

Meeting of Lanarkshire
NHS Board: 25 August 2021

Lanarkshire NHS Board
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SUBJECT: Healthcare Associated Infection (HCAI) Reporting Template

1. PURPOSE

This paper is coming to the NHS Lanarkshire (NHSL) Board:

For approval	<input type="checkbox"/>	For endorsement	<input checked="" type="checkbox"/>	To note	<input type="checkbox"/>
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The purpose of this paper is to update NHSL Board Members on the current position against;

- *CNO (2019) October 2019: Standards on Healthcare Associated Infection and Indicators for Antibiotic Use.*

2. ROUTE TO THE BOARD

This paper has been:

Prepared	<input checked="" type="checkbox"/>	Reviewed	<input type="checkbox"/>	Endorsed	<input checked="" type="checkbox"/>
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By the Head of Infection Prevention and Control (IPC) and approved by the Lanarkshire Infection Control Committee (LICC).

3. SUMMARY OF KEY ISSUES

The key performance headlines and improvement activity are noted in the Executive Summary on pages 4 to 5. Please note that performance data contained within the report has been validated nationally by Antimicrobial Resistance and Healthcare Associated Infection (ARHAI) Scotland. The *Standards on Healthcare Associated Infections and Indicators on Antibiotic Use for Scotland* were released on 10 October 2019. NHS Lanarkshire has developed local AOP standards which took effect retrospectively from April 2019.

4. STRATEGIC CONTEXT

This paper links to the following:

Corporate Objectives	<input checked="" type="checkbox"/>	Annual Operating Plan	<input checked="" type="checkbox"/>	Government Policy	<input type="checkbox"/>
Government Directive	<input checked="" type="checkbox"/>	Statutory Requirement	<input checked="" type="checkbox"/>	AHF/Local Policy	<input type="checkbox"/>
Urgent Operational Issue	<input type="checkbox"/>	Other	<input type="checkbox"/>		

There is a national mandatory requirement for a report relating to Infection Prevention and Control (IPC) to be presented to the NHS Board using the Scottish Government Reporting Template (in Appendix 1).

5. CONTRIBUTION TO QUALITY

This paper aligns to the following elements of safety and quality improvement:

Three Quality Ambitions:

Safe	<input checked="" type="checkbox"/>	Effective	<input checked="" type="checkbox"/>	Person Centred	<input checked="" type="checkbox"/>
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Six Quality Outcomes:

Everyone has the best start in life and is able to live longer healthier lives; (Effective)	<input type="checkbox"/>
People are able to live well at home or in the community; (Person Centred)	<input checked="" type="checkbox"/>
Everyone has a positive experience of healthcare; (Person Centred)	<input checked="" type="checkbox"/>
Staff feel supported and engaged; (Effective)	<input checked="" type="checkbox"/>
Healthcare is safe for every person, every time; (Safe)	<input checked="" type="checkbox"/>
Best use is made of available resources. (Effective)	<input checked="" type="checkbox"/>

6. MEASURES FOR IMPROVEMENT

- Annual Operating Plan (AOP) targets for *Staphylococcus aureus* bacteraemia (SAB) and *Clostridioides difficile* Infection (CDI) standards for 2019 to 2022 and *Escherichia coli* bacteraemia (ECB) standard for 2019 to 2024.
- Key Performance Indicators (KPI) for Meticillin Resistant *Staphylococcus aureus* (MRSA) Clinical Risk Assessment (CRA) and Carbapenemase-producing *Enterobacteriaceae* (CPE) CRA compliance.
- Local Performance Indicator for Hand Hygiene.

7. FINANCIAL IMPLICATIONS

The organisation carries financial pressures as a direct result of HCAI. The severity of these pressures are dependent on a number of variables including length of stay, associated treatment required etc.

8. RISK ASSESSMENT/MANAGEMENT IMPLICATIONS

- MRSA CRA Compliance: To achieve 90% or above.
- CPE CRA Compliance: To achieve 90% or above.
- Hand hygiene: To achieve 95% or above.

9. FIT WITH BEST VALUE CRITERIA

This paper aligns to the following best value criteria:

Vision & leadership	<input type="checkbox"/>	Effective partnerships	<input type="checkbox"/>	Governance & accountability	<input checked="" type="checkbox"/>
Use of resources	<input checked="" type="checkbox"/>	Performance management	<input type="checkbox"/>	Equality	
Sustainability	<input type="checkbox"/>				

10. EQUALITY AND DIVERSITY IMPACT ASSESSMENT

An Equality and Diversity Impact Assessment (EDIA) has been completed

Yes Please say where a copy can be obtained No Please say why not

There has been no requirement to date to complete an EDIA.

11. CONSULTATION AND ENGAGEMENT

Consultation and contributions have been devised from the following departments/personnel across acute and partnership services:

- Infection Prevention and Control Team (IPCT)
- Property and Support Services Division (PSSD)
- Antimicrobial Management Team (AMT)
- Lanarkshire Infection Control Committee (ICC) and Sub-groups

12. ACTIONS FOR THE BOARD

The NHS Board is asked to:

Approval	<input type="checkbox"/>	Endorsement	<input type="checkbox"/>	Identify further actions	<input type="checkbox"/>
Note	<input checked="" type="checkbox"/>	Accept the risk identified	<input type="checkbox"/>		

The NHS Board is asked to note this report and highlight any areas where further clarification or assurance is required.

The NHS Board is also asked to confirm whether the report provides sufficient assurance around NHSL performance on HCAI, and the arrangements in place for managing and monitoring HCAI.

13. FURTHER INFORMATION

For further more detailed information or clarification of any issues in this paper please contact:

- Eddie Docherty, Executive Director of Nursing, Midwifery and Allied Health Professionals (NMAHPs) (Telephone number: 01698 858089)
- Christina Coulombe, Head of Infection Prevention and Control (Telephone number: 01698 366309)

Presented by Eddie Docherty, Executive Director of NMAHPs

Prepared by Infection Prevention and Control Team

Infection Prevention and Control (IPC) key successes and challenges
Executive Summary
June to July 2021

KEY SUCCESSES

Launch of the Infection Prevention and Control (IPC) Virtual Breakthrough Series Collaborative

On 2 June 2021, NHS Lanarkshire launched the IPC Virtual Breakthrough Series Collaborative (VBSC) with keynote speakers including Heather Knox, Chief Executive, NHS Lanarkshire, Professor Amanda Croft, Chief Nursing Officer for Scotland and Professor Jason Leitch, National Clinical Director. The ethos of this work is to validate as well as sponsor a collective vision of improving outcomes for patients by reducing healthcare and community associated infection and concomitant avoidable harm. A considerable number of teams are involved across acute and the health and social care partnerships with support from Quality Improvement (QI) Advisors. All members are currently undertaking the eQUIP course to provide them with the necessary QI methodology skills to progress their specific projects. Updates will be provided to the ICC bi-monthly.

Launch of NHS Scotland Assure

Members of the IPC team attended the launch of NHS Scotland Assure on 28 June 2021. NHS Scotland Assure is a new national service which has been established to improve the quality and management of healthcare construction and refurbishment projects across NHS Scotland. NHS Scotland Assure brings together experts to improve quality and support the design, construction and maintenance of major healthcare developments. This world first interdisciplinary team includes microbiologists, infection prevention and control nurses, architects, planners, and engineers. Commissioned by the Scottish Government and established by NHS National Services Scotland, the service will work with Health Boards to ensure healthcare buildings are designed with infection prevention and control practice in mind, protecting patients and improving safety.

Benefits of NHS Scotland Assure include:

- Increased patient safety;
- Stronger relationships with clinical teams;
- Increase in public and professional confidence;
- Cohesion between healthcare and construction teams; and
- Greater sustainability.

NHS Scotland Assure consists of eight new services, supporting the management of risk in healthcare builds across Scotland. For some services, elements are already delivered across the system, and where this is the case, enhancements will be made.

Research Studies

SIREN

The Head of IPC remains a member of the Scottish Steering Group of SIREN (**S**arscov2 **I**mmunity & **RE**infection **E**valuation): The impact of detectable anti SARS-COV2 antibody on the incidence of COVID-19 in healthcare workers.

The Scottish arm of the UK SIREN study is led by Glasgow Caledonian University in partnership with Public Health Scotland and working closely with the Chief Scientist Office and NHS Research Scotland.

The overall aim of the full UK study is to determine if prior SARS-CoV-2 infection in healthcare workers confers future immunity to reinfection. The primary objective is to determine whether the presence of antibody to SARS-COV2 (anti-SARS-COV2) is associated with a reduction in the subsequent risk of re-infection over the next year.

Scottish objectives

Whilst SIREN in Scotland will contribute to delivering of all secondary objectives of the UK SIREN protocol, analysis and reporting of the Scottish data will focus on the following objectives:

1. To estimate the prevalence of SARS-CoV-2 infection in NHS secondary care healthcare workers in the Scottish SIREN sample, using baseline serological testing at study entry of healthcare workers and symptom history from February 1st 2020 to date of study entry.
2. To estimate the subsequent incidence of symptomatic and asymptomatic SARS-CoV-2 infection in NHS secondary care healthcare workers in the Scottish SIREN sample and determine how this varies over time, using fortnightly RT-PCR testing (combined with any intercurrent testing on development of symptoms).
3. To estimate cumulative incidence of new infections in NHS secondary care healthcare workers in the Scottish SIREN sample.

Updates will be provided to the ICC as an oversight function if required.

KEY CHALLENGES

Monklands Replacement Project

The Senior Nurse for IPC will be seconded to MRP on 16 August 2021 for an initial period of three months due to the inability to recruit after four attempts. This failure to recruit has required the Head of IPC and the Senior Nurse for IPC to continue to support this work programme in addition to their current role. The post will be re-advertised as a substantive post for MRP.

AOP Standards up to Q1 January to March 2021

- NHSL is **above** with the national comparator for Q1 SAB rates;
- NHSL is above the local AOP Standard rate for Q1 SAB rates; the AOP standard was **not met** for this quarter
- NHSL is above the national comparator for Q1 CDI rates;
- NHSL is above the local AOP Standard rate for Q1 CDI rates; the AOP standard was **not met** for this quarter
- NHSL is above the national comparator for Q1 ECB rates;
- NHSL is above the local AOP Standard rate for Q1 ECB rates; the AOP standard was **not met** for this quarter.
- MRSA KPI has been met;
- CPE KPI has **not** been met;
- Hand Hygiene Local Performance Indicator (IPC QA Audits) has **not** been met;

NHSL Performance

Staphylococcus aureus bacteraemia (SAB)

When *Staphylococcus aureus* (*S. aureus*) breaches the body's defence mechanisms it can cause a wide range of illness from minor skin infections to serious infections such as bloodstream infections.

Staphylococcus aureus Bacteraemia (SAB) Standard

NHSL Performance (Q1 Jan-Mar 2021): HCAI

- NHSL SAB HCAI rate of 26.8 per 100,000 TOBDs; 34 HCAI cases;
- National SAB HCAI rate of 18.4 per 100,000 TOBDs;
- NHSL is above with the national comparator for Q1 SAB rates;
- NHSL is above the local AOP Standard rate for Q1 SAB rates.

Staphylococcus aureus bacteraemia (SAB)

- The AOP target is for HCAI cases only;
- During January to March 2021, there were 59 SAB cases; 34 HCAI cases and 25 community associated infection (CAI) cases;
- This is an increase of 10 HCAI and 10 CAI SAB cases in total from the previous quarter;
- NHSL will be expected to achieve a target of ≤ 91 HCAI SAB cases (a rate of 16.1 per 100,000 TOBDs by end of March 2022).

Chart 1 – HCAI SAB cases (Oct 2018 – Mar 2021)

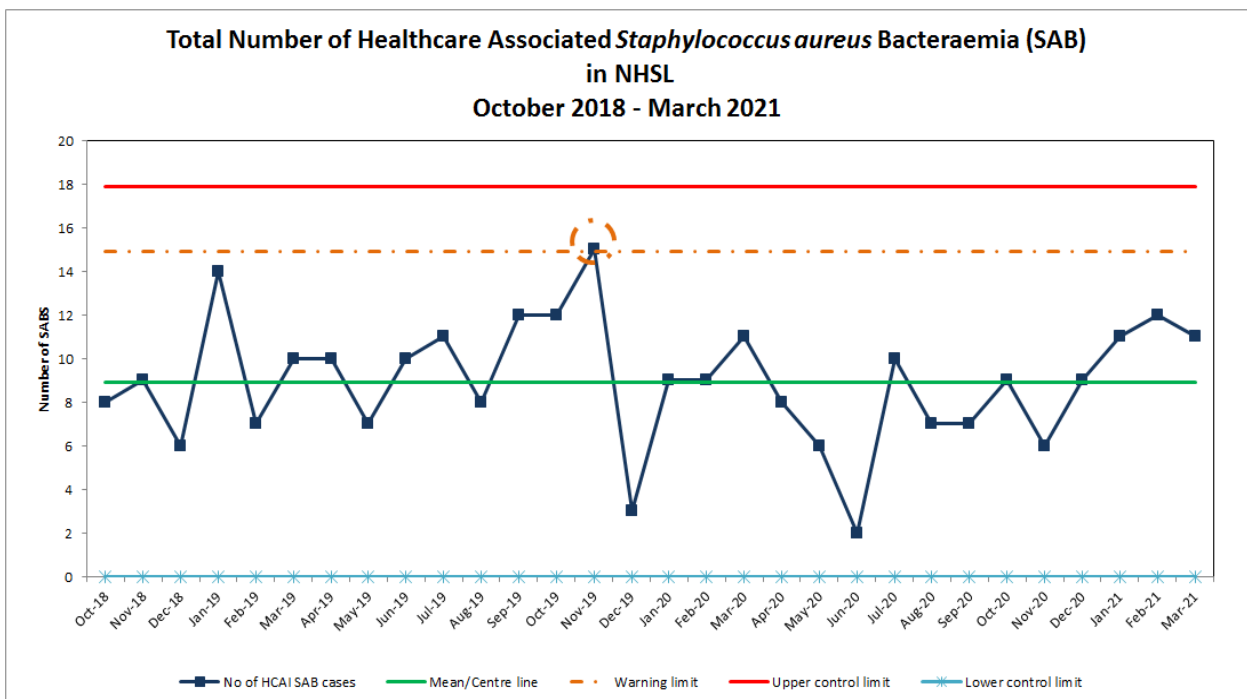


Chart 1 show that NHS Lanarkshire has witnessed an increase in the number of HCAI SAB cases from January to March 2021. Over this quarter there has been **14** device related infections; 4 PVC infections; 3 dialysis line infections; 2 PICC/Midline infections; 2 Nephrostomy infections; 1 Arterial line infection; 1 CVC infection and 1 Ascitic drain site infection.

Figure 1: Funnel plot of SAB incidence rates (per 100,000 TOBD) in healthcare associated infection cases for all NHS boards in Scotland in (Q1) Jan- Mar 2021.

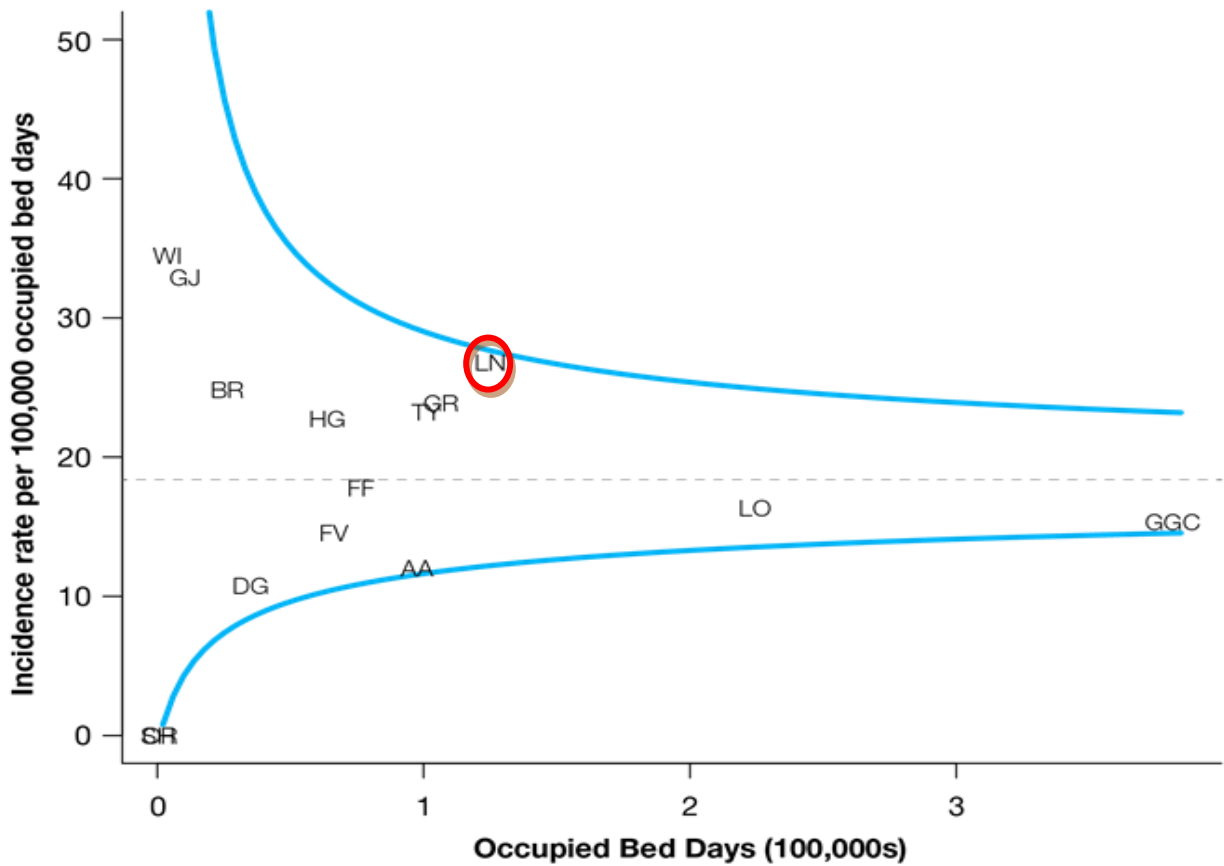
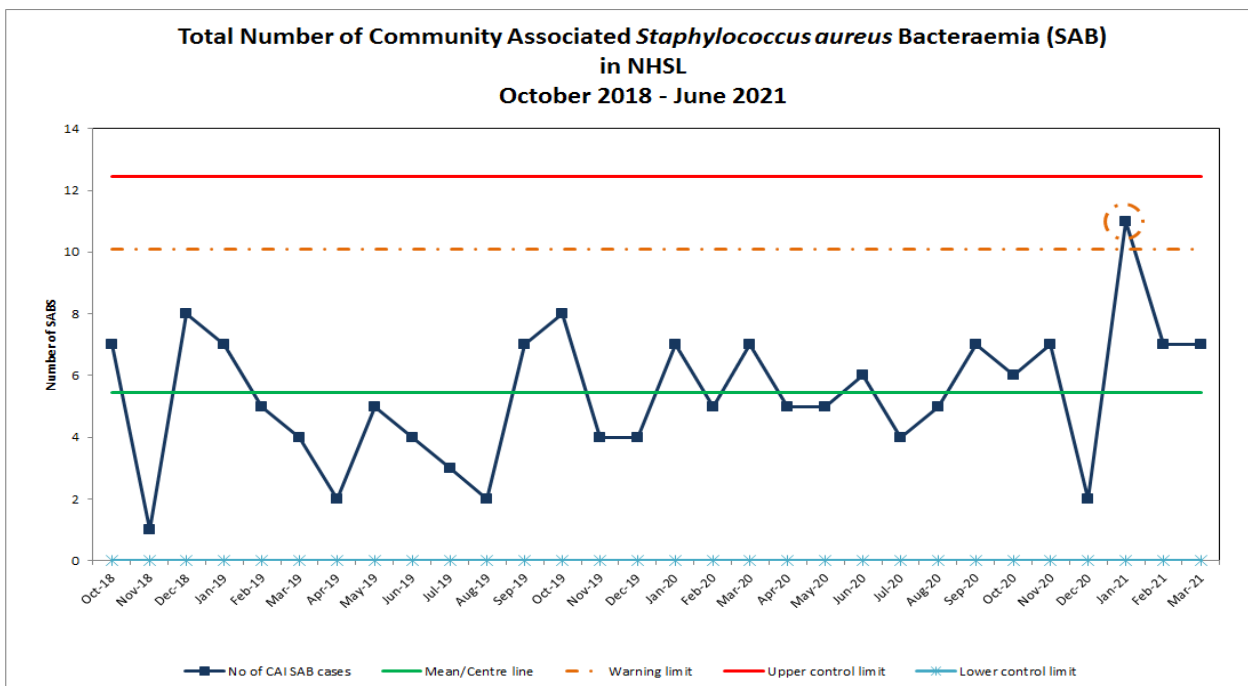


Figure 1 demonstrates that NHSL (LN) remains within the 95% confidence interval for incidence rates for Q1.

Chart 2 – CAI SAB cases (Oct 2018 – Mar 2021)



This chart is in statistical control.

Quality improvement and interventions in place to reduce SAB:

- Standard Operating Procedure (SOP) Manual for Invasive Devices Chapter 1 – Peripheral Venous Cannula (PVC) and associated practices: Chapter 1 contains research based guidance on the insertion, care and maintenance of Peripheral Vascular Cannulae (PVC). This resource will be promoted during the IPC Breakthrough Series Collaborative work streams;
- SAB rates and sources are discussed at Hygiene and Clinical Governance meetings with clinical staff; all Chiefs and Associate Nurse Directors have been asked to provide an update on improvement work to date to the June 2021 ICC; and
- The Virtual Breakthrough Series Collaborative will champion work related to device insertion and management.

Risk Management:

There were < 5 related SAB deaths between October and December 2020. No Datix resulted in a SAER.

Clostridioides difficile Infection (CDI)

CDI can be a severe and life-threatening infection which causes diarrhoea. Prevention of CDI is therefore essential and an important patient safety issue.

Clostridioides difficile Infection (CDI) Standard

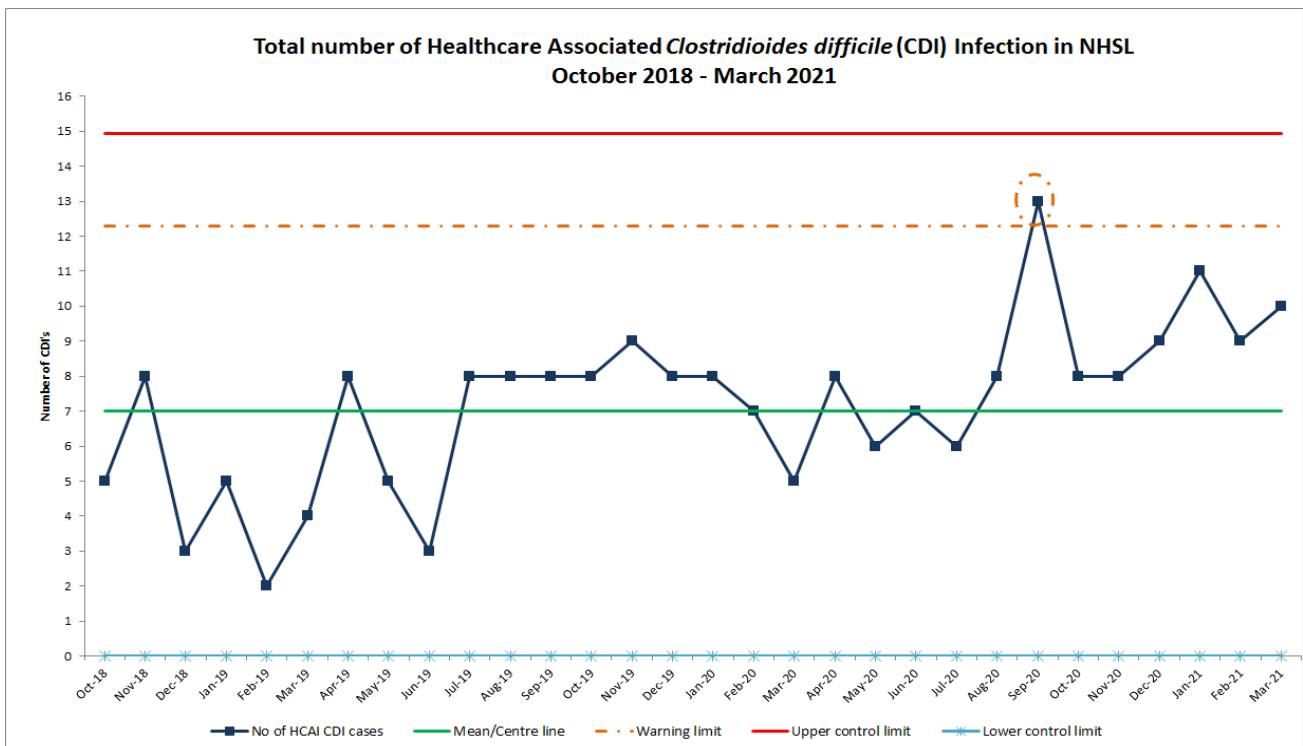
NHSL Performance (Q1 Jan-Mar 2021): HCAI

- NHSL CDI HCAI rate of 23.7 per 100,000 TOBDs; 30 HCAI cases;
- National CDI HCAI rate of 15.6 per 100,000 TOBDs;
- NHSL is above the national comparator for Q1 CDI rates;
- NHSL is above the local AOP Standard rate for Q1 CDI rates.

Clostridioides difficile Infection (CDI)

- During Jan – Mar 2021, there were 40 CDI cases; 30 HCAI cases and 10 CAI cases;
- NHSL will be expected to achieve a target of ≤ 84 HCAI CDI cases (a rate of 14.8 per 100,000 TOBDs by end of March 2022).

Chart 4 – HCAI CDI cases (Oct 2018 – Mar 2021)



This chart is out of statistical control; last 8 values on the same side of the mean/centre line. This trend indicates that something in the system is deteriorating. Investigations are ongoing across the acute division and within the partnerships to understand this shift in the data. All outcomes and learning continue to be discussed at the ICC.

Figure 2: Funnel plot of CDI incidence rates (per 100,000 TOBD) in healthcare associated infection cases for all NHS boards in Scotland in (Q1) Jan- Mar 2021.

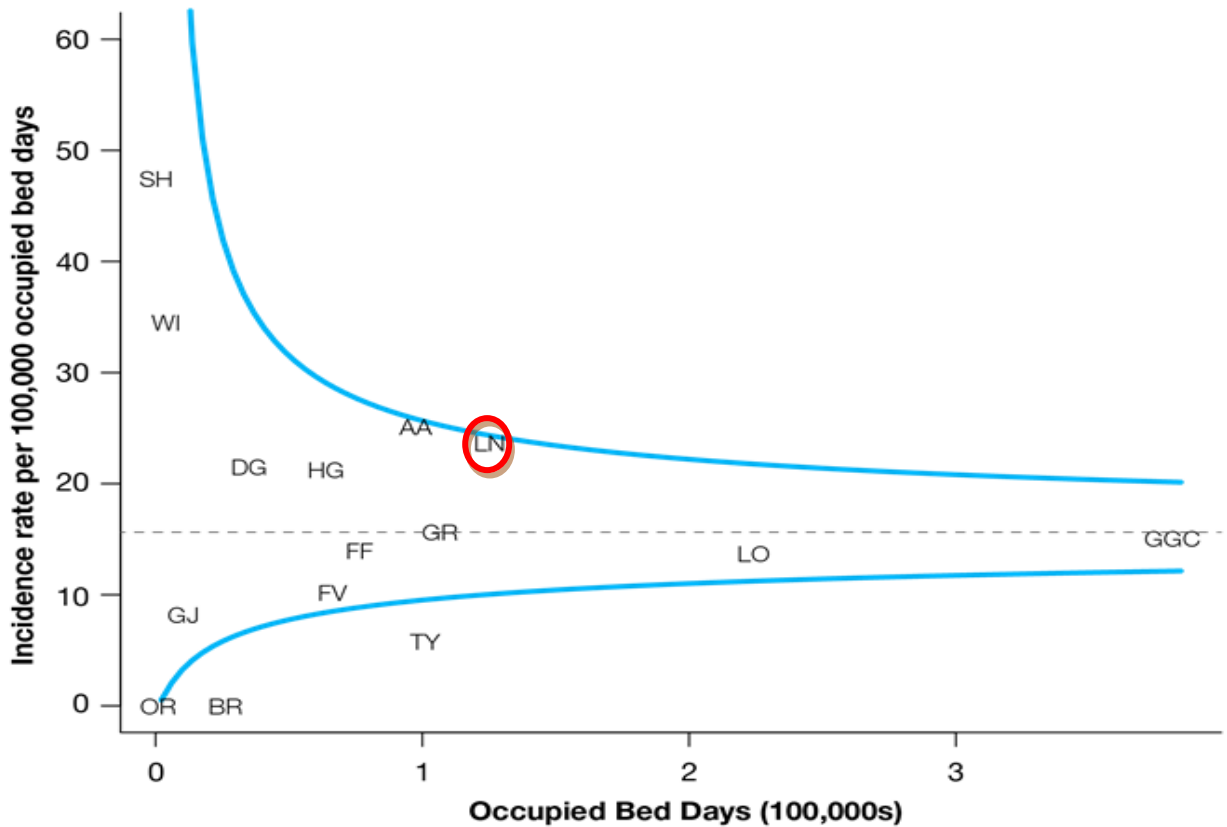
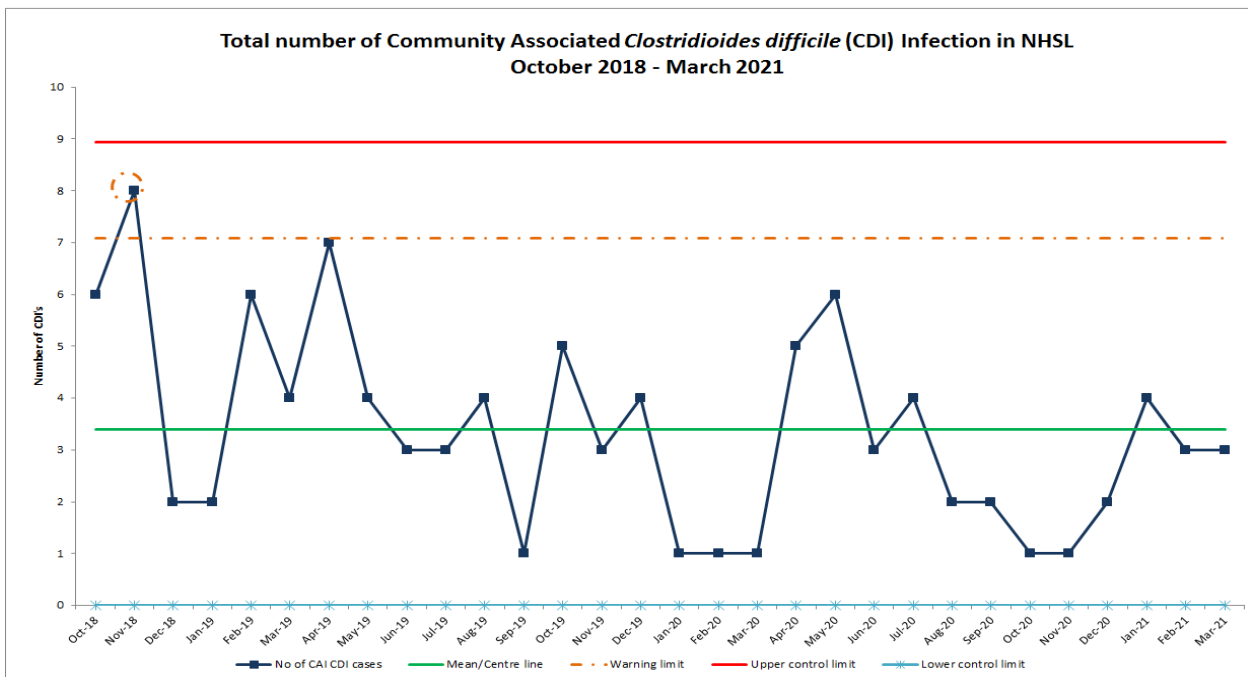


Figure 2 indicates that NHSL (LN) remains within the 95% confidence interval for incidence rates for Q1.

Chart 5 – CAI CDI cases (Oct 2018 – Mar 2021)



This chart is in statistical control.

Quality improvement and interventions in place to reduce CDI:

- Antimicrobial stewardship continues to be a priority in the management of CDI patients;
- All Chiefs and Associate Nurse Directors have been asked to provide an update on improvement work to date to the August 2021 ICC;
- Information is given to wards to advise of the requirement for prompt and clear identification of patients with loose stools and appropriate action to be taken;
- Support with data analysis and interpretation has been requested from ARHAI Scotland to determine the impact of the pandemic has had on AOP Standard rates; and
- The Vale of Leven improvement plan will be refreshed as a key action from the August 2021 ICC.

Risk Management:

There were < 2 related CDI deaths between October and December 2020. No Datix resulted in a SAER.

Escherichia coli Bacteraemia (ECB)

Escherichia coli (*E. coli*) is a bacterium that forms part of the normal gut flora that helps human digestion. Although most types of *E. coli* live harmlessly in your gut, some types can make you unwell.

When it gets into your blood stream, *E. coli* can cause a bacteraemia. This can be as a result of an infection such as:

- urinary tract;
- surgery; and
- inappropriate use of medical devices.

Escherichia coli Bacteraemia (ECB) Standard

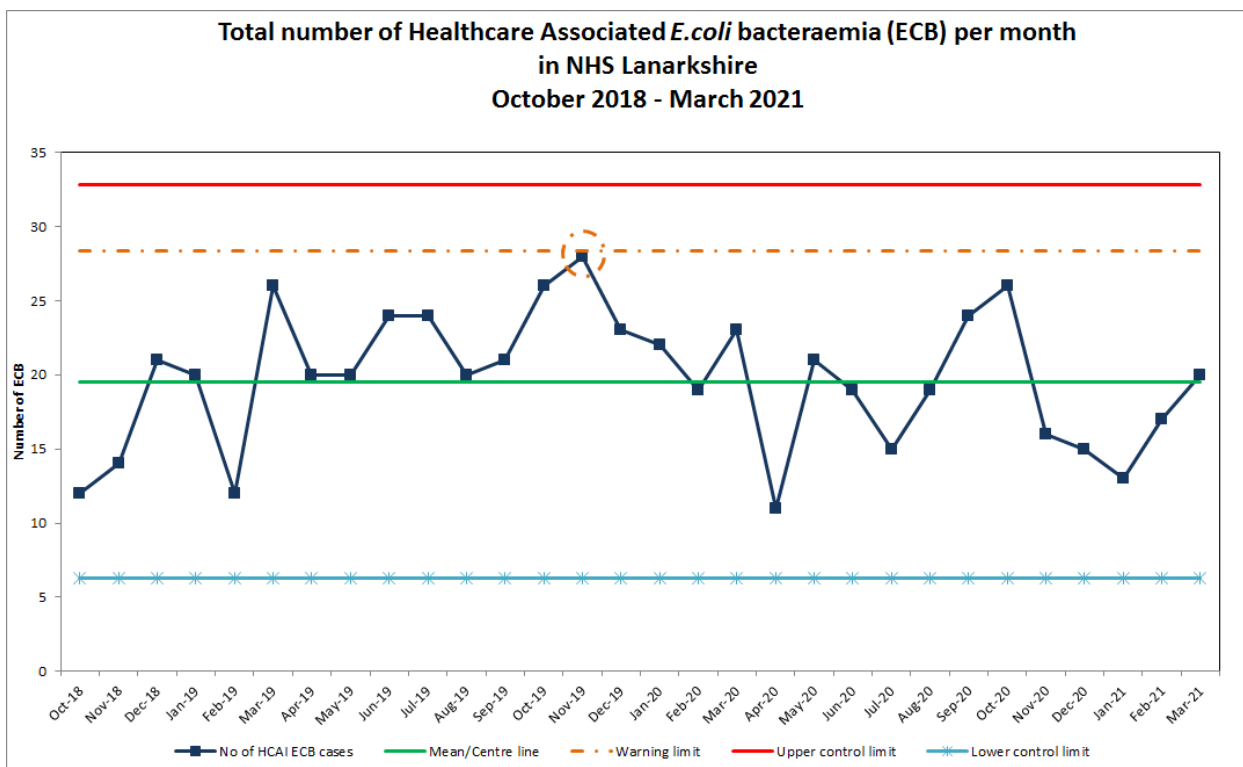
NHSL Performance (Q1 Jan-Mar 2021): HCAI

- NHSL ECB HCAI rate of 39.4 per 100,000 BDs; 50 HCAI cases;
- National ECB HCAI rate of 34.7 per 100,000 TOBDs;
- NHSL is above the national comparator for Q1 ECB rates;
- NHSL is above the local AOP Standard rate for Q1 ECB rates.

Escherichia coli Bacteraemia (ECB)

- During Jan – Mar 2021, there were 108 cases; 50 HCAI cases and 58 CAI cases.
- NHSL will be expected to achieve a target of <=189 HCAI ECB cases (a rate of 33.5 per 100,000 TOBDs by end of March 2022).

Chart 6 – HCAI ECB cases (Oct 2018 – Mar 2021)



This chart is in statistical control.

Figure 3: Funnel plot of ECB incidence rates (per 100,000 TOBD) in healthcare associated infection cases for all NHS boards in Scotland in (Q1) Jan- Mar 2021.

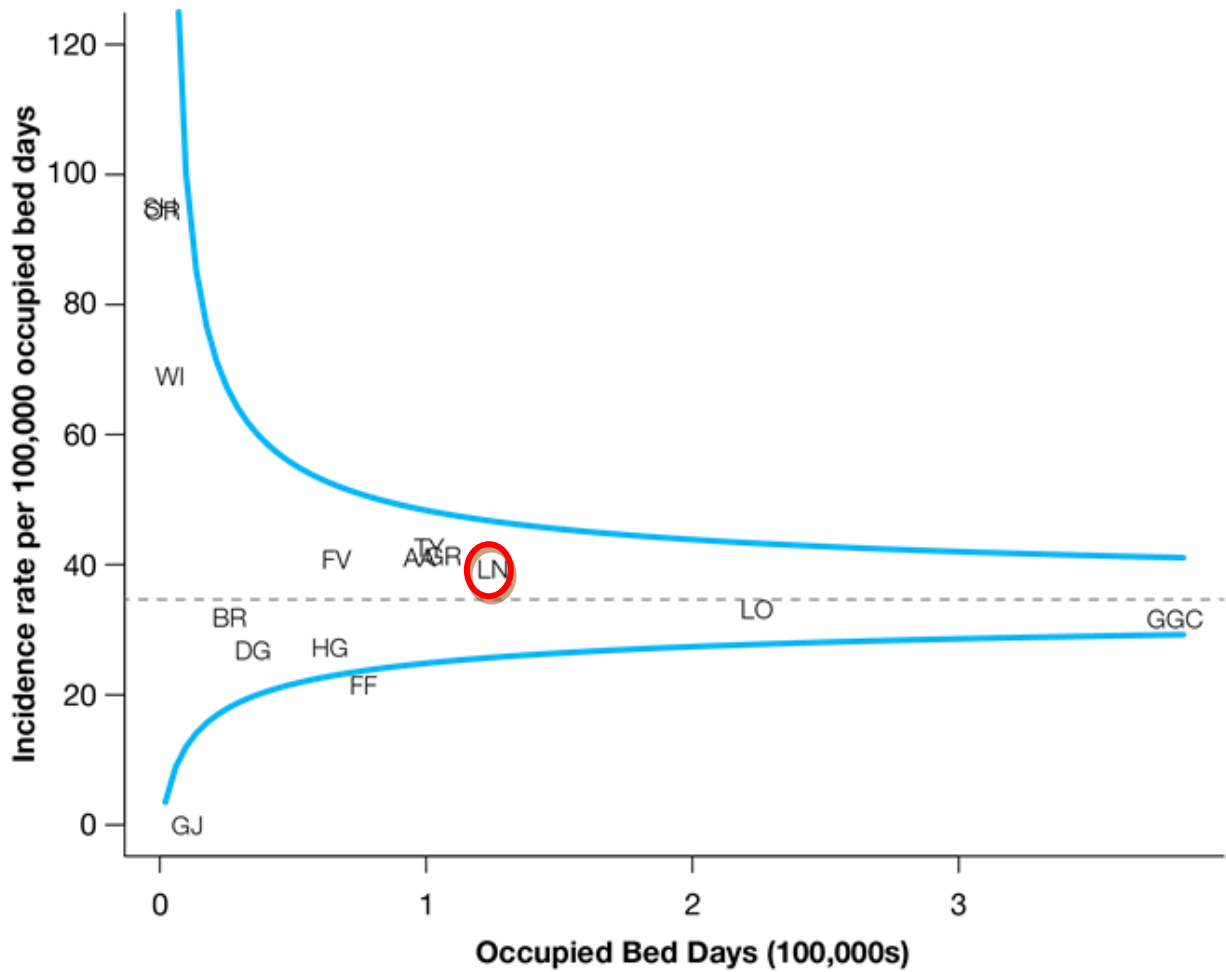


Figure 3 demonstrates that NHSL remains within the 95% confidence interval for incidence rates for Q1.

Surgical Site Infection Surveillance

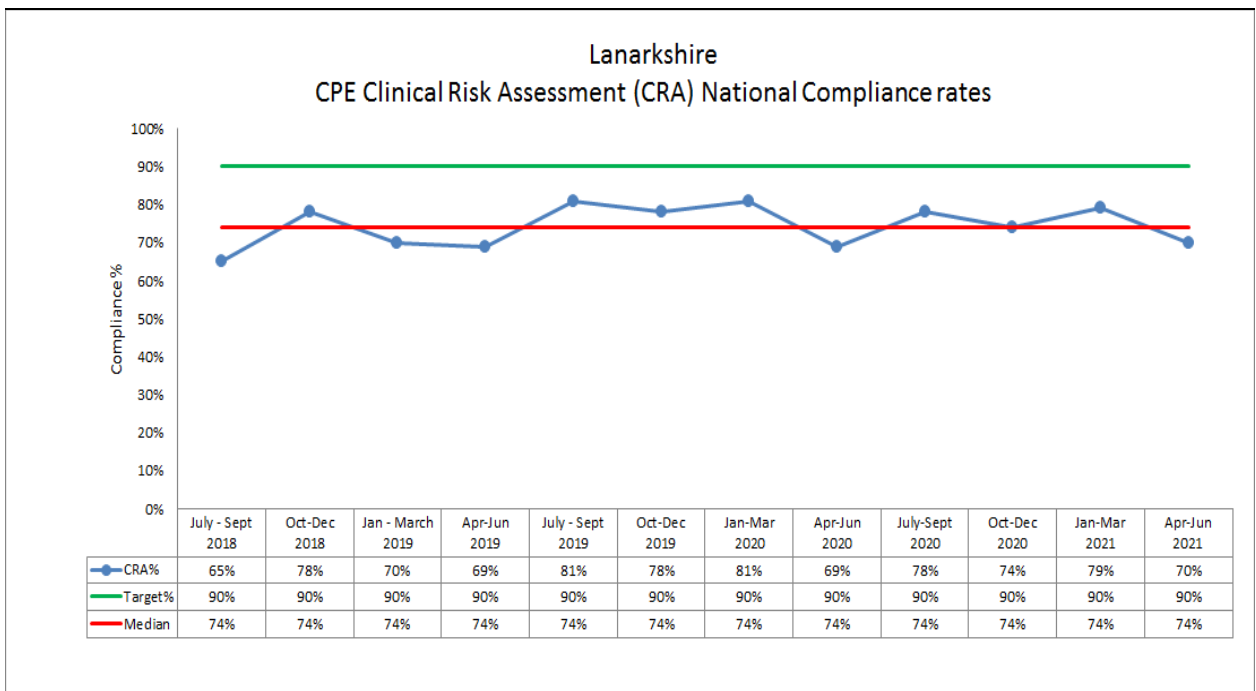
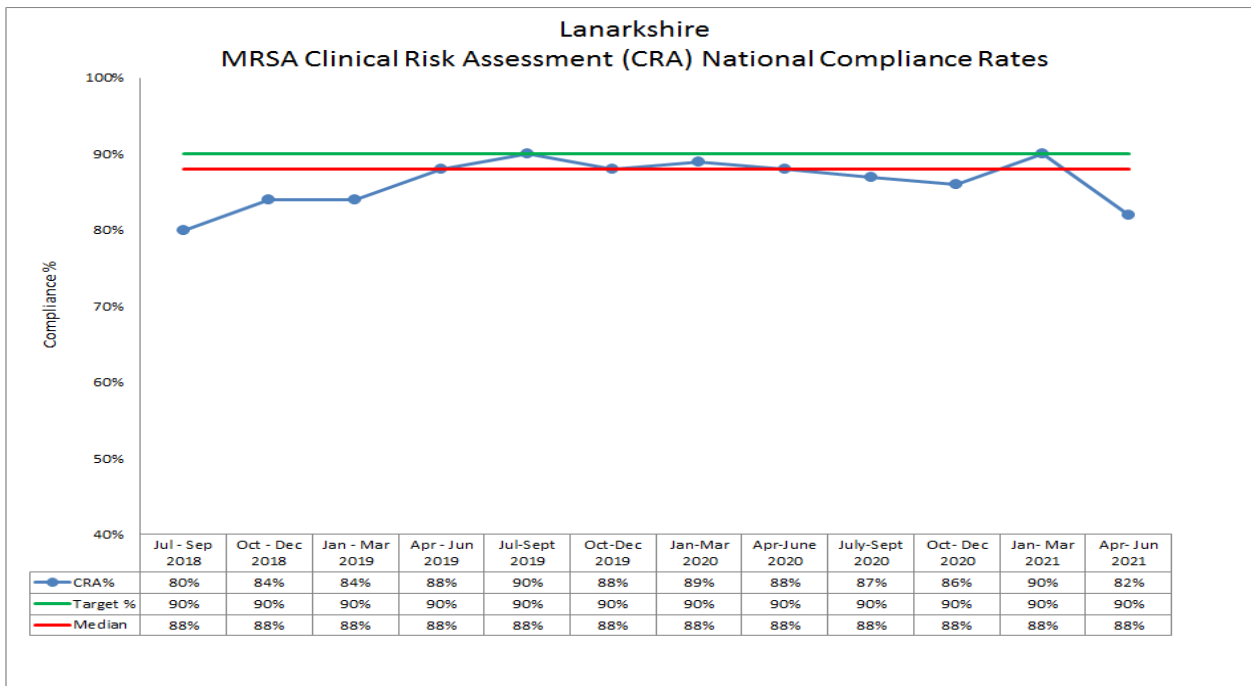
Epidemiological data for SSI are not included for this quarter due to the pausing of surveillance to support the COVID-19 response.

MRSA & CPE CRA Compliance

Key Performance Indicator (KPI): To achieve 90% compliance or above. Quarterly reports submitted to HPS.

NHSL Performance (Apr – Jun 2021):

- 82% compliance for MRSA acute inpatient admission CRA completion. (Exclusions: Maternity, Paeds, Mental Health, Psychiatry);
For this reporting period; MRSA KPI has **not** been met.
- 70% compliance for CPE acute inpatient admission CRA completion
(For this reporting period; CPE KPI has **not** been met.



National MRSA Screening Clinical Risk Assessment uptake in comparison with Lanarkshire

As you are aware, an uptake of **90%** with application of the MRSA Screening Clinical Risk Assessment is necessary in order to ensure that the national policy for MRSA screening is as effective as universal screening.

Below is current data for the 4 most recent quarters within NHSL, and for Scotland:

National MRSA Screening Clinical Risk Assessment uptake in comparison with Lanarkshire (Awaiting Apr-Jun 2021 (Q1) data).

MRSA Uptake	2019_20 Q4	2020_21 Q1	2020_21 Q2	2020_21 Q3	2020_21 Q4
Lanarkshire	89%	88%	87%	86%	90%
Scotland	87%	84%	86%	82%	83%

National CPE Screening Clinical Risk Assessment uptake in comparison with Lanarkshire.

CPE Uptake	2019_20 Q4	2020_21 Q1	2020_21 Q2	2020_21 Q3	2020_21 Q4
Lanarkshire	81%	69%	78%	74%	79%
Scotland	85%	80%	85%	79%	82%

Hand Hygiene

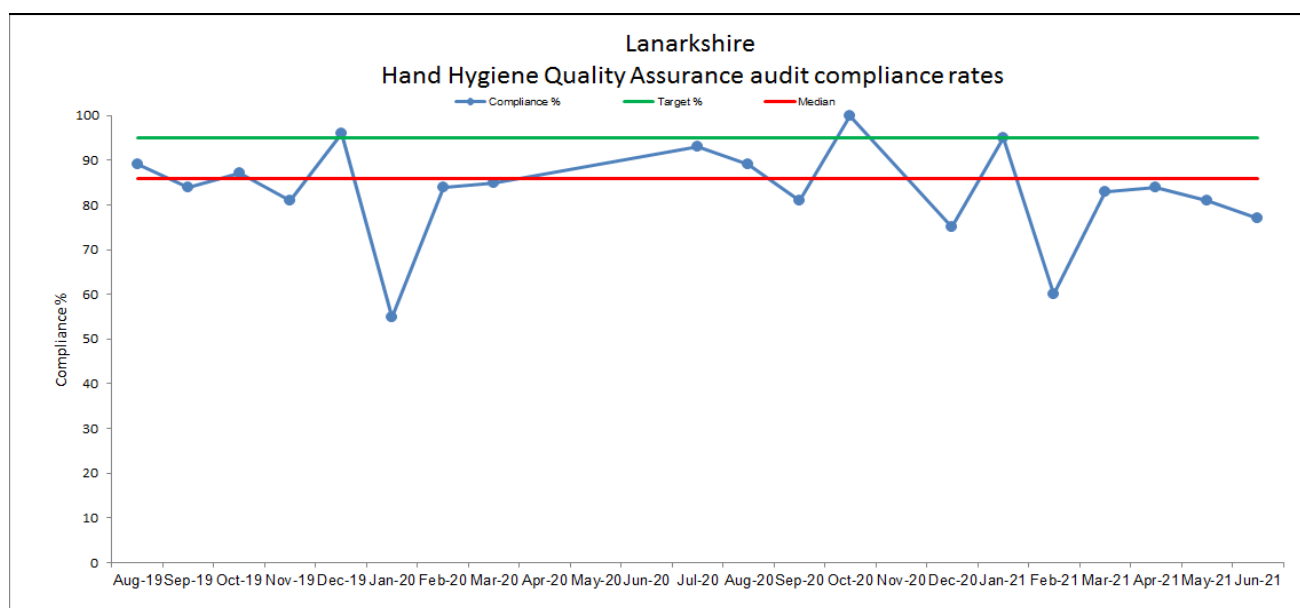
Hand Hygiene is a term used to describe the decontamination of hands by various methods including routine hand washing and/or hand disinfection which includes the use of alcohol gels and rubs. Hand Hygiene is recognised as being the single most important factor in the prevention of infection wherever care is delivered.

Local Performance Indicator: To achieve 95% compliance or above.

NHSL Performance (Apr - Jun 2021): IPC Quality Assurance HH Audits. (25 audits completed)

- 81% compliance achieved.
- For this reporting period the Local Performance Indicator has **not** been met.

Chart 8 – Hand Hygiene IPC Quality Assurance Audits Compliance rate Aug 2019 to Jun 2021



Staff Group Compliance: Apr - Jun 2021

A breakdown of the staff group compliance levels from IPCT audits completed during Apr to June 2021 is:

Nursing: 283 nursing staff compliant from 356 observations (79%)

Doctors: 74 medical staff compliant from 80 observations (93%)

Ancillary/Other: 31 ancillary/other staff compliant from 45 observations (69%)

Allied Health Professionals (AHPs): 36 AHPs compliant from 44 observations (82%)

Outbreaks and Incidents

Outbreaks and Incidents are reported via the Hygiene reports to ICC.