

Cover Sheet

Trust Board Meeting in Public: Wednesday 28 September 2022

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Title: Infection Prevention and Control Annual Report 2021/2022

Status: For Information

History: Hospital Infection Prevention and Control Committee

Board Lead: Chief Medical Officer

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Confidential: No

Key Purpose: Assurance, Policy, Performance

Executive Summary

1. The Infection Prevention and Control (IPC) Annual Report reports on infection prevention and control activities within the Oxford University Hospitals (OUH) NHS Foundation Trust between April 2021 and March 2022. The report covers Infection Prevention and Control (IPC) for the four main sites: John Radcliffe Hospital, Churchill Hospital, Nuffield Orthopaedic Centre and Horton General Hospital, and sites across the region including satellite dialysis units and midwife led units. The publication of the IPC Annual Report is a requirement to demonstrate good governance, adherence to Trust values and public accountability, in line with the Health and Social Care Act 2008: Code of Practice on the Prevention and Control of Infection and related guidance.
2. The following organisms are subject to NHSE/I mandatory reporting: Methicillin-resistant *Staphylococcus aureus* bacteraemia (MRSA), Methicillin-sensitive *Staphylococcus aureus* bacteraemia (MSSA), *Clostridiodes difficile*, and Gram-negative bloodstream infections (*Escherichia coli*, Klebsiella species, *Pseudomonas aeruginosa*). In 2021/22 OUH complied with all external reporting requirements. The Trust Board received bi-monthly updates via Integrated Assurance Committee.
 - **Methicillin-resistant *Staphylococcus aureus* (MRSA) Bacteraemia:** For the financial year 2021/22 4 cases of MRSA bacteraemia were reported against a zero tolerance (3 HOHA and 1 COHA).
 - **Methicillin-sensitive *Staphylococcus aureus* (MSSA) Bacteraemia:** The Trust reported 41 HOHA cases and 18 COHA cases for 2020/21. There is no trajectory set by NHSE/I for MSSA. The OUH rate of healthcare associated MSSA bacteraemias corrected for activity (discharges) has fallen in the last year.
 - ***Clostridiodes difficile*:** The OUH had a total of 107 cases in 2021/22, a reduction from 114 cases in 2020/21. This was above the NHSE/I trajectory however, when corrected for the number of discharges, the incidence of C.diff at OUH reduced by 24%.
 - **Gram negative blood stream Infections (GNBSI):** The NHSE/I national target is to halve healthcare associated Gram-negative blood stream infections by 2023/24. In 2021/22, thresholds related to GNBSIs were introduced to the NHS Standard Contract for the first time. The thresholds were set at a 5% reduction on calendar year 2019. For thresholds set for 2021/22, the OUH came in below the trajectory for E.coli and Pseudomonas BSI and 3 cases above trajectory for Klebsiella sp. BSI. The reduction of GNBSI in 2022/23 will remain a focus for the IPC team.
3. **Audits:** Audits took place on Carbapenemase-Producing Enterobacterales (CPE) screening, peripheral cannula audit, urinary catheter audit, hand hygiene audit, and

sharps safety. BDO undertook an internal audit, and an assurance visit took place by the Care Quality Commission (CQC).

4. **Surgical Site Infection:** The OUH undertakes both mandatory and voluntary Surgical Site Infection surveillance. Information is submitted to the UK Health Security Agency (UKHSA). Mandatory surveillance of repair of fractured neck of femur procedures is undertaken within Trauma and Orthopaedics and voluntary surveillance relating to Coronary Artery Bypass Graft procedures is undertaken within Cardiac surgery. There are no concerns with the surveillance outcomes in either specialty. As part of a bundle of care to reduce SSI in Hepatobiliary Surgery, a quality improvement project evaluated the use of antimicrobial sutures and established that these contributed to a reduced rate of SSI.
5. **COVID-19:** The operational impact of COVID-19 on the Trust in 2021/22 remained considerable. COVID-19 related work was a constant focus for the IPC team and as a consequence the ability to undertake proactive projects was limited. The COVID-19 clinical forum continued to run throughout the year to provide information to staff on IPC guidance, and staff and patient testing. The IPC team followed up all cases of COVID-19 admitted to the hospital to assist with the prevention of nosocomial acquisition.
6. **Investigation of Infection Prevention and Control Incidents and Outbreaks:** A number of IPC investigations were completed in 2021/22 which included cases of invasive *Aspergillus* infection in Paediatric Haematology, the response to the national *Staphylococcus capitis* outbreak in neonatal units, and an MRSA outbreak in the Neonatal Unit.
7. **Environmental IPC** The IPC team has provided support to both ongoing and new environmental concerns throughout 2021/22.
 - **Water Safety at the Churchill Cancer and Haematology Hospital:** Ongoing work to identify an engineering solution to address the failings of the water system continued in 2021/22. Point of use filters remain on all outlets within the building to maintain safe water at the point of use. The Extraordinary Water Safety Group continues to meet to ensure progress is being made.
 - **Cleaning at the Churchill Hospital:** The standard of cleaning at the Churchill Hospital has been raised as a concern. The concerns are reported through the Hospital Infection and Prevention Control Committee (HIPCC) and Patient Safety and Clinical Effectiveness Committee. Weekly meetings take place between G4S, OSL, the division and the Trust PFI office to monitor and review progress.
 - **New Builds and Water Issues:** A number of refurbishments and new builds which took place in 2021/22 resulted in associated water issues on commissioning. The IPC team worked closely with project teams, contractors and the Authorising Engineer for Water to resolve issues.

8. **Antimicrobial Stewardship:** During 21/22 the Antimicrobial stewardship (AMS) CQUINs were deferred due to the COVID-19 pandemic. Total antibiotic consumption for OUH (including inpatient and outpatients) per 1000 admissions is consistently lower than the England average. At the end of Q2 2021/22 OUH were meeting the 2% reduction target from the national contract in Defined Daily Doses (DDDs) per 1000 admissions at that time; final data awaited. Targeted AMS ward rounds have been taking place weekly at the Churchill, with plans to implement on all sites.

Recommendation

9. The Trust Board is asked to receive this report and note the content for information.

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Infection Prevention and Control Annual Report 2021/2022

1. Purpose

- 1.1. This report provides the Trust Board with an annual review of the mandatory reporting and activities undertaken by the Infection Prevention and Control Team between April 2021 and March 2022. The publication of the Infection Prevention and Control (IPC) Annual Report is a requirement to demonstrate good governance, adherence to Trust values and public accountability in line with the Health and Social Care Act 2008: Code of Practice on the Prevention and Control of Infection and related guidance.

2. Background

- 2.1. The Director of Infection Prevention and Control's (DIPC) Annual Report reports on infection prevention and control activities within the Oxford University Hospitals (OUH) NHS Foundation Trust for April 2021 to March 2022. The report covers IPC for the four main sites: John Radcliffe Hospital, Churchill Hospital, Nuffield Orthopaedic Centre and Horton General Hospital, and several sites across the region, for example satellite dialysis units and midwife led units and Katherine House Hospice.
- 2.2. A zero-tolerance approach continues to be taken by the Trust towards all avoidable Healthcare associated infections (HCAIs). We ensure that good IPC practices are applied consistently and are part of our everyday practice meaning that people who use OUH services receive safe and effective care.
- 2.3. This report acknowledges the hard work and diligence of all grades of staff, clinical and non-clinical, who play a vital role in improving the quality of patient and stakeholders experience as well as helping to reduce the risk of infections. Additionally, the Trust continues to work collaboratively with a number of outside agencies as part of its IPC and governance arrangements including:
 - Oxfordshire Clinical Commissioning Group (CCG)
 - Oxford Health NHS Foundation Trust
 - Thames Valley Health Protection Team
 - NHSE/I
- 2.4. The Hospital Infection Prevention and Control Committee (HIPCC) meets monthly. Due to a change in reporting structures in 2021/22, HIPCC now reports to the Patient Safety and Effectiveness Committee (PSEC).

- 2.5. Committees reporting to HIPCC are:
- Decontamination Committee
 - IV Steering Group
- 2.6. Regular reports to HIPCC are detailed in the Business Cycle (Appendix 1) and include:
- Divisional IPC reports
 - UKHSA/local Health Protection Team
 - Oxfordshire Clinical Commissioning Group (CCG)
 - Antimicrobial Stewardship Team (AMST)
 - OUH Estates and Facilities
 - Soft Facilities Management
 - Centre for Occupational Health & Wellbeing (COHWB)
 - Cardio-thoracic surgical site infection report

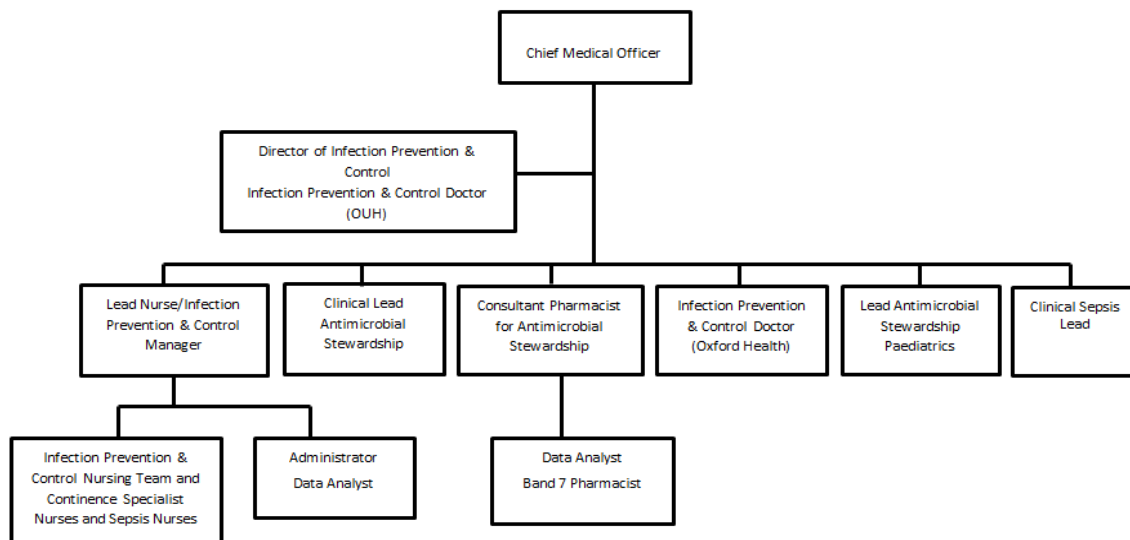
Key Points of Note for 2021/22

- 2.7. Divisional reporting on IPC to HIPCC has been established over 2021/22, based on a dashboard developed by the IPC and Information Team.
- 2.8. COVID-19 related work has demanded much of the IPC team's time and consequently the ability to undertake proactive projects has been limited.
- 2.9. The IPC business case to increase the establishment for IPC nurses, sepsis, antimicrobial stewardship and continence was approved.

3. Infection Prevention and Control Staffing

- 3.1. Table 1 shows the organisational chart for the IPC team at the end of March 2022. A full breakdown of roles can be found at Appendix 2.

Table 1: Organisational Structure of Infection Prevention Services



- 3.2. In February 2022, the OUH Trust Board approved a Business Case to expand and strengthen the IPC Team. Details of the expanded IPC team can be found in Appendix 3 and recruitment processes are underway.
- 3.3. To deliver a safe service, there is a close working relationship with all teams across the Trust, including the Microbiology Laboratory, Estates and Facilities, Health and Safety team, procurement, COHWB, Communications team, clinical and managerial staff, and across the PFI structure.
- 3.4. The IPC Manager chairs the Water Safety Group, is the Trust Decontamination Lead and is a member of the Ventilation Safety Group. There have been several projects throughout the year that have required the expertise of the IPC team on planning and opening of new wards and clinical areas.
- 3.5. As necessary, members of the wider microbiology/infectious diseases team are co-opted on to the team.

4. Organisms subject to mandatory reporting

- 4.1. The OUH is required to report centrally on the following organisms:

- Methicillin-resistant Staphylococcus aureus (MRSA)
- Methicillin-sensitive Staphylococcus aureus (MSSA)
- Gram negative Bloodstream Infections
- Clostridioides difficile (C. difficile)

Bacteraemia prior trust exposure categories

4.2. The two categories of reporting cover:

Hospital-Onset, Healthcare Associated (HOHA)

- Any NHS patient specimens taken on the third day of admission onwards (i.e. \geq day 3 when day of admission is day 1) at an acute trust

Community-Onset Healthcare-Associated (COHA)

- Any case reported by an NHS acute trust not determined to be Hospital-Onset Healthcare Associated and where the patient was discharged within 28 days prior to the current specimen date (where date of discharge is day 1).

Reporting and Investigation

- 4.3. HOHA and COHA cases of MRSA and MSSA bacteraemia are reported through the Trust incident reporting system Ulysses. The root cause analysis (RCA) tool is now completed as a questionnaire on Ulysses and the incident report is completed by the IPC team on identification of cases. This replaces email communications to clinical teams.
- 4.4. Divisions are asked to report by exception to HIPCC on action plans regarding MRSA and MSSA.

Methicillin-resistant Staphylococcus aureus (MRSA) MRSA Policy

- 4.5. The scheduled 2020/21 review of the MRSA policy was completed, and the new policy launched. One key change was the move to using Mupirocin for first line nasal decolonisation (previously Naseptin).

Methicillin-resistant Staphylococcus aureus (MRSA) (Hospital onset)

- 4.6. For the financial year 2021/22 a total of 3 HOHA MRSA bacteraemia were apportioned to the OUH (Table 2) compared to 8 in 2020/21. All cases have undergone a root cause analysis (RCA) and been reviewed at the Health Economy meeting with the CCG.

Table 2 MRSA Bacteraemias 2021-2022

Location	Category	Source and Learning
Neonatal unit (Sept 2020)	HOHA	Ventilator associated pneumonia (VAP). Neonatal Unit reviewed VAP prevention bundles
Neuro ICU (Nov 2021)	HOHA	Contaminated sample. Review of blood culture taking practice
Neonatal unit (Feb 2022)	HOHA	Extravasation event, line care documentation improvement required

- 4.7. Two bacteraemias occurred in the neonatal unit. An MRSA outbreak was declared in the unit in May 2022. The response to the outbreak is further reported on within this report.
- 4.8. There was one COHA MRSA in general medicine that was not assigned to the Trust as although recent care was given by the Trust, care at OUH did not contribute to the bacteraemia.
- 4.9. In 2020/21 the majority of the HOHA MRSA cases occurred in adult intensive care settings. Lessons learnt following RCA analysis were implemented and, despite the on-going COVID-19 pandemic, in 2021/22 there were no further MRSA bacteraemia cases in adult ICU settings.
- 4.10. Tables 3, 4 and 5 demonstrate the HOHA MRSA rate for OUH in comparison with the rate for England and our performance compared to our peer Trusts. In comparison with the Shelford Group and within the South East Region, the OUH is performing well.

Table 3 MRSA HOHA case counts (source Fingertips UKHSA AMR local indicator data)

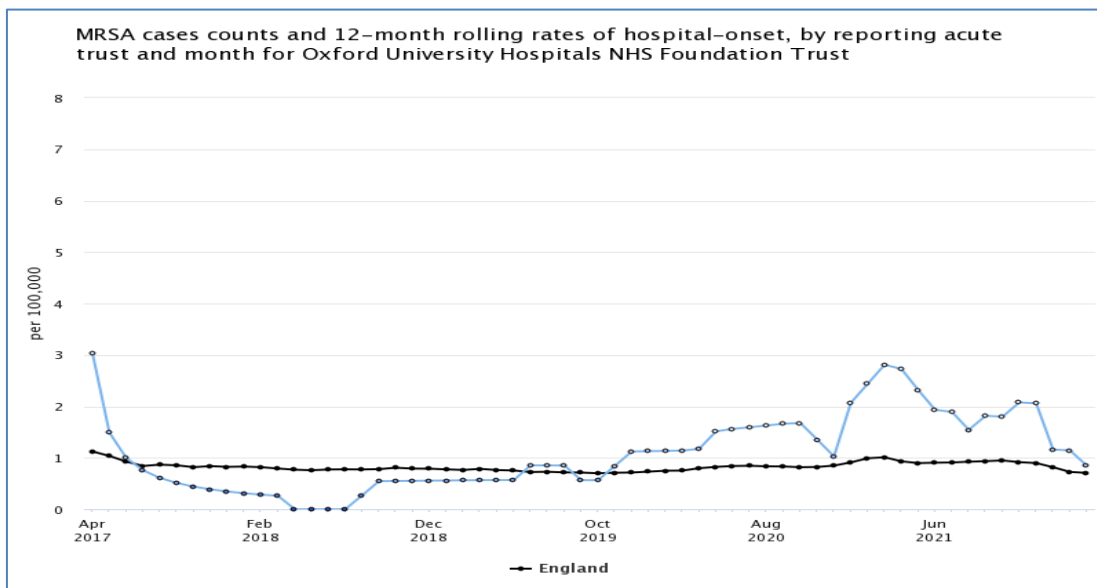


Table 4 MRSA HOHA case counts compared to Shelford Group (source Fingertips)

MRSA cases counts and 12-month rolling rates of hospital-onset, by reporting acute trust and month Crude rate - per 100,000

New data Mar 2022

Area	Count	Value	95% Lower CI	95% Upper CI
England	232	0.7	-	-
Shelford Group	47	1.0*	0.8	1.4
Imperial College Healthcare	10	3.1	-	-
University College London Hospitals	3	1.4	-	-
Manchester University NHS Foundation Trust	10	1.4*	-	-
Guys and St Thomas	5	1.4	-	-
Cambridge University Hospitals	4	1.2	-	-
University Hospital Birmingham	8	0.9*	-	-
Oxford University Hospitals	3	0.8	-	-
Kings College Hospital	4	0.8	-	-
The Newcastle Upon Tyne Hospitals	0	0.0	-	-
Sheffield Teaching Hospitals	0	0.0	-	-

Table 5 Model Hospital (May 2022) 12 Month rolling data



Methicillin-sensitive Staphylococcus aureus (MSSA) Bacteraemia (Hospital onset)

4.11. The Trust reported 41 HOHA cases and 18 COHA cases for 2020/21. Root cause analysis (RCA) was conducted on all HOHA MSSA bacteraemia cases and COHA cases associated with recent admission/instrumentation.

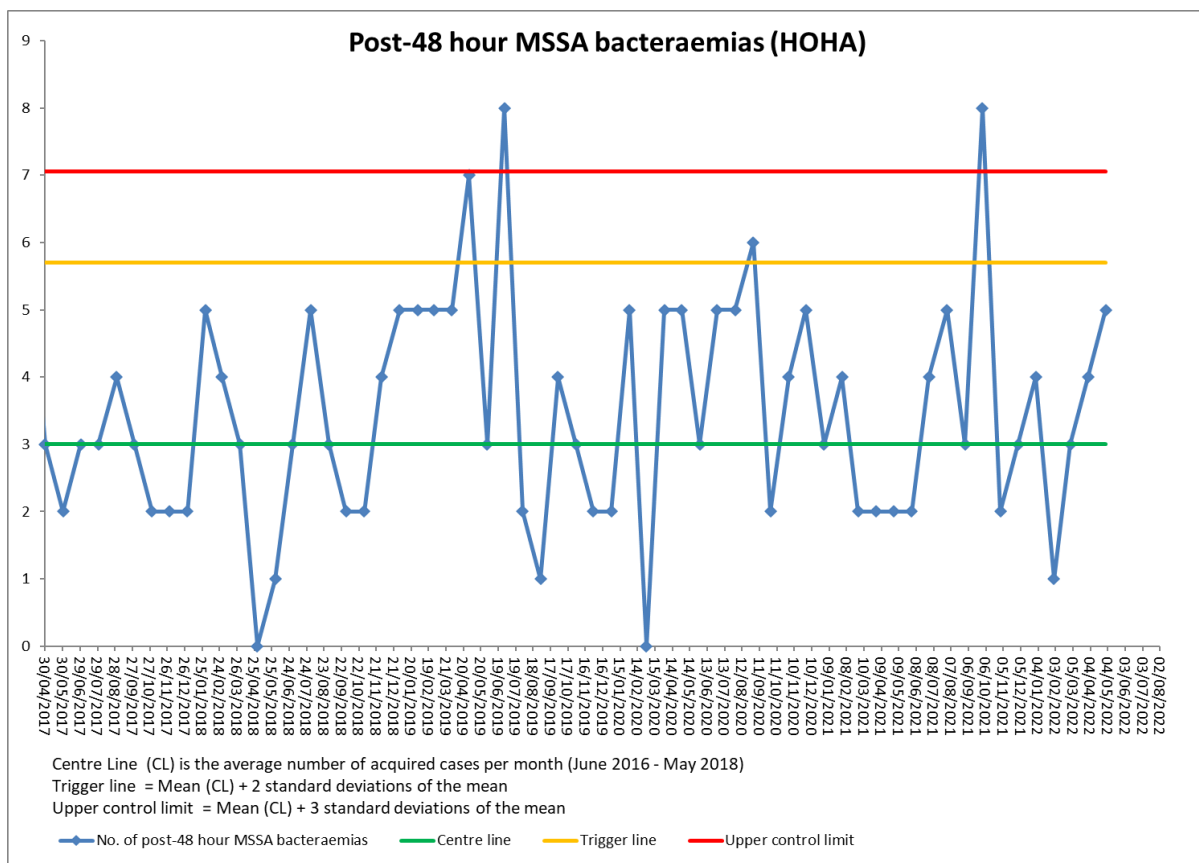
4.12. The main recorded infection sources are documented below:

Table 6 Breakdown of Sources of Infection

Recorded Source	Number of HOHA	Number of COHA
Lines/devices	17	3
Unknown	10	7
Skin or soft tissue (includes surgical site infection)	7	3

4.13. The SPC chart (Table 7) shows that number of cases in September 2021 was outside statistical control. RCAs did not reveal any consistent themes. Cases included 2 peripheral cannula infections, 2 central line infections and 2 surgical site infections. Rates over the next 7 months have been within statistical control. Central line associated blood stream infections (CLABSI) are discussed in a later section of the report.

Table 7 SPC HOHA MSSA bacteraemia data



4.14. The number of cases of MSSA bacteraemia in England has increased by 37.7% over eight years from 8,767 cases in 2011/12 to 12,073 cases in 2018/19. UKHSA report that the cause of this increase is not apparent. As a consequence it is not possible to target interventions to reduce the

number of cases. A study is being undertaken by UKHSA to explore potential reasons for increasing MSSA rates across the country

4.15. Tables 8, 9 and 10 below demonstrate the OUH performance for HOHA and for COHA cases relative to rates in England and to the Shelford group of Trusts.

Table 8 MSSA Bacteraemia HOHA case counts (source Fingertips UKHSA AMR local indicator data)

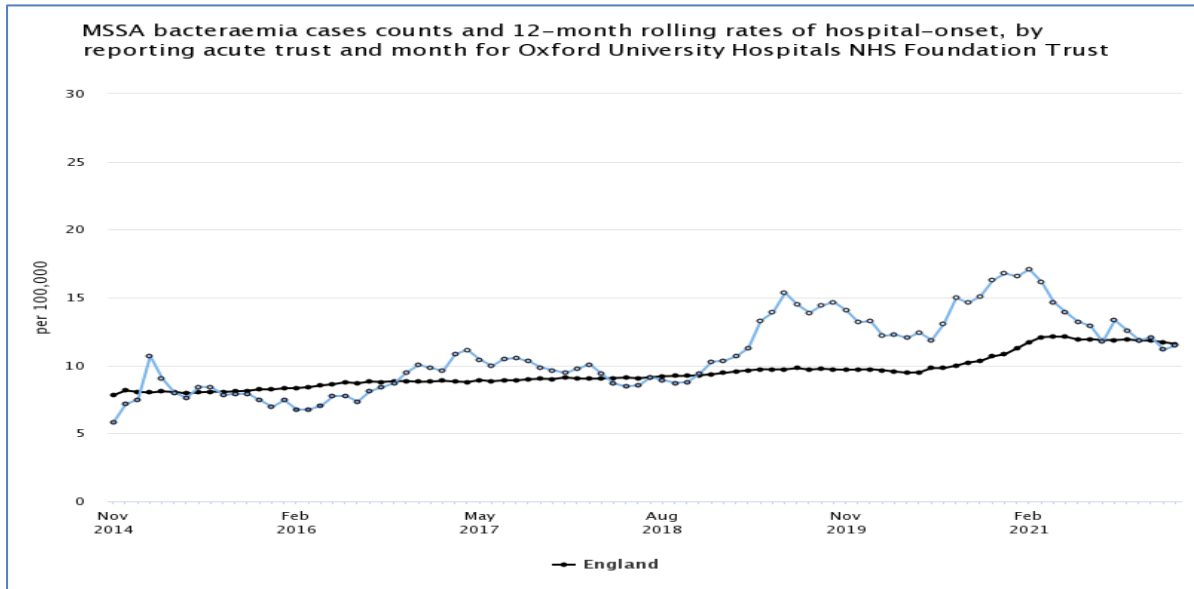


Table 9 MSSA Bacteraemia COHA case counts (source Fingertips UKHSA AMR local indicator data)

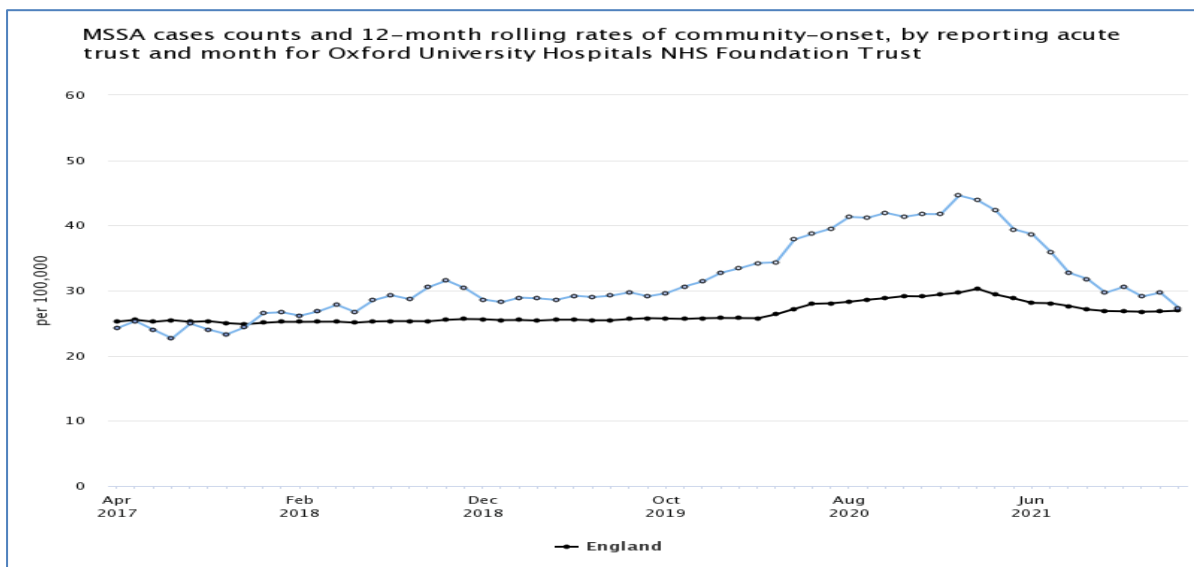


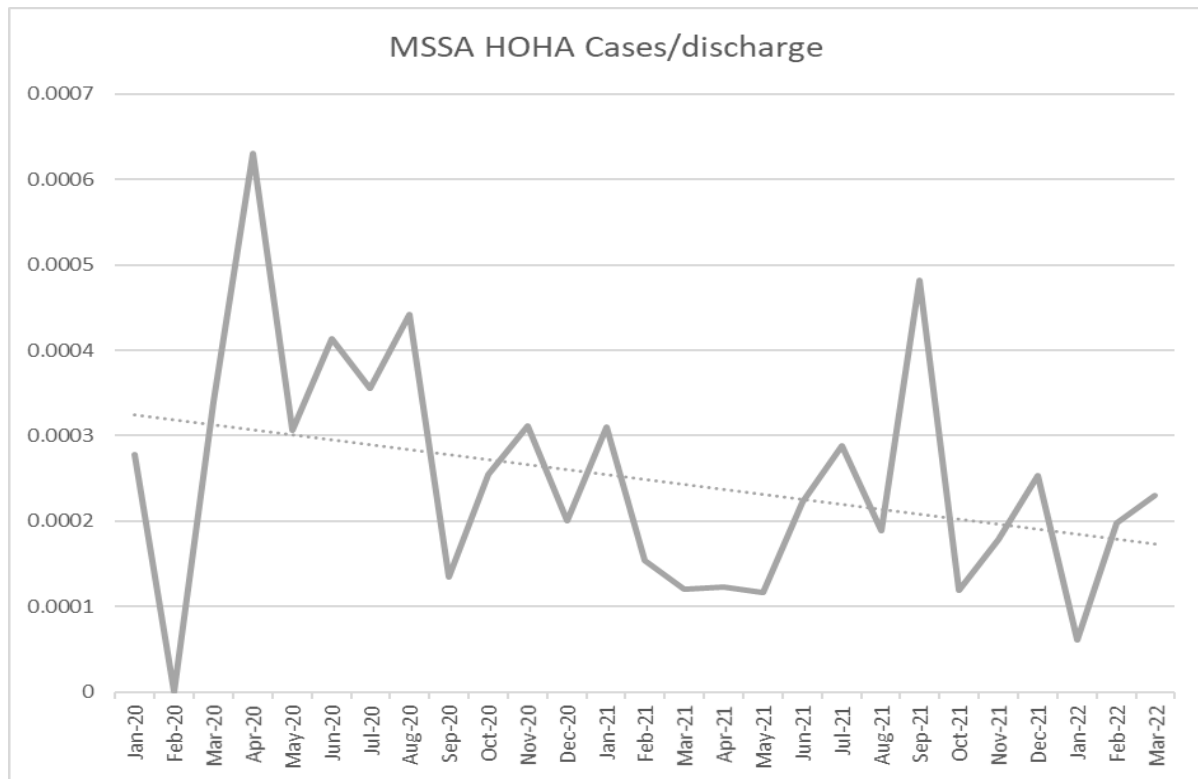
Table 10 MSSA Bacteraemia HOHA case counts for the Shelford Group of Trusts (source Fingertips UKHSA AMR local indicator data)

MSSA bacteraemia cases counts and 12-month rolling rates of hospital-onset, by reporting acute trust and month New data Mar 2022 Crude rate - per 100,000

Area	Count	Value	95% Lower CI	95% Upper CI
England	3,703	11.3	-	-
Shelford Group	566	12.4*	11.4	13.5
The Newcastle Upon Tyne Hospitals	82	18.5	-	-
Guys and St Thomas	60	16.5	-	-
Sheffield Teaching Hospitals	64	14.4	-	-
Kings College Hospital	61	12.9	-	-
Manchester University NHS Foundation Trust	88	12.5*	-	-
Oxford University Hospitals	41	11.6	-	-
University Hospital Birmingham	92	10.1*	-	-
University College London Hospitals	20	9.6	-	-
Imperial College Healthcare	30	9.2	-	-
Cambridge University Hospitals	28	8.3	-	-

4.16. When OUH HOHA cases are corrected for activity using the number of discharges per month, the incidence of HOHA MSSA has decreased by 28% from 0.29/1000 discharges in 2020/21 to 0.21/1000 discharges in 2021/22 (P=NS) (Table 11).

Table 11 MSSA HOHA cases per hospital discharge



Gram Negative Bloodstream Infections

4.17. NHS England/Improvement has set a national target of halving of healthcare associated Gram-negative blood stream infections (GNBSI) by 2023/24. In 2021/22 thresholds related to GNBSIs were introduced to the NHS Standard Contract for the first time - set at a 5% reduction on calendar year 2019 figures. The pre-Covid baseline was used in recognition of the changing trends seen during the pandemic and uncertainty to the degree and speed to which a bounce back to pre-pandemic counts might occur.

4.18. For thresholds set for 2021/22 (tables 12 and 13), the OUH came in below the trajectory for E.coli and Pseudomonas BSI and 3 cases above trajectory for Klebsiella

Table 12 Post – 48-hour Gram Negative Bloodstream Infections (April 2020- March 2021)

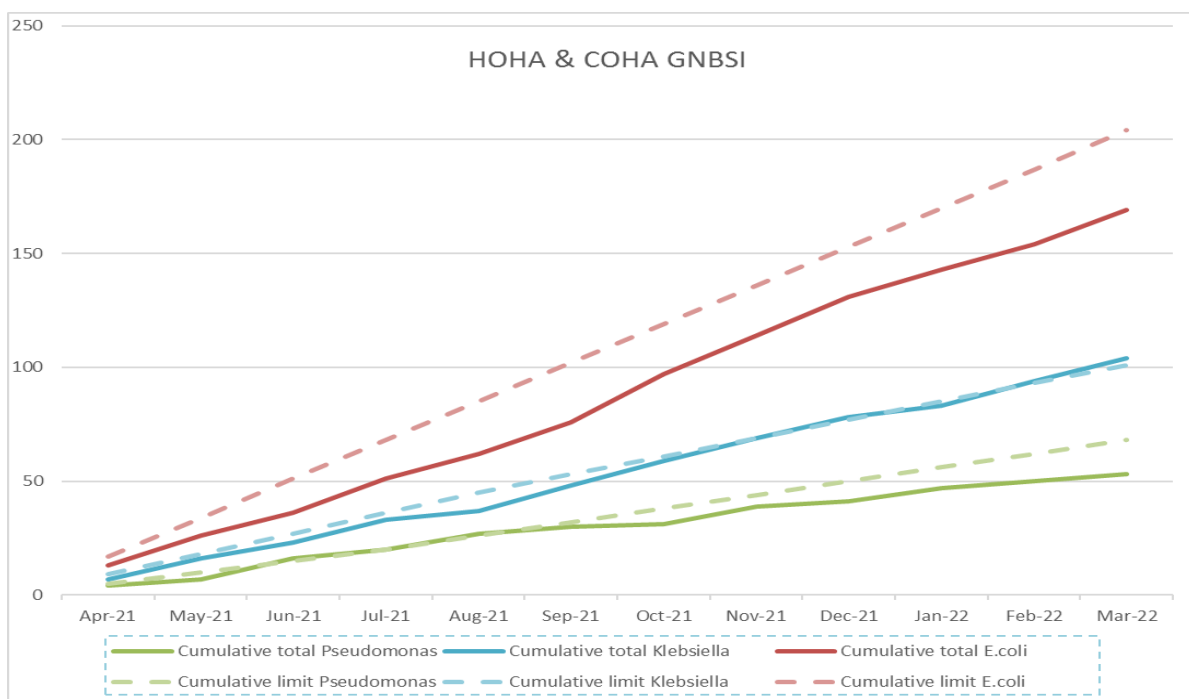


Table 13 Thresholds for 2021/22 and 2022-2023

	Threshold 2021/22	Year end 2021/22 Cumulative Total	Threshold 2022/23
Pseudomonas	68	53	57
Klebsiella	101	104	91
E.coli	204	169	161

4.19. The following tables (Tables 14-17) show our rates of Gram-negative bacteraemia relative to the England rate.

Table 14 E.coli Hospital Onset Cases and 12 month rolling rates for OUH compared to England (source Fingertips UKHSA AMR local indicator data)

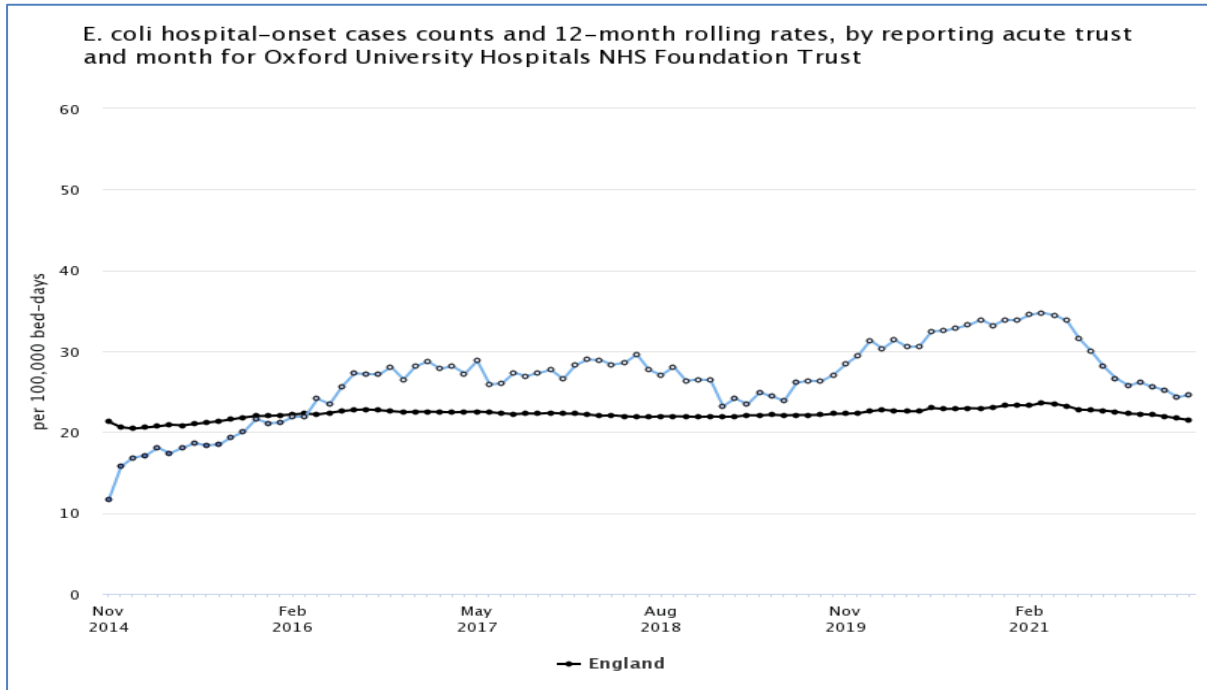


Table 15 E.coli OUH and Shelford Group comparison

E. coli hospital-onset cases counts and 12-month rolling rates, by reporting acute trust and month Crude rate - per 100,000 bed-days

New data Feb 2022

Area	Count	Value	95% Lower CI	95% Upper CI
England	7,060	22.1	-	-
Shelford Group	1,188	26.8*	25.3	28.4
University College London Hospitals	84	40.5	-	-
The Newcastle Upon Tyne Hospitals	149	34.8	-	-
Cambridge University Hospitals	111	34.3	-	-
Guys and St Thomas	94	27.3	-	-
Sheffield Teaching Hospitals	115	26.8	-	-
Kings College Hospital	119	25.5	-	-
Oxford University Hospitals	85	25.0	-	-
Imperial College Healthcare	78	24.6	-	-
University Hospital Birmingham	208	23.1*	-	-
Manchester University NHS Foundation Trust	145	21.6*	-	-

Table 16 Klebsiella and 12 month rolling rates for OUH compared to England (source Fingertips UKHSA AMR local indicator data)

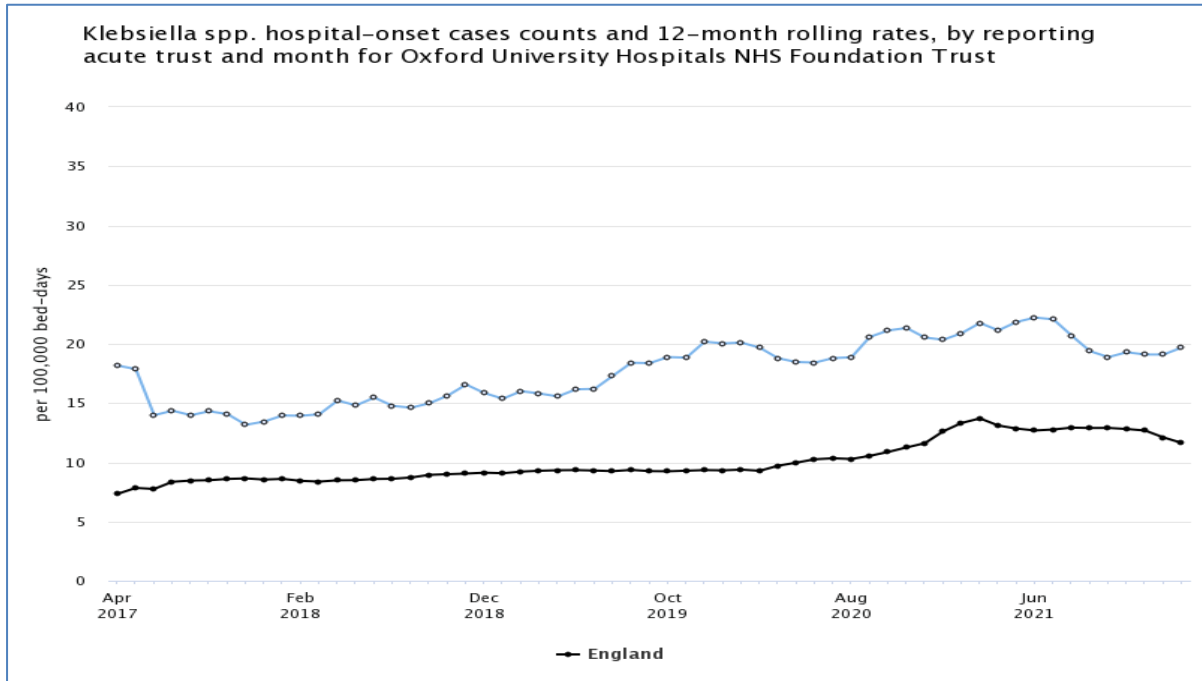
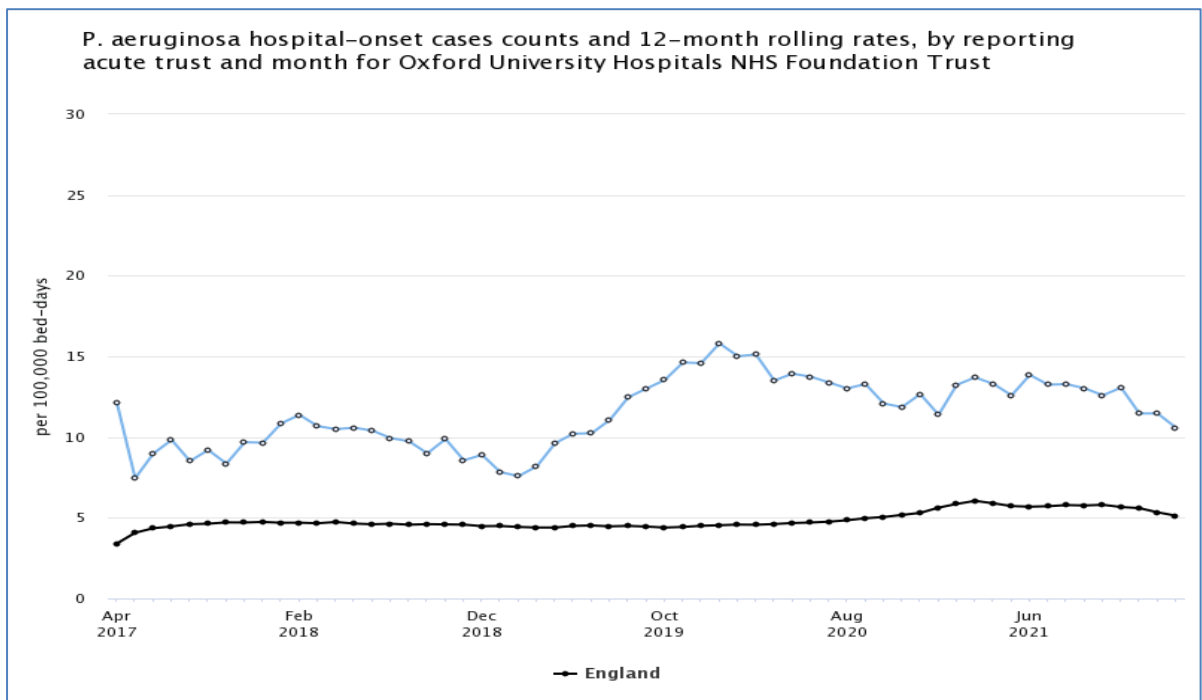


Table 17 P. aeruginosa and 12 month rolling rates for OUH compared to England (source Fingertips UKHSA AMR local indicator data)



4.20. The rate of blood culture sets taken per 1000 bed days in the OUH is high compared with the England and Shelford rates (Tables 18 and 19) and it is likely that we have very good ascertainment of our bacteraemia rates. This may, at least in part, explain our high rates of Gram-negative blood stream infection relative to other Trusts.

Table 18 Blood culture sets per 100 bed-days for OUH compared to England (source Fingertips UKHSA AMR local indicator data)

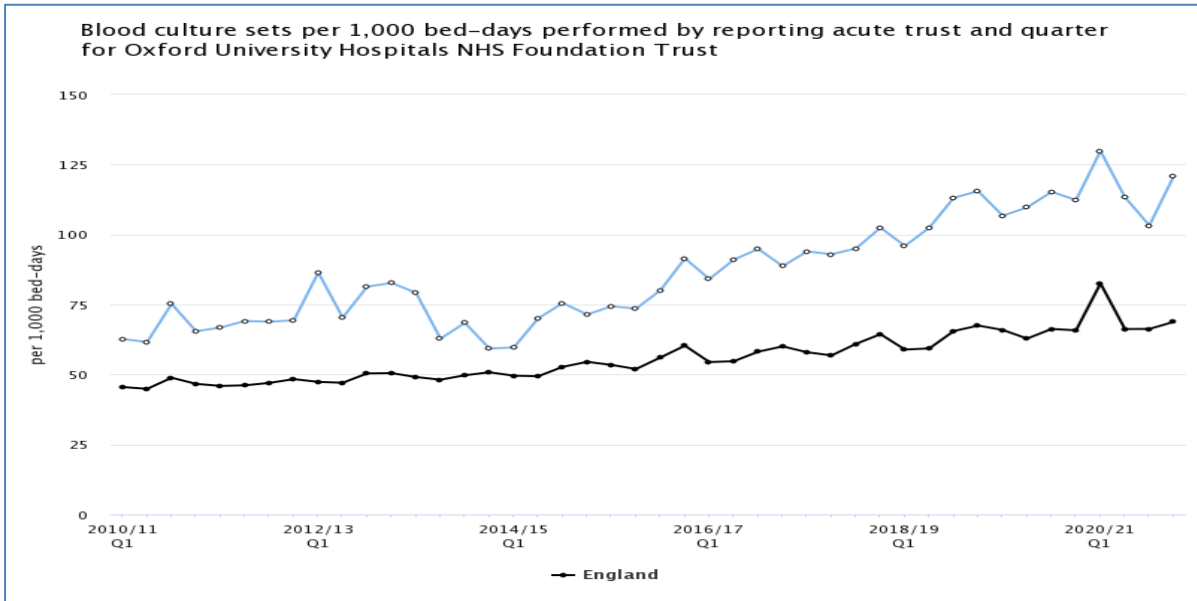


Table 19 Number of blood cultures taken by the Trust compared to Shelford Group

Blood culture sets per 1,000 bed-days performed by reporting acute trust and quarter 2020/21 Q4 Crude rate - per 1,000 bed-days

Area	Count	Value	95% Lower CI	95% Upper CI
England	411,507	68.8	-	-
Shelford Group	59,085	89.5*	88.8	90.2
Oxford University Hospitals	9,095	120.9	-	-
Imperial College Healthcare	8,522	117.9	-	-
University College London Hospitals	5,398	102.2	-	-
Kings College Hospital	11,092	100.8	-	-
Cambridge University Hospitals	7,454	100.4	-	-
The Newcastle Upon Tyne Hospitals	8,092	82.4	-	-
Sheffield Teaching Hospitals	7,933	78.4	-	-
Guys and St Thomas	1,499	19.7	-	-
Manchester University NHS Foundation Trust	-	-	-	-
University Hospital Birmingham	-	-	-	-

Clostridioides difficile (C.difficile)
Reporting and Investigation

- 4.21. *C.difficile* is reported to UK Health Security Agency (UKHSA)
- 4.22. *C.difficile* root cause analysis is now linked with Ulysses incident reporting. From the 1st of April, Community Onset–Indeterminate Association (COIA) and Community Onset–Community Associated (COCA) cases are reported on Ulysses in addition to HOHA and COHA cases. COIA and COCA cases are investigated by the IPC team with contribution from clinical areas and the CCG (now ICB) as required.
- 4.23. The threshold for OUH apportioned cases of *C. difficile* for 2021/22 was set at 83 cases. This figure was based on the total number of Trust apportioned cases, minus one, for the calendar year of 2019. OUH had a total of 107 cases in the year (114 in 2020/21). When corrected for the number of discharges, the incidence of *C.diff* has gone down from 0.71/1000 discharges in 2020/21 to 0.54/1000 discharges in 2021/22 (P=0.04 (Fishers exact test) . This represents a reduction of 24.1% (95% CI 0.00-42.2%) (table 20).

Table 20 *C. difficile* cases corrected for hospital discharges

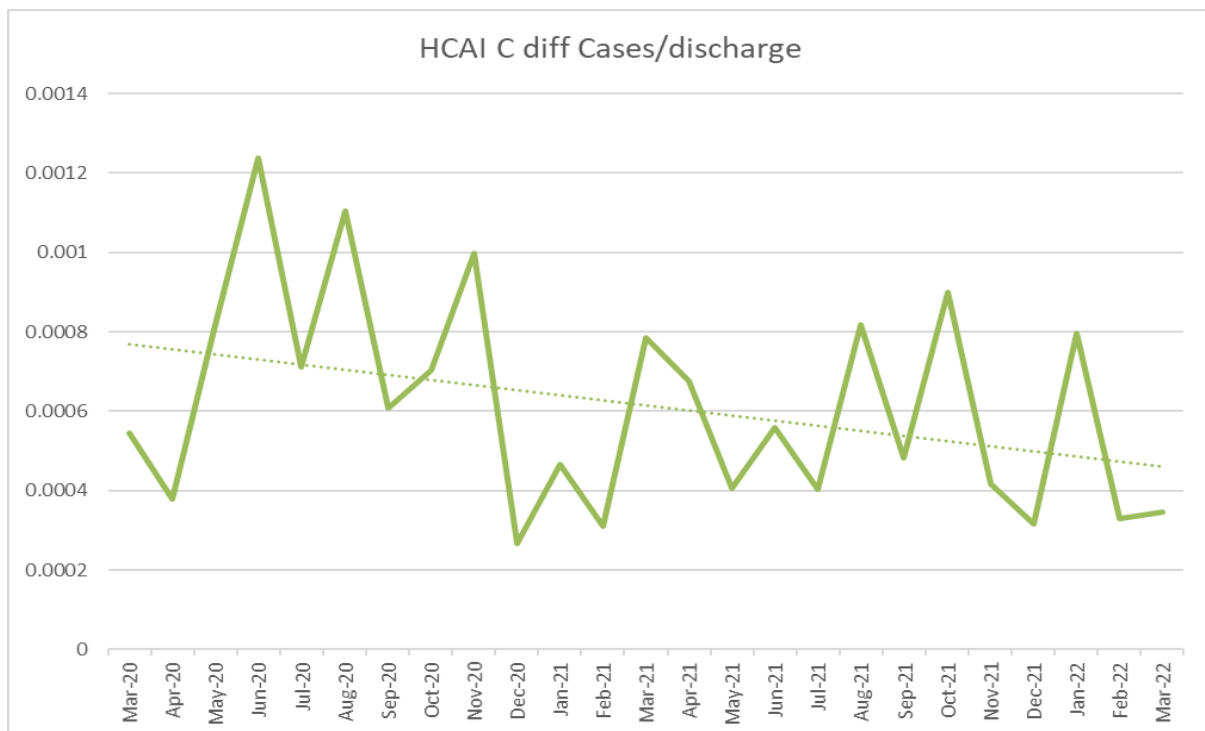


Table 21a Cumulative cases of OUH apportioned *C. difficile* (COHA and HOHA) per month (April 2021 – March 2022)

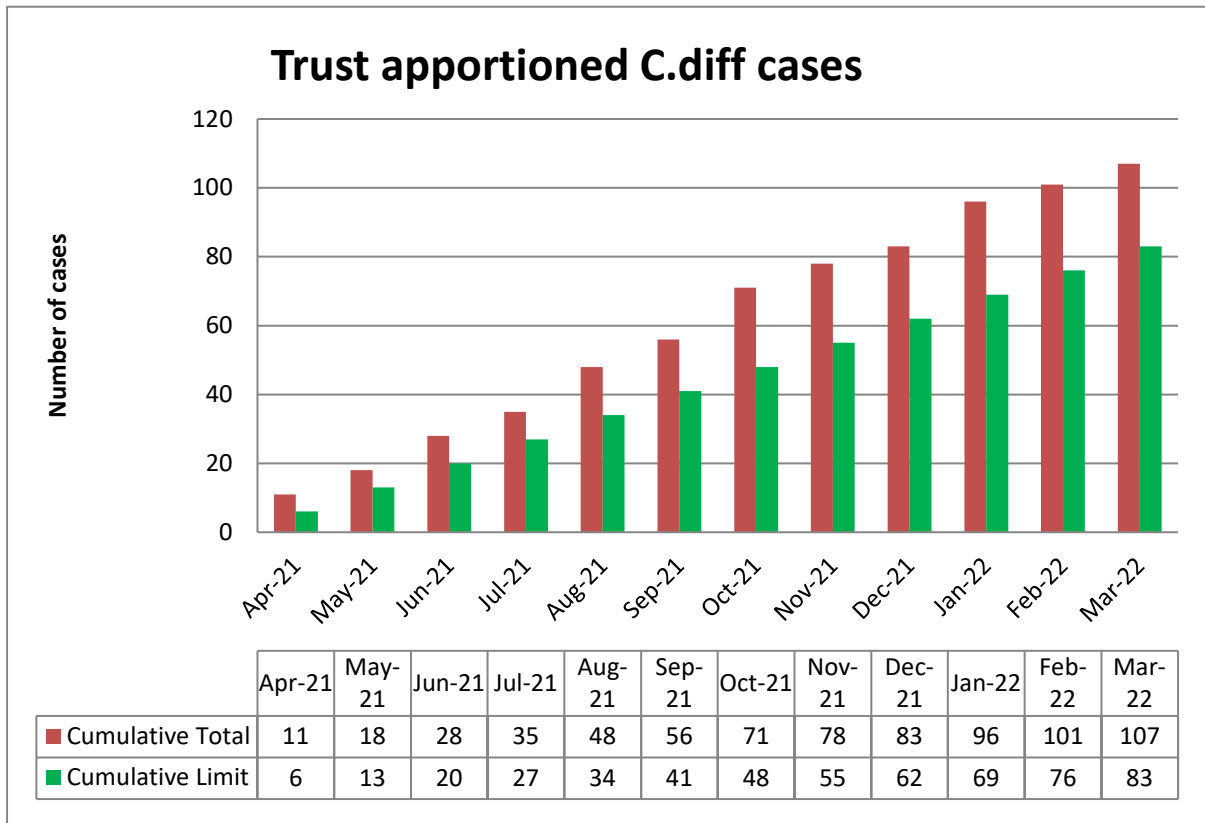


Table 21b Breakdown of *C. difficile* HOHA v COHA (April 2020- March 2021)

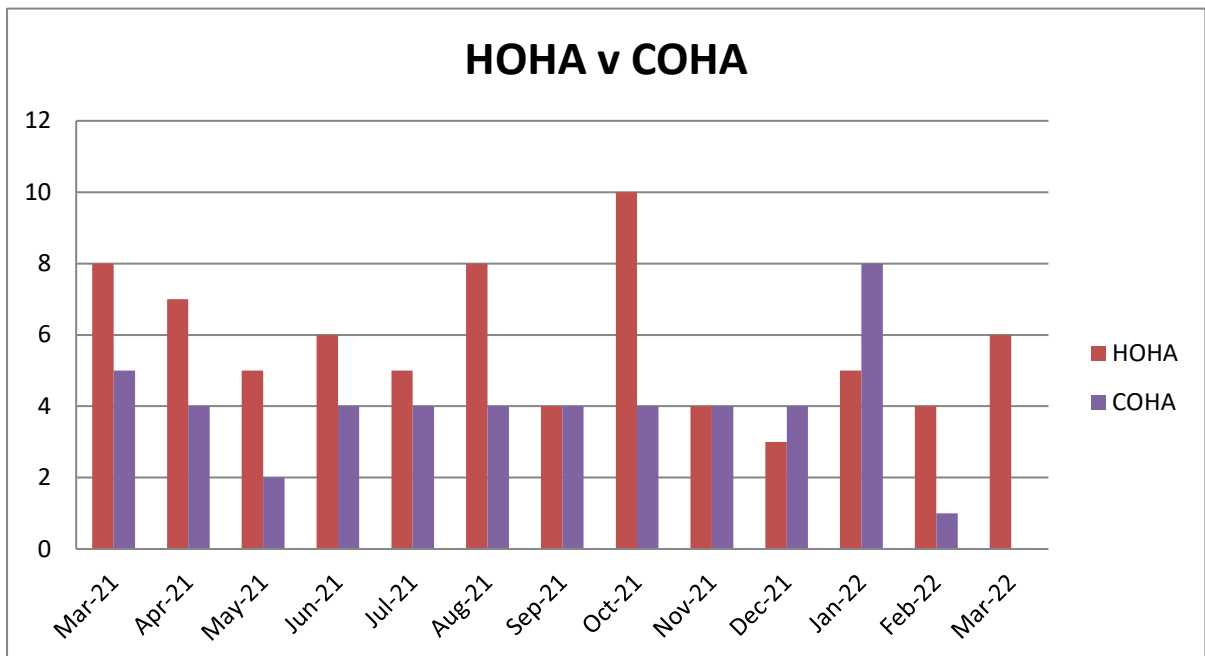


Table 22 SPC chart of OUH C. difficile infection counts

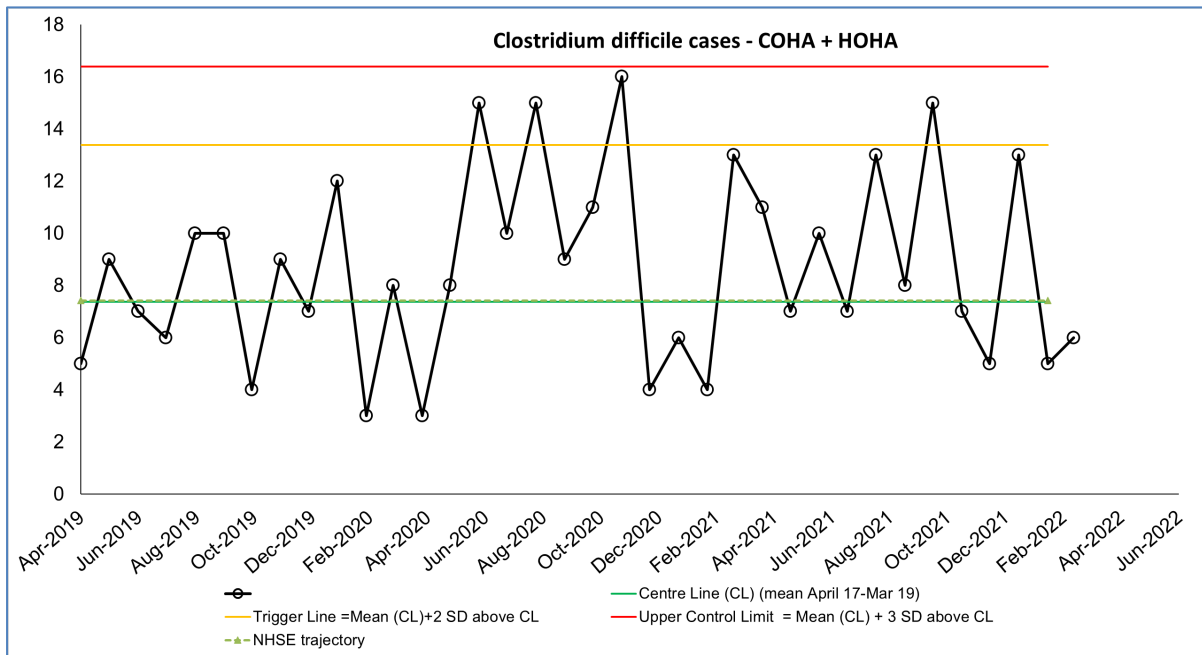


Table 23 C. difficile HOHA and 12 month rolling rates OUH compared to England (source Fingertips UKHSA AMR local indicator data)

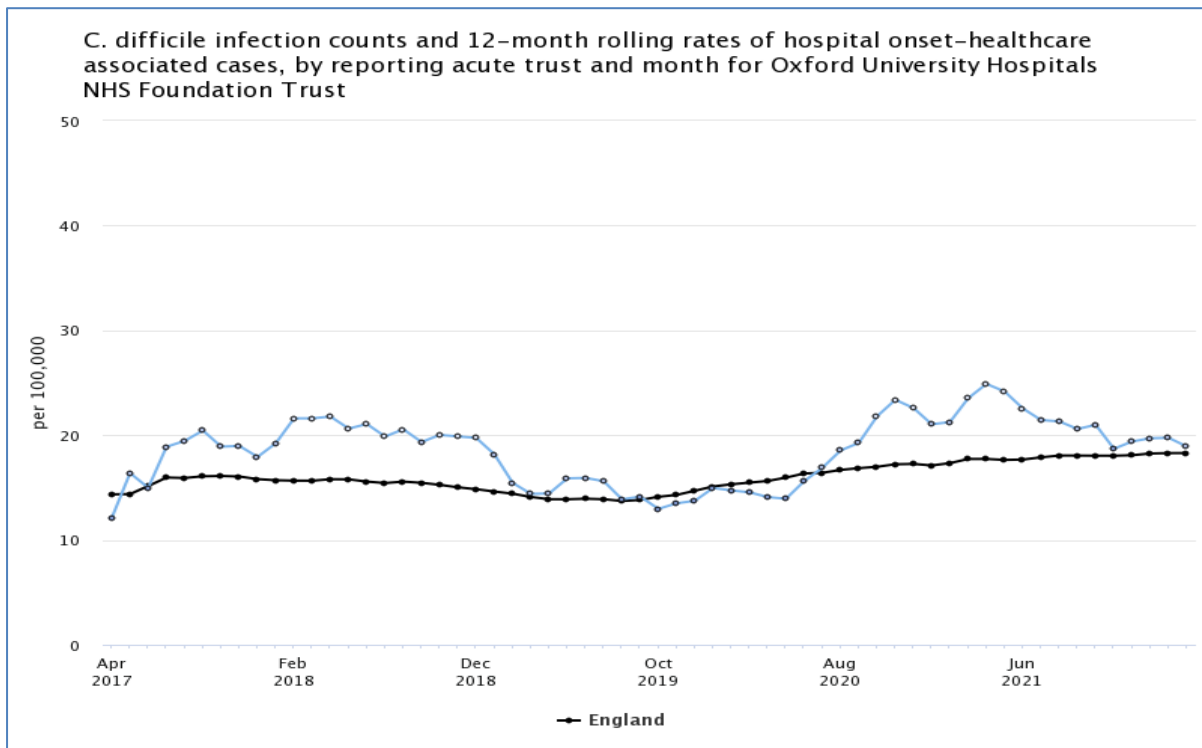
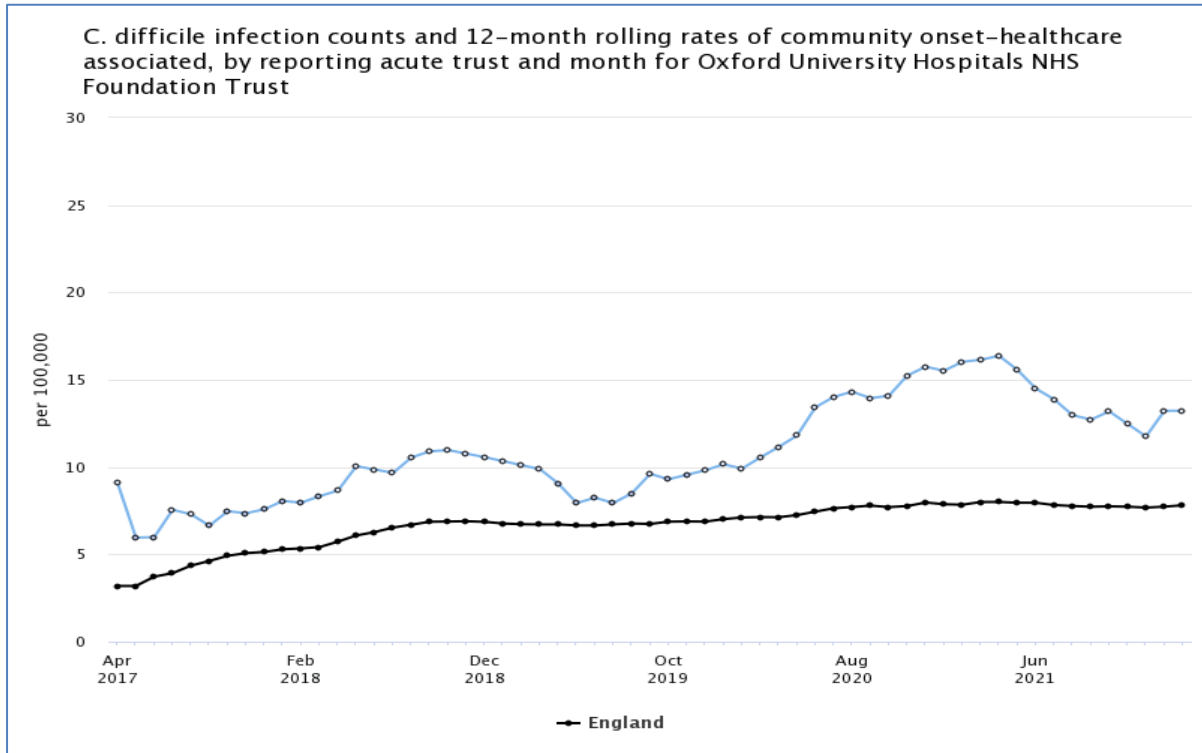


Table 24 C. difficile COHA and 12 month rolling rates OUH compared to England (source Fingertips UKHSA AMR local indicator data)



4.24. Our C. difficile HOHA rates compare favourably with the other Shelford Trusts, but we are an outlier for COHA infections, as is seen with our rates compared with England rolling rates. The reasons for this are unclear, but we do have a well-established programme of ambulatory medicine where patients may be given antibiotics as part of supporting safe ambulation.

Table 25 C.difficile counts and 12 month rolling rates OUH and Shelford Group (HOHA) (source Fingertips UKHSA AMR local indicator data)

C. difficile infection counts and 12-month rolling rates of hospital onset-healthcare associated cases, by reporting acute trust and month New data Mar 2022 Crude rate - per 100,000

Area	Count	Value	95% Lower CI	95% Upper CI
England	6,018	18.3	-	-
Shelford Group	1,016	22.3*	20.9	23.7
University College London Hospitals	72	34.5	-	-
The Newcastle Upon Tyne Hospitals	135	30.4	-	-
Cambridge University Hospitals	93	27.7	-	-
Sheffield Teaching Hospitals	119	26.8	-	-
Manchester University NHS Foundation Trust	163	23.2*	-	-
University Hospital Birmingham	186	20.4*	-	-
Imperial College Healthcare	62	19.1	-	-
Oxford University Hospitals	67	18.9	-	-
Kings College Hospital	68	14.4	-	-
Guys and St Thomas	51	14.1	-	-

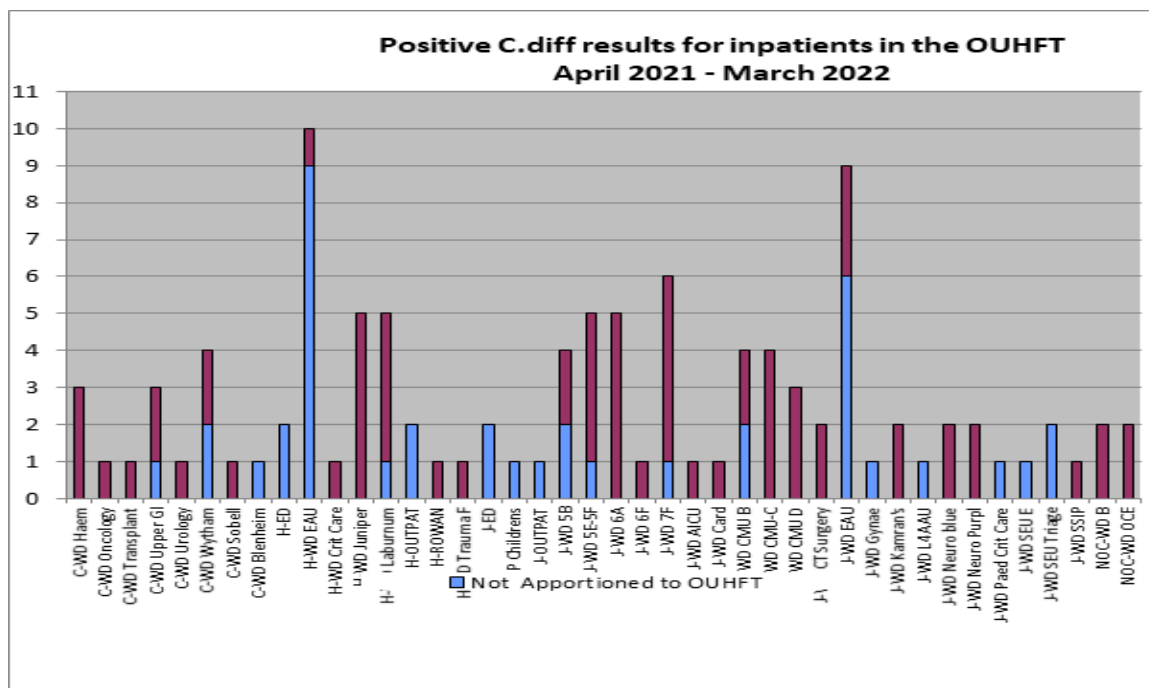
Table 26 C.difficile counts and 12 month rolling rates OUH and Shelford Group (COHA)

Area	Count	Value	95% Lower CI	95% Upper CI
England	2,209	7.3	-	-
Shelford Group	270	6.6*	5.8	7.4
Oxford University Hospitals	46	14.3	-	-
Sheffield Teaching Hospitals	44	10.4	-	-
University Hospital Birmingham	60	7.7	-	-
The Newcastle Upon Tyne Hospitals	26	6.5	-	-
Manchester University NHS Foundation Trust	28	5.5	-	-
Kings College Hospital	22	4.7	-	-
Cambridge University Hospitals	15	4.6	-	-
University College London Hospitals	10	4.5	-	-
Imperial College Healthcare	11	3.3	-	-
Guys and St Thomas	8	2.4	-	-

Location of C.difficile cases across the organisation

4.25. On review of the monthly collation of cases by area, there are two wards on the JR site that have more HOHA and COHA cases than other areas. These areas will be reviewed in 2022/23 looking at environmental issues and antimicrobial prescribing. Whilst cases linked to the two Emergency Assessment Units are higher than all other areas, it is important to remember that these units are the first points of admission and the areas where inpatient sampling is first undertaken.

Table 27 Positive C.diff results for inpatients by wards



C. difficile Prevention Activity

- 4.26. The IPC team undertakes harm review meetings with Divisions to review all healthcare associated C. difficile cases as well as real time review with the Infection MDT during daily microbiology plate rounds. This includes a review of antimicrobials and C. difficile treatment for feedback to Divisions.
- 4.27. Implementation of updated NICE guidance on Management of C. difficile infection has been undertaken which included a switch from Metronidazole to oral Vancomycin as first line therapy.
- 4.28. An Antimicrobial stewardship focus across whole organisation and wider health economy. All cases are reviewed by the health economy on a quarterly basis (OUH, Oxford Health, Oxfordshire CCG).
- 4.29. A request to NHSE/I to reconsider the process of calculation of threshold numbers for C. difficile and Gram-negative bloodstream infections has been made suggesting they are related to a measure of activity, such as number of in-patient episodes.

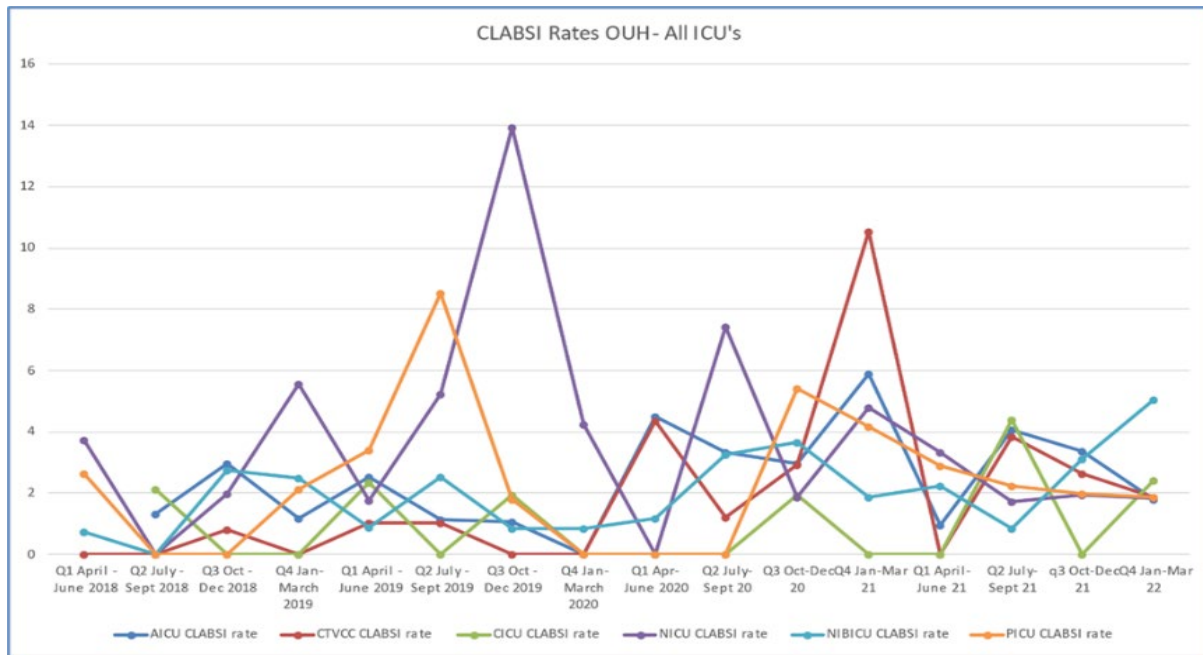
Central Line Associated Bloodstream Infection (CLABSI) surveillance Central Line Associated Bloodstream Infection (CLABSI) surveillance in the Intensive Care Units of Oxford University Hospitals

- 4.30. Central Line Associated Bloodstream Infections (CLABSIs) are serious infections typically causing a prolongation of hospital stay, increased cost and risk of mortality. CLABSIs can be prevented through proper insertion techniques and management of the central line, using evidence based central venous line care bundles.
- 4.31. CLABSI surveillance is undertaken for all the intensive care areas. Most units are now running at a comparable rate of around 2 per 1000-line days which benchmarks well with the national data (Tables 28a and 28b). Divisions have been asked to report their actions through the HIPCC IPC metrics dashboard.

Table 28a CLABSI ICU Data

	AICU	CTVCCU	CICU	NICU	NBICU	PITU/HDU
No of quarters in 2021/22 with data	4	4	4	4	4	4
No of CLABSIs	11	9	3	5	12	4
Central line days	4342	4360	1892	2236	4169	1835
CLABSI/1000 central line days	2.5	2.1	1.6	2.3	2.9	2.2
Benchmark (ICCQIP) Jul 20-June 21	2.5-4.1	2.5-4.1	2.5-4.1	2.5-4.1	0-2.9	0-1.5
Trend from 2019-2020	↓	↓	↑	↓	↑	↓

Table 28b CLABSI rates all ICUs



Trust wide non-ICU CLABSI surveillance:

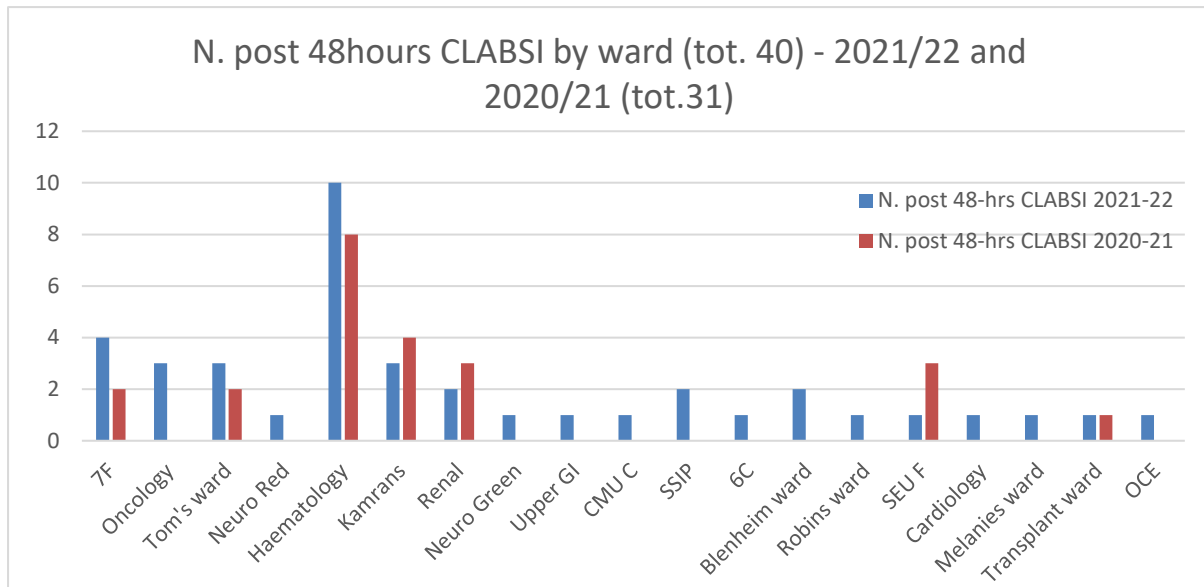
- 4.32. The IPC team continues to maintain Trust wide non-ICU Central line associated bloodstream infections (CLABSI) surveillance. These are not reported in rates per 100-line days as above due to difficulty obtaining denominator data from the Electronic Patient Record (EPR).
- 4.33. The definitions of HOHA and COHA as used for other healthcare-acquired infections reported in the Trust was not adopted for this surveillance as would exclude ambulatory encounters.
- 4.34. Every suspected CLABSI case is reviewed and classified against the [Centers for Disease Control and Prevention \(CDC\) CLABSI definition](#). The data was validated with oversight by a Consultant in Infection.

Post 48-hour CLABSI

- 4.35. A total of 238 suspected CLABSI cases were reviewed in 2021/22 and a total of 40 post 48-hour (hospital acquired) CLABSI were identified. Immunosuppressed patients and patients on Parenteral Nutrition (PN) continue to be high risk for developing CLABSI. These groups of patients are the most likely to have long-term central venous access, and to be managed at home as well as in hospital. Skin commensals were the most common cause of line infection. The number of CLABSIs ascertained has increased in 2021/22 compared with 2020/21 (Table 29) and is unlikely to represent a genuine increase in cases, but this is unknown as surveillance is incomplete.

- 4.36. In quarter 1 and 2 of 2021/22, the Haematology Team continued to be involved in the identification, validation, active feedback, and review of post-48-hrs cases in a collaborative QI project. However due to staffing and competing pressures this has not continued in quarter 3 and 4.

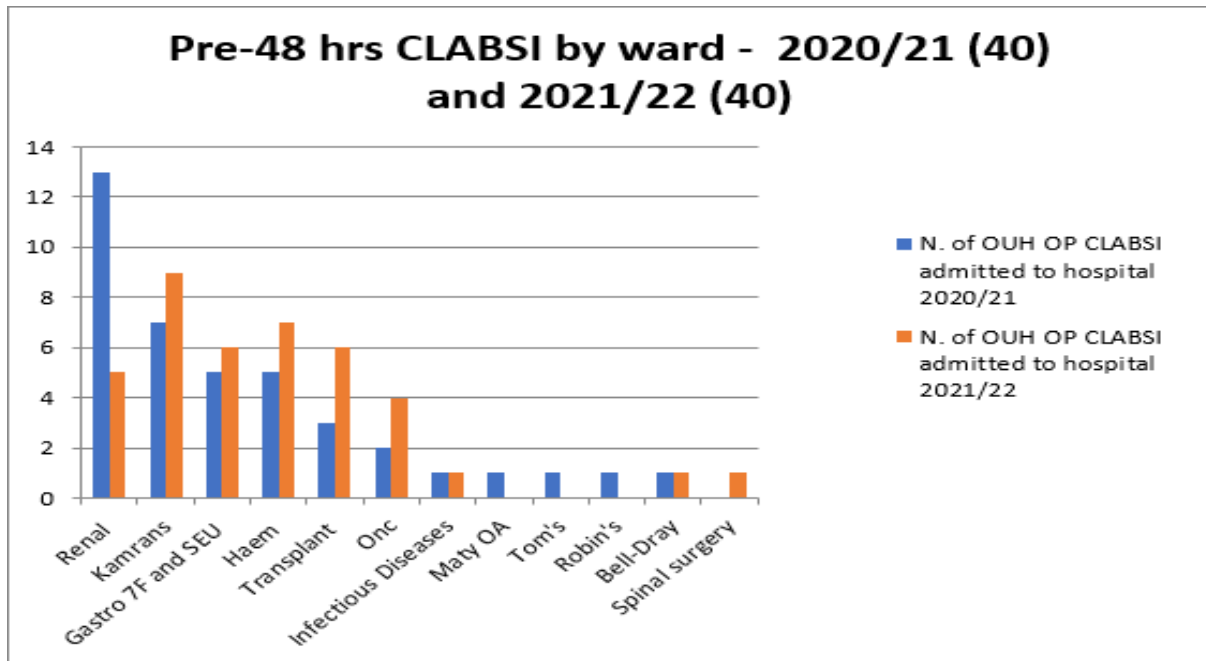
Table 29 Number of post 48hrs CLABSI (April 2020-March 2021 and April 2021-March 2022)



Pre-48-hrs CLABSI

- 4.37. IPC has identified 40 pre-48-hrs CLABSI for 2021/22.
- 4.38. The pre-48-hrs CLABSI cases reported are for patients with an existing central venous line who had positive blood cultures collected at OUH and were consequently admitted to hospital for CLABSI acquired either in the community or in another hospital or at OUH out-patient departments or within the first 48 hrs from admission.
- 4.39. The case review of pre-48 hr CLABSIs for 2021/22 shows that Paediatric Oncology and Haematology patients (Kamran's ward) had the most incidents of CLABSI followed by adult Haematology. Renal cases saw a reduction this year. The most common organisms causing pre-48-hrs CLABSI were *S. aureus*, *S. epidermidis* and other CoNS and *Klebsiella pneumoniae*.

Table 30 Pre-48hrs CLABSI by Ward



4.40. Line management remains a focal point of interventions to reduce CLABSIs.

4.41. A series of recommendations have been included in the report, to include the Introduction of RCA for all post-48-hrs CLABSI cases on Ulysses to identify themes and prompt tailored interventions to the clinical environment, the group of patients and the teams and to raise staff awareness of incidence in their areas with improvement of documentation of lines, tubes, and devices in EPR. Divisions and clinical teams are encouraged to engage with CLABSI surveillance and pro-actively undertake QI interventions in areas of high incidence of CLABSI with IPC and vascular access teams.

5. Audit & External Inspections

Point Prevalence Audit for Peripheral Cannulas and Urinary Catheters

5.1. The IPC team undertook an audit of the number of peripheral cannulas and urinary catheters and review of documentation on EPR in 40 clinical areas. The audit results were fed back in real time to the departments and action plans were held by divisions.

	2019	2021
Number of patients in audit	858	707
Peripheral cannulas observed	367	236
Peripheral cannulas recorded on EPR	57%	76%
VIP score recorded once per shift on EPR	43%	54%
Number of patients with a urinary catheter	123	132
Urinary catheters recorded on EPR	79%	84%
Urinary catheters with a daily review recorded	Not audited	43%

Internal BDO Audit

- 5.2. The Trust's internal audit company, BDO, undertook a review of staff knowledge and awareness of the 'OUH 7 Key Steps to preventing healthcare acquired infection during the COVID pandemic'.
- 5.3. The report found overall that staff across a range of grades were aware of the 7 Key Steps, a range of audits were being completed which related back to the steps, and that divisions had started to centralise reporting against the 7 Key Steps and provide some consistency. PPE compliance was noted to be excellent.
- 5.4. The recommendations from BDO were:
- 5.5. Detail of consolidated divisional reporting could be enhanced to facilitate Trust-wide assurance and exception reporting as required
- 5.6. Clinical Support Services (CSS) and Medicine Rehabilitation and Cardiothoracic (MRC) Divisions to use the 7 Key Steps reporting template used by SUWON and NOTSSCaN when reporting to HIPCC.
- 5.7. The style and content of reporting to be reviewed to ensure use of performance metrics / commentary is consistent
- 5.8. Exception reporting format to PSEC to be determined
- 5.9. Ensure that ventilator-associated pneumonia (VAP) audits are undertaken and reported on consistently across the Trust.
- 5.10. To this end, a standardised reporting template has been produced, trialled, and modified. Divisions are asked to populate, and report by exception to HIPCC. The dashboard displays IPC metrics such as audit results and healthcare associated infections to allow for triangulation and thematic analysis (Appendix 6).

Annual Hand Hygiene Validation Audit 2020/21

5.11. All clinical areas report Hand Hygiene Compliance against the World Health Organisation (WHO) 5 moments of Hand Hygiene (2009) and as directed by OUH hand hygiene policy. Each area has responsibility for conducting their own hand hygiene audits and for reporting them through their own directorate clinical governance structure with action plans to address non-compliance. Historically IPC undertake one validation audit in each inpatient area. The full report was prepared and presented at HIPCC, August 2022 and Clinical Improvement Committee (CIC) which has extracted hand hygiene scores from clinical governance papers and My Assure.

Key Findings

- 5.12. A large proportion of audit data was incomplete/missing; it was difficult to conclusively determine if the results are an accurate reflection of hand hygiene compliance within the OUH.
- 5.13. The data extracted from divisional quarterly reports submitted to Clinical Governance Committee and the My Assurance App throughout the year produced an average score of 94%, representing an increase from 72% in 2018/19.
- 5.14. The increase in compliance may be explained by the introduction of the Hand Hygiene Action Plan Flowchart. This is implemented when areas score below 80%. Areas that implemented the action plan and were re-audited reached above 80%. It could also be linked to the ongoing SARS-CoV-2 Pandemic.
- 5.15. The IPC team obtained permission from CIC to cease the annual hand hygiene validation audit as it is believed that one hand hygiene audit of an area once a year does not provide an accurate reflection of the true compliance of hand hygiene to the 5 Moments. In addition, the new IPC dashboard requires divisions to report hand hygiene scores monthly to HIPCC. The team will continue to observe practice when in clinical areas and will challenge non-compliance. Hand hygiene audits will be undertaken by the team when there are concerns or incidents e.g. outbreaks, poor practice observed.

Sharps Audit

- 5.16. Daniels Healthcare undertake an annual audit on sharps container safety. The audit was held in June 2021 and the findings demonstrate improved compliance on the last audit.
- 5.17. The report was presented to HIPCC. The number of sharps containers audited was the same as in 2019 (1764) and included containers across all four Trust sites. The key findings were:

- 5 (17 in 2019) sharps containers with protruding sharps
- 24 (31 in 2019) that were not properly assembled
- 7 that were more than three quarters full
- 21 (29 in 2019) sharps containers were sited on the floor
- 12 (18 in 2019) sharps containers had significant inappropriate non sharp contents
- 119 (224 in 2019) sharps containers did not have the temporary closure

5.18. Divisions were asked to review findings for their areas and implement any necessary action.

Carbapenemase Producing Enterobacterales (CPE) - Point prevalence audit of screening compliance for CPE

5.19. An initial baseline audit undertaken in August 2018 indicated there was an overall compliance of 29.0% with screening compliance for Carbapenemase-Producing Enterobacterales (CPE), with repeat audits showing compliance of 50.6% in March 2019, 61.3% in November 2019 and 64.8% in June 2020. The repeat point prevalence audit was undertaken in June 2021 across wards in OUHFT which receive transfers from other hospitals in the UK or from abroad, to measure compliance with screening in line with Trust CPE Guidelines.

5.20. In total 645 in-patient episodes were identified for inclusion (excluding movements of patients between wards). In a significant number of patients 562 (87.1%) a screen was not required.

5.21. Of the 83 patients meeting the criteria for screening there was an overall compliance of 59 %, which is a reduction in compliance from 64.8% in June 2020. Of those patients meeting the criteria for CPE screening:

- 0 (0.0%) patient was an overseas hospital transfer
- 0 (0.0%) patients were in-patients abroad (last 12 months)
- 82 (12.7 %) patients were UK hospital transfers, of which 33 patients were not screened.
- 1 (0.2%) patient was previously positive and was not screened

Table 31 Summary of CPE screening compliance - June 2020 and 2021

June-21	Total	Percent	Screened?		Percent screened
			Yes	No	
Screen not required	562	87.1%			
Overseas hospital transfer	0	0.0%			
UK hospital transfer	82	12.7%	49	33	59.8%
Inpatient abroad (12 months)	0	0.0%			
Previous positive	1	0.2%	0	1	0.0%
Overall	645		49	34	59.0%

June 2020	Total	Percent	Screened?		Percent screened
			Yes	No	
Screen not required	447	86.3%			
Overseas hospital transfer	1	0.2%	0	1	0.0%
UK hospital transfer	68	15.2%	45	23	66.2%
Inpatient abroad (12 months)	2	0.4%	1	1	50.0%
Previous positive	0	0.0%			
Overall	518		46	25	64.8%

- 5.22. The findings of the repeat audit continue to demonstrate that in line with Trust guidelines a high percentage of patients do not meet the criteria for screening for CPE.
- 5.23. Sustained improvement has been seen in Neurology and Cardiology which have a high number of UK transfers and therefore greater screening requirement, with good compliance across several clinical areas. However, there are still several clinical areas identified with zero to low levels of compliance with CPE screening requirements.
- 5.24. Further work to improve completion/correct completion of the KIPI within the Divisions has been recommended. The KIPI (Key In-Patient Information form) should be completed for all admissions, and triggers screening tasks for MRSA and CPE in the EPR if certain criteria are met. In all patients who met the screening criteria, the KIPI triggered after correctly being completed. Previous audits highlighted KIPIs were not correctly completed where the provenance of the patient was assessed as unknown and this has been noted as an area of improvement.
- 5.25. The National Guidance for CPE screening has recently been updated and the Trust CPE Guideline will be revised to reflect the updated version. This will include patients admitted into high-risk units; haematology/ oncology/ transplant, critical care, renal and renal dialysis. A higher percentage of patients will therefore meet the requirement for screening in future.

Additional screening swabs will be required; a wound swab if present and a urine sample if catheterised.

- 5.26. An action plan is in place to improve overall compliance in line with Trust CPE guideline and to further prevent the risk of transmission of CPE across all clinical areas of the Trust.

Care Quality Commission (CQC) IPC Assurance Review

- 5.27. The CQC conducted an unannounced IPC focused inspection at the John Radcliffe Hospital in April 2021. This was undertaken over a 2-week Infection Prevention and Control themed review of the OUH services. During the first week IPC staff were interviewed, and in the following week an unannounced onsite inspection occurred at the JR site in ED, EAU, John Warin Ward, CMU-D, Discharge Lounge and SSIP. During the visit, some non-IPC members of staff were also interviewed as part of the process.
- 5.28. Verbal high-level feedback was provided at the end of the inspection. The CQC praised the hand hygiene and personal protective equipment compliance in clinical areas and were positively impressed by the high visibility of the IPC team, as clinical areas reported that the team had been very present and supportive throughout the pandemic. Another positive note was on the observed application of learning in practice, with the recent evidence-based introduction of chlorhexidine impregnated wipes for meatal cleaning which have replaced the normal saline and gauze in the urinary catheterisation procedure, with the aim of reducing Catheter Associated Urinary Tract Infections (CAUTI).
- 5.29. The final report was published which identified many positive areas. The press release can be viewed here:
<https://www.cqc.org.uk/news/releases/cqc-publishes-report-infection-prevention-control-oxford-university-hospitals-nhs>. An action plan was developed for the areas identified for improvement which was monitored by the Assurance team and reported through the Clinical Governance Committee.

6. Surgical Site Infection Surveillance

Cardiac Surgery

- 6.1. Cardiac surgery continues to participate in voluntary surveillance and Surgical Site Infections (SSIs) information is reported to the UKHSA SSI surveillance service every quarter. The national benchmark for Coronary Artery Bypass Surgery (CABG) is currently 3.8% and for non-CABG surgery is 1.8%. Over the last year the OUH rate for CABG surgery was

3% and non-CABG surgery 0.6% providing positive evidence that OUH infection rates for this service are below the national benchmark.

Table 32 Non-CABG SSI Rates - April 2021 to March 2022

Non-CABG Sternal wound infections					
Period	Superficial wound infections	Deep incisional wound infections	Organ / Space infections	Total	Final
Quarter 1 Apr-Jun 2021	(0/107) = 0%	(0/107) = 0%	(1/107) = 0.9%	(1/107) = 0.9%	Yes
Quarter 2 Jul-Sep 2021	(0/69) = 0%	(0/69) = 0%	(0/69) = 0%	(0/69) = 0%	Yes
Quarter 3 Oct-Dec 2021	(0/91) = 0%	(0/91) = 0%	(0/91) = 0%	(0/91) = 0%	Yes
Quarter 4 Jan-Mar 2022	(0/79) = 0% TBC	(0/79) = 0%	(1/79) = 1.3%	(1/79) = 1.3%	Yes

Table 33 Coronary Artery Bypass Grafts for April 2021 to March 2022

CABG Sternal wound infections					
Period	Superficial wound infections	Deep incisional wound infections	Organ / Space infections	Total	Final
Quarter 1 Apr-Jun 2021	(2/109) = 1.8%	(2/109) = 1.8%	(0/109) = 0%	(4/109) = 3.7%	Yes
Quarter 2 Jul-Sep 2021	(2/73) = 2.7	(0/73) = 0%	(0/73) = 0%	(2/73) = 2.7%	Yes
Quarter 3 Oct-Dec 2021	(2/120) = 1.7%	(1/120) = 0.8%	(0/120) = 0%	(3/120) = 2.5%	Yes
Quarter 4 Jan-Mar 2022	(2/103) = 1.9%	(0/103) = 0%	(1/103) = 1.0%	(3/103) = 2.9%	No

Trauma and Orthopaedic SSI Surveillance

6.2. Mandatory surveillance of infections in trauma and orthopaedics started in April 2004, specifying that each trust should conduct surveillance for at least 1 orthopaedic category for 1 period in the financial year. The categories are:

- hip replacements
- knee replacements
- repair of neck of femur
- reduction of long bone fracture

6.3. The OUH collects continuous data on repair of neck of femur. The unit usually has 0-1 infections per quarter but as the data shows just one additional infection in a quarter can flag outlier status. The overall SSI rate for repair of neck of femur for 2021/22 was 1.06% on the John Radcliffe

site and 0.41% at the Horton Hospital which is within the required parameters.

Table 34 Fractured Neck of Femur SSI Rates 2020-2021

		JRH				HGH				National average 5 years to date		
		All #NOF Operations	No. SSI cases	JR SSI rate (%)	Outlier status	All #NOF Operations	No. SSI cases	HGH SSI rate (%)	Outlier status	All #NOF Operations *	No. SSI cases	National SSI rate (%)
2021-2022	Q1 Apr-Jun	78	1	1.3%		73	0	0.0%		90813	922	1.0%
	Q2 Jul-Sep	87	0	0.0%		65	1	1.5%		91406	916	1.0%
	Q3 Oct-Dec	108	2	1.9%	High outlier	56	0	0.0%		91392	894	1.0%
	Q4 Jan-Mar	103	1	1.0%		51	0	0.0%				

Spinal Service and Surgical Site Infection (SSI)

6.4. An apparent increase in spinal SSI in the reporting period was observed within the Trust. Without the availability of any corresponding denominator data, the IPC team completed a review of three different sources of information and identified 32 deep spinal SSIs in the last year. This information has been shared with the Spinal governance lead and the Clinical Director and the IPC team are undertaking observational audits in theatre, reviewing pre and post operative pathways to facilitate progress with addressing the reasons for the apparent increase in infections and the provision of data.

Hepatobiliary Surgery SSI

6.5. The HPB department undertook a quality improvement project to improve the rate of SSI with the introduction of antimicrobial coated sutures as part of an SSI prevention bundle. Table 35 demonstrates the positive impact of using the sutures.

Table 35 SSI audit in hepato-biliary surgery

Normal sutures				Plus sutures			
Operation Type	Total # of operations	SSI	% of SSI	Operation Type	Total # of operations	SSI	% of SSI
Whipple's	26	16	61.5	Whipple's	25	11	44.0
Total pancreatectomy	4	1	25.0	Total pancreatectomy	5	1	20.0
Distal pancreatectomy	7	0	0.0	Distal pancreatectomy	5	0	0.0
Liver resections	34	6	17.6	Liver resections	34	4	11.8
Any other bowel surgery	7	0	0.0	Any other bowel surgery	7	1	14.3
Hernia or Laparotomy or Open cholecystectomy	10	1	10.0	Hernia or Laparotomy or Open cholecystectomy	3	0	0.0
<i>Whipple's</i>				<i>61.5% → 44.0%</i>			
<i>Total pancreatectomy</i>				<i>25.0% → 20.0%</i>			
<i>Liver resection</i>				<i>17.6% → 11.8%</i>			

NICE Update on Antimicrobial Sutures

6.6. NICE has issued Medical Technologies Guidance (MTG59) which recommends the adoption of Plus Sutures, which are absorbable stitches with antibacterial protection from triclosan. Although the cost per suture is greater than standard sutures, the NICE committee was satisfied that the cost-modelling evidence indicates a cost saving compared with non-triclosan absorbable stitches by an average of £13.62 per patient due to a reduction in surgical site infections. This is the first piece of MedTech Guidance developed by NICE which has been published without a consultation period because of the strength of the evidence and the positive recommendation.

6.7. At present these sutures are available at the NOC and in Emergency Surgery. IPC are working with procurement on consideration of introducing into other areas. A paper will be presented to TME outlining the evidence to support the introduction of the sutures.

7. IPC Education

Catheter associated urinary tract infection (CAUTI) awareness week

7.1. From the 24th – 28th May 2021 a CAUTI awareness week was held with a focus on urinary catheterisation and catheter care. The use of Hexi-cath 0.1% chlorhexidine wipes during catheterisation of both male and female patients was re-launched Trust wide. Hexi-cath use reduces the risk of CAUTI, reducing the need for antibiotics and preventing harm to patients. The adult continence nurse and IPC team, with support from company representatives, visited all Trust sites during the week. A mini teaching session on catheter care, CAUTI prevention and the use of Hexi-cath was delivered to each area visited, along with a chance to ask questions. A

poster competition was held at the Horton site and IPC link practitioners prepared CAUTI information boards at the Churchill site.

Link Practitioner Workshops

- 7.2. The implementation of Microsoft 365 and MS Teams has been used to improve communications with the IPC link practitioner network and is being effectively managed to:
- promote quality IPC practices in all clinical areas
 - provide IPC support, information on training opportunities and involvement in IPC annual conference activities
- 7.3. MS Teams will continue to be used to increase IPC link practitioner knowledge on Medication safety and antimicrobial stewardship and to promote World Patient Safety Day in September 2022

8. COVID-19

- 8.1. Throughout 2021/22 the COVID-19 Clinical Forum, chaired by the DIPC, continued to meet at least weekly. This forum is used to communicate operational guidance and issues relating to infection prevention and control, including PPE, vaccination, staff and patient testing, and occupational health. It is also useful as a forum for staff to be able to express concerns and provide opinion on local guidance. It is attended by medical and nursing leads, communications, pharmacy, procurement, waste management, security, staff testing team, resuscitation, operational managers, and other Trust leads. Information shared is taken forward into staff safety huddles for onward communication.

Infection Prevention and Control Board Assurance Framework.

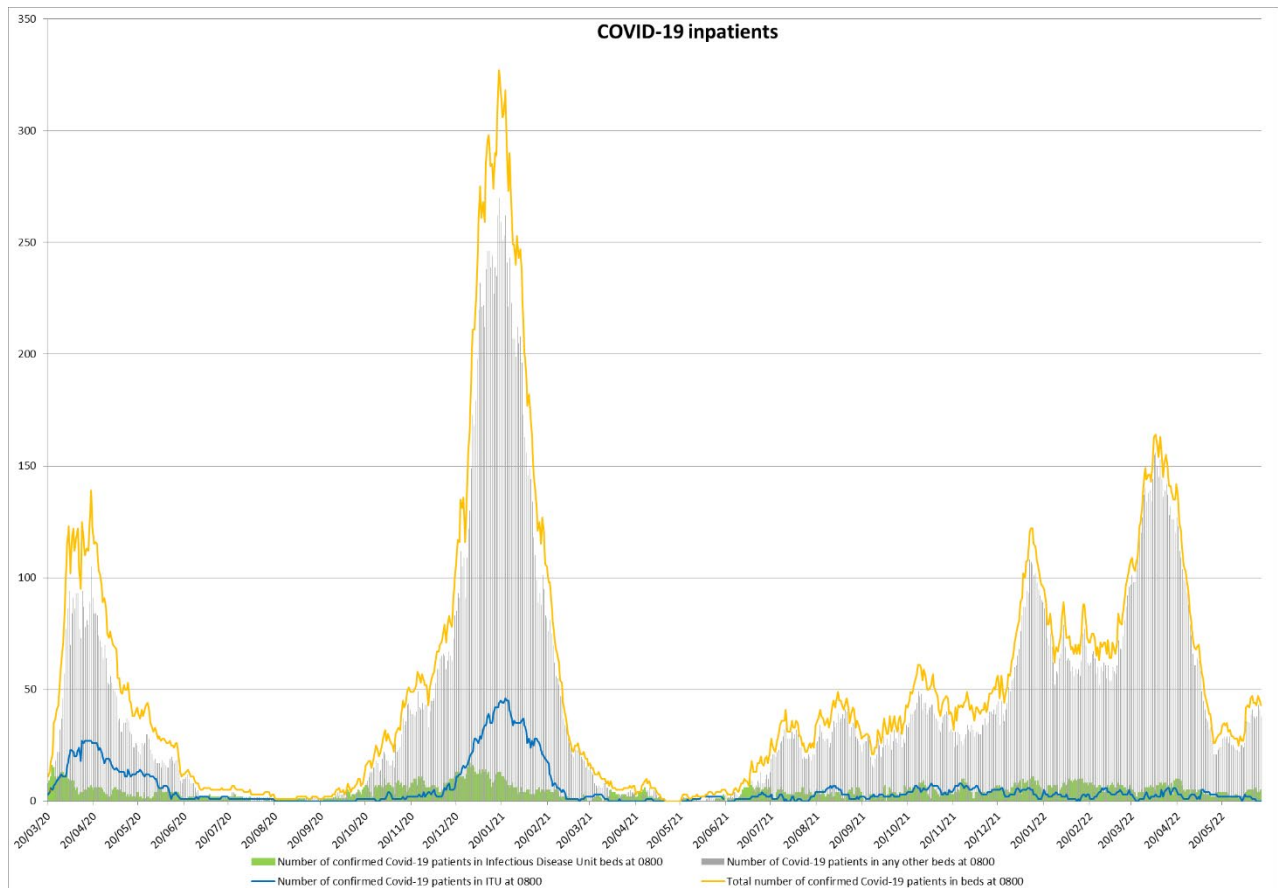
- 8.2. NHSE/I developed a Board Assurance framework to enable a self-assessment of compliance with UKHSA COVID-19 related infection prevention and control guidance, to identify risks, to act as an improvement tool and to assure trust boards. The IPC team completed the framework document and it has been regularly updated with key developments and implementation of new guidelines through-out the pandemic.

COVID-19 inpatient numbers

- 8.3. Table 36 shows the large peaks in hospital in-patients in association with the wild-type and alpha variants in 2020/21. Inpatient numbers in 2021/22 did not reach the peak of the alpha wave due to the success of COVID-19 vaccination and/or prior immunity, but the delta and omicron variant waves of infection led to a sustained impact of COVID-19 on the OUH Trust with

significant numbers of patients admitted primarily with COVID-19, or with another reason for admission with incidental COVID-19 infection. At all times the number of patients in the Trust has been sufficient to occupy several wards.

Table 36 COVID-19 inpatient numbers March 2020- March 2022



PPE

8.4. The Trust followed the UKHSA PPE guidelines. The UK IPC Cell guidance was updated on 17th December 2021 to make more explicit the extended use of respiratory protective equipment (RPE) following local risk assessment. In response to this and in line with local risk assessment the Trust issued a recommendation on 23rd December 2021 for staff to wear FFP3 masks when caring for COVID 19 positive or exposed patients, with a reminder that they must be fit tested. As in 2019/20, the procurement team were able to ensure that supply of all PPE required was maintained.

8.5. The Fit Testing team continued to provide an on-site Fit testing service for RPE, adapting to the mask types available.

Nosocomial Cases

8.6. The national definitions of nosocomial COVID-19 infection are as below.

- hospital-onset indeterminate healthcare-associated – first positive specimen date 3–7 days after admission to the Trust
- hospital-onset probable healthcare-associated – first positive specimen date 8–14 days after admission to the Trust
- Hospital onset definite healthcare-associated – first positive specimen date 15 or more days after admission to trust.

Investigation of Nosocomial Cases and Nosocomial Deaths

- 8.7. A total of 2791 Covid-19 cases were reported in 2021/22. Of these, 139 cases were identified as definite nosocomial cases and 141 cases as probable nosocomial cases, with a further 150 cases being indeterminate.
- 8.8. Of the definite and probable nosocomial cases 58 deaths were recorded. Within the indeterminate category, 18 deaths were recorded.
- 8.9. All definite and probable nosocomial cases have an incident report completed and a mandatory set of data is reported. All nosocomial deaths are investigated and this workstream is led by the Patient Safety Team with IPC input.

Table 37 COVID-19 cases by classification (April 2021- March 2021)

	Apr -21	May -21	Jun -21	Jul- 21	Aug -21	Sep -21	Oct- 21	Nov -21	Dec -21	Jan -22	Feb -22	Mar -22
Total No of Covid-19 Cases	37	8	35	187	181	191	234	177	322	494	339	586
Total No of Definite Nosocomial Cases	0	0	0	3	3	1	6	8	14	34	26	44
Total No of Definite Nosocomial Deaths	0	0	0	1	1	0	2	1	6	7	3	7
Total No of Probable Nosocomial Cases	0	0	0	1	0	0	6	2	15	34	33	50
Total No of Probable Nosocomial Deaths	0	0	0	0	0	0	1	0	8	12	2	7
Total No of Indeterminate Cases	0	0	3	4	4	5	3	8	9	29	28	57
Total No of Indeterminate Deaths	0	0	3	0	1	0	0	1	1	3	2	7
Total No of Non-Nosocomial Cases	37	8	32	179	174	185	219	159	284	397	252	435
Total No of Non-Nosocomial Deaths	1	1	3	11	8	12	21	11	10	11	5	29

COVID-19 Outbreaks

- 8.10. Two or more cases identified in one area within a certain period meets the criteria for declaring an outbreak and are investigated by the IPC team. All outbreaks require reporting via the NHSE/I online reporting outbreak tool.
- 8.11. A total of 35 outbreaks were reported in 2021/22, across all 4 OUH Trust sites, and additional sites such as Katherine House Hospice. Many outbreaks, especially those within acute medicine on the JR and Horton

sites were extensive and prolonged, in line with previous experience in Q3 and Q4 of 2020/21. Of note in sites/wards with a greater number of side-rooms there were fewer outbreaks. There were no nosocomial cases or outbreaks in intensive care settings.

- 8.12. The emergence of the Omicron variant in December 2021 was very challenging because of its high rate of transmissibility (higher than the previous variants). However, in general it caused less severe disease because of high rates of prior immunity and vaccination in the population. In many cases the infection has been asymptomatic.
- 8.13. Once a single nosocomial case is identified, it is more difficult to contain in terms of onward transmission than a community-acquired case. This is because by the time a community case presents to the hospital with COVID-19, they are usually beyond the period of maximum infectivity, which occurs early on the infection.
- 8.14. Outbreak incident management meetings were held as required, and action plans included a review of the hierarchy of controls in each area, and a clinical review of the patients to ensure that all COVID-19 specific treatments had been considered.

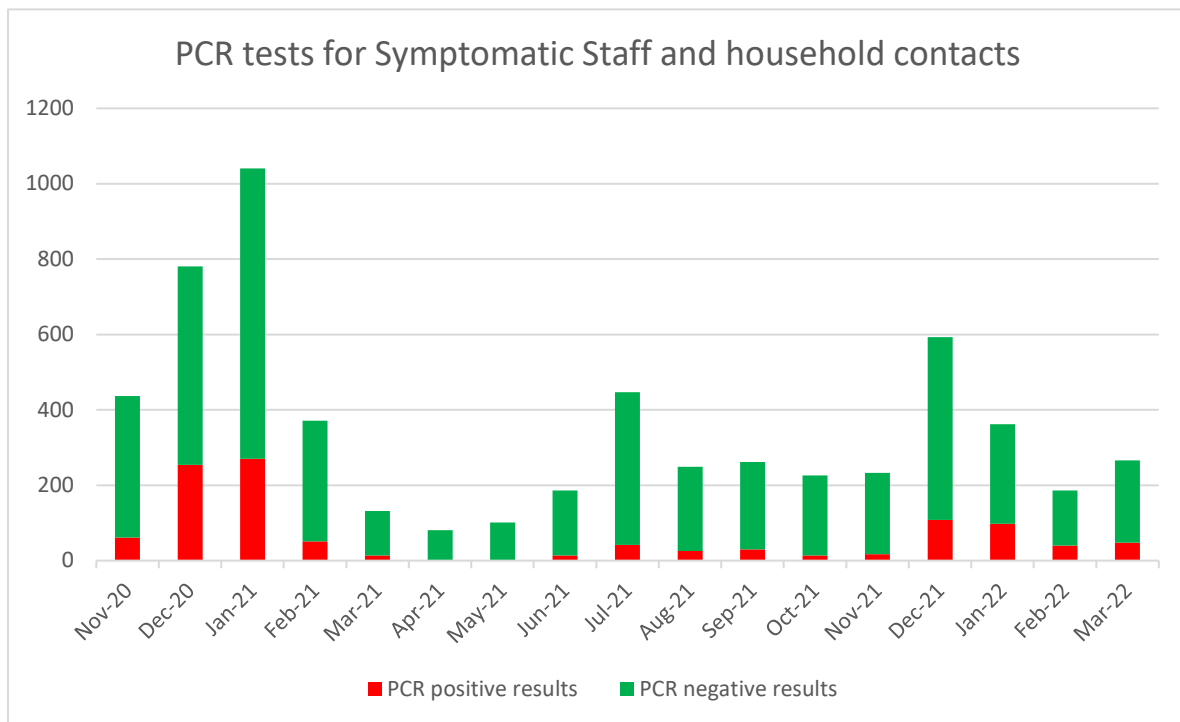
Staff & Patient testing

- 8.15. The Trust implemented a comprehensive staff screening service for both symptomatic (from the end of March 2020) and asymptomatic staff (from the end of April 2020). Twice weekly lateral flow testing (LFD) for staff commenced in November 2020.

Symptomatic staff testing

- 8.16. The staff testing team working alongside the Centre of Health and Well Being (COHWB) offered a PCR testing service for symptomatic staff and household members, and support for staff required to isolate throughout 2021/22.
- 8.17. Table 40 shows that the staff testing team continued to support significant numbers of staff with a COVID-19 swabbing service through 2021/22.

Table 40 Symptomatic staff/household swab/PCR testing by month



Asymptomatic staff testing

8.18. Asymptomatic staff have been expected to upload 2 LFD results per week unless on annual leave or within 90 days of a positive result. The percentage of results submitted is calculated on the basis of the number of unique individuals submitting at least one result in that month. The total number of results reported has fallen month by month since the programme started. The number/proportion of positive results has increased in recent months, and this may reflect reporting bias, although all results, positive or negative, are required to be reported by NHSE/I (Table 41). The number of staff taking part in the programme overall has decreased since the programme started but the number who participate reporting at least two results per week has not decreased (Table 42).

Table 41 Staff Lateral Flow Testing- positive results

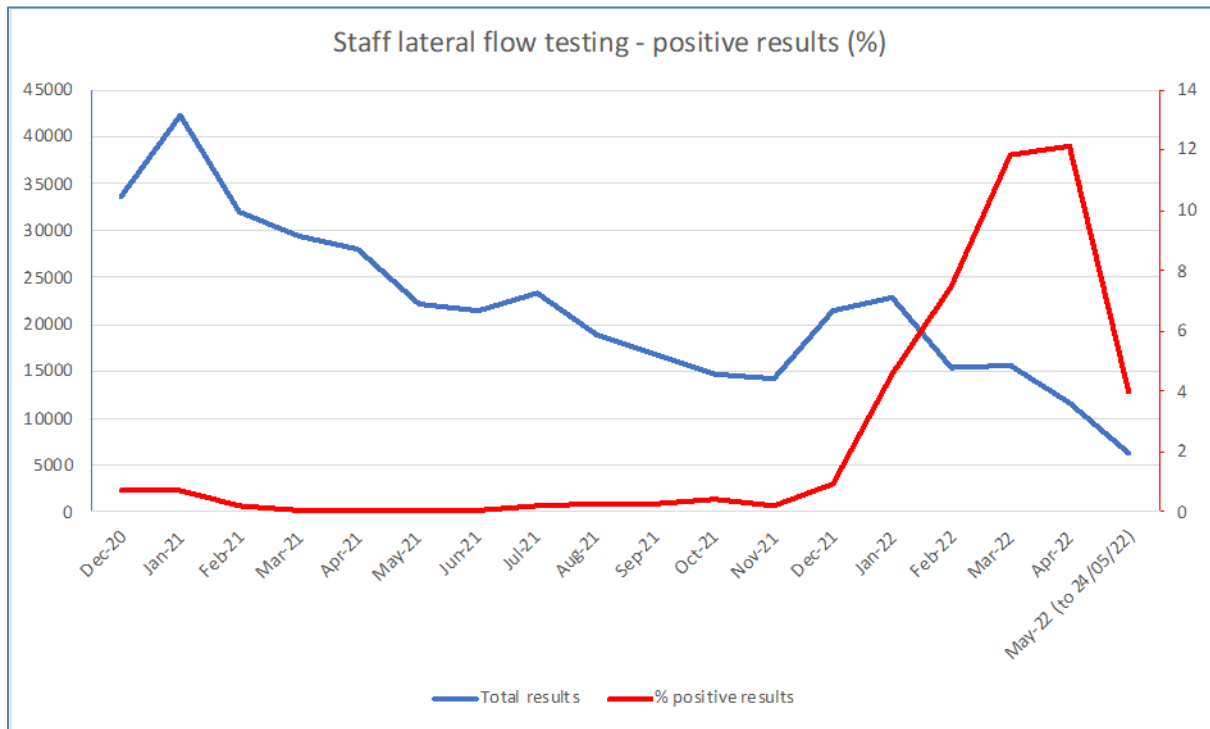
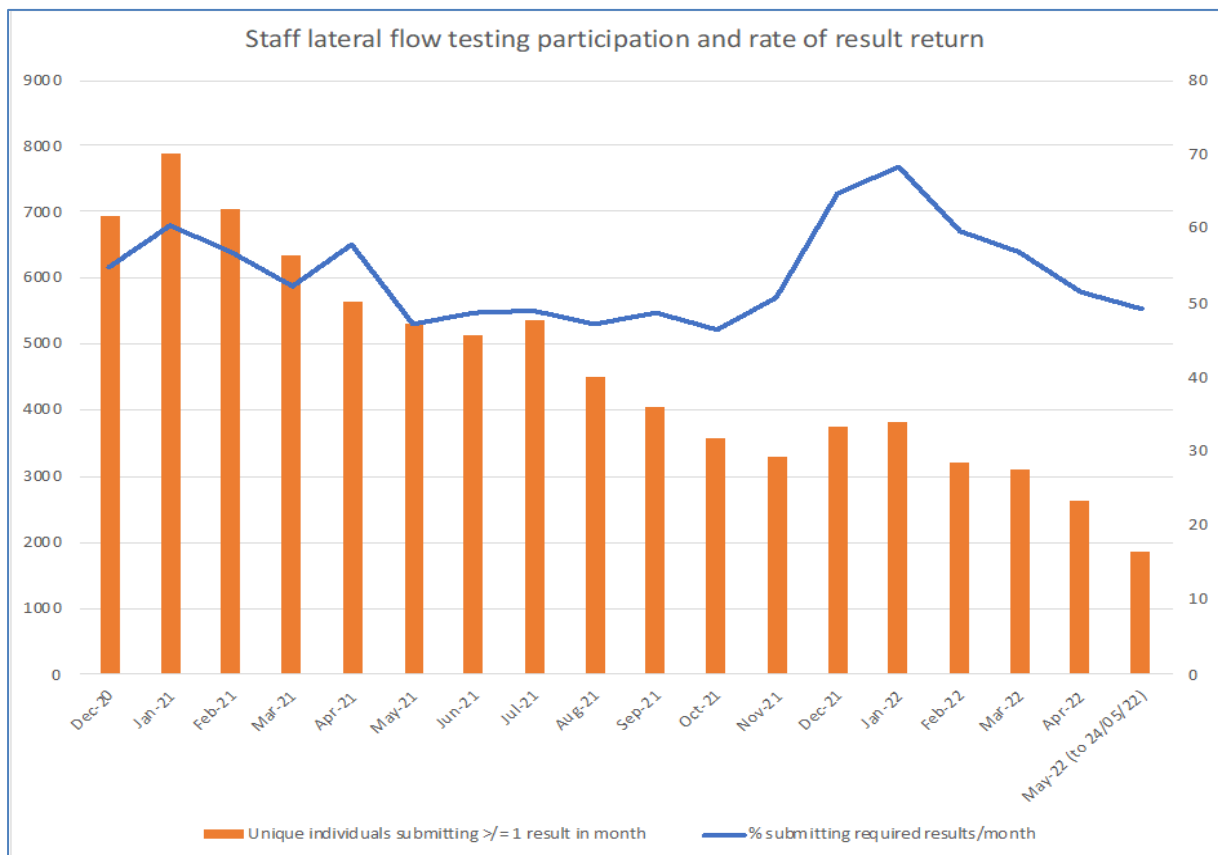


Table 42 Staff Lateral Flow Testing Participation & Rate of Result Return



Patient testing

8.19. Patient testing has followed the national pathway of day of admission, day 3, day 5- 7 with additional weekly screening implemented by the Trust.

Role of the Microbiology Laboratory

8.20. The microbiology laboratory continued to support the Trust with a 24/7 SARS-CoV-2 testing service, for both emergency and elective patients to try and minimise operational pressures and help facilitate the Trust recovery process. The laboratory identified some of the first omicron variants in the UK in December 2021 and provided SARS-CoV-2 Variant of Concern testing for the South 4 pathology network.

9. Investigation of Infection Prevention and Control Incidents

Aspergillus in Paediatric Oncology

- 9.1. In December 2021 IPC were alerted by the paediatric oncology team to a patient who was found to have invasive fungal infection due to aspergillus. At the time, construction work to replace cladding on the building was taking place. Due to previous identification of cases of Aspergillus infection at times of other significant construction projects (2008-2018 - 3 proven and ca. 10 probable), consideration of the building work/cladding replacement work in 2021 was included within the case review. A second patient was identified in February 2021 who was also found to have invasive fungal infection due to Aspergillus fumigatus. Three further possible cases were also identified in the same time period. All the confirmed and possible cases were immunosuppressed patients.
- 9.2. Working together, the Estates team, Bouygues, the cladding contractors, clinical team, DIPC and IPC, with advice from the Authorising Engineer for Ventilation, reviewed the confirmed cases and concluded that it was not possible to directly relate the cases to the building works, given that Aspergillus is ubiquitous in the environment and is a well-known opportunistic pathogen in the immunocompromised.
- 9.3. A paper for Chief Officers was prepared jointly between IPC, Estates and the PFI Office reporting on an apparent increase in invasive aspergillus infection in paediatric haematology, detailing the confirmed and suspected cases, the management of the cladding project and providing recommendations going forward

IPC and the Neonatal unit**Staphylococcus capitis (S. capitis) in Neonatal Unit**

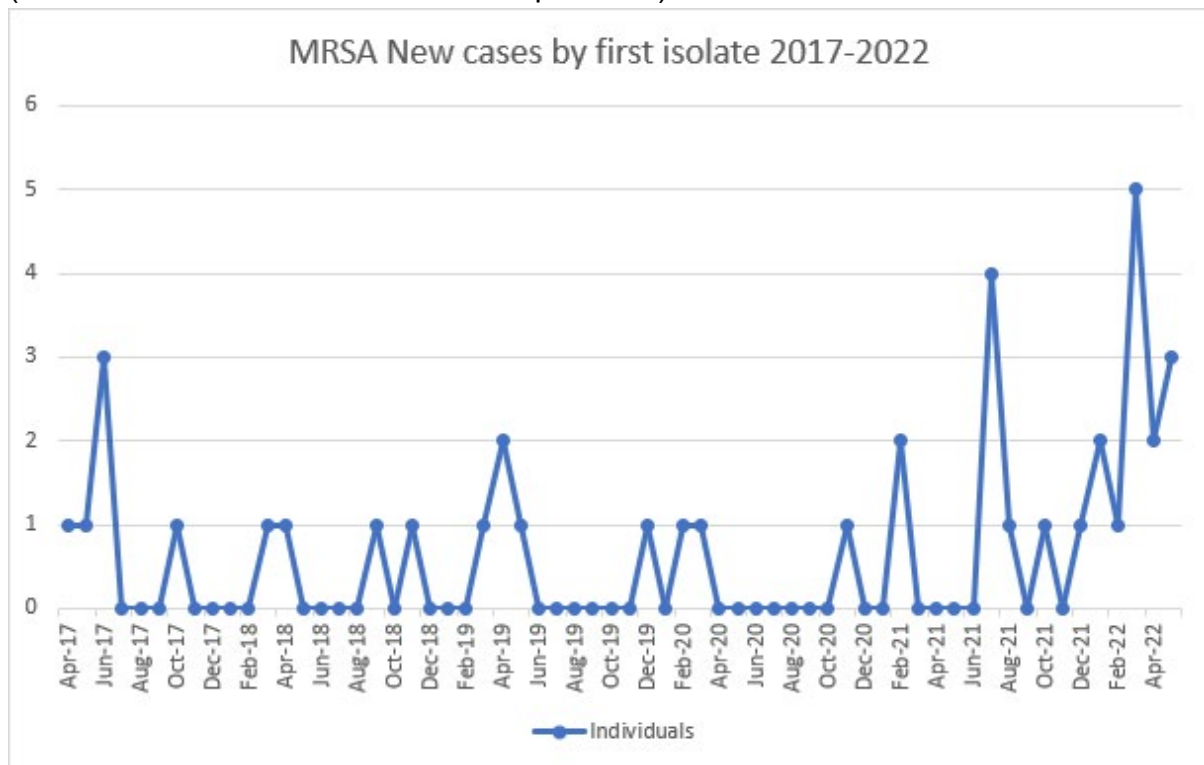
- 9.4. Nosocomial late-onset sepsis represents a frequent cause of morbidity and mortality in preterm neonates. The *Staphylococcus capitis* clone NRCS-A is recognised as an emerging cause of nosocomial bacteraemia in neonatal intensive-care units (NICUs).
- 9.5. A lookback in the OUH found 154 *S. capitis* isolates in samples originating from NBICU in just over 4 years (since April 2017). Sequencing performed in collaboration with Oxford University showed that all 30 *S. capitis* isolates found in blood cultures from neonatal unit babies between 2017 and 2022 were NRCS-A strain. These strains show a high degree of genetic relatedness, consistent with ongoing transmission within the unit environment. Blood culture *S. capitis* isolates from neonatal unit babies in a satellite hospital also identified the NRCS-A strain. *S. capitis* isolates from blood culture in adult wards including AICU were also investigated and none of these were NRCS-A strain.
- 9.6. Environmental sampling has detected both NRCS-A and other strains of *S. capitis* in the NBICU environment including on high touch points. Culture of rectal swabs (collected for CPE screening) has also shown *S. capitis* in the gastrointestinal flora of patients on NBICU. Work is ongoing to demonstrate if these isolates are NRCS-A strain.
- 9.7. IPC work with the neonatal unit continues and has been focusing on central line care bundles, decontamination of incubators, enhanced cleaning of the environment, and in particular the skin cleansing of the babies and hand hygiene. A review of the literature and practice in other UK unit regarding skin cleaning in NICU is currently under way.
- 9.8. This review has also identified a shortage of incubators on Newborn Care to nurse preterm and sick infants and facilitate the cleaning of incubators. This had been previously identified by the directorate and is on their risk register.

MRSA in Neonatal Unit

- 9.9. An outbreak of MRSA in the neonatal unit was declared in 2021/22 following an increase in the numbers of babies becoming colonised with MRSA and 2 MRSA bacteraemias.
- 9.10. Weekly meetings have been held between the unit, IPC and senior divisional representatives and a number of actions identified, predominantly around basic IPC practice such as cleaning and hand hygiene. The action plan is being monitored at the weekly meetings. Outbreak investigations and monitoring of the action plan continue into 2022/23.

- 9.11. Environmental swabbing of the unit was undertaken in the middle of April 2022 and whole genome sequencing (WGS) of 2 MRSA isolates identified from the sampling along with 12 isolates from 10 babies was undertaken by the microbiology lab, with support from University of Oxford researchers.
- 9.12. The WGS demonstrated that 2 cases of MRSA colonisation were unrelated to other cases on the unit. This is consistent with multiple introductions, not a single point source outbreak. This observation goes against for example, a single member of staff who is colonised with MRSA being the outbreak source.
- 9.13. One environmental sample (isolated from a computer) was identical to the sequenced isolate from a baby who left the unit 7 days prior. These two isolates were not included in the main cluster (see below). This observation is consistent with either a failure to clean the equipment in that seven-day period, or another ongoing source for that organism in the department (e.g. another colonised baby or member of staff).
- 9.14. Finally, a cluster of 12 closely related isolates were found by sequencing – this included an additional isolate that was included from a baby who had been discharged and re-admitted to the Paediatric ICU – this case had over-lapped with other babies on the NBICU during their first admission. Three isolates related to one case, a baby who developed bloodstream infection and was an inpatient for 3 months.
- 9.15. These findings suggest that there is transmission within the neonatal unit between babies colonised with MRSA, with incomplete ascertainment at the time of colonisation. They suggest that IPC measures particularly around hand hygiene and cleaning of equipment need careful attention.
- 9.16. The root cause of transmission of both *S. capitis* and MRSA on the unit is likely to be the same i.e. failure to observe good hand hygiene, and a failure of environmental cleaning.
- 9.17. A programme of increased weekly screening has been initiated, and new cases of colonisation continued to be found across all areas of the unit through April and May 2022. There have been no further cases of MRSA bacteraemia.

Table 43 MRSA New Cases of MRSA Colonisation and Bacteraemia* 2017-2022
(note that these are not all MRSA acquisitions)



*2 bacteraemia's in 2021-2022

Positive Tuberculosis Patient in Renal Unit at the Churchill

9.18. IPC were made aware of a patient that had tested positive for TB and had been a patient on the renal ward and visited the dialysis unit. On review of the exposure to staff and other patients, the DIPC/IPC doctor deemed that no patients met the criteria for further action/follow up for the following reasons:

- the exposures were all less than 8 hours
- all patients were wearing masks
- the index case was clinically well with no severe or persistent cough at time of exposure.

10. IPC Facilities, Support and Updates

Provision of Isolation Facilities

10.1. The John Warin Ward continues to provide isolation facilities with 4 isolation suites with positive-pressure ventilated lobbies (PPVL). An additional isolation facility was opened in the Emergency Department in 2021 with direct access from the external environment. The new critical care facility on the John Radcliffe site offers additional isolation facilities.

Due to travel restrictions during the COVID-19 pandemic, the number of patients assessed for high consequence infectious diseases (HCID) in 2021/22 was very small.

Access to Microbiology Laboratory Support

10.2. OUH has a dedicated in-house Microbiology Laboratory which provides a 24/7 service with UKAS accreditation (ISO-15189). A Microbiology Consultant and SpR are available 7 days a week to provide IPC advice and support. The IPC team attend the Microbiology 'plate' round daily, and present cases and issues for discussion, including *C. difficile* RCAs for feed-back to clinical teams in real-time. The Microbiology Laboratory Information Management system automatically flags alert organisms to the IPC system. The laboratory supports IPC investigations such as environmental swabbing as part of outbreak investigation.

11. Environmental IPC Issues

Water Safety at the Churchill Cancer and Haematology Hospital

- 11.1. An ongoing issue with Legionella positive water samples at the PFI Cancer and Haematology Hospital on the Churchill site has been reported annually since 2018/9. This was first identified in 2015 when the Legionella risk assessment indicated hot water system circulation issues that are likely to date from construction (2009) and recognised to be a systemic problem in 2019 via the Serious Incident Requiring Investigation (SIRI) process.
- 11.2. In September 2019 increased surveillance showed continued presence of legionella widely within the water system. As a result, all water outlets in the Churchill PFI Cancer and Haematology hospital have had point of use filters (POUF) in place since 10 October 2019. POUFs ensure that water is safe at the point of use for both patients and staff.
- 11.3. Water sampling continues to yield positive legionella samples in the Churchill PFI building. The root cause is thought to be a failure to maintain the flow of hot water, with cooler temperatures supporting growth of Legionella. An engineering solution is being sought. HIPCC is provided with a monthly report by the Soft Facilities Manager for the Client Contract Team.
- 11.4. No engineering solution was reached in 2021/22 to address the failings of the water system however a pilot study to enable temperature compliance monitoring in one area was undertaken in Summer 2021. The findings of the study have influenced the direction of potential solutions however the IPC team continues to raise concern over the lack of resolution of the issues.

- 11.5. An Extraordinary Water Safety Group is in place, chaired by the Deputy Chief Nurse, to monitor and progress completion of the SIRI action plan. Two 'Step-in' Notices (January and April 2022) were given to Ochre Solutions Limited (OSL) by the Director of Estates to provide written notice to OSL of the steps the Trust requires OSL to undertake, and the required timescales.
- 11.6. A regular report on progress is presented to the Clinical Governance Committee.

Churchill Cleaning

- 11.7. Throughout 2021/22 the standard of cleaning at the Churchill hospital has been of significant concern to the IPC team and has been discussed at HIPCC and regularly reported to the Patient Safety Effectiveness Committee. Weekly meetings are taking place between G4S, OSL, the division and the Trust PFI office to monitor and review progress. Regular reports are presented to the Clinical Governance Committee by the Trust PFI office. Whilst the OUH is not aware of any healthcare associated infections that can be attributed to below expected standard of cleaning, work with our partners will continue to ensure achievement of the high standards expected.

New Builds and Water Issues

- 11.8. A number of refurbishments and new builds took place in 2021/22 which resulted in associated water issues on commissioning (new adult intensive care, Level 5 JR, and the Trauma refurbishment). The project teams are working closely with IPC, the relevant contractors and the Authorising Engineer for Water to resolve the issues identified. Point of use filters have been installed where required to ensure water safety. The Trust Water Safety Group (WSG) continues to meet quarterly and is involved in advising on remedial actions and management of all water related issues.

12. Publications

- 12.1. A number of publications involving the IPC team have been accepted in peer reviewed journals during 2021/22 on IPC strategies and nosocomial transmission of both influenza and SARS-CoV-2. In addition, the team were closely involved in healthcare worker testing, which led to a number of publications influencing national strategy on COVID-19 infection and response to vaccination. Publications relevant to this year are included in Appendix 5.
- 12.2. At the 2021 Annual Infection Prevention Society Conference, the IPC team had 8 posters on display and were invited to present on three of the posters.

13. National profiles

- 13.1. The IPC Manager is Vice President for the Infection Prevention Society (IPS) and will become President in October 2022.
- 13.2. The DIPC is currently President of the British Infection Association (2021-23).
- 13.3. Members of the IPC nursing team hold positions of responsibility within the London North branch of the IPS.
- 13.4. The Consultant Pharmacist for Antimicrobial Stewardship is Chair of the South Central regional antimicrobial pharmacist network (SCAN) and Associate Member Secretary for the British Infection Association (BIA).

14. Committees

Decontamination Committee

- 14.1. The Decontamination Committee meets quarterly and covers decontamination in Sterile Services, endoscopy, decontamination of medical devices and patient equipment cleaning. This committee reports to the Hospital Infection Prevention and Control Committee.

Hospital Infection Prevention and Control Committee (HIPCC)

- 14.2. The HIPCC is chaired by the Director of Infection Prevention and Control and meets monthly. An exception report is included within the IPC Clinical Governance paper to the Trust Clinical Governance Committee.
- 14.3. HIPCC membership includes patient/public representation. The long-standing representative retired in December 2021 after 13 years of serving on the committee. A new public representative was appointed in the early part of 2022.

15. Antimicrobial Stewardship

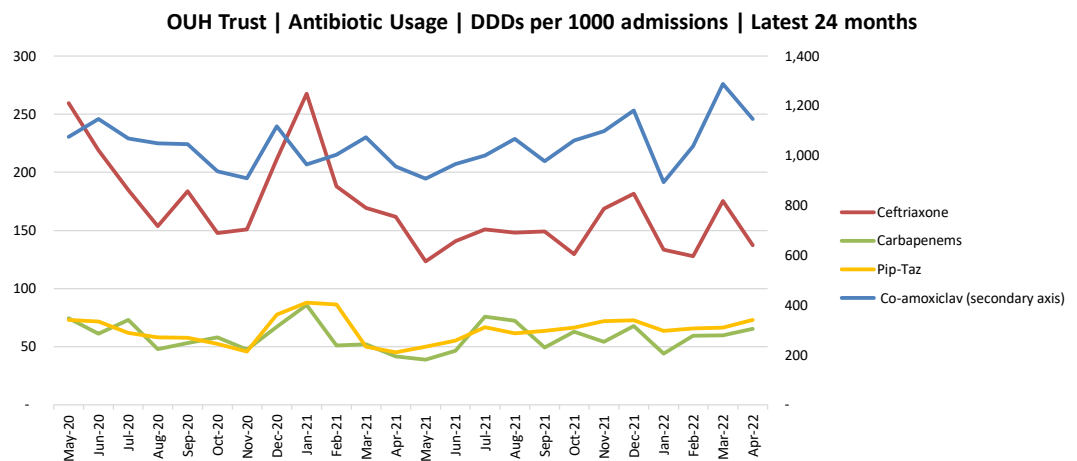
Trust wide *C.difficile* focused Antimicrobial Stewardship Workstreams

- 15.1. The SPACE ('Spurious Penicillin Allergy' in Secondary Care) study, which examines allergy de-labelling, has now recruited its first patients in the OUH. This will help reduce reliance on ceftriaxone use and reduce risk of *C. difficile* infection in this cohort of patients.
- 15.2. During 21/22 the Antimicrobial stewardship (AMS) CQUINs were deferred due to the COVID-19 pandemic.
- 15.3. Antibiotic consumption remained an element of the National Standard contract for 2021/22. The OUH ambition was to have a 2% reduction in

total antibiotic consumption against a 2018 (calendar year) baseline value. The data collection mechanism was extraction of the data by the UK Health Security Agency (UKHSA) from the Define program within RX-info software program.

- 15.4. The last update provided by regional antimicrobial leads was at end of Q2 2021/22 and this showed that OUH were meeting the 2% reduction target in Defined Daily Doses (DDDs) per 1000 admissions at that time. Work continued throughout 2021/22 by the AMS team to undertake activities designed to support reduction of inappropriate antibiotic consumption. The AMS team are awaiting information from UKHSA about our position at year end.
- 15.5. The OUH AMS team continues to monitor total antibiotic consumption and consumption of specific broad-spectrum antibiotics (e.g. ceftriaxone, ciprofloxacin, carbapenems) using a combination of data from the pharmacy dispensing system, electronic prescribing systems and the Define program within RX-info software program. Table 44 shows usage of specific broad-spectrum antibiotics over a rolling period. This data is being used to inform discussions about antibiotic consumption and stewardship with local clinical teams e.g. Ambulatory Care and Specialist Surgery.

Table 44 Broad spectrum antibiotic use over 24 month rolling period.



Source: Define Reports to May 2022

*Admissions estimates for April/May 2022 are based on February admissions which are typically 7% lower than average.

- 15.6. Assessment of the appropriateness of antibiotic use was one of the Trust's Antimicrobial Stewardship Key Performance Indicators for 2021/22 and this was undertaken using a point prevalence tool with focus on appropriateness of antibiotic use.
- 15.7. During Q1 21/22 a point prevalence survey (PPS) was undertaken for adult in-patients at the John Radcliffe (JR) hospital. The survey found that

28.8% of the patients reviewed (152 out of 527 patients) were receiving at least one antimicrobial. The indication for the antimicrobial was documented on 96.9% of prescriptions and a review or stop data was documented on 95.9% of prescriptions.

- 15.8. Compliance with guidelines or advice from Microbiology or Infectious Disease doctor was 84.5% and the results showed that 80.4% of the prescriptions were appropriate. This did not meet the KPI target of 90% of prescriptions being appropriate.
- 15.9. Subsequent quarters saw the PPS undertaken for Horton in-patient beds (Q2), acute medicine beds at the JR (Q3) and general surgery beds at JR (Q4).

Table 45 summarises appropriateness of prescribing reported for each quarter

	% Appropriateness of antimicrobials prescribed
Q1 (JR adult patients)	80.4
Q2 (Horton)	65.3
Q3 (Acute General Medicine at JR)	70.3
Q4 (General surgery JR)	48.6

- 15.10. This data is being used to inform discussions about antibiotic consumption, appropriateness of prescribing and stewardship with local clinical teams e.g. general surgery, acute general medicine.

- 15.11. Public Health England Fingertips continues to be used as the reporting tool viewed nationally for metrics for antimicrobial consumption. Tables 46 and 47 below present the OUH antibiotic consumption data within the Fingertips platform. The most recent data is Q3 21/22.

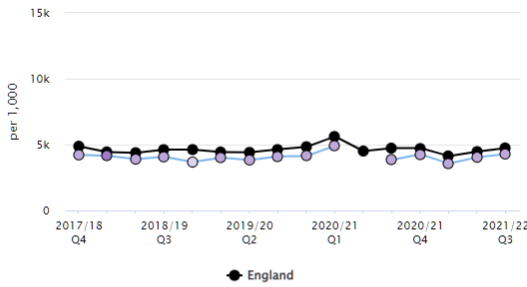
Table 46 shows Defined daily dose (DDD) of total antibiotic consumption for OUH (including inpatient and outpatients) per 1000 admissions. This data shows that OUH prescribing of antibiotics is consistently lower than the England average.

Total antibiotic prescribing DDDs per 1000 admissions; by quarter and trust

Crude rate - per 1,000

Show confidence intervals Show 99.8% CI values

[More options](#)



Period	Oxford University Hospitals NHS Foundation Trust				shelford copy	England
	Count	Value	95% Lower CI	95% Upper CI		
2017/18 Q4	208,940	4,221.4	-	-	5,210.7*	4,872.4
2018/19 Q1	208,332	4,155.8	-	-	4,843.3*	4,439.5
2018/19 Q2	191,296	3,894.8	-	-	4,848.7*	4,381.0
2018/19 Q3	210,459	4,068.7	-	-	5,085.2*	4,614.9
2018/19 Q4	191,915	3,671.2	-	-	5,049.9*	4,617.1
2019/20 Q1	202,654	4,007.2	-	-	5,051.4*	4,436.4
2019/20 Q2	198,228	3,833.3	-	-	5,021.6*	4,406.8
2019/20 Q3	211,896	4,108.7	-	-	4,788.5*	4,639.7
2019/20 Q4	201,931	4,129.0	-	-	5,372.0*	4,834.3
2020/21 Q1	143,507	4,915.1	-	-	6,291.7*	5,611.3
2020/21 Q2	-	*	-	-	4,774.5*	4,508.6
2020/21 Q3	175,102	3,851.3	-	-	4,953.0*	4,728.3
2020/21 Q4	174,430	4,255.8	-	-	4,877.7*	4,730.0
2021/22 Q1	180,228	3,567.0	-	-	4,254.3*	4,135.6
2021/22 Q2	197,037	4,043.9	-	-	4,616.8*	4,465.2
2021/22 Q3	205,530	4,288.9	-	-	4,980.8*	4,741.8

Source: DDDs were provided by RxInfo © 2019 to support NHS England CQUINs. Prescribing rates were calculated using HES admissions data provided by NHS Digital.

Table 47 shows Defined daily dose (DDD) of carbapenems for OUH (includes inpatient and outpatients) per 1000 admissions.

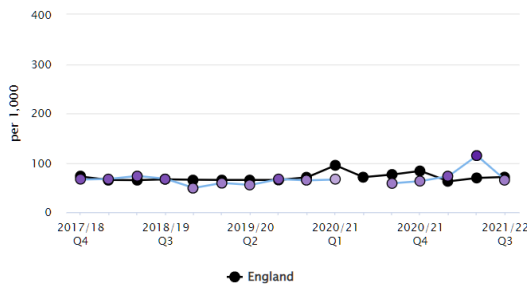
15.12. This data shows that in Q2 there was an increase in prescribing of carbapenems in the OUH. Work is on-going to continue to review use of carbapenems across the Trust.

Carbapenem prescribing DDDs per 1000 admissions; by quarter and acute trust

Crude rate - per 1,000

Show confidence intervals Show 99.8% CI values

[More options](#)



Period	Oxford University Hospitals NHS Foundation Trust				shelford copy	England
	Count	Value	95% Lower CI	95% Upper CI		
2017/18 Q4	3,255	65.8	-	-	112.0*	71.8
2018/19 Q1	3,362	67.1	-	-	104.2*	65.1
2018/19 Q2	3,588	73.1	-	-	102.1*	64.8
2018/19 Q3	3,486	67.4	-	-	106.8*	66.3
2018/19 Q4	2,555	48.9	-	-	104.7*	65.5
2019/20 Q1	2,984	59.0	-	-	106.2*	65.0
2019/20 Q2	2,842	55.0	-	-	106.9*	64.9
2019/20 Q3	3,443	66.8	-	-	99.8*	65.1
2019/20 Q4	3,142	64.2	-	-	114.8*	70.4
2020/21 Q1	1,920	65.8	-	-	151.5*	94.7
2020/21 Q2	-	*	-	-	110.3*	70.6
2020/21 Q3	2,641	58.1	-	-	112.8*	76.0
2020/21 Q4	2,572	62.7	-	-	122.5*	83.2
2021/22 Q1	3,667	72.6	-	-	89.8*	62.3
2021/22 Q2	5,571	114.3	-	-	105.9*	69.1
2021/22 Q3	3,109	64.9	-	-	104.3*	71.0

Source: DDDs were provided by RxInfo © 2019 to support NHS England CQUINs. Prescribing rates were calculated using HES admissions data provided by NHS Digital.

15.13. Tables 48 and 49 compare OUH data to other Trusts within the Shelford group for Q3 21/22. OUH is towards the lower end of usage for both indicators, and considerably below the Shelford average. This was also the case in the 20/21 report.

Table 48 shows Defined daily dose (DDD) of total antibiotic consumption for OUH (includes inpatient and outpatients) per 1000 admissions compared to other Shelford Trusts.

Indicator
 Total antibiotic prescribing DDDs per 1000 admissions; by quarter and trust 2021/22 Q3 Crude rate - per 1,000

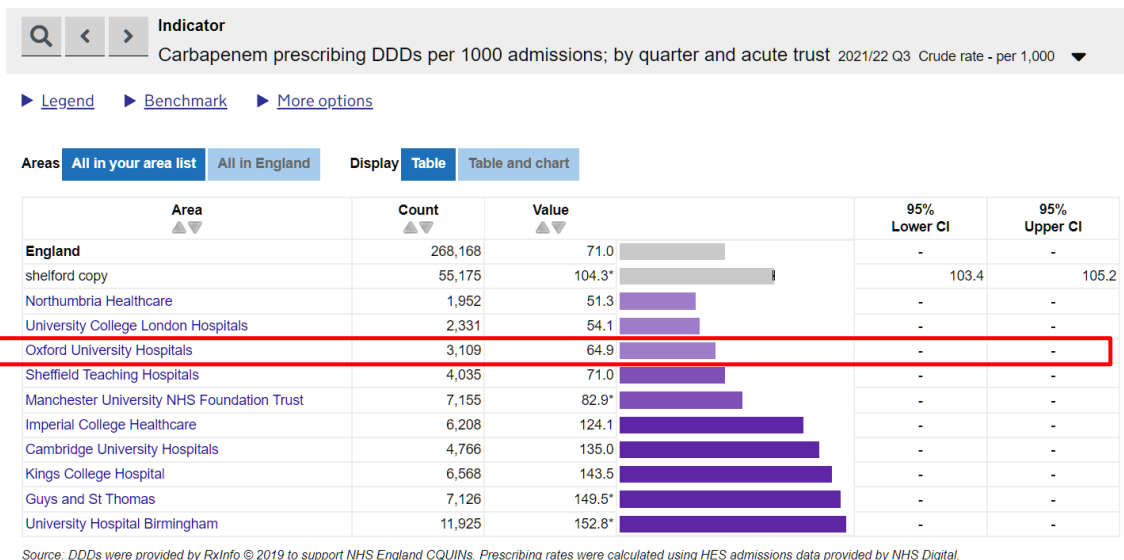
[Legend](#) [Benchmark](#) [More options](#)

Areas [All in your area list](#) [All in England](#) Display [Table](#) [Table and chart](#)

Area	Count	Value	95% Lower CI	95% Upper CI
England	17,914,688	4,741.8	-	-
shelford copy	2,634,553	4,980.8*	4,974.8	4,986.8
Northumbria Healthcare	127,268	3,347.7	-	-
University College London Hospitals	156,471	3,633.7	-	-
Sheffield Teaching Hospitals	237,356	4,178.6	-	-
Oxford University Hospitals	205,530	4,288.9	-	-
Manchester University NHS Foundation Trust	118,127	4,786.0*	-	-
Cambridge University Hospitals	181,787	5,147.4	-	-
Imperial College Healthcare	266,805	5,332.1	-	-
University Hospital Birmingham	430,026	5,511.7*	-	-
Kings College Hospital	275,922	6,027.5	-	-
Guys and St Thomas	340,261	7,138.1*	-	-

Source: DDDs were provided by RxInfo © 2019 to support NHS England CQUINs. Prescribing rates were calculated using HES admissions data provided by NHS Digital.

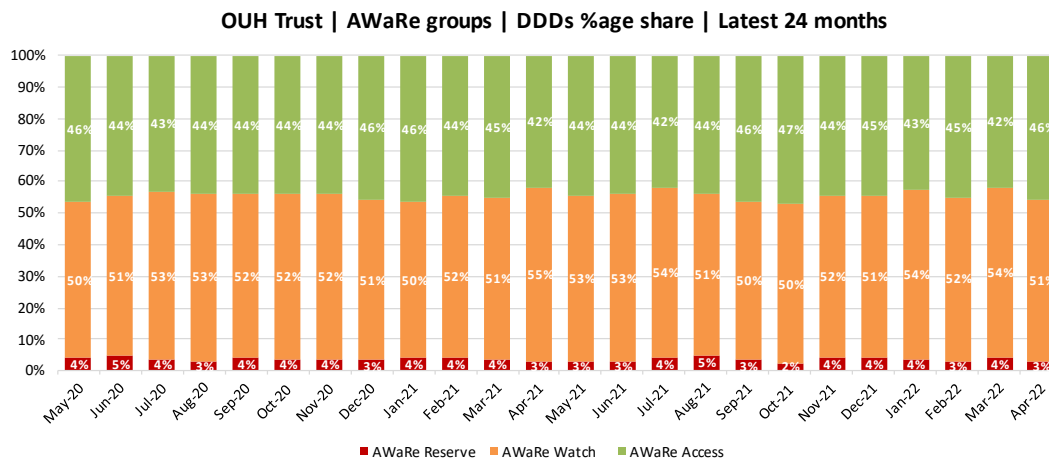
Table 49 shows Defined daily dose (DDD) of carbapenem consumption for OUH (includes inpatient and outpatients) per 1000 admissions compared to other Shelford Trusts.



15.14. The antimicrobial national standard contract for 2022/23 for OUH requires OUH to have a 4.5% reduction in antibiotics that the World Health Organisation classify as ‘watch’ or ‘reserve’ antibiotics compared to baseline period. The AMS team have been undertaking a base line assessment of OUH usage to support development of an action plan for this work. Table 50 shows OUH data related to the proportion of antibiotic use in each of the categories over the previous 24 months and this data will be used to help inform discussions with clinical teams to help reduce use of ‘watch’ and ‘reserve’ antibiotics.

Table 50

AWaRe share percentage



Source: Define Reports to May 2022
 *Admissions estimates for April/May 2022 are based on February admissions which are typically 7% lower than average.

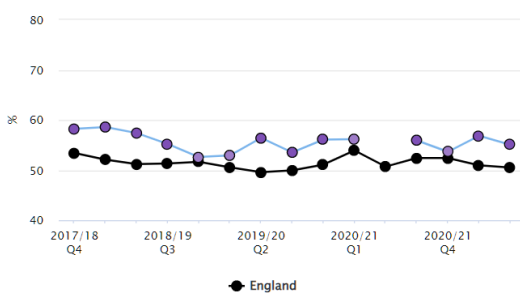
15.1. This date correlates well with the data presented by UKHSA on the Fingertips platform (Table 51) which shows that OUH need to reduce the use of ‘watch’ and ‘reserve’ antibiotics

Table 51

Proportion of total antibiotic prescribing from the "Watch" and "Reserve" categories of the WHO Essential Medicines List AWARe index Proportion - %

[Show confidence intervals](#) [Show 99.8% CI values](#)

[More options](#)



Period	Oxford University Hospitals NHS Foundation Trust				shelford copy	England
	Count	Value	95% Lower CI	95% Upper CI		
2017/18 Q4	121,658	58.2%	-	-	57.3%*	53.4%
2018/19 Q1	122,031	58.6%	-	-	55.9%*	52.1%
2018/19 Q2	109,786	57.4%	-	-	55.2%*	51.2%
2018/19 Q3	116,192	55.2%	-	-	55.4%*	51.3%
2018/19 Q4	100,926	52.6%	-	-	54.5%*	51.7%
2019/20 Q1	107,243	52.9%	-	-	54.2%*	50.6%
2019/20 Q2	111,867	56.4%	-	-	53.7%*	49.6%
2019/20 Q3	113,426	53.5%	-	-	54.4%*	50.0%
2019/20 Q4	113,253	56.1%	-	-	55.0%*	51.1%
2020/21 Q1	80,582	56.2%	-	-	58.2%*	53.9%
2020/21 Q2	-	*	-	-	55.3%*	50.7%
2020/21 Q3	97,903	55.9%	-	-	56.1%*	52.4%
2020/21 Q4	93,585	53.7%	-	-	56.9%*	52.4%
2021/22 Q1	102,444	56.8%	-	-	55.8%*	50.9%
2021/22 Q2	108,489	55.1%	-	-	54.9%*	50.5%

Source: Antibiotic prescribing data as Defined Daily Doses (DDDs) were provided to UKHSA by RxInfo © 2019 to support NHS England Quality Improvement schemes.

15.2. During 2021/22, the AMS started weekly focused AMS rounds at the Churchill hospital, in addition to the existing AMS rounds. By end of March 2022, antimicrobial prescribing of 424 patients had been reviewed with 255 interventions. A summary of the activities can be seen in table 52

Table 52 Churchill Hospital AMS rounds – summary of interventions

Intervention	August 2021 – March 2022
Number of ward rounds	26
Number of patients reviewed	424
Number of patients to have antibiotics stopped	57
Allergies confirmed/advice to clarify	3
Dose change/ advice	16
Request for microbiology	34
Back –up antibiotic plan	17
Referral for investigation	13
Addition of antibiotic	13
De-escalate antibiotics	21
Change / Escalate antibiotic treatment	18
Duration of antibiotic course stated	33
IV to oral switch	28
Line lock advice	1
Refer to AHA for OPAT	1
Total interventions	255

15.3. Overall this pilot has been a successful and this model is starting to be used in other areas across the Trust e.g. Horton.

16. Recommendation

16.1. The Trust Board is asked to receive this report and note the content.

17. Appendix 1: Hospital Infection Prevention & Control Committee Business Cycle 2021/22

			Q1			Q2			Q3			Q4	
	Apr 2021	May 2021	Jun 2021	Jul 2021	Aug 2021	Sept 2021	Oct 2021	Nov 2021	Dec 2021	Jan 2022	Feb 2022	Mar 2022	
													Lead
CSS Divisional Report										X		X	LP
MRC Divisional Report													LR
NOTSSCaN Divisional Report												X	FS
SUWON Divisional Report												X	SC
Antimicrobial Stewardship			X					X			X		LD/NJ
Contracts Team	X	X	X	X	X		X	X	X	X	X	X	WR/DA/LC
Estates & Facilities	X		X		X				X		X		JM/AM
IPC Clinical Governance Report/ IPC Patient Safety & Clinical Effectiveness Report	X	X	X	X	X			X	X	X	X	X	IPC
IPC Risk Register	X		X		X				X		X		IPC
OCCG Briefing Paper	X			X									HM
Occupational Health & Wellbeing	X							X					FW/CE
UKHSA Briefing Paper	X		X		X				X		X	X	CH/DR
SSI Cardiac		X		X					X	X		X	SH
Committee Reports													
Decontamination Committee	X			X					X		X		IPC
IV Steering Group			X					X				X	IPC
Reports / Policies													
IPC Annual Plan	X			X						X			IPC
IPC Annual Report					X								IPC
Central Line Associated Stream Infection (CLABSI) Surveillance Report 2020/21		X											IPC
IPC Policy for Adults & Children with Cystic Fibrosis			X										IPC

Meeting cancelled in September

18. Appendix 2 IPC Roles at end of 2021/22

- Infection Control Doctor (OUH) / DIPC
- Infection Control Doctor (Oxford Health NHS Foundation Trust)
- Infection Prevention and Control Manager (band 8C) 1.0 WTE
- Antimicrobial Stewardship Medical Lead
- Antimicrobial Stewardship Medical Lead Paediatrics
- Sepsis Medical Lead
- Infection Prevention and Control Senior Nurse (band 8A) 1.0 WTE
- Infection Prevention and Control Nursing staff (band 7) 5.0 WTE
- Infection Prevention and Control Nursing staff (band 6) 2.0 WTE
- Infection Prevention and Control Administrator 1.0 WTE
- Data Analyst 0.8 WTE
- Antimicrobial Stewardship team: Pharmacists 1.78 WTE (0.88 x band 8c and 0.5 x band 7)
- Sepsis Specialist Nurses (band 7 1.0 WTE, band 6 1.0 WTE)
- Continence Nurse (band 6 0.6 WTE)

19. Appendix 3 New IPC Structure

Team	Job Band and Role	WTE	Supporting Information		
Infection Control Team	B6 Qualified Nurse	4.00	Establish 8 IPC nursing teams consisting of 1.0WTE band 7 with band 6 support, to cover 9-10 inpatient wards, intensive care area, 6-7 operating theatres, 10 day care services and 1-2 off-site services (SUWON, NOTSSCaN and MRC). CSS will be covered by 1.0WTE band 7.		
	B7 Qualified Nurse	9.00			
	B7 Qualified Nurse - Decontamination	1.00			1.0 WTE to support the Infection Control Manager/Decontamination Lead
	B8c Nurse Manager	0.00			The IPC manager takes on the role of Deputy DIPC. The existing increased portfolio of Decontamination
	B9 Senior Manager	1.00			Lead/Chair of Water Safety Group is maintained
	Total	15.00			
Contenance Team	B6 Qualified Nurse	1.00	Contenance nurses provide advice/education to healthcare colleagues on management of incontinence (bowel and bladder) for routine and emergency admissions e.g. patients attending on an ambulatory basis or being admitted. They will advise on/deliver medications/products and treatments. They provide links to community services. Their role prevents prolonged length of stay, improving the speed of discharge from the hospital setting. Band 6 = specialist role and Band 7 = advanced role.		
	B7 Qualified Nurse	1.00			
	Total	2.00			
Sepsis Team	Consultant	0.15	Support increasing demand. Educates staff in sepsis awareness and detection i.e. changes in physiological observations that could indicate the onset of sepsis. Early recognition and appropriate management improve patient outcomes/reduce mortality.		
	B6 Qualified Nurse	3.00			
	B7 Qualified Nurse	1.00			Development post
	Total	4.15			
Antimicrobial Stewardship Team	B7 Pharmacist	2.00	Supplement existing pharmacist input to provide dedicated AMS pharmacist at each site.	Prospective stewardship interventions including peer to peer support of pharmacists and nurses to review antimicrobial prescriptions and challenge inappropriate prescribing, especially Ceftriaxone and ciprofloxacin as per 7 step IPC plan. Ward/clinic based presence will facilitate education of prescribers about AMS and appropriateness of prescriptions. The pharmacists and nurse will attend specific MDT ward rounds across the sites (e.g. haematology-oncology, transplant, endocarditis) and be able to join the infection consult team rounds. AMS team involvement in ward rounds is specified in recent national standards for infection teams.	
	B8a Nurse	1.00	This post will work cross-site to address gaps in AMS stewardship. This post would be qualified Advanced Nurse Practitioner (ANP)		
	B8a Pharmacist	1.00	Lead on antifungal stewardship activities across the Trust. There is a national focus on optimising the prescribing of high cost antimicrobials, which are frequently prescribed for extended periods. Optimising prescribing may contribute to reducing hospital stays. Annual expenditure on antifungals is c. £1m per annum. This reinstates the post introduced to support the AMS CQUIN in 2019/20.		
	Total	4.00			
	Grand Total	25.15			

20. Appendix 4 - Infection Prevention and Control Annual Plan Update 2021/2022

Topic	Metric of Assurance	Q1 Review	Q2 Review	Q3 Review	Q4 Review
<p>Surgical Site Infection</p> <p>(1) To encourage all surgical specialities to undertake surgical site surveillance and to report rates of SSI to HIPCC and through own Clinical Governance structure (2) To work with specialities that have higher rates than national benchmarks to reduce their rates (3) Agree KPI with the CCG for reduction from 14% SSI rate to 10% in C-sections ? (4) Continue to work with Johnson & Johnson in development of app, planned pilot of SEU (5) Submit business case to increase IPC nursing team to assist with SSI</p>	<p>(1 & 2) Rates presented to HIPCC and CG, and benchmark OUH SSI rates against national rates (3) SSI rates (4) Pilot of app and outcome results (5) Outcome of business case (6) Comparison of SSI rates from pre and post implementation (7) EVD infection rates declining (8) Reduction in SSI rates</p>	<p>Surgical Site Infection (1) (2) (3) (4) (5) Business case submitted (6) 28th June NICE issued Medical Technologies Guidance which recommends the use of antimicrobial coated sutures. IPC working with procurement team to introduce more widely across the Trust. (7) (8)</p>	<p>Surgical Site Infection (1) (2) (3) (4) (5) Business case submitted and has gone through several reiterations. (6) 28th June NICE issued Medical Technologies Guidance which recommends the use of antimicrobial coated sutures. IPC working with procurement team to introduce more widely across the Trust. Paper being prepared for TME. SSI week being planned for early Jan. SSIS APP approved by TAG for pilot of 10 pts (7) (8) No update</p>	<p>Surgical Site Infection (1) (2) (3) (4) (5) Business case submitted, approved by TME, awaited decision from Investment Committee (6) Paper still being prepared for TME proposing move to Plus suture. App not in use yet. Meeting requested with JnJ and Procurement to progress (7) (8) IPC nurse to dedicate more time to neuro in next quarter</p>	<p>(1) (2) (3) (4) Surgical Morbidity Tracker dashboard on ORBIT+ due for launch Q1 2022/23. Reduction of surgical morbidity (certain specific indices) agreed as a Quality Priority for 22/23 - Andrew Brent and Zahir Soonawalla as overall Leads. (5) Business case approved. Staff to be recruited Q1/Q2 2022 (6) QIP conducted in HPB with use of Plus sutures, demonstrates a further 20% reduction in SSI (7) audit undertaken but the main outcome was around the quality of samples coming to the lab but high rates of infection not seen (8) no update</p>

<p>(6) Review effect of antimicrobial coated sutures in orthopaedics, HPB and emergency surgery (7) Continue EVD SSI prevention (8) Review GIRFT data from 2021 and progress on SSI reduction in breast, hip and knee</p>					
<p>Lines, Tubes & Device Related Infection (1) Continue to monitor CLABSI rates across intensive care areas (2) Continue with QIP in haematology and oncology to establish process for monitoring CLABSI rates (3) Audit use of chlorhexidine wipes in ICU's (4) QIP for introduction of chlorhexidine impregnated line dressings</p>	<p>(1 & 2) Audit outcome data and CLABSI rates declining (3) Evidence of data collection (4) introduction of a product</p>	<p>Lines, Tubes & Device Related Infection (1) Annual report completed and due for HIPCC presentation July 2021 (2) On-going (3) (4) CVC data collection across Critical Care Areas and Renal underway, providing detail of possible savings/benefits from 3M/Shelford Group, to consider a product trial.</p>	<p>(1) presented as part of DIPC report to Trust Board Sept 2021. Q1 results show decline in CLABSI rates after increased rates associated with COVID-ICUs Q4 2020/21 (4) Meeting to discuss analysis of ICU CVC data, planned for early November, to consider next stages of a CHG Tegaderm product trial.</p>	<p>(4) Meeting held November-21 to present preliminary Health economics analysis of Critical Care, Renal data. Further clarification requested, on how we can measure any improvement and track outcomes</p>	<p>(1) Now embedded as routine practice with feedback to clinical units and reporting to HIPCC quarterly. Rates back to 2018 baseline apart from NBICU (2) ? (3) ? (4) First draft Standard business case awaited for the Shelford Group for the Tegaderm CHG, which can be tailored to OUHFT Trust costings and savings.</p>

<p>Gram Negative Bloodstream Infections (GNBSIs) mandate to reduce the number of healthcare associated GNBSI by 50%, by financial year 2023 to 2024 (1) Audit use of Hexicath across the Trust (2) Submit business case to increase IPC nursing team to enable support in CAUTI reduction</p>	<p>(1) Audit outcome data (2) Outcome of business case</p>	<p>Gram Negative Bloodstream Infections (GNBSIs) (1) (2) Business case submitted</p>	<p>NHSE/I now released objectives. E.coli & Klebsiella below cumulative limit, Pseudomonas slightly above.</p>	<p>(1) (2) Business case submitted as above. OUH below objectives for E.coli, Pseudomonas and on trajectory for klebsiella</p>	<p>(1) No audits conducted (2) Business case approved. Staff to be recruited Q1/Q2 2022</p>
<p>Information & Education (1) Improve internet information for visitors</p>	<p>(1) Create a more user friendly internet for external use</p>	<p>Information & Education (1)</p>	<p>Still needs to be progressed</p>	<p>Still needs to be progressed but meeting planned for Feb to revisit</p>	<p>Intranet site updated but will need further work</p>
<p>Screening- to ensure all areas that are required to undertake screening are compliant. (1) MRSA- ensure that MRSA screening tool is triggering correctly (2) CPE- to improve compliance to 80% (3) COVID-19 screening</p>	<p>(1) & (2) EPR compliance rates and point prevalence audit</p>	<p>Screening (1) (2) Changes made in EPR to add additional specimen types for CPE screening in line with new National Guidance .Trustwide point prevalence CPE screening audit in June-21,data analysis in progress.</p>	<p>(2) Changes are progressing in EPR to add additional specimen types/KIPI questions for CPE screening in line with new National Guidance. Trustwide point prevalence CPE screening audit June-21, overall compliance 59%, (5.8%</p>	<p>(2) Changes progressed in EPR to demo/sign off stage to add additional specimen types/KIPI questions for CPE screening. Updated CPE Guideline launch planned mid-February, to further improve compliance.</p>	<p>(1) not possible and therefore not progressed?? (2) EPR changes to support CPE screening now complete. Updated CPE guidance launched 04/05/022. (3) data?</p>

			reduction). Updated CPE Guideline launch planned late November or early December, to further improve compliance.		
<p>COVID-19 - learning from previous waves, adhere to UKHSA infection Prevention & Control guidance, preparedness for third wave. Review of documentation, debriefing sessions, operational management and environmental issues</p>	<p>(1) Nosocomial COVID rates in staff and patients (2) Up to date resources available (3) Work with Estates teams to review environment</p>	<p>(1) No probable or definite nosocomial cases in patients in Q1. Outbreak on CMU- C (indeterminate cases only in pts), staff affected, outbreak on AAU, staff only. (2) Resources remain under review (3) IPC continue to work with Estates team, new respiratory ward opened, all single rooms and with appropriate compliant ventilation, ward 5E&F opened, siderooms and bays, with mechanical ventilation</p>	<p>(1) IPC team continue to follow up all cases and any outbreaks. Staff participation in asymptomatic twice weekly testing decreasing. Symptomatic staff testing supporting staff and households (2) Guidance update as released (3) Ventilation Safety Group to review ventilation surveys undertaken last year.</p>	<p>No update to Q3. Increase in nosocomial cases in Dec likely due to high community prevalence and transmissibility of Omicron</p>	<p>FFP3 mask use upgraded to above level required in national IPC guidance for staff caring for COVID-19 positive patients and contacts. Higher levels of nosocomial transmission to patients observed with Omicron cf. previous variants. In bottom quartile cf. other acute NHS Trusts. (Correct??). Nosocomial SIRI meetings continued - very few lapses in care observed. Weekly COVID-19 forum meetings continued providing operational and clinical support, plus discussion of guidelines.</p>

<p>Implementation of the 7 Key Reminders to reducing HCAI during COVID-19 (1) increase seen in rates of C.diff and MRSA during COVID-19, 2021/22 quality priority to reduce rates (2)To gain an understanding of what rates of Ventilator Acquired Pneumonia (VAP) are within intensive care settings and establish task and finish group to audit and implement identified actions or interventions</p>	<p>(1) C.diff and MRSA rates return to pre-pandemic levels(2) Baseline data of VAP rates and interventions monitored to demonstrate improvement</p>	<p>(1) C.diff rates not yet returned to pre-pandemic levels. Ongoing RCA, Q1 Health Economy meeting cancelled by CCG. Zero MRSA for Q1 (2) VAP audit undertaken by AICU, results presented in Clinical Governance Committee and will be presented at the July HIPCC</p>	<p>(1) Q1 Health Economy meeting held August-21,high level summary spreadsheet of appropriate antibiotic prescribing under development. 2) VAP audit work due for presentation at ID/micro meetings - awaiting date from ICU team. New VAP audit tool drafted by AICU awaiting approval from other ICU's - New ET tubes with supraglottic device introduced in the unit in August 21. VAP audit going onto My Assure app</p>	<p>(1) Health Economy cancelled this quarter. The higher C.diff rate observed since the beginning of the pandemic in 2021/22 was most likely to be due to changes in antibiotic prescribing reflecting the increase in the number of non-elective patients, and prescribing required to support keeping patients out of hospital. In the most recent period between April to December 2021/22, the HOHA + COHA C.diff cases recorded are lower than the volume recorded in 2020/21 for the same period (83 vs 90/ 7.8% reduction), confirming that, after the initial increase due to the pandemic where special cause variation was observed in 2020/21 (see</p>	<p>(1) Achieved. MRSA 2021/22: 3 hospital onset cases and 1 community onset, healthcare associated case. 2020/21: 8 hospital onset cases, community onset, healthcare associated cases not ascertained. C.diff 2021/22: 107 HOHA and COHA cases cf 114 in 2020/21. Correcting for activity (by number of discharges) the number of discharges, the incidence of C.diff has gone down from 0.71/1000 discharges in 2020/21 to 0.54/1000 discharges in 2021/22 (P=0.04 (Fishers exact test); reduction of 24.1% (95% CI 0.00-42.2%).</p>
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				Appendix 2), cases have not increased. An analysis of COHA is planned to be undertaken with OCCG colleagues but has been on hold due to unplanned absence within OCCG. (2) VAP audit now on My Assure, will be reported through HIPCC dashboards by divisions New HIPCC dashboard on line in Jan 2022	
<p>Environment (1) Resume annual environmental audits (2) Work with Estates to review ventilation issues identified during COVID</p>	<p>(1) Completed audits (2) Ventilation issues addressed</p>	<p>(1) Annual audits not introduced in Q1 due to COVID pressures (2)Ventilation actions from COVID surveys- raised at Estates & Facilities meetings that remedial work still required. Head of Estates reports progress to HIPCC</p>	<p>(1) Focus on standard of cleaning at the Churchill this month, low audit scores, area visibly dirty. Working with the relevant stakeholders (2) Ventilation Safety Group cancelled last month therefore ventilation issues moved to next agenda</p>	<p>(1) Focus on standard of cleaning at the Churchill continues month, low audit scores, area visibly dirty. Working with the relevant stakeholders, execs aware (2) Ventilation Safety Group cancelled last month therefore ventilation issues moved to next agenda in March</p>	<p>(2) Estates compiling list of ventilation adaptations to present at Ventilation Safety Group. Estates have carried out a conditioning survey of AHU and will present to VSG</p>
<p>Team - (1) submission of business plan for expansion, succession</p>	<p>(1) Submission of business case and increase in</p>	<p>(1) Business case to be taken to TME on 14th August 2021 (2) Team</p>	<p>(1) Business case not taken to TME, delayed due to further</p>	<p>Business case approved at TME but now needs</p>	<p>(1) Business case approved and recruitment underway.</p>

and development, individual objectives within annual plan	establishment (2) Individual team objectives met	continue to progress actions	information needed (2) Catch ups arranged with team to review wellbeing, eLearning, appraisal and objectives	approval at Investment committee. (2) no change	

Actions on hold- (1)
gloves off campaign (2)
AMS targets nationally

21. Appendix 5 - Infection Prevention and Control Annual Plan 2022/2023

Topic	Metric of Assurance	Q1 Review	Q2 Review	Q3 Review	Q4 Review
Infection Prevention and Control Team					
Lines, Tubes & Device Related Infection (1) Continue to monitor CLABSI rates across intensive care areas and present through the IPC metrics dashboard (2) Continue with monitoring of CLABSI outside of ICU (3) Work towards establishing central line days with EPR team (4) Addition of CLABSI RCA to Ulysses	(1) Benchmark against ICCQIP and prior unit performance (2) Provide CLABSI rates as a proportion of all blood stream infections for paediatric and adult haematology and gastroenterology to establish a benchmark. (3) System in place for monitoring and reporting of CLABSI across the Trust (4) RCAs completed on Ulysses allowing themes to be identified for quality improvement strategies to be developed				
Gram Negative Bloodstream Infections (GNBSIs) mandate to reduce the number of healthcare associated GNBSI by 50%, by financial year 2024 to 2025. (1) to review current toolbox kit (2) Successful appointment of new band 7 continence nurse/CAUTI prevention and increase hours of existing band 6 nurse (3) Once team fully established develop CAUTI surveillance, prevention and interventions to reduce rates (4) Develop ICS-wide approach with regional colleagues	(1) Audit outcome data (2) Appointment of new nurse (3) System in place for monitoring and reporting of CAUTI across the Trust (4) Feedback from OJICC meeting/ ICS				
Information & Education (1) Improve internet information for visitors (2) Review how we present our IPC data in PSEC paper and	(1) Create a more user friendly internet for external use (2) Evidence of new data presentation (3) Intranet up to date				

consider new way of format for annual report (3)Review content on IPC intranet					
Screening - to ensure all areas that are required to undertake screening are compliant (1) Annual audit of MRSA and CPE screening	(1)Paper presented to HIPCC on results of screening audit				
Sustainability - (1) work with the sustainability team to help reduce carbon foot print of the Trust, eg through appropriate PPE, IV to oral antibiotic switch	(1) Evidence of sustainability project, AMS reports				
Establishment of 7 day working for IPC and AMS teams (1) recruitment into vacancies (2) Completion of consultation period for 7 day working	(1) Posts recruited to (2)Team working 7 days a week				
Ventilator Associated Pneumonia (1) For rates of Ventilator Acquired Pneumonia (VAP) within intensive care settings and adherence to prevention bundle to be reported via the IPC Metric dashboard to HIPCC (2) Once team fully established review hospital acquired pneumonia surveillance and interventions to reduce rates	(1) VAP rates to be reported by intensive care areas to HIPCC. VAP rates and interventions monitored to demonstrate improvement (2) Process developed to review HAP surveillance				
Surgical Site Infection (1) To work with surgical specialities to support them to undertake surgical site surveillance. Rates of SSI to be reported to HIPCC through the IPC Dashboard (2) To work with specialities that have higher rates than national benchmarks to	(1 & 2) Rates presented to HIPCC and benchmark OUH SSI rates against national rates (3) Pilot of app and outcome results (4) SSI Group activity reported to HIPCC				

<p>reduce their rates (3) Continue to work with Johnson & Johnson in development of SSI app (4) Re-establish the SSI Group</p>					
Sepsis					
<p>Improving identification and management of sepsis (1) To continue to ensure that 90% patients with a diagnosis of suspected sepsis receive antibiotics within one hour (2) To provide a 5 day week cross site sepsis cover (3) To work with specialities where the standards are <90% to improve their sepsis care (4) to continue to report sepsis performance on a monthly basis to the board and AMR governance (5) Introduce sepsis PGDs to ED/EAU for prompt antimicrobial administration (6) Developing the Sepsis Link Nurse role with a register of nurses, training updates and newsletter (7) Feedback to clinical areas where cases of septic shock and delayed antimicrobials identified</p>	<p>(1) Monthly audit of ORBIT sepsis data (2)Recruitment to the 2 vacant Sepsis posts. Team working at JR, CH and HGH sites (3) identification of areas for improvement using new Sepsis Agent dashboard and providing teaching and training. Focussing on specific clinical areas during quarterly Sepsis Working Group (4) Monthly audit of ORBIT sepsis data (5) PGD approval, development of e-learning, audit of PGD use (6) Register of cross site link nurses and introduction of newsletter (7) Monthly audit of ORBIT sepsis data and trust board reporting</p>				
<p>Developing the Infection Specialist Nurse role (1) To rebrand as "Sepsis and Infection Specialist Nurses", working alongside Infection Consult and AMS teams to provide advice on investigations and antibiotic choice beyond the first hour of sepsis management</p>	<p>(1) Timetabled participation on consult rounds and educational activities. Joining AMS rounds at the Churchill and introducing AMS rounds to JR site</p>				

<p>Screening (1) Continue to use the EPR sepsis agent to capture cases of suspected sepsis. Review with clinical informatics if 'reason for triggering' can be presented by the sepsis agent (2) Increased bedside review of patients with suspected sepsis and documentation of sepsis / not-sepsis</p>	<p>(1) Review Sepsis Agent with Clinical Informatics (2) Introduction of a Sepsis Review power note and weekly discussion of cases with Sepsis Lead</p>				
Antimicrobial Stewardship					
<p>PPS (KPI): annual point prevalence survey in Q1 (JR) and Q2 (Horton) and PPS for Q3 and Q4 as per clinical need: Data recorded includes indication, duration and review, allergy, appropriateness and adherence to guideline. Outputs are examined to see themes for further audit and feedback to teams</p>	<p>(1) Indication and duration recording both >95% 2. Appropriateness and adherence to guideline both >90%</p>				
<p>AMS ward rounds on all sites</p>	<p>(1) Continue to deliver Churchill AMS rounds and JR paediatric AMS rounds (2) establish (and gather data from) Horton AMS rounds by end Q2 (3) establish (and gather data) JR adult AMS rounds by end of Q4 (4) Recruitment to the approved business case posts</p>				
<p>Reduction of watch and reserve antibiotics (National Standard Contract)</p>	<p>(1) Monitor on a quarterly basis and use feedback to inform prescribing practice (2) By end of Q4 achieve a 4.5% reduction in use of Watch and Reserve antibiotics</p>				
<p>Guideline development and maintenance</p>	<p>(1) 100% review of all guidelines in MicroGuide within 3 years rolling basis</p>				

23. Appendix 7 Publications involving the IPC team

1. [Transmission of community- and hospital-acquired SARS-CoV-2 in hospital settings in the UK: A cohort study.](#)
Mo Y, Eyre DW, Lumley SF, Walker TM, Shaw RH, O'Donnell D, Butcher L, Jeffery K, Donnelly CA; Oxford COVID infection review team, Cooper BS.
PLoS Med. 2021 Oct 12;18(10):e1003816. doi: 10.1371/journal.pmed.1003816. eCollection 2021 Oct.
2. [Epidemiological data and genome sequencing reveals that nosocomial transmission of SARS-CoV-2 is underestimated and mostly mediated by a small number of highly infectious individuals.](#)
Lumley SF, Constantinides B, Sanderson N, Rodger G, Street TL, Swann J, Chau KK, O'Donnell D, Warren F, Hoosdally S; OUH Microbiology laboratory; OUH Infection Prevention and Control team, O'Donnell AM, Walker TM, Stoesser NE, Butcher L, Peto TE, Crook DW, Jeffery K, Matthews PC, Eyre DW.
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