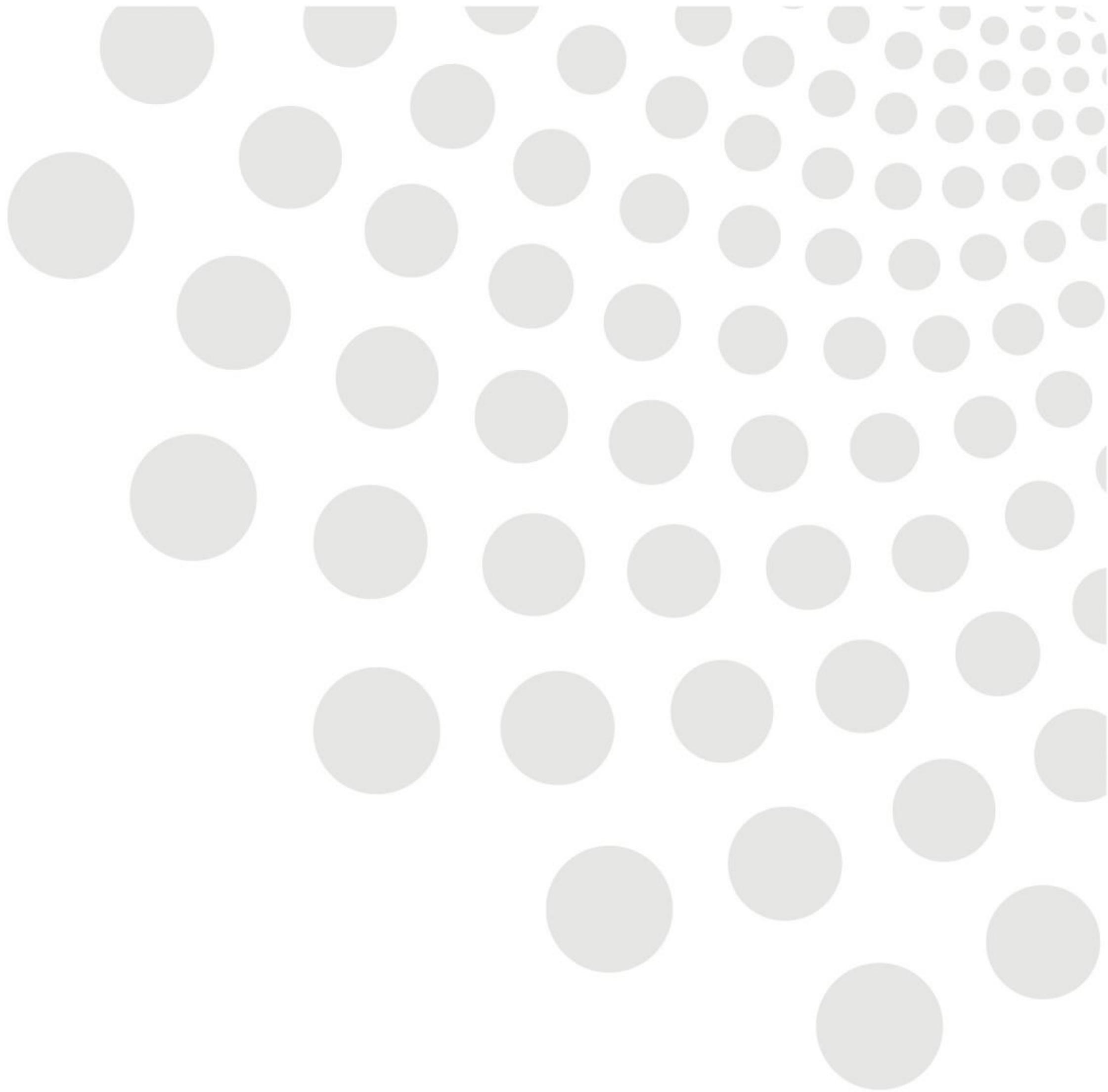

# Infection Prevention Team Report Healthcare Associated Infections update Q1 2019-20

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## 1. Introduction

This report is an update the Lancashire and South Cumbria Integrated Care System on the local Healthcare Associated Infections (HCAIs) data. It will also include an update on the support provided from the Infection Prevention team to Lancashire County Council (LCC) and Blackburn with Darwen (BwD) Local Authority and to the CCGs within the LCC footprint.

It is recognised that some infections are inevitable as a result of healthcare, but the vision of the Infection Prevention Society is that no person is harmed by a preventable infection. In addition to the significant unpleasant impact on patients of suffering from an unnecessary infection, HCAIs carry the financial risk of unscheduled care and prescribing costs. There are many HCAIs, but the national focus is on Meticillin resistant *Staphylococcus Aureus* (MRSA) bloodstream infections; Meticillin Sensitive *Staphylococcus Aureus* (MSSA) bloodstream infections; Gram-negative bloodstream infections including *Escherichia coli* (*E. coli*), *Pseudomonas* and *Klebsiella*; and *Clostridium difficile* infections (CDI).

Laboratories within the acute trusts submit their data onto the Data Capture System managed by Public Health England. This data is checked and locked down on the 15th of each month, but minor changes sometimes occur after this date.

**The purpose of the report is to:**

**Alert,**

- The ICS is amongst those reporting the highest numbers of E. coli bloodstream infections across England.
- 4 cases of MRSA bacteraemia during Q1.

**Advise;**

- There are changes in the attribution of CDI. This should not lead to more cases, but the proportion attributed to acute hospital trusts will increase.

**Assure**

- Work to reduce the number of E coli bloodstream infections continues
- The IPC team continue to work with schools to raise the profile of hand hygiene.

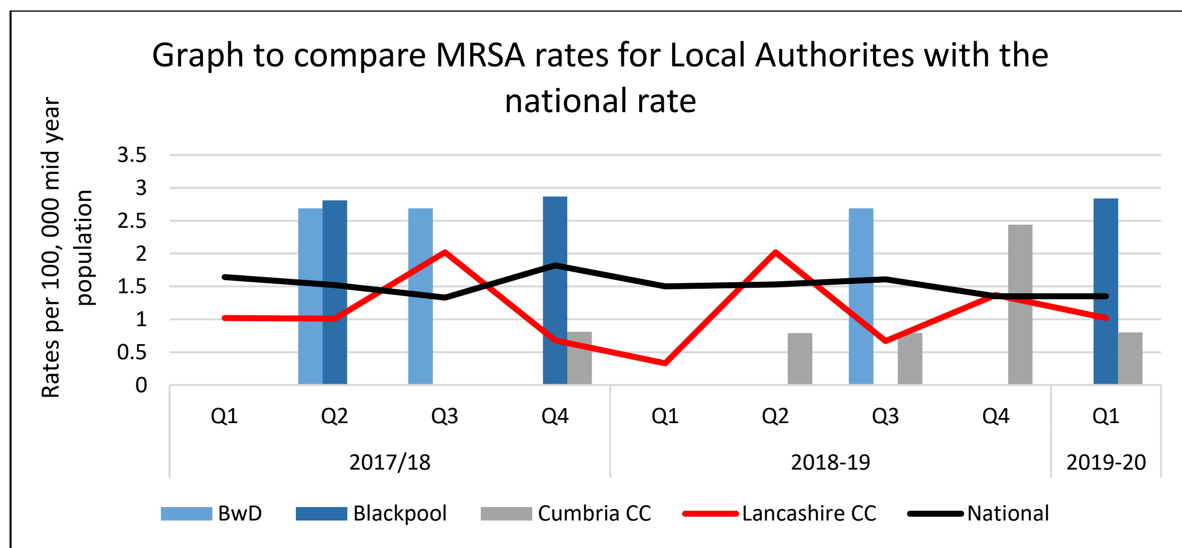
## 2. MRSA

A zero tolerance for MRSA bloodstream infections continues, and a clinical review is undertaken for each incident to determine if there are lessons to be learned and shared.

During Q1 there have been 4 MRSA bloodstream infections identified. Whilst this is a significant increase on the similar time period last year, the incidents continue to be diverse with no identifiable themes for the causes. The following chart shows a breakdown of these cases.

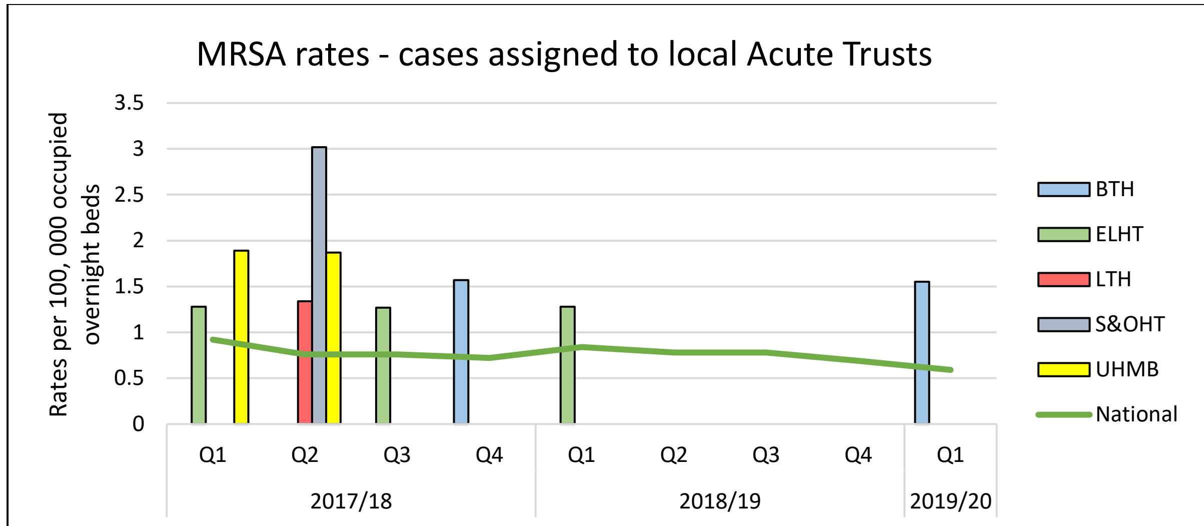
| Chart to show break down of MRSA bloodstream infections for 2019/20 to date | | | | | |
|---|---|---|---|---|---|
| | **CCG** | **Acute Trust** | **Where assigned** | **Main contributory factor** | **Lessons learned** |
| Q1 | B'pool | BTH | Acute Trust | | Unknown – not a Lancashire resident |
| | MB | UHMB | Community | Awaiting review | |
| | WL | Liverpool Women's Hospital | Acute Trust | Neonate - preterm in ICU. Umbilical arterial catheter tip and blood culture positive for MRSA | Care of devices |
| | EL | ELHT | Community | Ca lung with metastases. Neutropenic sepsis | None identified |

The following graph compares the MRSA rates within the local authorities to the national rate since 2017. These rates include all cases whether assigned to the acute trust or non-acute trust. This shows that for Q1 Lancashire, BwD and Cumbria were below the national rate. Blackpool was above the national rate, but this reflects just 1 case.




The following graph shows the rate of MRSA bloodstream infections assigned to local acute trusts compared to the national average. This graph should not be used to compare the performance within the local trusts as different population demographics and the variety of specialities provided will impact on their rates.

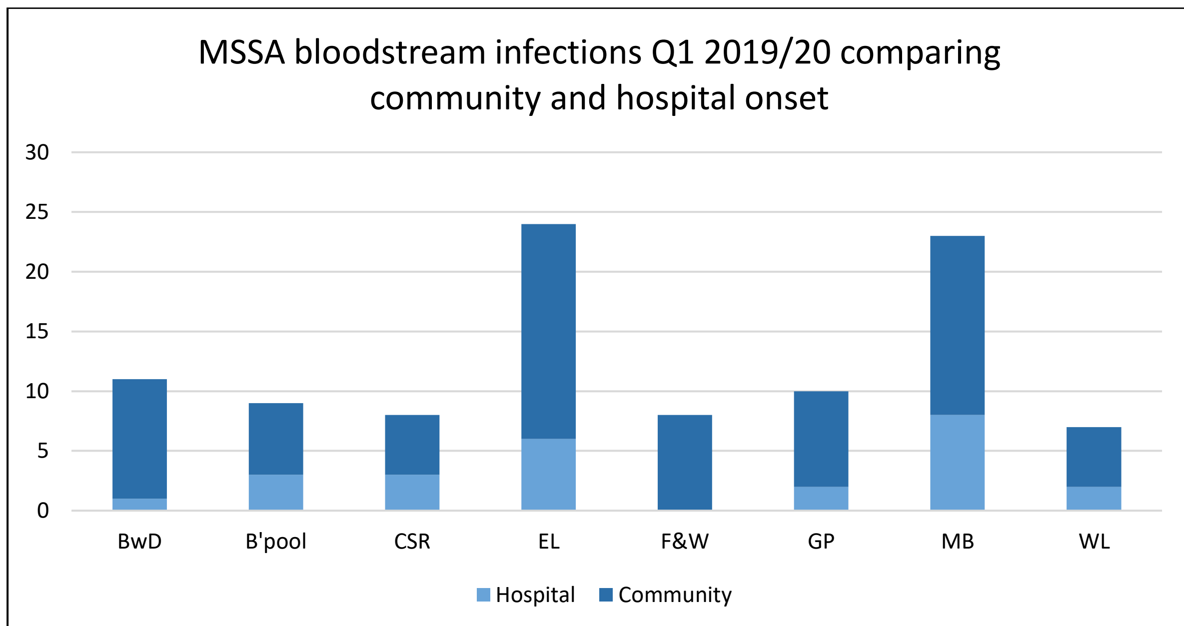
Blackpool Teaching Hospitals Trust reported a MRSA bloodstream infection during Q1; this is the first case apportioned to a local acute trust since Q1 2018/19.



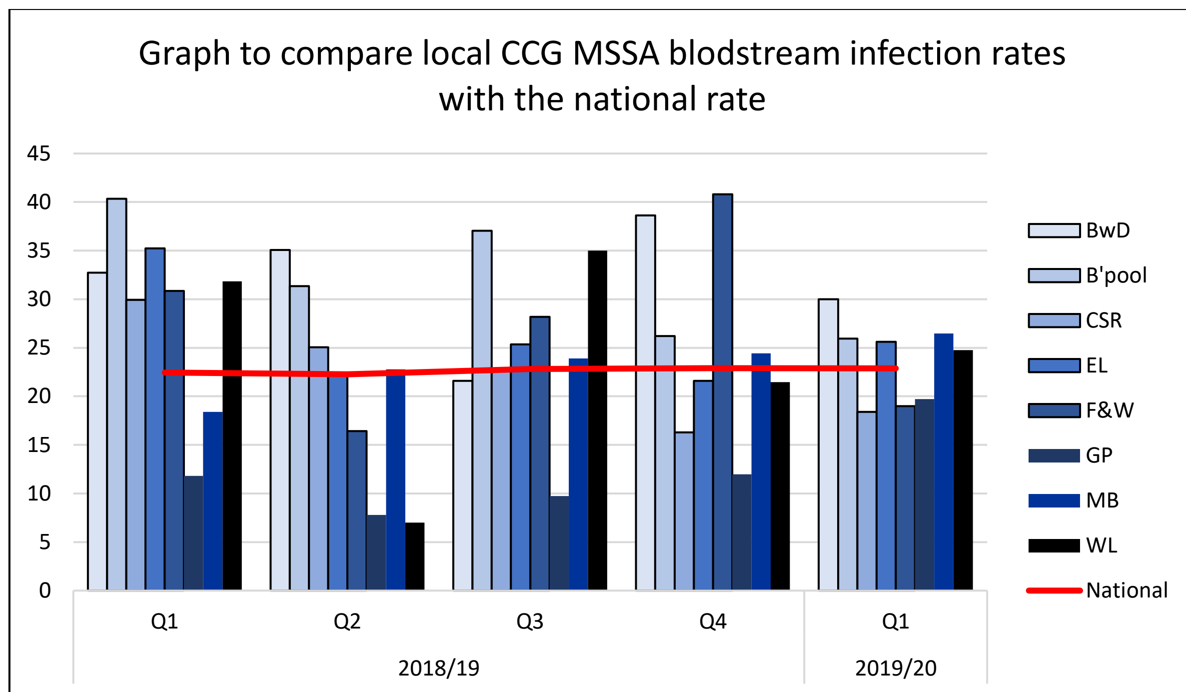

## 3. MSSA

There is no trajectory for MSSA bloodstream infections, but surveillance continues. For Q1 there have been 100 cases reported across the 8 CCGs with 75% being diagnosed within 2 days of admission to hospital; therefore attributed as community onset.

The following graph shows the distribution between the acute hospital trust and community onset.




The graph below compares the rates of MSSA in local CCGs to the national rate. This shows that the rate for some CCGs is repeatedly above the national rate, especially Blackpool and the Pennine CCGs, with no clear explanation for this.




## 4. *Clostridium difficile* infection (CDI)

Changes have been made to the CDI reporting algorithm for financial year 2019/20. The new categories are:

- ***hospital onset healthcare associated: cases that are detected in the hospital two or more days after admission***
- ***community onset healthcare associated: cases that occur in the community (or within two days of admission) when the patient has been an inpatient in the trust reporting the case in the previous four weeks***
- community onset indeterminate association: cases that occur in the community (or within two days of admission) when the patient has been an inpatient in the trust reporting the case in the previous 12 weeks but not the most recent four weeks
- community onset community associated: cases that occur in the community (or within two days of admission) when the patient has not been an inpatient in the trust reporting the case in the previous 12 weeks

The first two categories are now attributed to acute trusts. Previously cases were attributed to acute trusts after 3 or more days following admission and those taken immediately following discharge were attributed to the community. There will be a shift in numbers of cases from the community to the acute hospital trusts, but an increase in the total number of cases is not expected. The CDI objectives have been amended to reflect the new attribution.

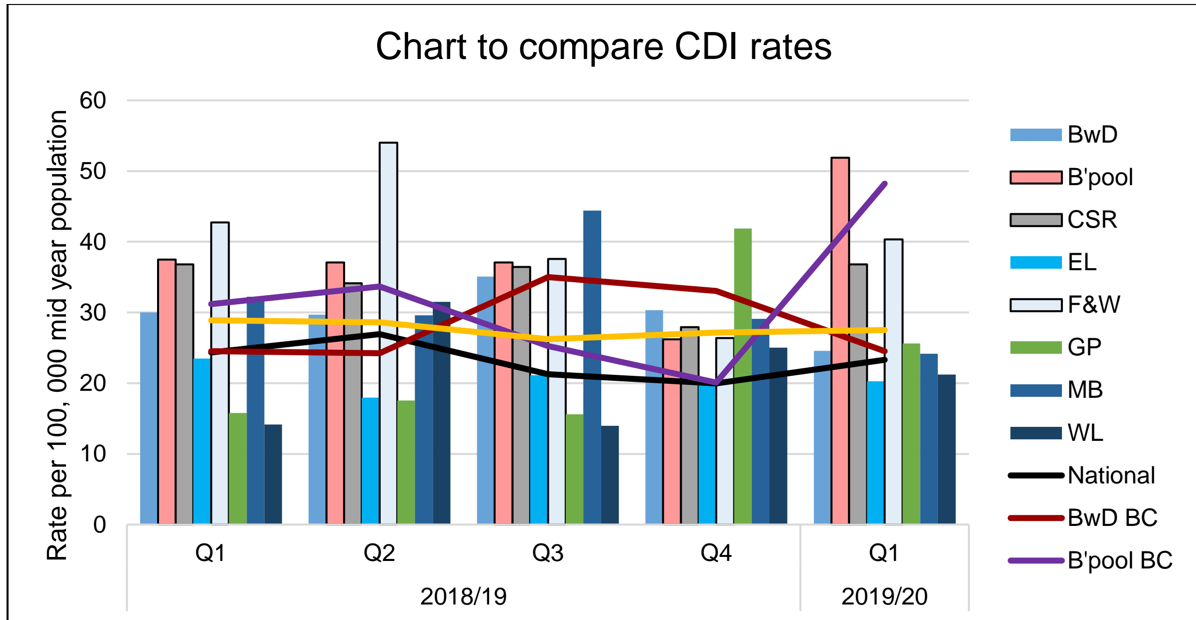
Cases are reviewed to determine if any lapses in care contributed to the onset of the infection, or poor management of the infection led to reduced outcomes for the patient, but this is not identifying any new trends.

### 4.1 CDI CCG

The CCG objective includes all cases of CDI in the registered population; whether attributed to the acute trust or the community. Across the 8 CCGs there have been 119 cases of CDI reported during Q1. This is against a combined cumulative objective of no more than 122, so this is being achieved by a narrow margin. The number is similar to Q1 2018/19, when there were 120 cases. The distribution of these is shown in the table below which highlights that Blackpool CCG and Greater Preston CCG breached their objective for Q1.

| | **BwD CCG** | **B'pl CCG** | **CSR CCG** | **EL CCG** | **F&W CCG** | **GP CCG** | **MB CCG** | **WL CCG** | **Total** |
|---|---|---|---|---|---|---|---|---|---|
| Q1 | 9 | 18 | 16 | 19 | 17 | 13 | 21 | 6 | 119 |
| Q1 cases 2018-19 | 11 | 13 | 16 | 22 | 18 | 8 | 28 | 4 | 120 |
| 2018/19 and 2019/20 Difference +/- | -18% | +38% | 0 | -14% | -6% | +62% | -25% | +50% | +1% |
| Objective | 11 | 13 | 16 | 19 | 19 | 8 | 30 | 6 | 122 |
| Q1 Non-acute cases | 7 | 8 | 8 | 14 | 10 | 6 | 15 | 2 | 70 |
| Q1 Acute cases | 2 | 10 | 8 | 5 | 7 | 7 | 6 | 4 | 49 |

The following graph compares the rates of CDI in local CCGs with the national rates. The rate for the CCG shows all cases within their population; those apportioned to acute trusts and those apportioned to the non-acute trusts. The graph shows that Blackpool, Chorley and South Ribble, and Fylde and Wyre CCGs had higher than national rates during Q1. The overall rate for Lancashire (27.53) was above the national rate (24.5)



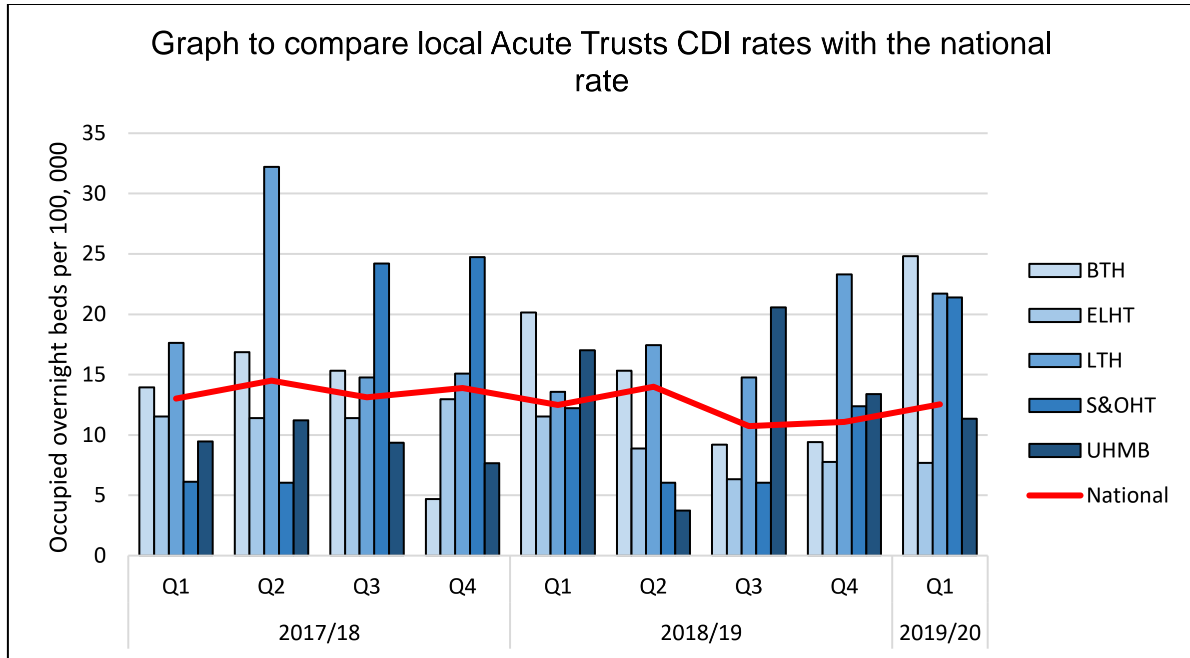

## 4.2 Acute Trusts CDI

The acute trusts' CDI objective is solely for the cases attributed to the acute trust. The clinical teams within the trust review the cases to determine if there have been lapses in care. Acute trusts are penalised if their objective is breached with cases where lapses in the quality of care have been identified.

The table below includes all cases attributed to acute trusts; including those where the review demonstrates that the outcomes for the patient were not altered by a lapse in care. The chart also shows the impact of the new reporting on the figures for the acute trusts. It is noted that not all trusts have seen an increase in the number of cases reported, but there has been an overall shift of 10% more cases attributed to the acute trusts.

| | BTH | ELHT | LTH | S&O HT | UHMB | Total |
|---|---|---|---|---|---|---|
| Q1 2019/20 | 16 | 6 | 16 | 7 | 6 | 51 |
| Q1 2018-19 | 13 | 9 | 11 | 4 | 9 | 46 |
| Objective | 16 | 13 | 21 | 4 | 6 | 54 |

The graph below compares local Trusts against the national rates. As with MRSA data, comparisons should not be drawn between acute trusts, due to the varying demographics of their catchment population and the specialist services they provide; therefore, this data should be used with caution.




## 5 *E. coli*

The reduction of Gram-negative bloodstream infections is a national priority, as often these are linked to multi-drug resistant organisms. Escherichia coli (E. coli) is the causative agent for the majority of these Gram-negative infections and is therefore the focus for the reduction plans.

The rate of E coli bloodstream infections varies tremendously across the country from 39.26 per 100, 000 mid-year population for the best performing CCG to 297.97 for the worst performing CCG (Q1 data). It is interesting to note that the CCGs with the highest rates tend to be in the north, especially the north-east, whilst the CCGs with the best rates tend to be in the south-east/London.

The following chart compares the CCG E. coli bloodstream infection rates with the highest and lowest across the country.

| Chart comparing the rate of E coli bloodstream infections for Q1 2019/20 per 100, 000 mid-year population | | |
|---|---|---|
| Highest rate | NHS SOUTH TYNESIDE CCG | 297.97 |
| 6th | NHS BLACKPOOL CCG | 129.67 |
| 18th | NHS WEST LANCASHIRE CCG | 109.65 |
| 36th | NHS EAST LANCASHIRE CCG | 100.32 |
| 41st | NHS BLACKBURN WITH DARWEN CCG | 98.2 |
| 55th | NHS CHORLEY AND SOUTH RIBBLE CCG | 89.75 |
| 100th | NHS MORECAMBE BAY CCG | 75.96 |
| 118th | NHS GREATER PRESTON CCG | 70.95 |
| 137th | NHS FYLDE & WYRE CCG | 66.46 |
| Lowest rate | NHS BROMLEY CCG | 39.26 |

The number of E. coli bloodstream infections for the 8 CCGs places the ICS as the 6th worst performing STP/ICS across England (N.B. this is based on numbers; not rates). Each health economy has developed action plans and reduction work is ongoing. NHS Improvement is arranging two events; one across the North-West and the other within the ICS. The purpose of these regional events is to engage senior leaders and to collate and share all the learning across the region.

Many cases arise in the community (78% locally during Q1), some with no recent health care involvement. This makes it challenging to identify the root cause of these infections and therefore the reduction work needs to be inclusive of many health and social care specialities. Some are linked to urinary tract infections (UTI) and urosepsis, so the Advisory Committee on Antimicrobial Prescribing, Resistance and Healthcare Associated Infection agreed that there should be a continued focus on UTI and associated preventative and management work.

### 5.1 *E coli* CCG

The ambition is to reduce healthcare associated E. coli bloodstream infections by 10% year on year to achieve a 50% reduction by 2024. The chart below shows the progress during Q1 towards achieving this trajectory.

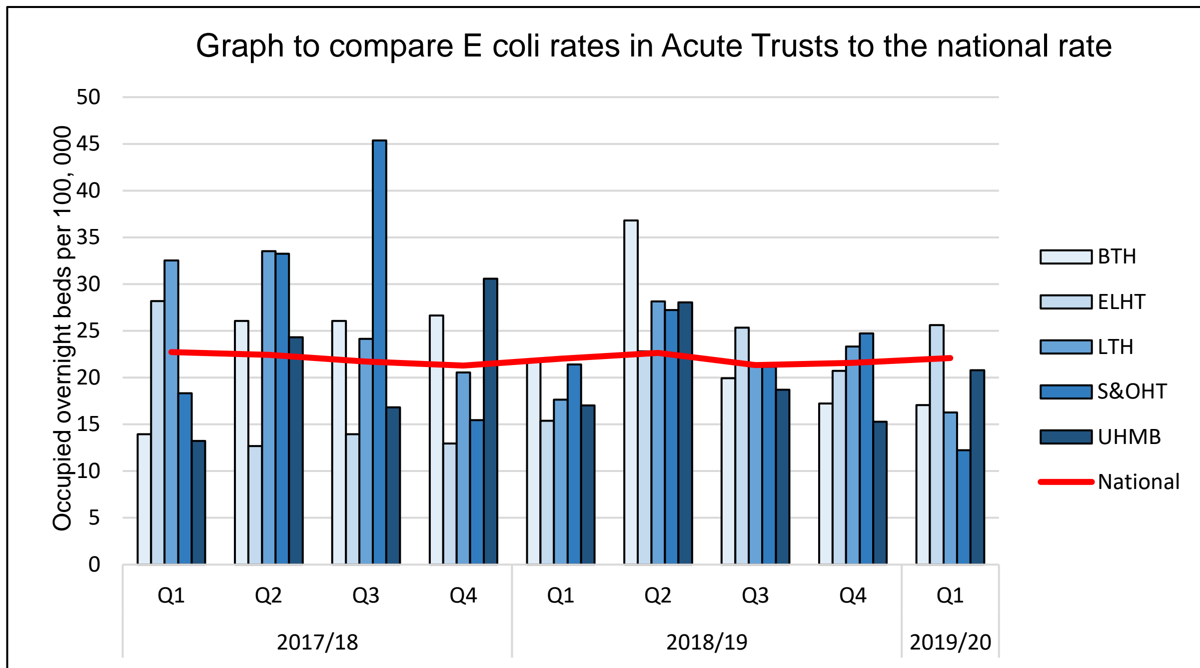
| | BwD CCG | B'pool | CSR CCG | EL CCG | F&W CCG | GP CCG | MB CCG | WL CCG | Total |
|---|---|---|---|---|---|---|---|---|---|
| Q1 Acute Cases | 6 | 6 | 8 | 17 | 1 | 6 | 12 | 2 | **58** |
| Q1 Non-acute cases | 30 | 39 | 31 | 77 | 27 | 30 | 54 | 29 | **292** |
| Total for Q1 | 36 | 45 | 39 | 94 | 28 | 36 | 66 | 31 | **375** |
| Ambition for Q1 | **27** | **29** | **21** | **50** | **21** | **27** | **49** | **12** | **236** |
| Comparison with Q1 2018/19 | 29 (inc.) | 41 (inc.) | 41 (dec.) | 85 (inc.) | 38 (inc.) | 48 (dec.) | 48 (inc.) | 20 (inc.) | 350 |

It is noted that all areas are currently breaching their ambition to reduce the numbers, with the majority of CCGs seeing a rise in the numbers from Q1 2018/19.

### 5.2 Acute Trusts E coli

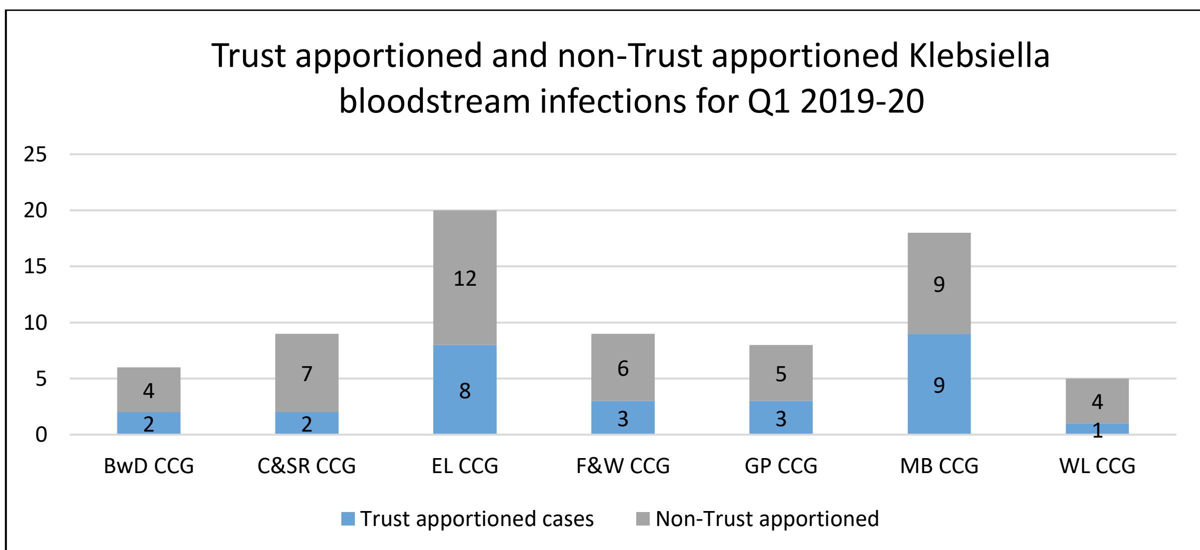
Acute trusts do not currently have a trajectory for reducing E. coli bloodstream infections, but they are supporting their local health economy plans to work towards the 10% reduction.

The following graph compares the rates for the local Acute Trusts against the national rate.



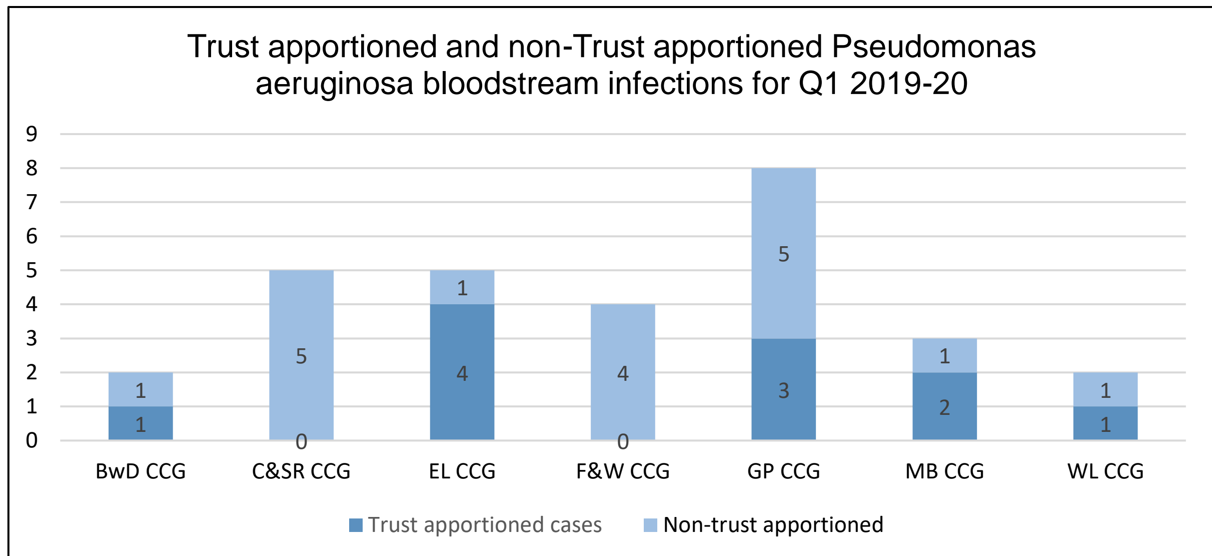

## 6 *Klebsiella spp.*

Klebsiella is another Gram-negative bacteria. There is not a trajectory at present, but the reduction of Klebsiella bloodstream infections is included in the 50% reduction ambition. During Q1 there were 75 cases in Lancashire with 47 (63%) of these being apportioned to the non-Acute Trust.




## 7 *Pseudomonas aeruginosa*

Pseudomonas aeruginosa is the other Gram negative bacteria which is included in the reduction ambition, but there are fewer cases (29 during Q1). There is currently no trajectory and mandatory surveillance commenced in April 2017. Again, the majority of these arise in the community.




## 8 Care homes

During Q1 the IP team continue to support those undergoing the Quality Improvement Programme. 10 homes have been visited and audited and support has been given to those homes going through a Quality and Performance Improvement Plan. In addition a training session was held for care home managers to raise awareness and advice on gathering evidence for compliance with the Code of Practice on the prevention and control of infections and related guidance. The team have also attended the Care Home forum at Fylde and Wyre.

During Q1 56 care homes have been supported by the IPNs to manage norovirus outbreaks. Whilst norovirus is called the winter-vomiting bug this number is comparable with the 55 cases reported for Q4 2018/19 when more cases would have been expected. The support promoted the use of the Outbreak Management guidance with good outcomes.

2 sessions of the sepsis awareness training have been delivered and the success of the sepsis strategy has been evaluated.

The work to promote good hydration continues with 2 educational sessions being delivered and an article in the 50+ Assembly newsletter.

## 9 Other work streams

The UK's five-year national action plan to tackle antimicrobial resistance 2019–2024 places the prevention of infection high on the agenda. To this end the IP team at LCC have had a programme of raising the importance of hand hygiene throughout the county. The focus this quarter has been with school children with 13 schools receiving training. The hand wash poster competition was a success and the winning schools have been awarded their prizes. A banner promoting good hand hygiene has been produced and is being used to support events across the county.

Work is ongoing to reduce the number of UTIs and the team are working with a group from east Lancashire to prevent infections and improve the management when one

occurs. The team continue to promote the message to not dip urine samples to diagnose UTIs.

Good oral hygiene has been encouraged to prevent the number of cases of pneumonia.

Elderly day care services have been audited.

## 10 Recommendations

The Director of Public Health is asked to acknowledge and approve the content of this report.

**Anita Watson, Lead Nurse Infection Prevention and Control**