

Agenda Item 10

Hospital Acquired Infection Performance Report – April 2020 to March 2021



Falkirk IJB Clinical and Care Governance Committee

21 May 2021

Hospital Acquired Infection Performance Report – April 2020 to March 2021

For Noting

1. Executive Summary

- 1.1 The purpose of this report to provide an oversight of all Hospital Acquired Infection (HAI) related activity across Falkirk Community Hospital and Bo'ness Community Hospitals from April 2021 to March 2021. Included in the report are details of all *Staph aureus* bacteraemias (SABs), *Clostridioides difficile* Infections (CDIs), *Escherichia coli* Bacteraemia (ECBs) and Device Associated Bacteraemias (DABs) for these areas with a brief summary of the investigations that have been carried out.
- 1.2 The report also provides details of COVID-19 work. The report contains more graphs to enable the reader to have a more comprehensive and clearer understanding of the data.

2. Recommendations

The Clinical and Care Governance Committee is asked to:

- 2.1 note the report.

3. Background

- 3.1 NHS Forth Valley recognises importance of the prevention and control of infections. The Board supports the principle that infections should be prevented wherever possible or, where this is not possible, minimised to an irreducible level and that effective systematic arrangements for the surveillance, prevention and control of infection are provided.
- 3.2 The Board has in place a programme for prevention, surveillance, active investigation, and control of infection in patients, staff and visitors. This programme is the responsibility of all staff, not just the central Infection Prevention & Control Team (IPCT). The delegation to and acceptance of this responsibility by clinical divisional and corporate teams has increased and is key to success. The infection control programme aims to continuously review and build on existing activity, driven by local needs, while incorporating and complying with the latest relevant strategy and regulations as laid out by Health Protection Scotland (HPS).

4. Hospital Acquired Infection Performance Report

- 4.1 The HAI related activity across Falkirk Community Hospital and Bo'ness Community Hospital for the reporting period is attached at Appendix 1. This includes details of all HAI activities across both sites including brief summaries of the investigations carried out where appropriate.
- 4.2 The CCGC will note from the appendix that there are no concerns and that appropriate actions continue to be taken.

5. Conclusions

- 5.1 COVID-19 continues to present many challenges during this pandemic, and as national and local restrictions ease, we will continue to monitor the situation and take actions as required.
- 5.2 This report to CCGC is part of the monthly and quarterly reporting through NHS FV governance structures.

Resource Implications

There is no resource implication arising from the report.

Impact on IJB Outcomes and Priorities

There is no direct impact resulting from the recommendations of this report.

Legal & Risk Implications

There are no legal or risk implications arising from the report and data presented.

Consultation

No consultation was required to develop the report although the author recognises and thanks members of the oversight group for their contribution to the report.

Equalities Assessment

There are no equalities impacts arising from the report.

6. Report Author

Jonathon Horwood, Area Infection Control Manager

7. List of Background Papers

n/a

8. Appendices

Appendix 1: HAI Performance Report April 2020 – March 2021

Hospital Acquired Infection Performance Report

Reporting Period
April 2020 – March 2021



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1. Key challenges this quarter

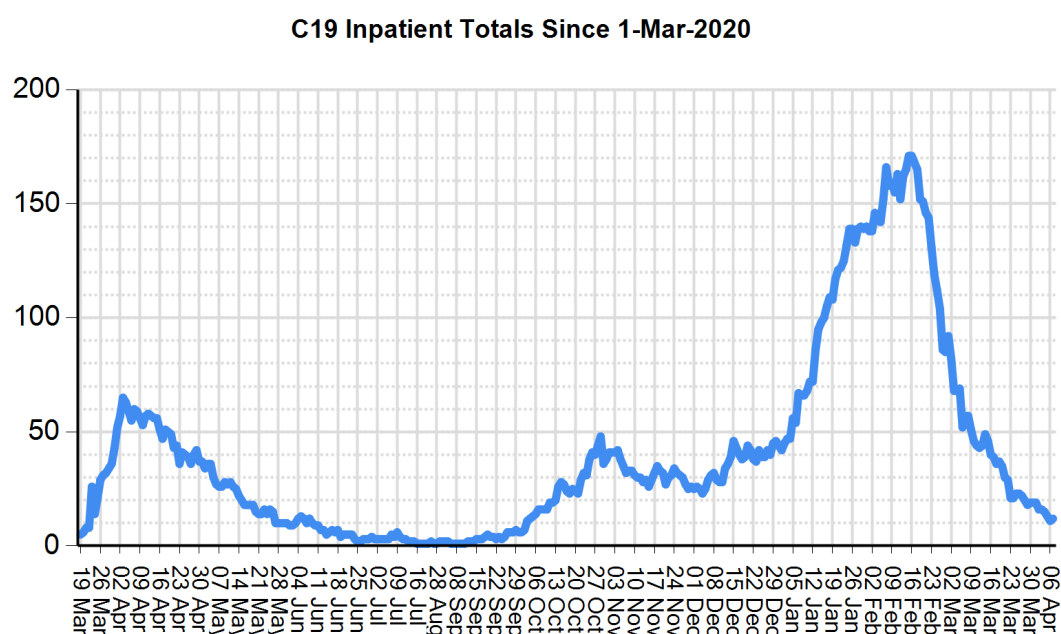
1.1. Covid-19 Pandemic

The Infection Prevention & Control Team (IPCT) had been closely following the Covid -19 outbreak in China since January 2020 and kept stakeholders updated on developments before the pandemic became a global concern. As infections emerged in the UK, the team developed, implemented and led a community testing service for symptomatic travellers returning from Asia and Europe. Based at Lochview Hospital, this was implemented within 6 days. Testing continues following the formal hand-over in March to Public Health to continue the testing service across Forth Valley.

At the early stages of the pandemic, national infection control guidance changed continually which caused numerous challenges across Forth Valley as knowledge and understanding of the virus improved.

The IPCT has been monitoring and reporting on a daily basis current inpatient numbers of confirmed and those investigated for Covid -19. At its peak in April, NHSFV had over 60 inpatients, these numbers decreased to less than 5 inpatients by the end of June. Unfortunately, Covid -19 cases increased during September peaking in February 2021 with over 170 inpatients across the hospital sites. Fortunately in March, inpatient number declined quite rapidly.

Graph 1: inpatients with confirmed Covid -19 (up until April 2021)



1.2. Hospital Onset Covid-19

On a weekly basis Health Protection Scotland publish infection figures based on electronic data submitted to them on the rate of Covid -19 infection that has been acquired during the patients hospital stay. This is calculated solely based on the time the patient was admitted to the hospital and the incubation period of Covid -19 (14 days). For example, if a patient stay has exceeded 14 days and became Covid -19 positive after day 14 then it is determined to be hospital acquired. Based on purely on admission times does not necessary mean hospital acquired, however, these are the limitations of the data and the report.

The table below is an extract from the report detailing Covid -19 infections and where they were acquired. NHSFV current hospital infection is 1.4% compared to the national percentage infections of 1.7%.

NHS board	Total COVID-19 cases (n)	Non-hospital onset (n)	Indeterminate hospital onset cases (n)	Probable hospital onset cases (n)	Definite hospital onset cases (n)	Non-hospital onset (%)	Indeterminate hospital onset cases (%)	Probable hospital onset cases (%)	Definite hospital onset cases (%)
Ayrshire & Arran	16,427	764	121	226	387	4.7%	0.7%	1.4%	2.4%
Borders	2,851	134	12	17	50	4.7%	0.4%	0.6%	1.8%
Dumfries & Galloway	4,124	197	16	6	7	4.8%	0.4%	0.1%	0.2%
Fife	10,695	454	31	33	253	4.2%	0.3%	0.3%	2.4%
Forth Valley	11,991	495	77	77	173	4.1%	0.6%	0.6%	1.4%
Golden Jubilee	22	11	5	3	3	-	-	-	-
Grampian	14,330	377	47	56	179	2.6%	0.3%	0.4%	1.2%
Greater Glasgow & Clyde	68,091	2,990	469	562	1,326	4.4%	0.7%	0.8%	1.9%
Highland	4,839	135	12	8	28	2.8%	0.2%	0.2%	0.6%
Lanarkshire	39,297	1,195	199	265	488	3.0%	0.5%	0.7%	1.2%
Lothian	30,351	1,151	167	286	565	3.8%	0.6%	0.9%	1.9%
Orkney	68	4	0	0	0	5.9%	0.0%	0.0%	0.0%
Shetland	230	12	0	0	0	5.2%	0.0%	0.0%	0.0%
Tayside	14,214	602	110	128	262	4.2%	0.8%	0.9%	1.8%
Western Isles	292	12	1	4	3	4.1%	0.3%	1.4%	1.0%
Scotland	217,822	8,533	1,267	1,671	3,724	3.9%	0.6%	0.8%	1.7%

1.3. IPCT Support to Care Homes

Scottish Government informed health boards across Scotland of enhanced professional clinical and care oversight of care homes and instructs each board to provide expert clinical support to care in particular focusing on infection prevention and control. As a result of this, the IPCT are working closely with public health, HSCP and Care Inspectorate staff to provide such guidance and support to care homes.

2. Annual Operating Plan Target

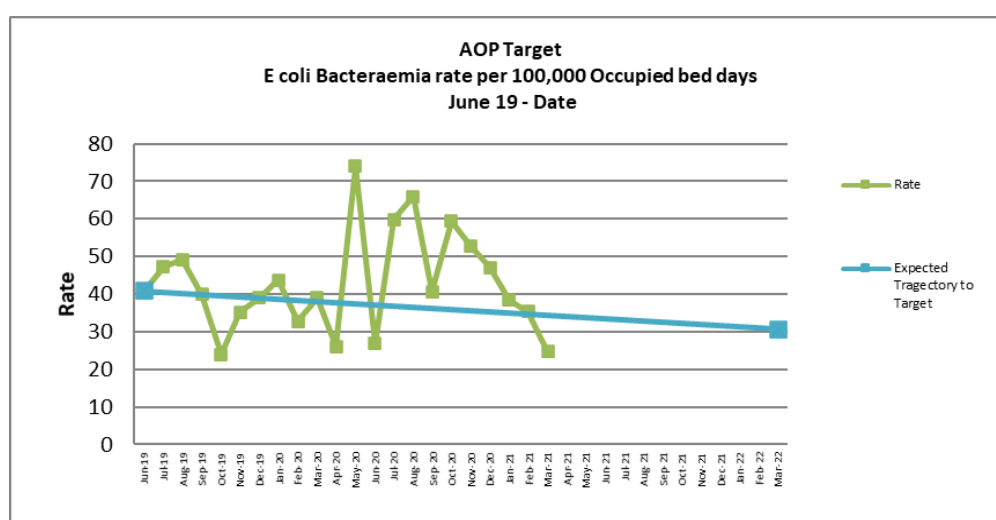
2.1. Hospital Acquired Infection Annual Operating Plan (AOP) targets for 2019-2022

On the 10th October 2019, a letter was sent to all Health Board Chief Executives highlighting our new HAI targets. These targets are based on our (Forth Valley) current rates of infection and a percentage reduction has been set to be achieved by March 2022. This target is different from our previous targets and includes the reduction in hospital and healthcare acquired infections and does not include community acquired. Hospital and healthcare acquired infections are now classified as healthcare infections as it is perceived nationally that all hospital and healthcare infections are all reducible. For continuity, we will continue to report separately hospital and healthcare infections to maintain our quality and transparency in our data, however, the total number of infections will reflect on what we are reported nationally and in line with our set targets. In addition to Staph aureus bacteraemia, (SABs) and Clostridioides difficile infection (CDI) targets, Escherichia coli bacteraemia (ECB) is now included in our targets.

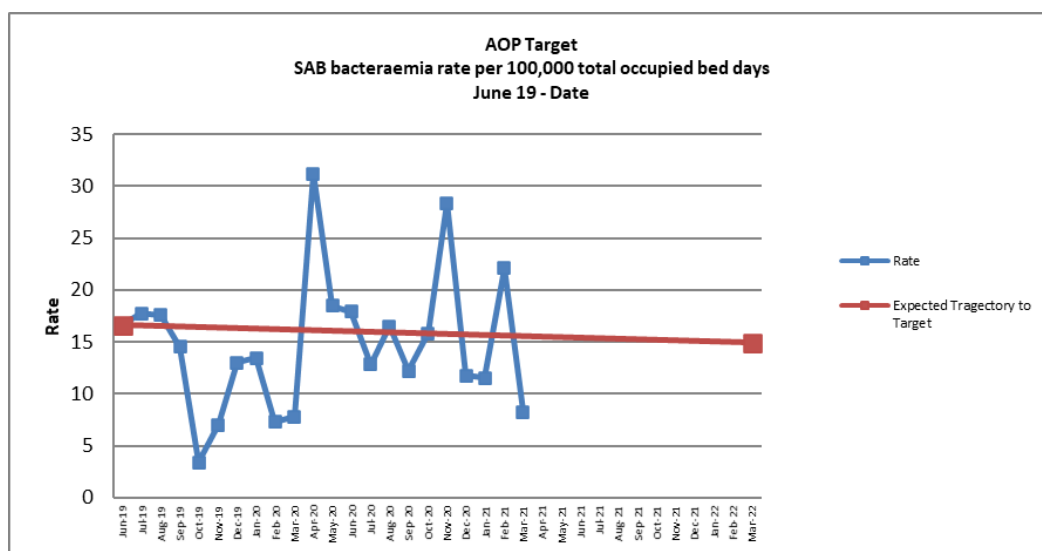
The data is currently being reformatted to address these targets and will be included in future reports. Please see table below for our new targets:

	2018/19 Rate (base line) per 100,000 total bed days	No of cases (per annum)	Reduction %	Date for reduction	Target rate per 100,000 total bed days	Target cases per annum
ECB	40.8	135	25	2022	30.6	101
SAB	16.6	55	10	2022	14.9	50
CDI	11.4	38	10	2022	10.3	34

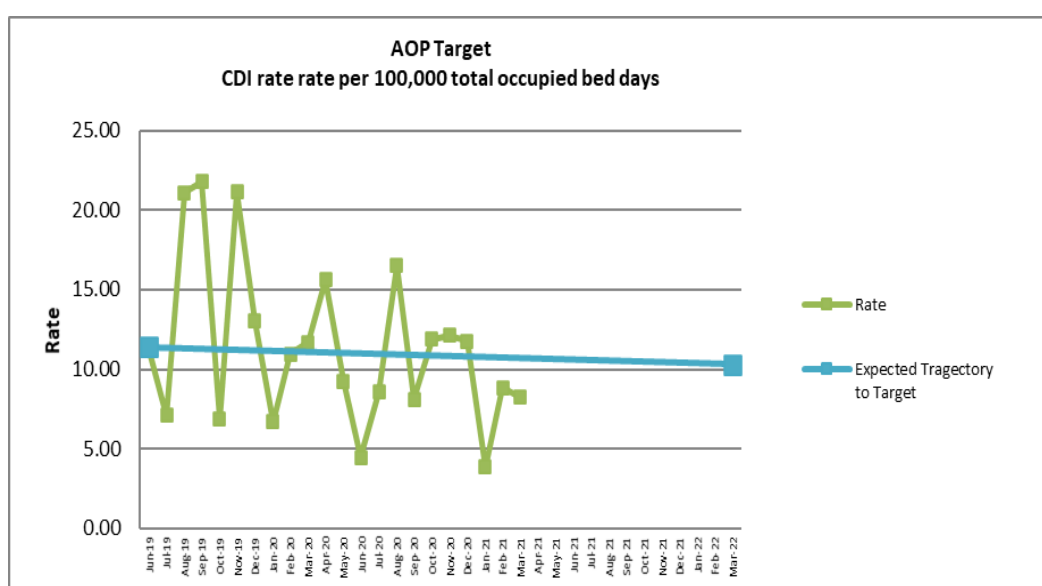
2.2. AOP Target Progress to date



Comments: During the height of the Covid-19 pandemic there was an increase in ECBs compounded by the reduced occupied bed days. Fortunately, ECB case numbers have decreased over subsequent months.



Comments: SAB case numbers have remained consistent over the last 12 months, however the peaks observed above the trajectory line were attributed to lower occupied beds seen over the pandemic period.



Comments: CDI case numbers have remained consistent over the last 12 months.

March 2020 – April 2021

Target	Status
ECB	↓
SAB	↓
CDI	↓

3. Staph Aureus Bacteraemias (SABs)

All blood cultures that grow bacteria are reported nationally and it was found that *Staph aureus* became the most common bacteria isolated from blood culture. As *Staph aureus* is an organism that is found commonly on skin it was assumed (nationally) the bacteraemias occurred via a device such as a peripheral vascular catheter (PVC) and as such a national reduction strategy was initiated and became part of the then HEAT targets in 2006. The target was a national reduction rather than a board specific reduction, however the latest target set for 2019-2022 are Board specific, based on our current infection rates.

3.1. NHS Forth Valley's approach to SAB prevention and reduction

All *Staph aureus* bacteraemia are monitored and reported by the IPCT. Investigations to the cause of infection consist of examining the patients notes, microbiology, biochemistry and haematology reports to identify potential causes of the infection; from this, in most cases, a provisional cause is identified, however this is discussed further with the clinical team responsible for the management of the patient to assist further with the investigation. Any issues identified during the investigations, such as incomplete bundle completion etc is highlighted at this time and where appropriate an IR1 is reported. Once a conclusion has been agreed, the investigations are presented to the Infection Control Doctor/Microbiologist for approval. The investigation is concluded with the IPCT reporting their findings to the clinical team and management.

This data is entered into the IPCT database collated, analysed and reported on a monthly basis. The analysis of the data enables the IPCT to identify trends in particular sources of infections, such as Hickman line infections etc and identifying areas requiring further support. The data also influences the direction of the HAI annual workplan.

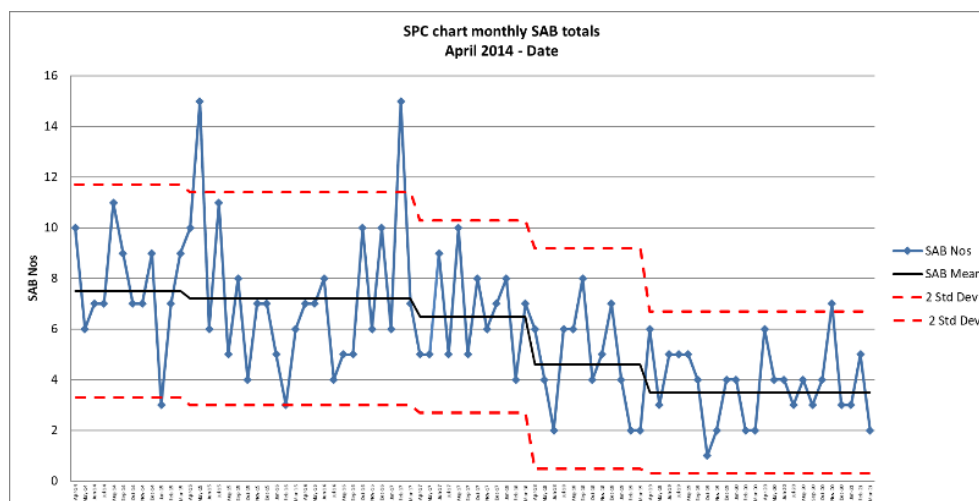
April 2020 – March 2021

Staph aureus bacteraemia total - April 20 to March 21 = 48

	2020-2021	2019-2020
Hospital	19	17
Healthcare	28	25
Nursing Home	1	0
Annual Total	48	42

Hospital	No of SABs
Falkirk Community Hospital	1
Bo'ness Community Hospital	0

Note: The SAB attributed to Falkirk Community Hospital (Unit 2) was an unknown cause.



Comments: Case numbers this year has increased slightly, from 42 cases to 48 cases. With the exception of November 2020, case numbers have remained within control limits with a mean of 3.5 cases per month.

4. Device Associated Bacteraemias (DABs)

In addition to the nationally set targets, infections from an invasive device caused by *Staph aureus* would be investigated fully and reported, any other organism causing the same infection was not mandated to report nationally or to be investigated. As a result of this, in 2014, the IPCT started reporting all bacteraemias attributed to an invasive device regardless of the bacterium causing the infection. Due to the importance and significance of this surveillance, it is now part of our local AOP.

4.1. NHS Forth Valley's approach to DAB prevention and reduction

Continual monitoring and analysis of local surveillance data enables the IPCT and managers to identify and work towards ways to reduce infections associated with devices. All DABs are reviewed and investigated fully and highlighted to the patients' clinicians, nursing staff and management. Where appropriate an IR1 is generated to enable infections that require learning is shared and discussed at local clinical governance meetings.

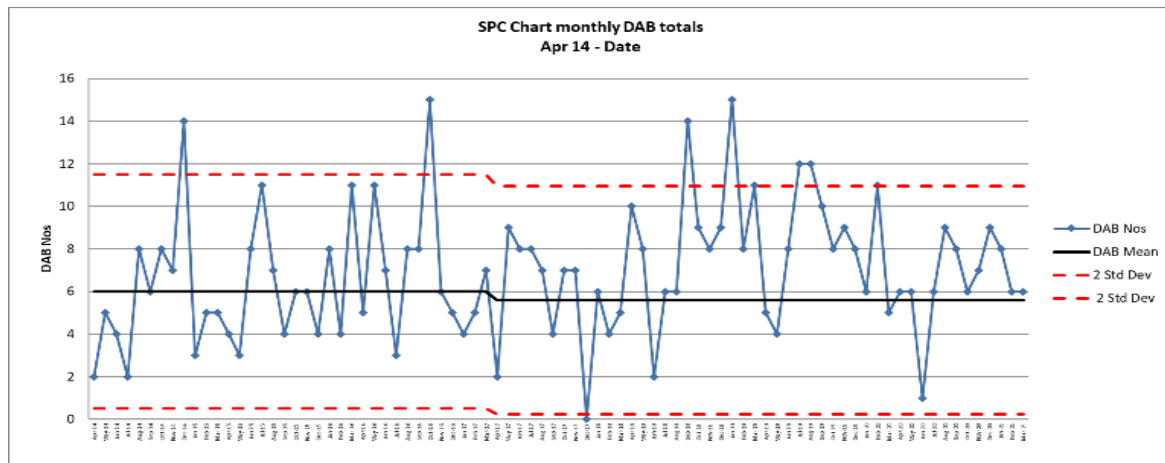
In addition, on a weekly basis the IPCT assess bundle compliance of three invasive devices peripheral vascular catheters (PVCs), urinary catheters, central venous catheters (CVCs) etc) as part of their ward visit programme and this is reported in the monthly Directorate Reports.

April 2020 – March 2021

Device associated bacteraemia total - April 20 to March 21 = 77

	2020-2021	2019-2020
Hospital	20	40
Healthcare	57	54
Nursing Home	0	4
Annual Total	77	98

Hospital	No of DABs
Falkirk Community Hospital	0
Bo'ness Community Hospital	0



Comments: This year has seen a decrease in DABs from 98 cases reported in 2019-2020 to 77 cases reported this year. This decrease is attributed to a marked decrease in hospital acquired infection. Case numbers have remained within control limits.

5. Escherichia coli Bacteraemia (ECB)

5.1. NHS Forth Valley's approach to ECB prevention and reduction

Escherichia coli (E coli) is one of the most predominant organism of the gut flora and for the last several years the incidence of E coli isolated from blood cultures i.e. causing sepsis, has increased so much that it is the most frequently isolated organism in the UK. As a result of this, the Healthcare Acquired Infection (HAI) Policy Unit has now included E coli as part of the AOP targets. The most common cause of E coli bacteraemia (ECB) is from complications arising from urinary tract infections (UTIs), hepato-biliary infections (gall bladder infections) and urinary catheters infections.

In NHS Forth Valley, device associated bacteraemias (DABs) surveillance has been ongoing since 2014 and have seen a reduction in urinary catheter bacteraemias over the years including E. coli associated infections and will hope to continue to reduce so to achieve our target for 2022.

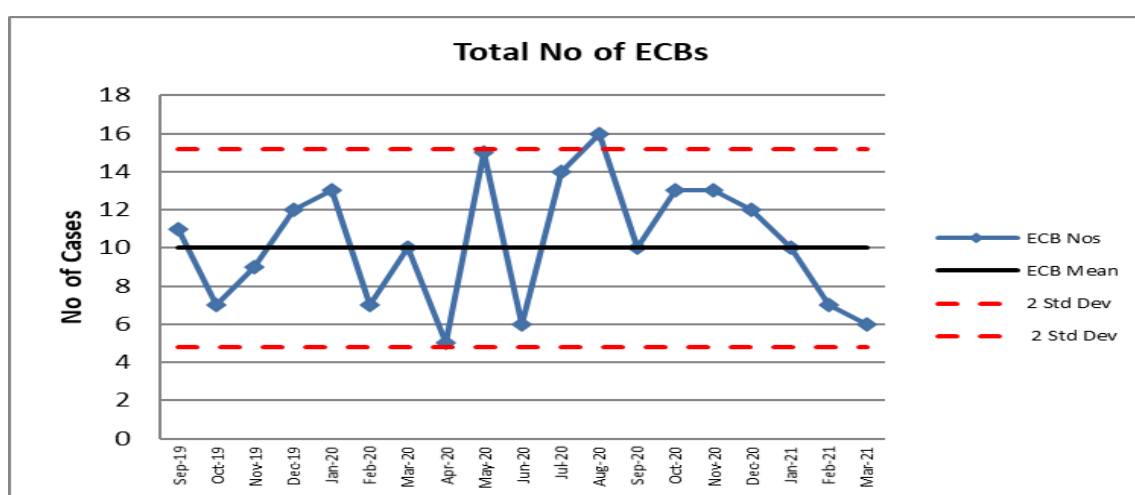
April 2020 – March 2021

E coli bacteraemia infection total - April 20 to March 21 = 131

	2020-2021	2019-2020
Hospital	30	22
Healthcare	97	45
Nursing Home	4	5
Annual Total	131	72

Hospital	No of ECBs
Falkirk Community Hospital	1 (Unit 5)
Bo'ness Community Hospital	0

The ECB from Unit 5 FCH was attributed to a UTI.



Comments: Case numbers have risen quite significantly this year especially from healthcare sourced infections; in particular from UTI and urinary catheter infections. This increase occurred during the first few months of the pandemic with data exceedance occurring in August. Fortunately, the latter half of the year numbers have been slowly reducing. It is speculated that patients delayed seeking medical intervention promptly due to lockdown accounted for this increase.

5.2. Healthcare ECBs

Case numbers significantly increased this year from 45 reported cases in 2019-2020 to 97 reported cases this year. Data exceedance occurred in May, July and August. Increases were predominantly associated with urinary catheter (n=23), lower UTI (n=27) and biliary tract (n=13) infections. In 2019-2020 there were 5, 10 and 2 reported cases respectfully. The increase in UTI and urinary catheter infections has been hypothesised previously in this report with patient delaying to seeking medical intervention appropriately. It is unknown why biliary sepsis have increased given the medical reasons for

developing such infections. Fortunately, numbers have fallen to pre-covid levels towards the end of the year.

6. Clostridioides difficile Infections (CDIs)

6.1. NHS Forth Valley's approach to CDI prevention and reduction

Similar to our SABs and DABs investigation, patient history is gathered including any antibiotics prescribed over the last few months. Discussion with the clinical teams and microbiologists assist in the determination and conclusion of the significance of the organism, as sometimes the organism isolated can be an incidental finding and not the cause of infection. Data is shared with the antimicrobial pharmacist and cases are discussed at the Antimicrobial Management Group to identify inappropriate antimicrobial prescribing.

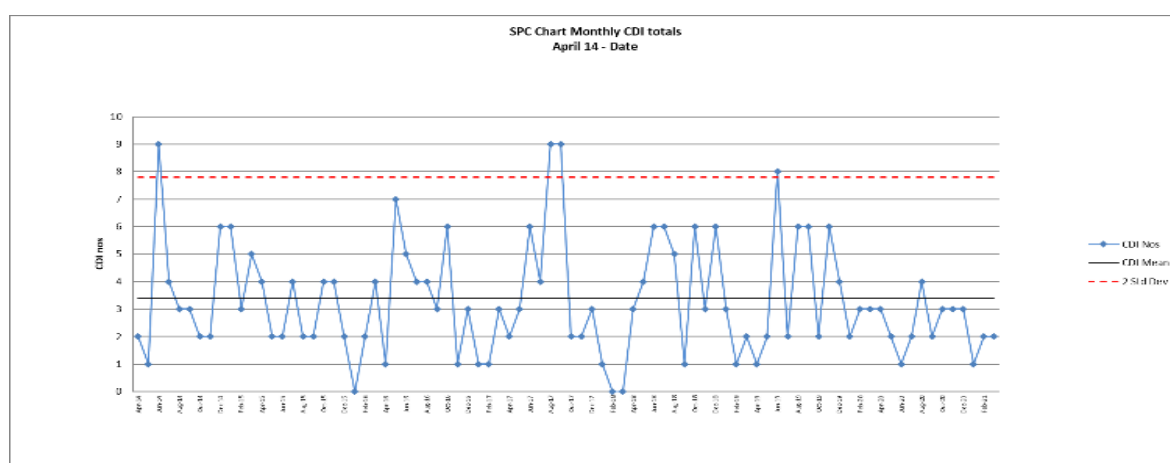
April 2020 – March 2021

Clostridioides difficile infection total - April 20 to March 21 = 29

	2020-2021	2019-2020
Hospital	6	17
Healthcare	23	30
Nursing Home	0	1
Annual Total	29	48

Hospital	No of CDIs
Falkirk Community Hospital	1 (Unit 1)
Bo'ness Community Hospital	0

The CDI attributed to Unit 1 FCH following antimicrobial therapy.



Comments: Case numbers have decreased this year compared from 48 reported cases in 2019-2020 to 29 cases reported. This decrease was

attributed quite markedly to hospital acquired CDIs and also to healthcare sourced infections. There has been no data exceedance this year and with the exception of one month, case numbers have remained under the monthly mean. The IPCT remain optimistic about this reduction, however it is recognised that this might be directly associated with the ongoing pandemic.

7. Estate and Cleaning Compliance (per hospital)

The data is collected through audit by the Domestic Services team using the Domestic Monitoring National Tool and areas chosen within each hospital is randomly selected by the audit tool. Any issues such as inadequate cleaning is scored appropriately and if the score is less than 80% then a re-audit is scheduled. Estates compliance is assessed whether the environment can be effectively cleaned; this can be a combination of minor non-compliances such as missing screwcaps, damaged sanitary sealant, scratches to woodwork etc. The results of these findings are shared with Serco/Estates for repair. Similar to the cleaning audit, scores below 80% triggers a re-audit.

Board Wide Total




	Apr-Jun 2020	Jul-Sept 2020	Oct-Dec 2020	Jan-Mar 2021
Cleaning	97	95	96	96
Estates	97	93	94	94

Falkirk Community Hospital

	Apr-Jun 2020	Jul-Sept 2020	Oct-Dec 2020	Jan-Mar 2021
Cleaning	97	94	96	94
Estates	87	85	87	89

Bo'ness Hospital

	Apr-Jun 2020	Jul-Sept 2020	Oct-Dec 2020	Jan-Mar 2021
Cleaning	94	96	94	96
Estates	91	90	90	91

	Colour	Description
	Green	compliance level 90% and above - Compliant
	Amber	compliance level between 70% and 90% - Partially compliant
	Red	compliance level below 70% - Non-compliant

7.1. Falkirk Community & Bo'ness Hospital Estate and Cleaning Scores

Both cleaning and estate scores remained consistent over the last 12 months with a slight improvement in the estate scores in Falkirk Community Hospital. Results from the monthly audits are discussed at the Estates Compliance Group to look at ways to improve the scores. Please note that the number of audits were reduced due to the COVID-19 pandemic.

8. Incidence/Outbreaks

Incidence and outbreaks across NHSFV are identified primarily through ICNet, microbiology or from the ward. ICNet is the IPCT data management system that automatically identifies clusters of infections and specific organisms such as MRSA, admission of patients with known infections etc to enable timely patient management to prevent any possible spread of infection. The identification of outbreaks is determined following discussion with the Microbiologist. In the event of a declared outbreak a Problem Assessment Group or Incident Management Team meeting is held with staff from the area concerned and actions are implemented to control further infection and transmission.

All outbreaks are notified to Health Protection Scotland and Scottish Government (see below for further details).

8.1. Healthcare Acquired Infection Incident Reporting Template (HAIIRT)

The HAIIT is a tool used by boards to assess the impact of an incident or outbreak. The tool is a risk assessment and allows boards to rate the incident/outbreak as a red, amber, or green. The tool also directs boards whether to inform Health Protection Scotland/SGHD of the incident (if amber or red), release a media statement etc.

- HAIIT Green – None reported this quarter
- HAIIT Amber – Two were reported this quarter
- HAIIT Red – None reported this quarter

All outbreaks are notified to Health Protection Scotland and Scottish Government. The table below highlights the outbreaks reported this quarter.

Hospital and Ward	Highest HAIAT recorded for incident	HAIAT	Patient cases	Staff cases	Total deaths	Date of first reporting	Single/cluster
Bo'ness Community Hospital - 1	Not Done	Not Done	2	0	0	2020-04-24	NA
Bo'ness Hospital - Bo'ness Units 1 & 2	Amber	Green	18	12	6	2021-01-25	Cluster
Falkirk Community Hospital - Unit 5	Red	Green	13	16	2	2021-02-14	Cluster
Bellsdyke Hospital - Trystpark	Green	Green	4	9	0	2021-02-17	Cluster
Total	-	-	37	36	8	-	-

8.2. Preparations for HEI Inspections

As a result of the Covid -19 pandemic, in April, the HEI Inspectorate decided to suspend all unannounced inspections across Scotland. As case numbers decline and Scotland is now in phase 3, the Inspectorate unannounced have resumed inspections focusing on both acute and community Hospitals. Stakeholders are aware and assurance checks are being performed in all areas to ensure all sites are HEI inspection ready.