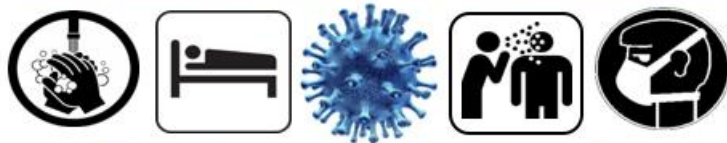


# Annual Infection Prevention report 2018-19

## Infection Prevention Team

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### Infection Prevention & Control Team



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## 1. Introduction

The purpose of this report is to provide an update on the work of the Infection Prevention Team from Lancashire County Council to the Clinical Commissioning Groups (CCGs) across Lancashire and south Cumbria. The update will include the data for healthcare associated infections (HCAs) which are subject to mandatory surveillance and progress towards any trajectories where appropriate.

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. HCAs have a significant impact on morbidity and mortality whilst carrying a financial risk due to unscheduled care and prescribing costs. There are many HCAs, but the national focus is on Meticillin resistant *Staphylococcus Aureus* (MRSA) blood stream infections; Meticillin Sensitive *Staphylococcus Aureus* (MSSA) blood stream infections; Gram-negative blood stream infections including *Escherichia coli* (*E. coli*), *Pseudomonas* and *Klebsiella*; and *Clostridium difficile* infections (CDI). During the winter months Norovirus and influenza also have a substantial impact on care providers.

Laboratories within the Acute Trusts submit their data for reportable infections onto the Data Capture System (DCS) managed by Public Health England. This data is checked and locked down on the 15th of each month, but minor changes, especially linked to the rates, sometimes occur after this date. The data reported throughout this report is for the population registered with GPs in the 8 CCGs within the Lancashire and South Cumbria Integrated Care System, and this may vary slightly from the residents' data.

## 2. Key points

The key points of this report for the partners of the ICS include

- 15 MRSA bacteraemia for the year. All CCGs and Acute Trusts have lower than national rates
- The combined number of CDI slightly breaches the combined trajectory; 73% have not identified a lapse in care. The assignment of CDIs will change from April 2019.
- No local CCG achieved their Quality Premium for the reduction of E coli bacteraemia
- Quality improvement initiatives continue

## 3. MRSA

There has been a considerable decrease in the rate of reported MRSA blood stream infections since mandatory surveillance began in April 2007. There was a steep decline of 85% of reported cases between 2007 and 2014 from 10.2 cases per 100,000 population to 1.5. The rate has remained stable since then. A zero tolerance continues.

During Q4 five MRSA blood stream infections have been reported for local residents, bringing the total for 2018/19 to 15 across the ICS. Clinical reviews continue to ensure

that any lessons are learned and shared; due to the low numbers it is difficult to determine any themes, but the majority of patients acquiring the infection are vulnerable either due to age or co-morbidities or lifestyle choices.

The lessons learned for the cases this year are:

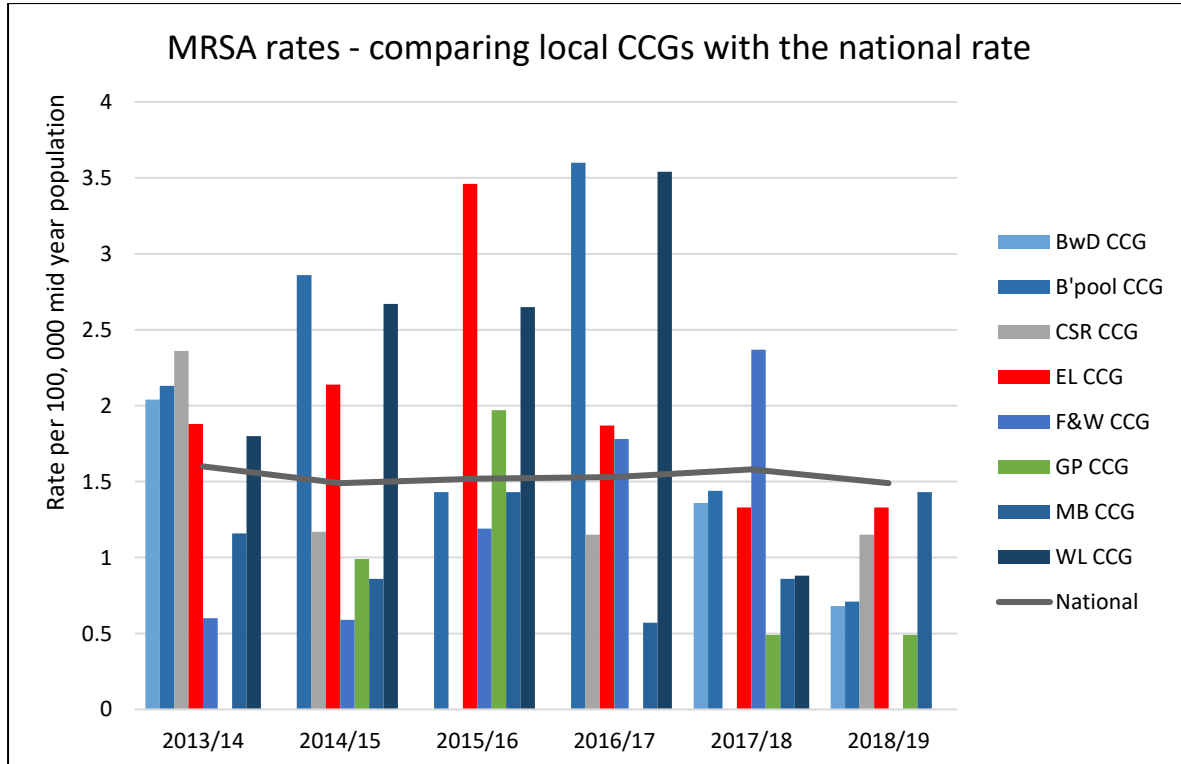
<b>Chart to show break down of MRSA bacteraemia cases for 2018/19 to date</b>					
	<b>CCG</b>	<b>Acute Trust</b>	<b>Where assigned</b>	<b>Main contributory factor</b>	<b>Lessons learned</b>
Q1	EL CCG	ELHT	Acute Trust		Appropriate antibiotic prescribing for a known MRSA patient Prompt topical treatment Documentation of lines/wounds
Q2	MBCCG	MBCCG	CCG	Foot ulcers - ?became colonised whilst abroad. Recent cardiac surgery – sternal abscess	Microbiologist no access to GP record when giving advice to hospital doctors on antibiotic prescribing No management plan for prescribing of long term antibiotics.
	EL CCG	UHSM	CCG	Patient with severe co-morbidities	Contaminant
	EL CCG	ELHT	CCG	Alcoholic liver disease. Spontaneous peritonitis	No recent contact with health providers
	MB CCG	UHMB	CCG	Unable to identify. COPD, long term steroids. Maybe UTI, chest or wound from fall.	Documentation and labelling of MRSA screening samples.
	BCCG	BTH	CCG	Lancashire resident registered with Blackpool GP Leg ulcer – treated appropriately, but advice not sought.	Microbiologist's advice should be sought to manage long term wounds.
	EL CCG	ELHT		Supra-pubic catheter	Poor maintenance of catheter by patient and lack of oversight by professionals.
Q3	EL	Airedale	Acute Trust	Alcoholic liver disease – hepatic hydrothorax. Cannulation	Improve cannula observations and documentation
	CSR	LTH	CCG	Cancer. Long term catheter	Care home revisit their pre-assessment protocol. Communication and documentation. Management of a long-term catheter.
	BwD CCG	ELHT	CCG	Frail, elderly. Recent UTIs	Sampling and checking vital signs for suspected UTIs. Decolonisation of known MRSA.
Q4	GP CCG	LTH	CCG	Alcoholic with severe eczema seborrheic dermatitis	Poor self-management of skin condition. Neglect.
	MB CCG	UHMB	CCG	Pressure sores (Staph Aureus and multiple antibiotics), catheter (with trauma), pneumonia	Antibiotics when reviewing wound dressing may be more appropriate
	CSR	UHSM	CCG	Post Infection Review meeting is outstanding.	
	MB CCG	UHMB	CCG	Cumbria resident registered with MB GP	
	MB CCG	UHMB	CCG	Cumbria resident registered with MB GP	

The following chart shows which local CCGs have reported MRSA blood stream infections during 2018/19.

CCGs reporting MRSA blood stream infections 2018/19	
Blackburn with Darwen CCG	1
Blackpool CCG	1
Chorley and South Ribble	2
East Lancashire CCG	5
Greater Preston CCG	1
Morecambe Bay CCG	5

It is significant that as these numbers are small they fluctuate considerably. Fylde and Wyre CCG reported 4 cases in 2017/18, but have not had any cases during 2018/19.

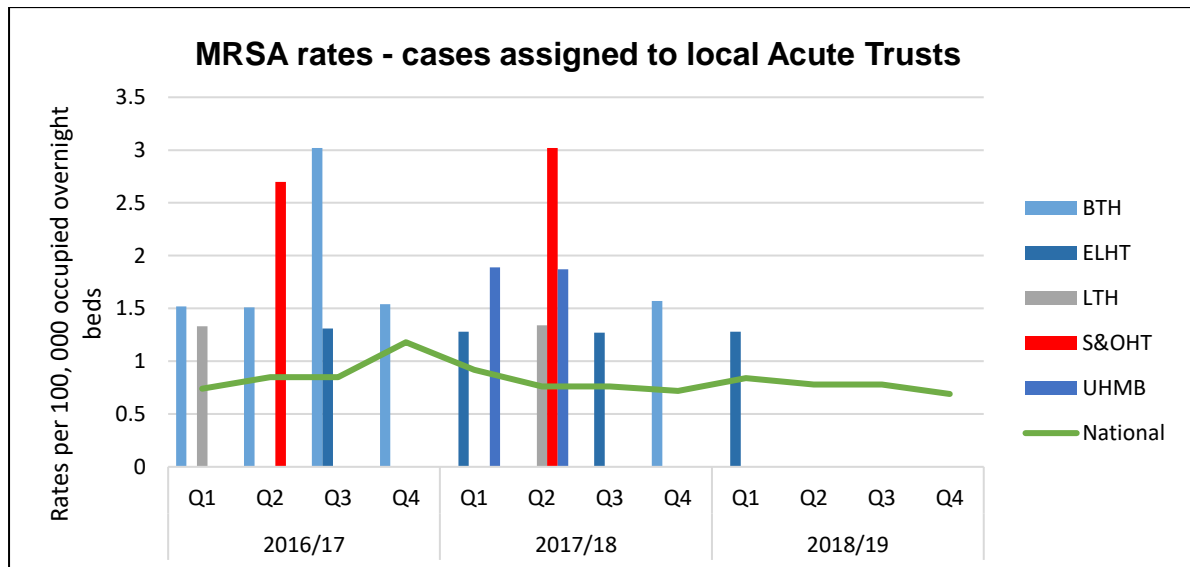
The following graph compares the rates of MRSA blood stream infections with the national rate. These are for all cases of MRSA, whether community or acute onset. It is worth highlighting that 2018/19 is the first year that all local CCGs reported lower rates than the national rate.



### 3.2 Acute MRSA

Local Acute Trusts are monitored on the hospital onset blood stream infections; those that occur after 2 days following admission. The only case that was classed as 'hospital onset' during 2018-19 was in June at East Lancashire Hospitals Trust; therefore all local Acute Trusts are reporting rates below the national rate.

The graph below 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 the rates.



## 4. Clostridium difficile infection (CDI)

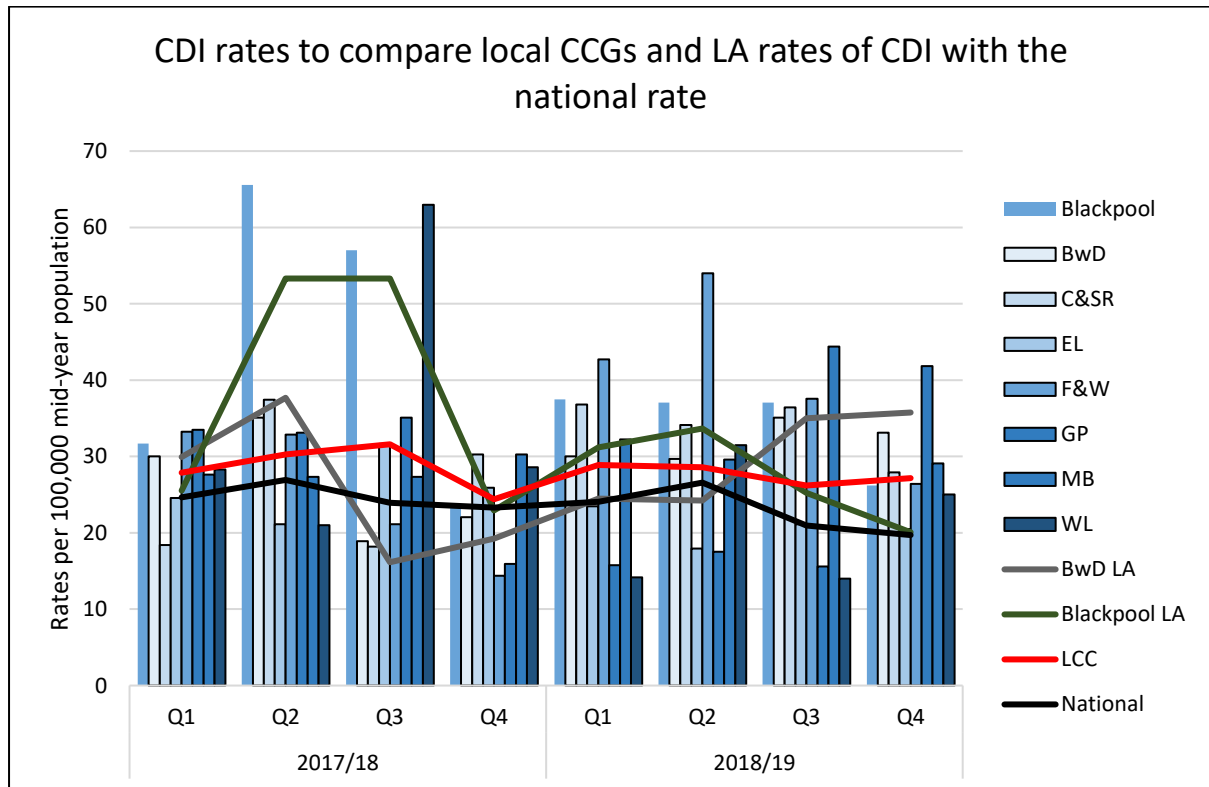
### 4.1 CDI - CCG

Across the 8 CCGs there have been 116 cases of CDI during Q4; bringing the year to date total to 488. This is against a combined trajectory of 475; therefore the trajectory is being slightly breached. The distribution of these is shown in the table below and highlights the CCGs which breached their trajectory.

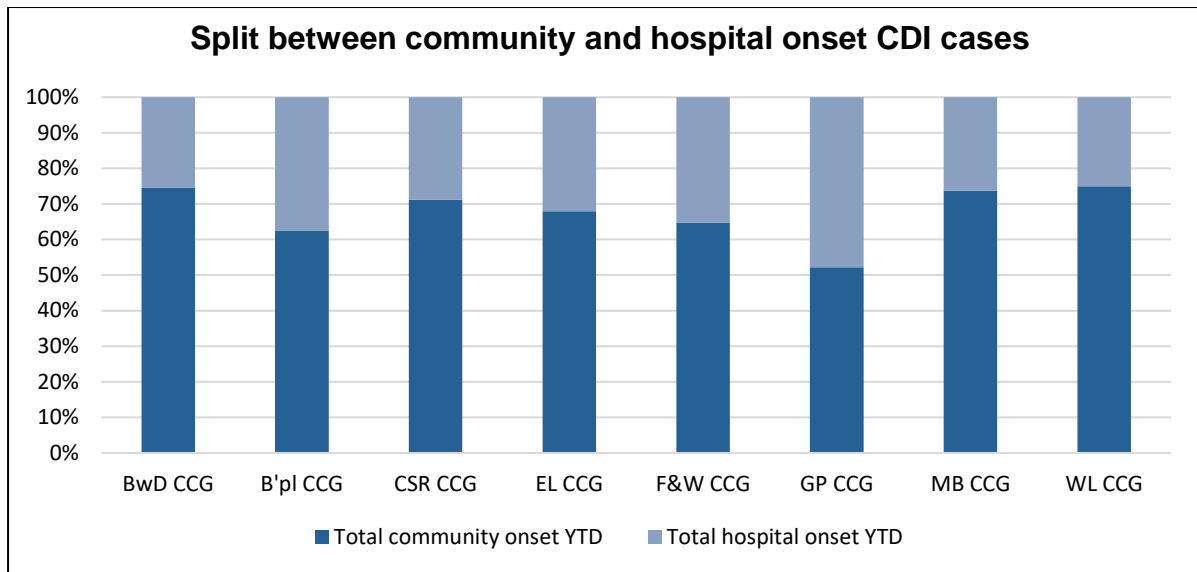
Table to show progress against the CDI trajectory									
	BwD CCG	B'pl CCG	CSR CCG	EL CCG	F&W CCG	GP CCG	MB CCG	WL CCG	ICS Total
Total community onset	35	30	42	53	44	24	87	18	333
Total hospital onset YTD	12	18	17	25	24	22	31	6	155
Total – all cases	47	48	59	78	68	46	118	24	488
Annual trajectory	39	51	58	57	43	48	133	46	475

Percentage above or below the cumulative trajectory year to date	+21%	-6%	+2%	+37%	+58%	-4%	-11%	-48%	+3%
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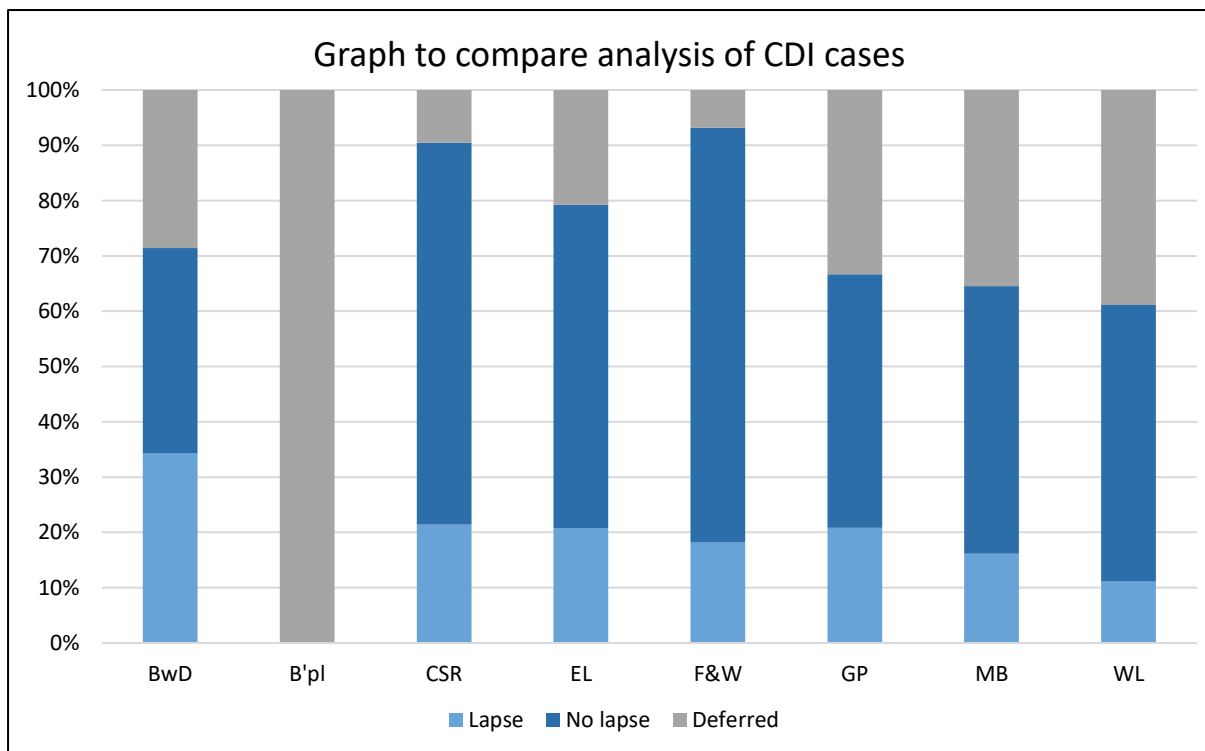
The following graph compares the quarterly rates of CDI in local CCGs with the national rate. The rate for the CCG shows all cases within their population regardless if they are hospital or community onset. The graph shows that all local CCGs and LAs had higher than national rates for CDI.



Cases are attributed as community onset or hospital onset depending on when and where the sample was obtained. Of the 488 cases reported across the ICS during 2018/19, 333 (68%) were reported as being community onset; this ratio will change when new reporting systems come into force from April 2019 (see section on CDI – horizon scanning).



All cases are reviewed at a panel to ascertain if they are linked to lapses in the quality of care. The following chart shows that the majority of cases are due to no lapse in care. The data for Blackpool and Cumbria residents is unavailable to Lancashire County Council, so these organisations show a higher level of deferred cases.

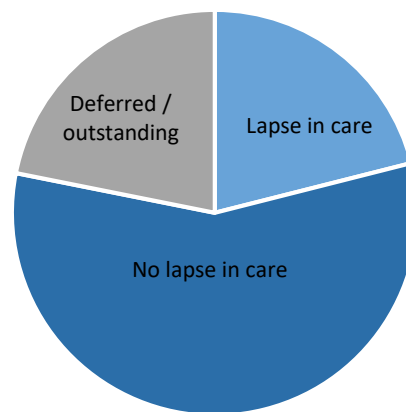


The following chart shows the lapses in care (52) compared to no lapses in care (141) for the community-onset cases for residents in Lancashire and Blackburn with Darwen. 54 cases have the decision outstanding at the time of writing this report; this may be due to incomplete information to enable a decision, or that the panel has been

postponed. Therefore the community-onset infections where a decision has been made there have been no identified lapses in care for 73% of cases.

The majority of lapses are due to suboptimal antibiotic prescribing and a lack of sampling and these are the areas which continue to be targeted for quality improvement. No new themes or actions are being identified by the post infection review process.

**Chart to show split between lapses and no lapses in care in Lancashire residents**



#### 4.2 CDI - Acute Trusts

The acute trusts have their own CDI objectives for the infections that present 3 or more days following admission. The clinical teams within the trust review these to determine if there have been lapses in the quality of care impacting on the outcome for the patient, prior to them being considered at a CCG led panel.

The table below includes all hospital onset cases; including those where the review demonstrates that no lapse in care took place. It is interesting to note that whilst the combined total for community and hospital onset cases is exceeding the local combined trajectory, no local Trust is currently breaching their objective.

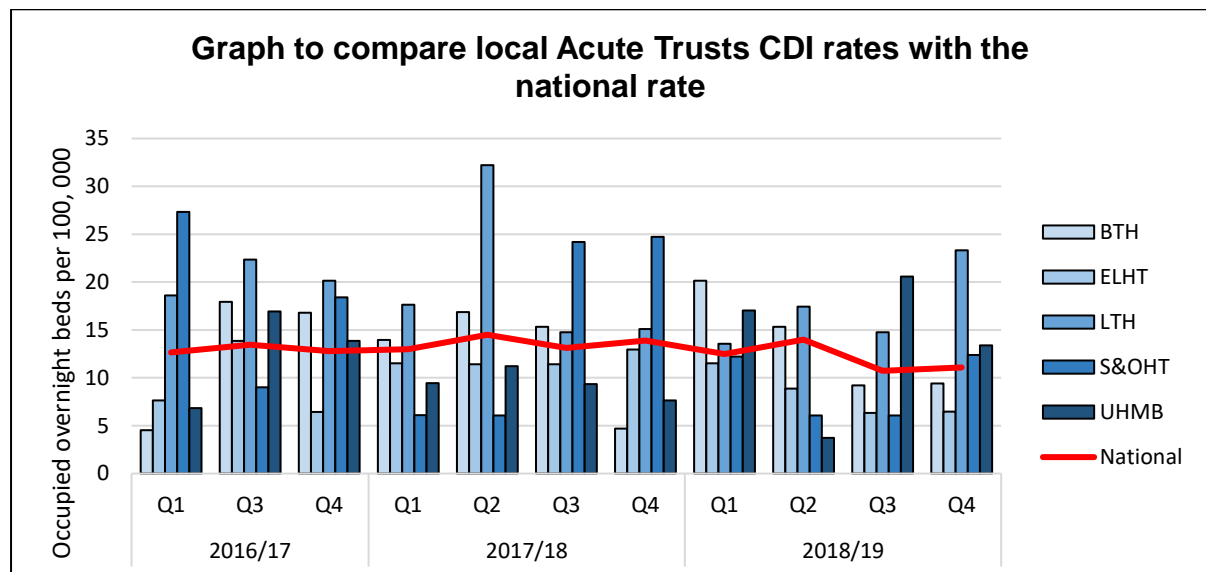
Southport and Ormskirk Hospitals Trust is significantly below their trajectory.

**Table showing the numbers of CDIs at local Acute Trusts during 2018/19**

	BTH	ELHT	LTH	S&O HT	UHMB	Total
Total	35	26	51	12	29	153
CDI Objective 2018-19	39	28	66	36	44	213
Percentage above or below objective	-10%	-7%	-23%	-67%	-34%	-28%



The graph below compares local acute trusts against the national rate. 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.



### 4.3 CDI – Horizon scanning

From April 2019 the reporting algorithm and subsequent assignment for CDI will change. These changes are:

- adding a prior healthcare exposure element for community onset cases
- reducing the number of days to apportion hospital-onset healthcare associated cases from three or more (day 4 onwards) to two or more (day 3 onwards) days following admission

CCG objectives will be set on the total number of CDI cases assigned to the CCG (hospital onset healthcare associated, community onset healthcare associated, community onset indeterminate association and community onset community associated).

Acute provider objectives for 2019/20 will be set using these two categories:

- 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

These changes should not lead to an increase in cases but it is expected that 65% will now be assigned as hospital onset (due to the reduction in the days to apportionment

to hospital onset and also cases that occur within four weeks of discharge), rather than community onset.

## 5. MSSA

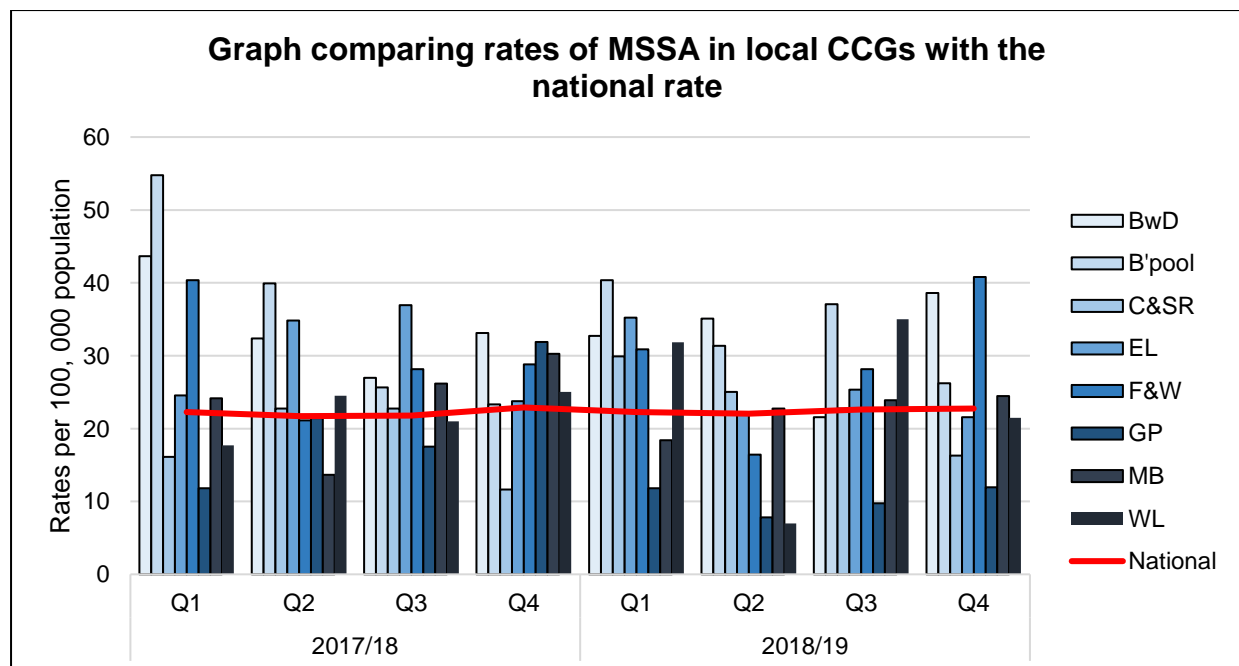
Surveillance of MSSA blood stream infections is mandatory, but there is no trajectory associated with this infection. In line with other HCAs under mandatory surveillance, MSSA blood stream infections are divided into community and hospital onset.

### 5.1 MSSA – CCG

The following chart show that the majority (69%) of cases also have a community onset.

Chart to show the number of MSSA blood stream infections 2018/19 to date.									
	BwD CCG	BCC G	CSR CCG	EL CCG	F&W CCG	GP CCG	MB CCG	WL CCG	Total
Community onset YTD	34	33	32	68	30	16	50	19	282
Hospital onset YTD	13	14	9	30	19	5	28	8	126
Total cases YTD	47	47	41	98	49	21	78	27	408

The graph below compares the rates of MSSA in local CCGs to the national rate. This shows that the rate for most Lancashire CCGs is above the national rate. It is unclear why this is the case.



## 5.2 MSSA - Acute trusts

The table below compares the numbers of MSSA bacteraemia reported at the local Trusts for the last three financial years. This has shown a slight increase over the years, especially at University Hospitals of Morecambe Bay.

Table showing numbers of MSSA blood stream infections at local acute trusts.						
	BTH	ELHT	LTH	S&OHT	UHMB	Total
2016/17	30	26	18	12	12	98
2017/18	27	24	22	13	21	107
2018/19	27	36	19	12	26	120

## 6 *E coli*

### 6.1 *E coli* CCG

The rate of antimicrobial resistance amongst Gram negative bacteria is on the rise. The Department of Health have an ambition to reduce the number of Gram negative blood stream infections by 50%; initially the target date was 2021, but this has been revised to 2024. The focus remains on *E coli* as that is the most common organism implicated in Gram negative blood stream infections. The initial ambition is to reduce *E coli* blood stream infections by 10% each year from the baseline of 2016. The ambition is based on healthcare associated blood stream infections. Most local CCGs are breaching this ambition with a 79% breach across the ICS.

The *E. coli* bacteraemia: annual data on the Department of Health webpage<sup>1</sup> stipulates that the data does not provide:

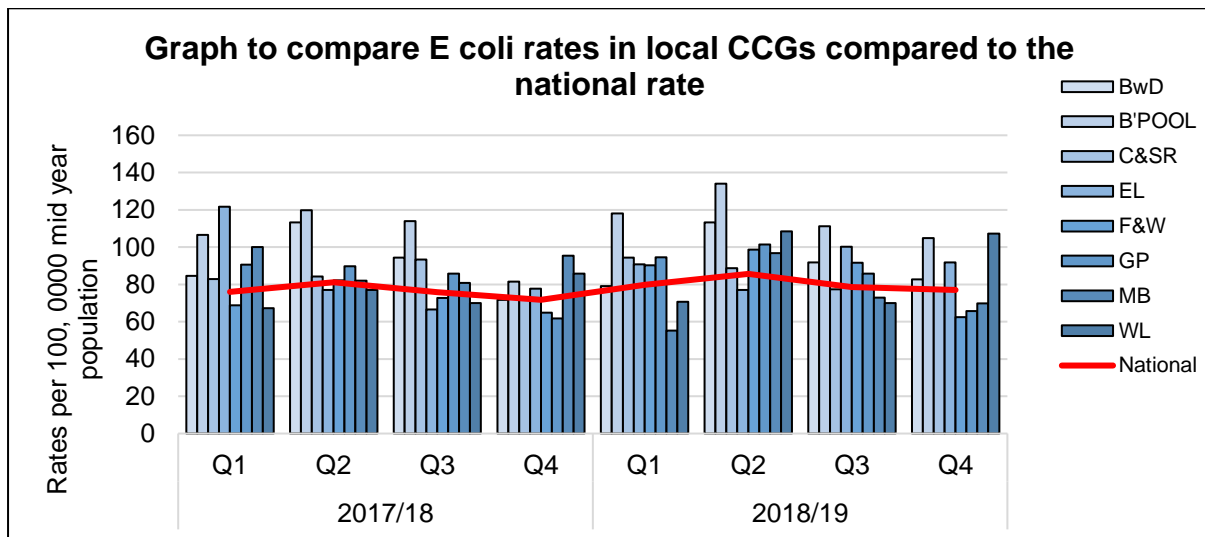
- *A basis for decisions on the clinical effectiveness of infection control interventions in individual trusts.*
- *A basis for comparisons between acute trust or CCGs.*

The majority of the cases across the ICS have been reviewed; 82% were community-onset and many have had no recent healthcare involvement. The analysis highlights the wide range of potential causes and make it challenging to identify the root cause to initiate intervention strategies. Each area has implemented a health-economy reduction plan and many of these focus on improving hydration, prevention and management of urinary tract infections, and avoidance and management of urinary catheters. Other potential causes are linked to abdominal surgery and these are more complicated to address.

<sup>1</sup> <https://www.gov.uk/government/statistics/escherichia-coli-e-coli-bacteraemia-annual-data>

Table to show number of E coli blood stream infections against ambition targets 2018/19 to date.									
	BwD CCG	B CCG	CSR CCG	EL CCG	F&W CCG	GP CCG	MB CCG	WL CCG	Total
Total community onset	117	135	121	278	108	140	209	86	1194
Total hospital onset	18	28	26	60	37	37	48	15	269
Total	135	163	147	338	145	177	257	101	1463
<b>Ambition target</b>	<b>94</b>	<b>97</b>	<b>72</b>	<b>171</b>	<b>71</b>	<b>91</b>	<b>167</b>	<b>56</b>	<b>819</b>
Percentage of breach	44%	68%	104%	98%	104%	95%	54%	80%	79%

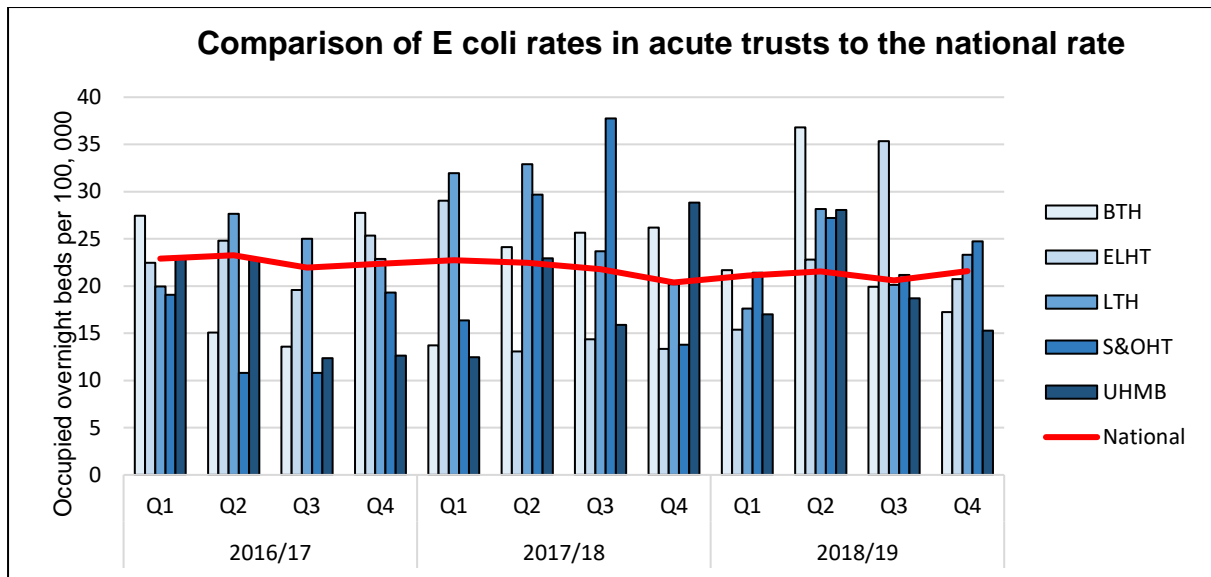
The following graph shows the rates of E coli blood stream infection compared to the national rate. Most of the Lancashire CCGs have higher than the national rate, but note the disclaimer above



### 6.2 Acute Trusts E coli

Acute trusts do not currently have a trajectory for reducing E. coli blood stream infections. They are endorsing the ambition of reducing the number of Gram-negative blood stream infections by 50% and are supporting local CCGs to work towards the reduction across the health economy.

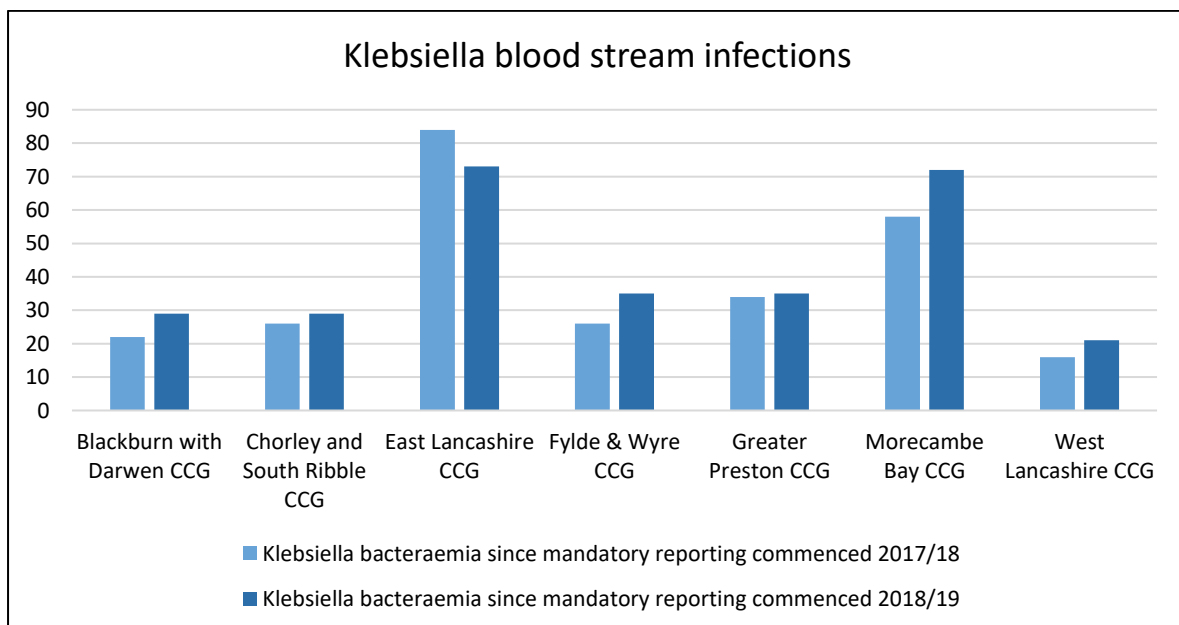
The following graph compares the rates for the local acute trusts against the national rate.



## 7 *Klebsiella* spp.

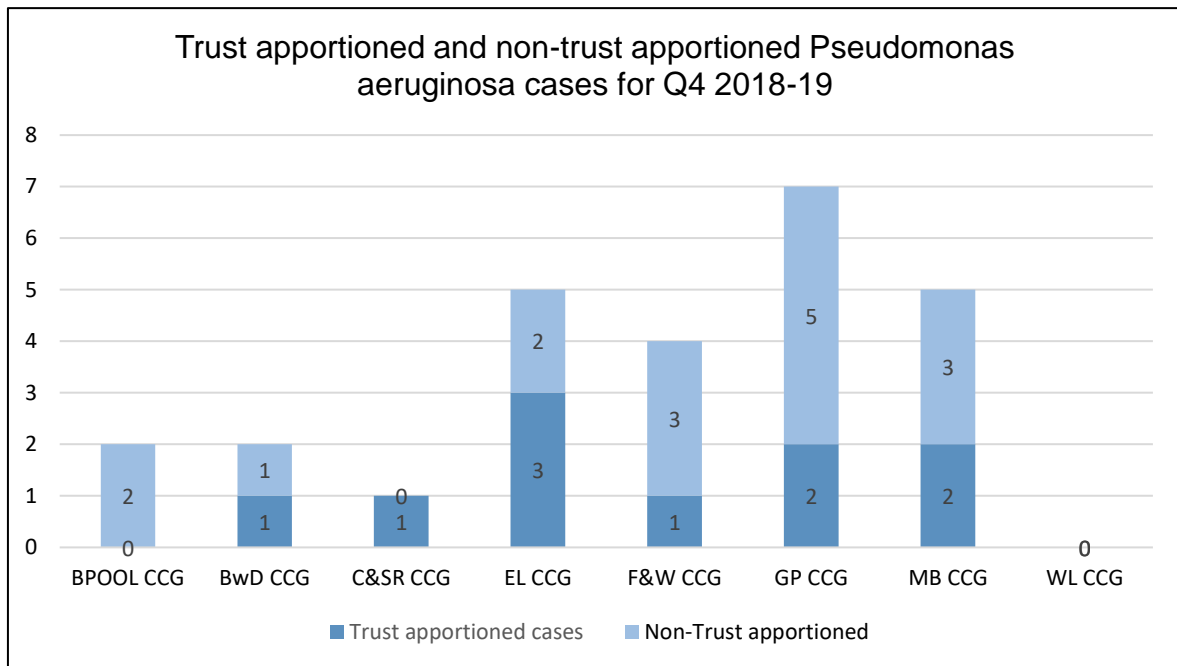
*Klebsiella* is another Gram-negative bacteria, which does not have a trajectory at present, but the reduction of *Klebsiella* blood stream infection is included in the 50% ambition.

The following graph compares the numbers from 2017/18 with 2018/19.



## 8 *Pseudomonas aeruginosa*

*Pseudomonas aeruginosa* is another Gram negative bacteria which is included in the reduction ambition. There is currently no trajectory and mandatory surveillance commenced in April 2017. Again, the majority of these arise in the community. Across the 8 CCGs 29 new cases were reported in Q3, bringing the total to 79 for Q1-3, this compares to 90 for the same time period last year.



## 9 Care homes

Throughout the year the IP team supported 21 care homes through Quality Improvement Programmes and provided advice on the management of outbreaks.

During Q4 55 care homes reported outbreaks of Norovirus which brings the total of diarrhoea and vomiting outbreaks for the year to 148. In addition homes were also reporting outbreaks of Influenza.

## 10 Outbreaks and incidents

In addition to outbreaks of norovirus and influenza within care homes, throughout the year the IP team have supported Public Health England to manage outbreaks and incidents in a variety of settings. These include

- Needle stick incident at a school
- Meningococcal B at a nursery
- Unregistered tattoo parlour
- Hepatitis A at a school
- Hepatitis B potentially linked to a dentist
- CDI in a care home
- Monkeypox in the community
- Streptococcus pneumoniae in a care home
- Group A streptococci in a care home

Debriefs have taken place after the higher profile cases and lessons learned.

## 11 Additional work streams

The Infection Prevention team have continued to initiate and support several quality improvement initiatives during 2018/19.

These include

- Hand hygiene sessions delivered to 51 schools and nurseries in central Lancashire – this will be rolled out to other areas in Lancashire during 2019/20.
- Hand hygiene poster competition for schools.
- The annual conference was attended by 123 colleagues within the social and residential care environment. The event was supported by colleagues from across the health economy and covered a range of topics relevant to IPC.
- Support to develop and implement E coli reduction plans.
- Development of clinical guidance for care homes
- The IPC team have worked with colleagues from the Fylde Coast to develop an automated, voiced over presentation for care home staff on the prevention of urinary tract infections.
- Development of an Antimicrobial Reduction action plan that will be implemented during 2019/20.
- Delivery of the Sepsis Strategy for Lancashire Care Homes through the sepsis training. The work has been presented at local and national conferences. The IPC team are also involved in the national Learning Disabilities sepsis work stream.
- The IPNs also delivered session to local General Practice Nurses on meeting environmental CQC standards in primary care to support patient safety.
- Work to improve hydration continues with attendance at care home activity co-ordinator forums. During 2018/19 this has been extended to include domiciliary agencies and vulnerable people in their own homes. Poster adapted to leaflet which would be more appropriate for some settings. This has been promoted across the north west.
- Specific training for care home managers about compliance with the Code of Practice for Infection Prevention

## 12 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**