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INFECTION PREVENTION AND CONTROL REPORT: JANUARY – APRIL 2020 (QUARTER (Q) 4 OF ANNUAL REPORT)

Presented by	Karen Dawber, Chief Nurse/Director Infection Prevention and Control	
Author	Claire Chadwick, Nurse Consultant/Assistant Director Infection Prevention and Control	
Lead Director	Karen Dawber, Chief Nurse/Director Infection Prevention and Control	
Purpose of the paper	This report summarises progress against the infection prevention and control work plan for 2019/20 and sets out the Trust's infection control activities and performance between November and January 2019/20. This is the Q4 report for 2019/20 and provides the fourth of 4 reports which comprises the annual report. To provide assurance on compliance with: • NHS Outcomes Framework– domain 5: Treating and caring for people in a safe environment and protecting them from avoidable harm. • Health & Social Care Act 2008: Code of Practice for the NHS on the prevention and control of healthcare associated infections and related guidance (commonly known as The Hygiene Code).	
Key control	This paper is a key control for the Board Assurance Framework	
Action required	For approval	
Previously discussed at/ informed by	Infection Prevention and Control Committee	
Previously approved at:	**Committee/Group**	**Date**
	Infection Prevention and Control Committee	
	Executive and Non-Executive Regulation Committee	29.07.20

Key Options, Issues and Risks

This is the quarterly infection prevention and control report which is required by the Board of Directors to demonstrate progress against the annual infection prevention programme and in achieving compliance with:

- The Health and Social Care Act (H&SCA) 2008: Code of Practice for the NHS on the prevention and control of healthcare associated infections and related guidance.
- Regulation 12(2) (h) and 21(b) of the Health and Social Care Act 2008 (Regulated Activities) Regulations 2014.

This is the Quarter (Q) 4 report for 2019/20 and provides the fourth of four reports which comprises the annual report.

Analysis

The report presents assurances for progress against the annual infection prevention work programme. The report also highlights and provides an escalation summary of key risks in systems and processes which impact on the prevention of healthcare associated infections.

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Recommendation
The report provides assurance to the Board of Directors by monitoring the activity of infection prevention and control annual work programme and is requested to confirm the actions arising from the recommendations identified are appropriate. The Board is asked to note the changes to the objectives for Clostridium difficile for 2019/20, the increase in reported cases and confirm that assurance is provided in relation to the controls in place. The Board is requested to consider the risks described in relation to the outbreak of *Enterobacter Cloacae* in the Neonate Unit and subsequent actions taken to prevent further cases. The Board is also requested to consider the gaps in compliance with the internal audit report and the actions to improve compliance going forward. The Board is requested to approve the COVID-19 preparedness programme as detailed in the main report.

Risk assessment						
Strategic Objective	**Appetite (G)**					
	Avoid	**Minimal**	**Cautious**	**Open**	**Seek**	**Mature**
To provide outstanding care for patients			g			
To deliver our financial plan and key performance targets			g			
To be in the top 20% of NHS employers					g	
To be a continually learning organisation				g		
To collaborate effectively with local and regional partners					g	
The level of risk against each objective should be indicated. Where more than one option is available the level of risk of each option against each element should be indicated by numbering each option and showing numbers in the boxes.	**Low**		**Moderate**	**High**	**Significant**	
	Risk (*)					
Explanation of variance from Board of Directors Agreed General risk appetite (G)						

Benchmarking implications (see section 4 for details)	**Yes**	**No**	**N/A**
Is there Model Hospital data relevant to the content of this paper?	☒	☐	☐
Is there any other national benchmarking data relevant to the content of this paper?	☒	☐	☐
Is the Trust an outlier (positive or negative) for any benchmarking data relevant to the content of this paper?	☒	☐	☐

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Risk Implications (see section 5 for details)	**Yes**	**No**
Corporate Risk register and/or Board Assurance Framework Amendments	☒	☐
Quality implications	☒	☐
Resource implications	☒	☐
Legal/regulatory implications	☐	☒
Diversity and Inclusion implications	☐	☒
Performance Implications	☒	☐

Regulation, Legislation and Compliance relevance
NHS Improvement: (please tick those that are relevant) ☐Risk Assessment Framework ☒Quality Governance Framework ☐Code of Governance ☒Annual Reporting Manual
Care Quality Commission Domain: Safe
Care Quality Commission Fundamental Standard: Safety (Regulation12(2)(h) and 21(b) of the Health and Social Care Act 2008(Regulated Activities) Regulations 2014
NHS Improvement Effective Use of Resources: Clinical Services
Other (please state): NICE [QS61] Infection prevention and control

Relevance to other Board of Director's Committee: (please select all that apply)					
Workforce	Quality	Finance & Performance	Partnerships	Major Projects	Other (please state)
☐	☒	☒	☐	☒	☐

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INFECTION PREVENTION AND CONTROL REPORT: JANUARY – APRIL 2019/20

1 PURPOSE/ AIM

1.1 The purpose of this report is to demonstrate progress against the annual infection prevention programme and in achieving compliance with national standards and performance indicators. The report provides assurance by monitoring the activity of infection prevention and control and identified key issues are noted. The Board is asked to note the report in relation to:

- Corporate objectives: strategic objective 1 - To provide outstanding care for our patients.
- NHS Outcomes Framework – domain 5: Treating and caring for people in a safe environment and protecting them from avoidable harm.
- Health & Social Care Act 2008: Code of Practice for the NHS on the prevention and control of healthcare associated infections and related guidance.
- NICE [QS61] Infection prevention and control.

2 BACKGROUND/CONTEXT

2.1 Section 21 of the Health and Social Care Act (H&SCA) 2008 contains statutory guidance about compliance with the registration requirement relating to infection prevention (regulation 12(2) (h) and 21(b) (Regulated Activities) Regulations 2014. It should also be noted that Regulation 15 is also relevant.

2.2 CQCs guidance about compliance with the above regulations includes a reference to the 'premises and equipment' regulation (regulation 15) as CQC considers this code to be relevant for the purposes of meeting that regulation.

2.3 The 'Code of Practice' on the prevention of infections under The Health and Social Care Act 2008 sets out the 10 criteria. Criterion 1 requires that systems to manage and monitor the prevention and control of infection and require the Director of Infection Prevention and Control (DIPC) to provide oversight and assurance on infection prevention (including cleanliness) directly to the Trust Board and produce an annual report. This report therefore provides assurance to meet the requirements set out above.

3 PROPOSAL

3.1 This report will confirm continued assurance systems for compliance against the statutory requirements which will support assurance with corporate strategic objective 1 - To provide outstanding care for our patients.

3.2 This is the Q4 report for 2019/20 and provides the fourth of 4 reports which comprises the annual report.

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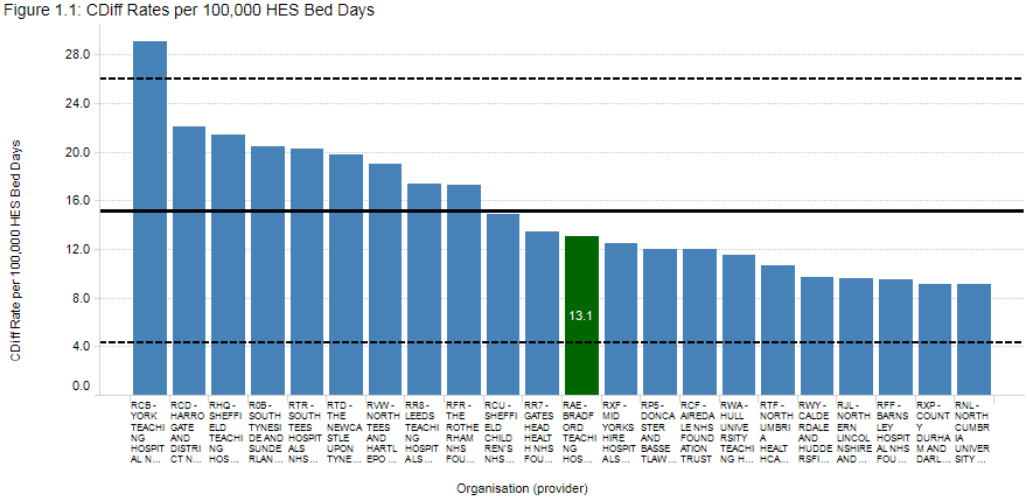
4 BENCHMARKING IMPLICATIONS

The latest information available on the Healthcare Evaluation DATA (HED) in relation to infection rates is included in the section below. It shows the Trusts position in relation to MRSA and MSSA bacteraemia, Clostridium difficile and E. coli, in relation to the national distribution for each of these infections as at April 2020. The data highlights for 2019/20 that BTHFT Is above peers' median infection rate for MRSA, however is equal to or below peers' median for CDI, MSSA and E.coli healthcare acquired infections. Model Hospital data was not included as the data is not up to date.

Standard Indicator Set: Clinical Quality	Trust Performance			Benchmarking		
Infection rate - C. diff (12 mth rolling) PHE C. Diff Infection Rates, HES Inpatients (Apr 2020)	12.68 (Mar 2019 - Feb 2020)	11.47 (Feb 2019 - Jan 2020)	1.21 ↑	17.77	14.26	
Infection rate - MRSA (12 mth rolling) PHE MRSA Infection Rates, HES Inpatients (Apr 2020)	0.79 (Mar 2019 - Feb 2020)	0.79 (Feb 2019 - Jan 2020)	No Change	0.58	0.71	
Infection rate - MSSA (12 mth rolling) PHE MSSA Infection Rates, HES Inpatients (Apr 2020)	5.95 (Mar 2019 - Feb 2020)	5.93 (Feb 2019 - Jan 2020)	0.01 ↑	9.21	9.03	
Infection rate - E. coli (12 mth rolling) PHE E. coli Infection Rates, HES Inpatients (Apr 2020)	116.53 (Mar 2019 - Feb 2020)	113.94 (Feb 2019 - Jan 2020)	2.59 ↑	118.95	118.11	

Figure 1.1: CDiff Rates per 100,000 HES Bed Days



5 RISK ASSESSMENT

5.1 The paper provides assurance for compliance with:

- Corporate objectives: strategic objective 1 - To provide outstanding care for our patients.
- NHS Outcomes Framework – domain 5: Treating and caring for people in a safe environment and protecting them from avoidable harm.
- Health & Social Care Act 2008: Code of Practice for the prevention and control of healthcare associated infections and related guidance.
- NICE [QS61] Infection prevention and control.

5.2 Gaps in compliance during January – April 2020 that have been identified are highlighted below and within the main report (Appendix 1).

5.3 There is a reported increase in Trust apportioned CDI cases since April 2019; this reflects the changes to the definitions for Trust apportioned case as detailed in the main report. Key themes from post infection reviews are outlined and controls are described to mitigate the increase in cases.

5.4 Risks associated with the ongoing Covid-19 pandemic and the impact of Bradford community as a high outlier both regionally and nationally is discussed in the main report.

5.5 Challenges associated with FFP3 mask/respirator fit testing have been highlighted and require continuing resource support to ensure staff have access to safe PPE. In addition to this the continued changes in FFP3/respirator sourcing and supply require ongoing and repeated fit testing for each new mask.

5.6 The risks associated with some of the Trust's historical ward design have been highlighted during the Covid-19 pandemic. The lack of hand was facilities, bed spacing and toilet/bathroom facilities have been escalated to Silver and Gold command as not supportive for the prevention of infection including Covid-19; a multidisciplinary working group is reviewing the Trust ward bed capacity and provide recommendations for improvements.

6 RECOMMENDATIONS

6.1 The report provides assurance to the Board of Directors by monitoring the activity of infection prevention and control annual work programme and is requested to confirm the actions arising from the recommendations identified are appropriate.

6.2 The Board is asked to note the changes to the objectives for Clostridium difficile for 2019/20, the increase in reported cases and confirm that assurance is provided in relation to the controls in place.

6.3 The Board is requested to consider the risks described in relation to Covid-19 with current mitigations provided and programme of current work outlined in the main report.

6.4 The Board is asked to note the summary report for ventilation and water safety and detailed improvement programmes to support compliance with national standards for healthcare ventilation and water safety.

6.5 The Board is requested to consider the completed board assurance framework and approve the mitigating actions as outlined.

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7	Appendices

Appendix 1: Infection Prevention and Control: Main Report

1. Introduction

1.1 The following report demonstrates progress against the annual infection prevention programme and in achieving compliance with national standards and performance indicators. The report provides assurance by monitoring the activity of infection prevention and control and identified key issues are noted. The Board is asked to note the report in relation to compliance with corporate objectives; the Health & Social Care Act 2008: Code of Practice for the NHS on the prevention and control of healthcare associated infections and related guidance (commonly known as The Hygiene Code).

2. Strategic Context

2.1 To provide assurance on compliance with:

- NHS Outcomes Framework – domain 5: Treating and caring for people in a safe environment and protecting them from avoidable harm.
- Health & Social Care Act 2008: Code of Practice for the NHS on the prevention and control of healthcare associated infections and related guidance (commonly known as The Hygiene Code).
- NICE guidance.

2.2 This report summarises progress against the work plan for 2019/20 and sets out the Trust's infection control activities and performance. This is the Q4 report for 2019/20 and provides the fourth of 4 reports which comprises the annual report.

2.3 The infection prevention programme of work continues to be delivered. The progress is monitored through the Infection Prevention and Control Committee (IPCC), which meets 6 times a year and has been chaired by the Assistant Director Infection Prevention & Control. Reports are submitted at each committee on progress against the annual plan and key performance objectives.

3. Objectives for reduction of HCAIs.

3.1 The objectives for reduction for *Clostridium difficile* infections (CDI) cases for 2019/20 have been reclassified and have been reduced from 2018/19 objective as 50 cases to 30 cases. The objective for MRSA bacteraemia remains as zero tolerance.

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3.2 MRSA bacteraemia:

The Trust has investigated 10 cases during 2019/20 and following post infection review (PIR) investigation, reported 2 attributed MRSA bacteraemia cases. Figure 1 statistical process (SPC) chart highlights the Trust allocated cases from April 2015 to present.

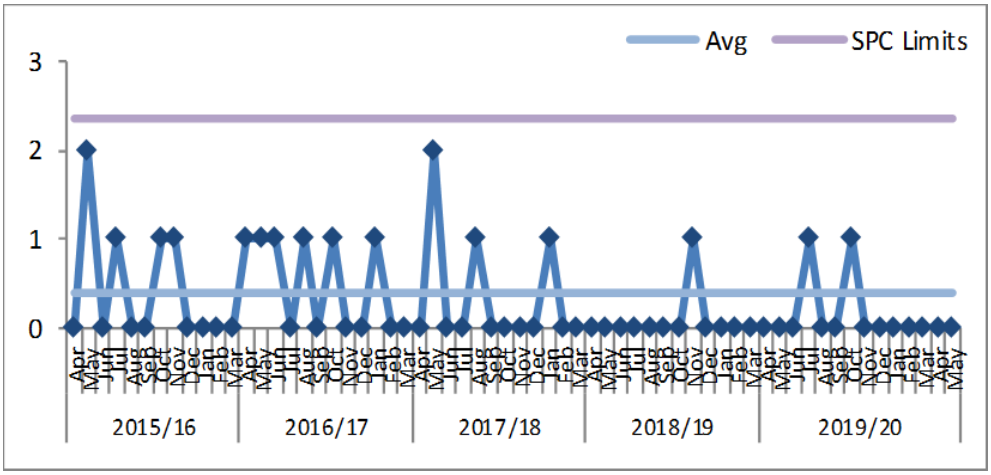

Figure 1

3.3 MSSA Bacteraemia

The Trust has reported 16 hospital attributed (>48hr) MSSA blood stream infections during 2019/20 compared to 21 cases reported in 2018/19. Figure 2 statistical process (SPC) chart showing Trust allocated cases from April 2015 to present.

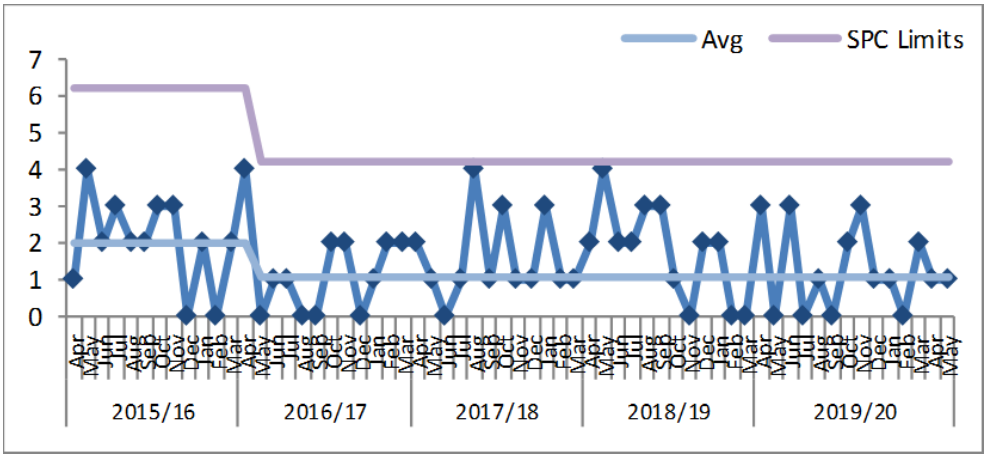

Figure 2

3.3.1 Enhanced Surveillance of MSSA bacteraemia cases

Enhanced surveillance is completed for MSSA >48hr cases and potential lapses of care are reported through the clinical incident reporting system. A review of the enhanced surveillance has highlighted a significant proportion are associated with skin and soft tissue infection from leg ulcers and IV drug users' related abscess.

3.3.2 **Actions to support reduction of MRSA and MSSA Bacteraemia:**

- As part of the 2019/20 infection prevention work plan, Aseptic Non-Touch Technique competency assessment programme for the care of invasive devices was developed and is in progress. This was stalled due to work committed to supporting Covid19. However this will be progressed as part of 2020/21 work programme.
- In addition, a task and finish group reviewed both the policy and current practice of central line insertion and after care to ensure this was aligned to current evidence and best practice.

3.4 *Clostridium difficile* infection

- There have been 45 cases of CDI attributed to the Trust for 2019/20 against an annual trajectory of 30. These cases have been assigned under the categories as listed below:
  - 26 cases of Hospital onset healthcare associated (HOHA).
  - 10 cases of Community onset health care associated (COHCA).

- The chart (figure 3) below is taken from the Yorkshire regional Public Health England surveillance data and identifies the number of Trust attributed CDI cases and the proportion of cases designated in each of the 2 categories (HOHA/COHA).

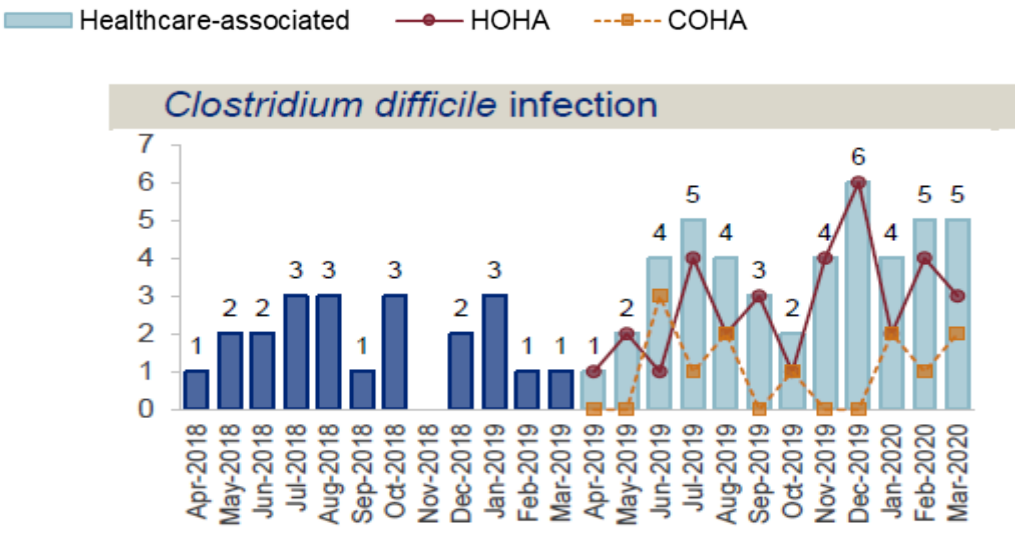

Figure 3

- The SPC chart (figure 4) below identifies the number of Trust attributed CDI cases. An increase in Trust attributed cases has been reported since April 2019; the rationale for this increase and key themes identified are described below.

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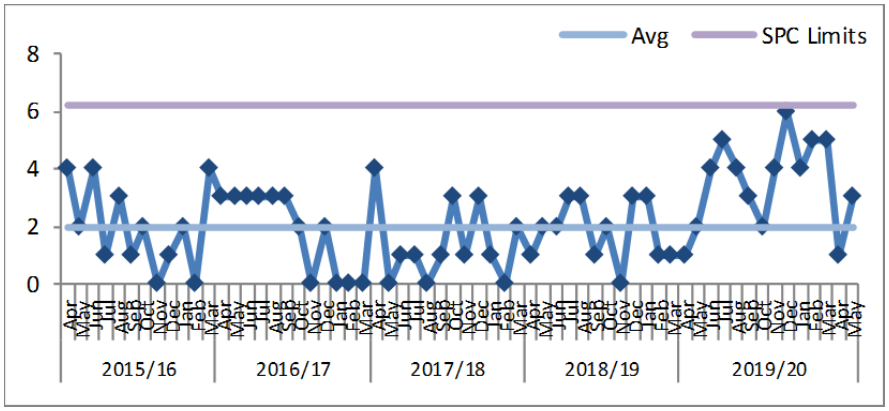

Figure 4

3.4.1 Post-infection Review (PIR) of C difficile cases

- The PIRs are presented at monthly Planned Care and Unplanned care IPC sub-group meetings and action plans to correct any lapses of care are approved and monitored for completion through these meetings, with final assurance provided by the Assistant Directors of Nursing reports to the Trust IPCC.
- The reported increase in CDI cases during November and December has received a detailed investigation and an exception report with comprehensive analysis was presented in January. No episodes of cross infection were identified.
- Contributory risk factors which may be causally related were a change in disinfectant wipe and an increase in antibiotic consumption, especially co-amoxiclav. This theoretically may have caused a distribution of CDI spores in the environment and triggered by antibiotic consumption, was acquired by the most vulnerable.
- Other risk factors identified were the use of PPI medication and NG feeding – both of which have an impact on gut microbiome which causes susceptibility to CDI proliferation in the bowel.

3.4.2 Actions to Support CDI Improvement

- An action plan has been developed and approved at the Infection Prevention and Control Committee (IPCC) in January; this is monitored through the Care Group IPCC and the Trust IPCC.
- A review of standards of environmental cleaning identified that clinical areas required an enhanced clean of affected wards, which was completed.
- Significant focussed support on compliance with hand hygiene and use of personal protective equipment (PPE) was implemented with audit and feedback systems.
- IPC Nurse Specialist's assurance visits concentrated on patients with CDI and compliance with completion of the Bristol Stool Chart on EPR and isolation precautions.
- The Consultant Microbiologist and Antibiotic Pharmacist provided antibiotic stewardship visits and supported the post infection review of CDI cases with the Medical team.
- The IP Team have requested that the Joint Venture Microbiology laboratory review the feasibility of introducing C.difficile toxigenic gene testing. This will aid faster recognition for patients who may develop CDI and therefore support timely treatment and isolation precautions.

- A CDI checklist has been developed to augment the information collated within the PIR (post infection review) and to provide assurance that the ward have the correct procedures and practices in place.

3.5 Gram-negative Blood Stream Infections (BSI)

- The Department of Health launched objectives to halve E.Coli blood stream infections by 2024.
- Figure 5 SPC chart highlights the Trust attributed E Coli BSI cases per month. The cases are investigated and a Datix entered. The cases investigated to date relate to neutropenic sepsis, biliary sepsis and urinary tract infection with associated contributory factors of urinary catheter, central lines/PICC lines and significant multiple complex co-morbidities.

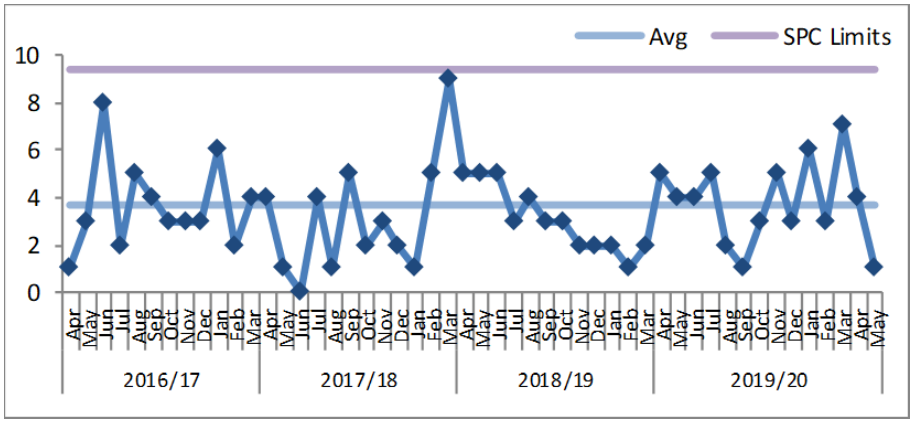

Figure 5

3.5.1 Gram Negative Quality Improvement Programme

- The E Coli improvement strategy supports the collaborative work programme for the Infection Prevention Teams at Bradford Council and Bradford Teaching Hospitals NHS Foundation Trust, who will support the CCGs to develop action, plans to reduce E. coli BSI.
- The IPC quality improvement programme, as part of the annual work plan, included promoting hydration to prevent urinary tract infections.
- As part of the deteriorating patient collaborative, a new quality improvement project is in development to improve the diagnosis of urinary tract infections (UTI) without the reliance on dipstick urinalysis, which is nationally not recommended for patients over the age of 65 years.

3.6 Carbapenemase-producing Enterobacteriaceae (CPE)

- Figure 6 highlights the number of newly reported CPE cases identified on or during admission to BTHFT since April 2014. The increase in cases during 2019/20 is a consequence of agreed actions following the outbreak in 2019 which instigated active screening for CPE on admission to ICU and admission for emergency acute gastrointestinal surgery, as these specialities were identified as at risk of CPE.

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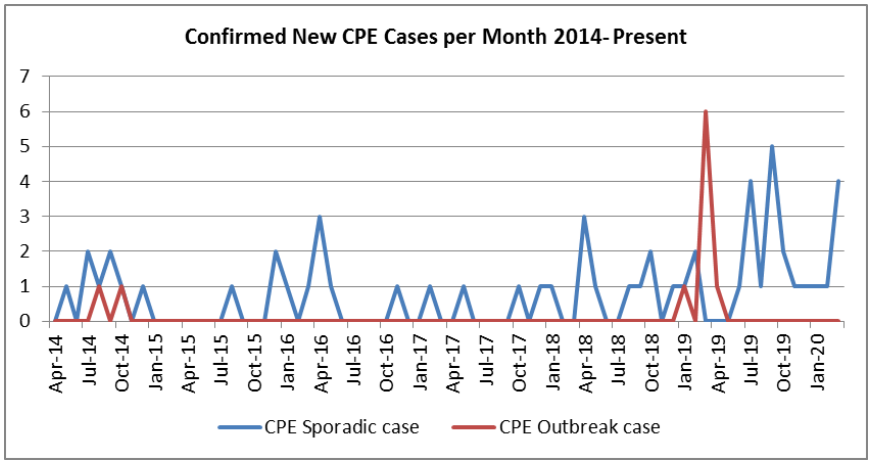

Figure 6

4. Outbreaks, Incidents and Bay/Ward closures

There have been no bay or ward restrictions due to diarrhoea and vomiting or any other healthcare acquired infection cohorting requirements since January (excluding Covid-19).

5. Internal Audit Hand hygiene report

- The Internal Audit Team completed an audit during November 2019. The audit objectives were to provide assurance that effective systems and processes are in place to ensure that staff practice hand hygiene and use personal protective equipment to the expected standard and ensure the safety of patients, staff and visitors.

- An overall opinion of significant assurance was provided. The Internal Audit Team visited four adult wards and the Neonatal Unit and reported that there was embedded knowledge in using personal protective equipment and practising hand hygiene to prevent cross-infection; wards were well-stocked in aprons and gloves and gel dispensers were maintained with gel. The final report noted that the Audit Team observed 40 moments for hand hygiene of which 36 were positive (90% compliance).

- The report noted that through other observation however, areas that required improvement were:
    - Hand hygiene on entering and leaving the wards by staff and visitors.
    - Use of personal protection equipment when delivering meals to isolation rooms.
    - Cleaning portable equipment between patients in isolation rooms.
    - Ensuring Agency staff were aware and understood infection control protocols.

- An action plan has been developed to address the recommendations in the audit and is being reviewed and monitored by the IPCC.

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6. Coronavirus (COVID19) Preparedness

6.1 Situation Update

- The government has issued clinical guidance for the detection and diagnosis of COVID-19 and infection prevention and control protocols. These protocols are continually being updated and changing as new evidence of the disease risks and impact to the general public and healthcare services is understood.
- Figure 7 below highlights the laboratory-confirmed COVID-19 tests completed and percentage positivity rate benchmark for Yorkshire and Humber by local authority.
- Bradford continue to report significantly higher numbers of tests performed and positive cases compared to other Cities in Yorkshire and Humber and has not seen the pattern of declining numbers that has been seen both regionally and nationally.
- This was discussed on a national call to Ruth May , Chief Nursing Officer for England on 26.06.20 together with Leicester which is also reporting high numbers of community Covid-19 cases.
- The conference call concluded that although Bradford continued to report high numbers of confirmed, however apart from previously reported outbreaks at a meat packing factory in Kirklees (affecting Bradford residents who work there) and 4 schools, no significant outbreaks either community or hospital have been identified.

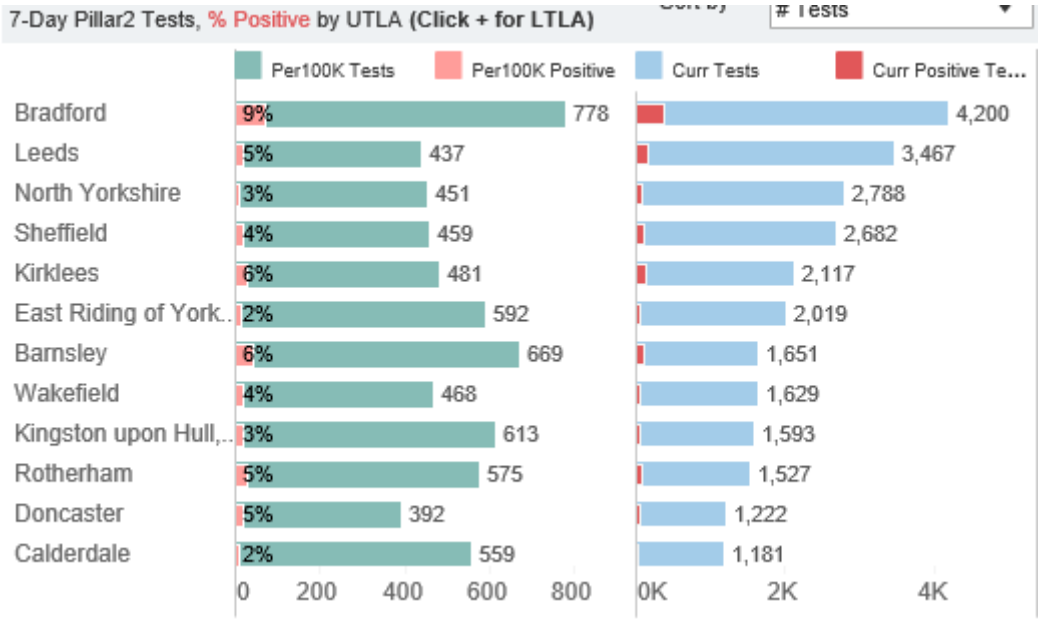

Figure 7

6.2 Continued Covid-19 Programme at BTHFT:

- Silver and Gold Clinical Reference Groups and Tactical meetings continue with development of standard operating procedures to reflect any changes to national guidance or operation plans in relation to cohorting wards, restart plans and changes to normal working

arrangements. These meetings have been supported by attendance from the IPC Team since the 31 January.

- The IPC Team have continued to support the Trust with training for all staff in infection prevention, PPE, Social distancing, cohorting, how to take screening swabs, how to donn and doff the PPE.
- Posters, leaflets and videos have been developed to support training.
- The IPC Team supported the Covid-19 cohort wards (red wards) with daily visits and subsequently training volunteers to support these wards as PPE Guardians.
- The IPC Nurse Consultant reviews all new stock of PPE to ensure they continue to meet National standards and in addition supports the national PPE procurement team as technical assessor for glove purchases and the regional PPE procurement team as technical advisor.
- The IPC Team have provided regular support for departments (e.g. AED, Radiology, Maternity, Children's ward, and theatres) to assure all clinical areas developed business continuity plans and separated Covid/non-Covid (i.e. red/green) safe patient flow. This has involved a walk through department, highlighting safe placement without impeding the department's ability to continue to function. This has been repeated regularly to ensure all staff understand the pathways.
- Cleaning and disinfection of wards and departments have been developed and implemented to ensure any areas changing status from "red" to "green" receive high level decontamination including hydrogen peroxide vapour fogging (HPV).
- Where individual cases of Covid-19 are reported in "green" wards, the bay has been restricted and the patients cohorted to ensure any transmission of the virus is limited. This has included flagging patient contacts on EPR for follow up for 14 days.

6.3 Post-infection Review (PIR) of Covid-19 cases Reported Post 14 days following Admission

- Any patient identified with Covid-19 after day 14 from admission, receives a post-infection review (PIR) which is discussed with Clinical teams and actions developed if gaps in compliance with protocols is identified. These are subsequently reported to the Infection Prevention and Control Committee.
- The PIRs undertaken to date highlight that the majority of cases had clinical symptoms associated with Covid-19 on admission in spite of a negative swab.
- These cases will continue to be reviewed and any key themes escalated to Silver and Gold clinical reference groups.

6.4 Key Risks Identified during Covid-19 Pandemic

- Fit testing has been provided as a drop-in clinic by the IPC Team 7 days a week with approximately 3000 staff completing fit testing since early February and over 80 staff completing training as a fit test assessor.
- Fit testing has been a challenge to ensure all staff who require to wear a respirator are fit tested including porters, domestic staff, junior doctors, student nurses, however with sufficient trained assessors and further fit test assessor training arranged the IPC Team have arranged to hand over fit testing responsibility to the Care Groups.

- Additional challenges have related to the regular change of FFP3 mask supplier which requires staff to be fit-tested again.
- Meetings have regularly taken place with Procurement department and a central stock of personal protective equipment (PPE) that meets the national guidance has been maintained as a PPE Hub.
- The use of cohorting wards (red wards) during the initial surge in cases ensured sufficient bed capacity, ensuring the PPE supplies were provided to the right areas, and ensuring that staff trained in PPE skills and use of non-invasive ventilation (NIV) could support each other.
- However, as cases declined the expansion of non-Covid ward areas (green wards) increased. This has led to individual patients being identified as Covid-19 positive that have been placed in a bay or open nightingale design ward and subsequently caused:
    - Transmission to other patients.
    - The need to restrict admissions to those areas.
    - Significant cohorting and contact tracing.
    - These bays and in some cases full nightingale ward has required a deep clean to ensure the elimination of environmental reservoirs of virus.

- The access to rapid PCR test to support timely and correct placement of patients has reduced the risk of bay restrictions, however the lack of side rooms to enable patients admitted to be isolated whilst awaiting swab results means that this risk will remain.

- A review of facilities and bed spacing during the pandemic has identified the traditional Nightingale ward design as significant risk for the potential transmission of communicable infections and healthcare associated infections. This is due to a lack of hand wash basins, bed spacing, lack of side rooms, limited shared toilet and bathroom facilities and difficult to deep clean due to open design of the ward rather than in sections or bays.

- A multidisciplinary working group has been established to review the Trust ward building stock and provide recommendations on feasibility of reconfiguration, redesign or the need for new facilities.

6.5 **Infection prevention and Control Covid-19 Board Assurance Framework**

- NHSE/I developed a board assurance framework to support all healthcare providers to effectively self-assess their compliance with Public Health England (PHE) and other COVID-19-related infection prevention and control guidance and to identify risks.
- The general principles can be applied across all settings and locally adapted; the framework can be used to assess measures taken, in line with the current guidance, and assure directors of infection prevention and control, medical directors and directors of nursing.
- It can be used to provide evidence and also as an improvement tool to optimise actions and interventions. The framework can be used to assure Trust Boards.
- In addition, NHSE/I produced an infection prevention and control COVID-19 management checklist. This has been adapted as an audit tool to support compliance with Covid-19 national guidance. Refer to Appendix 2 for completed Board assurance framework.
- The Board Assurance framework has been presented and will be monitored through the Infection Prevention and Control Committee (IPCC).

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7. Summary report Ventilation Steering Group

7.1 The Ventilation Steering Group is a sub-group if the IPCC and provides assurance on assurance and safety aspects of ventilation in healthcare premises which relates to infection prevention and control. Since February 27th 2020, the Trust has implemented a number of control methodologies and strategies to mitigate the effect of COVID-19. The purpose of the strategies is to:

- Protect the staff undertaking procedures on a confirmed COVID-19 patients.
- Protect areas / staff working in areas with confirmed COVID-19 patient(s).
- Minimise the spread of COVID-19.
- Maintain theatre and critical services without detriment to HTM guidance on airflows and pressures.

7.2 **Key Actions:**

- There have been several requests by clinical staff to convert ventilated theatres into negative pressure facilities. Estates have received detailed advice from the Trust's Authorised Engineer (Ventilation) (AE), who has forwarded guidance from Public Health England (PHE) and the Specialised Ventilation Healthcare Society (SVHSoc). Guidance currently states that theatre ventilation should not be altered in order to maintain its function which is to prevent surgical site infections and airborne transmissions.

- Various changes to ventilation systems have been adapted on wards/departments to assist with the management of COVID-19 patients. Estates Department's ongoing strategy; for all converted side rooms and treatment rooms, is to create a negative pressure environment from the corridor to the room. This is to provide protection to the surrounding areas and staff as well as containing/isolating any infection. Supply airflow will be maintained with the aim of achieving 10 air changes per hour (ACH), to maintain airflow dilution and reduce the risk of stagnated/contaminated air.

- For areas where compartmentalisation has been introduced with the use of green and red zones, control barriers have been introduced. Surrounding airflow distribution systems have also been utilised to provide adequate means of source and/or protective isolation.

- All ventilation amendments and deviations from normal operations have been made in consultation with the infection prevention and control committee (IPCC) and escalated to Silver Command.

- Ventilation verifications have now been authorised to proceed again as per issued schedule to clinical staff, however microbiological sampling has been suspended until potential risk of COVID-19 infection is excluded. Estates will recommence this work at that time.

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7.3 Management of Existing Ventilation Systems:

- Estates are currently undertaking an exercise to establish all outstanding remedial works associated with the Trust's current ventilation systems. Each outstanding remedial action is to be assessed with a risk assessment completed by the service/department affected. The risk assessments will outline the control measures which are in place as any planned or pending mitigation with timescales and responsible persons. This was agreed by the ventilation working group (VWG).

- Estates are currently developing a series of controlled ventilation drawings and schematics for all Trust specialist ventilation systems. This is to provide assurance and control around any verification/validation exercise that is to be undertaken, and to apply benchmarked figures to assess system compliance. Importantly, every Critical System will be included in the Trust Inventory and have both a Logbook and a certificate for display which confirms the date of verification and acceptance by the Ventilation Steering Group.

8. Summary Report Water Safety Steering Group (WSSG)

- WSSG meets on a quarterly basis with a Water Safety Working Group (WSWG) meeting monthly and the Water Safety Policy was ratified on 18 December 2019.
- The Water Safety Plan (Procedures Document) is in date, and is managed of any changes through the WSSG.

8.1 Management of Waterborne Pathogens:

- An externally appointed contractor undertakes the water sampling and laboratory testing of water outlets (Inc. showers) for the Trust.

8.1.1 Pseudomonas Management

- A routine testing programme for Pseudomonas takes place in the augmented care wards and departments within the Trust in line with the Health Technical Memorandum (HTM-04-01) document.
- 424 water outlets are sampled in the augmented clinical areas every six months. The average number of contaminated outlets has reduced to 49 outlets per month against an average of 56 outlets per month during the prior 12 month period.
- To reduce the number of contaminated outlets further more attention needs to be administered by the clinical areas for the correct use of WHBs and to ensure the standard of cleaning is to a high standard whilst ensuring **daily** flushing of water outlets is administered by the ward domestics.

8.1.2 Legionella Management

- The management of Legionella is in line with the HSE L8 document and the HTM-04-01 document.

- Temperature control is the primary control measure for legionella prevention within the water systems.
- Shower hoses are swapped on a quarterly basis throughout the Trust; water storage tanks are annually cleaned; as well as temperature monitoring of the tanks; and flushing of water outlets; are just a few of the measures undertaken to help reduce legionella on the Trust premises.
- Legionella contaminated outlets are generally low throughout the tested Trust premises; averaging 3.5 outlets per month over the 12 month period within the augmented areas. This compares with 3.9 contaminated during the prior 12 month period. The identified contaminations in every case are local to water outlet and not systemic.

8.1.3 Water System Contaminations: Maternity Block and ENT Block

- Within the Maternity block following the successful exercise to rationalise water outlets in M1, M2 and M3 which had eradicated the legionella in the water system at stagnant locations, further water rationalisation works are planned within Ward M4 where a number of unused Bidets are to be removed from service.
- Within the ENT Block, a similar exercise is underway to ensure unused water outlets and associated pipework are removed (also addressing any existing dead leg pipework in the system). Also a thorough water flushing regime has been put in place and is being monitored. Early results indicated the flushing activity introduced and the primary works to remove dead legs proved to be successful. Now that Ward 19 is in use the turnover of water is much greater which should assist to reduce or eliminate the few stubborn water outlets which remain to be contaminated. Investigations and water outlet rationalisation works continue to prevent the occurrences of legionella forming.

9. Report Recommendations

9.1 The report provides assurance to the Board of Directors by monitoring the activity of infection prevention and control annual work programme and is requested to confirm the actions arising from the recommendations identified are appropriate.

9.2 The Board is asked to note the changes to the objectives for Clostridium difficile for 2019/20, the increase in reported cases and confirm that assurance is provided in relation to the controls in place.

9.3 The Board is requested to consider the risks described in relation to Covid-19 with current mitigations provided and programme of current work outlined in the main report.

9.4 The Board is asked to note the summary report for ventilation and water safety and detailed improvement programmes to support compliance with national standards for healthcare ventilation and water safety.

9.5 The Board is requested to consider the completed board assurance framework and approve the mitigating actions as outlined.

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Appendix 2: Infection Prevention and Control board assurance framework: May 2020

1. Systems are in place to manage and monitor the prevention and control of infection. These systems use risk assessments and consider the susceptibility of service users and any risks posed by their environment and other service users

Key lines of enquiry	Evidence	Gaps in Assurance	Mitigating Actions
Systems and processes are in place to ensure: • infection risk is assessed at the front door and this is documented in patient notes • patients with possible or confirmed COVID-19 are not moved unless this is essential to their care or reduces the risk of transmission • compliance with the national guidance around discharge or transfer of COVID-19 positive patients • patients and staff are protected with PPE, as per the PHE national guidance • national IPC guidance is regularly	• Process in place and embedded. EPR flag system • Cohorting policy is updated on a regular basis to identify areas dependent on numbers • Our local SOP's reflect national guidance and are tracked through the command structures in place • Local PPE guidance has been updated in line with changes to national guidance, PPE is managed through a centralized hub with expert clinical advice available • Risk registers updated and	• Staff, in some areas, remain confused over the level of PPE to wear – this is primarily in relation to the new guidance to wear a surgical mask at all times unless in a non-clinical area which is approved as "Covid secure". • Although ad hoc observation audits are being undertaken, routine audits not being undertaken on Meridian.	• Continue to update communications in relation to PPE. • Informative videos developed with Communications team. • PPE hub in place to give advice in relation to PPE, this includes coordinated deliveries of the correct PPE to all clinical and non- clinical areas. • Audit schedule to recommence from the 1st July 2020. Infection control matron spot check to be recommenced

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checked for updates and any changes are effectively communicated to staff in a timely way • changes to guidance are brought to the attention of boards and any risks and mitigating actions are highlighted • risks are reflected in risk registers and the Board Assurance Framework where appropriate • robust IPC risk assessment processes and practices are in place for non COVID-19 infections and pathogens	monthly update to Board members via regulation committee or Board • Board Assurance Framework updated June 2020 • IPC risk for non COVID continues as per our policies and procedures in place		
2. Provide and maintain a clean and appropriate environment in managed premises that facilitates the prevention and control of infections			
Key lines of enquiry	**Evidence**	**Gaps in Assurance**	**Mitigating Actions**
Systems and processes are in place to ensure: • designated teams with appropriate training are assigned to care for and treat patients in COVID-19 isolation or cohort	• Staff training and / or information in place for all front line staff (including porters / domestics / temporary workers)	• Lack of resources to support deep cleaning on sites other than BRI, relating the availability	• Case of need for an additional machine has been escalated to Gold, approval received 19/5/2020.

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areas • Designated cleaning teams with appropriate training in required techniques and use of PPE, are assigned to COVID-19 isolation or cohort areas. • decontamination and terminal decontamination of isolation rooms or cohort areas is carried out in line with PHE and other national guidance • increased frequency of cleaning in areas that have higher environmental contamination rates as set out in the PHE and other national guidance • linen from possible and confirmed COVID-19 patients is managed in line with PHE and other national guidance and the appropriate precautions are taken • single use items are used where	• Dedicated cleaning teams in place with HPV / Chlorine and UV in place. PPE training and advice given • National guidance is followed and SOP's are in place for all staff	of the HPV machine. • Limited capacity to provide a programme of deep cleaning for all wards on a regular basis above and beyond the normal cleaning schedules. • Limited availability of routine disinfectant products (i.e. chlorox wipes)	• Ad hoc deep cleaning being provided. • Business case under development by the facilities team to deliver a regular programme of deep cleaning for all areas. • Review of schedules and frequencies of ward and department routine cleaning to ensure compliance with National Cleaning standards and recommendations for enhancement of clearing in high risk area will form part of Business case. • IPC team working in collaboration with Procurement to source suitable alternatives.

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possible and according to Single Use Policy • reusable equipment is appropriately decontaminated in line with local and PHE and other national policy	• Where an item is for single use only and is being reused (Visor / Goggles and respirators) this has been risk assessed and a process in place. • Reusable equipment is appropriately decontaminated and policies are in place		
3. Ensure appropriate antimicrobial use to optimise patient outcomes and to reduce the risk of adverse events and antimicrobial resistance			
Key lines of enquiry	**Evidence**	**Gaps in Assurance**	**Mitigating Actions**
Systems and process are in place to ensure: • arrangements around antimicrobial stewardship are maintained • mandatory reporting requirements are adhered to and boards continue to maintain oversight	• Anti- microbial pharmacist in place and continues to maintain some of the service. • Reporting continues to be signed off and reported to the national systems. Board dashboard in place.	• Consultant microbiologist not on site doing ward rounds	• EPR virtual review • Failsafes within EPR for discontinuation of high risk drugs • Virtual MDT reviews in place

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4. Provide suitable accurate information on infections to service users, their visitors and any person concerned with providing further support or nursing/ medical care in a timely fashion			
Key lines of enquiry	**Evidence**	**Gaps in Assurance**	**Mitigating Actions**
Systems and processes are in place to ensure: • implementation of national guidance on visiting patients in a care setting • areas in which suspected or confirmed COVID-19 patients are where possible being treated in areas clearly marked with appropriate signage and have restricted access • information and guidance on COVID-19 is available on all Trust websites with easy read versions • infection status is communicated to the receiving organisation or department when a possible or confirmed COVID-19 patient needs to be moved	• National guidance has been implemented and uploaded onto website, SOP in place • Signage in place • Information available on the website. Easy read versions have been commissioned from Bradford Talking Media • Electronic patient record with alerts clearly in place for all patients at BTHFT. Discharge and transfer documentation clearly states infection status.	• Although documented we have had a concern raised that we did not notify a care home of potential COVID status (on discharge from AED) • Easy read information not yet available on the external website. • Patient contacts for a confirmed Covid case not always provided with timely information that they have been a contact	• Written information being provided to care homes for all patients who are assessed in a 'non-green area' • Easy read documents under development with the support of Bradford Talking Media. • Written information available and communication via Silver tactical to remind ward clinical teams to notify patient that they have been a contact.

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5. Ensure prompt identification of people who have or are at risk of developing an infection so that they receive timely and appropriate treatment to reduce the risk of transmitting infection to other people			
Key lines of enquiry	**Evidence**	**Gaps in Assurance**	**Mitigating Actions**
Systems and processes are in place to ensure: • front door areas have appropriate triaging arrangements in place to cohort patients with possible or confirmed COVID-19 symptoms to minimise the risk of cross-infection • patients with suspected COVID-19 are tested promptly • patients that test negative but display or go on to develop symptoms of COVID-19 are segregated and promptly re-tested • patients that attend for routine appointments who display symptoms of COVID-19 are managed appropriately	• Policies and procedures are in place and embedded. Specific SOPs developed and updated as appropriate.	• We are understanding more about the disease process on a daily basis, this means we need to change and review frequently – sometimes ahead of national guidance	• Command structure in place (including clinical reference group) to evaluate all new findings and decisions.

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6. Systems to ensure that all care workers (including contractors and volunteers) are aware of and discharge their responsibilities in the process of preventing and controlling infection			
Key lines of enquiry	**Evidence**	**Gaps in Assurance**	**Mitigating Actions**
Systems and processes are in place to ensure: • all staff (clinical and non- clinical) have appropriate training, in line with latest PHE and other guidance, to ensure their personal safety and working environment is safe • all staff providing patient care are trained in the selection and use of PPE appropriate for the clinical situation and on how to safely don and doff it • a record of staff training is maintained • appropriate arrangements are in place that any reuse of PPE in line with the CAS alert is properly monitored and managed	• Training in place for all staff including updated SOP, videos, posters web and face to face. In preparation education sessions aimed purely at COVID and treatment including Donning / Doffing and IPCC • All staff trained but not embedded due to changing guidance • Staff training records are maintained for all staff on a centralized database • CAS alert reviewed and action plan developed	• Changing guidance • Inconsistent recording of training records, with variable use of ESR and ability to pull compliance reports.	• Posters in all clinical areas, ongoing teaching and spot checks. Education content updated as per new guidance. • Local records being kept. Need to revisit reporting arrangements. • Spot checks and Chief Nurse

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• any incidents relating to the re-use of PPE are monitored and appropriate action taken • adherence to PHE national guidance on the use of PPE is regularly audited • staff regularly undertake hand hygiene and observe standard infection control precautions • staff understand the requirements for uniform laundering where this is not provided for on site • All staff understands the symptoms of COVID-19 and takes appropriate action in line with PHE and other national guidance if they or a member of their household display any of the symptoms.	• Regular spot audits are being undertaken in relation to the wearing of PPE, any incidents reported in relation to PPE are reviewed by the infection control team. • Hand hygiene audits have continued and observations taking place • Staff have been advised on the correct temperature to wash uniforms, strict policy of no travelling to work in uniform enforced • Evidence that staff understand the requirements to report / ask for advice / self-isolate.	• Not always full compliance, separation and storage of clean and dirty visors.	Team/ IPN Team assurance visits in place to monitor compliance. • Review existing audit programme and data and undertake a gap analysis which will then inform the training priorities, future audit programme and infection control annual plan. • Alternative methods of providing training in development including training banners with assessment questions.

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7. Provide or secure adequate isolation facilities			
Key lines of enquiry	**Evidence**	**Gaps in Assurance**	**Mitigating Actions**
Systems and processes are in place to ensure: • patients with suspected or confirmed COVID-19 are isolated in appropriate facilities or designated areas where appropriate • areas used to cohort patients with suspected or confirmed COVID-19 are compliant with the environmental requirements set out in the current PHE national guidance • patients with resistant/alert organisms are managed according to local IPC guidance, including ensuring appropriate patient placement	• Policies and procedures in place to monitor guidance • Cohorting plans in place that are flexed to the different needs of patients and demands • Environmental checks plus additional checks in place • Existing policies in place and maintained – flagging system via EPR	• Not an exact science on how to cohort and this leads to differences in opinion – potentially impacting on practice • Environmental checks are showing areas of concern • Old estate, with paucity of side rooms (including side rooms with en-suite and/or appropriate ventilation), and adapted nightingale wards with limited hand wash facilities. • Evidence that timely review of Covid-19 swab results not in place by Clinical teams so that a patient is not moved to a red ward or side room	• Command and control structure in place with consensus gained and reviewed as any concerns arise. • MDT Review meetings for isolation and cohorting facilities in progress to establish where current estate can be adapted/or reconfigured to enhance isolation capacity. • Established operational processes for communication between estates, facilities, infection control and the Clinical Site team to move patients to the most appropriate area in a timely manner.

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		promptly.	
8. Secure adequate access to laboratory support as appropriate			
Key lines of enquiry	**Evidence**	**Gaps in Assurance**	**Mitigating Actions**
There are systems and processes in place to ensure: • testing is undertaken by competent and trained individuals • patient and staff COVID-19 testing is undertaken promptly and in line with PHE and other national guidance • screening for other potential infections takes place	• Managed in collaboration with Airedale and any new guidance is reviewed and implemented • Staff testing uptake has increased as availability improved. Clear database of staff and rational for testing	• No established regular routine reporting in place to check compliance with MRSA /CPE screening.	• Regular report to be established through EPR for MRSA/CPE screening.
9. Have and adhere to policies designed for the individual's care and provider organisations that will help to prevent and control infections			
Key lines of enquiry	**Evidence**	**Gaps in Assurance**	**Mitigating Actions**
Systems and processes are in place to ensure that: • staff are supported in adhering to all IPC policies, including those for other alert organisms	• As part of business as usual and ongoing checks, evidence is available that we are adhering to policies and addressing any		

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• any changes to the PHE national guidance on PPE are quickly identified and effectively communicated to staff • all clinical waste related to confirmed or suspected COVID-19 cases is handled, stored and managed in accordance with current national guidance • PPE stock is appropriately stored and accessible to staff who require it	changes • Effective process in place to manage communication of changes to national guidance via command and control structure. • PPE hub in place offering advice and supply of correct PPE	• Robust audit of waste disposal not in place during Covid 19 due to risk from contaminated waste	• Review with Waste Officer ward processes for waste disposal with spot-check visits to wards
10. Have a system in place to manage the occupational health needs and obligations of staff in relation to infection			
Key lines of enquiry	**Evidence**	**Gaps in Assurance**	**Mitigating Actions**
Appropriate systems and processes are in place to ensure: • staff in 'at-risk' groups are identified and managed appropriately including ensuring their physical and psychological wellbeing is supported	• Risk assessment process in place for vulnerable groups of staff including guidance for managers and risk assessment checklist and template. Documents are regularly updated in line with national guidance. OH support	• Changing guidance and advice re vulnerable groups. • Risk assessments locally held so assurance re completion	• Regular communications re risk assessments. • Risk assessment checklist developed for BAME staff which can be used for all colleagues.

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	available to staff/managers that have concerns about their vulnerabilities including signposting to psychological support. [local and national]	and follow up.	• Reporting functionality set up on ESR/OLM to record completion. • Spot check audits to be instigated. • Revisiting reporting arrangements.
• staff required to wear FFP reusable respirators undergo training that is compliant with PHE national guidance and a record of this training is maintained	• Record of training. Staff trained to use respirators by IPC or specially trained staff.	• Inconsistent recording of training. • Staff remaining confused re when to wear FFP respirators due to conflicting guidance from PHE/NHSE and Professional bodies on what procedures are included as aerosol generating procedures (AGP)	• Advice/comms taking place when issue comes up via risk assessments. • Discussion via Silver and Gold CRG to agree list of AGP and SOP amended as required.
• staff absence and well-being are monitored and staff who are self-isolating are supported and able to access testing.	• Staff absence is recorded via Health Roster/ESR; standard operating procedures are in place for all symptomatic staff/symptomatic household contacts to access staff testing. HR/Occupational health helpline in place.	• Timely reporting and recording of absence in all cases.	• HR Helpdesk contact staff on days 1-3 of absence to check testing status and to book test for them if this has not happened.

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• Staff that test positive have adequate information and support to aid their recovery and return to work.	• In house staff testing results are returned via occupational health, individual staff and managers are provided with appropriate isolation, re-swabbing and return to work advice based on national guidance and local policies/SOPs.	• Staff who book tests in a different name means delays in getting results back to staff. • Staff who book outside the agreed process or via the government system get results directly and occupational health are not flagged to chase results. • Testing via Marley site reliant upon staff advising occupational health, again potential delays.	• Development of an on line booking system for staff testing. • Increase in in house testing capacity will negate the need for staff to use other services. • Occupational Health Service available over seven days. • Staff test and Trace in place with Occupational health and follow up by IPC Team if any clusters of staff identified. Investigation of potential outbreaks in place and notification processes compliant with NHSE/I requirements.