

Annual Infection Prevention Report 2021- 2022

Infection Prevention Team

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Introduction

The purpose of this report is to provide an update on the work of the Infection Prevention (IP) 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 (HCAIs) which are subject to mandatory surveillance and progress towards any trajectories where appropriate. The announcement of the 2022/23 trajectories has not yet been released.

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. HCAIs have a significant impact on morbidity and mortality whilst carrying a financial risk due to unscheduled care and prescribing costs. There are many HCAIs, but the national focus is on Methicillin resistant *Staphylococcus Aureus* (MRSA) blood stream infections; Methicillin Sensitive *Staphylococcus Aureus* (MSSA) blood stream infections; Gram-negative blood stream infections including *Escherichia coli* (*E. coli*), *Pseudomonas aeruginosa* and *Klebsiella spp.*; and *Clostridioides difficile* infections (CDI).

Laboratories within the Acute Trusts submit their data for reportable infections onto the Data Capture System (DCS) managed by UK Health Security Agency (UKHSA). 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 (ICS), and this may vary slightly from the residents' data. The data for the NHS Trusts will also vary from the CCG data as the NHS Trusts may admit patients registered with GP outside of the ICS, and other cases may be registered in the ICS, but treated at NHS Trusts outside the area.

COVID-19 outbreaks in all settings, but especially care homes, have continued to have a significant impact on the workload for the IP team during 2021/22.

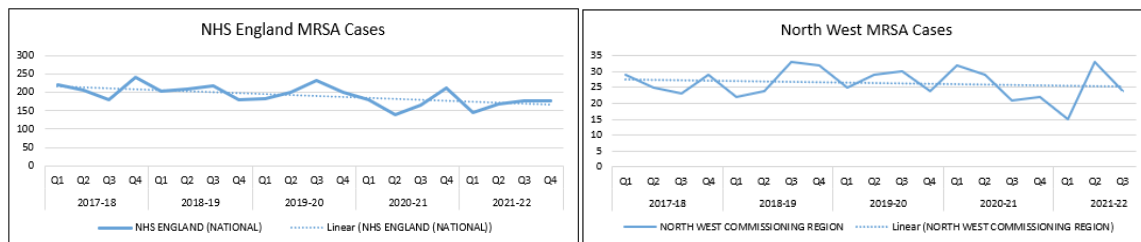
MRSA

There has been a considerable decrease in the rate of reported MRSA blood stream infections (BSI) since mandatory surveillance began in April 2007. There was a steep decline of 85% of reported cases between 2007 and 2014 and the trend for the last 5 years continues to show a year-on-year decrease.

As these have a zero tolerance all cases undergo a post infection review to establish if there are any lessons to be learned and shared.

National and Northwest data

The chart below shows the number of MRSA cases by quarter since April 2017.

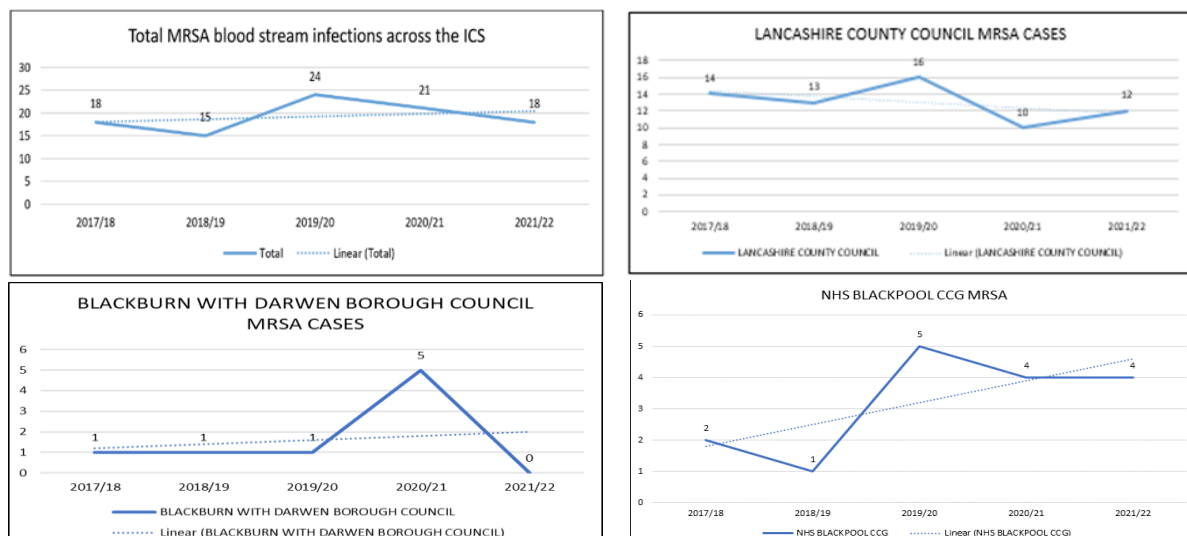


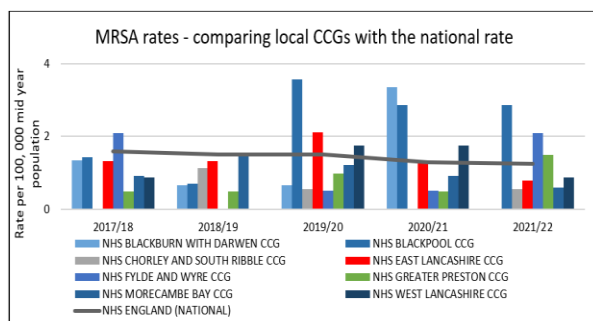
Nationally the MRSA cases were at their lowest in Q2 2020-21 and low again in Q1 2021/22. During both of these time periods significant COVID outbreaks were being seen in NHS Trusts which resulted in reduced admissions for trauma and pre-planned surgical procedures, which may have impacted on the factors contributing to the BSI. The downward trend is also seen within the NW, although quarterly fluctuation is noticeable.

ICS and Lancashire and BwD data

The chart below shows the number of MRSA BSI and the trend across the ICS over the last 5 years. Despite the decrease across the NW the ICS is showing a slight increase; this may be linked to the increased trend within Blackpool CCG who have reported rates consistently higher than the national rate for the last 3 years.

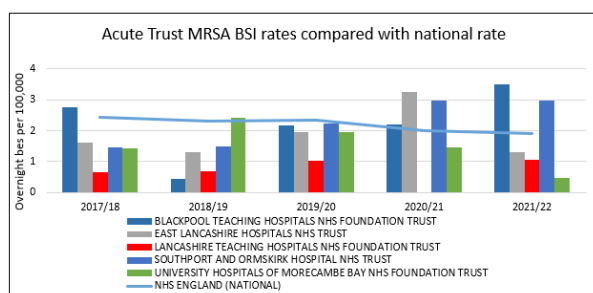
There have been a total of 18 cases of MRSA BSI this year, 11 cases were healthcare associated and 7 cases were community associated. No MRSA BSI were reported for Blackburn with Darwen residents during 2021/22.





Significant Acute Trust data

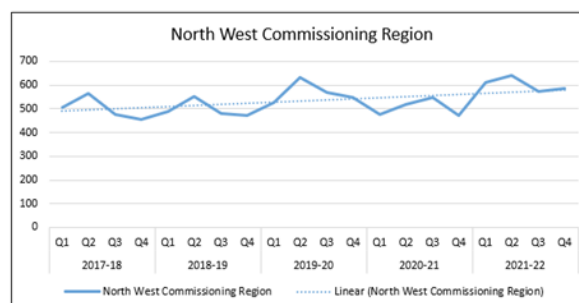
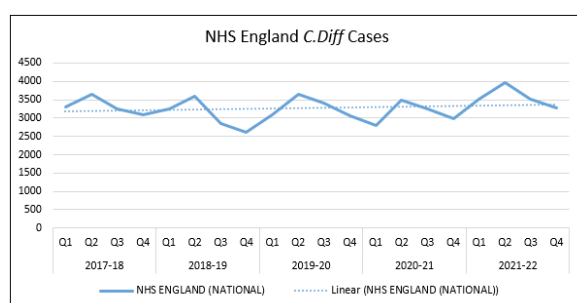
There has been a total of 20 MRSA cases across the acute trust in 2021-22. BTH have had 6 MRSA BSI, 3 of these however were the same patient who had a deep infection, this has also impacted on their rates which are above the national rate. The chart below shows the MRSA BSI rates in the NHS Trusts compared with the national rate. S&OHT also have rates higher than the national rate.



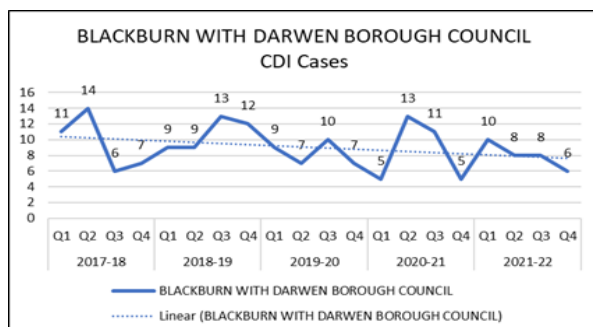
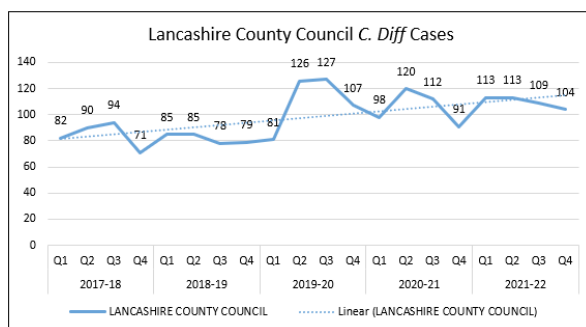
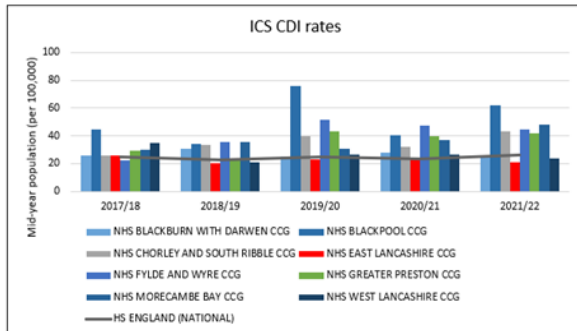
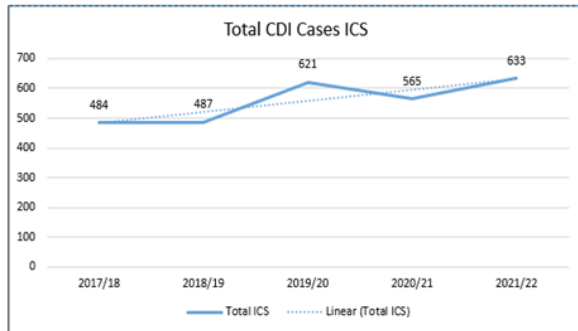
Clostridioides difficile infection (CDI)

Clostridioides difficile bacterium can produce a toxin which leads to colitis (CDI). This may vary from mild diarrhoea to being potentially fatal. The NHS Standard Contract includes quality requirements for NHS Trusts and CCGs to minimise rates of *Clostridioides difficile* infections. Some cases may arise from appropriate health care, so every case is reviewed to ascertain whether they have been due to lapses in care. These often highlight inappropriate antibiotic usage as a cause, and this is an area that could be targeted. Some cases are also linked to environmental cleanliness with the dated estates at NHS Trusts and the recent issues with bed capacity make enhanced cleaning problematic.

National and the North-West data



The chart below shows the total number of CDI cases and the trend across the ICS and Lancashire since April 2017. Blackpool CCG has been significantly above the national rate each year.



There have been 633 cases of CDI in 2021/22 across the ICS, this is the highest number of cases per year in the last 5 years. This will be an area that the IPC team will target during 2022/23, especially looking into correct management of cases to prevent reinfection.

The table below shows the number of cases by CCG against their objective for 2021-22. MB CCG significantly breached their annual trajectory by 55%, this was probably linked to the increased number of cases in UHMB.

CDI data	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Total	Obj ective to date
Blackpool CCG	8	5	10	11	11	8	6	6	6	7	8	1	87	82
Bury CCG	2	5	4	4	3	2	4	3	3	1	4	1	36	37
CSR CCG	5	4	8	5	5	5	4	4	12	8	5	11	76	63
EL CCG	6	4	11	3	11	4	4	9	6	9	6	6	79	85
FW CCG	4	10	11	5	9	10	6	11	6	3	6	4	85	89
GP CCG	4	10	5	6	9	10	8	7	6	9	5	6	85	81
MB CCG	11	15	20	9	14	13	18	11	11	11	11	14	158	102
WL CCG	1	2	1	3	3	3	4	2	2	1	3	2	27	32
Total Hospital onset	23	32	34	29	36	32	26	31	26	24	35	24	352	
Total Community Onset	9	17	27	13	20	16	15	16	18	19	14	12	196	
Total	41	55	70	46	65	55	54	53	52	49	48	45	633	571
Cumulative Total	41	96	166	212	277	332	386	439	491	540	588	633	-	
Cumulative Total 20-21	35	70	111	162	223	258	316	352	393	434	470	505	-	
Cumulative trajectory 2021-22	48	95	143	190	238	285	333	380	428	476	523	571		

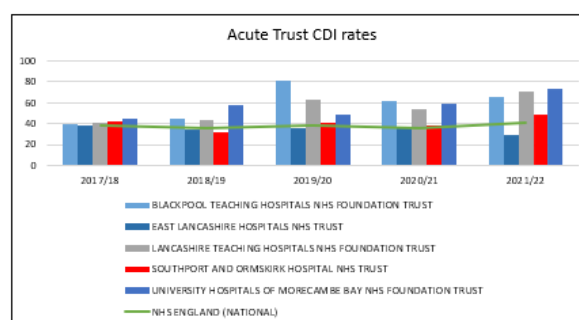
The table below shows the count of deaths where CDI as an underlying or contributory cause of death

CCG of registration of deceased	Year of death						Grand Total
	2016	2017	2018	2019	2020	2021 (provisional)	
NHS Chorley and South Ribble CCG	4	4	2	2	5	7	24
NHS East Lancashire CCG	8	5	6	3	9	5	36
NHS Fylde and Wyre CCG	4	4	7	4	10	9	38
NHS Greater Preston CCG	7	4	3	5	10	11	40
NHS Morecambe Bay CCG	9	6	9	3	12	8	47
NHS West Lancashire CCG	4	3	5	4	2	4	22
Grand Total	36	26	32	21	48	44	207

NHS Trust CDI data

Within local NHS Trusts there were 424 healthcare associated CDI cases in 2021-22, against an annual trajectory of 371. Therefore, the NHS trusts have breached their combined annual objective, with UHMB, LTH, and S&OHT breaching their individual objectives. All of these NHS trusts have implemented CDI reduction plans which are monitored at their Infection Prevention and Control Committees and Assurance Groups. BTH, LTH and UHMB have been above the national rate consistently for the last 5 years.

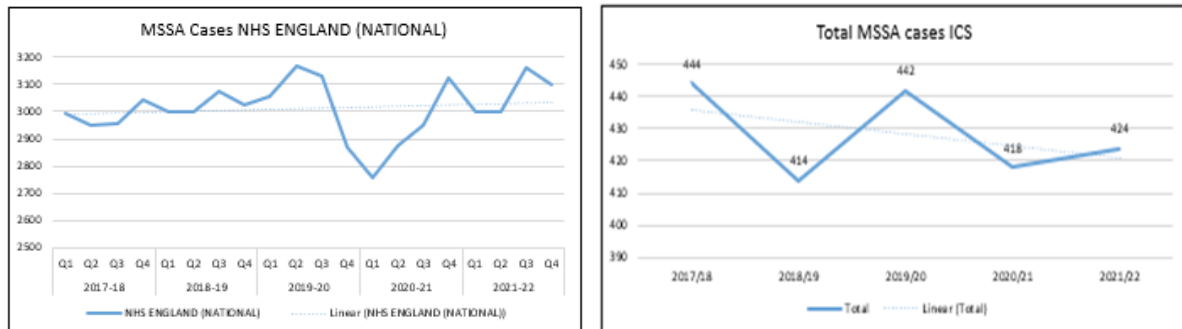
CDI Total by Provider	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Total	Objective to date
Blackpool 21-22	8	9	7	11	14	11	8	13	7	3	7	2	100	104
ELHT 21-22	5	5	7	3	8	2	3	5	3	2	9	5	57	67
LTH 21-22	7	12	12	11	11	12	11	8	9	15	13	14	135	118
Southport & Ormskirk 21-22	7	4	6	5	3	6	5	2	1	0	1	3	43	27
UHMB 21-22	7	9	12	5	8	9	8	7	6	6	5	7	89	52
Monthly Total	34	39	44	35	44	40	35	35	26	26	35	31	424	371
Cumulative Total	34	73	117	152	196	236	271	306	332	358	393	424		
Cumulative Trajectory	31	61	92	123	154	185	216	247	278	309	340	371		



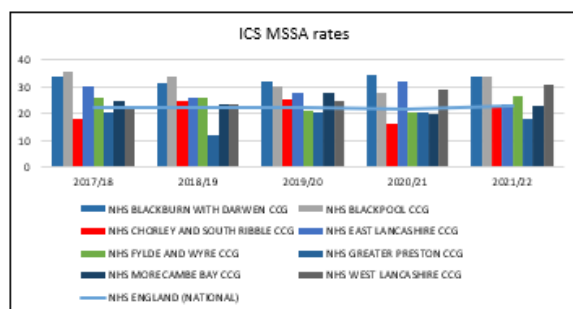
MSSA

Surveillance of MSSA BSI is mandatory but there is no trajectory associated with it. In line with other HCAIs under mandatory surveillance, MSSA BSI are divided into healthcare associated and community associated.

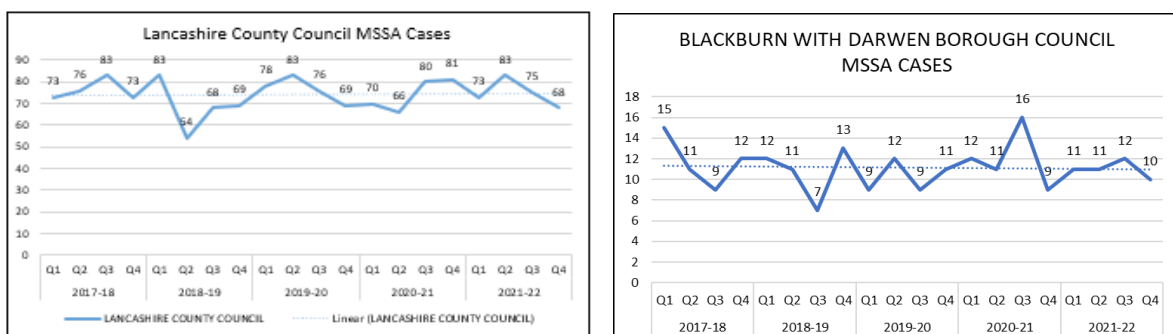
National and ICS data



The bar chart below shows the MSSA rates across the ICS compared to the national rate over the last 5 years and highlights those CCGs that are above the national rate most years.



The graph below shows the total number of MSSA cases across Lancashire and Blackburn with Darwen over the last 5 years and both show a downward trend.



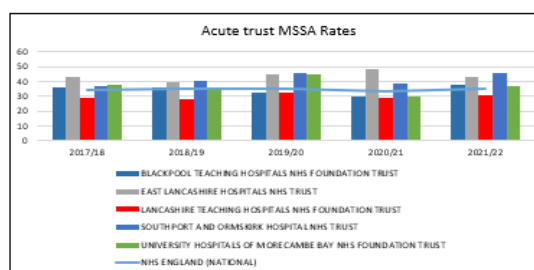
There have been 424 reported MSSA cases in 2021-22 across the 8 CCGs. 232 cases were community associated and 192 cases were healthcare associated. NHS Trusts may review these healthcare associated cases to understand if there are lessons to be learned to prevent further cases.

MSSA data	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Total
Blackpool CCG	5	6	5	4	2	0	6	5	4	2	5	3	47
Bury CCG	1	7	5	4	4	7	4	3	5	6	1	3	50
CSR CCG	1	3	3	5	5	3	5	2	4	2	3	2	38
EL CCG	7	4	6	10	8	8	12	5	4	4	9	12	89
FW CCG	2	9	5	2	5	4	3	2	5	8	2	4	51
GP CCG	1	6	5	4	3	4	1	3	5	0	0	5	37
MB CCG	5	4	10	5	10	4	6	5	12	5	5	5	76
WL CCG	1	4	1	7	2	4	5	1	0	2	6	2	35
Total Hospital onset	10	21	20	14	14	13	28	11	15	13	14	18	191
Total Community Onset	13	22	20	27	25	21	14	15	24	16	17	18	232
Total	23	43	40	41	39	34	42	26	39	29	31	36	423
Cumulative Total	23	66	106	147	186	220	262	288	327	356	387	423	-
Cumulative Total 20-21	34	71	107	138	166	199	238	278	314	357	387	418	-

NHS Trust data

There have been 212 reported 'Healthcare associated' MSSA cases in 2021-22 across the Acute trusts. The table below shows the number of cases in each local NHS Trust in 2021-22. The graph shows the MSSA rates for the acute trust over the last 5 years and highlights those Trusts who are often higher than the national rate.

MSSA Total by Provider	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Total
Blackpool 21-22	5	8	3	1	2	2	5	2	7	2	1	1	39
ELHT 21-22	5	4	4	3	4	9	10	3	1	4	4	7	58
LTH 21-22	1	4	6	3	2	2	6	2	3	3	4	6	42
Southport & Ormskirk 21-22	0	3	0	5	2	1	2	1	0	2	4	2	22
UHMB 21-22	1	3	6	1	4	1	3	3	2	3	3	3	33
Total 21-22	17	25	25	14	16	16	26	11	13	14	16	19	212

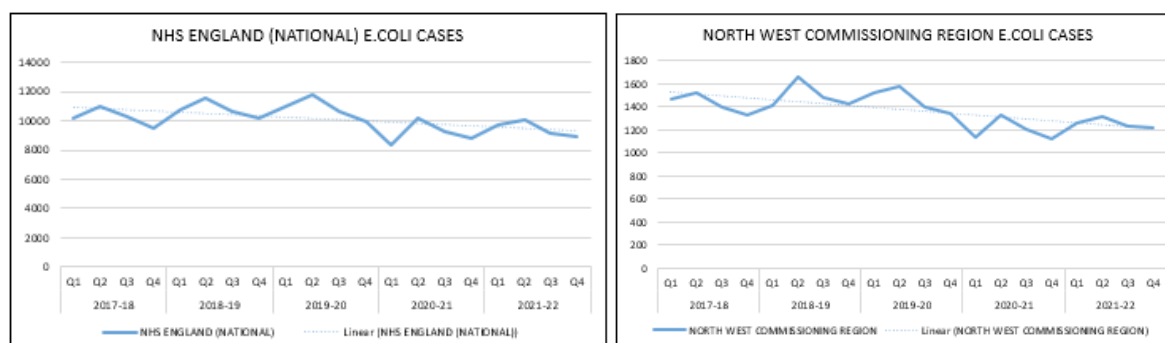


Gram negative BSI

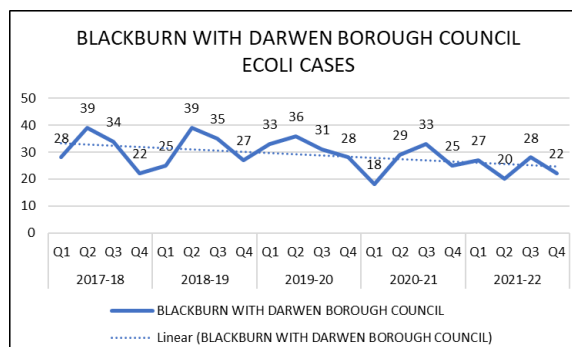
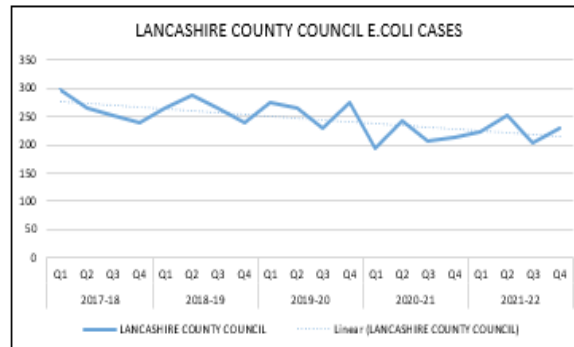
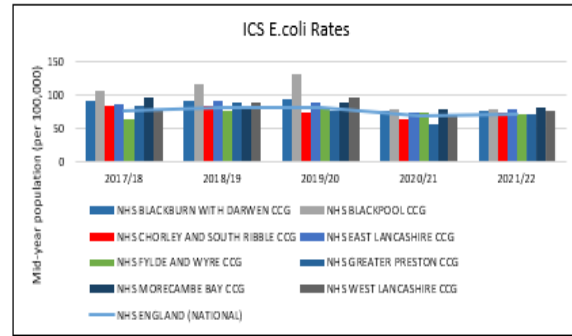
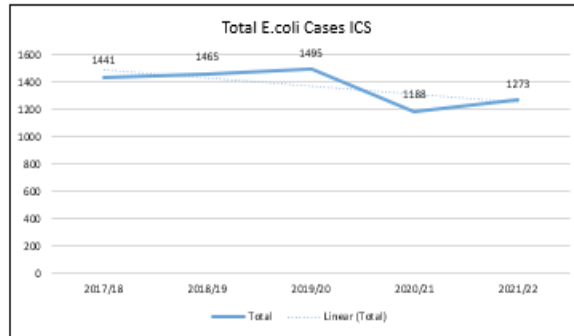
The reduction of Gram-negative bloodstream infections is a national priority as they are often linked to multi-drug resistant organisms. *Escherichia coli* (E. coli) is the causative agent for the majority of these Gram-negative infections and is therefore the major focus for the reduction plans. *Klebsiella spp.* and *Pseudomonas Aeruginosa* are other Gram-negative bacteria, which now have trajectories since the 2021-22 contract.

E.coli

National and North West data



ICS and Lancashire and BwD data



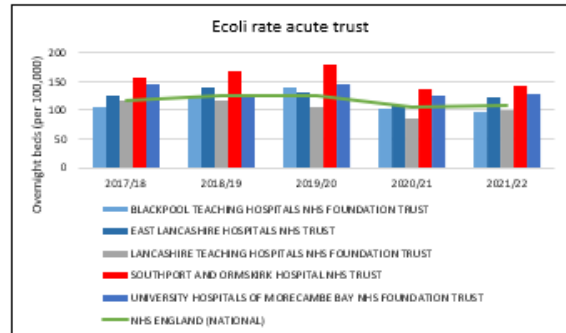
Whilst the trend line is moving in the right direction, this is not showing as big reduction as required, and more work is required to reduce these infections. Many of the Gram-negative BSI are linked to urinary tract infections, so the prevention and management of these infections is the main focus.

The table below shows the cases of E.coli across the CCGs from April 2021

E.coli data	Apr -21	May -21	Jun -21	Jul -21	Aug -21	Sep -21	Oct -21	Nov -21	Dec -21	Jan -22	Feb -22	Mar -22	Total	Objective to date
Blackpool CCG	16	11	9	8	9	8	8	8	11	7	7	6	108	169
BwD CCG	10	8	13	10	4	11	12	7	11	13	2	10	111	131
CSR CCG	14	10	5	8	18	10	10	10	8	10	12	14	129	111
EL CCG	20	21	33	28	24	25	25	21	25	23	32	22	299	304
FW CCG	7	14	12	16	10	15	12	8	7	9	16	9	135	135
GP CCG	19	7	5	17	18	7	16	5	15	10	10	13	142	138
MB CCG	21	20	22	33	21	21	22	19	20	21	25	17	262	271
WL CCG	7	10	10	9	10	6	4	7	7	5	4	8	87	106
Total Hospital onset	45	35	43	46	50	46	41	39	39	38	37	35	494	
Total Community Onset	69	66	66	84	64	56	68	46	65	60	71	54	769	
Total	114	101	109	129	114	103	109	85	104	98	108	99	1273	1372
Monthly Trajectory	114	114	114	114	114	114	114	114	114	114	114	114	1372	
Cumulative Trajectory	114	229	343	457	572	686	800	914	1029	1143	1257	1372		
Cumulative Total	114	215	324	453	567	670	779	864	968	1066	1174	1273	-	
Cumulative Total 20-21	83	170	269	369	476	587	692	786	891	982	1075	1188	-	

The table and graph below show the number of E.coli cases and the comparison with the national rate within local NHS Trusts.

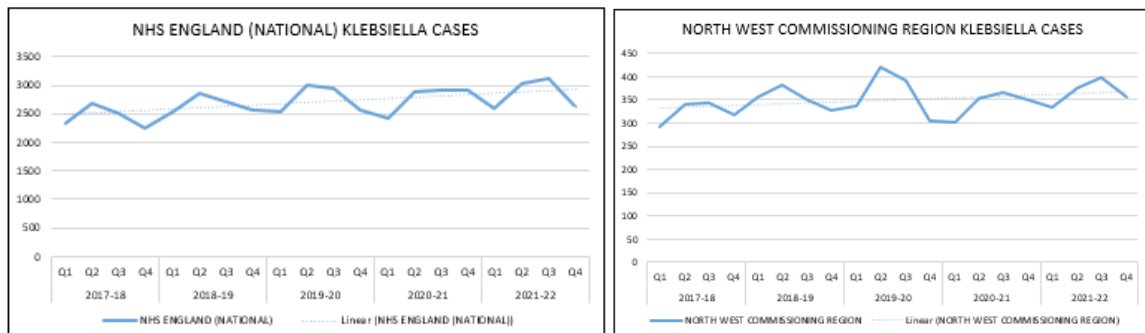
E.Coli Total by Provider	Apr- 21	May- 21	Jun- 21	Jul- 21	Aug- 21	Sep- 21	Oct- 21	Nov- 21	Dec- 21	Jan- 22	Feb- 22	Mar- 22	Total	Objective to date
Blackpool 21-22	2	10	7	11	9	9	4	7	7	2	8	3	76	105
ELHT 21-22	11	13	14	8	12	14	15	14	16	17	11	12	145	142
LTH 21-22	18	5	7	14	15	5	12	5	5	7	7	11	100	116
Southport & Ormskirk 21-22	6	2	7	5	3	5	1	6	5	6	5	6	51	70
UHMB 21-22	9	5	9	5	10	12	8	12	8	5	10	7	93	99
Total	46	35	44	43	49	45	40	44	41	37	41	39	465	532



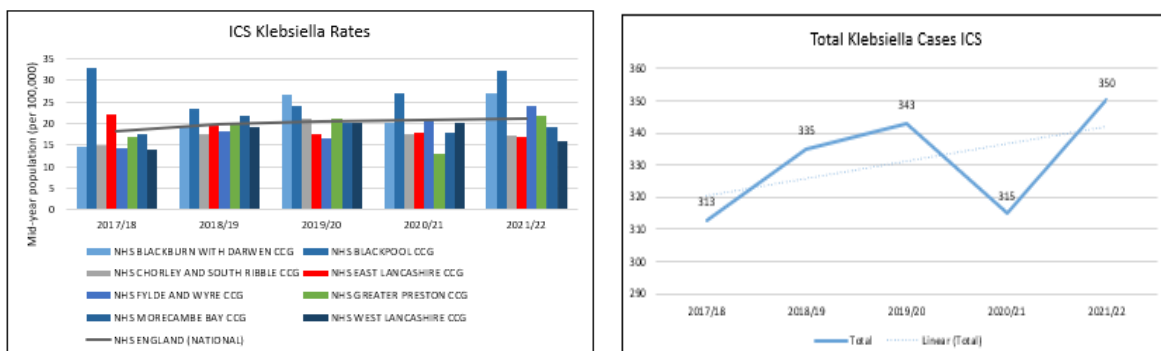
Klebsiella spp

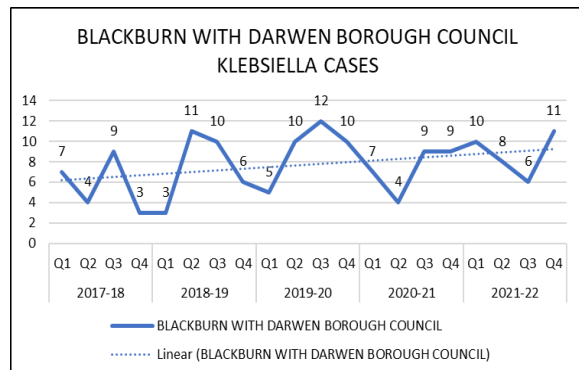
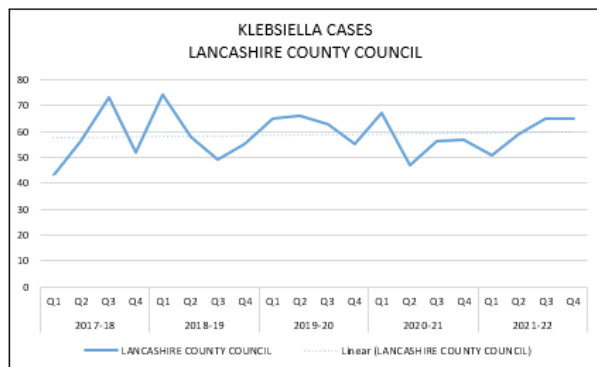
Whilst the numbers of *Klebsiella spp.* BSI are lower than E. Coli, the trend line continues to show an increase in cases. Cases are reviewed to assist in the understanding of the epidemiology of the organism to be able to implement strategies to break the chain of infection.

National and North West data



ICS and Lancashire data





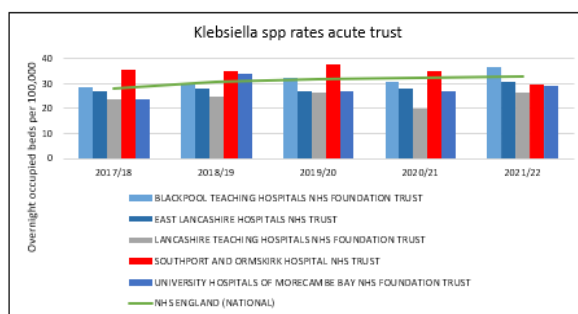
Klebsiella data	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Total	Objective to date
Blackpool CCG	2	2	2	3	3	6	9	4	3	5	3	3	45	30
Blackburn CCG	2	3	5	2	4	3	5	1	3	5	3	4	40	35
CSR CCG	2	1	1	1	2	4	3	5	2	3	2	4	30	37
EL CCG	6	4	4	2	5	7	3	6	7	11	5	4	64	61
FW CCG	5	4	3	4	3	4	4	5	3	4	2	5	46	33
GP CCG	3	4	2	8	5	2	4	4	3	0	1	7	43	38
MB CCG	6	1	4	4	4	5	9	3	7	11	4	5	63	53
WL CCG	1	1	1	3	0	2	2	2	1	1	0	4	18	19
Total Hospital onset	17	7	13	19	15	19	19	17	17	24	11	14	192	
Total Community Onset	10	13	9	8	11	14	20	13	12	16	9	22	157	
Total	27	20	22	27	26	33	39	30	29	40	20	36	349	317
Monthly Trajectory	26	26	26	26	26	26	26	26	26	26	26	26	317	
Cumulative Trajectory	26	53	79	106	132	158	185	211	238	264	290	317		
Cumulative Total	27	47	69	96	122	155	194	224	253	293	313	349	-	
Cumulative Total 20-21	26	54	88	111	127	151	183	216	237	269	293	315	-	

The annual trajectory for the 8 CCGs combined is 317, so the CCGs are above the combined annual trajectory.

NHS Trust Data

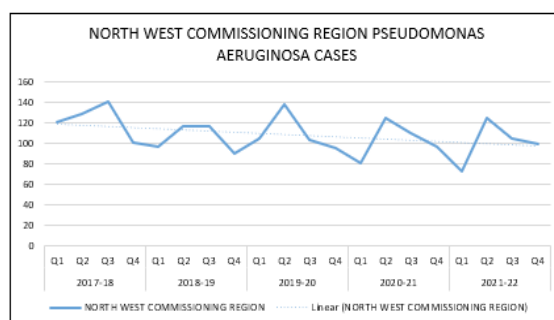
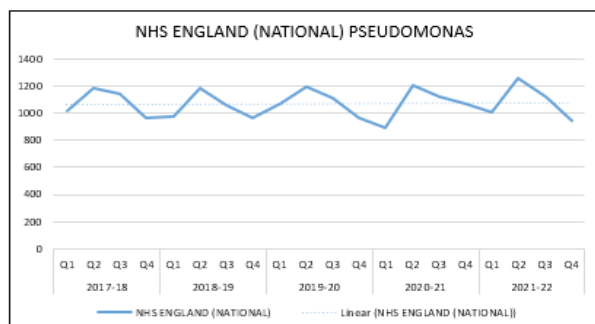
The table below shows the number of cases each month by NHS Trust and those who have breached their trajectory. The graph compares the local NHS Trusts against the national rate.

Klebsiella Total by Provider	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Total	Objective to date
Blackpool 21-22	2	4	3	6	4	6	6	7	5	6	3	1	53	43
ELHT 21-22	7	2	3	2	4	6	6	3	4	9	5	4	55	35
LTH 21-22	3	1	2	6	3	3	4	2	4	0	1	3	32	42
Southport & Ormskirk 21-22	1	0	1	2	1	3	2	1	0	2	0	2	15	23
UHMB 21-22	2	0	2	3	2	2	2	2	1	5	2	4	27	24
Total	15	7	11	19	14	20	20	15	14	22	11	14	182	167

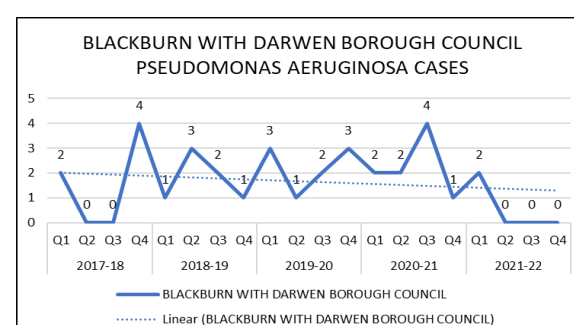
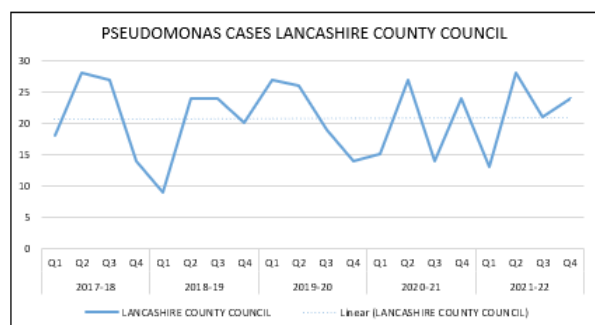
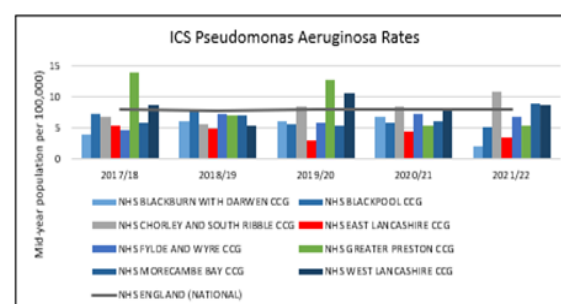
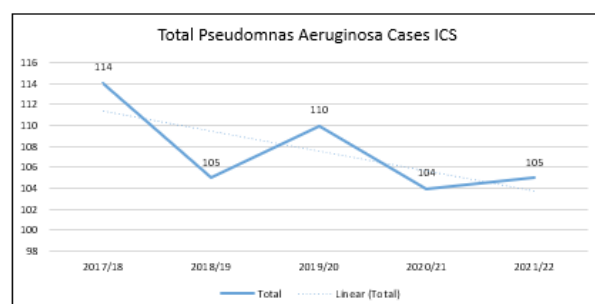


Pseudomonas Aeruginosa BSI

National and North West data



ICS, BwD and Lancashire data

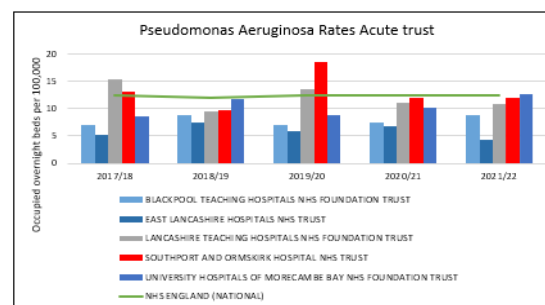


There have been 105 cases of *Pseudomonas aeruginosa* in 2021/22 across the ICS; 62 were healthcare associated cases and 43 were community associated cases. The annual trajectory for the 8 CCGs combined is 109, therefore they are under the annual trajectory.

Blackburn with Darwen have not reported any cases since Q1.

NHS Trust Data

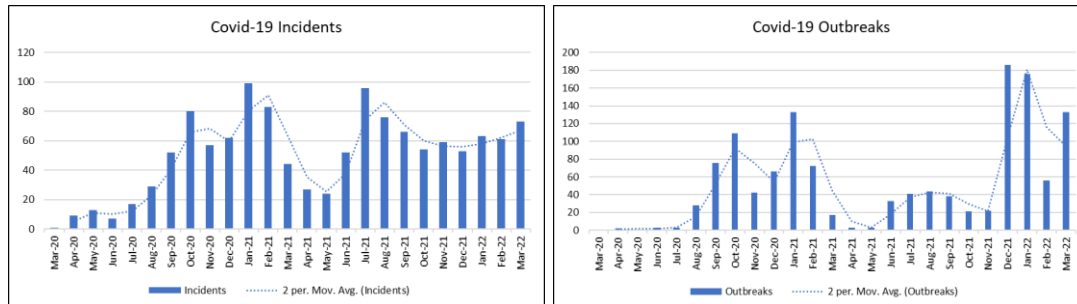
Pseudomonas Aeruginosa Total	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Total	Objective to date
Blackpool 21-22	0	0	1	1	5	4	1	2	1	1	0	1	16	9
ELHT 21-22	0	0	1	0	2	0	0	0	0	1	0	2	4	7
LTH 21-22	0	0	0	4	2	1	1	1	3	1	1	4	14	23
Southport & Ormskirk 21-22	1	2	0	1	0	1	0	1	1	0	0	0	7	14
UHMS 21-22	1	1	0	0	1	2	1	0	2	1	1	1	10	9
Total	2	3	2	6	10	8	3	4	7	4	2	8	59	62



Covid-19

There has been a total of 704 new incidents (single cases) and 756 new outbreaks (2 or more confirmed linked cases) of Covid-19 in care homes in 2021-22 (excluding Blackpool CCG).

The graph below shows the number of cases by month since March 2020, and the impact of the Omicron variant from November 2021. It is worth noting that the data held at the start of the Covid-19 pandemic is not validated.



Care homes

New Referrals/Audits/Visits

The LCC IPC team completed 58 care home audits in 2021-22.

This number of audits undertaken would have been considerably higher, however the team were unable to visit on several occasions due to ongoing covid-19 outbreaks.

Other visits - Infection Prevention Visits & Audits

The LCC IPC team undertook 17 assurance visits and 3 risk assessments in residential homes, schools, prisons, and other healthcare settings

Outbreaks and incidents

The IPC team have supported on the following outbreaks in Lancashire in 2021-22

- 103 norovirus outbreaks in care homes
- 2 scabies outbreaks in care homes
- 1 IGas outbreak at a care home
- A Hepatitis A outbreak at a nursery
- An E. coli outbreak at NICU ELHT

Additional work streams

The IPC team have undertaken many additional workstreams throughout the year including

- Delivery of 39 Hand Hygiene awareness sessions to Primary schools across Lancashire. Feedback rated the quality of the session 'Excellent' or 'Good'.
- Delivery of hand hygiene webinars for care and education settings.
- Delivery of 3 IPC forums with 81 attendees from various care settings.
- Working in collaboration with NHS colleagues to submit a bid to NHS England to develop a hydration heroes' pilot.

- Production and distribution of 17 newsletters and leaflets on various IPC topics targeted at care and education settings
- Supporting international and national IPC related campaigns such Hand Hygiene awareness day/week, glove awareness week, nutrition and hydration week, antimicrobial resistance day.
- Providing bespoke training sessions for care providers

Recommendations

The Directors of Public Health are asked to acknowledge and approve the content of this report.

Anita Watson, Lead Nurse Infection Prevention and Control