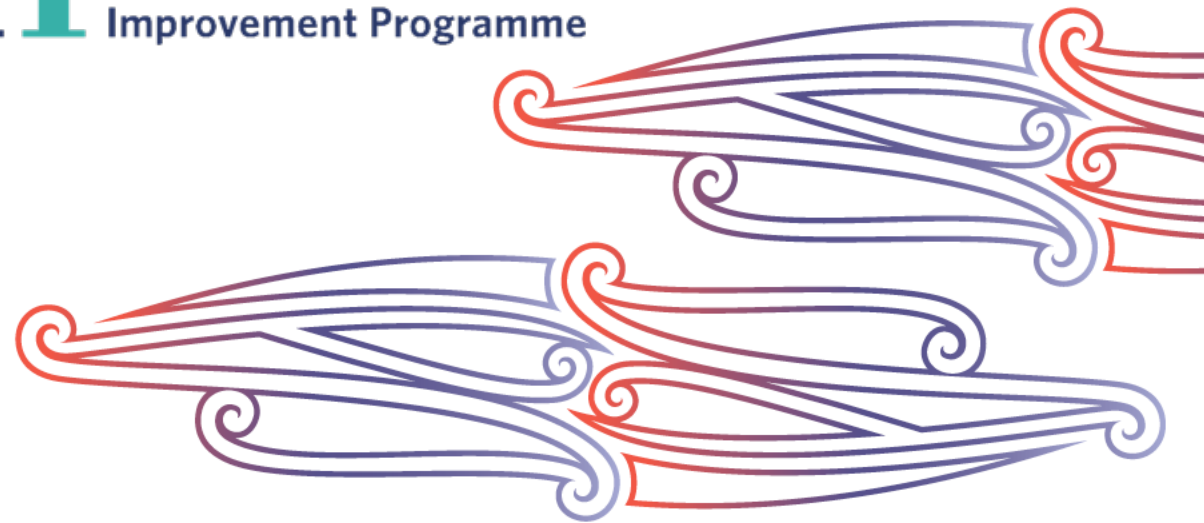




HEALTH QUALITY & SAFETY  
COMMISSION NEW ZEALAND  
*Kupu Taurangi Hauora o Aotearoa*

# Surgical Site Infection Improvement Programme champions webinar

**SSII** Surgical Site Infection  
Improvement Programme



7 December 2022

# 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

<b>Time</b>	<b>Item</b>	<b>Presenter</b>
1.00 pm	Welcome Opening karakia	Ruth Barratt – IPC specialist Jeanette Bell – project manager
1.05 pm	Update from data analyst	Grace Clendon – data analyst
1.10 pm	Cardiac update	Arthur Morris – SSIIP clinical lead
1.30 pm	First year review of light surveillance	Ruth Barratt
1.45 pm	Orthopaedic manual update	Ruth Barratt
1.50 pm	Q&A	Ruth Barratt
1.55 pm	Close Closing karakia	Ruth Barratt Jeanette Bell

# Data analyst update

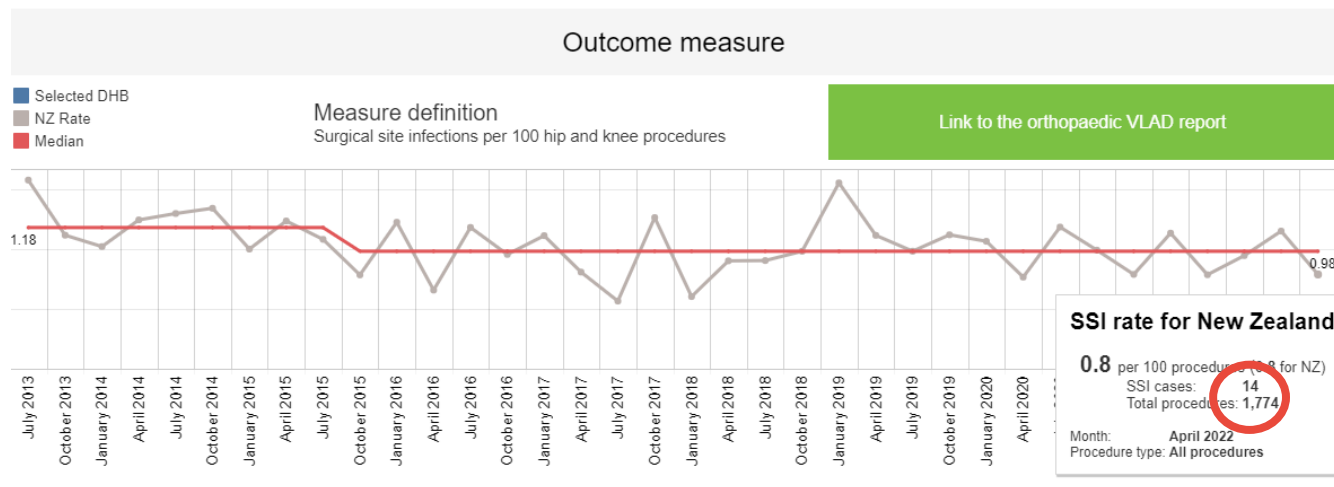
## **A little bit about me**

- Part-time data analyst
- Work with Harini (full-time analyst for IPC)
- Surgical site infection draft reports and dashboard
- Anti-staphylococcal bundle
- Any miscellaneous tasks



# Reviewing the data

DHB	Surveillance type	Number of procedures
Auckland DHB	Full surveillance	60
Bay of Plenty DHB	Light surveillance	64
Canterbury DHB	Light surveillance	156
Capital & Coast DHB	Light surveillance	81
Counties Manukau Health	Full surveillance	113
Hauora Tairāwhiti DHB	Full surveillance	32
Hawke's Bay DHB	Light surveillance	0
Hutt Valley DHB	Light surveillance	68
Lakes DHB	Light surveillance	82
MidCentral DHB	Light surveillance	72
Nelson Marlborough Health	Light surveillance	142
Northland DHB	Light surveillance	97
South Canterbury DHB	Light surveillance	0
Southern DHB	Light surveillance	85
Taranaki DHB	Light surveillance	36
Waikato DHB	Full surveillance	195
Wairarapa DHB	Light surveillance	12
Waitemata DHB	Light surveillance	289
West Coast DHB	Full surveillance	8
Whanganui DHB	Full surveillance	30
<b>Total</b>	<b>Light and full surveillance</b>	<b>1622</b>



DOR - Orthopaedic procedures and SSI; current quarter

Rachele Allan

Surgeries

01-Apr-2022 - 30-Jun-2022

## Data

DHB	Number of procedures	Total
Auckland DHB	60	25
Bay of Plenty DHB	86	42
Canterbury DHB	156	70

# Review of cardiac surgery Surgical Site Infection Improvement Programme (SSIIP)

(2014) 2015–2021

- All procedures: 15,853
- SSI 670 (4.2%)
- Adult: 13,953 (88%)
  - 37% CARD, 63% CABG (93% = CBGB)
- Paediatrics: 1,900 (12%),
  - ~100% CARD procedures



# Cardiac surgery adults: BMI

BMI	n	SSI %	OR	P
< 25	2,169	1.8	Reference	
≥ 25—< 30	4,472	2.8	1.6	0.013
≥ 30—< 35	3,086	4.7	2.7	< 0.001
≥ 35—< 40	1,346	7.3	4.3	< 0.001
≥ 40	698	8.3	4.9	< 0.001

# Cardiac surgery – risk factors

[Dr Arthur Morris presented the review's draft results for risk factors for a surgical site infection following cardiac surgery.

These results will be published early 2023]





# The move to light surveillance for orthopaedic surgery



# Changes to data collection and reporting

## Data collection

- Mandatory data collection ↓ from 35 to 5 fields
- Outcome data for all cases
- Process measure data for SSI cases only
  - Investigation of SSI cases required

## Reporting

- SSI rate maintained for all
- QSM for process measures ends
- Changes to risk factor analysis reporting



# Light surveillance – first 12 months

- Light surveillance commenced on 1 October 2020
- 14 districts have made the move to light surveillance
- May 2022 – Health Quality & Safety Commission board report
  - 12 months worth of data collection
- Results shared as a poster at ACIPC and IPCNC conferences

## A move to light surveillance for New Zealand national orthopaedic surgical site infection reporting



### Introduction

Since 2013, the Health Quality & Safety Commission New Zealand has collected orthopaedic surgical site infection (SSI) data for all publicly funded hip and knee arthroplasty procedures as part of its Surgical Site Infection Improvement Programme (SSIIIP).

The outcome measure for the programme is the rate of SSI. The process measures for the programme are:

- correct antimicrobial dosing
- antibiotic prophylaxis given on time
- duration of post-operative surgical antibiotic prophylaxis
- alcohol-based skin preparation

Data collection by district health boards (DHBs) requires 35 mandatory data fields with an additional 10 data fields required for procedures resulting in an SSI. The data collection process is largely manual and labour intensive.

In 2019 the SSIIIP showed a decline in the national SSI rate with a decrease from 1.18 to 0.89 (per 100 procedures), a 25 percent reduction over four years. This result, combined with high compliance rates for process measures and feedback about workload burden, led to an evaluation of the programme and introduction of the light surveillance reporting mode.

### Intervention

Fourteen out of 20 DHBs have made the move to light surveillance. Light surveillance collects data for outcome monitoring only and process measure data is only collected for SSI cases. This reduces mandatory data collection from 35 fields to 5.

A detailed review of SSI cases prioritising deep and organ space, and superficial infections leading to readmission using a standardised investigation tool was introduced as a light surveillance requirement. Each quarter the Health Quality & Safety Commission hosts a learning community meeting with SSI champions, reflecting on usage of the SSI investigation tool. These meetings provide an opportunity to share information, network, solve challenges and discuss best practice and ideas for improvement. Variable life-adjusted display (VLAD) charts were also introduced to support early identification of changes in SSI rates (see Figure 1).

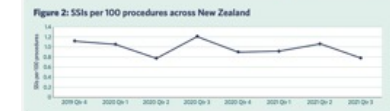


### Analysis and outcomes

SSI data for the baseline period (quarter 4, 2019 to quarter 3, 2020) was compared with data for the light surveillance period (quarter 4, 2020 to quarter 3, 2021).

### Outcome measure (SSI rate)

Overall, across all 20 DHBs, there was a decrease in the orthopaedic SSI rate for New Zealand from 1.1 per 100 procedures for the baseline period to 0.9 per 100 procedures for the light surveillance period, Figure 2. This decrease was not statistically significant.

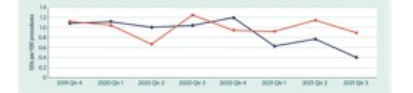


There were no significant decreases for either the light surveillance or the full surveillance DHB groups when comparing the before and after aggregated data using quarter 4, 2019 to quarter 3, 2020 as a baseline (Table 2, Figure 3).

Table 2: Aggregated DHB SSI rates (quarter 4, 2019 to quarter 3, 2020 compared with quarter 4, 2020 to quarter 3, 2021)

Surveillance type	Pre-implementation SSI rate	Post-implementation SSI rate	P-value
All	1.06 (27.2/2641)	0.77 (86.2/2040)	0.075
Light	1.07 (27.6/2565)	0.78 (86.6/1993)	0.483

Figure 3: SSI rates for full and light surveillance DHBs



### Process measures for SSI cases

There are early signs for light surveillance DHBs, of a statistically significant decrease for both antibiotic timing and antibiotic dose process measures for SSI cases. These measures will need to continue to be tracked over time.

There has been no change for process measures for SSI cases for full surveillance DHBs.

Table 3: Aggregated DHB surveillance DHB compliance rates for antibiotic prophylaxis (quarter 4, 2019 to quarter 3, 2020 compared with quarter 4, 2020 to quarter 3, 2021)

Surveillance type	Pre-implementation SSI rate	Post-implementation SSI rate	P-value
Timing	94.9% (26/27)	87.9% (22/25)	0.03
Dose	94.9% (26/27)	82.8% (24/29)	<0.001



### Champions survey

In July 2021, a survey of SSI champions indicated that the move to light surveillance had resulted in a median time saving of 16 hours per quarter, with a range of 4-96 hours saved.

### Conclusions

- DHBs have embraced the light surveillance option of data collection, as the reduction in resource requirements for data collection has freed up time to focus on in-depth reviews of SSI cases. The SSI investigation tool and VLAD report provide a systematic approach to monitoring results.
- Overall, across all 20 DHBs, there was a decrease in the orthopaedic SSI rate for New Zealand from 1.1 per 100 procedures for the baseline period to 0.9 per 100 procedures for the light surveillance period. This decrease was not statistically significant.
- There are early signs, for light surveillance DHBs, of a statistically significant decrease for both antibiotic timing and antibiotic dose process measures for SSI cases. These measures will need to continue to be tracked over time.



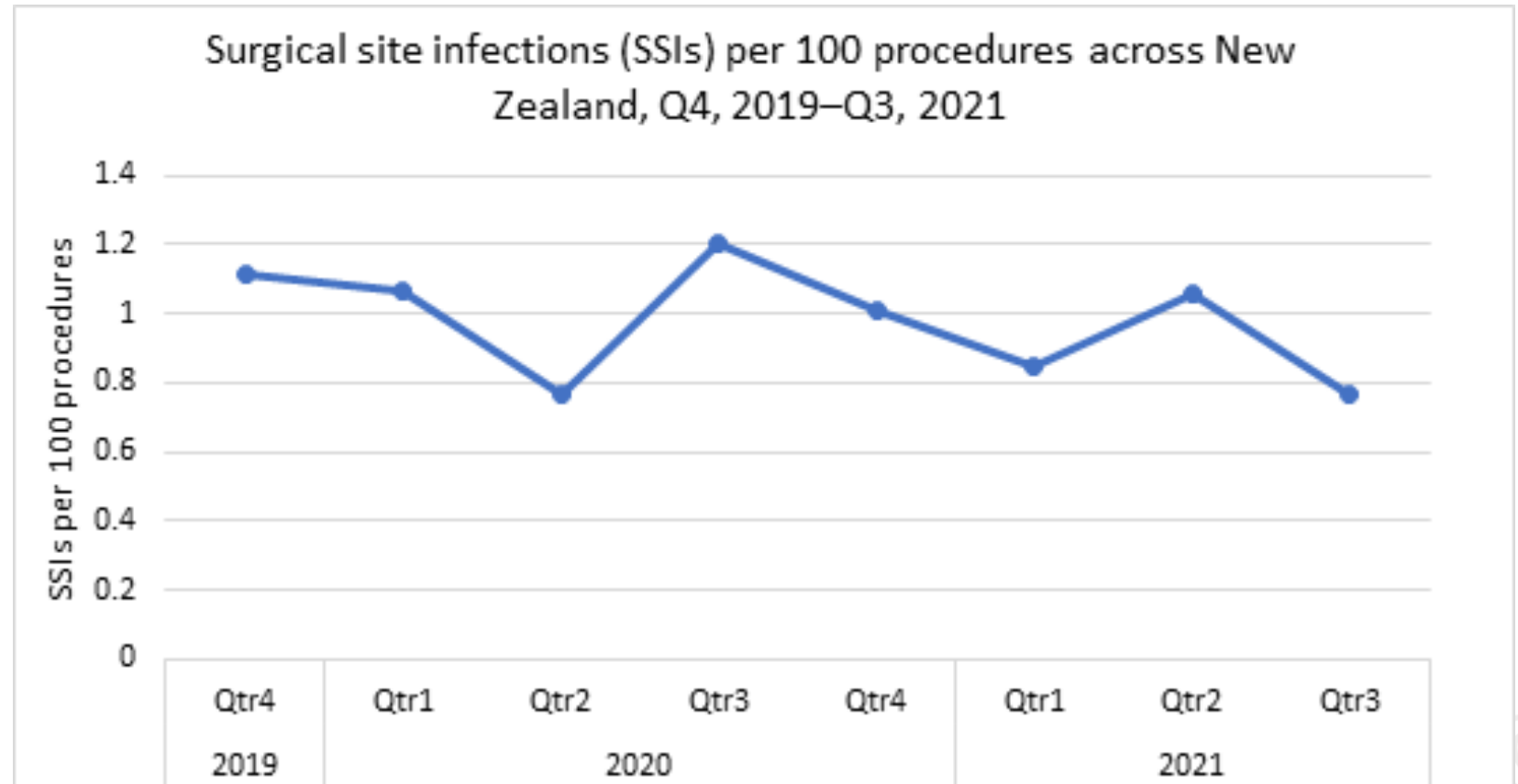
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Thank you to everyone who participated. In relation to this presentation, I declare that there are no conflicts of interest.

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# Analysis and outcomes – outcome measure (SSI rate)

- Across all 20 districts there was a decrease in the orthopaedic SSI rate
- Not statistically significant



# Process measures for SSI cases

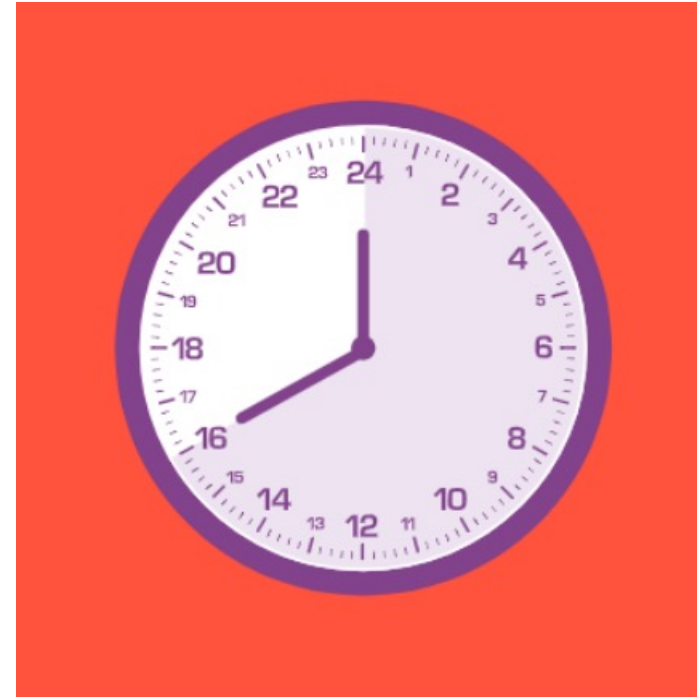
- Early signs of a statistically significant decrease for light surveillance districts for:
  - antibiotic timing
  - antibiotic dosing
- No change for process measures for SSI cases for full surveillance

Table 3: Aggregated light surveillance DHB compliance rates for antibiotic prophylaxis (Q4 2019 – Q3 2020 compared to Q4 2020 – Q3 2021)

Measure	Pre-implementation compliance rate	Post-implementation compliance rate	P-value
Dosing	94.9% (56/59)	87.7% (50/57)	0.01
Timing	94.9% (56/59)	82.5% (47/57)	<0.001

# Time savings

- Median time saving of 16 hours per quarter
- Time savings freed up time for in-depth reviews of SSI cases
- SSI investigation tool and variable life-adjusted display (VLAD) report introduced to support light surveillance



# SSI investigation tool

- Introduced as a resource end 2021
- Use of the SSI investigation tool is a **requirement** of light surveillance
- Used to review orthopaedic SSIs, prioritising deep and organ space infections and superficial infections leading to readmission
- Optional (but encouraged) use for full surveillance
- Helps identify other contributing factors for SSI, apart from the existing process measures



**Surgical site infection investigation tool**

For background information on this tool, go to: [www.hpa.gov.uk/our-programmes/infection-prevention-and-control/what-we-do/resources-and-research/outbreaks/SSI](http://www.hpa.gov.uk/our-programmes/infection-prevention-and-control/what-we-do/resources-and-research/outbreaks/SSI)  
Explanations of abbreviations used in this tool are given at the end.

Patient information			
NHS:			
Gender:	<input type="checkbox"/> M	<input type="checkbox"/> F	<input type="checkbox"/> Other
Date of birth:			Insert patient's date here if available
Admission/discharge			
Was the patient seen (phoned) by pre-admission clinic?†	<input type="checkbox"/> Y <input type="checkbox"/> N		
Date of admission (to surgery):	/ /		
Date of discharge:	/ /		
Date of death (if applicable):	/ /		
Date of re-admission:	/ /		
Transfer from another acute care hospital?†	<input type="checkbox"/> Y <input type="checkbox"/> N		
Pre-operative length of stay (primary admission):	/ /		
Post-operative length of stay (primary admission):	/ /		
Infection details			
Type of SSI:	<input type="checkbox"/> Superficial	<input type="checkbox"/> Deep	<input type="checkbox"/> Organ space <input type="checkbox"/> Not stated
Organism identified:	1	2	3
Date SSI symptoms identified:	Date SSI confirmed by surgical team:		
ACC treatment status process initiated?†	<input type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> Unknown	SAC rating:	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4

Surgical site infection investigation tool (print version)

# Summary

- No statistically significant decrease in the SSI rate since introduction
- Early signs of a statistically significant decrease in antibiotic timing and antibiotic dosing process measures – need to track over time
- Saves time but some surgeons like to see all data for all cases
- SSI investigations required but not always performed





# Orthopaedic guide review

- Supersedes the Commission's *Orthopaedic surgery implementation manual, 2019*
- Publication due January 2023
- Online version plus hard copy x 1 for each district
- Use in conjunction with other document resources, eg, ICNet guides

**Orthopaedic surgery implementation guide**

**Te aratohu mahi hāparapara kōiwi**

**For providers implementing and delivering a national Surgical Site Infection Improvement Programme in Aotearoa New Zealand**



# Orthopaedic guide - key updates

- Inclusion of light surveillance
- Re-order of contents to flow better
- Updated references particularly antimicrobial prophylaxis
- Clarification of a case inclusion relating to previous SSI
- No changes to definitions or process charts



Have you a question about the SSIIP?



# Upcoming dates

- Quarterly QSM, SSIIIP dashboard and variable life-adjusted display (VLAD) reports published 16 December
- End of SSIIIP quarter 31 December
- Quarterly SSIIIP investigation summary form due 6 January 2023
- Quarterly SSIIIP data for Q3 Jul–Sept 2022 procedures due 31 January 20223
- Quarterly SSIIIP investigation meeting Date TBC early Feb



# 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.

# Abbreviations used in this presentation

ACIPC – Australian College for Infection Prevention and Control

BMI – body mass index

CABG – coronary artery bypass graft

CARD – cardiac surgery

CBGB – coronary artery bypass graft with chest and donor site incisions

DHB – district health board

IPC – infection prevention and control

IPCNC – Infection Prevention and Control Nurses College

OR – odds ratio

QSM – quality safety marker

SSI – surgical site infection

SSIIP – surgical site infection improvement programme