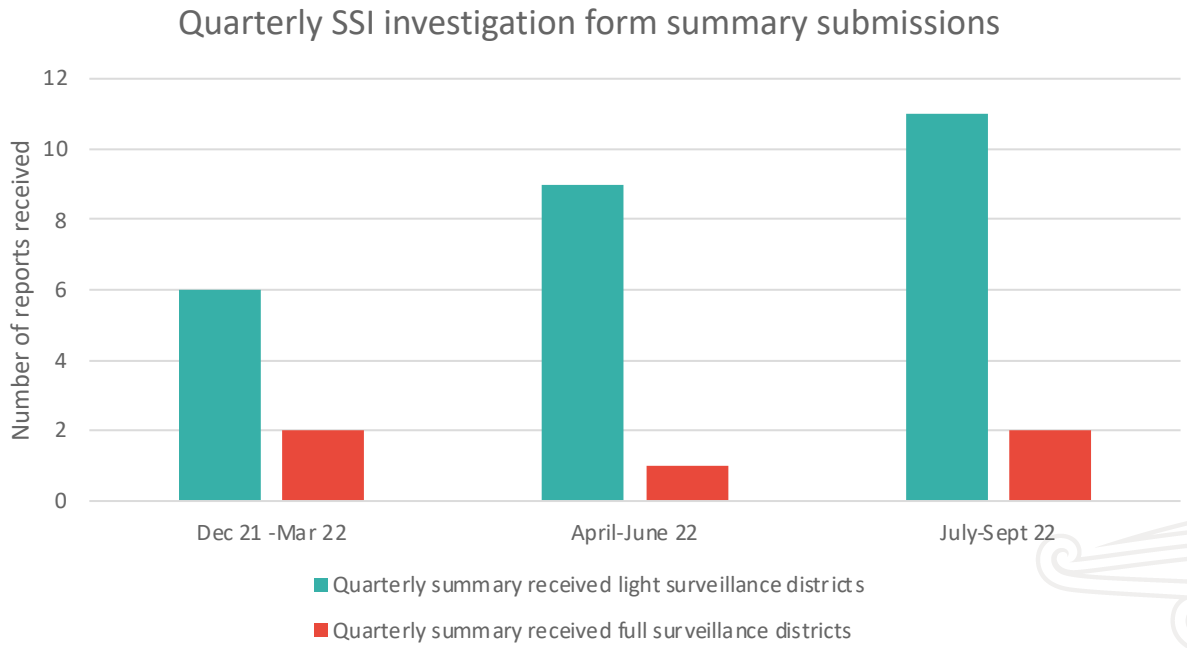
This list is for guidance only. All events should be rated on actual outcome for the consumer.

See also the Always Report and Review list 2021–22 and the Severity Assessment Code (SAC) rating and triage tool for adverse event reporting.[1]

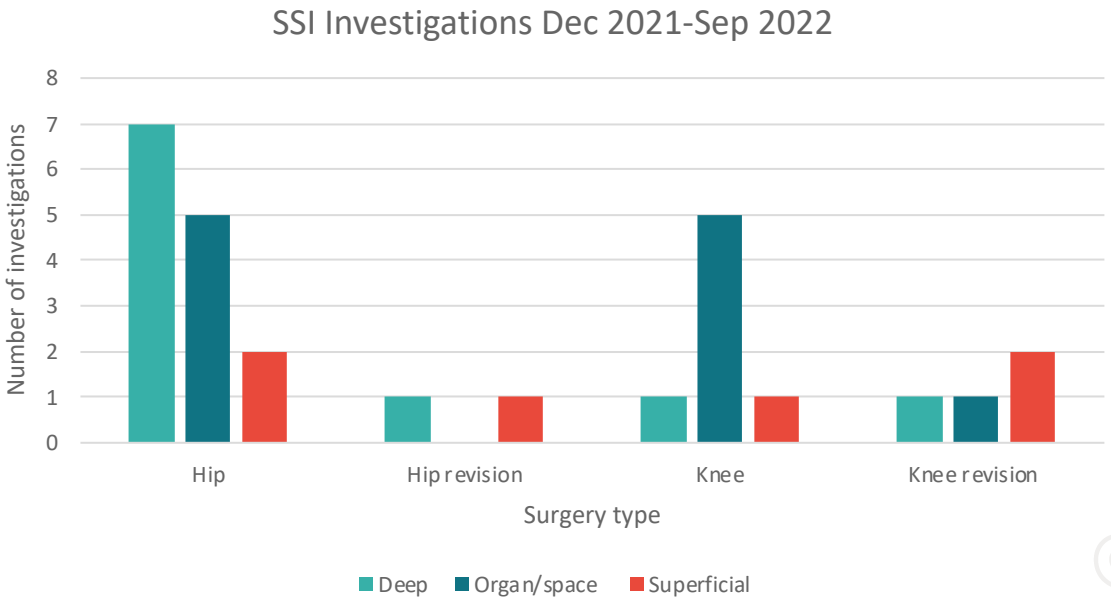
SAC 1 Death or permanent severe loss of function	SAC 2 Permanent major or temporary severe loss of function	SAC 3 Permanent moderate or temporary major loss of function	SAC 4 Requiring increased level of care
Healthcare-associated infection resulting in **sepsis-related* death or permanent disability.** For example: • sepsis-related death • amputation of limb following surgical site infection • blindness following eye procedure infection.	Healthcare-associated infection leading **to ICU/HDU/1:1 care, or unplanned transfer to another hospital for higher acuity care** OR **other major complication of healthcare-associated infection.** For example: • sepsis leading to organ failure and/or requiring vasopressor support • a surgical procedure to remove infected prosthetic material with subsequent reimplantation, eg, prosthetic joints, ventriculo-peritoneal (VP) shunts, vascular grafts • pacemaker-related endocarditis • hospital-acquired pneumonia requiring ventilation.	Healthcare-associated infection that **requires surgical or other significant intervention** or **readmission for management of healthcare-associated infection** not requiring **ICU/HDU/1:1 care.** For example: • central or peripheral venous catheter bloodstream infection • prosthetic joint infection resulting in prolonged IV antibiotics • readmission for surgical or non-surgical management of healthcare-associated infection (not ICU/HDU/1:1 care) • urosepsis following urinary tract manipulation, eg, after transrectal ultrasound (TRUS) biopsy or catheterisation.	Healthcare-associated infection requiring additional **non-surgical management** only (eg, antimicrobial therapy) and resulting in minimal harm. For example: • device-related healthcare-associated infection, eg, peripheral intravenous catheter exit site infection • hospital-acquired norovirus, respiratory infection • hospital-acquired infection with a drug-resistant organism.

*Sepsis definition = refer to organisational sepsis definitions. HDU = high-dependency unit; ICU = intensive care unit.

SSI investigation quarterly forms/ updates received



SSI investigations by surgery type



Upcoming dates

SSIIP reporting	Due dates
Deadline for validating April–June 2022 data	Monday 31 October
Check draft SSI reports sent by Commission	Friday 2 December–Monday 12 December 2022
Commission publication of January–March 2022 data in QSMs, SSI dashboards and VLAD report	Friday 16 December 2022
Quarterly SSI investigations summary due	Monday 9 January 2022

SSIIP meetings	Date
SSI champions meeting	Wednesday 7 December 2022
SSI investigations meeting	TBC – late January

Conclusion

- Questions?
- Comments?

Closing karakia

Kua mutu a tātou mahi
Ka tae te wā
mō te whakairi te kete
I te kete kōrero,
I te kete whakaaro
Hei tiki atu anō mā tatou
Tauwhirotia mai mātou katoa
Ō mātou hoa
Ō mātou whānau
Āio ki te Aorangi.
Hui e tāiki e.

Our work has finished
the time has arrived
to gather one's thoughts in the basket
that contains discussion
and concepts
that we may use it again in the future
Protect us all
our colleagues
our families
Peace to the universe.
It is complete.