

NLG(21)204

<b>DATE OF MEETING</b>	Tuesday 5 October 2021
<b>REPORT FOR</b>	Trust Board of Directors – Public
<b>REPORT FROM</b>	Maurice Madeo – Deputy DIPC, Ellie Monkhouse, Chief Nurse/DIPC
<b>CONTACT OFFICER</b>	As above
<b>SUBJECT</b>	Annual Infection Prevention & Control DIPC report
<b>BACKGROUND DOCUMENT (if any)</b>	
<b>OTHER GROUPS WHO HAVE CONSIDERED PAPER (where applicable) AND OUTCOME</b>	Quality & Safety Committee
<b>EXECUTIVE SUMMARY</b>	<ul style="list-style-type: none"> <li>• 28 cases of Hospital Onset Healthcare Associate C.difficile cases which is 23% reduction to last year.</li> <li>• Only x1 hospital onset case of MRSA bacteraemia in December. There was a 20 month gap between cases.</li> <li>• 19% reduction in E.coli bacteraemia cases.</li> <li>• Good performance with orthopaedic primary hip &amp; knee surgical site infections.</li> <li>• Managing the second wave of the pandemic a challenge due to infrastructure deficiencies and limited testing ability and novel virus.</li> <li>• Continuation of the Incident Control centre with excellent clinical engagement and innovative ways of working.</li> <li>• IPC Board assurance framework informally assessed by CQC and deemed satisfactory.</li> </ul>

<b>LINK TO STRATEGIC OBJECTIVES - which does this link to? (please tick ✓)</b>				
<b>1. To give great care</b>	<b>2. To be a good employer</b>	<b>3. To live within our means</b>	<b>4. To work more collaboratively</b>	<b>5. To provide good leadership</b>
✓				
<b>TRUST PRIORITIES - which Trust Priority does this link to? (please tick ✓)</b>				
<b>Pandemic Response</b>	✓	<b>Workforce and Leadership</b>		
<b>Quality and Safety</b>	✓	<b>Strategic Service Development and Improvement</b>		
<b>Estates, Equipment and Capital Investment</b>		<b>Digital</b>		
<b>Finance</b>		<b>The NHS Green Agenda</b>		
<b>Partnership &amp; System Working</b>				

<b>BOARD ASSURANCE FRAMEWORK</b> (explain which risks this relates to within the BAF or state not applicable (N/A))	Infrastructure issues				
<b>BOARD / COMMITTEE ACTION REQUIRED</b> (please tick ✓)	<b>Approval</b>	<b>Information</b>	<b>Discussion</b>	<b>Assurance</b>	<b>Review</b>
	<input checked="" type="checkbox"/>				

Northern Lincolnshire and Goole



NHS Foundation Trust

**INFECTION PREVENTION & CONTROL TEAM  
ANNUAL REPORT  
TO THE  
DIRECTOR OF INFECTION PREVENTION & CONTROL  
2020-21**

Written by M. Madeo Deputy DIPC / Assistant Chief Nurse on behalf  
of the DIPC Ellie Monkhouse Chief Nurse.



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## Executive Summary

This report is a record of activities relating to the prevention and control of healthcare associated infection (HCAI) in Northern Lincolnshire and Goole NHS Foundation Trust during the year April 2020 to March 2021.

The main focus this year has been to continue the work around nosocomial infections and antimicrobial stewardship. However with the unexpected emergence of SARS CoV-2 and variants, managing the pandemic has been the main focus of attention for the team and Trust for the last 12 months. The team continue to work closely with facilities colleagues to best direct cleaning resources and instigate appropriate cleaning regimes to help manage the pandemic. Work also continues with the capital team in the design of new builds to take into account the latest evidence around containment of SARS CoV-2. The management of COVID-19 has been a substantial challenge and pull on limited IPC team resources. With the establishment of the incident control centre this allowed the pandemic to be managed in a proactive robust manner with excellent engagement from clinical staff.

Overall there have been a number of achievements in the past twelve months, which include:

### Performance

- Only 1 lapse in care / practice associated with C.difficile infection from cases reviewed which is a reduction from the previous year. Due to the pandemic multidisciplinary reviews were suspended and undertaken by the IPC team.
- 28 cases of Hospital Onset Healthcare Associate C.difficile cases which is well within the allocated trajectory and 23% reduction to last year.
- Only x1 hospital onset case of MRSA bacteraemia in December. There was a 20 month gap between cases.
- Reduction in Gram negative blood stream infections which remains a challenge, however we have achieved a 19% reduction in E.coli bacteraemia cases.
- Good performance with orthopaedic primary hip & knee surgical site infections although cases reduced due to pandemic response.
- Use of medical devices such as PVC and urinary catheters remains broadly the same.
- Antimicrobial IV usage is difficult to compare due to the pandemic response.
- Below peers for number of Hospital onset COVID-19 cases.

### Governance

- The development of WebV COVID-19 icons to identify current swab status
- Implementation of SARS CoV-2 monitoring tool to help operational team and update service leads.
- Developed systems using Power BI to feedback ward / dept performance against KPIs.
- Undertook the Infection prevention and control board assurance framework assessment which showed overall good compliance
- Undertaken point prevalence surveillance across acute adult wards.

- Had a virtual CQC Infection Prevention and Control Assessment Engagement call to review the BAF which was deemed satisfactory.

#### **Training / Education**

- Due to the pandemic face-face training replaced by virtual and on the spot donning and doffing / fit testing preparation.
- CPD team and seconded staff into IPC assisted manage the FFP3 fit testing requirements with around 2500 fit tested.



**Areas for further improvement and support include:**

There remain a number of challenges for the Trust that needs to be considered going forward which have been magnified with the emergence of the coronavirus pandemic.

The lack of single rooms across the trust is partly been addressed at DPOW through the opening of A1 and reconfiguration of the C floor wards. However SGH continues to be a challenge due to the historic closure of the Coronation wards and loss of 11 single rooms. As previously mentioned the incidence of respiratory virus for various socioeconomic reasons appears to be much higher within Northern Lincolnshire, as such impacts on the SGH site. It was noted during the pandemic at times the prevalence in the community within NL was 3-4 times higher than North East Lincolnshire.

There is no High Dependency Unit at SGH which causes issues when there needs to be escalation of respiratory patients, especially if no capacity on ICU to manage patients. The HDU at DPOW is also not currently fit for purpose due to only having x1 single room, which has posed a challenge during the pandemic. This situation is compounded due to the oxygen limitations (output) across the wards making management of patients requiring high level of oxygen more of a challenge.

As part of the estates strategy, future builds will now take into consideration the IPC requirements including enhanced ventilation, oxygen demands and isolation capacity. This will help the Trust prepare for future COVID-19 waves and future infection challenges. Adequate mechanical ventilation is now seen as being essential to help mitigate the risk of airborne pathogens to help protect staff and patients and not solely rely on the use of PPE. This is critical within areas that are undertaking AGPs such as respiratory wards and critical care settings. Currently we do not have this functionality within the Trust.

The Trust purchased some redirooms which allowed us the opportunity to try and contain suspected and confirmed cases of COVID-19 within the admission zones to compensate for the lack of isolation capacity. These have been of great use especially during the second wave of the pandemic where we saw high daily cases of COVID-19 admissions.

There continues to be a lack of Consultant Medical Microbiologists onsite 5 days a week. During the pandemic one of the part time Consultant medical microbiologists was appointed the main COVID lead for the Trust and undertook this role on a full time basis remotely which was well received. Once this comes to an end post lockdown there will be a significant gap that will impact on the delivery of a proactive service with antimicrobial stewardship ward rounds and attendance of key meetings.

## Introduction

This report is a record of activities relating to prevention and control of healthcare associated infection (HCAI) in North Lincolnshire & Goole Hospitals NHS Foundation Trust during the year April 2020 to March 2021. Healthcare associated infection remains a top priority for the public, patients and staff and remains one of the Trust's strategic objectives. Avoidable infections are not only potentially devastating for patients and healthcare staff, but consume valuable healthcare resources and impact on antimicrobial resistance pressure. Investment in infection prevention and control remains both necessary and cost effective.

The purpose of this report is to inform patients, public, staff, the Trust Board of Directors, Council of Governors and Clinical Commissioning Groups (CCG) of the infection prevention and control work undertaken in 2020-21 and provides assurance that the Trust remains compliant with the Health and Social Care Act 2008: code of practice on the prevention and control of infections and related guidance (Department of Health, 2015). This report is structured using the criteria in the [Health and Social Care Act 2008 – Code of Practice for Health and Adult Social Care on the Prevention and Control of Infections and related guidance](#) which sets out the criteria against which a registered provider's compliance with requirements relating to cleanliness and infection control will be assessed by the Care Quality Commission (CQC).

Infection prevention and control is the responsibility of everyone in the healthcare community and is only truly successful when everyone works together. Success is the product of everyone getting everything right first time, every time. This annual report shows how we are performing, where we do well and where we would like to do better. Due to the COVID-19 pandemic much of the normal IPC activities had to be prioritised as such most of the annual report will be focused on the management of the pandemic and lessons learnt.

**1. Systems 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 that their environment and other users may pose to them.**

## Infection Prevention and Control Workforce arrangements

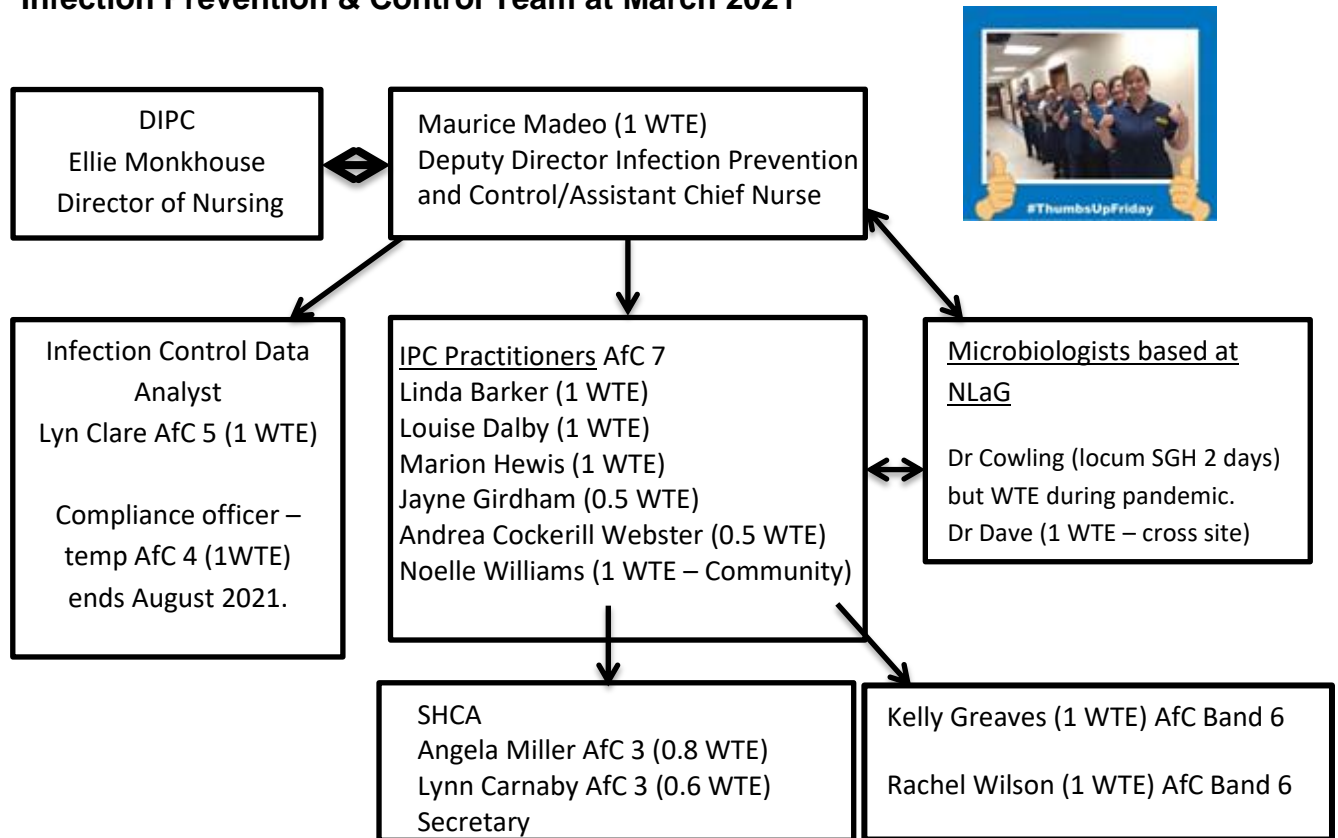
The Trust's arrangements for the prevention and control of infection are contained within the document, [Infection Prevention & Control Strategy: Overview of the Trust Approach and Arrangements for Infection Prevention & Control \[IC/SP3\]](#), which is held by the Directorate of Governance & Assurance/Trust Secretary. This document details the responsibilities of various parties within the organisation and their governance and management arrangements. While the Chief Executive has the final responsibility for all aspects of infection control, the functional responsibility lies with the Director of Infection Prevention and Control (DIPC) who is currently the Director of Nursing. The deputy DIPC for IPC oversees the day to day activities of the IPC team and delivery of the IPC Strategy 2020-22 incorporating the annual work plan.

The number of consultant microbiologists available within PathLinks continues to have challenges with recruitment. This has left the

Compliance criterion	What the registered provider will need to demonstrate
1	Systems to manage and monitor the prevention and control of infection. These systems use risk assessments and consider how susceptible service users are and any risks that their environment and other users may pose to them.
2	Provide and maintain a clean and appropriate environment in transport premises that facilitates the prevention and control of infections.
3	Ensure appropriate antibiotic use to optimise patient outcomes and to reduce the risk of adverse events and antimicrobial resistance.
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.
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.
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.
7	Provide or secure adequate isolation facilities.
8	Secure adequate access to laboratory support as appropriate.
9	Have and adhere to policies, designed for the individual's care and provider organisations that will help to prevent and control infections.
10	Providers have a system in place to manage the occupational health needs of staff in relation to infection.

availability of onsite consultant microbiologists severely stretched minimising the amount of ward rounds especially during the pandemic and attendance at relevant meetings. During the COVID-19 pandemic we were fortunate to acquire the services of a WTE Consultant Medical Microbiologist, to provide the Trust and IPC team remote additional support during this pandemic. This has been very much appreciated and valuable during the early phases of the pandemic where there was much anxiety within certain staff groups.

### Infection Prevention & Control Team at March 2021



The infection control service is provided 7 days a week with an on- call service available to cover the weekends and Bank holiday periods. All nurses who provide on call advice service have completed a programme of study and are experienced infection prevention and control specialists. There is also 24/7 consultant medical microbiologist cover through Path Links.

### Infection Prevention & Control Committee

The IPC committee oversees and directs all infection prevention and control activity in the Trust, is responsible for ensuring appropriate implementation of national guidance and that infection prevention and control policies are in place, regularly reviewed and compliance audited. During the pandemic there was a close working relationship with the Incident Control Centre, where the Deputy DIPC and Consultant Microbiologist were core members. The ICC met on a daily basis and was able to review and agree new national guidance and provide strategic direction in an efficient timely manner.

The annual infection prevention & control programme and IPC strategy are endorsed by the Infection Prevention & Control Committee and updates are received on a periodic basis. The committee membership includes representatives from Occupational Health (co-opted), Consultant Microbiologist, Senior Infection Prevention and Control nurses, senior divisional nurses or representatives, Consultant Pharmacist, Antimicrobials, CCG representatives, Estates / facilities, medical director or deputy and others co-opted as required. The attendance at IPCC has been variable as expected due to competing pressures and obviously the pandemic. The establishment of the Incident Control Centre during the COVID-19 incident helped to cascade key messages and the Deputy DIPC was a key member of this group.

## Surveillance of Healthcare Associated Infection

One of the main elements of Infection Prevention workstream is undertaking active surveillance. Surveillance is more than just the recording or reporting of infections. Data is collected in accordance with strict definitions and protocols to ensure consistency. Some surveillance data are only reported internally and other data are reported externally either as part of mandatory or voluntary surveillance schemes. However, the most important element of surveillance is feedback to clinicians in a timely manner. Feedback prompts review of, and where necessary, planned improvements to clinical practice. There are a number of mandatory surveillance activities that are routinely undertaken to meet Public Health England requirements and this is growing year on year with increasing demands on the team and information team.

### MRSA Bacteraemia

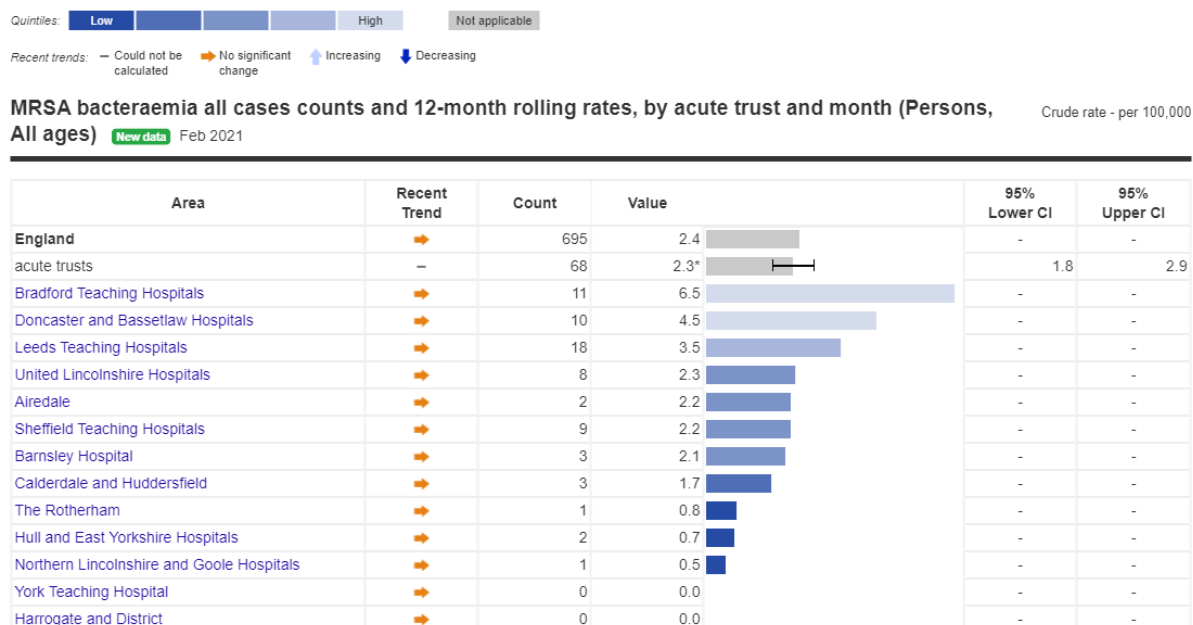
Nationally, there remains a zero tolerance for preventable [MRSA bacteraemia](#) cases. Thus, once again the Trust had a target of zero avoidable hospital-acquired cases. As in previous years, every case of MRSA bacteraemia must undergo a rigorous Post Infection Review Process to help identify any obvious root causes and learn lessons. I am pleased to report the Trust only detected 1 hospital onset MRSA bacteraemia case in December and has since not had any further cases.

**Table 1 MRSA bacteraemia cases since 2006**

Year	Trust-apportioned	Total
2006/2007	29 (60.4%)	48
2007/2008	22 (66.7%)	33
2008/2009	11 (57.9%)	19
2009/2010	3 (18.8%)	16
2010/2011	8 (50.0%)	16
2011/2012	4 (57.1%)	7
2012/2013	2 (40.0%)	5
2013/2014	5 (55.6%)	9
2014/2015	1 (16.7%)	6
2015/2016	0 (0.0%)	3
2016/2017	3 (75%)	4
2017/2018	1 (33%)	3
2018/2019	0	2
2019/2020	1	7
2020/2021	1	1

Overall the Trust has performed very well compared to many other Trusts within the region as can be seen in the Yorkshire and Humber PHE data below.

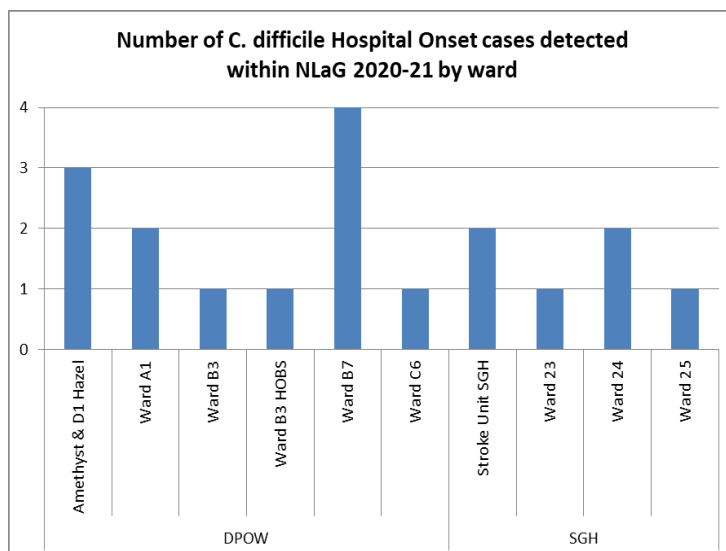
Figure 1 Total Number of MRSA Bacteraemia Hospital Onset Yorkshire & Humber up to February 2021



## Clostridioides difficile (formerly known as Clostridium difficile) Infections

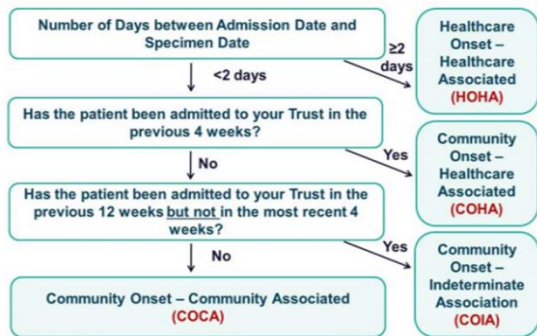
Figure 2 Breakdown of C.difficile cases by ward

*Clostridioides difficile* infection (CDI) remains an unpleasant, and potentially severe or fatal infection that occurs mainly in elderly and other vulnerable patient groups especially those who have been exposed to antibiotic treatment. *Clostridioides difficile* is a bacterium that releases a toxin which causes colitis (inflammation of the colon), and symptoms range from mild diarrhoea to life threatening disease. Asymptomatic carriage also occurs. Infection is often associated with



healthcare, particularly the use of antibiotics which can upset the bacterial balance in the bowel that normally protects against *C. difficile* infection. Infection may be acquired in the community or hospital, but symptomatic patients in hospital may be a source of infection for others.

The *C.difficile* objective guidance continued the use of lapse in care as a performance indicator. A lapse in care would be indicated by evidence that policies and procedures consistent with local guidance or best practice were not followed. There was also a change in the classification of a healthcare onset or community onset case. This reduced the number of days to identify hospital onset healthcare associated (HOHA) cases from  $\geq 3$  to  $\geq 2$  days after admission. The introduction of the Community Onset Healthcare Associated (COHA) category also will assign cases to the Trust where the patient has been an inpatient in the trust reporting the case in the previous four weeks. In 2019/20 the Trust has been allocated a trajectory of no more than 36 cases combining the HOHA and COHA as such we adopted this trajectory for 2020/21.



The trust had a CDI objective of no more than 36 cases and ended the year on 28 reported cases which is well within the allocated trajectory and 23% reduction to last year. There was 1 lapse in practice / care detected from the Post Infection Reviews undertaken with the main issues around antimicrobial prescribing

The SGH site had 11 cases of CDI and DPOW 17. Due to the reconfiguration of wards during the

pandemic there were no obvious issues with significant cases detected within any wards or linked cases. The IPC team routinely submit positive stool samples for ribotyping to the reference laboratory to help establish the presence of virulent strains of *C.difficile* and also monitor if there is a possible relationship between cases. It was pleasing to report there were no clusters or outbreaks of *C.difficile* infection. Overall the trust is performing well compared to Yorkshire & Humber data for CDI rates in patients over 2 years of age for all England acute trusts based on 100,000 bed days.

Figure 3 Total Number of *C.difficile* Hospital Onset Yorkshire & Humber upto Feb 2021

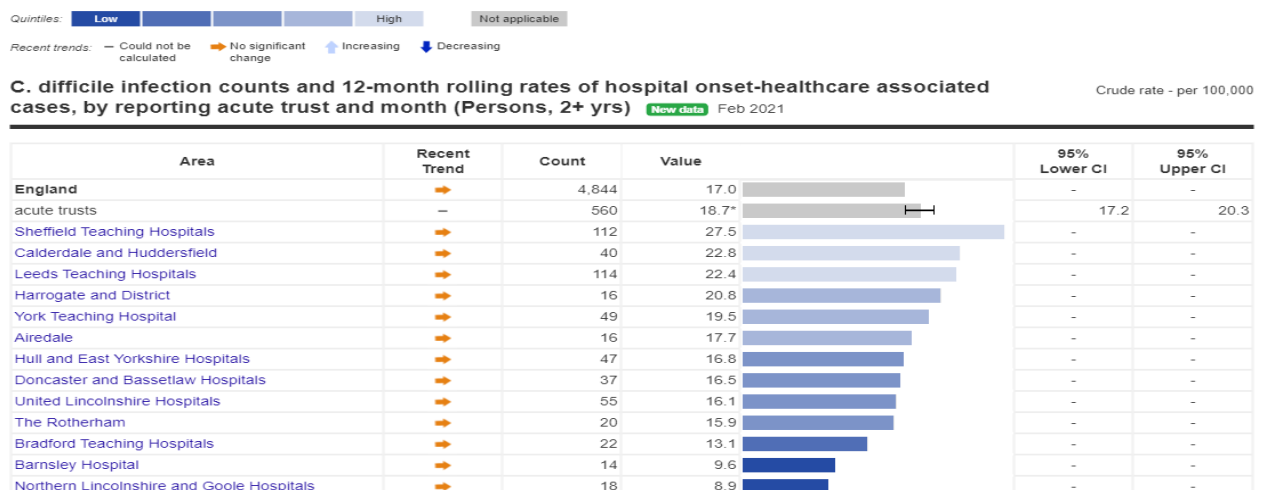
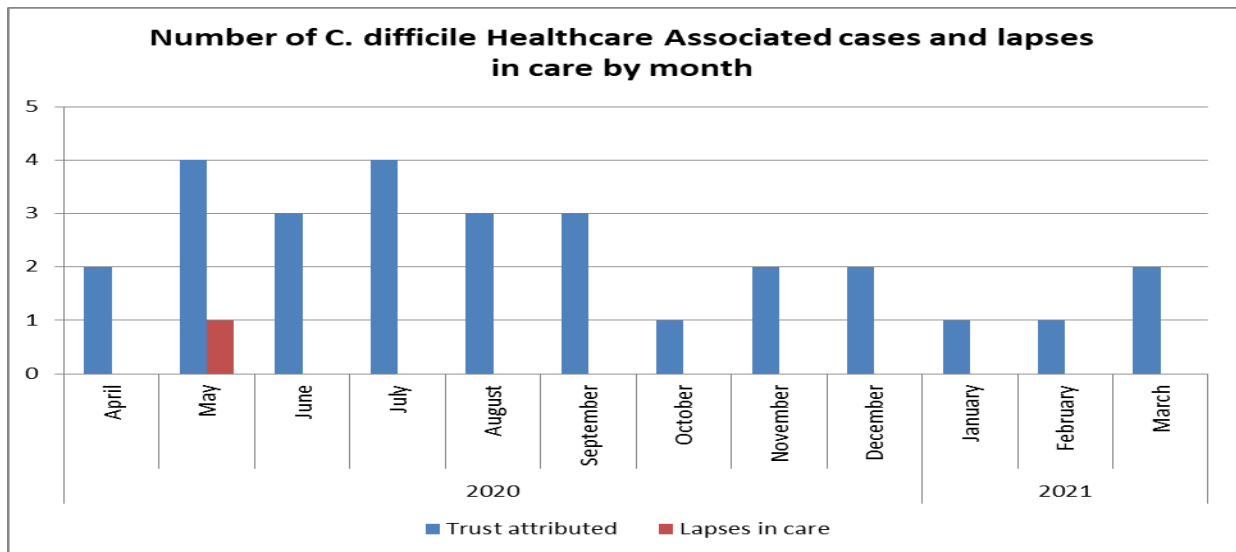


Figure 4 Number of C.difficile cases




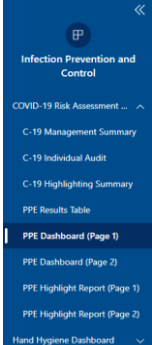


The distribution of cases over the year does not show any abnormal trend.

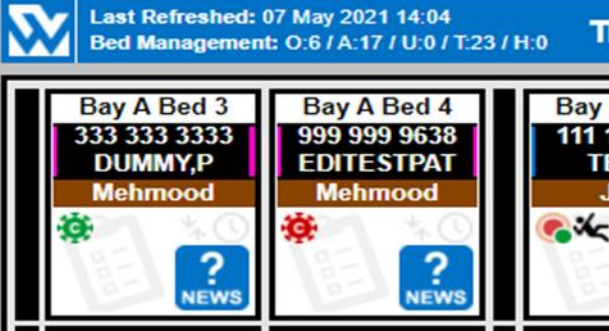

### Post Infection Review

Following a case of Healthcare Onset Healthcare associated C.difficile infection a PIR is undertaken with relevant clinical staff to ascertain if there have been any deviations from best practice. However due to the ongoing pandemic situation the structure was amended. The IPC team undertook a thorough review of the case and if there were any obvious lapses in practice / care then a PIR meeting was held if possible. The one lapses detected was associated with the use of antimicrobials e.g. prolonged courses.

## Some of the initiatives introduced to reduce the risk of nosocomial infections

 <p><b>Infection Prevention &amp; Control Matters</b> 1<sup>st</sup> edition April 2021</p> <p>A bi-monthly newsletter highlighting the key infection issues at Northern Lincolnshire &amp; Goole NHS Foundation Trust Please disseminate to all relevant staff including medical &amp; nursing staff</p> <p>Stop the spread of COVID-19</p> <p><b>What a difference a year makes</b> Just over a year ago we were all totally unaware that a pandemic was looming and it was</p>	<p>The IPC team managed to launch a newsletter to help promote latest news <a href="http://nlgn.net.nhs.uk/infectioncontrol/Documents/Link%20Network/infection%20control%20matters%201st.pdf">http://nlgn.net.nhs.uk/infectioncontrol/Documents/Link%20Network/infection%20control%20matters%201st.pdf</a></p>
	<p>The IPC Blog is regularly updated to provide bite sized information to staff <a href="https://ipc427.wordpress.com/">https://ipc427.wordpress.com/</a></p>
	<p>As part of the COVID pandemic response we had additional support from our nursing colleagues to help with donning and doffing / PPE training. They wore a visible jacket to allow staff to easily spot them on their rounds. The majority of high risk staff were fit tested for reusable FFP3 masks. &gt;2500 fit tests were undertaken during the pandemic.</p>
	<p>The implementation of bespoke audits to help ensure best practice was in place during the pandemic – including PPE and IPC Board assurance audits with dashboards for staff. <a href="#">Infection Prevention and Control Power BI App</a></p>

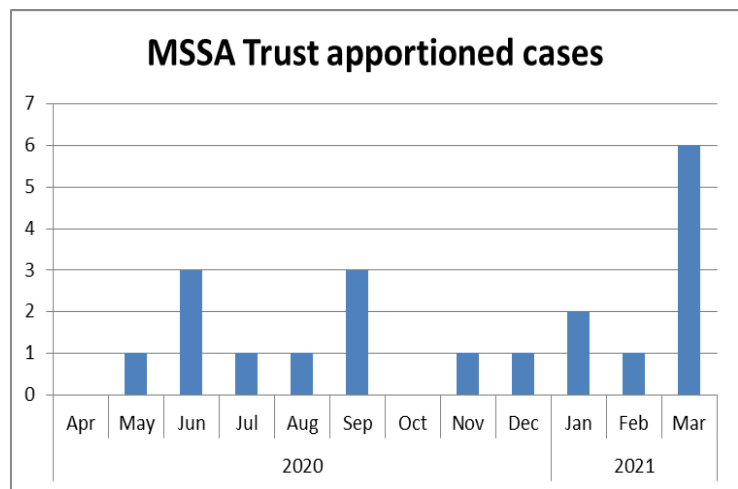


	<p>The development of the COVID flags and reswab list to improve day 3 and 6 swabbing compliance.</p>
<p><a href="#">Outbreak vulnerability assessment tool</a></p>  <p>The outbreak vulnerability assessment tool (OVAT) is a quick and handy 'walkaround' guide to support leaders.</p> <p>The OVAT was developed by Dr Evonne Curran and Maurice Madeo.</p>	<p>The IPC team undertook a number of surveys to establish staff feedback on how they thought the pandemic was managed and lessons to be learnt. This was undertaken on the back of the <a href="#">tool</a> developed and adopted by NHSE/I.</p> <p>Full report – <a href="#">here</a>.</p>

## Staphylococcus aureus bacteraemia

*Staphylococcus aureus* is a bacterium commonly found colonising the skin and mucous membranes of the nose and throat. Although approximately a quarter of the population carry this organism harmlessly, it is capable of causing a wide range of infections from minor boils to serious wound infections and from food poisoning to toxic shock syndrome. In hospitals, it can cause surgical wound infections and bloodstream infections. When *Staphylococcus aureus* is found in the bloodstream it is referred to as a *Staphylococcus aureus* bacteraemia.

Figure 5 MSSA Trust apportioned cases



The reporting of Meticillin Sensitive *Staphylococcus aureus* (MSSA) bacteraemias became mandatory from January 2011. Prior to that only voluntarily collected data was available.

The number of trust apportioned MSSA bacteraemias detected during the current year is shown in Figure 5. The definition of Trust-Acquired vs Community-Acquired is based on the positive blood culture sample being collected on or after the 3rd day of admission. All actions taken to minimise MRSA bacteraemias will have the effect of minimising MSSA bacteraemias. The number of cases detected deemed healthcare acquired compared to the previous year have generally remained static. The majority of MSSA bacteraemia cases are detected within 2 days of admission and in many

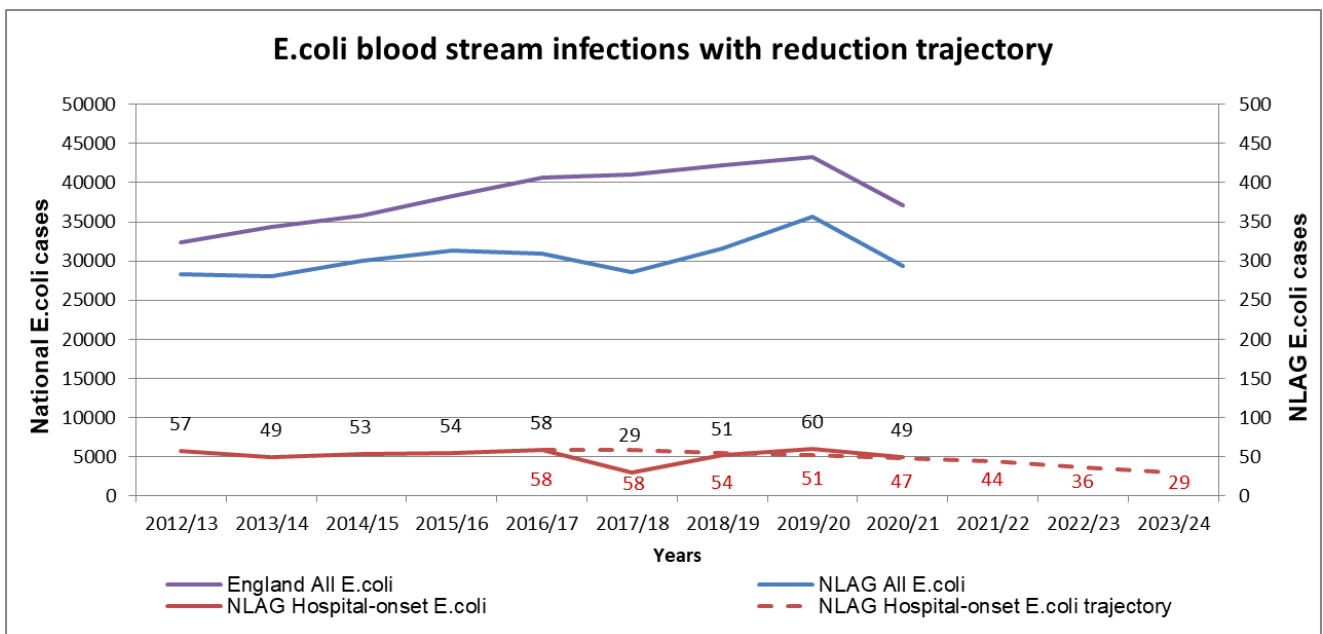
cases the source is not always obvious despite a review by the IPC team. There are many causes for MSSA infections and there are generally no obvious trends at present.

### Gram negative blood stream infections inc E.coli.

Halving the numbers of healthcare-associated Gram-negative bloodstream infections (GNBSIs) by 2024 is a key government ambition, announced as a key action in Lord O’Neill’s Review of Antimicrobial Resistance (AMR). In 2017 we saw the implementation of a new national ambition to reduce the incidence of healthcare-associated Gram negative bacteraemias caused by Escherichia coli, Klebsiella spp. and Pseudomonas aeruginosa by 50% (compared to baseline year April 2017 to March 2018) by April 2024.

Locally the number of E.coli bacteraemia cases remains a significant burden for patients.

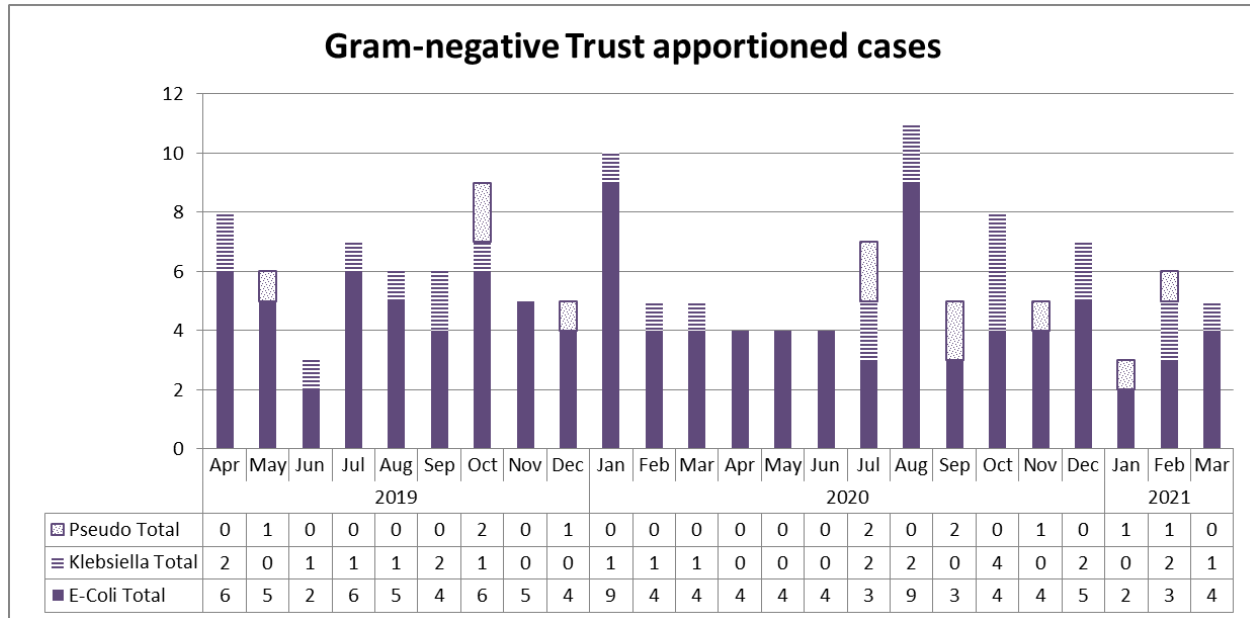
Figure 6 E.coli blood stream infections with reduction trajectory



The number of E.coli blood stream infections detected after day 2 of admission has decreased from 60 to 49 which is a 19% reduction. The number of cases detected is very dependent on the presenting patient condition and timeliness of the blood culture. There is seasonal variation with generally more cases during the spring and summer period would also have had some impact on the number of cases presenting with urogenital issues exacerbated by dehydration. The Trust reported 382 cases which is a combination of Healthcare Onset and Community Onset cases of which 49 were deemed Healthcare Onset (13%). As can be appreciated with this number of cases reported with around 87% of E.coli blood stream infections detected within 2 days of admission, many of the required interventions will require a health economy approach if a long lasting reduction is to be made. The necessary actions should take into consideration the age profile of these patients (Fig 11) where the average age of gram-negative patients is 70.3 years. Due to the age profile a significant number will have numerous co-morbidities and risk factors e.g. dementia, increasing their risk of infection. Therefore measures such as hydration, removal of urinary catheters, appropriate diagnosis

and treatment of urinary tract infections. Improved surgical management are some of the key priorities for secondary and primary care which may have been adversely affected due to the pandemic.

**Figure 7 Trust apportioned Gram Negative Cases**



In addition to E.coli the Trust reports the number of Klebsiella and Pseudomonas aeruginosa blood stream infections.

**Pseudomonas aeruginosa** is a Gram-negative bacterium often found in soil and ground water. P. aeruginosa is an opportunistic pathogen and it rarely affects healthy individuals. It can cause a wide range of infections, particularly in those with a weakened immune system. These infections are sometimes associated with contact with contaminated water. In hospitals, the organism can contaminate devices that are left inside the body, such as respiratory equipment and catheters. P. aeruginosa is resistant to many commonly-used antibiotics.

The trust detected 30 cases of Pseudomonas aeruginosa with 7 Healthcare Onset, which was similar to previous years.

**Klebsiella species** belong to the family Enterobacteriaceae. Klebsiella species are a type of gram negative rod shaped-bacteria that are found everywhere in the environment and also in the human intestinal tract (where they do not cause disease). Within the genus Klebsiella, 2 common species are associated with the majority of human infections: Klebsiella pneumoniae and Klebsiella oxytoca. Both species are commonly associated with a range of healthcare-associated infections, including pneumonia, bloodstream infections, wound or surgical site infections and meningitis.

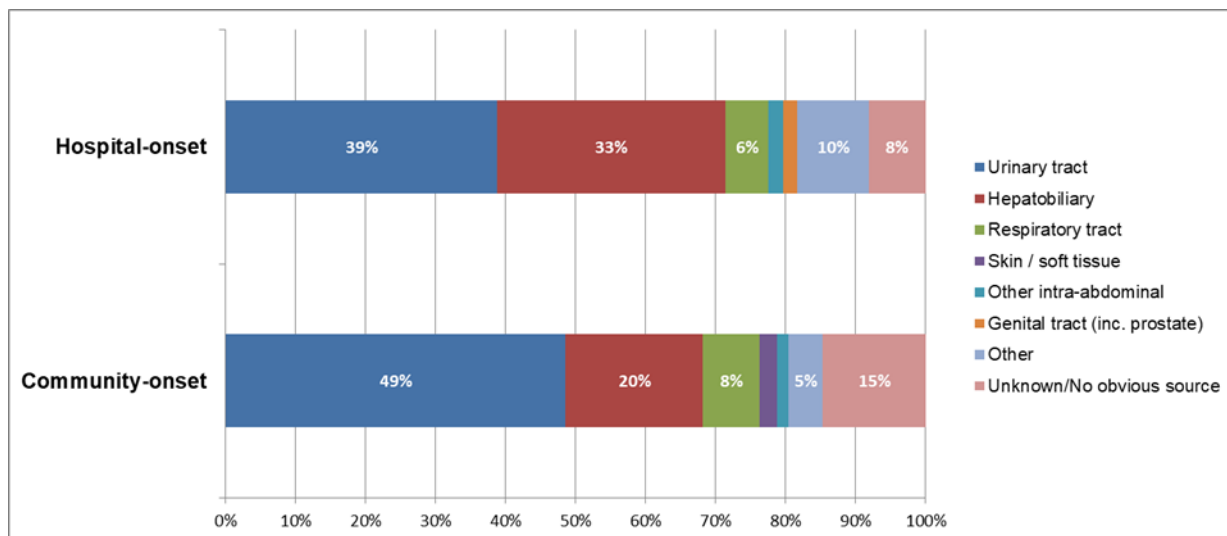
In healthcare settings, Klebsiella infections are acquired endogenously (from the patient’s own gut flora) or exogenously from the healthcare environment. Patient to patient spread can occur via contaminated hands of healthcare workers or less commonly by contamination of the environment. There were 62 cases of Klebsiella with 13 Healthcare Onset which is similar to the previous year.

Table 2 Hospital onset E.coli bacteraemia cases 2020-2021

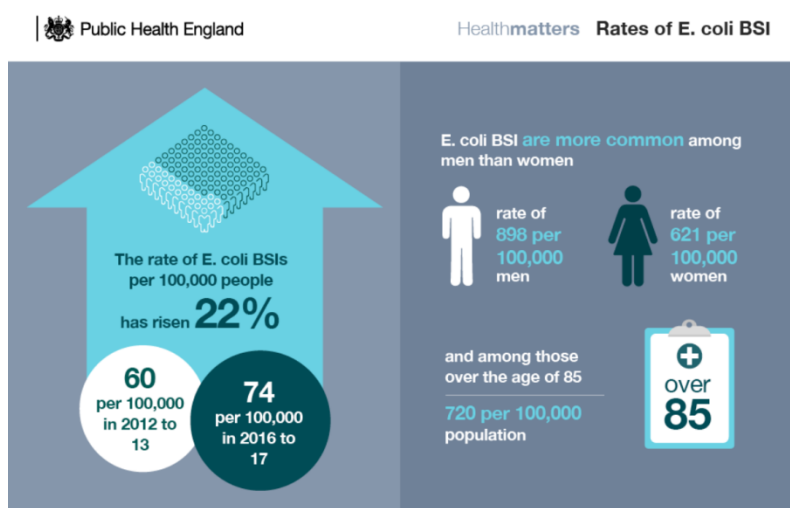
Row Labels	2020/21												2020/21
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
E-Coli													
DPOW													
Acute Assessment Unit - DPOW	0	0	0	0	0	0	0	0	0	0	0	0	0
Amethyst & D1 Hazel	0	0	0	1	0	0	0	0	0	1	0	0	1
Holly Ward	0	0	0	0	0	0	0	0	0	0	0	0	0
ITU	0	0	0	0	0	0	0	1	1	0	0	0	2
Laurel Ward	0	0	0	0	0	0	0	1	0	0	0	0	1
Stroke Unit DPOW	0	0	0	1	2	0	0	0	0	0	0	0	3
Ward A1	0	0	0	0	0	0	0	0	0	0	0	0	0
Ward B2	1	0	0	0	0	0	0	0	0	0	0	0	1
Ward B3	0	0	0	0	0	0	0	0	1	0	0	0	1
Ward B4	0	0	1	0	0	0	0	0	0	0	0	0	1
Ward B6	0	0	0	0	1	1	0	0	0	1	0	0	3
Ward C1 Glover	0	1	0	0	1	0	0	0	0	0	0	0	2
Ward C2	0	0	1	0	0	0	0	1	1	0	1	1	5
Ward C5	0	1	0	0	2	0	1	0	1	0	0	0	5
Ward C6	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>DPOW Total</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>6</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>27</b>
GDH													
Goole Neuro Rehab Centre	0	0	0	0	0	0	0	0	1	0	0	0	1
Ward 3 GDH	0	0	0	0	0	1	0	0	0	0	0	0	1
Ward 5/6 GDH	0	0	0	0	0	0	0	1	0	0	0	0	1
<b>GDH Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>
SGH													
Acute Assessment Unit - SGH	0	0	1	0	0	0	0	0	0	0	0	0	1
Central Delivery Suite	0	1	0	0	0	0	0	0	0	0	0	0	1
Stroke Unit SGH	0	0	0	0	0	1	0	0	0	0	0	0	1
Ward 16	1	0	1	0	0	0	0	0	0	0	0	1	3
Ward 17	1	0	0	0	0	0	0	0	0	1	0	0	2
Ward 18	0	0	0	0	0	0	0	0	0	0	0	0	0
Ward 19	0	0	0	0	0	0	0	0	0	0	0	0	0
Ward 22	0	0	0	0	0	0	0	0	1	0	0	1	2
Ward 23	0	0	0	0	1	0	0	0	0	0	1	0	2
Ward 24	0	0	0	0	0	0	0	0	0	0	0	0	0
Ward 25	1	0	0	1	0	0	0	0	0	0	0	0	2
Ward 26	0	1	0	0	0	0	0	0	0	0	0	0	1
Ward 27	0	0	0	0	1	0	1	0	0	0	0	0	2
Ward 28	0	0	0	0	0	0	0	0	0	0	1	0	1
Ward 29	0	0	0	0	1	0	0	0	0	0	0	0	1
<b>SGH Total</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>2</b>	<b>19</b>
<b>E-Coli Total</b>	<b>4</b>	<b>4</b>	<b>4</b>	<b>3</b>	<b>9</b>	<b>3</b>	<b>4</b>	<b>4</b>	<b>5</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>49</b>

Examination of the main source of E.coli infection locally in the stack chart would suggest the urinary system and hepatobiliary are the main predisposing risk factors and this is where targeted interventions are to be directed e.g. avoid / removal of urinary catheters, streamlined surgical pathways. The national picture in the infographic is not too dissimilar to our local position.

Figure 8 Common causes of E.Coli bacteraemia in cases detected in NLaG in 2020-2021



It is acknowledged that there has been good reduction in E.coli hospital onset bacteraemia cases detected over the last year; this may be the consequence of the pandemic. Much more needs to be done to ensure the number of cases is kept as low as possible and best practice is embedded across the whole health economy.



Given the risk factors for gram negative reduction are so generalised and as yet not fully understood, it is important as a Health economy we adopt measures that are within our control. All cases of Hospital Onset Gram negative infections are reviewed to identify the source of infection if known and identify if any lapses in care / practice have occurred. Where a lapse has been identified a review meeting is held with the ward manager and Matron to help avoid future cases.

As a trust our rate of E.coli bacteraemia is comparable to many other trusts however we always strive for improvement in reducing the number of cases.

## Surgical Site Infection Surveillance

The Department of Health introduced mandatory surveillance of certain categories of surgery in 2004. It is a requirement that each trust should conduct surveillance for at least 1 orthopaedic category for 1 period (3 months) in the financial year. The categories are:

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

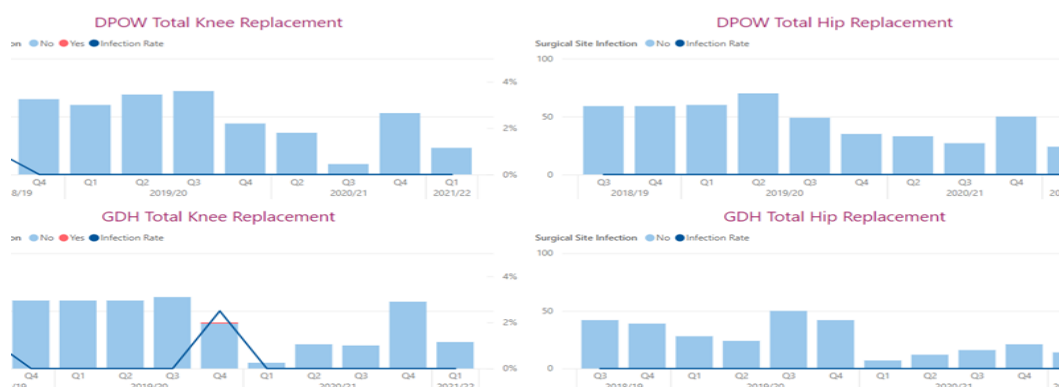
The Infection Prevention and Control team in conjunction with our orthopaedic colleagues undertake continuous surveillance of primary total hips (THR) and primary total knee (TKR) at DPOW and GDH hospital sites.

**Table 3 Orthopaedic hip and knee replacement infection rates – April 2019 – March 2021**

	All Hospitals	Grimsby			Goole		
	National Rate	No. Operations	No. Infections	% Infection	No. Operations	No. Infections	% Infection
<b>Hip Replacement</b>	0.5%	324	0	0.0%	201	0	0.0%
<b>Knee Replacement</b>	0.4%	343	0	0.0%	326	1	0.3%

Overall the infection rates remain within normal parameters, however due to the small denominator the infection rate can quickly become skewed. When a surgical site infection is detected a thorough RCA is undertaken to identify if there were any deviations from best practice. In the cases reviewed there were no significant deviations from best practice identified. As a team we undertake a very robust method of monitoring patients fully for the whole year. Due to the pandemic situation and zoning of clinical areas elective surgery has been reduced therefore the throughput of cases will be impaired compared to previous years. The 1 SSI detected found no lapses in care or practice and the organism detected was MSSA.

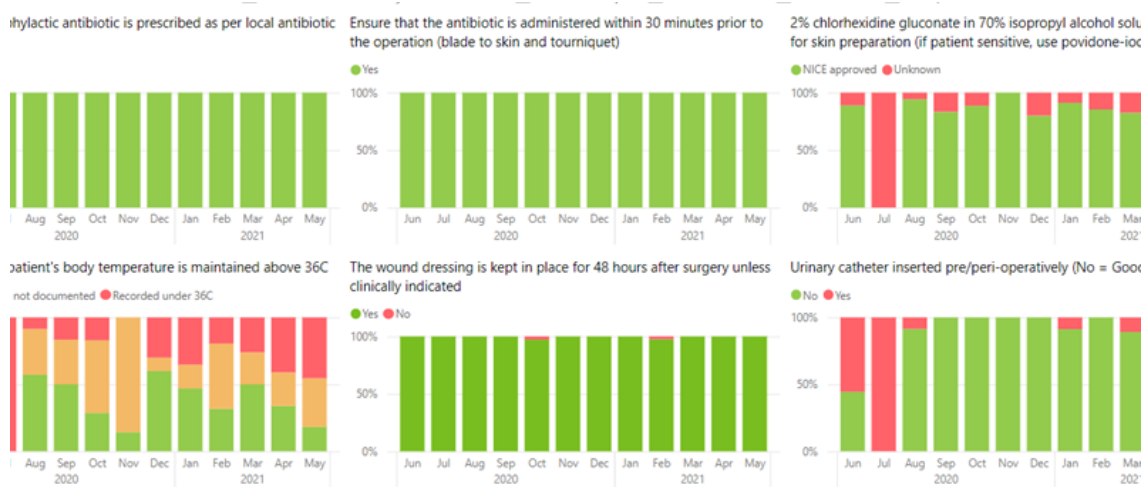
**Table 4 Surgical Site Infections 2018 - 2020**



As part of the surveillance process the team also ensure theatres are adopting best practice in accordance with the High Impact Intervention surgical site prevention bundle. Now that sufficient

data has been collected a dashboard has been produced and shared with Theatre colleagues to ensure the high standards of practice are maintained.

**Figure 9 Surgical Site High Impact Intervention Feedback**

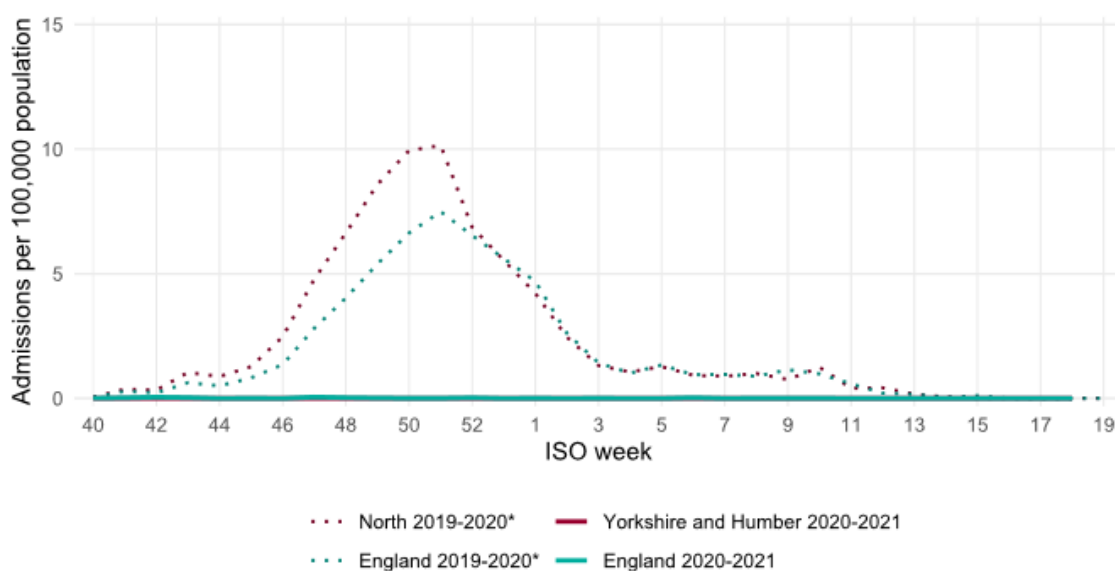


The main issues noted are around normothermia. The high impact data is fed back to the divisions to review and implement any actions required.

### Influenza / Viral respiratory disorders

Due to the social distancing measures and lockdown the Trust and generally across the NHS there have not been any significant cases of influenza

**Figure 10 Number of Influenza cases detected within Yorkshire & Humber**



\*Data from 2019-20 USISS Sentinel Surveillance

One of the best ways to protect vulnerable patients and front line staff from influenza virus is the influenza vaccine. There was an ambition for organisations to achieve a front line worker uptake of at least 100%. NLaG achieved a respectable 65% uptake in front line workers using a peer vaccination approach. Although a drop to previous years this may have been as a result of the low prevalence of influenza circulating and staff focusing on the coronavirus vaccine.



**Table 5 Influenza vaccination uptake by frontline workers**

Season	Dr	Nurse	AHP/STT	Support	Total
2017-18	83.7%	65.5%	67.1%	80.5%	72.6%
2018-19	77%	76%	98%	75%	78%
2019-20	77%	68%	67%	65%	67.6%
2020-21	57.33%	63.27%	73.54%	61.61%	64.32%

## Point Prevalence Surveillance

As part of the ongoing review process the IPC team began to undertake a modified version of the national Point Prevalence Surveillance twice a year where possible. The main advantage of utilising this approach is that it enables the team to gain an immediate insight into the practices on the ward re invasive devices, antimicrobial prescribing and management of patients with infections. All patients within the ward are reviewed and staff are then provided with a verbal resume and this is followed up with a written report usually the same day. Divisions are provided with a dashboard that is available on the HUB site to help support any changes in practice. Due to the pandemic the usual rounds of surveillance had to be put on hold until the covid-19 infections subsided and wards reverted back to some form of normality. As such the PPS was undertaken in the last quarter of the financial year. The IPC team managed to undertake surveillance on 26 wards across the 3 hospital sites with 484 patients monitored. The mean age of patients was 70 years with a range of 17-98 years.

The overall hospital onset infection rate was 4.1% which is a drop from the baseline of 6.4%. It was noted that the number of antimicrobials prescribed had risen to 45% compared to the recommended standard of around 30% and this is an increase from the baseline of 34%. This may be a result of the pandemic where most patients admitted with signs of a chest infection were generally prescribed an antimicrobial, which many required intravenous administration. As such there has also been a large increase in the use of peripheral venous cannula devices to 61% compared to 39% baseline value. There is an urgent requirement to review the current usage of antimicrobials and those administered intravenously so that invasive devices can then be removed in a timely manner. It was pleasing to note the majority of PVC had an appropriate assessment and dressing was clean, intact and secure.



## **Carbapenemase-producing Enterobacteriaceae**

The management of patients with an antibiotic resistant organism is an increasing priority nationally. The emergence of Carbapenemase-producing Enterobacteriaceae (CPEs) is predicted to pose significant challenges nationally in the near future. Carbapenem antibiotics are a powerful group of B-lactam antibiotic used in hospitals. Until recently they have been able to be used to treat infections when other antibiotics have failed. Emerging resistance patterns have rendered in some cases Carbapenems ineffective. Public Health England have issued toolkits for use in either acute or community settings to enable the early detection, management and control of CPE. A Trust policy is in place to support and guide staff to provide safe and effective management of patients colonised or infected with resistant bacteria and minimise the risks of transmission in patients.

Last year there were 2 cases detected x1 NDM and x1 OXA-48.

**2. Provide and maintain a clean and appropriate environment for managed premises that facilitates the prevention and control of infections.**

### **Facilities Service update (written by Keith Fowler – associate director facilities)**

The Hospital Support Assistant (H.S.A) remains a relatively new concept within Healthcare cleaning services. The role combines a multi-skilled ward and department based service enhancing the patient experience with excellent standards of cleaning, nutrition and hydration and ward support functions.

Building upon the service with enhanced cleaning practices embedded during 2019 – 20, our cleaning feedback, audits, CQC inspections, patient experience and team engagement provided a high level of assurance around our support services.

2020–21 presented the biggest ever challenge to face our NHS in the form of a global pandemic. The coronavirus (Covid–19) challenged our cleaning service beyond any expected or planned levels of support service delivery. The H.S.A staff group demonstrated a level of courage and response to the increased demands for effective cleaning which was truly unbelievable. The challenges around PPE use, segregations, zoning and additional safety practices to keep everyone safe was a changing platform, and tested the whole teams resilience and grit.

Staff worked more hours, in hot uncomfortable PPE, ensuring wards received enhanced frequencies of cleaning, and ensuring we were helping our clinical colleagues to prevent cross contamination and ensure the highest standards of infection prevention and control were achieved.

The team reacted to create enhanced working rotas, service changes to achieve compliance with increased cleaning frequencies, and took forward plans for the wider hospital sites to take on the challenge. We trained in enhanced PPE, recorded and reassured the training principles, adapted labour resource and thrust forwards the Trust cleaning response to Covid–19.

Emotions were mixed, and the team were supported, supportive, and built upon relations in wards where staff pulled together in the fight against Covid 19. The numbers of positive patients treated were at times reaching our limits of capabilities, and the H.S.A role and service reacted to this at peak times, alongside supporting deep cleaning areas when reopening to non-positive patients. The service enabled the operational response to the pandemic.

Our cleaning remains to the highest standards possible, and lessons learned combine with enhanced cleaning levels throughout the sites to assist a return towards activity levels and operational delivery prior to the pandemic. The H.S.A cleaning service has demonstrated the model remains to be a service of excellence and efficiency, and the Facilities services team, in partnership with the Infection Prevention & Control team will continue to ensure a response to any future challenges is robust, capable and keeps our patients, staff and visitors safe from the coronavirus.

Facilities Services have already commenced a detailed gap analysis of the newly released National Standards of Healthcare cleanliness (2021), working to understand the impact of this revised standard against our H.S.A role and domestic functions. Investment commenced in late 2020 to update our auditing tool, and the team are building upon this updated version to ensure compliance with the revised standards but, also include the new departments recently opened as a result of the Capital Investment Programme. The team anticipate the revised standards to be embedded during 2021.

## IPC Environmental Audits

The IPC team undertake a yearly environmental audit of clinical areas and if required repeat the process depending on findings. The majority of the IPC areas of concern have now been incorporated within the Ward Assurance Tool (WAT) and Matron audits. Therefore the IPC audit acts as an independent validation and is triangulated with the WAT.

The average scores per section are highlighted below. The main areas for future improvement are generally associated with environmental fixture and fittings such as floor and wall condition. Any items that are potential patient safety concerns are dealt with by estates and facilities in a timely manner.

Figure 11 IPC Environmental Audit Tool Feedback Form

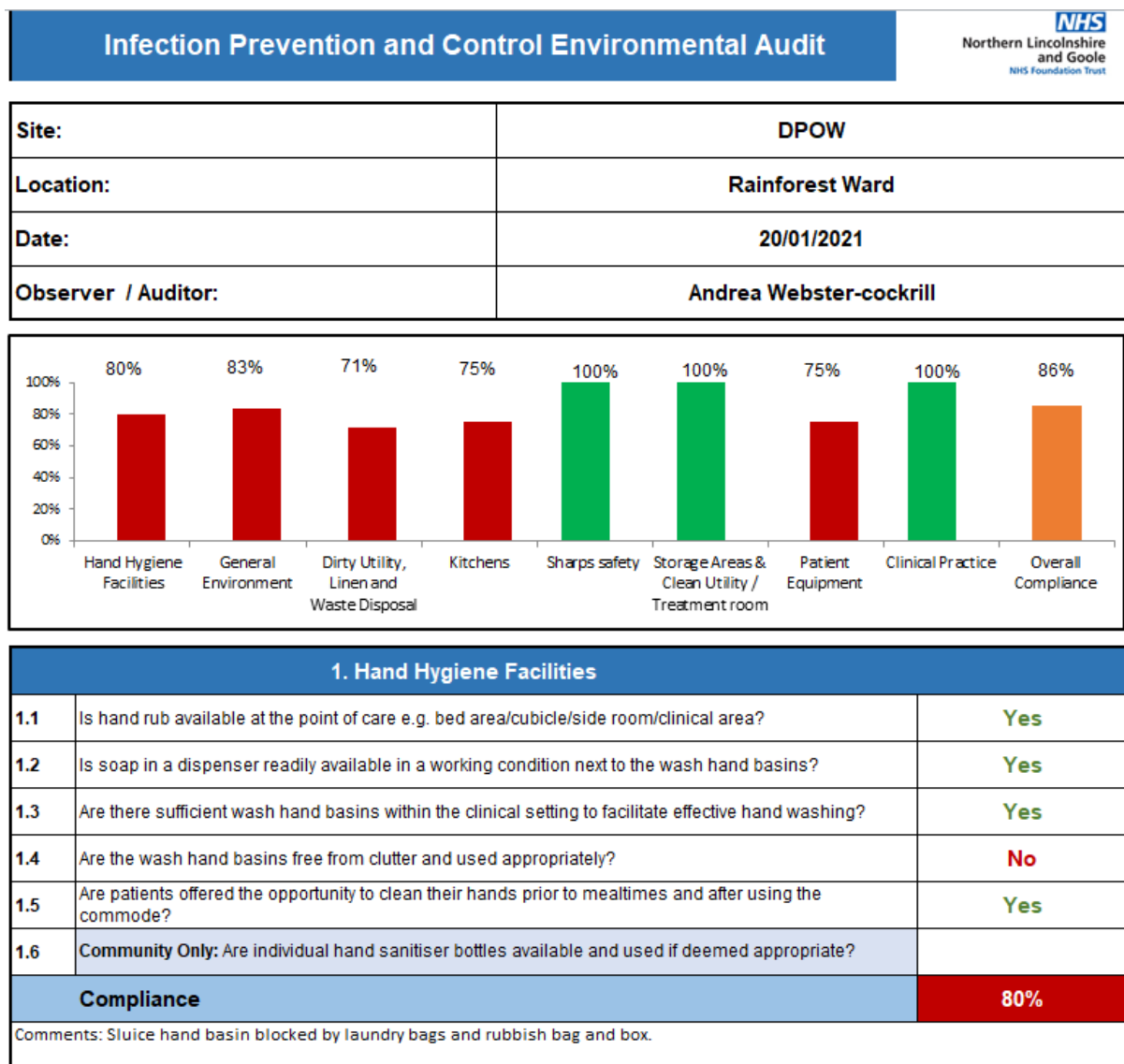
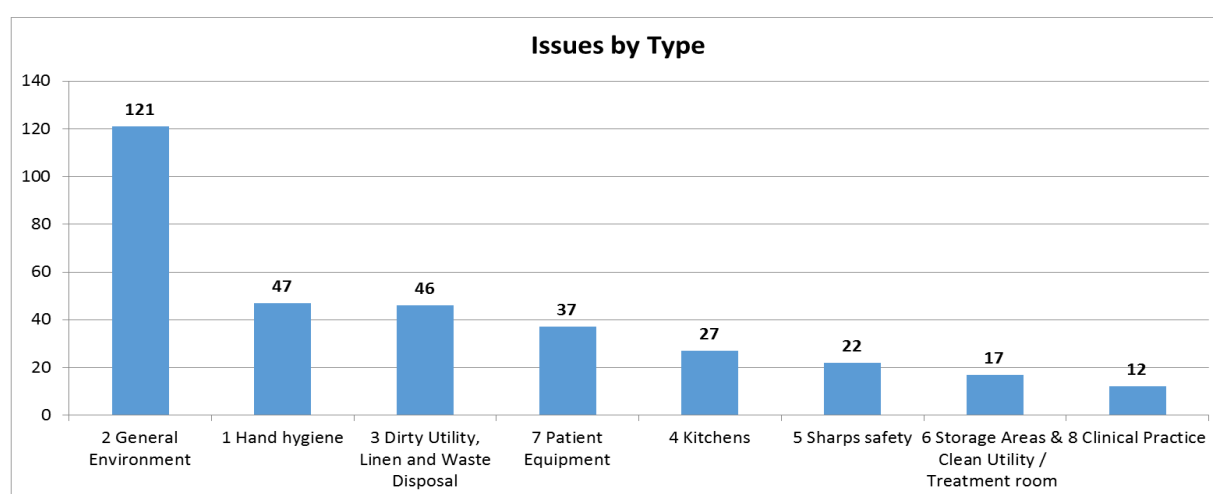


Table 6 IPC Environmental Audit Scores

IPC Environmental Audit 2020/21									
Compliance by Ward and Division									
Row Labels	1 Hand Hygiene	2 General Environment	3 Dirty Utility, Linen & Waste Disposal	4 Kitchens	5 Sharps Safety	6 Storage Areas & Clean Utility/ Treatment Rm	7 Patient Equipment	8 Clinical Practice	Overall
+ Community	100%	81%	93%	83%	95%	88%	82%	93%	90%
+ DPOW	89%	80%	82%	85%	78%	86%	86%	86%	84%
+ GDH	100%	94%	92%	94%	79%	97%	87%	96%	92%
+ SGH	98%	91%	86%	94%	82%	96%	86%	95%	91%
Grand Total	95%	85%	87%	88%	83%	90%	85%	91%	88%

Figure 12 Number of IPC Environmental Audit Issues by Type



With the introduction of 15 steps accreditation and Monthly ward manager audits; these have been designed to incorporate again pertinent IPC related questions. As part of the 15 Steps process a member of the IPC takes part in this process which allows expert opinion to be included in the review process. As can be seen the main issues identified in the IPC audits tend to be related to the estate of the building. Various capital scheme projects have been submitted for national funds to help address some of these issues which has seen ward 29 transformed into a ward.

## Decontamination

A member of the Infection Prevention and Control team attends the decontamination group. This group oversees decontamination issues including the function of the Synergy run HSDU. The committee is responsible for ensuring that reprocessing systems are revalidated as required and dealing with problems by exception. It serves as a conduit between equipment reprocessing departments and the IPCC.

## Water Safety Group

The Deputy DIPC and Consultant microbiologist are members of this group to help ensure relevant guidance is adopted to help reduce the risk of waterborne infections such as Pseudomonas and Legionella. The group has implemented a number of standard operating procedures to ensure the

daily flushing of little used outlets and their correct cleaning / maintenance including the use of L8 guard.

## Pseudomonas Water Testing

In 2012 the Department of Health issued national guidance for managing Pseudomonas within the water system of hospitals in-particular the augmented care units. These high risk units have a regular water check depending on results and where Pseudomonas or legionella species are identified discussion takes place with the IPC team on measures required to mitigate the risk. There is a robust ongoing program within the clinical settings to ensure flushing is undertaken within little used outlets and that wash hand basins are used appropriately. The L8 guard reporting system is working well and generally achieving a good level of flushing compliance.

### 3. Ensure appropriate antibiotic use to optimise patient outcomes and resistance

## Antimicrobial Stewardship

Antimicrobials stewardship is the prudent, use of antimicrobials. This is a multi-disciplinary effort and all healthcare professionals are encouraged to facilitate good prescribing practices.

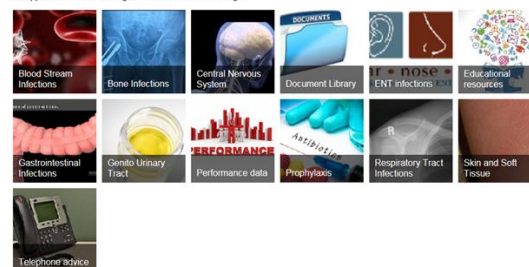
Slowing the development of micro-organisms' resistant to antimicrobials, increasing the longevity of our available agents and minimising the occurrence of healthcare acquired infections is a national and international priority.

### Antimicrobial Resource

To contact a Consultant Microbiologist please do so via switchboard both in and out of hours. A call to Microbiology for advice is just like any other clinical referral. ALL patients MUST be discussed with a senior member of the clinical team before contacting the Microbiologist. Please ensure you use the SBAR format and have patient history readily available.

#### IMPORTANT NOTES

For the full policy information please access the Antibiotic Formulary & Prescribing Advice for Adult Patients located in the Document Library folder below. Please note that clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt about antimicrobial therapy contact a senior colleague or a Consultant Microbiologist.



In terms of total antibiotic reduction the Trust has noted significant reductions in antibiotic use throughout all areas during COVID-19. However in regards to daily doses used per 1000 patients, usage has increased during the COVID-19 pandemic Trustwide in Medicine and Surgery & Critical Care. Targets have not been met in the Medicine at Goole and Surgery and Critical care at DPOW and SGH. This may be due to a difference in the demographics of patients being treated before the pandemic, to those after it started; i.e. those who were not sufficiently ill to require admission to hospital for IV antibiotics post-pandemic commencement may have avoided visiting the hospitals altogether or more antibiotics may have been used to treat patients with COVID-19 pneumonia, despite very few of these being likely to have secondary bacterial pneumonias. It was not possible to identify and audit these patients accurately. Conversely, the Trust will have admitted very few patients for elective procedures requiring antibiotic prophylaxis.

### Antimicrobials Stewardship Strategy

The Trust's Antimicrobials Stewardship Strategy, released in January 2020, incorporates all elements of the national Tackling antimicrobial resistance 2019 – 2024: The UK's five-year national action plan, in order to ensure that our Trust is compliant with those elements in its local healthcare context, including:

#### Minimising infection, by:

- Having zero tolerance of avoidable infections in healthcare settings;

- Optimising the use of effective vaccines;
- Minimising infection transmission in the environment;
- Promoting good infection control practices.

**Providing safe and effective care to patients, through:**

- Practising good antimicrobials stewardship;
- Encouraging that all decisions involving the use of antimicrobials are informed by a diagnostic test, clinical decision support tool or other relevant data;
- Prescribing and administering the appropriate antimicrobials agents *promptly*, to reduce harm from sepsis;
- Using data more effectively, to achieve optimum prescribing of recommended agents.

**Supporting the sustainable supply and access to quality assured antimicrobials**

- Through appropriate contracting activities.

**Demonstrating appropriate use of antimicrobials, through:**

- Real-time monitoring of use, via reports from the Trust's electronic Prescribing and Medicines Administration System and associated systems;
- Collection and display of appropriate antimicrobials consumption data, made freely available to all, for discussion and to develop better antimicrobials prescribing habits amongst clinicians.

**Engaging patients, carers and the public, through:**

- Effective communication with patients, carers and the public about their antimicrobial medicines and optimum use, to treat primary infections effectively, whilst avoiding healthcare acquired infections and antimicrobial resistance.

**Antibiotic audits and point-prevalence surveys**

The Consultant Pharmacist, Antimicrobials, Deputy Director of Infection Prevention and Control and Quality and Audit Department co-ordinate appropriate antimicrobials audits and point prevalence surveys to examine and inform whether antimicrobials are being used appropriately within the Trust, for example:

- Adherence to surgical prophylaxis guidelines;
- Adherence to IV to oral switch guidance, per speciality;
- Adherence to dosing and therapeutic drug monitoring guidelines for antibiotics with a narrow therapeutic index.

**Education and Training**

Training on Antimicrobial Stewardship and antimicrobials medication is provided Trust-wide in a number of ways:

- On-line and face-to-face mandatory training;
- Twice yearly antimicrobial stewardship sessions, on new doctors' induction sessions;
- "Key messages on antimicrobials prescribing;" Antimicrobial Stewardship sessions on the FY1 doctors' core training programme;
- Pharmacists' monthly Antimicrobial Stewardship sessions

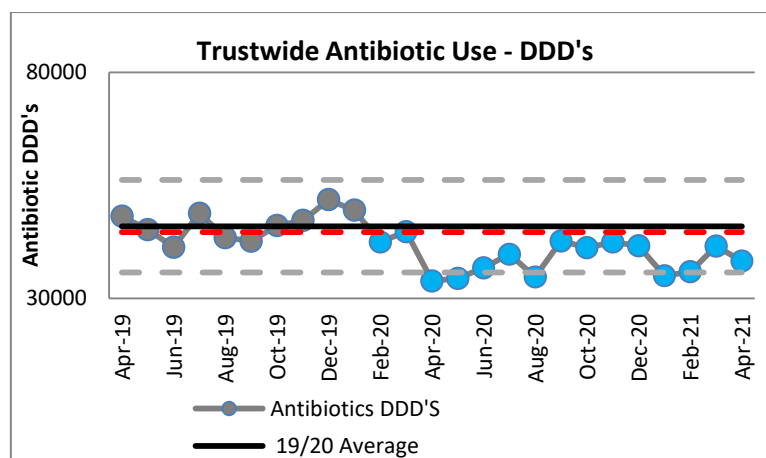
- Annual Grand Round presentations for doctors on both main sites, on Antimicrobial Stewardship, to coincide with World Antibiotics Awareness Week and European Antibiotic Awareness Day;
- Pre-registration Pharmacist activity, during World Antibiotics Awareness Week and European Antibiotic Awareness Day, including running stands to communicate with Trust staff and patients, on the prudent use of antibiotics;
- Delivery of influenza and pertussis vaccination training sessions for Trust peer and patient vaccinators;
- Additional information and expert advice on aspects of the use of antimicrobials in clinical trials.

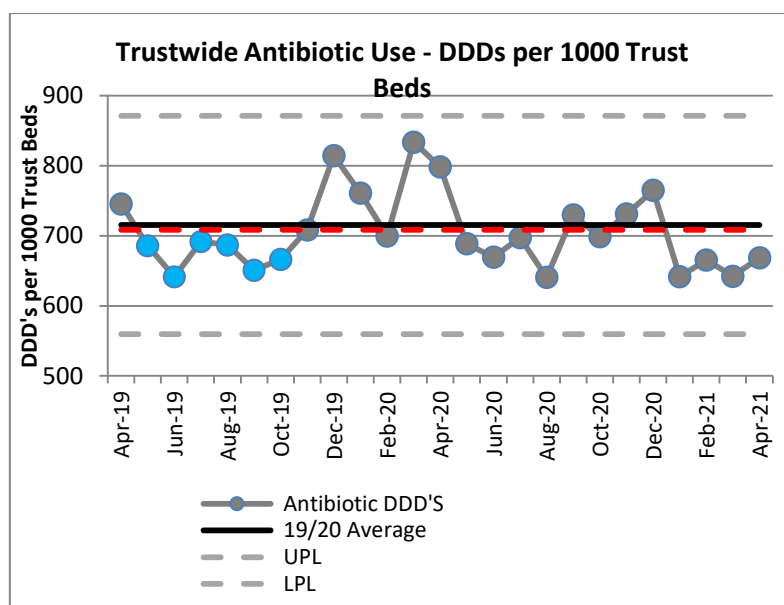
**Table 7 Antibiotic average monthly percentage difference from 2018 calendar year baseline**

DDD's				
	Trustwide	Medicine	Surgery & CC	Family Services
Trustwide	-15.96%	-13.20%	-10.47%	-49.52%
DPOW	-13.49%	-8.63%	-7.86%	-51.43%
SGH	-15.92%	-13.49%	-8.45%	-47.44%
GDH	-69.18%	-81.09%	-44.13%	N/A

DDD's per 1000 Trust Beds				
	Trustwide	Medicine	Surgery & CC	Family Services
Trustwide	-7.52%	-4.48%	-10.99%	-30.20%
DPOW	-10.24%	-8.43%	0.51%	-27.08%
SGH	-9.94%	-5.88%	-26.16%	-36.57%
GDH	46.27%	8.41%	3.50%	N/A

**Figure 13 Trustwide Antibiotic use**





### Antimicrobials Guidance and Review

The Consultant Pharmacist, Antimicrobials co-ordinates these functions in a number of ways:

- Collaboration in the review, maintenance and development of the Path Links Antimicrobials Formulary and Prescribing Advice, for both adults and children, to ensure that it is fit-for-purpose locally and also meets relevant national guidance, such as the NICE and Royal Colleges guidance on the management of infections;
- Antimicrobials stewardship ward rounds in specific areas, in conjunction with the Consultant Microbiologists and Lead Nurse Infection Control;
- Provision of detailed antibiotics history reviews for patients identified as being community or hospital onset, hospital acquired infections and participation in post-infection reviews of those patients;
- Provision of monthly Specific Process Charts (SPCs), the Antibiotic Prescribing Quality Standards Dashboard and any additional information to Divisional Governance Groups and Clinical Directors, for consideration of and action, as necessary on local antimicrobials consumption trends. The Antibiotic Prescribing Quality Standards Dashboard (completed quarterly for all patients prescribed an antimicrobial) shows there is room for improvement in our prescribing practices.

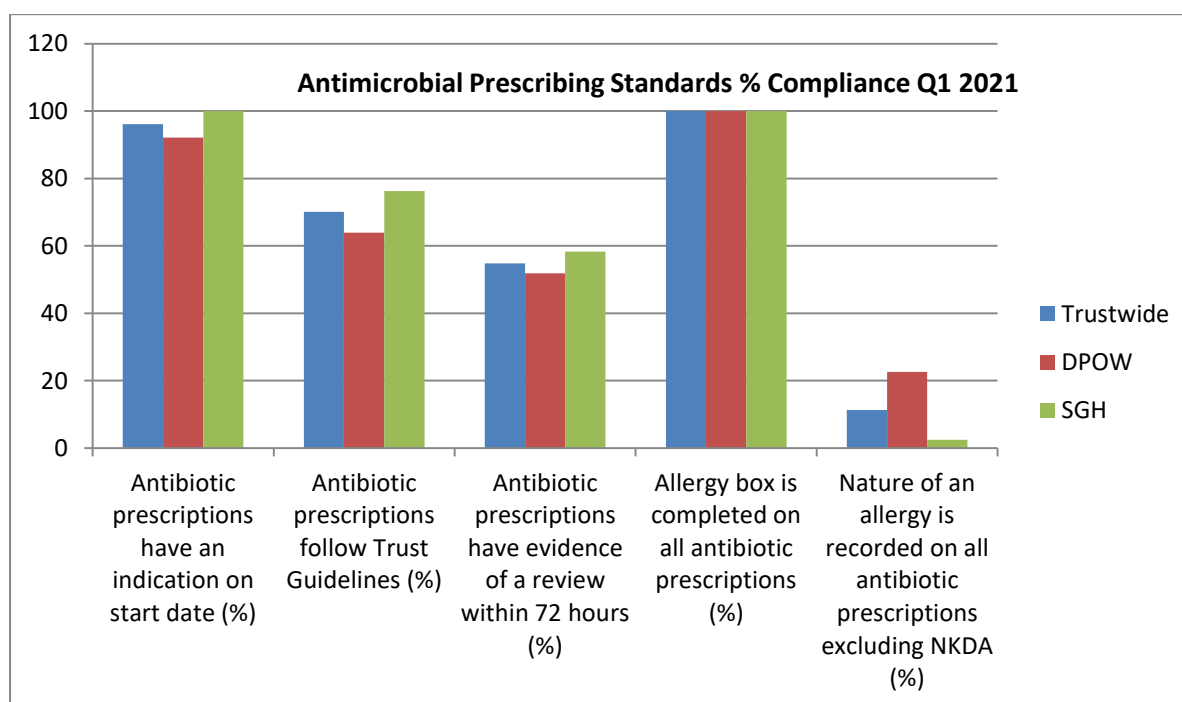
**Table 8 Percentage of patients prescribed an antibiotic on the day of data collection during Q1**

	2021/22 (Q1)
% of patients prescribed an antibiotic	47.5%
% of patients prescribed an antibiotic DPOW	43.9%
% of patients prescribed an antibiotic SGH	51.5%

Note: Q1 2021/22 based on April 21 bed occupancy data at midday divided by 30 days



Figure 14 Percentage of compliance to antimicrobial standards Q1 2021



**4. Provide suitable accurate information on infections to any person concerned with providing further support or nursing / medical care in a timely fashion.**

**Patient Information**

The trust has an IPC [www website](#) with information for the general public. There are a variety of guides for common healthcare associated infections.

The intranet HUB has a multitude of information [leaflets](#) for patients that can be quickly printed off by staff as required as well as quick reference guidance on ‘how to’ manage patients with infections. The IPC team designed a specific leaflet for patients and staff to help manage the [pandemic](#) and encourage the wearing of face masks in patients.

**Preventing infection**

We take the prevention and control of infection very seriously. Over the past few years the Trust has piloted and adopted a range of proactive measures to prevent healthcare-associated infection.

These measures include:

- ✓ Adopting the National Patient Safety Agency, ‘Clean your Hands’ campaign
- ✓ Provision of wall-mounted alcohol hand gels dispensers on all wards across the Trust for use by staff, patients and visitors. In addition, we have installed alcohol gel at each inpatient bedside so that it is available at the point of care
- ✓ Providing training in infection control and hand hygiene at induction for all new staff and annual refresher training for existing staff



**5. Ensure that people who have or develop an infection are identified promptly and receive the appropriate treatment or care to reduce the risk of passing on the infection to other people.**

**MRSA colonisation**

As a result of the pandemic the laboratory had to prioritise the types of samples it was processing to help keep on top of the Coronavirus testing. As a result only high risk patients and clinical settings were swabbed for MRSA during the peak of the pandemic.

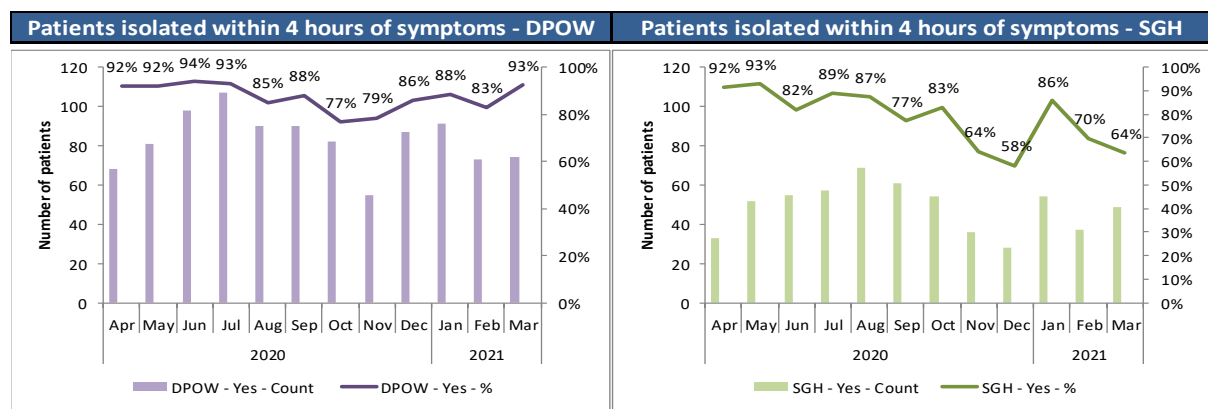
The bulk of MRSA isolates come from routine wound swabs and from swabs taken specifically to look for the presence of the organism (screening swabs). Most patients, from whom the organism is isolated, are not infected but rather merely colonised, i.e. harmlessly carrying the organism. It is very difficult to look at the raw data and determine how many patients are in fact infected but the rule of thumb is that infections account for less than ten percent of isolates.

The MRSA screening criteria within the trust was modified in 2014/15. This was in accordance with national recommendations where targeted screening rather than blanket screening was encouraged. If an MRSA colonisation is detected within a high risk environment a rapid review is undertaken to ensure best practice is maintained and any lessons learnt are shared.

**Patients with Unexplained Diarrhoea**

As part of the *C.difficile* reduction strategy the IPC team monitor patients who have had a faecal sample submitted to the laboratory for suspected infection. One of the main key performance indicators is patients presenting with type 5-7 stools should be isolated within 4 hours of symptoms. Again during the height of the pandemic the priority for single rooms were patients with suspicion of COVID-19 infection meaning this posed some difficulties at times. The adoption of the Redrooms certainly allowed us to minimise the overall impact.

Figure 15 Patients with diarrhoea and time to isolation



In approximately 86% of cases this was achieved at DPOW site but only on 77% of the time at SGH. Due to the limited number of single rooms currently available across the main hospital sites, especially at SGH this will continue to pose challenges especially during the

peak winter season. Work continues with Strategy and Planning and part of the winter resilience to enhance additional isolation capacity across the Trust including Scunthorpe site. Part of the enhancement has seen the installation of [architectural wallsz](#) including ward 23.

The IPC team also review whether the stool sample submitted is deemed appropriate based on clinical information. Staff are given feedback if samples are deemed inappropriate to help improve practice and reduce pressure on single rooms. There is ongoing education and stool sampling and correct management of patients with diarrhoea is part of the IPC yearly roadshows.

## Outbreaks

Outbreaks occur when there are two or more linked infections which may or may not be preventable. Usually, these events are, by definition, unpredictable. Historically this has mainly been associated with viruses such as Norovirus or Influenza. However with the emergence of SARS CoV-2 we have mainly been dealing with numerous outbreaks associate with this virus and fortunately no outbreaks related to other traditional winter viruses.

**Figure 16 Wards and bays closed for outbreaks of confirmed COVID-19 outbreaks.**

NLAG COVID-19 Outbreaks January - March 2021

	W/C 05/10/2020	W/C 12/10/2020	W/C 19/10/2020	W/C 26/10/2020	W/C 02/11/2020	W/C 09/11/2020	W/C 16/11/2020	W/C 23/11/2020	W/C 30/11/2020	W/C 07/12/2020	W/C 14/12/2020	W/C 21/12/2020	W/C 28/12/2020	W/C 04/01/2021	W/C 11/01/2021	W/C 18/01/2021	W/C 25/01/2021	W/C 01/02/2021	W/C 08/02/2021	
BPOW Stroke Unit																				Stroke Unit 8 pts, 4 staff
Ward B3					Ward B3 2 pts, 4 staff															
Ward B6				Ward B6 3 pts, 5 staff										Ward B6 30 pts, 8 staff						Ward B6 6 pts, 3 staff
Ward B7											Ward B7 8 pts									
Ward C2																				Ward C2 3 pts, 1 staff
Ward C5				Ward C5 18 pts, 20 staff										Ward C5 8 pts, 12 staff						
SDH Ward 3	Ward 3 6 pts, 6 staff																			
Ward 6																				Ward 6 11 pts, 4 staff
SDH Stroke Unit																				Stroke Unit 14 pts, 5 staff
Ward 16																				
Ward 17					Ward 17 10 pts, 4 staff															
Ward 17																				Ward 17 14 pts, 4 staff
Ward 17																				Ward 17 5 pts, 3 staff
Ward 23																				Ward 23 17 pts, 15 staff
Ward 28 HORS																				
Ward 28																				17 pts, 6 staff
Ward 29																				
Ward 29																				Ward 29 3 pts, 2 staff
Ward 29																				Ward 29 8 staff

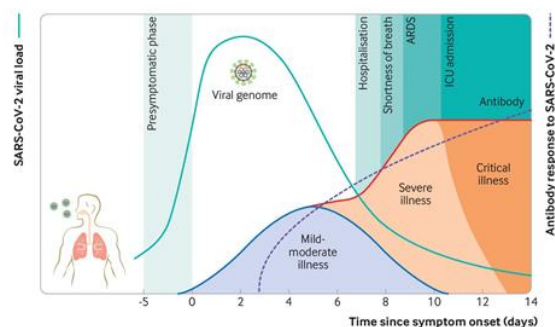
## COVID-19 pandemic response

Due to the vast amount of activity undertaken in preparing and managing the COVID-19 outbreak the operational content will be covered in the phase 2 and 3 response documents produced by directorate of operations. This section will only focus on the pertinent IPC aspects of the pandemic.

The COVID-19 pandemic in the United Kingdom is part of the worldwide pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The virus reached the UK in late January 2020. As of 24 March 2021, there have been 4.4 million cases confirmed and 127,543 deaths overall among people who had recently tested positive.

SARS-CoV-2 is spread primarily via respiratory droplets during close face-to-face contact. Infection can be spread by asymptomatic, pre-symptomatic, and symptomatic carriers. The average time from

After the initial exposure, patients typically develop symptoms within 5-6 days (incubation period).



Muge Cavik et al. BMJ 2020;371:m3862

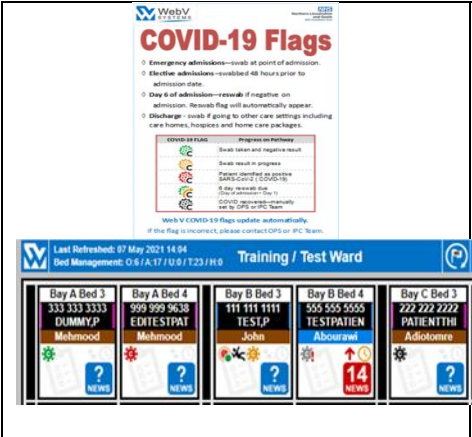

exposure to symptom onset is 5 days, and 97.5% of people who develop symptoms do so within 11.5 days. The most common symptoms are fever, dry cough, and shortness of breath. Diagnosis is made by detection of SARS-CoV-2 via reverse transcription polymerase chain reaction testing. Manifestations of COVID-19 include asymptomatic carriers and fulminant disease characterized by sepsis and acute respiratory failure. Approximately 5% of patients with COVID-19, and 20% of those hospitalized, experience severe symptoms necessitating intensive care. More than 75% of patients hospitalized with COVID-19 require supplemental oxygen.


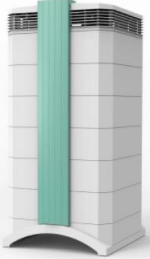
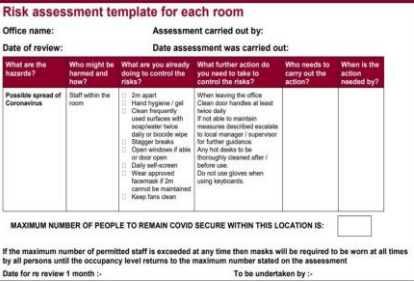


On 23 March 2020, the UK went into lockdown. The governments imposed a stay-at-home order banning all non-essential travel and contact with other people, and shut almost all schools, businesses and gathering places. Those with symptoms, and their households, were told to self-isolate, while those with certain illnesses were told to shield themselves. The NHS was asked to make additional capacity for possible surge of cases. This resulted in a number of wards being identified as being the COVID-19 wards to manage positive cases, initially this was C5 and C6 with A1 at DPOW and Ward 22, 25 and 18 at SGH. Part of the surge preparation, clear zoning was instigated across the Trust to ensure patient pathways were deployed based on the patient COVID status or presentation of possible COVID like illness.

Green Zone	Covid free
Yellow Zone A	Patient Covid status unknown - Asymptomatic
Yellow Zone B	Patient Covid status unknown - Symptomatic
Red Zone	Covid positive patients

The COVID wards were changed in November due to the oxygen demands with influx of patients requiring high volumes of oxygen therapy. As such ward 17 was upgraded to improve its oxygen delivery hence ward 22 migrated into this area and C6 migrated to C1.

### Measures implemented to assist with the management of COVID-19 infections.

 <p>The screenshot shows the 'COVID-19 Flags' interface. It includes a legend for 'COVID-19 FLAG' with icons for 'Swab taken and negative result', 'Swab result in progress', 'Patient identified as positive (SARS-CoV-2 COVID-19)', and '5 day, return date'. Below the legend is a 'Progress pathway' diagram. At the bottom, there's a 'Training / Test Ward' header and a grid of patient cards for various beds (e.g., Bay A Bed 3, Bay A Bed 4, Bay B Bed 3, Bay B Bed 4, Bay C Bed 3) with names like DUMMY.P, Mehmoood, John, Abourawi, and Adiolomre.</p>	<p>Working closely with WebV programmers some new coronavirus icons were developed. These were automatically linked to swab results and when received by the laboratory making the movement of patients safer and preventing unnecessary swabs. This was particularly useful when the day 3 swab came into being in December.</p>
 <p>The image shows a white, rectangular isolation pod on a blue base with wheels. It has a door on the front and various ports and handles on top and sides.</p>	<p>The Trust purchased 30 Redirooms which are pop up isolation PODS. These were received in December and implemented within the admission areas such as IAAU and short stay wards. Although there were some beds lost due to the size of the POD it has helped to enhance the isolation capacity across the Trust and certainly helped to reduce the nosocomial infection rate especially with the emergence of the B117 (Kent) variant in December 2020. This particular variant was reported to be up to 70% more transmissible</p>

	<p>than the original SARS CoV-2 variant.</p>												
	<p>The Trust also purchased a number of Cubiscreens. These are plastic curtains that are used to help provide a visible barrier between patients. These help to prevent patients mingling and will protect against droplets but not airborne particles.</p>												
	<p>Within certain high risk units the Trust also purchased a number of air scrubbers. These help to reduce the amount of airborne contaminants by filtering the air and passing it through a HEPA filter. Depending on the room size is equivalent to 12 Air changes per hour. These were deployed within HDU, ECC SGH and COVID wards to help reduce risk to patients and staff from airborne particles.</p>												
	<p>As part of the social distancing implementation process all areas were asked to risk assess all rooms using the HSE guidance. The <a href="#">assessment</a> was then placed in a visible area e.g. on the door. This was periodically updated to take into account the shielding changes and increasing numbers of staff, ward moves etc.</p> <p>Staff were also asked to undertake a declaration that they would not attend work with any possible signs of COVID. During the pandemic staff were asked to undertake a personal risk assessments to determine if their current area of work was safe for them and what additional mitigations were required e.g. PPE. A panel was instigated by HR to review cases scoring high on the RA tool.</p>												
	<p>COVID-19 antibody testing was rolled out in the Trust in summer which saw a phenomenal uptake.</p> <table border="1" data-bbox="663 1319 1299 1496"> <thead> <tr> <th>Site</th> <th>% Positives</th> <th>Total Tested</th> </tr> </thead> <tbody> <tr> <td>SGH</td> <td>15%</td> <td>1663</td> </tr> <tr> <td>GDH</td> <td>12%</td> <td>179</td> </tr> <tr> <td>DPOW</td> <td>6%</td> <td>1848</td> </tr> </tbody> </table>	Site	% Positives	Total Tested	SGH	15%	1663	GDH	12%	179	DPOW	6%	1848
Site	% Positives	Total Tested											
SGH	15%	1663											
GDH	12%	179											
DPOW	6%	1848											
	<p>In June the updated IPC guidance advocated all patients / visitors and staff to don a face mask. In order to support this initiative a PPE audit was introduced to support the implementation. A <a href="#">PPE</a> and COVID BAF dashboard are available for staff to gauge their performance.</p> <p>• <a href="#">Outbreak vulnerability assessment tool</a></p> <p>The outbreak vulnerability assessment tool (OVAT) is a quick and handy 'walkaround' guide to support leaders.</p> <p>The OVAT was developed by Dr Evonne Curran and Maurice Madoo.</p> <p><a href="#">Outbreak vulnerability Tool</a> adopted by NHSE</p>												

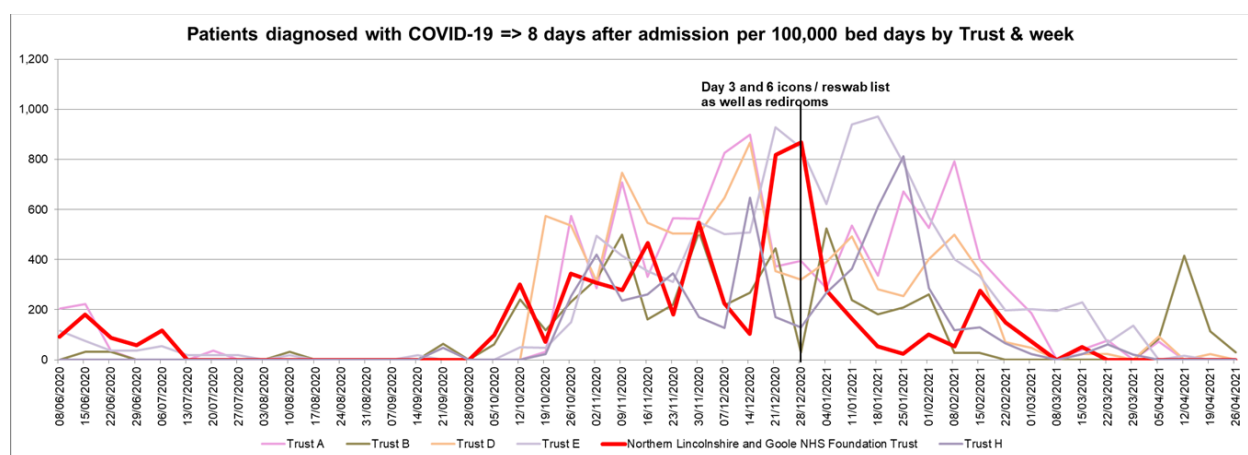




mini RCA undertaken to identify any lessons to be learnt. The main themes detected varied depending on the time of the infection:

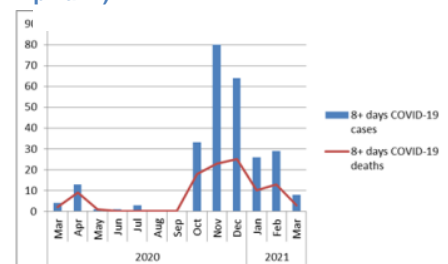
- Possible staff to patient transmission (Before lateral flow testing became available for asymptomatic staff)
- Admission swab negative (could be false negative) which may have exposed other patients in bay / ward, especially pertinent when no day 3 swab was recommended.
- Aerosol generating procedure – helping to disseminate the virus in presumed negative patient in a bay.
- Delay in detecting positive cases due to swab turnaround time or failure to swab on time– increasing exposure to susceptible patients.

Figure 18 Comparison of NLaG COVID-19 cases with local peers based on 100,000 bed days



One of the consequences of the pandemic is unfortunately hospital onset COVID with resulting mortality within 28 days of detection. As with the majority of NHS Trusts we unfortunately experienced a significant number of patients that died during the pandemic that will have acquired the infection whilst in our care. This is now part of a national enquiry to determine lessons learnt and better planning for any future pandemics. Given the complexity of the pandemic it was inevitable hospital onset cases would occur despite best efforts taken to minimise them.

Figure 19 Number of deaths >8 days (exc pillar 2)



**6. Ensure that all care workers are aware of their responsibilities in preventing and control of infection.**

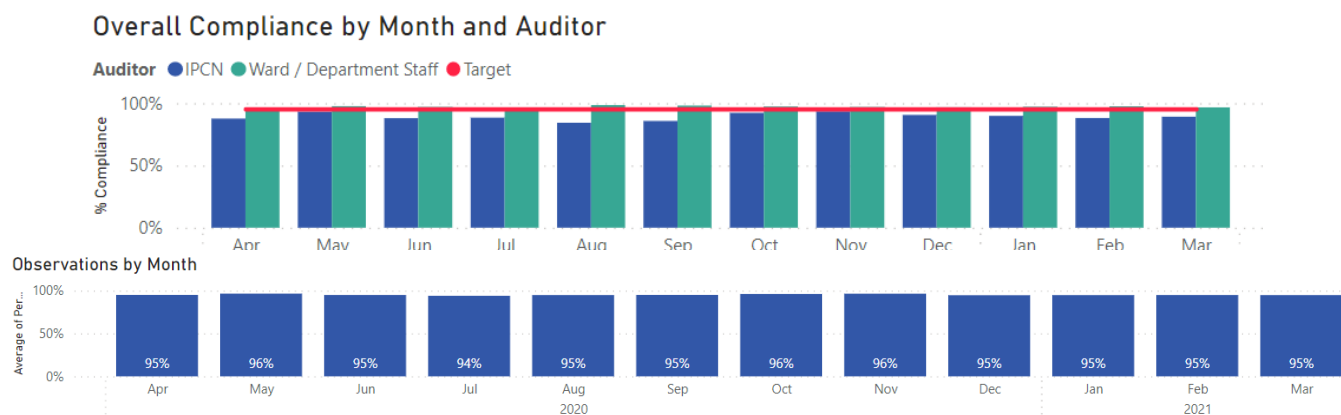
## Hand Hygiene

Hand Hygiene remains a fundamental component in the prevention of nosocomial infections. The IPC team continue to promote hand hygiene compliance incorporating the WHO five moments tool. Hand hygiene compliance including bare below the elbows is an expectation for all clinicians. Ward staff continue to record opportunistic hand hygiene observations on a monthly basis and these are supplemented by IPCN observations to provide some quality assurance. Areas that are found

deficient are provided with a feedback plan and remedial actions worked through with the ward manager and if required the Matron.

A WebV hand hygiene App was launched in February 2019 allowing staff to use the smart phones on wards / depts. to record compliance. Results are displayed in an interactive dashboard so that all areas can view their compliance with each of the WHO five moments. Overall hand hygiene compliance remains good. Total observations for 2020/21 were 8354: 2084 IPCN observations and 6270 Ward/Department Staff observations.

**Figure 20 Hand Hygiene overall compliance scores**



## Isolation Facilities



As previously mentioned SGH site is more compromised due to the lack of isolation rooms. The opening of Ward 29 has improved the infrastructure for surgical patients and has the additional benefit of adequate mechanical ventilation.

The lack of isolation capacity is highlighted on the Board Assurance Framework as a risk which may impact on the management of infectious patients, however this has been mitigated considerably with the introduction of the Redirooms and future capital schemes enhancing isolation capacity.

### 7. Secure adequate access to laboratory support as appropriate.

#### Microbiology Laboratory (report by Nick Duckworth Laboratory manager)

A slightly busier year than expected. Covid-19 samples arrived from the first week in February which were initially tested by PHE before on-site testing started at Scunthorpe on 3rd April. Microbiology were part of the ME2 network response along with Nottingham, Leicester, Derby, Chesterfield, Kings Mill, Kettering & Northampton who all worked together through the ME2 Ops team comprising all 8 lab managers plus a lead and support team. Until December 3 meetings each week were held, plus additional meetings during operational difficulties. Contact between managers was also by WhatsApp to allow for rapid contact and support across the network. Although work was moved



around initially between sites to allow for delays to implementation & analyser failures, by the autumn this method had been ditched as being too staff intensive and introduced further delays and problems into the system. The ME2 Ops group has been viewed as a very successful operation and we have shared lessons learnt with the ME2 board. The microbiology staff have volunteered for extra Covid-19 shifts and/or swapped shifts to enable us to provide 24/7 Covid-19 cover and although one or two ME2 sites did manage to provide some 24/7, we remain the only lab providing this level of service throughout.

Routine work dropped considerably during April as Path Links Microbiology Directorate introduced the RCPATH testing guidance for the pandemic to ease staffing pressures and to allow extra safety measures to be put in place to protect staff. BAU finally came back with a vengeance in mid-February 2021.

The UKAS surveillance visit in March 2021 went very well with only 2 improvement actions which was viewed by Path Links management as an incredible achievement under normal operating conditions, let alone the pandemic.

The tender for MALDI-TOF has finally gone out through the NHS Framework at the beginning of May 2021 and we hope to complete this and have it service by late summer. This will make a significant improvement to the identification of organisms and turnaround time, which should benefit sepsis management in particular.

The major challenge now is to obtain NLAG Trust agreement for several business cases for extra staff for both Covid-19 testing and routine work as we are now, in common with other labs, struggling to meet demand safely.

**8. Have and adhere to policies, designed for the individual’s care and provider organisations that will help to prevent and control infections.**

## Infection Prevention and Control Policies

There are an extensive number of policies, guidelines and how to documents that are maintained by the IPC team in a timely manner. Recent policies updated can be seen below.

**Table 9 Policies updated within last year**

Name of Policy	Date for review
Decontamination of Medical Equipment Prior to Inspection Service or Repair Policy	23/03/2022
Sharps injury and body fluid exposure management	01/09/2021
Surveillance Policy	04/05/2022
Hand Decontamination Policy	24/06/2022
Varicella Zoster Virus Protocol	11/08/2022
MRSA Policy	17/02/2024
Isolation Policy	01/05/2022
Safe Use and Disposal of Sharps Policy	08/11/2022
SARS Policy / SARS CoV-2 (PHE guidelines)	04/08/2021
Viral Haemorrhagic Fevers & Other Hazard Group 4 Agents (VHF Policy)	20/11/2022
Medical Devices Policy	06/01/2023
Transmissible Spongiform Encephalopathy Agents – (TSE Policy)	17/01/2023

**9. Have a system in place to manage the occupational health needs of staff in relation to infection.**

The Occupational Health team have undergone changes within the last year with the senior nurse leaving the service. The team have played a crucial role in the delivery of the influenza vaccines and the also helped to implement a successful support service during the pandemic. The lead nurse has an open invite to the Infection Prevention & Control Committee.

### **Training and Education**

The IPC team continue to make education of staff one of its key priorities. There are a wide variety of educational portfolio materials available for clinical and non-clinical staff to help maintain their mandatory training requirements.

**The materials include:-**

- Surewash machines
- Workbooks for clinical and non-clinical staff updated into flip books
- Link practitioner programme
- Ward based training
- Care Camp
- Induction
- Clinical updates
- Junior Doctors / HYMS training
- [IPC blog site](#) for staff and students

Over 6000 members of staff have undertaken some form of IPC training.

<b>Count of Competency Match</b>	<b>Column Labels</b>	
<b>Row Labels</b>	<b>Yes</b>	<b>Grand Total</b>
208 LOCAL Antimicrobial Stewardship	1386	1386
208 LOCAL Infection Control - 3 Yearly	589	589
208 LOCAL Infection Control - No renewal	1309	1309
NHS MAND Infection Control - 1 Year	3312	3312
<b>Grand Total</b>	<b>6596</b>	<b>6596</b>

There was also approximately 2500 staff fit tested for the appropriate FFP3 mask. This process also incorporated a resume on donning and doffing.

## Community & Therapies Services – information provided by Noelle Williams IPCN

### Overview

2020/21, the year of the Covid-19 pandemic has been a year of challenge for all IPC teams throughout the UK. The Community Infection Prevention & Control team were no exception to this. The team remains a sub set of the Acute Trust IPC team, with dual input across both acute and community interfaces in the provider only role. The team also continues to deliver the IPC service for Goole hospital.

The Community Infection Prevention & Control (IPC) team comprises a 1.0 wte Band 7 CNS IPCN and a 0.8 wte Band 3 AHCA (this includes sequestered time to the SSI prevention strategy).

The work of the Community IPC team has been significantly impacted by the COVID-19 pandemic from mid-January 2020. Initially with the management of potential cases of SARS-CoV-2 infection as a high consequence infectious disease (HCID), and then as significant numbers of cases were managed in Community and the Trust, the team were called upon to support the Acute Hospitals. The Band 3 AHCA went into shielding between 28/2/2020 until 30/6/2020 and the Band 7 was placed on sick leave from 17/11/2020 until 07/12/2020.

Demonstration of activity and input/acknowledgement of on-going challenges, related to infection prevention and control continue to be discussed within the Community & Therapy Governance meetings which are held monthly; remotely since the advent of the pandemic. Minutes from this meeting including actions and issues continue to be forwarded to the Infection Control Committee and are available to view via the Hub. Where attendance has not been possible a formal report has been submitted for discussion.

Support to commissioned services has continued throughout this financial year and has notably increased during the Covid-19 pandemic. A named nurse for Commissioning IPC service has now been appointed.

Face to face mandatory training has not been possible during this year so work booklets have become the medium of choice.

### Surveillance organisms

Performance against the objectives set for surveillance organisms improved overall in the year 2020/21 with all objectives achieved as can be seen in the table below.

Table 10 Comparison of North Lincolnshire performance against CAI surveillance organisms for 3 years

Organism	2018/19	2019/20	2020/21
	Performance	Performance	Performance
MRSA	1	3 ↑	0 ↓
C.difficile	20	15 ↓	10 ↓
E.coli	106	165 ↑	125 ↓
MSSA	43	41 ↓	31 ↓

CPE	1	0	0 =
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## Audit

Prior to the COVID 19 pandemic, community services had launched the '15 Steps' audit programme as alluded to in the previous annual report, this included Community IPC as a core auditor. This was to supersede the previous community audit. With the advent of the pandemic this was naturally postponed. Issues with community environments were, this year reviewed on need until such time as the annual audit programme could be reinstated. Board Assurance Framework (BAF) Covid risk assessments were however undertaken for all community venues as soon as the team were relieved from acute only duty.

Hand hygiene audits continue to be recorded annually on OLM as a practical assessment for all Community & Therapy staff. Monthly point of care audits remain requested of those staff groups in group clinical environments; namely the chronic wound management team, podiatry teams, MacMillan Home Health care teams and Dental clinics. These audits are available to view via the IPC hub dashboards. The annual hand hygiene assessment for all Community clinical staff remains the significant audit for assurance.

## Community & Therapy Link Practitioner Forum

There was no Link practitioner forum during the period under scrutiny due to the Covid 19 pandemic. All IPC guidance appertaining to Coronavirus/Covid 19 remains accessible on the Trust Hub. A Bulletin newsletter was provided quarterly to update Link Practitioners on the current developments.

## Decolonisation Service

The decolonisation clinic, closed during the Covid 19 pandemic and remains so at the time of writing this report. Any decolonisation treatments required during this year have been secured entirely via the primary care route. Table 2. below demonstrates the would be accesses to the clinic for both identified MRSA patients and for out of area accesses in comparison to the prior 2 years .

**Table 11 MRSA decolonisation events**

Period	No. of MRSA patients treated	No. of Out of Area accesses
2018/19	42 ↓	20 ↓
2019/20	20 ↓	2 ↓
2020/21	0/21	0/1

## **Activity and Engagement**

### **FIT Testing**

The community IPC team assisted in the delivery of FIT testing sessions to Community & Therapy staff plus acute Medical and nursing staff as was required throughout the year.

### **Preparation of the Covid Swabbing Teams**

The Community IPC team delivered training and advice to the Community swabbing teams – ensuring good practice for donning and doffing of PPE and the swabbing technique required.

### **Care Home Support**

May to July 2020 Community IPC were seconded 2 days per week to assist the commissioners and local authority to provide face to face PPE training and infection control advice to a number of North Lincolnshire care homes whom had been identified as 'hotspots'. These homes were struggling with Covid -19 outbreaks and required the support to better manage the situation within.

During this period 19 Care home were visited and training provided to all available staff. Of these 19, 3 were provided with multiple visits to provide further support.

Community IPC also supported a number of North Lincolnshire GP practices during this period with advice for restarting urgent minor procedures.

### **PPE Roadshow**

August 2020 the Community IPC team joined forces with the acute team to provide education, information and advice specifically around the topic of PPE practice. Education packages and quizzes were utilised to ensure that all staff were both aware and understanding of the practice required.

The community prize was won by a Speech & Language Therapist (who did not wish her photo to be shared)

## Glossary

MRSA	Meticillin resistant Staphylococcus aureus is a bacterium that is resistant to commonly used antibiotics such as flucloxacillin.
C.difficile	Is the organism most frequently identified as the cause of antibiotic-associated diarrhoea
Bacteraemia	The presence of bacteria in the blood
Colonisation	The presence of a bacteria on or in the body without causing infection
ESBL	Extended-Spectrum Beta-Lactamases are enzymes produced by bacteria, making them resistant to broad-spectrum antibiotics.
PIR	Post Infection Review is a systematic review of an event to determine if any deviation from best practice and lessons to be learnt.
Antimicrobials	Antibiotics
Dashboard	Is a way of presenting data in a visual format.
Carbapenemase-producing Enterobacterales	Resistance to carbapenem antibiotics