Infection Prevention Report

Quarter 2 (July to September 2022)

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Contents

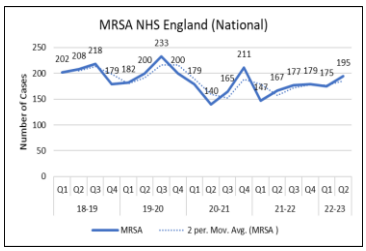
Introduction

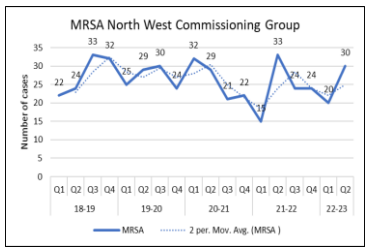
The purpose of this report is to provide an update on the work of the Infection Prevention Team from Lancashire County Council to the former Clinical Commissioning Groups (CCGs) across Lancashire and south Cumbria. The update will include the data for healthcare associated infections (HCAIs) which are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

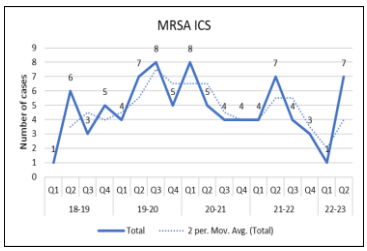
It is recognised that some infections are inevitable as a result of healthcare, but the vision of the Infection Prevention Society is that no person is harmed by a preventable infection. HCAIs have a significant impact on morbidity and mortality whilst carrying a financial risk due to unscheduled care and prescribing costs. There are many HCAIs, but the national focus is on Meticillin resistant *Staphylococcus Aureus* (MRSA) blood stream infections; Meticillin Susceptible *Staphylococcus Aureus* (MSSA) blood stream infections; Gram-negative blood stream infections including *Escherichia coli* (*E. coli*), *Pseudomonas* and *Klebsiella*; and *Clostridioides difficile* infections (CDI).

Laboratories within the Acute Trusts submit their data for reportable infections onto the Data Capture System (DCS) managed by 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, and this may vary slightly from the residents' data.

MRSA





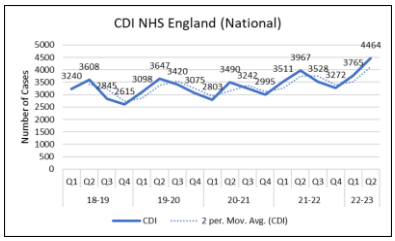


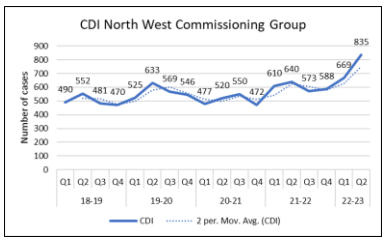
MRSA data	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Total
B'pool CCG	0	0	0	0	0	3	3
BwD CCG	1	0	0	0	0	1	2
CSR CCG	0	0	0	0	0	0	0
EL CCG	0	0	0	1	0	0	1
FW CCG	0	0	0	0	0	0	0
GP CCG	0	0	0	0	1	1	2
MB CCG	0	0	0	0	0	0	0
WL CCG	0	0	0	0	0	0	0
Total Hospital onset	0	0	0	0	0	2	2
Total Community Onset	1	0	0	1	1	3	6
Total	1	0	0	1	1	5	8
Cumulative Total	1	1	1	2	3	8	-
Cumulative Total previous year	1	3	7	9	14	14	-
Percentage change from last year	0%	-67%	-86%	-78%	-79%	-43%	

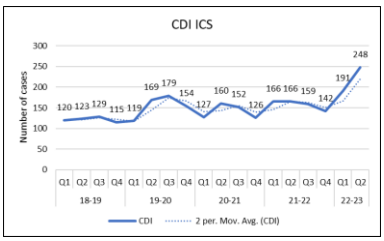
MRSA CCG data	QTR 1	QTR 2
B'pool CCG	0	3
BwD CCG	1	1
CSR CCG	0	0
EL CCG	0	1
FW CCG	0	0
GP CCG	0	2
MB CCG	0	0
WL CCG	0	0
Total Hospital onset	0	2
Total Community Onset	3	5
Total	1	7

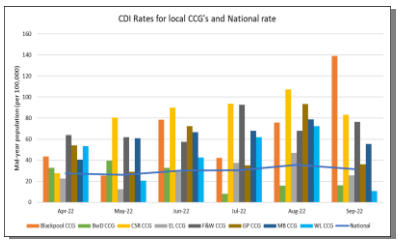
MRSA Acute Trust data	QTR 1	QTR 2
BTH 22-23	0	2
ELHT 22-23	0	0
LTH 22-23	0	0
SOHT 22-23	0	0
UHMB 22-23	0	0
Total	0	2

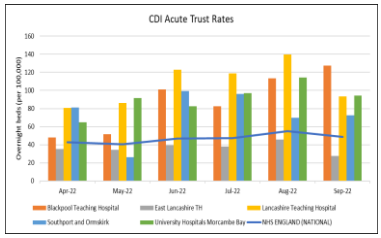
Clostridioides difficile infection (CDI)







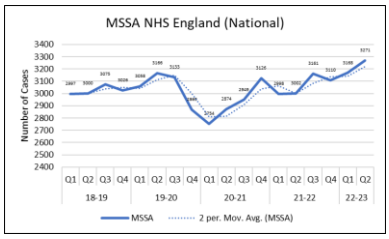


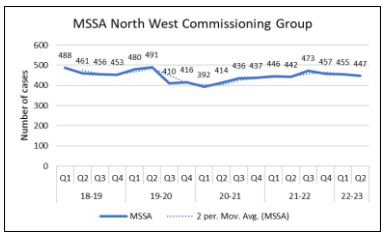


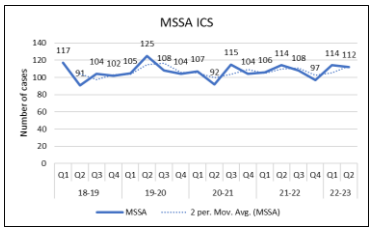
CDI CCG data	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Total	Objective to Date	Breach
BP CCG	5	3	9	5	9	16	47	43	
BwD CCG	4	5	4	1	2	2	18	18	
CSR CCG	4	12	13	14	16	13	72	34	109%
EL CCG	7	4	9	12	15	8	55	35	36%
FW CCG	10	10	9	15	11	12	67	44	57%
GP CCG	9	5	12	6	16	6	54	44	22%
MB CCG	11	17	18	19	22	15	102	73	40%
WL CCG	5	2	4	6	7	1	25	15	67%
Total Hospital onset	36	32	48	48	58	41	263		
Total Community onset	19	26	30	30	40	31	176		
Total	55	58	78	78	98	72	439	303	45%
Cumulative Total	55	113	191	269	367	439	-		
Cumulative Total last year	32	81	142	184	240	288	-		
Change from 21/22	72%	40%	35%	46%	53%	52%			

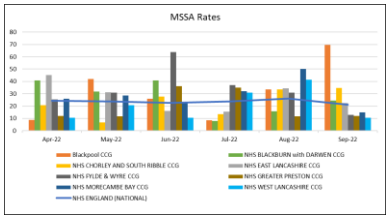
CDI data	Apr-22	May-22	Jun22	Jul-22	Aug-22	Sep-22	Total	Objective to Date	Breach
BTH 22-23	7	5	10	9	12	11	54	55	
ELHT 22-23	5	6	3	5	6	5	30	27	11%
LTH 22-23	15	11	21	20	20	16	103	61	69%
SOHT 22-23	5	2	7	3	5	5	27	25	8%
UHMB 22-23	4	8	8	13	11	8	52	42	8%
Total	36	32	49	50	54	45	266	209	27%
Cumulative Total	36	68	117	167	221	266	-		
Cumulative Total last year	34	73	117	152	196	236	-		
Change from 21/22	6%	-7%	0%	10%	13%	13%	-		

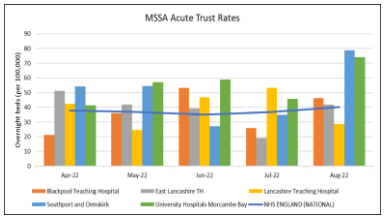
Meticillin Susceptible Staphylococcus Aureus (MSSA)









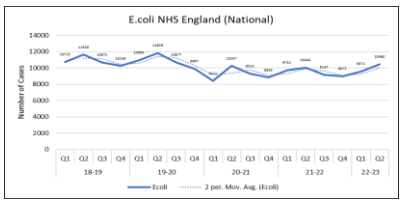


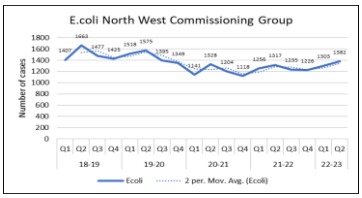
MSSA CCG data	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Total
BP CCG	1	5	3	1	4	8	22
BwD CCG	5	4	5	1	2	3	20
CSR CCG	3	1	4	2	5	5	20
EL CCG	14	10	5	5	11	8	53
FW CCG	4	5	10	6	5	2	32
GP CCG	2	2	6	6	2	3	21
MB CCG	7	8	6	9	14	6	50
WL CCG	1	2	1	3	4	1	12
Total Hospital onset	18	16	16	15	20	14	99
Total Community Onset	19	21	24	18	27	21	130
Total	37	37	40	33	47	36	230
Cumulative Total	37	74	114	147	194	230	-
Cumulative Total last year	23	66	106	147	186	220	-
Change from last year	61%	12%	8%	0%	4%	5%	-

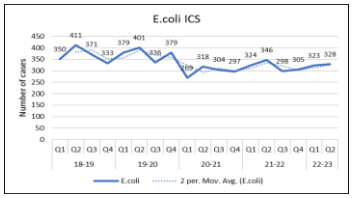
MSSA Acute Trust data	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Total
BP 22-23	2	5	4	1	2	3	17
ELHT 22-23	7	3	4	3	6	6	29
LTH 22-23	5	4	6	5	3	3	26
SOHT 22-23	2	4	2	1	5	1	15
UHMB 22-23	2	2	4	5	7	2	22
Total	18	18	20	15	23	15	109
Cumulative Total	18	36	56	71	94	109	-
Cumulative Total (21/22)	12	34	53	66	80	95	-
Change from 21/22	50%	6%	6%	8%	18%	15%	-

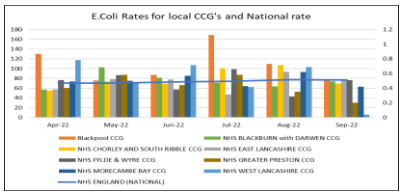
Gram Negative BSIs

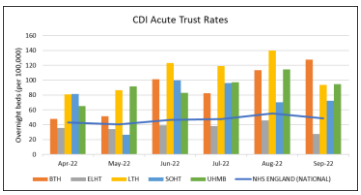
E.coli







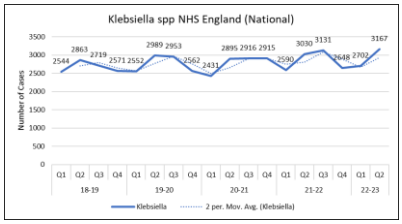


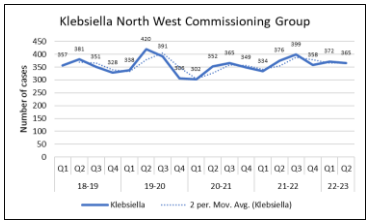


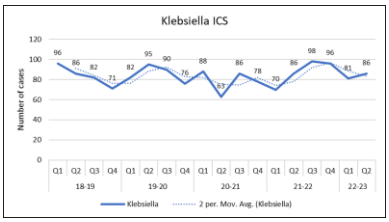
E. Coli CCG Data	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Total	Objective to Date	Breach
BP CCG	15	9	10	20	13	9	76	53	43%
BwD CCG	7	13	10	9	8	10	57	55	4%
CSR CCG	8	11	10	15	16	12	72	60	20%
EL CCG	18	25	24	15	30	24	136	137	
FW CCG	12	14	9	16	7	13	71	65	9%
GP CCG	10	15	11	15	9	6	66	64	3%
MB CCG	20	21	23	18	26	26	134	124	8%
WL CCG	11	7	10	6	10	9	53	44	20%
Total Hospital onset	35	48	44	36	43	37	243		
Total Community Onset	66	67	63	78	76	72	422		
Total	101	115	107	114	119	109	665	600	10%
Cumulative Total	101	216	323	437	556	665	-		
Cumulative Total 21/22	101	190	287	391	491	581	-		
Change from 21/22	0%	14%	13%	12%	13%	14%	-		

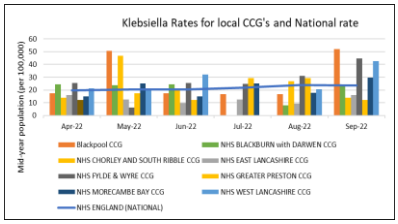
E. Coli Acute Trust	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Total	Objective to Date	Breach
BTH 22-23	10	10	10	13	9	5	57	46	24%
ELHT 22-23	7	14	10	4	16	8	59	68	
LTH 22-23	6	14	12	12	5	2	51	56	
SOHT 22-23	5	3	5	2	8	5	28	26	8%
UHMB 22-23	7	9	9	3	10	17	55	51	8%
Total	35	50	46	34	48	37	250	246	2%
Cumulative Total	35	85	131	165	213	250	-		
Cumulative Total 21/22	46	81	125	168	217	262	-		
Change from 21/22	-24%	5%	5%	-2%	-2%	-5%	-		

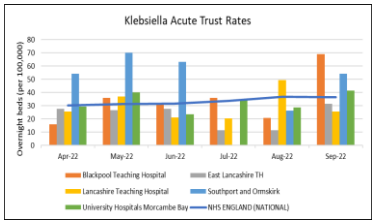
Klebsiella spp.







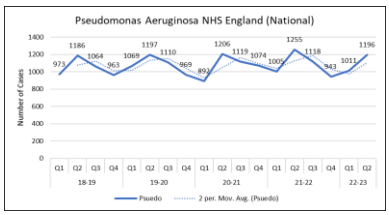


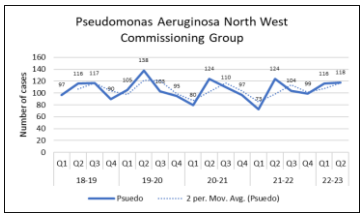


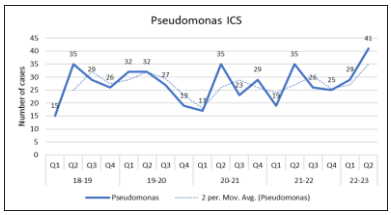
Klebsiella CCG Data	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Total	Objective to Date	Breach
BP CCG	2	6	2	2	2	6	20	18	11%
BwD CCG	3	3	3	0	1	3	13	3	333%
CSR CCG	2	7	3	0	4	2	18	13	38%
EL CCG	5	4	3	4	3	5	24	29	
FW CCG	4	1	4	4	5	7	25	20	25%
GP CCG	2	3	2	5	5	2	19	19	
MB CCG	4	7	4	7	5	8	35	26	35%
WL CCG	2	2	3	0	2	4	13	10	30%
Total Hospital onset	13	11	12	7	11	15	69		
Total Community Onset	11	22	12	15	16	22	98		
Total	24	33	24	22	27	37	167	137	22%
Cumulative Total	24	57	81	103	130	167	-		
Cumulative Total last 21/22	27	47	69	96	122	155	-		
Change from 21/22	-11%	21%	17%	7%	7%	8%	-		

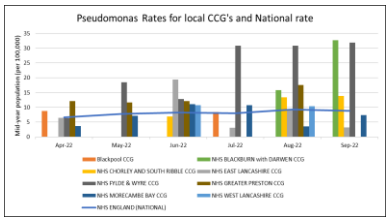
Klebsiella data	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Total	Objective to Date	Breach
BTH 22-23	1	2	4	0	2	3	12	22	
ELHT 22-23	3	4	2	1	1	3	14	26	
LTH 22-23	4	1	0	0	1	4	10	13	
SOHT 22-23	4	2	3	3	4	3	19	9	111%
UHMB 22-23	2	2	3	3	4	3	17	11	65%
Total	14	11	12	7	12	16	72	80	
Cumulative Total	14	25	37	44	56	72	-		
Cumulative Total last year	17	25	37	60	76	96	-		
Change from 21/22	-18%	0%	0%	-27%	-26%	-25%	-		

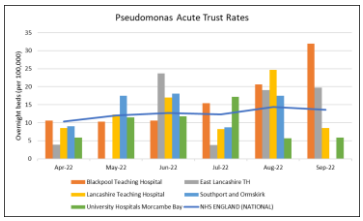
Pseudomonas Aeruginosa









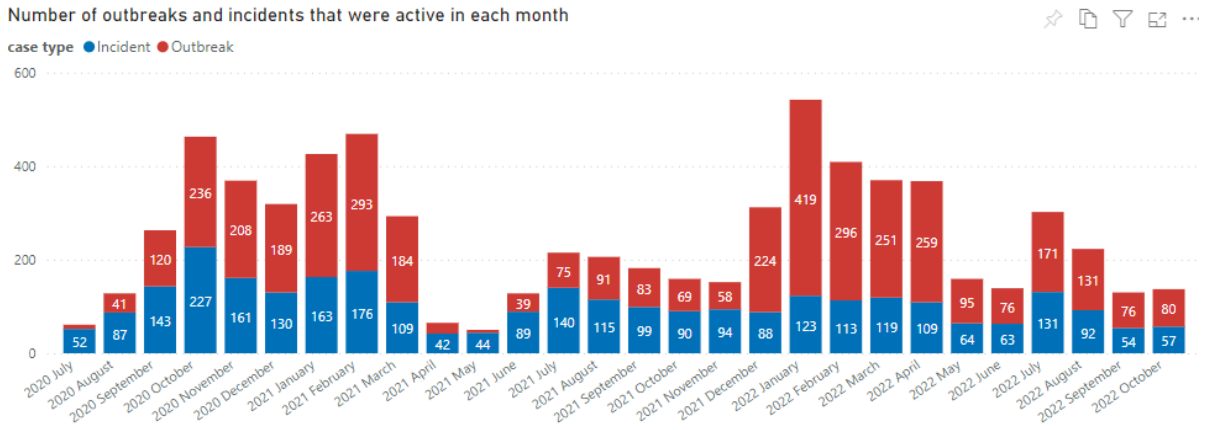


Pseudo CCG data	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-23	Total	Objective to Date	Breach
BP CCG	1	0	0	1	0	0	2	3	
BwD CCG	0	0	0	0	2	4	6	2	200%
CSR CCG	0	0	1	0	2	2	5	7	
EL CCG	2	0	6	1	3	1	13	7	86%
FW CCG	1	3	2	5	5	5	21	7	200%
GP CCG	2	2	2	0	3	0	9	5	80%
MB CCG	1	2	3	3	1	2	12	12	
WL CCG	0	0	1	0	1	0	2	4	
Total Hospital onset	2	6	10	6	9	8	41		
Total Community onset	5	1	5	4	8	6	29		
Total	7	7	15	10	17	14	70	47	
Cumulative Total	7	14	29	39	56	70	-		
Cumulative Total last year	4	10	19	27	42	54	-		
Change from 21/22	75%	40%	53%	44%	33%	30%	-		

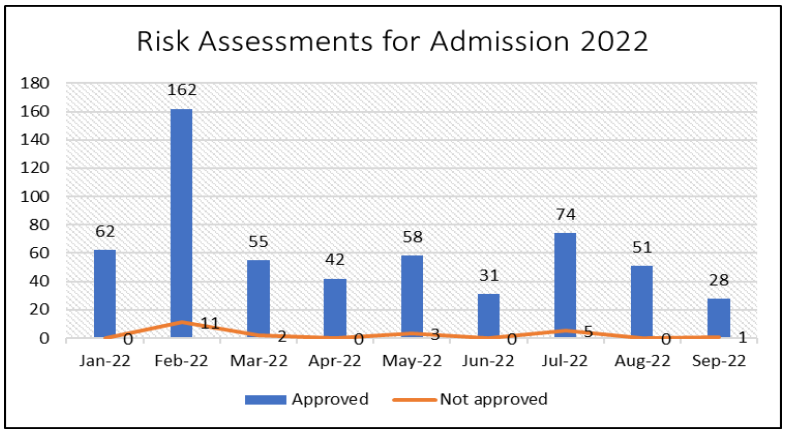
Pseudo Acute Trust data	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Total	Objective to Date	Breach
BP 22-23	0	0	3	0	4	4	11	10	
ELHT 22-23	0	2	3	2	2	0	9	4	125%
LTH 22-23	1	0	2	0	0	0	3	7	
SOHT 22-23	0	2	1	1	1	0	5	4	25%
UHMB 22-23	0	2	1	1	1	0	5	5	
Total	1	6	10	4	8	4	33	28	18%
Cumulative Total	1	7	17	21	29	33	-		
Cumulative Total last year	2	5	7	13	23	31	-		
Change from 21/22	-50%	40%	143%	62%	26%	6%	-		

COVID-19

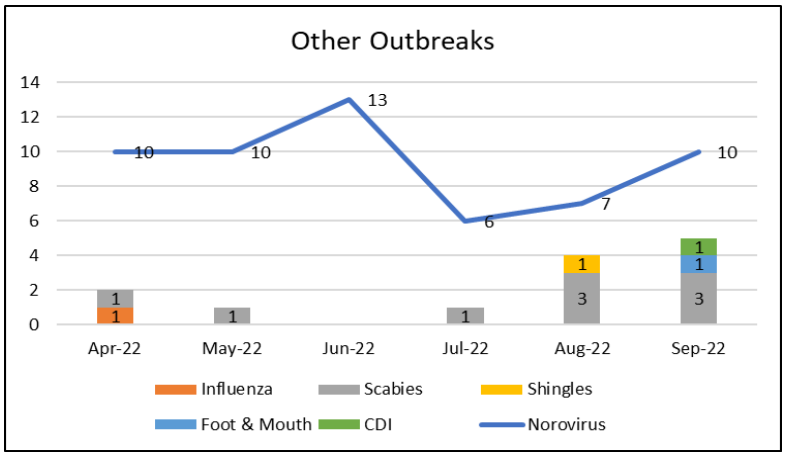
Number of active incidents and outbreaks within care settings in Lancashire and Blackburn with Darwen by month



Risk assessments for admission (carried out to support admission to care homes when in COVID-19 outbreak)



Other Outbreaks



IPC work streams & observations

MRSA

To date there have been 8 MRSA blood stream infections this year. Each case should be subject to a timely post infection review to allow for analysis of the themes and trends and to implement lessons learned. These reviews are becoming more difficult to complete, especially for community onset cases when input is required from multiple agencies.

COVID-19 response

- The IPC Team continue to provide support and advice to care providers. The team have handled 1,507 tasks on the Dynamics System relating to COVID-19 incidents and outbreaks in Q2: a slight increase on Q1 (1,458 tasks).
- There was a total of 216 incidents and 225 outbreaks in Q2.
- There have been 5162 emails sent and received in the team mailbox in Q2, the majority of these related to COVID-19.

Forums

Social Care Infection Prevention Champions

- The IPC team have held Social Care Infection Prevention Champions Forums. These have focussed on Cleaning Standards with the purpose of the forum was to improve understanding of the expected standard of cleaning and how it can help to reduce health care associated infections (HCAIs). The new national cleaning standards were highlighted, and implementation throughout social care settings was discussed. These standards are not mandatory in Adult Social Care settings but are considered best practice. The Infection Prevention Society (IPS) are developing a template that will be available once approved.
- Seven sessions were delivered at six locations across Lancashire in July and August 2022. There were 103 attendees in total and 95% of the feedback was excellent or good. The following comments were received.
    - "Very Informative and well presented."
    - "Great Information, relevant guidance advice timely, not dragged out, great session. Thank you."
    - "Ensure we get sent the information so we can cascade"
- The slides from the forum have now been uploaded to the IPC website.

Fundamentals of IPC Forum

- These forums are currently held every 6 weeks and are available for anyone working within a care setting to attend. They are aimed at new members of staff or staff wishing to complete a refresher session.
- The aims of the sessions are for participants to
    - Learn the basics of infection prevention and why they are required to stop the spread of infections
    - Learn the standard precautions in relation to infection prevention
    - Build upon knowledge of how infections can be prevented/controlled
    - Understand the importance of breaking the chain of infection
- Two sessions were held in Q2 with a total of 17 attendees.
- 100% of feedback received rated the overall workshop as excellent or good.

Audits

- 22 care home audits were completed in Q2,
    - 11 were rated as green
    - 9 were rated amber
    - 2 were rated as red

The team are working with the homes to create action plans to improve environmental and IPC standards within their homes. Feedback from care home audits has shown that although many homes have a nominated IPC Champion, they are often not attending IPC forums or engaging. Work is currently being done to promote the role of the IPC champions within care settings.

- 1 GP Practice was audited in Q2, self-referral from new IPC lead in the surgery.

Hand hygiene sessions

- There were 12 of hand hygiene sessions delivered at schools across Lancashire and BwD in Q2, 100% of the responses received rated the quality of the awareness session excellent or good.

Hydration Heroes project

- A pilot has been developed to promote hydration for service users in care settings across the ICS. The pilot is targeting day centres and includes a presentation highlighting the benefits of hydration and risks of dehydration to help to reduce the number of UTIs. The first session will be held in October.
- Several resources have been developed and purchased to help promote hydration. If the pilot is successful, we aim to expand the sessions to the wider public and informal/ family carers via community venues.

New resources developed by IPC team

- IPC Team leaflet
- Booklet IPC for nursery settings.
- Follow up questionnaire and feedback forms for post forum and training sessions.
- Hydration leaflets for the hydration heroes pilot

Influenza vaccination training

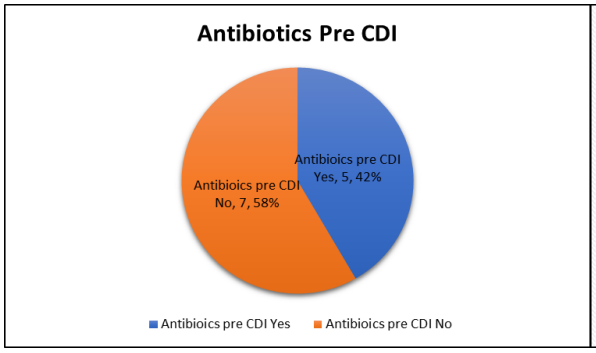
- 4 IPC nurses have attended a vaccination and immunisation foundation course to become involved in the influenza vaccination programme for Lancashire County Council staff.

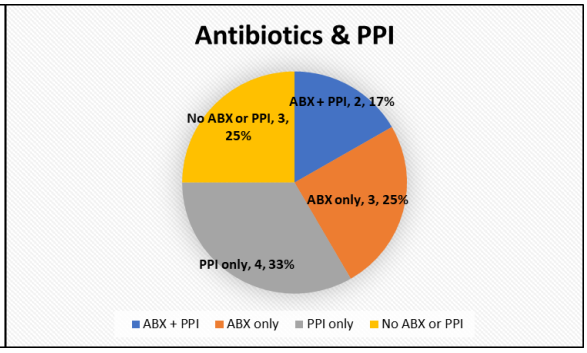
Horizon scanning

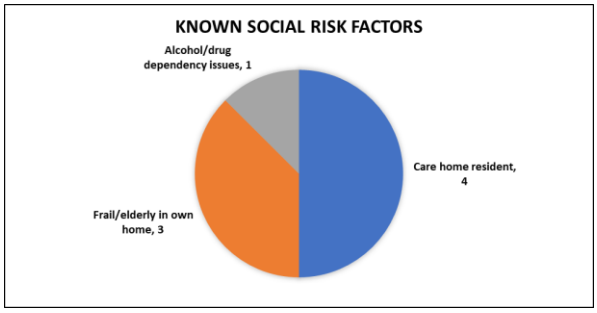
CDI increased cases

- CDI figures have significantly rose in Q1 and risen further in Q2, CSR are breaching their trajectory to date by 109% and LTH by 69%. Other areas across the ICS are also significantly breaching. A deep dive into a select number of cases is underway to see if there are any themes or trends to be identified.
- 4 members of the IPC team will be attending a CDI seminar in October
- The IPC team are working in collaboration with the ICB to create an action plan to tackle the increase in CDI
- Communications have been developed for GP's and distributed in the ICB newsletter.

The team performed a deep dive on community onset cases during a fortnight in September. Some former CCGs had already undertaken the reviews of the cases, and therefore the GPs were reluctant to complete further reviews. The learning is discussed at former CCG level, but this should be shared and analysed across the broader footprint of the ICS to be effective. When the ICB has the surveillance information and analysis then they can target the specific issues that impact on the local cases. For the limited data received the following is a brief analysis.







The PIRs received showed that only 42% of affected cases had antibiotics prior to developing CDI and 33% (the highest percentage) were taking PPIs only prior to developing CDI

Surgical Site Infections

Surgical site infections (SSI) are subject to post infection reviews. It has been identified that antibiotic prescribing needs to be improved. Patients have been diagnosed with post operative SSI by their GP however for the purpose of surveillance, a GP's diagnosis of a surgical site infection is not considered as a clinician's diagnosis as the SSI cannot be directly confirmed as meeting the case definition and cases should be referred back to the hospital clinician.

Glossary

Infections under mandatory surveillance:

***Clostridioides* difficile (CDI)**

Clostridioides difficile, formerly known as *Clostridium* difficile, is a spore-forming bacterium found in 3% of healthy people who are asymptomatic.

Clostridioides difficile infection (CDI) is the biggest cause of infectious diarrhoea in hospitalised patients and is caused by the production of toxins due to the disturbance of the normal intestinal flora, often from antibiotic treatment. Those at most risk of developing CDI includes the elderly and immunocompromised people.

Surveillance of *Clostridioides* difficile infections was introduced in 2004 for patients aged 65 years and over. This was extended to include all cases in patients aged 2 years and over in April 2007.

The NHS Standard Contract 2022/23 includes quality requirements for NHS Trusts to minimise rates of *Clostridioides* difficile infections.

Gram-negative bacteria

Gram-negative bacteria are bacteria that do not retain the crystal violet dye in the Gram stain protocol. The organisms are often resistant to many commonly used antibiotics.

The significant organisms are *Escherichia* coli (E. coli), Klebsiella spp., and Pseudomonas aeruginosa. Mandatory surveillance of *Escherichia* coli (E. coli) bloodstream infections was introduced in June 2011, following increases observed by UKHSA's voluntary surveillance and a recommendation from the Advisory Committee on Antimicrobial Prescribing, Resistance and Healthcare Associated Infection (APRHAI). In April 2017, Klebsiella spp. and Pseudomonas aeruginosa bacteraemia were also added.

This mandatory surveillance supports the Government's ambition to reduce the number of Gram-negative bloodstream infections by 50% by the end of the financial year 2023 to 2024.

Escherichia coli

Escherichia coli cause a range of infections including urinary tract infections and bloodstream infections.

***Klebsiella* species**

Klebsiella species (spp.) belong to the Enterobacteriaceae family. They are commonly found in the environment and in the human intestinal tract (where they do not normally cause disease). These species can cause a range of healthcare-associated infections, including pneumonia, bloodstream infections, wound or surgical site infections and meningitis.

Pseudomonas aeruginosa

Pseudomonas aeruginosa (P. aeruginosa) is often found in soil and ground water. It causes a wide range of infection in those with a weakened immune system, such as, those with cancer and diabetes. In hospitals, the organism can contaminate devices that are left inside the body, such as respiratory equipment and catheters. It is sometimes associated with contaminated water.

Staphylococcus aureus

Staphylococcus aureus (S. aureus) is a bacterium that commonly colonises human skin and mucosa without causing any problems. If the bacteria have an opportunity to enter the body (medical device/broken skin) they can cause disease such as skin and wound infections, joint infections, pneumonia and blood stream infections.

Most strains of S. aureus are sensitive to the more commonly used antibiotics, and infections can be effectively treated. There are two types of S. aureus strains:

- **Meticillin susceptible *Staphylococcus aureus*** (MSSA) is a strain of *Staphylococcus aureus* that is sensitive to the antibiotic methicillin.

- **Meticillin resistant *Staphylococcus aureus*** (MRSA) is a strain of *Staphylococcus aureus* that is resistant to the antibiotic meticillin. MRSA infections often require different types of antibiotics to treat them.

There is a zero tolerance for MRSA bloodstream infections. There was a considerable decrease in the rate of reported MRSA blood stream infections following the introduction of mandatory surveillance in April 2007 until 2014. The rate has remained stable since then.

MRSA and MSSA only differ in their degree of antibiotic resistance: other than that, there is no real difference between them.

Terms:

BSI	Blood stream infection/bacteraemia is an invasion of the bloodstream by bacteria. This may occur through a wound or infection, or through a surgical procedure or injection.
COCA	Community-onset, community associated.
COHA	Community-onset, healthcare associated.
COIA	Community-onset, indeterminate association.
DCS	Data Capture System. Web-based system where patient-level mandatory surveillance data is collected.
HCAI	Healthcare associated infections.
HOCA	Hospital-onset, community acquired.
HOHA	Hospital-onset, healthcare acquired.
PIR	Post Infection Review. The aim of the PIR process is to help identify any critical points and contributory factors leading to certain infections or outbreaks.
Trajectory	Trusts are required under the NHS Standard Contract 2022/23 to minimise rates of both CDI and of Gram-negative bloodstream infections. Each NHS Trust and former CCG have their own trajectory. For CDI infections this is referred to as

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