

Board of Directors (in Public) Item 2.3

Subject: Director of Infection Prevention and Control (DIPC)
Quarterly Report - Q2

Date of Meeting: Tuesday 26th November 2019

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Presented by: Dr Raphael Perry – Medical Director

Reason for Report: To Note

BAF Ref	Impact on BAF
1.1,1.2	Potential for patient harm

1. Executive Summary

This paper provides information and an update on infection prevention and control issues for the 2nd quarter of this financial year 1st July– 30th September 2019. Previous reports have covered the period up to June 2019.

This paper provides assurances that surveillance systems and audit programmes are in place to monitor and prevent healthcare associated infections. A number of audits have been performed across the Trust which identified some issues which have been fed back to the relevant managers to address.

2. Background

High standards of infection prevention and control are essential to ensure that people who use health care services receive safe and effective care. The *Health and Social care Act 2008: Code of Practice on the prevention and control of infections* identifies that good organisational processes and a robust assurance framework are essential to ensure effective infection prevention.

In order to demonstrate that infection prevention is integrated into the assurance framework one recommendation is that the Board of Directors receives regular updates from the infection prevention and control team, including information on alert organisms, outbreaks, cleanliness standards and audit information. This report provides such an update.

3. Issues

3.1 Surveillance

3.1.1 Mandatory reporting of Bacteraemias and C Difficile infections

There is a requirement that bacteraemias (blood stream infections) caused by certain bacteria and also Clostridium difficile infections are monitored and reported to Public Health England on a monthly basis. These cases are also reported to the Clinical Commissioning Group monthly.

		July 19 – Sept 19 (Year to Date)	Target
1.	Trust attributable MRSA (Methicillin Resistant Staphylococcus aureus) bacteraemias	0 (0)	0
2.	Trust attributable MSSA (Methicillin Sensitive Staphylococcus aureus) bacteraemias	3 (9)	Internal target = 7
3.	Trust attributable E coli bacteraemias	3 (3)	Internal Target for the total of all these Gram negative bacteraemias = 9
4.	Trust attributable Klebsiella species bacteraemias	0 (3)	
5.	Trust attributable Pseudomonas aeruginosa bacteraemias	2 (2)	
6.	Trust attributable Clostridium Difficile infection	2 (5)	≤ 4

Patient Reviews for Bacteraemias

A report summarising the reviews of patients with MSSA bacteraemias is included in appendix 1.

Patient reviews have been performed for all the other reportable bacteraemias to try to identify the initial source of infection and assess if there are any learning points or areas for improvement. The sources of infection have been identified as urinary tract infections, chest infection and surgical site infection

The patient reviews with associated action plans have been submitted to the relevant divisions for discussion and for follow up of any actions noted.

Clostridium difficile

Two patients developed Clostridium difficile infection during this quarter, both had full patient reviews performed. There was no connection between the two patients.

Patient 1

The patient had symptoms and developed the infection prior to admission. This would not previously have been attributed to the Trust but under new guidelines

because the patient had had another admission to the Trust within the previous 4 weeks this is classified as a community onset healthcare associated infection and has been attributed to the Trust. Some inconsistencies in documentation were noted and fed back to the ward.

Patient 2

The patient had a prolonged hospital stay post cardiac surgery and received multiple courses of antibiotics. Learning points included inconsistent documentation, administration of anti-motility drugs and sampling not performed at the correct time. Feedback has been shared with Critical Care and they have produced an action plan to address the issues raised.

3.1.2 MRSA – all cases (Non- bloodstream)

Cases of MRSA in the Trust are closely monitored to identify any increased incidence or outbreaks. This includes all patients and all isolates, including colonised and infected patients.

38 patients were MRSA positive in this time period all of these were already known to be positive or MRSA was isolated from the admission screen i.e. there were no Trust acquired cases. All were colonised patients; positive samples were screening swabs or sputum samples.

3.1.3 Carbapenemase Producing Enterobacteriaceae (CPE)

4 new cases were identified only 1 of these was designated as Trust attributable (colonised only).

3.1.4 Vancomycin Resistant enterococcus (VRE)

Twenty one patients were identified as having VRE positive isolates in this time period. The majority of these positive samples were from rectal swabs. However 1 patient had a positive urine sample and another a positive blood culture..

Seven of the patients were designated as not Trust acquired i.e. screened positive on admission.

Nine patients had not had a screen for VRE prior to the positive sample therefore unknown whether this was Trust acquired

Five patients had had a negative screen (s) prior to the positive one therefore probably acquired VRE whilst an inpatient at this Trust.

The majority of the new isolates were from patients on the Critical Care Unit. However this is the only area that routinely tests for colonisation with VRE as part of a weekly screening regime. Therefore it is not always possible to identify where and when the patients acquired VRE.

3.4 Audits

3.4.1 Hand Hygiene

Clinical areas carry out weekly observational audits of hand hygiene in their area, with 1 audit in a peer review ward each month. Some areas have not submitted all the peer audits, but this has been raised with the relevant managers and the results have been forwarded to the Heads of Nursing so they can monitor that the audits are performed according to the schedule.

	July	August	September
Results of Compliance Audits	99%	100%	99%
No. of Observations	732	519	654

Although audits performed by the wards show good compliance audits separately performed by the infection prevention nurse showed that not all staff were compliant with the hand hygiene and “bare below the elbows” policy, this has been fed back to individual staff members, ward managers and the Infection Prevention Committee.

3.5 Cleanliness

3.5.1 Environmental Cleanliness

A standard monitoring tool is used by the Hygiene supervisors to assess environmental cleanliness. The target is an overall Trust score of 95%, with an individual score for clinical areas of 95% or above.

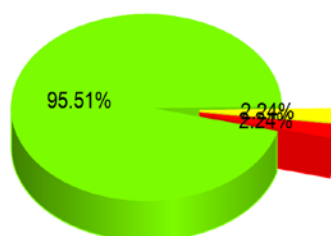
All clinical areas scored above the target score within this time period.

	July	August	September
Results of Compliance Audits	99%	99%	98%

3.5.2 Monitoring of Equipment cleanliness

The Clean Trace system helps to assess standards of hygiene and cleaning processes by using a swabbing system to monitor levels of contamination at the point of use. All wards are expected to complete an audit monthly to monitor cleanliness of equipment and patient items.

Pass Caution Fail



Measurements:401. Pass:383. Caution:9. Fail:9

All equipment that failed was cleaned at the time and results fed back to individual ward managers and Matrons.

4. Audits

Audits have been performed by the infection prevention nurses:

1) Critical Care screening compliance

An audit was performed to check for compliance with the screening policy on Critical Care. There has been an increase in compliance with screening for resistant organisms but a decrease in screening for MRSA. This is because of the way samples are being labelled and sent for processing. Results and information have been fed back to Critical Care

2) Hair Removal

An audit was performed to check hair removal was done correctly pre-operatively. Documentation has improved but issues remain that for some patients hair removal is being performed but assessed as inadequate by theatre staff. This has been discussed at the Infection Prevention Committee and will be addressed by the matrons and ward managers.

5. Sepsis

There has been an improvement in the management of sepsis with the principal KPIs either achieved or significantly improved. Usage of the screening tool and the sepsis bundle has more than doubled in the last year. The annual sepsis report was presented to the Quality Committee in July 2019.

The lead for sepsis Dr Al-Rawi continues to lead the sepsis group to ensure continuous improvement of the care of patients with sepsis at LHCH. The group comprises Dr Al-Rawi, Dr Nistal de Paz, (consultant microbiologist), the infection prevention nurses, the sepsis audit analyst, outreach nurses, EPR representation and ITU staff

The objectives have been clarified and simplified using MEWS scoring. MEWS ≥ 5 and suspicion of infection do not need screening and should be treated within one hour preferably using the sepsis bundle. Two consecutive MEWS ≥ 3 and suspicion of infection need the screening tool completing and if high risk treated within one hour. There is a national drive to use NEWS2 scoring rather than MEWS however the sepsis group and the infection prevention committee consider that this is not the best tool for our specific patient population. Discussions with commissioners have led to LHCH continuing to use MEWS with NEWS2 being monitored and applied to transfer patients.

There is a plan for optimisation of EPR workflow. This includes making the collection of blood culture timing to be a mandatory field; pop up reminders for the screening tool when trying to prescribe sepsis antibiotics off bundle; a tick box for MEWS greater than 5 to eliminate the need for the screening tool; automatically open the sepsis bundle on completion of high risk screening.

The drive now is to use the screening tool and ensure all KPIs can be measured via EPR. The mortality from sepsis remains low. The weekly and year to date screening data is presented in the executive harm report. High risk screens are identified and the KPIs presented for that subgroup. Data is fed back to the wards and areas and a clear line of responsibility established.

There is a continued education program. To deliver teaching sessions for junior doctors outreach and hospital coordinators. Trust wide reminders through screen savers and desktop backgrounds continue. There is a new sepsis eLearning package which is included in mandatory training for clinical staff.

6. Summary

The surveillance of infections and routine audit data continue to be monitored and work is on-going to ensure the annual programme is fulfilled and a robust audit programme is in place.

Deep dives are carried out in areas where the targets are failed and actions developed.

7. Recommendations

The Board is asked to note the contents of this report and request further updates on progress against the annual plan and outstanding action plans.

Appendix 1

Report on Methicillin Sensitive Staphylococcus aureus bacteraemias

Prepared by: Nicola Best/Infection Prevention Nurse Specialist

The internal Trust target for the reduction of Trust attributable Staphylococcus aureus bacteraemias (bloodstream infections) has been breached. This paper provides details on the patients who have been diagnosed with these types of infections during this year and explores some of the issues that have been identified.

Background

Patients can develop bacterial infections whilst in hospital and in certain circumstances these bacteria can enter a patient's bloodstream causing them to become severely unwell.

One type of bacteria that can be a common cause of healthcare associated infections and can cause bloodstream infections is Staphylococcus aureus. Different types of these bacteria can be distinguished by their susceptibility to common antibiotics and they are commonly subdivided for reporting purposes as; Methicillin sensitive Staphylococcus aureus (MSSA) or Methicillin resistant Staphylococcus aureus (MRSA). Both of these types of bacteraemia are reportable to the national mandatory surveillance system.

A target for the reduction of healthcare associated MRSA bacteraemias has been set for each Trust by NHS England (0 for this Trust). A national target for the reduction of MSSA bacteraemias has not been set but the Trust itself has set an annual internal target of 7 or fewer Trust attributable cases.

That target has now been exceeded, there have been 9 cases reported from April to September. Patient reviews have been undertaken to identify the causes and ascertain any lapses in care or learning points.

Patient Reviews

It is recognised that the review process is more robust and valuable if it is multi-disciplinary in nature and not solely the responsibility of the infection prevention team. Therefore a defined process for reporting and review of these bacteraemias has been developed and the reviews and outcomes are discussed at the relevant divisional meetings.

The table below provides a summary of the outcome of the reviews.

	Cause	Review outcome and Issues identified	Actions taken
Case 1	Surgical site infection following cardiac surgery	The patient did not receive correct pre-op decolonisation. Swabs were not requested correctly and therefore not processed.	Audits of swabs undertaken and results fed back to all areas. Education provided to all wards regarding decolonisation.
Case 2,7 & 8	Endocarditis	The patient had already developed endocarditis prior to admission to this Trust but had repeated bacteraemias over a 3 month inpatient stay. The patient was	

		on appropriate antibiotic therapy and microbiologists had advised on the treatment plan. There had been meetings within the surgical division regarding treatment and when to proceed with surgery. Therefore even though there was ongoing infection there is evidence of expert advice provided regarding management and treatment.	
Case 3.	Peripheral venous cannula(PVC) infection	The patient had a number of PVCs inserted during their stay. One of these became infected. The documentation related to the insertion, ongoing care and monitoring of PVCs was incomplete and confusing.	Review of PVC insertion and care documentation undertaken. Audits of care and insertion undertaken.
Case 4.	Pneumonia	The patient developed a chest infection following left lung resection surgery.	
Case 5.	Unable to identify cause	It is a possibility that the patient did not have a "true" bacteraemia but that the sample was contaminated when the culture was obtained.	
Case 6.	Pneumonia	The patient developed pneumonia after being sedated and ventilated following an emergency admission for PCI. It was noted that the sepsis screening tool was not used correctly.	Education provided to all areas on the sepsis screening tool and bundle. Ongoing monitoring of compliance and feedback.
Case 9	Unknown cause	Patient was a post-operative cardiac surgical patient who had had cellulitis of the leg prior to surgery (treated) and had leg ulcer. No infection at the surgical site. Central line had been removed 3 days before bacteraemia. Peripheral line in situ, monitored but no issues noted.	Documentation not always consistent

Summary

Reviews of patients with MSSA bacteraemias have been undertaken but do not indicate an overall theme or common causes related to the sources of the infections. In some cases the infection was present prior to admission to this Trust and one patient had a number of bacteraemias despite the efforts of clinicians to treat the underlying infection. In some cases however it was noted that lapses had occurred. Action plans were developed to address these and these have been discussed and monitored by the relevant divisions. Ongoing monitoring of bacteraemias and the review process for any new cases will continue.