The Shrewsbury and Telford Hospital NHS Trust

Board of Directors' Meeting
8 June 2023

Agenda item		071/23		
Report Title		Report from the Director of Infection Prevention and Control Q4 2022-23		
Executive Lead		Hayley Flavell, Executive Director of Nursing		
Report Author		Kara Blackwell, Deputy Chief Nurse		
CQC Domain:		**Link to Strategic Goal:**		**Link to BAF / risk:**
Safe	√	Our patients and community	√	
Effective	√	Our people		
Caring	√	Our service delivery		**Trust Risk Register id:**
Responsive	√	Our governance	√	2077,1456,1749,2158,1359,1809
Well Led	√	Our partners		
Consultation Communication		NA		
Executive summary:		This report provides an overview of the Infection Prevention and Control key metrics for Quarter 4 2022/23 (January to March 2023).The key points to note are: • In relation to Healthcare Associated Infections (HCAI), the Trust breached the national targets set for MRSA bactereamia and C difficile in 2022/23. • When the Community Onset Hospital Associated (COHA) cases are included the Trust also exceeded the target for gram-negative Klebsiella and E.Coli bacteraemia • The Trust has continued to see a number of COVID 38 outbreaks, with 38 outbreaks in total in Quarter 4. • An NHSE IPC sustainability visit was completed in March 2023; the Trust retained its "Green" RAG rating and following this visit the enhanced oversight for the Trust that had been in place from NHSE reverted to standard oversight and monitoring. The Infection Prevention and Control Board Assurance Framework has been updated, the Trust is currently RAG rated "Green" for 83 of the key lines of enquiry (KLOE), and Amber for 16 KLOEs		
Recommendations for the Board:		The Board is asked to note the contents of the Report		
Appendices:		Appendix 1- Table of Outbreaks and Period of Increased Incidence		

1.0 INTRODUCTION

This paper provides a report for Infection Prevention and Control for Quarter 4 (January to March 2023) against the 2022/23 objectives for Infection Prevention and Control. An update on hospital acquired infections: Methicillin-Resistant *Staphylococcus aureus* (MRSA), Clostridioides Difficile (CDI), Methicillin-Sensitive Staphylococcus (MSSA), Escherichia Coli (E.Coli), Klebsiella and Pseudomonas Aeruginosa bacteraemia for January to March 2023 is provided. An update in relation to Covid-19 is also provided. The report also outlines any recent IPC initiatives and relevant infection prevention incidents. The updated IPC BAF is also included.

2.0 KEY QUALITY MEASURES PERFORMANCE

Throughout 2022/23, in line with our local contracting via the Integrated Care System (ICS) the Trust has reported MRSA bacteraemia, MSSA bacteraemia, Clostridioides Difficile cases, both Hospital Onset Healthcare Associated i.e those cases >48 hours post admission (HOHA) and Community onset Healthcare Associated (COHA, i.e. within 28 days of discharge), and Hospital onset healthcare associated (HOHA) cases of gram-negative bacteraemia for Klebsiella, Escherichia Coli, and Pseudomonas Aeruginosa. Based on our local reporting the Trust exceeded the national target for MRSA and C.Diff in 2022/23.

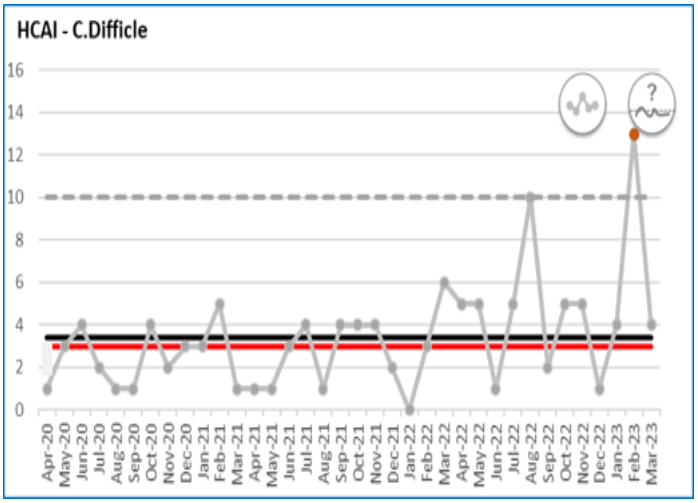
2.1 MRSA Bacteraemia

The target for MRSA bacteraemia remains 0 cases for 2022/23. There was 1 case in Q4 2022/23, this was in the Emergency Department at the Royal Shrewsbury Hospital. A full Post Infection Review took place as per Trust Policy chaired by the Director of Infection Prevention and Control. The last MRSA bacteraemia attributed to the Trust prior to this was December 2022 (see IPC Serious Incident Section). This takes the Trust to 2 cases in the financial year 2022/23 against a target of 0 cases.

2.2 Clostridioides Difficile

The Trust trajectory for Clostridioides Difficile (C.Diff) cases in 2022/23 is no more than 33 cases. There was a total of 21 cases of C.Diff for Quarter 4 2022/2023 against a target of no more than 7 cases for the Quarter.

There have been 60 cases of C. diff attributed to the Trust in the financial year (April 2022 to March 2023) against an annual target of no more than 33 cases.



These numbers include both Hospital Onset Healthcare Associated (HOHA) and Community Onset Healthcare Associated (COHA) with 50 of these cases being post 48 hours of admission and 10 cases having been an inpatient in the 28 days prior to the positive

sample.

Root cause analysis investigations are undertaken on all C. diff cases. During Quarter 4, 21 cases of C. diff were reviewed.

Common themes being identified and reported were:

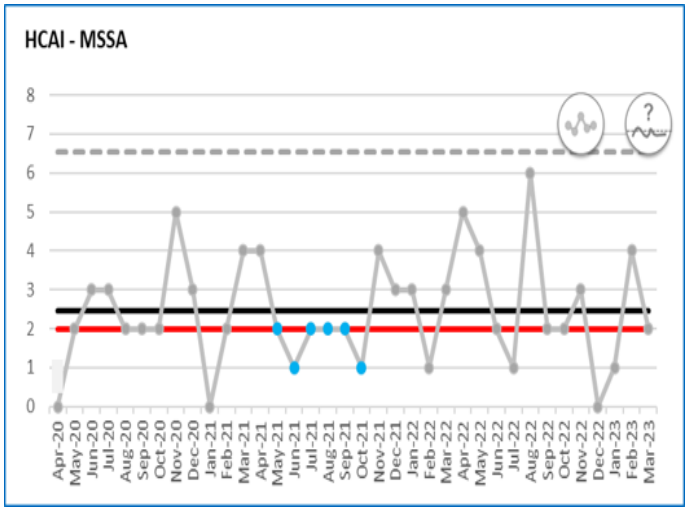
- Delays in taking a sample from patients experiencing episodes of unexplained type 5, 6, or 7 stool.
- Delays in commencement of a stool chart at the second episode of an unexplained type 5,6, or 7 stool.
- Delays in isolation of patients experiencing 2 or more episodes of unexplained type 5, 6, or 7 stool.
- Documentation not completed consistently.

As part of the RCA process, action plans for each case include sharing of the cases with the relevant clinical division in their governance meetings so that lessons learnt can be shared and findings of practise which could be done better, and good practice can be identified and shared with other clinicians. Learning from the RCA's are also shared as part of the divisional reports in IPCOG.

A C.Diff gap analysis has been undertaken by the IPC team following the increase in C diff cases in August 2022. An action plan was developed that has been reviewed monthly at IPCOG and all actions within this have now been completed. In additional the Trust is looking at undertaking a deep clean programme for the wards later in 2023/24.

2.3 Methicillin-sensitive Staphylococcus Aureus (MSSA)

There has been no national target set for MSSA bacteraemia cases in 2022/23. The end of year figure was 32 cases of post 48-hour MSSA bacteremia against the Local Trust target of no more than 28 cases. All cases deemed to be device/ intervention related, or where the source is unknown have an RCA completed. 14 were considered to be device or intervention related.

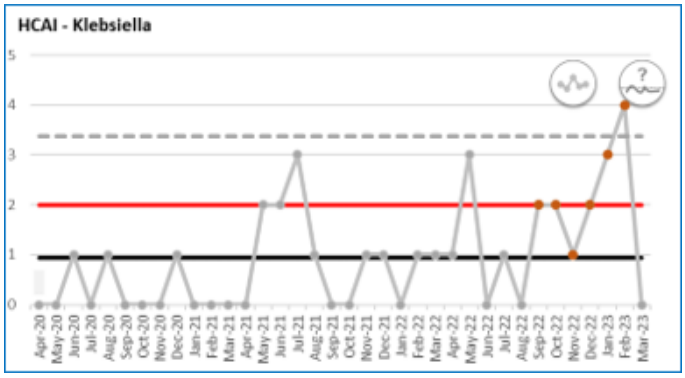


Of these 14 cases:

- The source was considered to be intravenous devices related in 11 cases
- 2 cases were related to a surgical site infection
- In one case the source was unknown, but an RCA is being completed

2.4 Klebsiella

There were 7 cases of post 48-hour Klebsiella bacteraemia in Quarter 4 and a total of 19 Hospital onset healthcare associated (HOHA) cases at the end of the financial year.

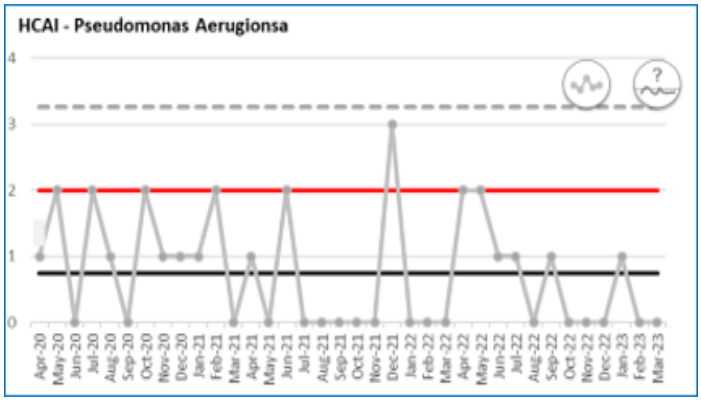


Of these eight cases were considered to be device/intervention related:

- 4 cases were related to a catheter associated urinary tract infection.
- 3 related to intravenous devices
- 1 case related to an infected pacemaker system. T
- The remaining 11 cases were not considered to be device related.

2.5 Pseudomonas Aerugionsa

There was one case of post 48-hour Pseudomonas Aeruginosa in Quarter 4 of 2022/23. There was a total of 8 Hospital onset healthcare associated (HOHA) cases in the financial year 2022/23.



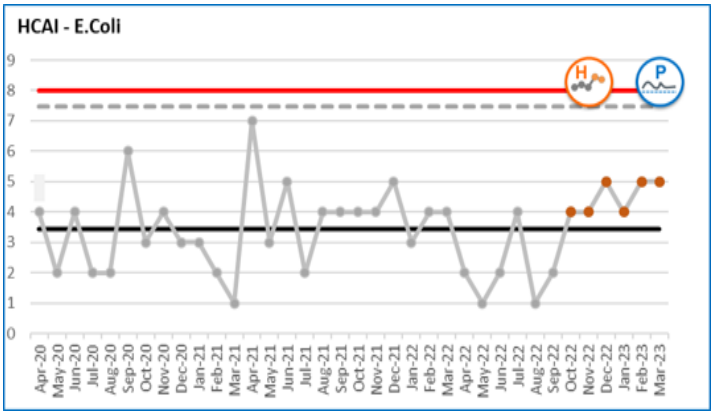
Of these:

Two cases were considered to be device/intervention related with one source being post and ERCP; and one case elating to an intravenous device.

The other six cases were not considered device/ intervention related .

2.6 Escherichia Coli (E.Coli)

There were fourteen cases of E.Coli in Quarter 4. There were thirty-nine cases of post 48 E.coli bacteraemia in 2022/23.
In total, there were eight cases which were considered to be device/intervention related, with the sources being:



- Six cases of catheter associated urinary tract infections (CAUTI)
- Two cases related to intravenous devices

2.7 Root Cause Analysis Infections for MSSA and E.Coli Bacteraemia

All MSSA and E.coli post 48-hour bacteraemia are reviewed by the microbiology team. Those deemed to be device related, or, where the source of infection cannot be determined are expected to have a Root Cause Analysis (RCA) completed.

In Quarter 4, there were:

- 4 MSSAs attributed to the High Dependency Unit at the Royal Shrewsbury Hospital, ,Ward 23 Neonatal and Wards 9 & 10 at the Princess Royal Hospital
- 3 E.Coli bacteraemia with one case attributed to Ward 26,and two cases to Ward 27 at the Royal Shrewsbury Hospital.

During Quarter 4 the Trust also had 1 MRSA bacteraemia that was attributed to the Royal Shrewsbury Hospital Emergency Department. A full Post Infection Review (PIR) was completed by the IPC and Department Team caring for the patient during their previous and current admission. The findings of the PIR investigation were discussed during a meeting and an action plan was created which included all issues identified during the investigation for addressing. A further meeting has been scheduled to monitor completion of the actions.

Learning from completed RCAs include:

- Lapses in management of cannulas.
- Insufficient documentation for cannula and collection of blood cultures.
- Delay in sending blood cultures.
- Blood Cultures not repeated after 48 hours.
- ECHO not requested when MSSA bacteraemia identified.
- Management of urinary catheters including documentation and plans for removal not completed fully in E. coli bacteraemia case
- Lapses in management of peripheral cannula including inconsistency between inflammatory signs and VIP scores signs, identified in MSSA bacteraemia case
- Multiple intravenous cannulations.
- Skin integrity issues (preadmission) not documented consistently and accurately.

Actions implemented in relation to improvements include:

- Lessons learned from all cases have been cascaded to staff in huddles, handovers, and clinical governance meetings.
- Discussion of care issues identified in RCAs as part of IPC and induction training with junior doctors regarding Blood culture best practice. Blood culture ‘top tips’ poster distributed to all clinical areas to highlight best practice.
- Ward managers and nurses in charge monitor the VIP scores and compliance monitored at monthly nursing metrics meetings, these being reported by division through their IPC reports to the IPC Operational Group each month.
- Urology specialist nurses now linking with clinical practise educators to provide catheter care training as part of the statutory training requirement.

- HOUDINI care plan implemented to better guide catheter care and accurate documentation.
- Training on unnecessary use of gloves provided to various staff groups.
- Education on hand hygiene provided to staff members.

2.8 Health Care Associated Infections (HCAI) Performance including Community Onset Healthcare Associated)COHA) gram-negative infections

The reduction of healthcare associated infections (HCAIs) remained a key priority for the Trust throughout 2022/2023. Performance Report.

As part of our local contract with the Integrated Care System (ICS) the Trust has been reporting all Hospital Onset Healthcare Associated (HOHA) infections for Methicillin Resistant Staphylococcus Aureus (MRSA), Methicillin Sensitive Staphylococcus Aureus (MSSA) and both Hospital Onset HealthCare Associated (HOHA) and Community Onset Healthcare Associated (COHA) for Clostridium Difficile (i.e., both hospital acquired >48 hours and those infections within 28 days of discharge from hospital). Alongside this the Trust has reported Hospital Onset Healthcare Associated (HOHA) gram-negative bacteraemia for Pseudomonas, Klebsiella, and Escherichia Coli; these have been reported via our commissioning contract monitoring processes and the Trust Integrated. The overall cases reported by each HCAI organism are shown:

Health Care Associated Infection	Number of Cases 2022/23	Number of Cases 2021/22	Number of Cases 2020/21	Number of Cases 2019/20	Target
Methicillin Resistant Staphylococcus aureus (MRSA)	2	1	2	1	0
Clostridium Difficile (>3 days from admission to hospital and within 28 days of discharge)	60	33	30	54	33
Methicillin Sensitive Staphylococcus Aureus (MSSA)	32	33	28	30	No Target
Pseudomonas aeruginosa	8	6	3	8	19
Escherichia Coli bacteraemia	39	49	36	51	96
Klebsiella bacteraemia	19	12	14	19	23

The IPC team have reported all cases of both Hospital Onset Healthcare Associated (HOHA) and Community onset Healthcare Associated (COHA) cases for all these organisms via the national IPC database, however, COHA gram-negative bacteraemia infections for E.Coli, Pseudomonas and Klebsiella have not been reported locally.

Following a review of the IPC requirements in the National NHS Contract and discussion with Regional NHSE IPC colleagues they advised that gram negative Community Onset Healthcare Associated (COHA) for Pseudomonas, E.Coli and Klebsiella infections within 28 days of the patient being discharged from hospital should be included. Revised Year to

Date figures is shown based on inclusion of these COHA infections alongside the Hospital Onset Healthcare Associated (HOHA), and the revised totals for both the HOHA and COHA infections. Moving forward these will all be reported monthly via our Integrated Performance Report in 2023/24.

Healthcare Associated Infection (gram negative organism)	Number COHA Infections	Number of HOHA Infections	Total (HOHA and COHA) Infections	Target 2022/23
Pseudomonas aeruginosa	8	8	16	19
Escherichia Coli bacteraemia	79	39	118	96
Klebsiella bacteraemia	18	19	37	23

When the HOHA and COHA cases for these gram-negative bacteraemia are combined the Trust exceeded the national targets for both E. Coli and Klebsiella in 2022/23.

Moving forward in 2023/24 both HOHA and COHA gram-negative bacteraemia will be included in our reported against our nationally set targets and reported through the IPR as well as national IPC database.

2.9 MRSA Screening (Elective and Emergency)

MRSA Elective screening compliance has been above the 95% target throughout Q1 to Q4 for 2022/23. Q1 compliance was 96.9%; Q2 97.3%; Q3 97.0%; and Q4 97.1%

The MRSA emergency screening compliance has not reached the required 95% in any of the Quarters in this financial year. The average performance in Q1 was 94.0%; Q2 93.6%; Q3 92.5%; and Q4 92.8%.

3.0 PERIODS OF INCREASED INCIDENCE/OUTBREAKS

During the period January to March 2023, there were 38 COVID outbreaks declared in the Trust.

The most common issues identified during the outbreak management are:

- Asymptomatic, intentionally unscreened patients creating contacts, who then tested positive.
- Delayed isolation due to lack of isolation capacity/side rooms in across the Trust

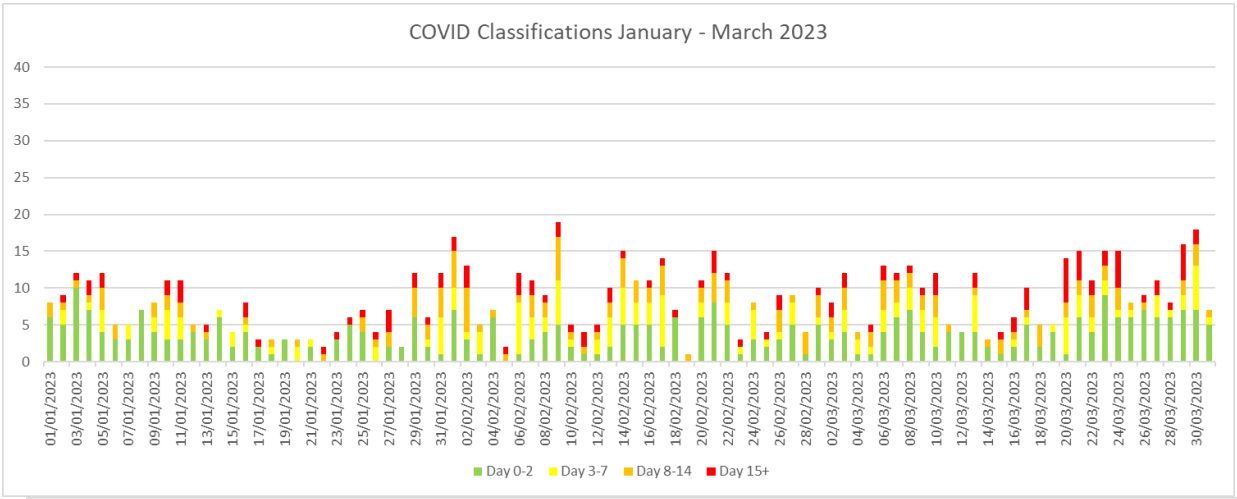
The periods of increased incidence/outbreaks are shown for Quarter 4 2022/2023 in Appendix 1.

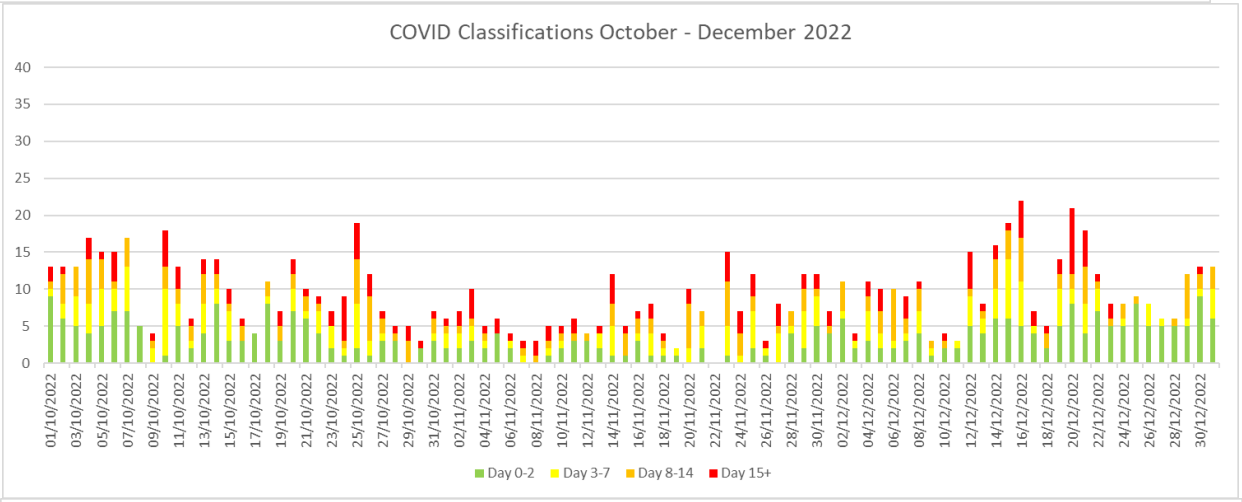
An update is included on Periods of Increased Incidence noted in Q3 report. After ribotyping, these have been reviewed and are not related and therefore not outbreaks (also see Appendix 1).

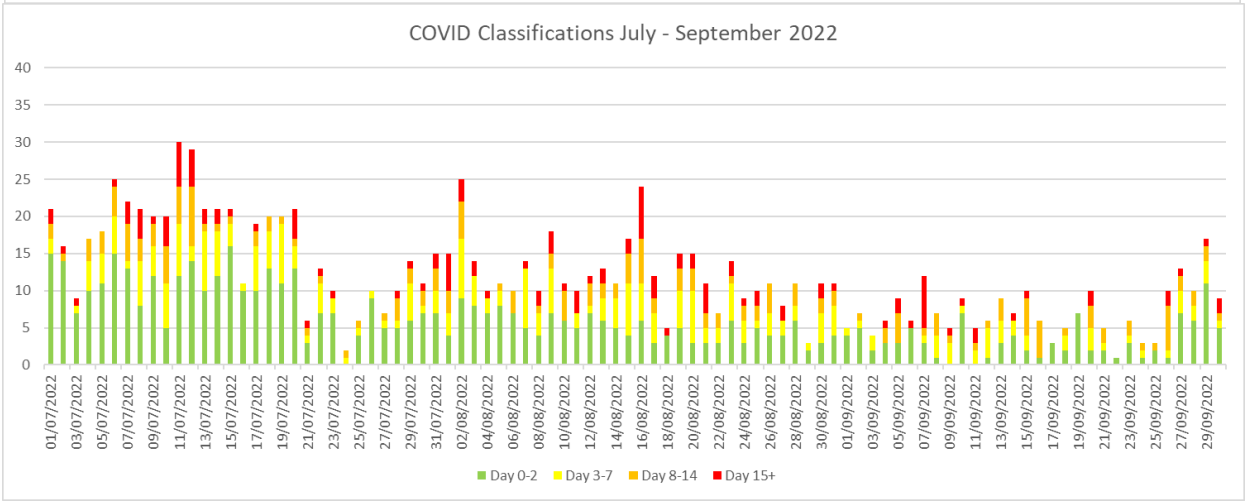
4.0 COVID 19 UPDATE

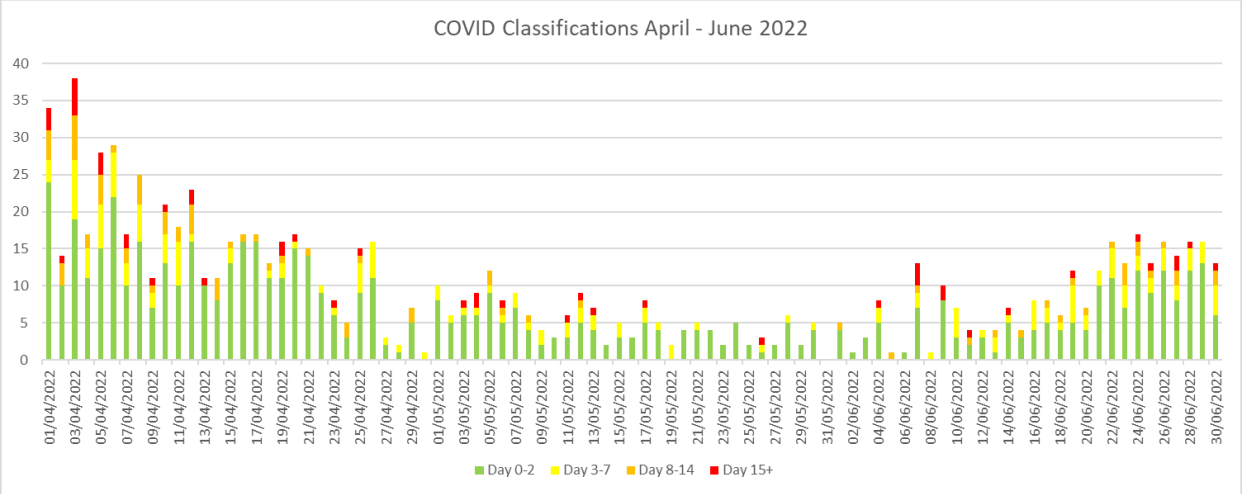
The number of Covid-19 cases in the Trust in Quarter 4 (January – March 2023) dropped slightly in January 2023 but then increased and remained relatively steady throughout February and March.

The graphs below demonstrate the trends of cases seen in the Trust per Quarter. In September 2022, the vast majority of asymptomatic COVID-19 testing paused in line with new national guidance from NHSE.









NHSE provide definitions of apportionment of COVID 19 in respect of patients diagnosed within hospitals as below:

Indeterminate – diagnosed at 3 - 7 days
Probable Healthcare Onset – diagnosed at 8 - 14 days
Definite Healthcare Onset – diagnosed at 15+ days

In Quarter 4 of 2022/23, there were 154 'Probable' Healthcare onset, and 113 'Definite' Healthcare onset cases. Most of these cases had been involved in COVID outbreaks on the wards.

In January 2023, a brief review of patient timelines in outbreaks was carried out and compared to December 2021. In December 2021, 32% of the patients in outbreaks had been identified as being a contact, compared to January 2023 when 56% of patients in outbreaks were identified as contacts.

5.0 SERIOUS INCIDENTS (SI) RELATED TO INFECTION PREVENTION & CONTROL

There has been one Serious Incident reported in Quarter 3 of 2022-23. The investigation was led by the Women and Children Division with the involvement from the IPC team and was a post 48-hour MRSA bacteraemia, in Maternity services. There were no IPC serious incidents reported in Quarters 1, 2 or 4 of 2022/23.

6.0 IPC INITIATIVES

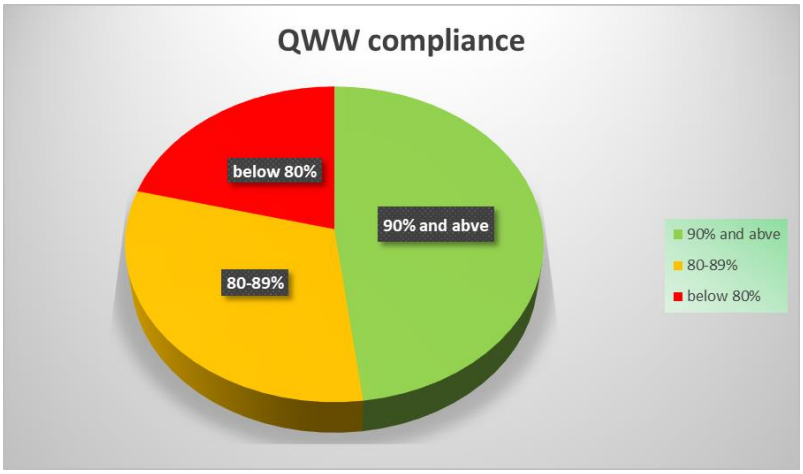
The IPC team conducted twenty-nine full QWW in Q4 (January 2022 to March 2023).

The accepted standard is for QWW compliance of 90% and above. If compliance is between 100% and 90% the area will be re-audited quarterly in line with current schedule and the action plan should be returned to the IPC team within two weeks. If the compliance achieved is between 80-89%, the area will be reviewed in 1 month, and the action plan should be returned to the IPC team within a week. If an area scores less than

80%, a repeat audit will be completed in a week and action plan should be returned immediately.

Compliance scores ranged from 69% - 100% in Quarter 4.

Of the 29 QWWs completed, fourteen areas (48%) were over 90% compliant, nine audited areas (31%) scored between 80% - 89% and 6 areas (21%) achieved a score below 80%.



During the same period, IPC team has also conducted thirty-five of outbreak QWWs related to Covid-19 outbreaks, other outbreaks, and Periods of Increased Incidence (PII).

The most frequently non-compliant elements were:

- Inappropriate catheter management
- Cleanliness of the general ward environment and equipment
- Cleanliness of sanitary equipment including commodes, toilet seat frames and bed pans
- Inappropriate glove use
- Inconsistent ventilation and cleaning checklists
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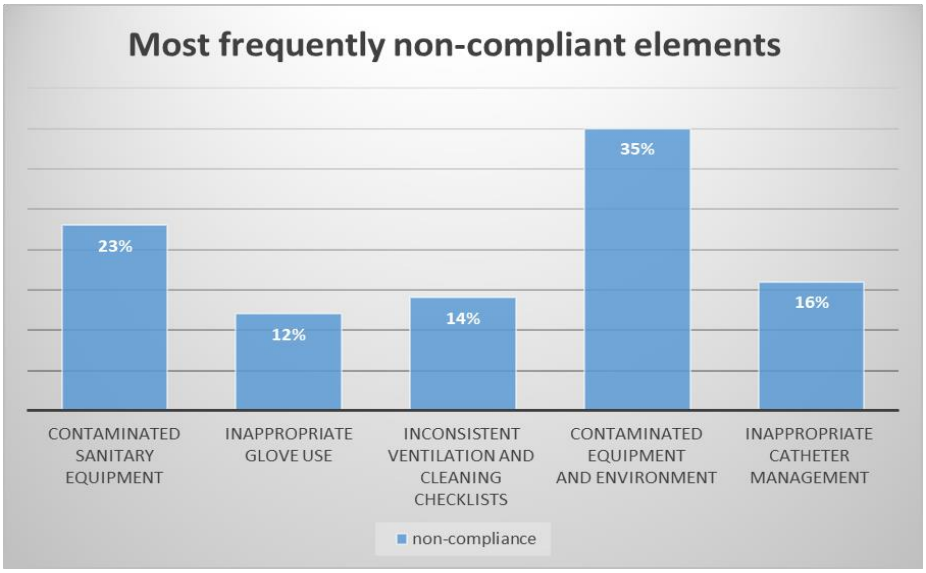

Contaminated equipment and the environment on the wards were identified as the most frequent issue found in the quality ward walks. A large number of issues were also related to contaminated sanitary equipment. These issues were raised at the time of the audit and addressed immediately.

Lastly, non-compliances regarding the care and management of catheters were also found and escalated to the ward area leads.

Following each QWW Assurance Audit conducted by IPC team the action plan is sent to Ward Managers, Matrons and Divisional Director of Nursing. Depending on the compliance achieved during the QWW, the time scale for completion of the action plans is set and communicated to departments.

Unfortunately, only a small number of all action plans are returned within the given time and most of the actions that are completed did not include details of the processes that are implemented to ensure the issue identified will be resolved. This still remains an issue even after follow up requests, this has been escalated through the IPC Operational Group for Divisional Directors of Nursing to ensure actions are taken address concerns and ensure ongoing compliance.

7.0 IPC NHSE REVIEW

The Trust was downgraded from RAG rating “Green” to “Amber” by NHSE in July 2022 following a peer review, issues identified during a masterclass and concerns raised in relation to compliance with IPC practices on an external COVID Outbreak meeting.

NHSE revisited the Trust on the 6th of December 2022 and performed a re-inspection and assessment of the Trusts RAG rating. Following this visit, the Trust achieved a “Green” rating with a request for a sustainability visit to be undertaken in March 2023.

A sustainability visit was completed on the 13th of March 2023. Feedback from this visit from NHSE was that the Trust had demonstrated a continued and sustained IPC improvement program, retaining its “Green” rating. As such, the enhanced oversight that had been in place from NHSE was removed and the Trust reverted to standard IPC oversight by NHSE. .

8.0 RISKS AND ACTIONS

The Risk register for IPC is held by the Director of Nursing as the Director for Infection Prevention and Control (DIPC) and is updated monthly.

There are 6 risks on the risk register. Of the 6 risks, one risk relating to decontamination remains rated as red after mitigation:

Risk 2077: Decontamination assurance for medical devices

Ongoing work continues to ensure improvements are made in relation to decontamination across the Trust and that all recommendations from the Decontamination review undertaken by University Hospitals Birmingham are addressed.

9.0 IPC BOARD ASSURANCE FRAMEWORK

The NHSE Infection Prevention and Control Board Assurance Framework was update and published at the end of September 2022. The 10 domains remain, with a total of 99 lines of enquiry. This is reviewed quarterly by the IPC team and reported through to the IPC Operational Group and IPC Assurance Committee chaired by the Director of Infection Prevention and Control.

The BAF has a total of 99 Key Lines of Enquiry. The Trust is rated “Green” for 83 of these KLOEs, “Amber” for 16 of the KLOEs and has no “Red” rated KLOEs.

10.0 HEALTH AND SOCIAL CARE ACT COMPLIANCE UPDATE

The Health and Social Care Act (2008) Code of Practice on the prevention and control of infections, applies to all healthcare and social care settings in England. The Code of Practice was updated in February 2023. The document sets out 10 criteria with 268 elements against which the Care Quality Commission (CQC) will judge a registered provider on how it complies with the infection prevention requirements, which is set out in regulations.

To ensure that consistently high levels of infection prevention (including cleanliness) are reviewed and maintained the Hygiene Code is reviewed quarterly by the IPC team and presented at the IPC Operational Group.

Following the full review, the Trust is currently 93.0% compliant, being RAG rated ‘Green’ for 233 elements, ‘Amber’ for 16 and RAG rated ‘Red’ for 0. There are currently 20 elements awaiting review and RAG rating, this review is being undertaken in Q1 of 2023/24. The Trust self-assessment compliance against each of the 10 domains and the current gaps are shown:

Health and Social Care Act 2008: code of practice on the prevention and control of infections and related guidance				
Self Assessment Tool				
Shrewsbury and Telford Hospitals NHS Trust				
Criterion	**Statement of Compliance**	**Compliance Score**	**Score**	**Potential Score**
Criterion 1	Systems to manage and monitor the prevention and control of infection. These ystems use risk assessments and consider the susceptibililty of service users and any risks that their environment an other users may pose to them.	90%	113	126
Criterion 2	Provide and maintain a clean and appropriate environment in managed premises that facilitates the prevention and control of infections.	93%	75	81
Criterion 3	Ensure appropriate antimicrobial use and stewardship to optimise service user outcomes and to reduce the risk of adverse events and antimicrobial resistance.	75%	18	24
Criterion 4	Provide suitable accurate information on infections to service users, their visitors and any person concerned with providing further health and social care support or nursing/ medical care in a timely fashion.	100%	66	66
Criterion 5	Ensure that people who have or at risk of developing an infection are identified promptly and receive the appropriate treatment and care to reduce the risk of transmission of infection to other people.	100%	6	6
Criterion 6	Systems to ensure that all care workers (including contractors and volunteers) are aware of and discharge their responsibilities in the process of preventing and controlling infection.	100%	18	18
Criterion 7	Provide or secure adequate isolation facilities.	92%	11	12
Criterion 8	Secure adequate access to laboratory support as appropriate.	100%	15	15
Criterion 9	The service provider should have and adhere to policies designed for the individual's care, and provider organisations that will help to prevent and control infections.	94%	382	408
Criterion 10	The registered provider will have a system or process in place to manage health and care worker health and wellbeing and organisational obligation to manage infection, prevention and control.	92%	44	48
Total Compliance		**93%**	**748**	**804**

10.0 CONCLUSION

This IPC report has provided a summary of the performance in relation to the key performance indicators for IPC in Quarter 4 of 2022/23 and the financial year overall.

In relation to healthcare associated Infections (HCAI) when the Community Onset Healthcare associated (COHA) figures are added the Trust breached the national targets for E.Coli, and Pseudomonas bacteraemia as well as MRSA and C,Diff.

The Trust has continued to see a number of COVID 19 outbreaks, with thirty-eight outbreaks in total in Q4. The Trust management of the isolation period for Covid positive patients, screening and management of contacts changed in Q2, in line with national guidance.

Appendix 1: Q 4 Outbreaks and Period of Increased Incidents

	Ward	Infective Organism	Typing	Learning
Jan 23	T17	Covid-19		Patients know each other and shared visitors
	T4	Covid-19		Contacts became positive
	T4	Covid-19		Contacts became positive
	T6	Covid-19		Contacts became positive
	T9	Covid-19		Contacts became positive. Visitors entering two bays despite advice.
	T10	Covid-19		No obvious original source
	T11	Covid-19		Likely positive visitors
	S18	Covid-19		No obvious original source.
	S23	Covid-19		Possible index case identified.
	S23	Covid-19		Possible index case identified.
	S21	Covid-19		Asymptomatic patients. Source unclear
	S25	Covid-19		Unclear source. Patients having visitors.
	T9	MRSA		
Feb 23	T11	Covid-19		Positive staff may have driven
	T9	Covid-19		Contacts became positive
	T10	Covid-19		Contacts became positive
	T7	Covid-19		Positive visitors continued to visit
	T17	Covid-19		Clear index case with contacts who became positive
	S23	Covid-19		Possible positive visitor
	S24	Covid-19		Likely index case identified
	S25	Covid-19		Unclear index case
	S26T/O	Covid-19		Late isolation of positive patient
	S28	Covid-19		Symptomatic patient created contacts
	S29 T/O	Covid-19		Likely index case identified. Contacts became positive
	S32	Covid-19		No index case identified. Possible incidental finding
	S33	Covid-19		Admission of unknown covid positive patient created contacts.
	S27	Covid-19		Non isolation of asymptomatic positive patient
	S28	Covid-19		Unclear
Mar 23	**T10**	Covid-19		Contacts became positive
	T16	Covid-19		Contacts became positive
	S21	Covid-19		
	S27	Covid-19		Asymptomatic index case
	S32	Covid-19		Unclear index case

	S25	Covid-19		Unclear. Positive index cases across three bays. Contacts became positive
	S18	Covid-19		Untested symptomatic patient. Contacts became positive
	S28	Covid-19		Unclear. Possible staff involvement
	S24	Covid-19		Unclear cause
	S26	Covid-19		Contacts became positive
	S27	Covid-19		Contacts became positive
Dec 2022 Update	S27	C Diff	Complete	Not related
	SITU	Pseudomonas	Complete	Not related