

NHS Ayrshire & Arran



Meeting:	Ayrshire and Arran NHS Board
Meeting date:	Monday 3 February 2020
Title:	Healthcare Associated Infection Report
Responsible Director:	Hazel Borland, Nurse Director
Report Author:	Bob Wilson, Infection Control Manager

1. Purpose

This is presented to the Board for:

- Discussion

This paper relates to:

- Annual Operational Plan

This aligns to the following NHSScotland quality ambition:

- Safe

2. Report summary

2.1 Situation

This paper provides NHS Board members with the current position against the national Healthcare Associated Infection (HCAI) Standards and the national meticillin resistant *Staphylococcus aureus* (MRSA) admission clinical risk assessment (CRA) key performance indicator (KPI).

The paper also informs the Board of three significant infection outbreaks in Quarter 3 2019-20.

2.2 Background

The Scottish Government has established national HCAI Standards for:

- *Clostridium difficile* infection (CDI) - a reduction of 10% in the national rate of healthcare associated (HCA) CDI for the year ending March 2022, with 2018-19 used as the baseline.
- *Staphylococcus aureus* bacteraemias (SABs) - a reduction of 10% in the national rate of HCA SAB by year end March 2022, with 2018-19 used as the baseline.
- *Escherichia coli* bacteraemias (ECBs) - a 50% reduction in HCA ECBs by 2023-24, with an initial reduction of 25% by 2021-22. The baseline is the 2018-19 rate.

Each Board is required to contribute its own proportionate reduction to achieve the national standard

The national KPI for MRSA admission CRA is 90%.

2.3 Assessment

The Board's current position against each HCAI standard is:

Infection	NHS A&A Annual Rate Year Ending September 2019	2021-22 Target	2023-24 Target
<i>Clostridium difficile</i> Infection	16.7	13.0	
<i>Staphylococcus aureus</i> Bacteraemia	15.4	12.4	
<i>Escherichia coli</i> Bacteraemia	42.5	34.4	22.8

The Board's compliance with the MRSA admission CRA KPI for the October – December 2019 quarter was 87%.

There have been three significant infection outbreaks of since the last report. Two were due to Influenza and one to *Klebsiella pneumoniae*.

2.3.1 Quality/patient care

Attainment of the national HCAI standards will result in fewer infections in patients and improve patient outcome.

Compliance with the national MRSA KPI will minimise the risk of transmission of MRSA from unidentified sources.

2.3.2 Workforce

Reductions in HCAI will reduce the exposure risk to staff from harmful infections

2.3.3 Financial

Reductions in HCAI will lead to reduced inpatient lengths of stay and associated treatment costs

2.3.4 Risk assessment/management

The Infection Prevention Control Team (IPCT) provide clinical teams and managers with risk assessed advice and guidance based national policy and best practice.

2.3.5 Equality and diversity, including health inequalities

An impact assessment has not been completed because this is an update report to NHS Board members.

2.3.6 Other impacts

Nil to Note

2.3.7 Communication, involvement, engagement and consultation

The Board has carried out its duties to involve and engage external stakeholders where appropriate:

- Individual patient and family discussions have taken place as required and described in the body of the paper.

2.3.8 Route to the meeting

The data presented in section 1 to 4 of this report provides the standard report to the NHS Board as required by the Scottish Government. Section 5 data has been previously considered by the following groups as part of its development. The groups have either supported the content, or their feedback has informed the development of the content presented in this report.

- Healthcare Governance Committee, 6 January 2020

2.4 Recommendation

Members are asked to discuss the Board's current performance against the national HCAI standards and from the information provided be assured that significant infection outbreaks and incidents are managed appropriately and; that we are compliant with our reporting of these to Health Protection Scotland in line with national policy requirements.

3. List of appendices

The following appendices are included with this report:

Appendix 1 - HCAI Update Report

Appendix 1

HCAI Update Report

1. National Healthcare Associated Infection (HCAI) Standards

1.1 Clostridium difficile Infection (CDI) National Standard

The CDI target is a reduction of 10% in the national rate of healthcare associated (HCA) CDI for the year ending March 2022, with 2018-19 used as the baseline. In order to deliver our contribution to the national standard we must achieve a rate of no more than 13.0 per 100.000 total occupied bed days (TOBDs) for the year 2021-22.

The Board’s verified HCA CDI rate for the July – September quarter is 19.0 (Chart 2). The Board traditionally sees a peak in its rates during the late summer early autumn. The increase during the last quarter was primarily due to an increase in those cases assessed as HCA or of an unknown point of origin, i.e. cases that developed up to 12 weeks after discharge from hospital. There were no outbreaks during this period. The IPCT reviewed these cases to determine if there are any unidentified links between them. None were found.

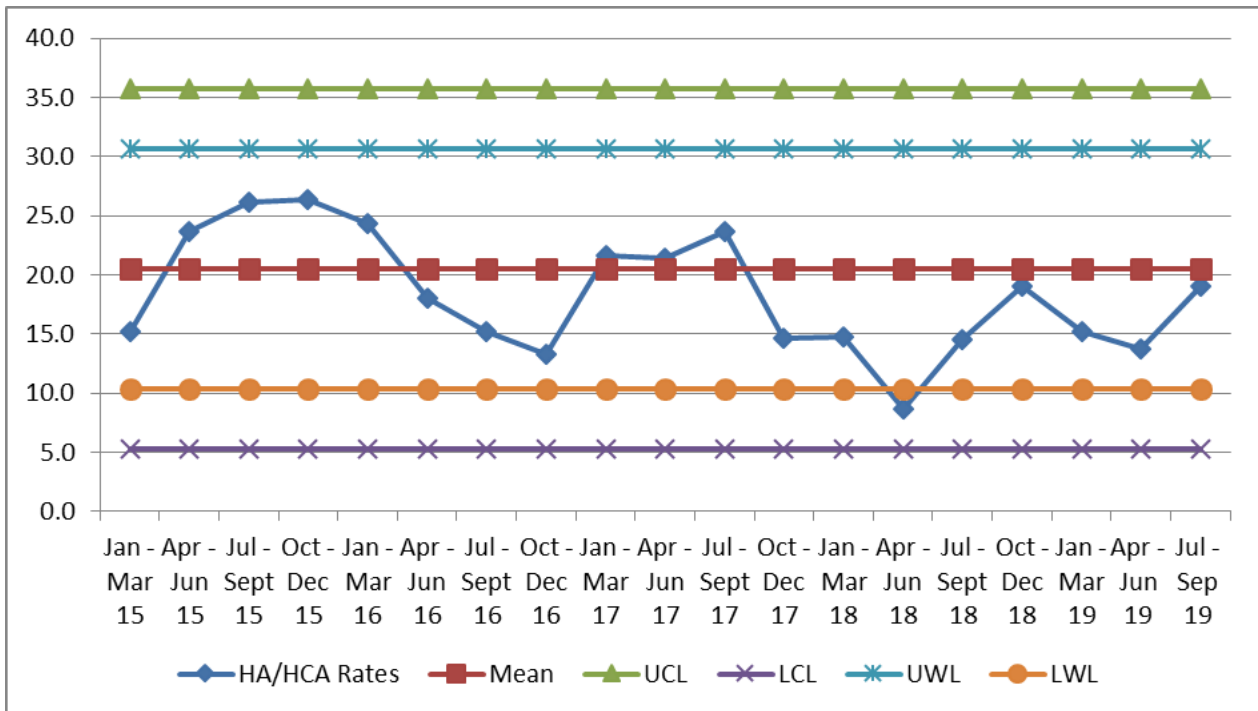


Chart 1 – Quarterly HCA CDI Rate

The verified rolling annual rate for the year ending September 2019 was 16.7 (Chart 3). In addition to the higher rate during the last quarter the rise is in part due to the inclusion of the peak in 2018 which occurred slightly later in the October – December quarter.

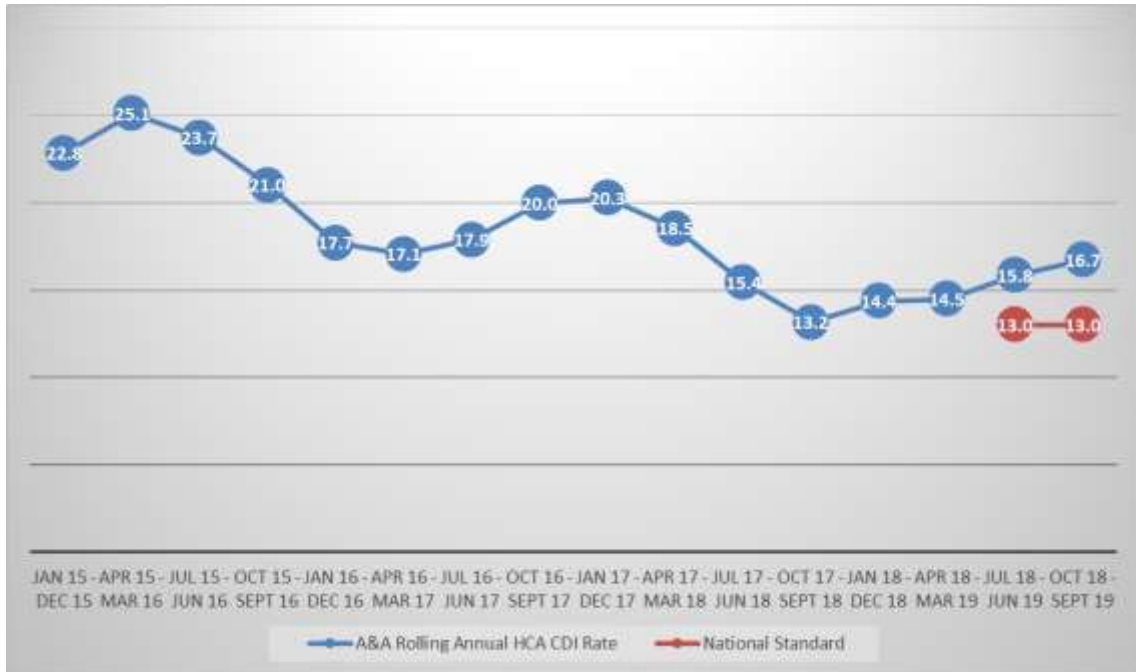


Chart 2 – Rolling Annual HCA Rate vs National Standard

In 2018-19 NHS Ayrshire & Arran had 65 cases of HCA CDI. Therefore assuming TOBDs do not change significantly then the new standard equates to no more than 58 cases per annum with an average of 4.8 cases per month. As of the end of November 2019 there have been 49 cases of HCA CDI which is 11 above the maximum permitted trajectory of 38.4 required to meet the target for the current year (Chart 3).

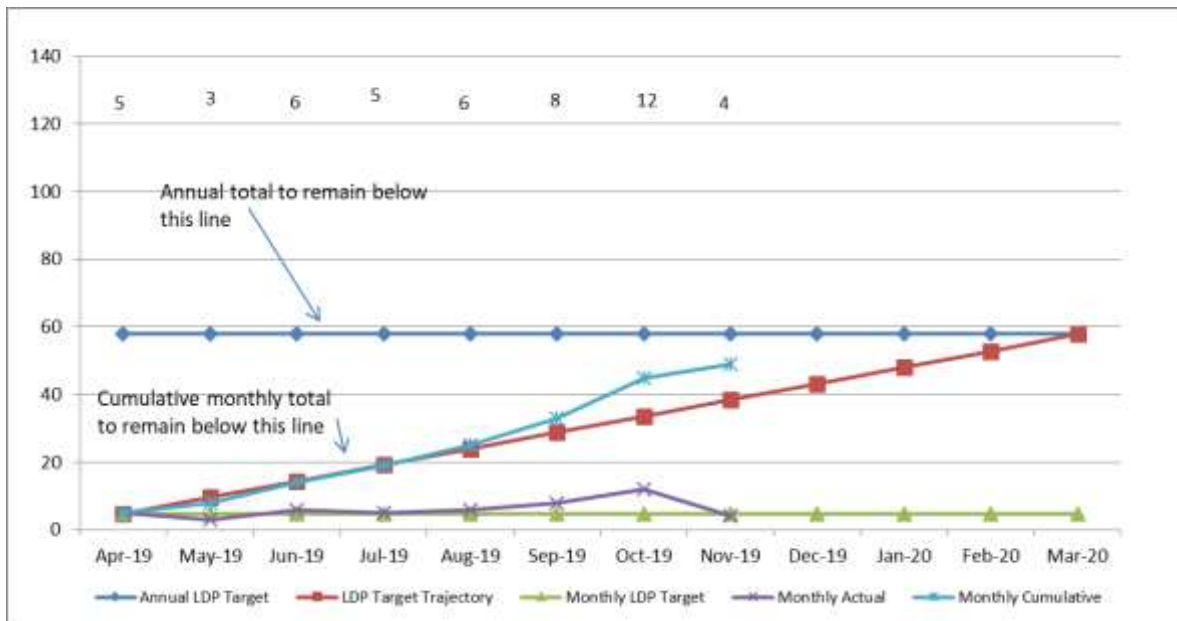


Chart 3 – CDI Target Monthly Trajectory

2. SAB Standard

The SAB standard is a reduction of 10% in the national rate of HCA SAB by year end March 2022, with 2018-19 used as the baseline. In order to deliver our contribution to the national standard we must achieve a rate of no more than 12.4 per 100,000 TOBDs for the year 2021-22.

The Board’s verified rate for the July – September 2019 quarter was 19.9 (Chart 4).

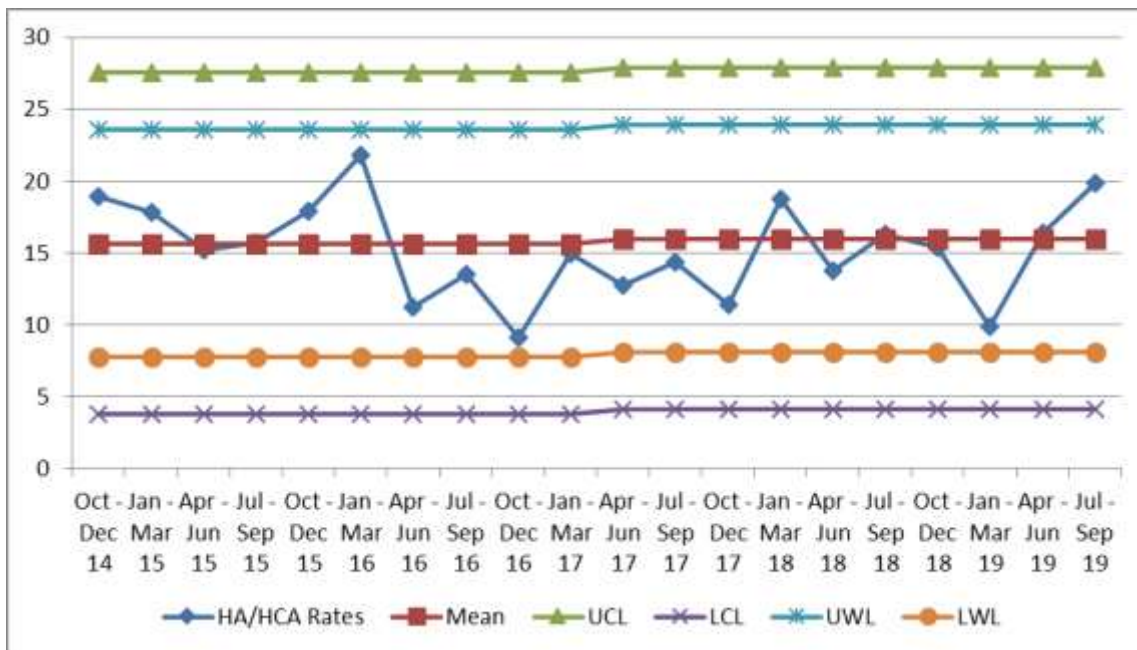


Chart 4 – SABs Quarterly HCA Rate

The points of entry for the HCA related SABs are detailed in Table 3. There were four peripheral vascular catheter (PVC) related SABs during the quarter. All were associated with furosemide infusions administered in the cardiology wards; three in University Hospital Ayr (UHA) and one in University Hospital Crosshouse (UHC). This association was first identified early in 2018 when there was a cluster of infections in UHC in 2018. This patient group often have pre-disposing risk factors such as skin damage caused by peripheral oedema. As part of the investigation into this latest cluster it has been identified that the number of patients receiving IV (Intravenous) furosemide infusions has increased by 244% since 2015. It is hypothesised that the emergence of PVC related SABs in this high risk patient group is due to the increased use of furosemide infusions. Whilst a review of PVC management by the IPCT did not identify any significant issues with PVC management in the cardiology ward at UHA the Senior Charge Nurse has raised awareness of PVC and infusion management and ensured that staff complete refresher training on PVC management. There have been no new PVC related SABs in this patient group since August.

Point of Entry	Number
Not known	5
Peripheral vascular catheter	4
Skin	3
Other	2
Respiratory tract infection	2
Contaminant	1
Central vascular catheter	1
Urinary catheter	1
Device (Other)	1
Multiple sites	1
Urinary tract infection	1

Table 3 – SAB Points of Entry July – September 2019

The Board's verified rolling annual rate for the year ending September 2019 was 15.4 (Chart 5).

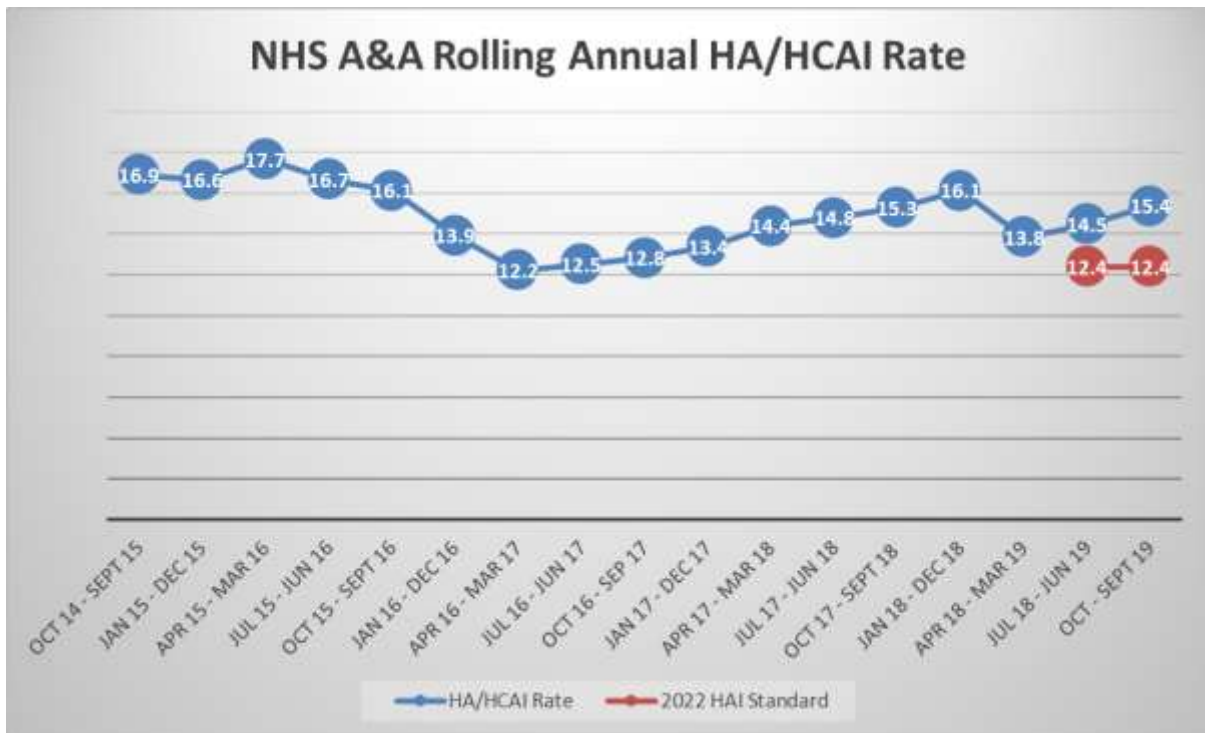


Chart 5- Rolling Annual HCA SAB rate vs National Standard

In 2018-19 NHS Ayrshire & Arran had 62 cases of HCA SAB. Therefore assuming TOBDs do not change significantly then the new standard equates to no more than 55 cases per annum with an average of 4.5 per month. As of the end of November there have been 50 cases, 14 above trajectory (Chart 6).

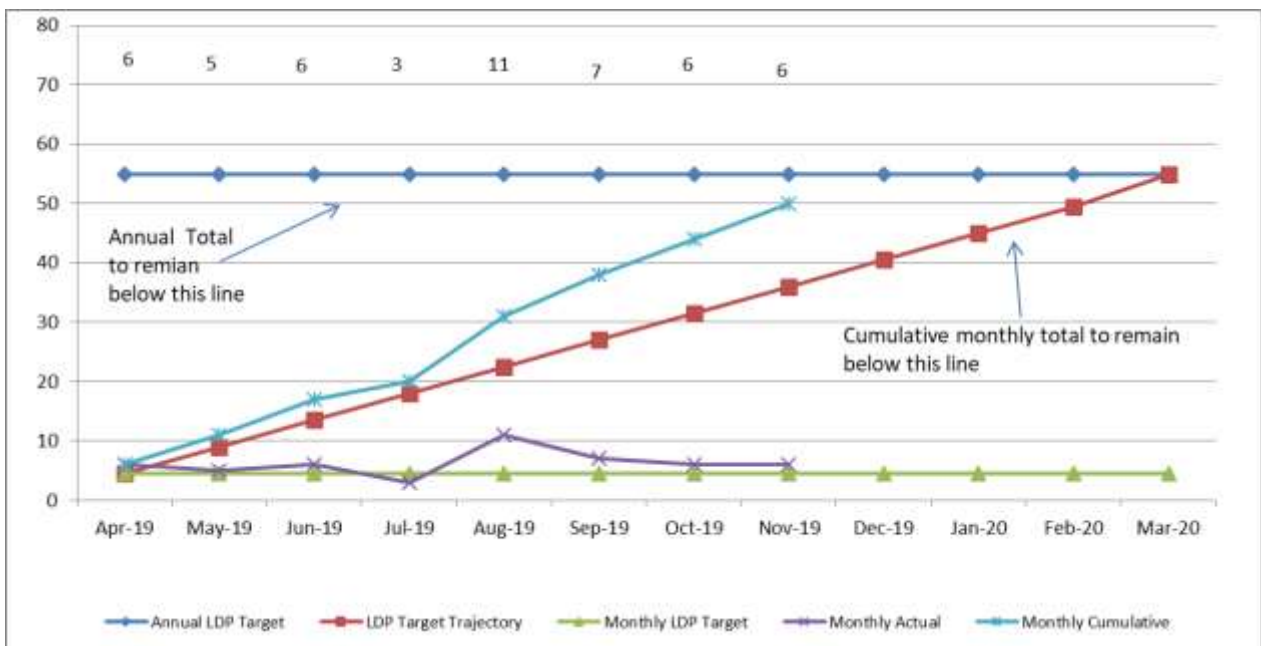


Chart 6 – SAB Target Monthly Trajectory

3 . ECB Standard

The ECB target is a 50% reduction in HCA ECBs by 2023-24, with an initial reduction of 25% by 2021-22. The baseline is the 2018-19 rate. In order to deliver our contribution the national standard we must have achieve a rate of no more than 34.4 cases per 100,000 TOBDs for the year 2021-22 and rate of no more than 22.8 cases per 100,000 TOBDs by 2023-24.

The Board’s verified quarterly rate for the July - September quarter was 45.2 (Chart 7).

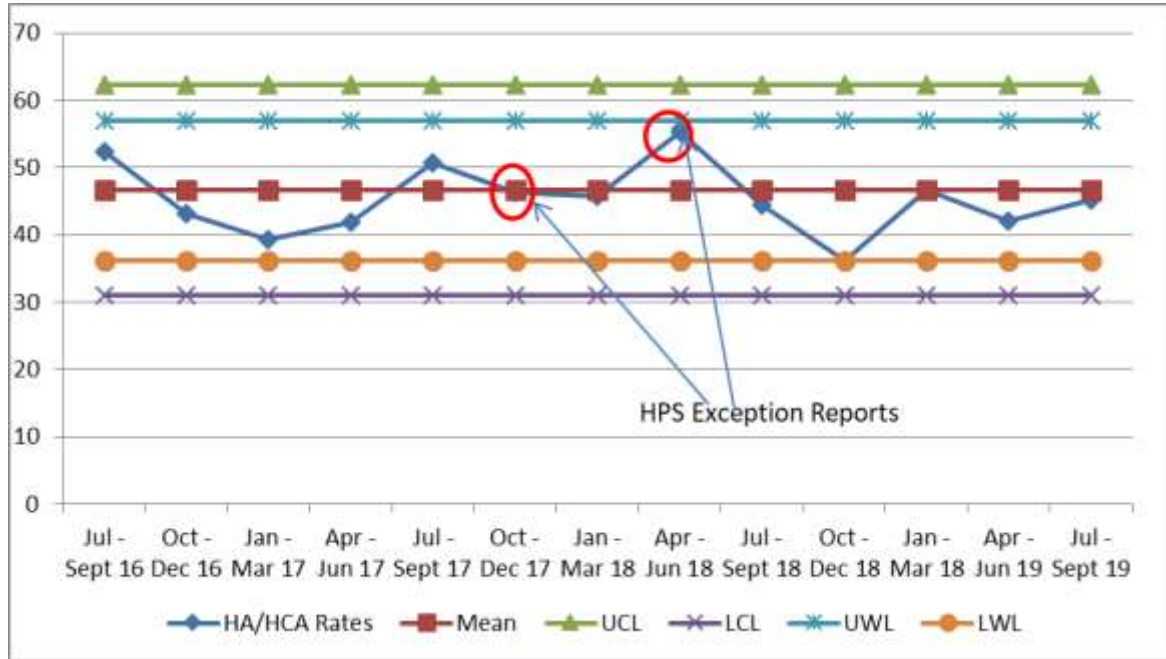


Chart 7 – Quarterly HCA ECB Rate

The Board’s verified annual HCA rate for the year ending September 2019 was 42.5 (Chart 8).

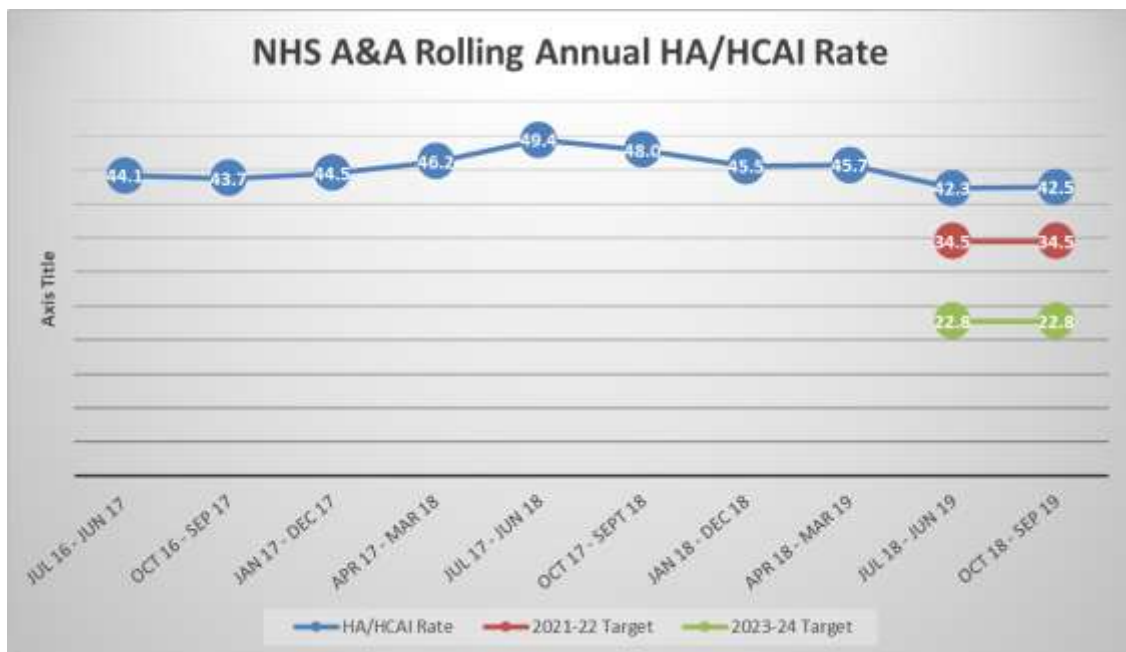


Chart 8 – Rolling Annual HCA ECB Rate

The Prevention and Control of Infection Committee has agreed to establish graduated annual targets by which to measure progress against the 2021-22 interim target and the 23-24 final target. The target established for 2019-20 is a rate of no more than 43.4 cases per 100,000 occupied bed days (Chart 9).

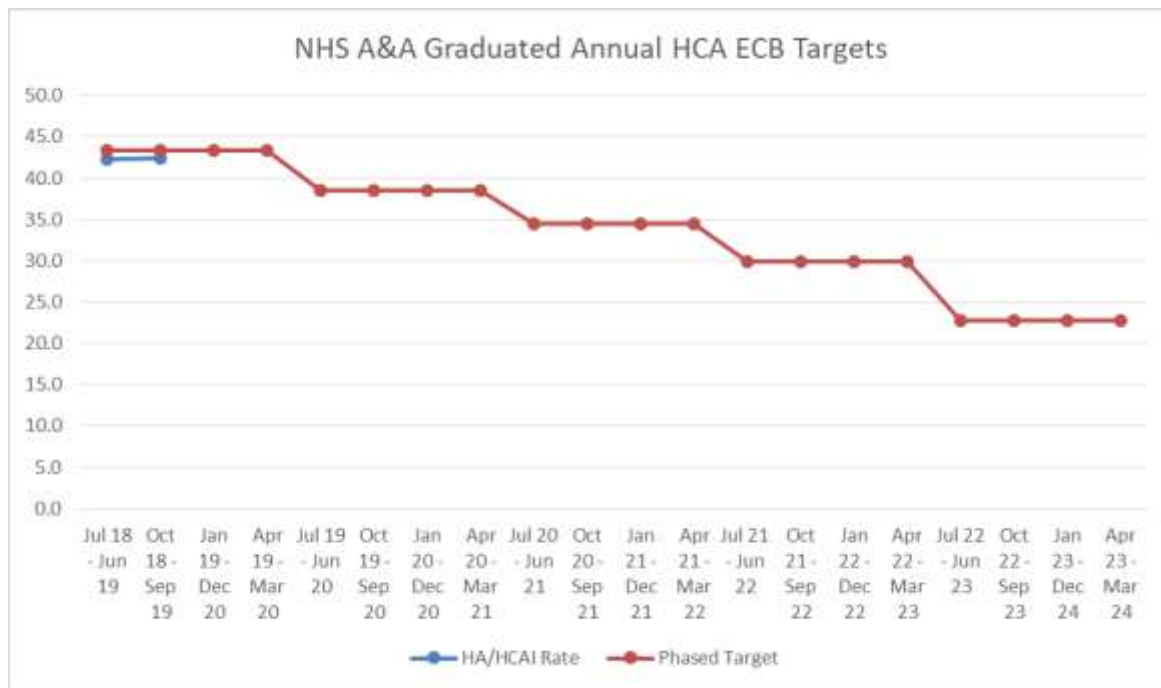


Chart 9 – Graduated Annual HCA ECB Targets

The newly established Urinary Catheter Improvement Group has carried out a review of the urinary catheter care plans. Potential areas of improvement have been identified to support staff in making informed decisions on catheter insertions and removal have been identified. A revised care plan has been developed and is being tested in both hospital and community settings.

4. National MRSA CRA Policy Update

The national MRSA CRA Key Performance Indicator (KPI) target is for boards to achieve a minimum 90% compliance with CRA completion. Compliance for Q2 2019-20 was 87% compared with 80% the previous quarter (Chart 10). The data has been fed back to the audited areas with a reminder of the requirements.

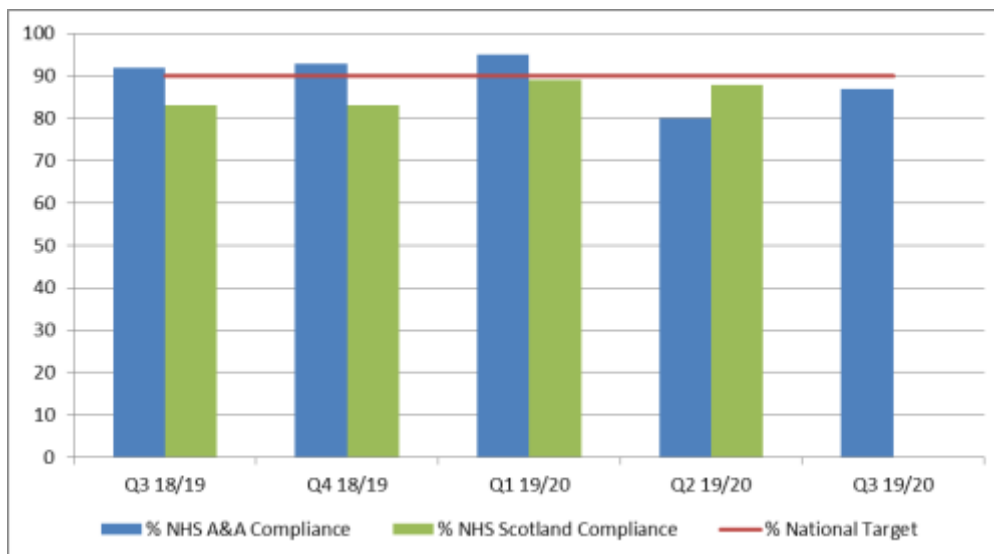


Chart 10 – MRSA KPI Quarterly Compliance

5. Outbreaks / Incidents Update Q3 2019-20

5.1 Outbreak of *Klebsiella pneumoniae* Ward 3D, UHC

An outbreak of *Klebsiella pneumoniae* affecting 4 patients occurred in Ward 3D UHC in November 2019. Unfortunately one of the patients died, with the infection contributing to their death.

The index case was previously identified as positive during a previous admission to another hospital. **The Board will wish to note that there is no national screening process for this organism and no requirement to isolate previously positive patients on subsequent admissions.**

Although there was no direct contact between the index case and the three subsequent cases the antibiotic resistance profile of the organism was unusual and this was sufficient to conclude that the cases were linked. Cases Two, Three and Four were in adjoining beds at the same time therefore transmission is likely to have occurred via contaminated hands, equipment or environment. There is also the potential that direct interaction between the patients resulted in transmission. A hand hygiene audit carried out by the IPCT in the ward recorded compliance at 75%. A follow up audit in January recorded compliance at 90%.

The index case did not acquire the infection in the ward and had been discharged by the time the outbreak was identified. The family of the deceased patient were informed by medical staff that the infection acquired in Ward 3D as part of the outbreak contributed to the death. The other two patients who recovered and were subsequently discharged were both informed that their infections were acquired in the ward as part of an outbreak.

The incident was reported to HPS as a Red incident based on the [Hospital Infection Incident Assessment Tool](#). HPS in turn notified the Scottish Government Healthcare Associated Infection (HAI) Policy Unit. The Nurse Director also communicated directly with the Chief Nursing Officer's Directorate to keep them informed of the situation.

5.2 Influenza Outbreak Station 8 UHA

An outbreak of influenza developed in Station 8, UHA in November 2019. Seven patients were confirmed as developing influenza of whom four unfortunately died. Influenza was recorded on the death certificate of all four cases. Five staff were also reported as symptomatic of which one was confirmed by a sample submitted by their GP.

The ward was closed to admissions and transfers for seven days. Outbreak control measures were implemented to limit further spread. A hand hygiene audit undertaken during the outbreak recorded compliance of 100%.

Patients within the ward were informed of the outbreak and the families of the deceased were advised that influenza acquired in the ward as part of the outbreak caused the death of their relatives.

Due to the associated mortality the incident was reported to Health Protection Scotland (HPS) as a Red incident based on the [Hospital Infection Incident Assessment Tool](#). HPS in turn notified the Scottish Government HAI policy Unit. In addition, the Nurse Director

communicated directly with the Chief Nursing Officer's Directorate to keep them informed of the situation. Close communication was also maintained with the Procurator Fiscal's office.

5.3 Influenza Outbreak Station 16 UHA

An outbreak of influenza developed in Station 16, UHA in December 2019. Six patients were confirmed as developing influenza. No staff were reported as being symptomatic. There were no fatalities associated with the outbreak.

The two affected six bedded rooms were closed to admissions and transfers for six days as part of the outbreak control measures. A hand hygiene audit undertaken during the audit recorded compliance of 85%.

Patients and relatives were informed of the outbreak. The incident was reported to HPS in line with the national reporting requirements.