

# Infection Prevention Team Report Healthcare Associated Infections update Q3 2019-20

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## 1. Introduction

This report is an update for the Healthier Lancashire and South Cumbria Integrated Care System (HLSC) on their healthcare associated infections (HCAIs) data. It also provides an update on the support provided from the Infection Prevention team to Lancashire County Council and Blackburn with Darwen Local Authority and to the CCGs within the council footprint. Some infections are unpreventable as a result of complex healthcare, but nobody should be harmed by a preventable infection. 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 submit data onto the Public Health England (PHE) Data Capture System. This data is checked and locked down on the 15th of each month, but minor changes can occur after this date.

### The purpose of the report is to:

#### Alert:

- Significant increase in the numbers of CDI cases across HLSC

#### Advise:

- MRSA numbers have increased slightly

#### Assure:

- E coli numbers appear to be plateauing.

## 2. MRSA

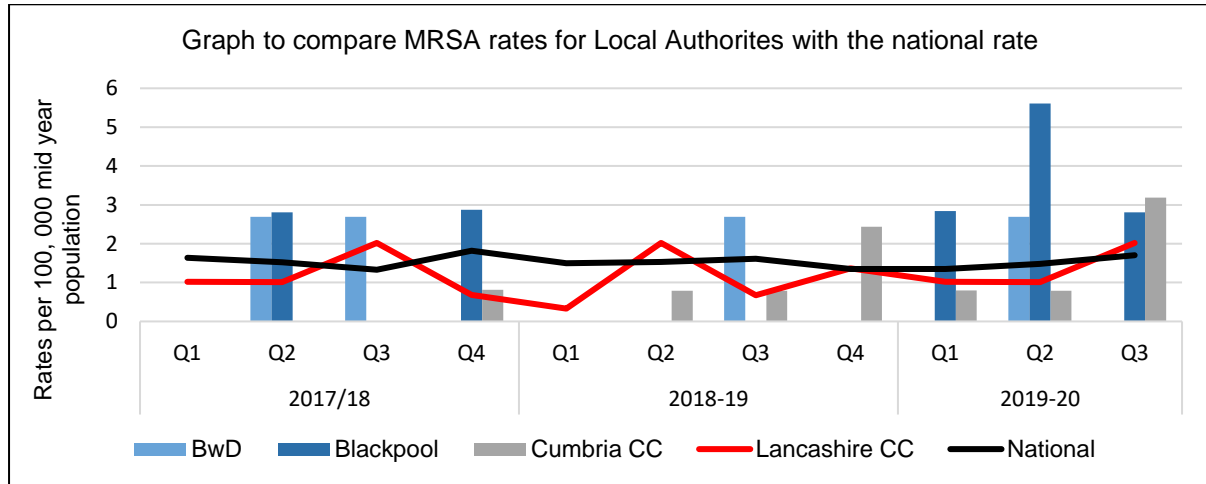
A zero tolerance for MRSA bloodstream infections continues, and a clinical review is undertaken for each incident to determine if there are lessons to be learned and shared. During Q3 there have been 7 MRSA bloodstream infections identified, bringing the total to 18 so far for the year. The incidents continue to be diverse with no identifiable themes for the causes, but any lessons learned from each individual case are embedded with action plans developed.

The following chart shows a breakdown of the cases to date.

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
Q2	BwD	ELHT	Acute	Urinary catheter	Poor compliance and documentation of urinary catheter.
	B'pool	BTH			Unknown – not a Lancashire resident
	EL	Airedale Hospital	Community	Contaminated sample	
	MB	UHMB	Community	Awaiting review	
	F&W	BTH	Community	No significant history. Previous MRSA blood stream infection with undetermined cause in 2017.	No lessons identified
	GP	LTH	Acute	Colonized with MRSA previously: Diabetic, bullous pemphigoid; hypertension and CKD. Chronic leg ulcerations. Required a permcath for dialysis	No lessons identified.
	B'pool	BTH			Unknown – not a Lancashire resident
Q3	MB	UHMB	Community	IV drug user	No lessons identified
	CSR	LTH	Community	Long term carrier of MRSA. Insulin dependent diabetic. Pacemaker. Eczema with skin breaks.	MRSA status was not communicated to GP
	GP	LTH	Community	Community acquired pneumonia. Hepatocellular carcinoma, end of life.	Hand hygiene audits did not reach the required Trust standard. Validation audits by IPCT support sustained improvement.
	MB	UHMB	Acute		Unknown – not a Lancashire resident
	EL	ELHT	Community	Psoriasis	No lessons identified
	WL	SOHT	Community	Urinary catheter	Communication when patients have urinary catheters are being discharged from hospital to residential care.
	EL	ELHT	Community		Awaiting the outcome of the review

Total MRSA cases per CCG			
Blackburn with Darwen	1	Fylde and Wyre	1
Blackpool	3	Greater Preston	2
Chorley and South Ribble	1	Morecambe Bay	4
East Lancashire	4	West Lancashire	2

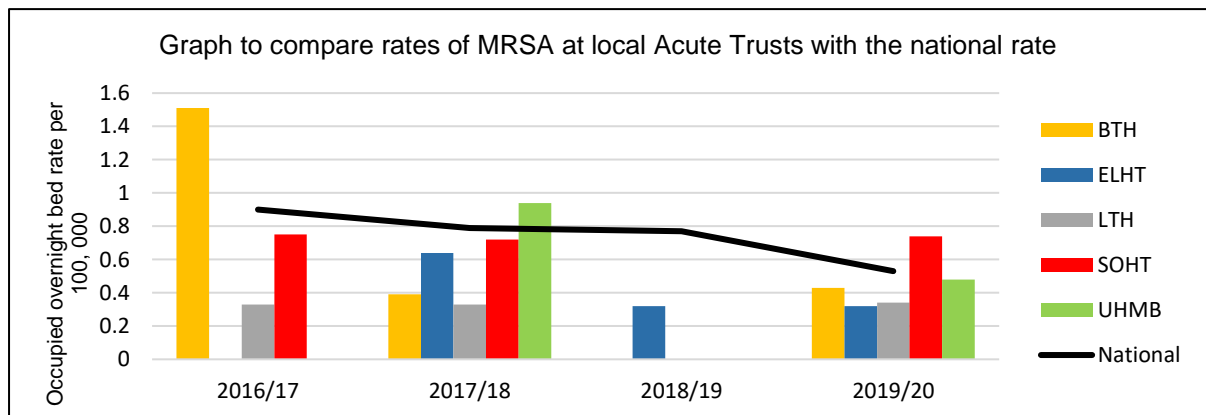
The following graph compares the quarterly MRSA rates within the local authorities to the national rate since April 2017. These rates include all cases whether assigned to the acute trust or non-acute trust.



During 2018/19 15 MRSA blood stream infections were reported and only one of these was assigned to an acute trust with the remainder being community onset. During Q1-3 2019/20 five local acute trusts are reporting hospital onset cases. These are:

- Blackpool Teaching Hospital NHS Foundation Trust
- Liverpool Women's Hospital NHS Foundation Trust
- East Lancashire Hospitals NHS Trust
- Lancashire Teaching Hospitals NHS Foundation Trust
- University Hospitals of Morecambe Bay NHS Foundation Trust

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. The data for 2019/20 is incomplete, so the rates may change by the end of the financial year.

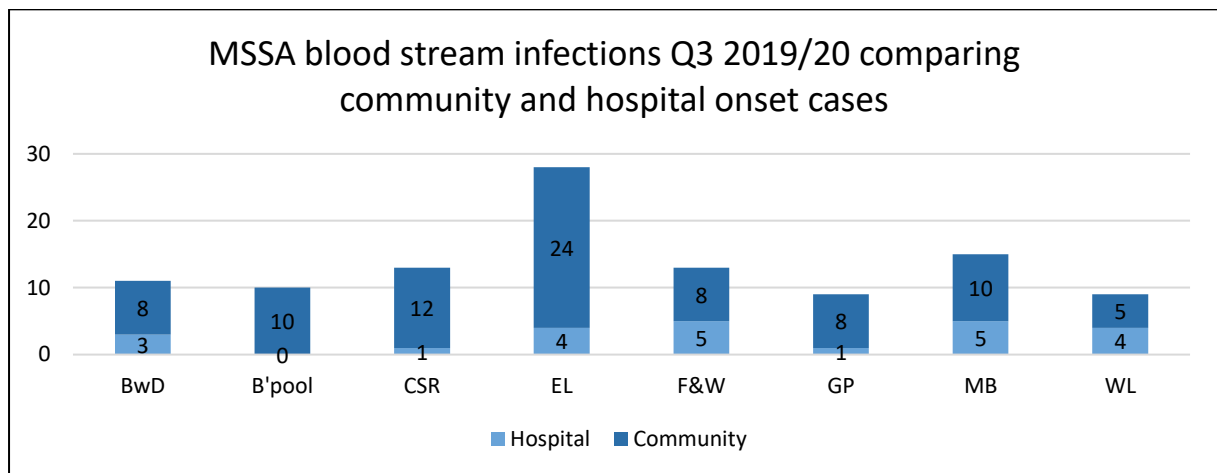


Southport and Ormskirk Hospitals NHS Trust reported a MRSA blood stream infection who was not a resident from HLSC. Due to lower overnight bed occupation numbers this case has resulted in a rate higher than the national rate.

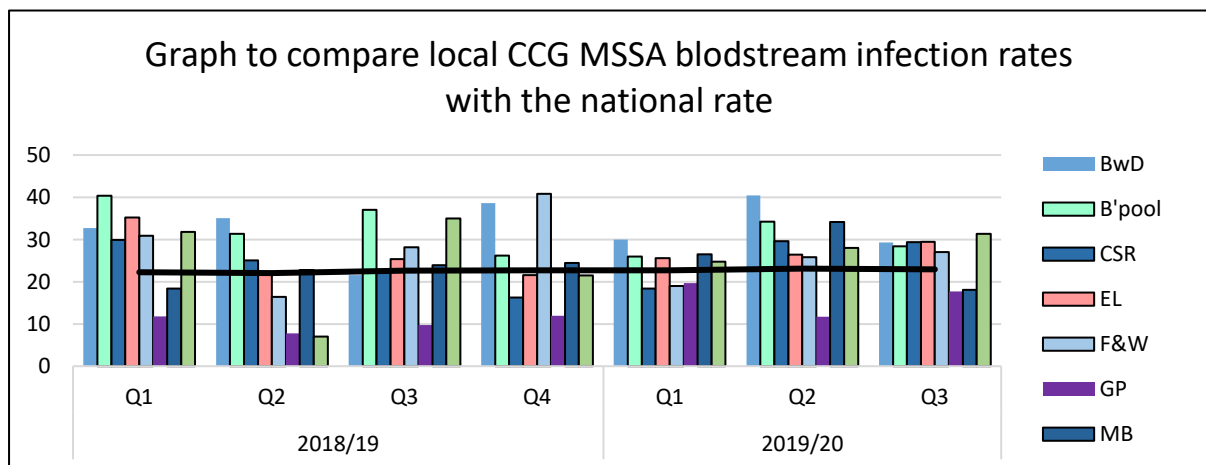
### 3. MSSA

There is no trajectory for MSSA bloodstream infections, but surveillance continues. For Q3 there have been 108 cases reported across the 8 CCGs bringing the total to 328 so far this year; this compares with 308 for the same time period last year. 85 (79%) were 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 during Q3.



The graph below compares the rates of MSSA in local CCGs to the national rate. This shows that the rate for most CCGs is often above the national rate, whereas the rate for Greater Preston CCG is usually lower than the national rate.



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

*Clostridium difficile* continues to cause unpleasant and potentially fatal infections. Across the 8 CCGs there have been 467 cases of CDI reported year to date; against a combined cumulative objective of no more than 365. The annual objective is no more than 486, so it looks likely that this will be breached this year. During the same time period in 2018/19 the figure was 373, so this has increased by 25%. There has also been a rise across the northern region and nationally, but these are both nearer to 4%. It is unclear why this increase has occurred, but Blackpool Teaching Hospitals and Lancashire Teaching Hospitals have both seen significant increases. Whilst the overall increase is 25%, but there has been an increase of 171% (114-310) in the hospital onset cases against the same time period last year; some of this will be attributed to the new reporting methodology.

All cases of CDI 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. This process is not identifying any new trends from those previously reported, specifically:

- inappropriate antibiotic usage;
- inappropriate proton pump inhibitor usage;
- delay in sampling; and
- delay in isolating patient

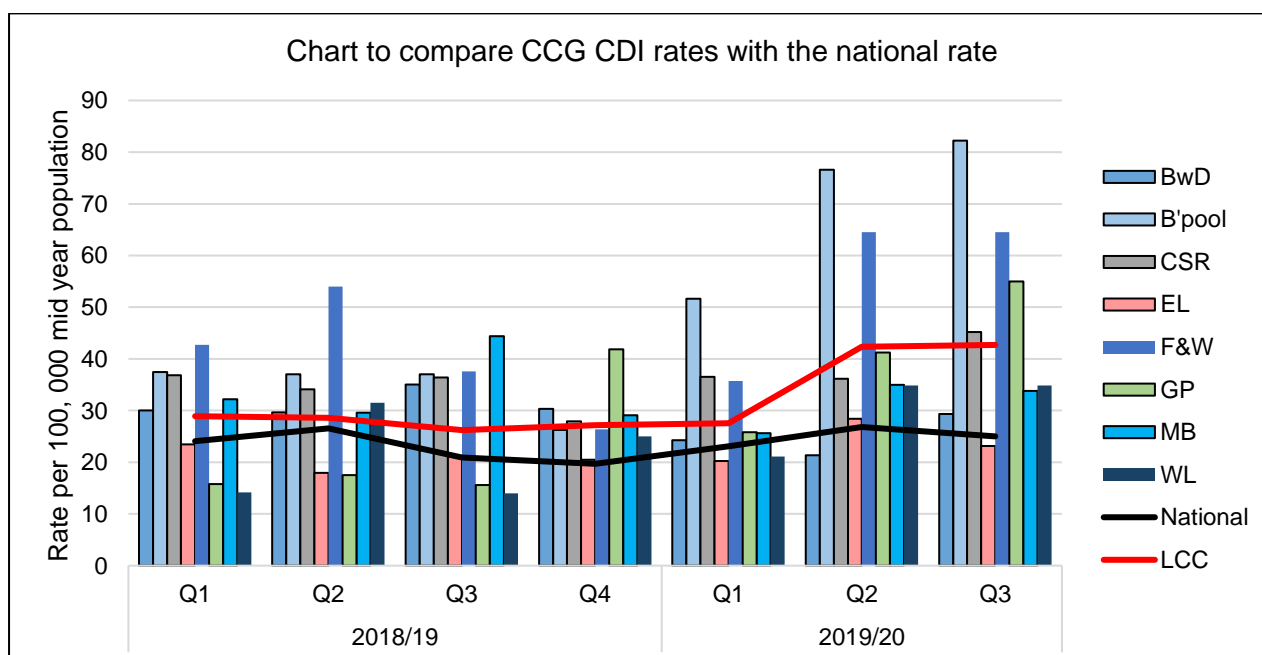
#### 5. *CDI CCG*

The CCG objective includes all cases of CDI in the registered population; whether attributed to the acute trust or the community.

Most CCGs are breaching their cumulative objectives. Blackpool, Fylde and Wyre, Greater Preston, and West Lancashire CCGs have already breached their annual objectives. The Fylde Coast CCGs' increase is reflected in the surge of cases at Blackpool Teaching Hospitals and, likewise, the increase at Greater Preston CCG is linked to the cases at Lancashire Teaching Hospitals.

		BwD CCG	B'pl CCG	CSR CCG	EL CCG	F&W CCG	GP CCG	MB CCG	WL CCG	HLSC Total
Q3		11	29	20	22	31	28	28	10	179
Total cases year to date		28	74	52	68	79	62	78	26	467
Objective – year to date		34	38	47	58	56	24	91	17	365
Progress towards annual objective.		62%	129%	82%	88%	105%	194%	64%	118%	96%
Q1 + Q2 + Q3 Acute cases	Hospital onset healthcare associated	10	40	30	33	35	36	31	14	229
	Community onset healthcare associated	9	14	6	15	13	10	14	4	85
Q1 + Q2 + Q3 Non - Acute cases	Community onset indeterminate onset	7	12	6	7	14	3	9	2	60
	Community onset community associated	2	8	10	13	17	13	24	6	93

The following graph compares the rates of CDI in local CCGs with the national rates. The graph shows that most CCGs had higher than national rates during Q3, especially the Fylde Coast CCGs.





## 4.2 Acute Trusts CDI

The acute trusts' CDI objective is based on the hospital onset healthcare associated and community onset healthcare associated. The clinical teams within the trusts review the cases to determine if there have been lapses in care.

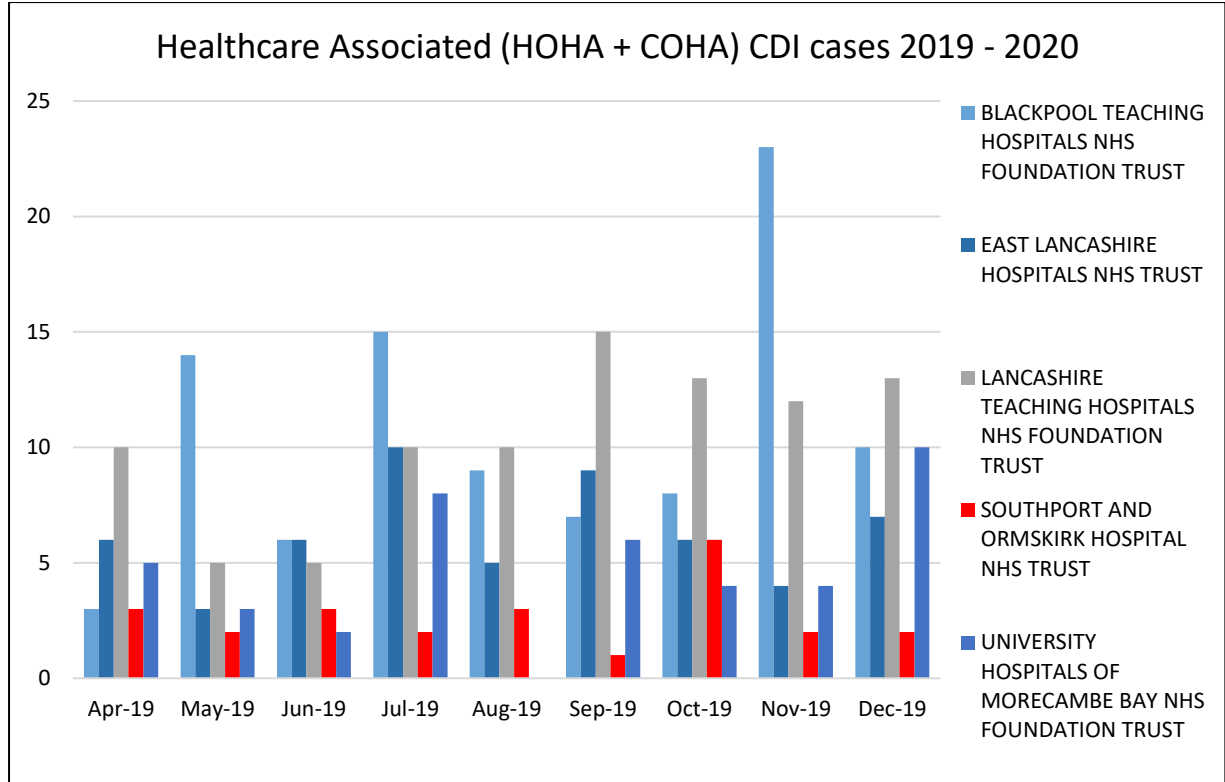
All local acute trusts are breaching their trajectory and are showing an increase in numbers from last year, but it is difficult to compare as the reporting criteria has changed. The number reported includes all cases, but for performance management purposes, there is the option to discount cases where no lapses in care have been identified. The table below includes all cases attributed to acute trusts.

		BTH	ELHT	LTH	S&O HT	UHMB	Total
Q1 + Q2 + Q3 2018-19	Hospital onset	29	21	34	8	22	114
Q1 + Q2 + Q3 2019/20	Hospital onset healthcare associated	67	34	77	18	28	224
	Community onset healthcare associated	28	22	16	6	14	86
	Total Acute cases	95	56	93	24	42	310
Increase from 2018/19 excluding COHA cases		+131%	+61%	+126%	+125%	+27%	+96%
Increase from 2018/19 including COHA cases		+228%	+167%	+174%	+200%	+91%	+172%
Objective		49	38	63	12	28	190

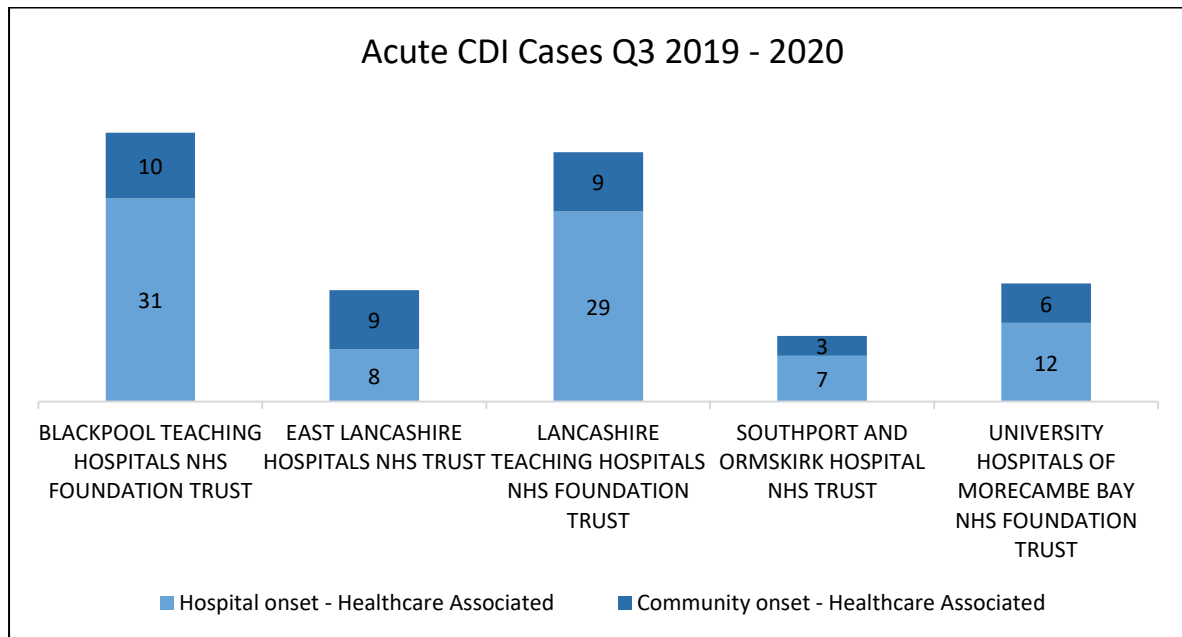
Lancashire Teaching Hospitals and Blackpool Teaching Hospitals have undertaken in-depth reviews of their increase in cases and have implemented trust wide action plans to address this. The themes are

- Cleaning and disinfection with appropriate movement of patients to facilitate cleaning.
- Commode cleaning
- Hand hygiene reinforced for all staff and training where necessary
- Completion of antimicrobial prescribing audits
- Appropriate isolation of patients
- Deep clean

The chart below shows the number of cases reported each month during 2019/20 at the local trusts. 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.



The following chart shows the split between hospital onset and community onset healthcare associated cases during Q3



## 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 Gram-negative bloodstream infections and is therefore the focus for the reduction plans. HLSC has held a regional event which engaged all CCGs and Acute Providers to share learning and develop a regional action plan to address the high rates. A follow up meeting is tentatively arranged for February, when a more thorough, area-wide, action plan may be developed.

Many cases arise in the community (81% locally during Q3); some with no recent health care involvement. 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 prevention and optimal management of UTIs.

NHS England and NHS Improvement have developed a toolkit with a selection of resources that could be used to reduce *E. coli* blood stream infections. This can be found at <https://improvement.nhs.uk/resources/gram-negative-bloodstream-infection-reduction-plan-and-tools/>

### 5.1 *E. coli* CCG

The ambition is to reduce healthcare associated *E. coli* bloodstream infections by 10% year on year, using 2016 data as the baseline, to achieve a 50% reduction by 2024. The chart below shows the progress during Q3 towards achieving this trajectory.

	BwD CCG	B'pool	CSR CCG	EL CCG	F&W CCG	GP CCG	MB CCG	WL CCG	Total
Q3 Acute Cases	2	8	10	16	12	7	10	0	65
Q3 Non-acute cases	30	31	18	49	34	27	61	21	271
Total for Q3	32	39	28	65	46	34	71	21	336
Total for 2019/2020 to date	107	142	91	236	116	110	226	82	1110
Annual ambition	<b>109</b>	<b>114</b>	<b>85</b>	<b>201</b>	<b>83</b>	<b>108</b>	<b>198</b>	<b>49</b>	<b>947</b>
Percentage of Annual ambition	98%	124%	107%	117%	139%	101%	114%	167%	117%
% increase or decrease on Q1-3 2018/19	+2%	+11%	-25%	-7%	-3%	-31%	+13%	+13%	-2%

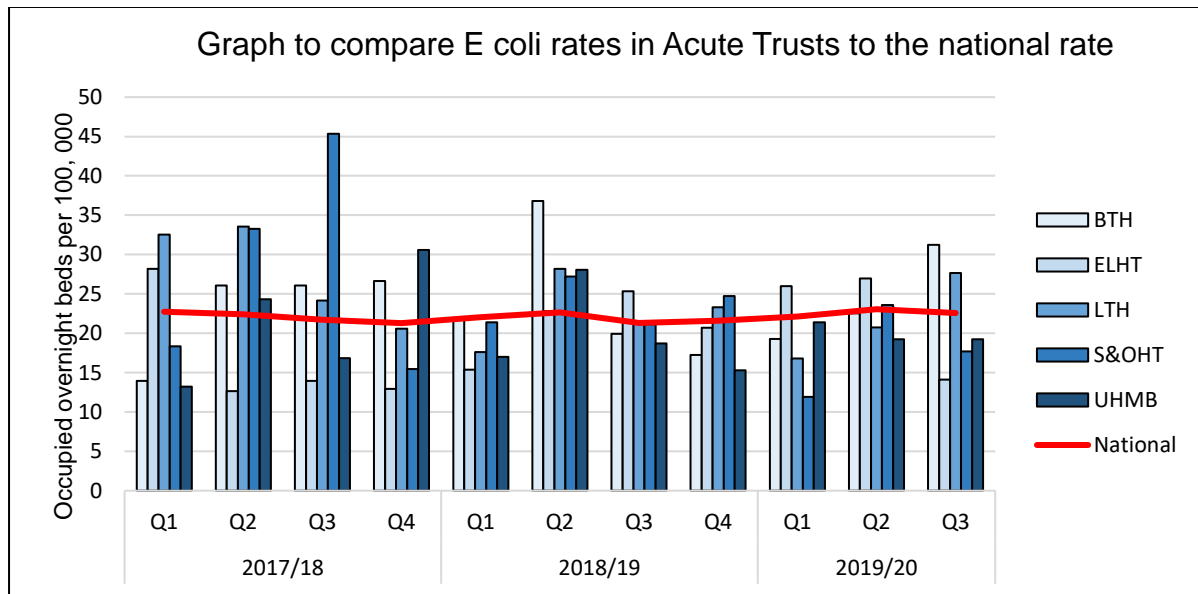
All areas are currently breaching their ambition to reduce the numbers, with the overall figure being breached by 63%. Whilst the ambition is not currently being achieved it appears that the increase is slowing down and the first 3 quarters of this year have shown a minimal decrease of 2% (1130 in 18/19 to 1110 19/20).

West Lancashire CCG have breached their annual ambition as they are reporting 82 cases against the annual ambition of no more than 50 cases.

## 5.2 Acute Trusts E coli

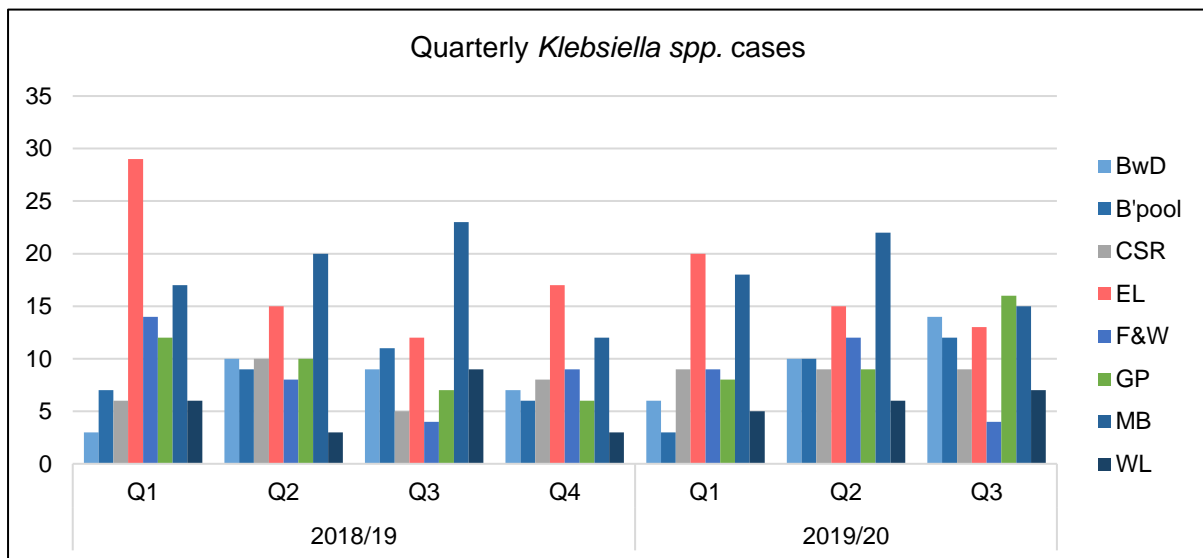
Acute trusts do not currently have a trajectory for reducing E. coli bloodstream infections, but they are supporting their local health economy plans to work towards the 10% reduction.

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

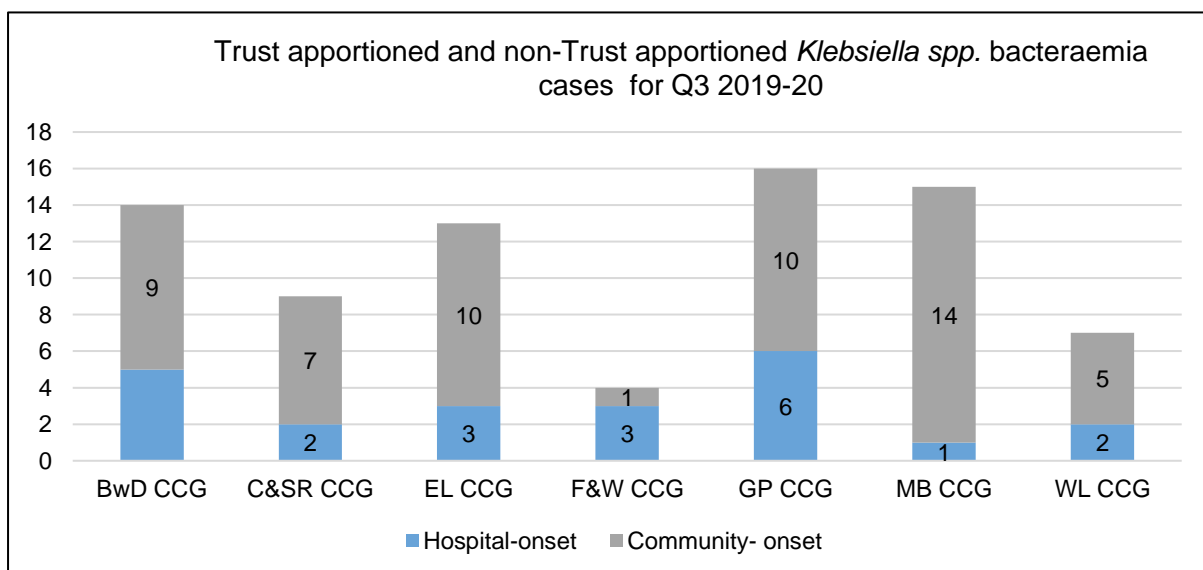


## 6 *Klebsiella spp.*

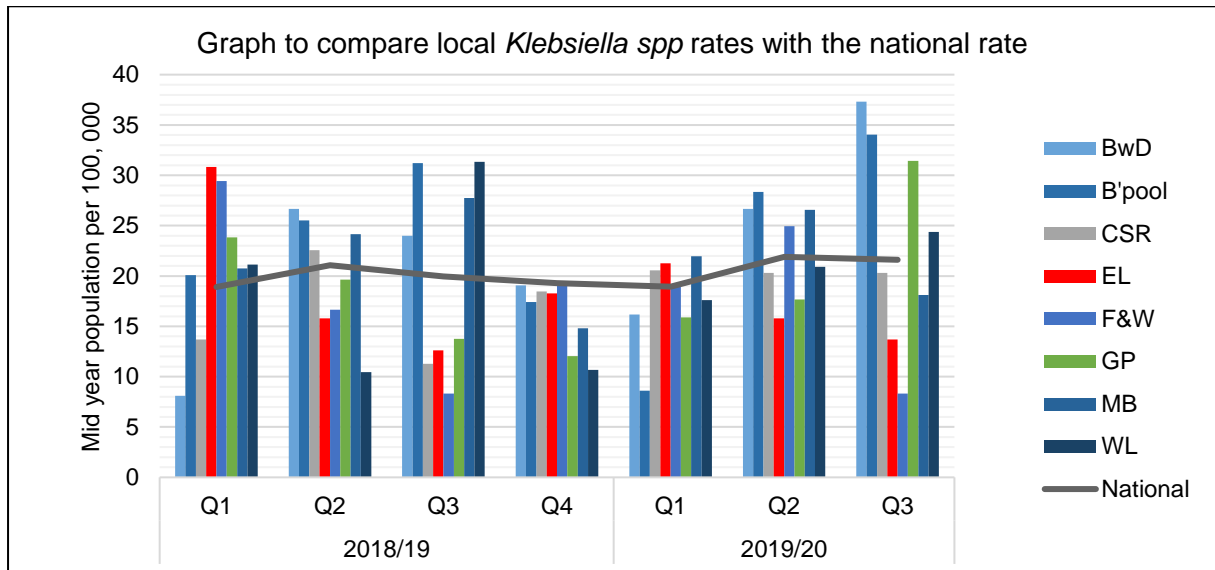
*Klebsiella spp.* is another Gram-negative bacteria. There is not a trajectory at present, but the reduction of *Klebsiella spp.* bloodstream infections is included in the reduction ambition. During Q3 there were 90 cases across in HLSC, bringing the total for the year to date to 261, similar to the Q1-Q3 2018/19 when 259 cases were reported.



The cases are split between hospital and community onset. The following chart shows the split for Q3. For the year to date 79 cases were hospital onset and 182 (70%) were community onset.

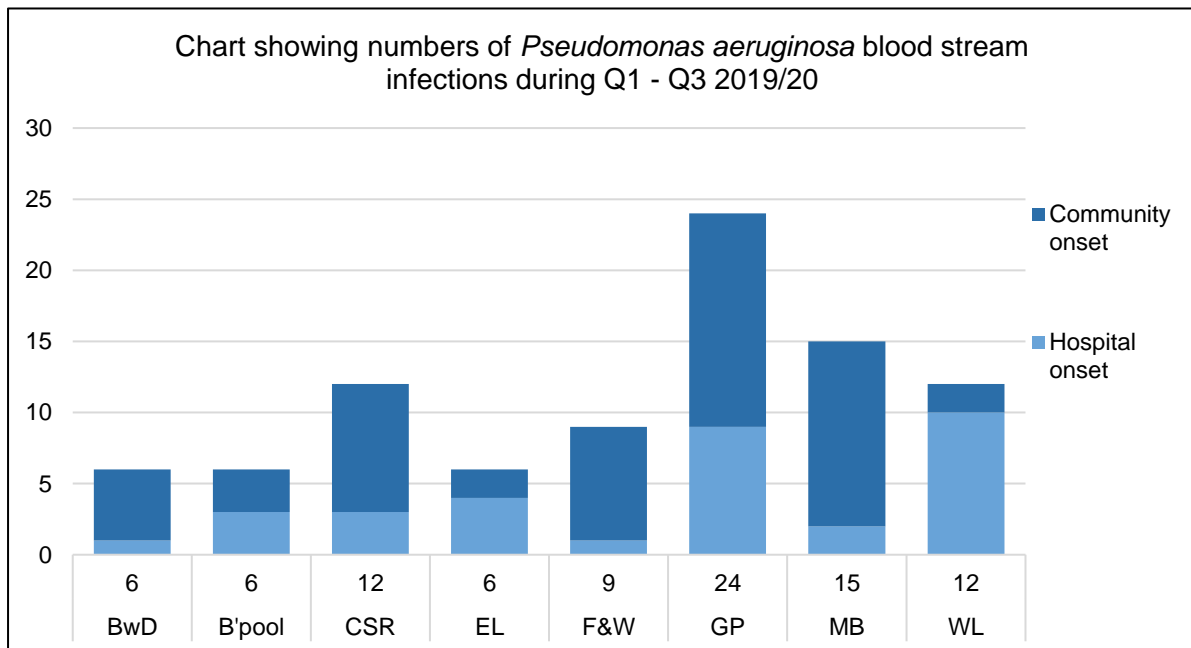


The following graph compares the rates of *Klebsiella spp.* blood stream infections in residents from HLSC with the national rate.



### 7 *Pseudomonas aeruginosa*

*Pseudomonas aeruginosa* is the other Gram negative bacteria which is included in the reduction ambition, but there are fewer cases. There is currently no trajectory. Again, the majority of these arise in the community (33 hospital onset v. 57 community onset).



## 8. Care homes

During Q3 the IP team continued to support those care homes undergoing the Quality Improvement Programme. 7 homes have been visited, audited and support provided.

An IPN now attends NSHE/I's Regulated Care Quality sub-group to raise the profile of infection prevention.

In addition training sessions have been provided via the Care home IPC Champions meetings and 6 sepsis and 2 nutrition and hydration workshops.

The team continue to support the management of outbreaks in care homes.

In addition to norovirus and influenza outbreaks the team have supported PHE to manage incidents of;

- invasive Group A Streptococcus in 2 Fylde coast care homes;
- Hepatitis A linked to a health care worker at a care home; and
- Salmonella

## 9. Other work streams

The work to improve hand hygiene continues with the sessions delivered to the local schools; for this quarter the sessions have been delivered to 30 schools in Pennine Lancashire. All of these sessions have excellent evaluation.

IPNs have attended a train the trainer session from colleagues at PHE working on the e-Bug resources for schools. This package will be cascaded in the near future on completion of the current round of hand hygiene training.

Work continues to reduce the number of UTIs and the team are collaborating with a team 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 for residents over the age of 65 years and those with urinary catheters.

A Nutrition and Hydration Community of Practice has been established for care homes and domiciliary agencies. This includes Quality Improvement methodology to assist the homes to implement initiatives to improve hydration within the homes and domiciliary settings.

Meetings have been held to discuss techniques and resources required to improve oral hygiene within care homes and domiciliary settings to prevent pneumonia.

The delivery against the sepsis strategy for Lancashire care homes 2017-2020 is ongoing. 6 training sessions have been provided to care home staff within the last quarter. Sessions continue to evaluate as overall excellent. Sepsis/deterioration advice and support continues to be provided at local, regional and national levels. Work is now underway to improve experiences and outcomes of the deteriorating resident across care pathways.

The IPCNs have also supported PHE and Public Health colleagues in the council to deliver invasive Group A Streptococcal sessions to staff working in hostels for the homeless.

## **10. Outbreaks**

In addition to norovirus outbreaks in care homes the IPC team at LCC have also been involved and supported the following outbreaks

- Klebsiella at Southport Hospital – action plan developed and being implemented
- Carbapenemase-producing enterobacteriaceae at Blackburn Hospital – action plan developed and being implemented
- Streptococcus A outbreak in the community – training being provided by care teams
- Cryptosporidium in a nursery in Hyndburn – nursery visited with the Environmental Health Officer; advice provided.

## **11. 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**