

**REPORT TO PUBLIC TRUST BOARD
HELD ON 24 SEPTEMBER 2020**

Subject Title	Infection Prevention and Control Annual Report 2019-20
Executive Sponsor	Professor Nina Morgan, Chief Nursing Officer
Author	Kate Prevc, IPC, Sepsis and Decontamination Lead Nurse. Dr Chris Hastie, IPC Data Analyst
Attachment(s)	Infection Prevention and Control (IPC) Annual Report 2019-20
Recommendation(s)	Trust Board is asked to RECEIVE ASSURANCE from the IPC Annual Report 2019-20

EXECUTIVE SUMMARY

UHCW continues to perform well against Department of Health and Social Care (DHSC) targets. Compared to a basket of 35 large teaching NHS trusts, the combined unweighted rank of UHCW for outbreaks of MRSA, MSSA, *E. coli* and *C. diff* is third, reflecting the Trust's excellent performance in infection prevention and control. Trust Board is requested to receive, and note the Annual Report.

PREVIOUS DISCUSSIONS HELD

Annual Report to Public Trust Board.

KEY IMPLICATIONS

Financial	Breach of Cdiff ceiling target has financial implications if cases are deemed avoidable.
Patients Safety or Quality	Reducing infection rates improves the safety and quality of care to our patients and ensures a high quality of care
Human Resources	Excellent infection prevention and control practices are dependent on our entire workforce.
Operational	Increased infection rates are costly and increase length of stay. Increased requirement for isolation affects patient flow.

UNIVERSITY HOSPITALS COVENTRY & WARWICKSHIRE NHS TRUST

REPORT TO PUBLIC TRUST BOARD

Infection Prevention and Control Annual Report 2019-20

1. INTRODUCTION

- 1.1 The purpose of this report is to provide assurance to the Board that the Trust has a robust and effective infection prevention and control framework. The annual report monitors progress against the annual plan 2019-20.

2. CONTENT

2.1 COVID-19

- 2.2 In January 2020, government advice was issued to all acute trusts regarding an outbreak of SARS COV-2 in Wuhan, China.

- 2.3 The first positive cases in the United Kingdom were confirmed 31st January, with UHCW having its first positive case on 6th March.

- 2.4 IPC were involved in the planning and execution of guidance from the first communication in January, with the extent of changes across trust services being extraordinary, with rapid changes in what is done and the way it is done.

- 2.5 Huge challenges included FIT testing, a safety check for a type of mask worn by staff during aerosol-generating procedures, the provision and safe use of Personal Protective Equipment (PPE) and the safe care and management of patients tested positive for COVID-19.

- 2.6 To meet the demand and provide support, the IPC team moved from a Monday-Friday service with an on-call telephone facility at weekends, to a seven day service.

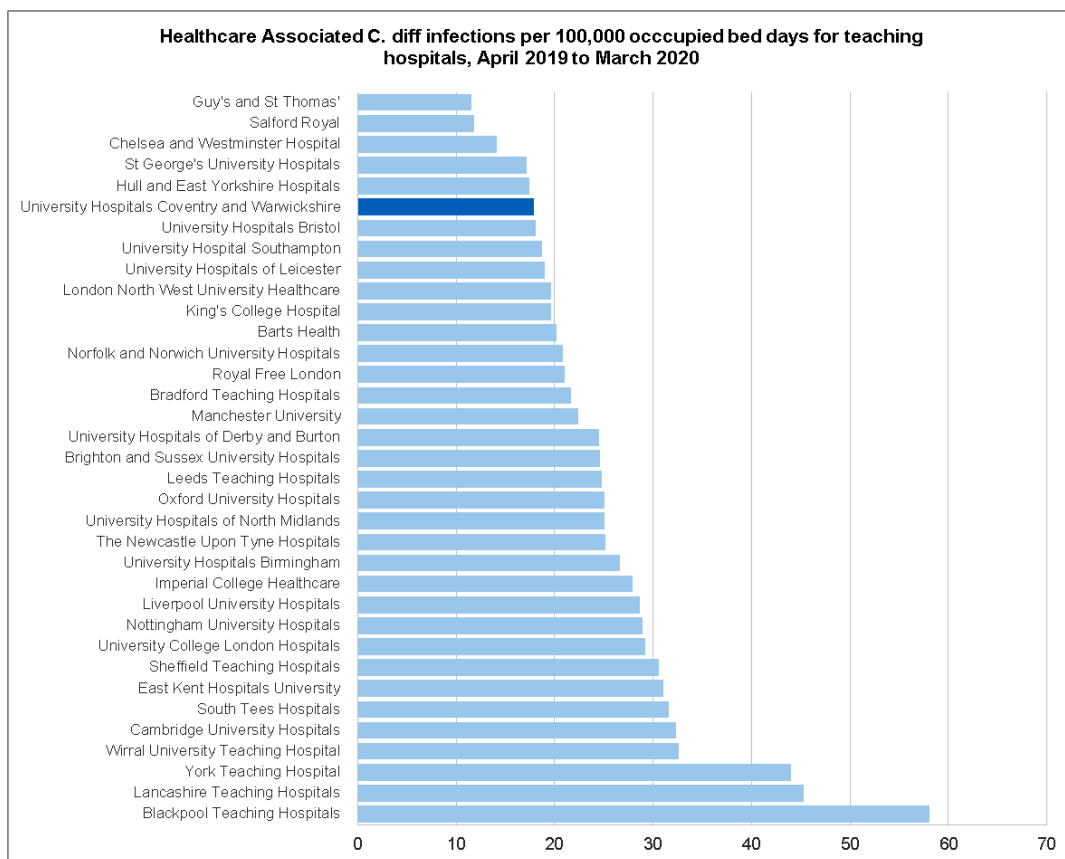
2.7 Clostridioides difficile (C. diff)

- 2.8 In April 2019 the way in which cases of *Chlostridioides difficile* infection (CDI) are counted changed significantly. The Trust is now held accountable not only for case of CDI occurring in inpatients, but also for those cases which commence in the community in patients who have been inpatients in the previous 28 days. These cases are known as Community Onset Healthcare Associated (COHA), whilst cases occurring in inpatients are known as Hospital Onset Healthcare Associated (HOHA)

- 2.9 UHCW reported 70 cases of Healthcare Associated (both HOHA and COHA) *C. diff* against a Public Health England (PHE) set aim of having 60 or fewer. The table below summarises the number of *C. diff* episodes using the four categories now used by PHE:

Healthcare associated cases				Community Onset Indeterminate Association (COIA)	Community Onset Community Associated (COCA)	Total
Hospital onset (HOHA)	Community Onset (COHA)	Total	PHE Threshold			
48	22	70	60	16	37	123

2.10 In terms of the rate of infection per 100,000 bed days the Trust's performance for *C. diff* infections remains good, ranking 6th out of 35 similar trusts see (Graph 1 below). However, this does represent a slight drop in performance compared to previous years — in 2018/19 UHCW ranked 4th.



Graph 1: Rate of *C. diff* infection per 100,000 bed days for 35 English teaching hospital trusts

2.11 The Trust saw a significant increase in the number of *C. diff* infections throughout much of the first half of 2019/20. Considerable work was done, in partnership with NHS Improvement and Public Health England, to try to understand the increase in rates of *C. diff*. No clear cause was identified, but the second half of the year saw the rate dropping again. The increase in the number of cases seen in the first half of the year was not confined to healthcare associated cases, but was also seen in community associated cases.

2.12 Each healthcare associated case is subject to a prompt Patient Safety Review, involving the IPC team, Patient Safety team and clinicians from the wards involved. This multi-disciplinary process facilitates shared learning and improved care. The outcomes of these reviews are later discussed and agreed with the CCG. The number of lapses of care identified through this process in 2019/20 was low, at just 8. This indicates that the management of *C. diff* at UHCW provides a high standard of care to our patients.

2.13 In addition to monitoring the rate of *C. diff* the IPC team conduct an ongoing audit of the management of each case of *C. diff* against Trust policy. The results of this audit inform our ongoing education package around *C. diff* management. The results are available at ward level in the Infection Prevention and Control scorecard and are discussed by the Matron group at monthly Infection Prevention and Control performance and quality meetings.

3. METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS (MRSA)

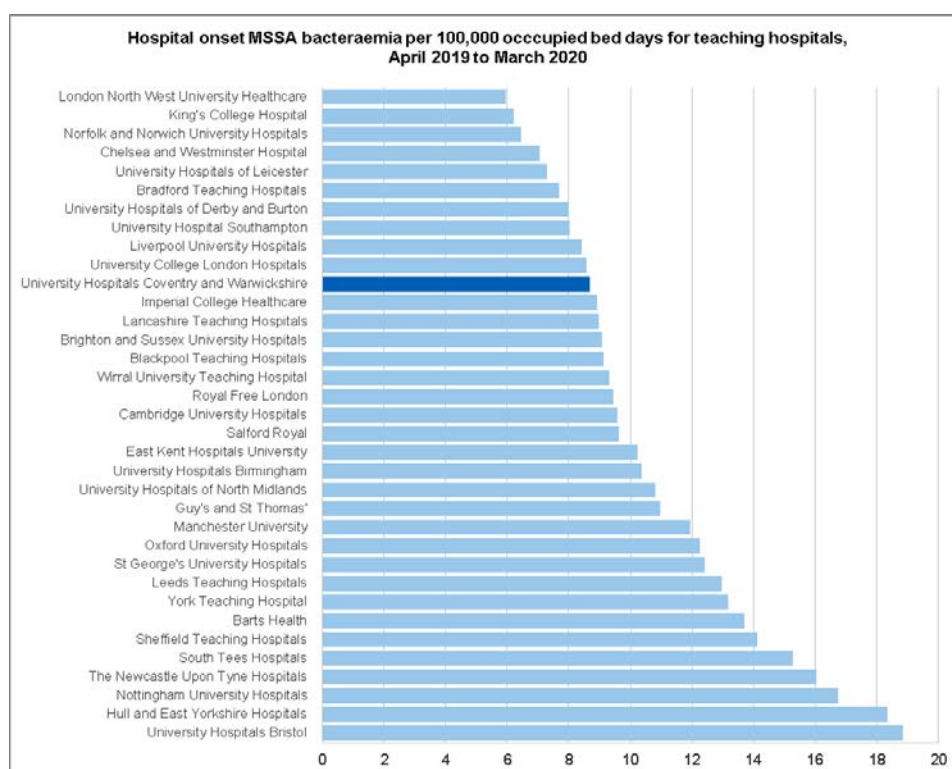
3.1 UHCW declared one case of hospital acquired MRSA bacteraemia for 2019-20. Across our comparator group of 35 similar trusts the average rate per 100,000 bed days was 0.80. The rate at UHCW was 0.26.

3.2 The single case seen at UHCW during 2019-20 is likely to have been acquired in the community, but has to be recorded as hospital onset because of a delay in testing.

3.3 The Trust's compliance with its targets for screening for MRSA colonisation in patients admitted to high risk areas increased considerably during 2019/2020. For emergency admissions in particular the overall trust figure fell below the target of 90% only in April (88.5%) and September (89.9%). In the previous year emergency admissions fell below target for eight of the twelve months.

4. METHICILLIN SENSITIVE STAPHYLOCOCCUS AUREUS (MSSA)

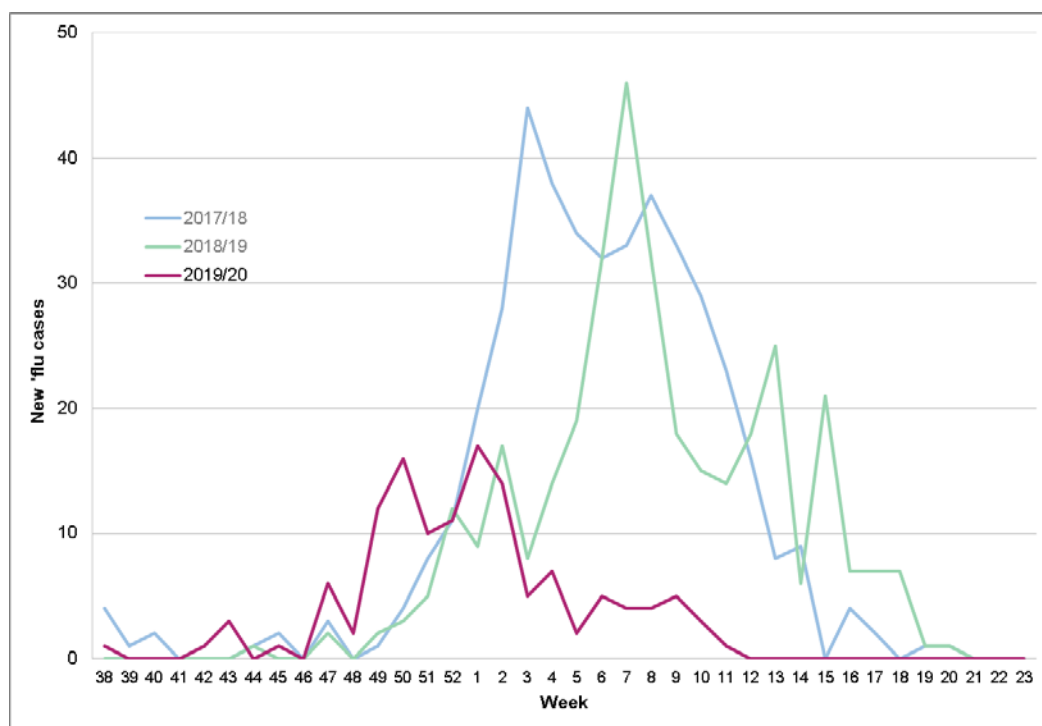
4.1 The Trust continues to perform well when compared to other Trusts. Across our comparator group of 35 similar trusts the average rate of trust-apportioned MSSA bacteraemia per 100 000 bed days is 10.8. The UHCW rate is 8.69, ranking 11th out of 35 (See Graph 2 below).



Graph 2: Rate of MSSA compared to 35 English teaching trusts

5. INFLUENZA AND NOROVIRUS

- 5.1 The 2019-20 influenza season began unusually early, with a sharp rise in cases being seen in late November 2019. However, cases did not continue to rise, and the season was both short and quiet (See Graph 3 below). There was very little disruption to operational work due to influenza.
- 5.2 UHCW ran a highly successful influenza vaccination campaign last year successfully vaccinating 5837 frontline staff which equated to 84.5%.
- 5.3 The prevalence of norovirus was not high across the Trust during 2019/2020. A total of 4 wards were affected by confirmed cases, in all four instances it was managed by bay closure as opposed to the whole ward. The spread of infection was identified in one instance in medicine; this led to 2 bays being closed, with a total of 5 patients affected. Both bays were open after 11 days. Root cause analysis in 3 of the 4 closures indicated visitors had introduced the virus into the area.



Graph 3 Comparison of 'flu seasons

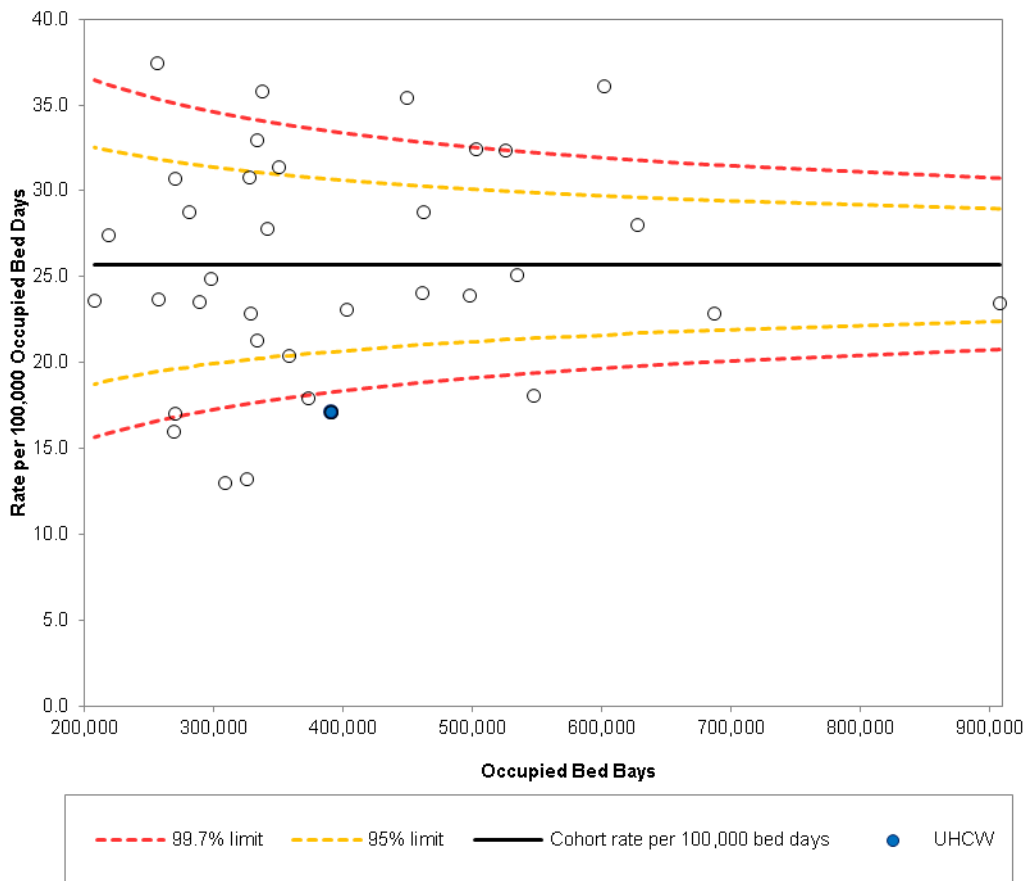
6. ESCHERICHIA COLI

- 6.1 During the 2019/20 financial year UHCW had 67 incidences of trust apportioned *E. coli* bacteraemia, equating to a rate of 17.2 per 100,000 bed days. The cohort rate across our comparator group of 35 trusts was 25.7, with UHCW ranking 5th out of 35. UHCW was a low outlier (See Graph 4).

6.2 This represents a significant improvement for UHCW over the last three years. The table below demonstrates that UHCW has succeeded in reducing its *E. coli* rate considerably faster than similar trusts in our comparator group.

Year	UHCW Cases	UHCW Rate	Cohort rate	UHCW Rank
2017/18	107	27.6	26.3	21
2018/19	76	19.5	24.9	7
2019/20	67	17.2	25.7	5

Hospital onset *E. coli* bacteraemia per 100,000 occupied bed days for teaching hospitals, funnel plot for April 2019 to March 2020



Graph 4 *E. coli* rate comparison with other trusts

6.3 There has been a large amount of work undertaken to understand the impact of this organism. Surveillance work for *E. coli* is challenging because a high proportion of cases originate in the community. Understanding and addressing issues related to *E. coli* thus requires close collaboration with community based healthcare providers.

- 6.4 UHCW are part of the national collaborative on Urinary Tract Infections (UTI) led by NHSI. We also continue to work with the regional group of CCG and acute teams from UHCW, George Eliot and South Warwick Hospital and the Partnership Trusts to work collaboratively to achieve the department of health ambition to reduce gram negative blood stream infections by 50% by the year 2021. The initial focus is on *E. coli* as this organism accounts for 55% of all gram negative blood stream infections. At the end of March 2020 UHCW had achieved a reduction of 63 %.
- 6.5 A urinary catheter audit, based on the DH Saving Lives criteria, is undertaken monthly. The results are shared via the infection prevention and control scorecard and discussed routinely with the Matron group. Following the collection of this data the continence lead directs education to areas that require further intervention.
- 6.6 The infection prevention and control team conduct an annual period prevalence audit of urinary catheters. This has been in place since 2010 and provides a range of valuable information about urinary catheter use within the Trust. The audit is usually carried out in February and March, but unfortunately it was necessary to postpone it in 2020 in order to focus resources on the response to COVID-19.

7. SEPSIS

- 7.1 The table above shows the percentage of red flag sepsis patients treated within 1 hour of first red flag observation (suspicion of sepsis), and within 1 hour of arrival in ED. It also includes the inpatient screening for red flag sepsis and the time treated within 1 hour of first red flag observation (suspicion of sepsis). For noting, the data collected is a randomised selected sample and a snap shot of data for that time period.

UHCW sepsis screening and treatment

Showing percentage of red flag sepsis patients treated within 1 hour of first red flag observation (suspicion of sepsis), and within 1 hour of arrival in ED

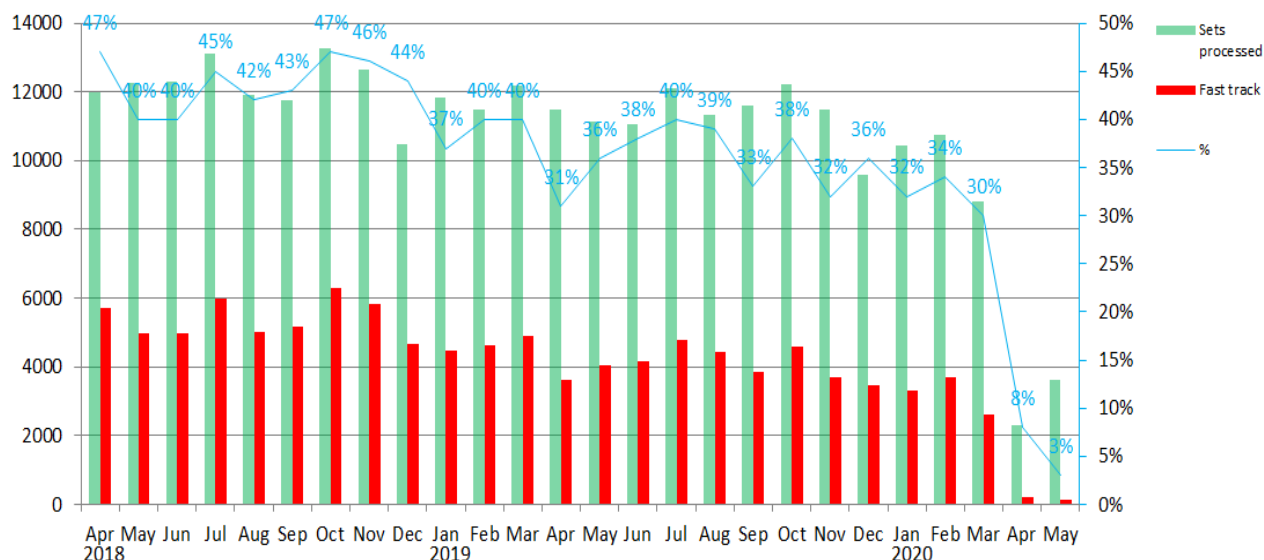
Month	All ED			All Inpatients	
	Screened	Treated within 1 hour of SOS	Treated within 1 hour of arrival	Screened	Treated within 1 hour of SOS
2019/20 Q1	93.6%	83.2%	63.0%	82.7%	73.1%
2019/20 Q2	94.9%	84.3%	64.7%	73.5%	68.1%
2019/20 Q3	95.9%	83.7%	57.5%	73.5%	71.8%
2019/20 Q4	96.5%	80.5%	60.2%	80.7%	77.8%
2020/21 Q1	82.4%	63.6%	40.9%	68.1%	76.2%

- 7.2 The screening compliance for ED has shown a decrease in Q4 in comparison to previous quarters. The data for antibiotics administration within the hour is showing similar trends. Staff redeployment, shielding and Covid-19 was a significant factor during this time period.
- 7.3 Looking at the inpatient data there are similarities for screening and antibiotic administration compliance suggesting a potential negative consequence of the extraordinary pressure the Trust has been under.
- 7.4 The Sepsis Team has delivered sepsis awareness and sepsis cascade teaching sessions to staff within the Trust throughout the year. The sepsis team continues to support the UK Sepsis Trust to facilitate a sepsis support group for sepsis survivors and bereaved family members who have been affected by sepsis.

8. **DECONTAMINATION**

- 8.1 Personnel changes within Decontamination at UHCW this year included the appointment of Neil Harper as SSD Production & Development Manager and Jim Tinsdeall as Authorised Engineer (Decontamination). Trust Decontamination Lead, Simon Lambert, has also been appointed as Authorised User for the Trust.
- 8.2 Audere Medical Services are now our preferred engineering service provider for validation testing and maintenance in CSSD while iM-Med continue to support Endoscopy.
- 8.3 Following our successful completion of ISO 13485:2016 accreditation audits in December 2019, LRQA withdrew from their role as notified body for the Medical Devices Directive (soon to be the Medical Devices Regulation) leaving UHCW CSSD with a large potential risk as all other LRQA clients began looking for a new notified body at the same time.
- 8.4 Under the Leadership of the Trust Decontamination Lead, Simon Lambert, UHCW CSSD has been accepted for new certification to both ISO 13485:2016 and MDR with SGS UK Ltd in June 2020.
- 8.5 Challenges in Decontamination centre around machinery life span. Both the Endoscopy washers and the CSSD washer-disinfectors are at the end of their useful life span and plans have already been submitted for replacements, with the age of the endoscopy washers in particular being highlighted in the recent CQC report.
- 8.6 While volumes into CSSD in general have shown a slight decline over the last 12 months, Fast Tracking requests through CSSD continue to fall from their 2017 peak of 62%, thanks to ongoing close collaboration with theatre staff and Instrument Co-ordinators (the majority of Fast Track requests now come from Rugby and Orthopaedics).

8.7 The reduction in Fast Tracking allows better planning of workloads in CSSD and less disruption to turnaround of all trays.



8.8 Since mid-March, CSSD staff have been supporting other areas of the Trust as volumes through the facility drop in line with elective surgery.

8.9 Several staff shortages in Medical Equipment Library have been back-filled and storage floor space in CSSD provided to allow Medical Equipment Library staff to work more safely and efficiently.

8.10 Working closely with the newly-formed COVID-19 PPE team, CSSD staff helped to set up and run a completely new receipt and distribution process for the huge volumes of PPE arriving in the Trust. As a result of their hard work and determination, and the robust processes put in place, UHCW has never been short of the PPE it has needed at the point of care. Hundreds of roll cages and many millions of pieces of PPE have been sent out to keep clinical colleagues safe.

8.11 To complement existing FFP3 masks, CSSD staff introduced a brand new Powered Air Purifying Respirator process to:

- source and manage the issue & return of PAPR units to clinicians (using our T-DOC track & trace software)
- perform functional checks, carry out maintenance, decontaminate PAPR units and recharge for the next user
- train clinicians on safe use of the equipment (currently 130 clinicians trained)

8.12 PAPR units are now used when performing Aerosol Generating Procedures by a wide variety of clinicians at UHCW and Rugby St Cross who are unable to pass fit testing with standard FFP3 masks.

8.13 Decontamination staff have also worked closely with the COVID-19 PPE team and ISS to support a new initiative to supply fluid-resistant, reusable gowns to clinical colleagues, working with suppliers such as Aston Martin and Nikwax to create a supply chain and a new proofing & laundry process from scratch.

9. **IMPLICATIONS**

9.1 Infection Prevention and Control governance framework is mandated within the DH Health Act (2008 revised 2014) UHCW is compliant with these requirements.

10. **OPTIONS**

10.1 Report is for noting only.

11. **CONCLUSIONS**

11.1 When compared to a group of 35 similar large acute trusts, UHCW's performance in infection prevention and control is very good. The Trust's combined rank for infection rate for *C. diff*, MRSA, MSSA and *E. coli* in 2019/20 was 3rd out of 35, as shown in appendix 1.

11.2 The IPC Q3 & Q4 2020/21 Work Plan will be presented to Quality & Safety Committee for discussion in October 2020.

11.3 The Infection Prevention and Control Team seek to be leaders in national and international healthcare and to provide safe care and an excellent experience to our patients in line with Trust values.

12. **RECOMMENDATIONS**

12.1 For the Board to note.

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Dr Chris Hastie, Data Analyst Infection Prevention and Control

Date report written: June 2020

Appendix 1

NHS Trust	Trust Code	MRSA Rate per 100,000 Bed Days	MSSA Rate per 100,000 Bed Days	C. diff Rate per 100,000 Bed Days	E. coli Rate per 100,000 Bed Days	MRSA Ranked	MSSA Ranked	C. diff Ranked	E. coli Ranked	Summed Rank
Norfolk and Norwich University Hospitals	RM1	0.00	6.44	20.87	13.20	1	3	13	2	19
Chelsea and Westminster Hospital	RQM	0.37	7.06	14.13	15.99	9	4	3	3	19
University Hospitals Coventry and Warwickshire	RKB	0.26	8.69	17.90	17.13	4	11	6	5	26
King's College Hospital	RJZ	0.00	6.23	19.68	23.90	1	2	11	17	31
Salford Royal	RM3	0.37	9.63	11.86	17.04	8	19	2	4	33
London North West University Healthcare	R1K	0.50	5.96	19.63	23.11	13	1	10	12	36
University Hospital Southampton	RHM	0.54	8.03	18.74	17.94	15	8	8	6	37
University Hospitals of Leicester	RWE	0.91	7.30	18.99	18.07	23	5	9	7	44
University Hospitals of Derby and Burton	RTG	0.43	8.01	24.47	24.04	12	7	17	18	54
Bradford Teaching Hospitals	RAE	0.96	7.70	21.65	23.58	25	6	15	15	61
Imperial College Healthcare	RYJ	0.84	8.93	27.91	20.38	20	12	24	8	64
Brighton and Sussex University Hospitals	RXH	1.94	9.07	24.61	12.95	34	14	18	1	67
Lancashire Teaching Hospitals	RXN	0.35	8.99	45.28	23.50	6	13	34	14	67
Royal Free London	RAL	1.22	9.45	21.03	22.86	29	17	14	11	71
Liverpool University Hospitals	REM	0.75	8.42	28.63	25.08	19	9	25	20	73
St George's University Hospitals	RJ7	1.01	12.43	17.13	24.85	26	26	4	19	75
Wirral University Teaching Hospital	RBL	0.39	9.32	32.61	23.68	11	16	32	16	75
East Kent Hospitals University	RVV	0.29	10.25	31.04	27.81	5	20	29	22	76
Manchester University	R0A	1.16	11.93	22.41	22.84	28	24	16	10	78
University Hospitals of North Midlands	RJE	0.65	10.82	25.11	28.79	18	22	21	25	86
Guy's and St Thomas'	RJ1	2.44	10.98	11.59	30.80	35	23	1	27	86
University Hospitals Birmingham	RRK	1.43	10.36	26.67	23.48	30	21	23	13	87
York Teaching Hospital	RCB	0.60	13.18	44.04	21.27	17	28	33	9	87
The Newcastle Upon Tyne Hospitals	RTD	0.22	16.03	25.16	35.40	3	32	22	32	89
South Tees Hospitals	RTR	0.36	15.28	31.62	28.78	7	31	30	24	92
Hull and East Yorkshire Hospitals	RWA	0.89	18.35	17.46	35.81	21	34	5	33	93
Leeds Teaching Hospitals	RR8	0.50	12.96	24.76	36.06	14	27	19	34	94
Barts Health	R1H	1.43	13.70	20.24	28.04	31	29	12	23	95
Blackpool Teaching Hospitals	RXL	0.91	9.14	58.03	27.42	24	15	35	21	95
Nottingham University Hospitals	RX1	0.38	16.74	28.91	32.33	10	33	26	29	98
Oxford University Hospitals	RTH	1.14	12.26	25.09	31.36	27	25	20	28	100
University Hospitals Bristol	RA7	1.48	18.85	18.11	30.68	32	35	7	26	100
Cambridge University Hospitals	RGT	0.90	9.58	32.34	32.94	22	18	31	31	102
Sheffield Teaching Hospitals	RHQ	0.60	14.11	30.62	32.40	16	30	28	30	104
University College London Hospitals	RRV	1.56	8.58	29.24	37.43	33	10	27	35	105