

Infection Prevention and Control Report

Quarter 4 Report and Annual Summary 2023-24

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Abstract

The Infection Prevention and Control (IPC) Team continue to work towards three priorities:

PRIORITY 1 – Prevent and promote Antimicrobial Resistance (AMR) by contributing to the National Action Plan by targeted project work in care settings and other relevant settings.

Highlighting health promotional activities that link with IPC and sharing relevant resources.

PRIORITY 2 – Respond to and reduce outbreaks of infections in settings and work with partner agencies and stakeholders to reduce the number of outbreaks via health promotion campaigns, training, and auditing. Data analysis of themes and trends of outbreaks and healthcare associated infections. Production of monthly, quarterly and annual reports.

PRIORITY 3 – Develop and expand the IPC workforce, IPC knowledge and IPC best practice across Lancashire and Blackburn with Darwen by offering opportunities for development and foster confidence. Offering bespoke opportunities of learning to establish and embed the IPC knowledge and promote the IPC Champion role.

In relation to healthcare associated infections (HCAIs) this quarter, there has been a marked increase in the Blood Stream Infections (BSIs).

In relation to outbreaks within care settings this quarter, there has been an increase in norovirus cases. This is also mirrored within acute trusts admissions.

The IPC Team produced and continually update their Scabies Booklet to assist care settings which is read alongside United Kingdom Health Security Agency (UKHSA) National Guidance. Each setting in a scabies outbreak now also has a named worker for the duration of the outbreak for continuity.



Introduction

The purpose of this report is to provide an update on the work of the Infection Prevention Team at Lancashire County Council to the Director of Public Health at Lancashire County Council and how the work the team undertake is contributing to the wider reduction of HCAs. The HCAI data is inputted into the Data Capture System by the Acute Trusts and the IPC Team collate this data on behalf of the Health Protection Board.

The report includes the data for HCAs which are subject to mandatory surveillance and progress towards any trajectories where appropriate.

It is recognised that some infections are inevitable because of healthcare. 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 Susceptible *Staphylococcus Aureus* (MSSA) blood stream infections

Clostridioides difficile infections (CDI)

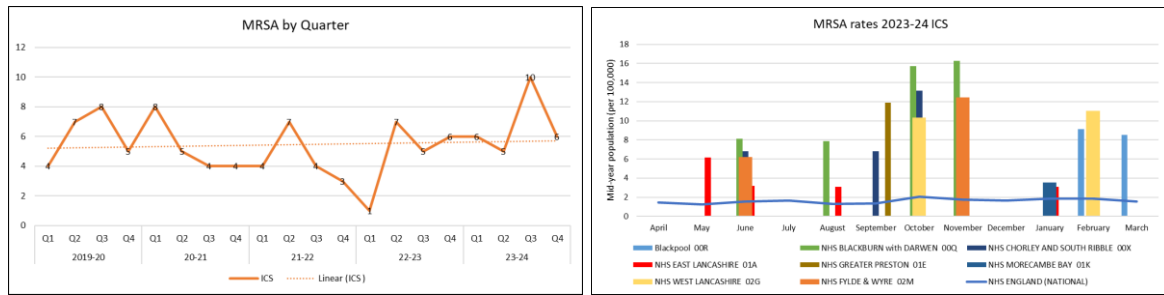
Gram-negative blood stream infections including:

- *Escherichia coli* (*E. coli*),
- *Pseudomonas* and
- *Klebsiella*

The report will also focus on the IPC Team and the work being undertaken contributing towards the reduction of HCAs and other infections.



MRSA

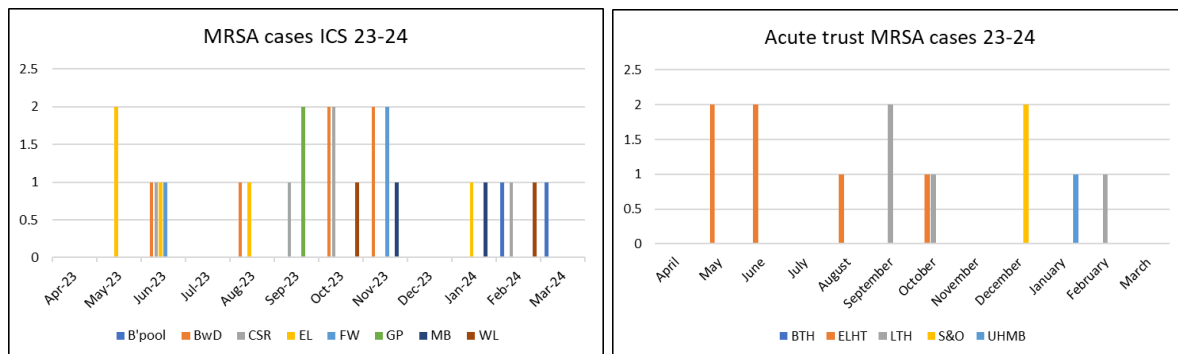


Evaluation:

Across the ICS there has been a significant decrease in MRSA cases in Q4 and a decrease in Q4 total of 27 in 23-24.

When comparing to North West and National data, they have also had a decrease in Q4.

The charts below show the areas and months the cases were recorded in.



Post Infection Reviews are undertaken by the Acute Trusts for hospital cases and the Integrated Care Board (ICB) for community cases.

Learning is shared and may lead to targeted work for the IPC Team.

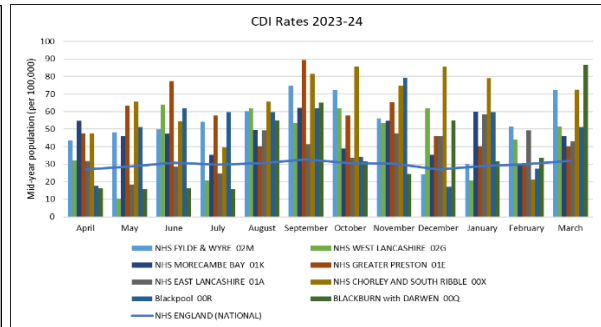
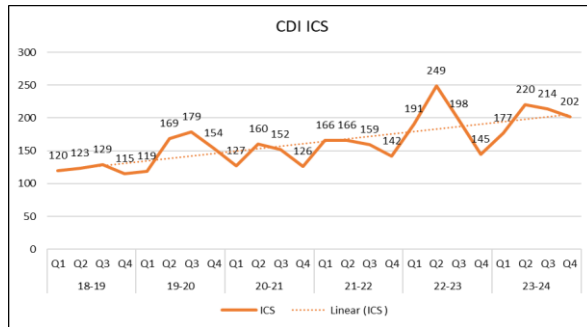
IPC Team Focus:

Specific AMR Forum delivered for care settings. See workstream section below for further information.

Promoting hand hygiene and the use of standard precautions during communications with care settings and when undertaking audits.



Clostridioides Difficile



Evaluation:

Across the ICS there has been a slight decrease in CDI cases in Q4, however the rates are still high compared to the national rate.

When comparing to North West data, and the National data they have both seen an increase for Q4.

All areas and acute trusts have breached their yearly trajectory except for Blackpool and BTH.

CDI data	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Total	Objective to Date	Breach
B'pool	2	6	7	7	7	7	4	9	2	7	3	6	67	81	
BwD	2	2	2	2	7	8	4	3	7	4	4	11	56	34	65%
CSR	7	10	8	6	10	12	13	11	13	12	3	11	116	66	76%
EL	10	6	9	8	16	13	11	15	14	19	15	14	150	69	117%
FW	7	8	8	9	10	12	12	9	4	5	8	12	104	86	21%
GP	8	11	13	10	7	15	10	11	7	7	5	7	111	86	29%
MB	15	13	13	10	14	17	11	15	10	17	18	13	166	145	15%
WL	3	1	6	2	6	5	6	5	6	2	4	5	51	28	82%
Hospital onset	38	32	40	33	49	57	44	55	41	45	33	40	507		
Community Onset	16	25	26	21	28	33	27	23	22	28	17	37	303		
Total	54	57	66	54	77	89	71	78	63	73	60	79	821	595	38%
Percentage change 22/23	-2%	-2%	-7%	-14%	-16%	-10%	-10%	-7%	-5%	-3%	0%	5%	-		

CD Acute data	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Total	Objective to Date	Breach
BTH	3	5	9	8	8	10	8	8	3	7	5	6	80	89	
ELHT	7	4	2	4	6	11	7	7	12	13	12	#	101	53	91%
LTH	16	17	19	13	19	25	20	23	16	17	8	#	204	121	69%
S&O	2	0	4	2	5	5	6	4	6	1	1	4	40	39	3%
UHMB	12	6	6	5	8	7	4	13	5	8	6	5	85	83	3%
Total	40	32	40	32	46	58	45	55	42	46	32	#	510	385	33%
% +/- 22/23	11%	6%	-4%	-14%	-14%	-7%	-8%	-3%	0%	0%	1%	#	-		



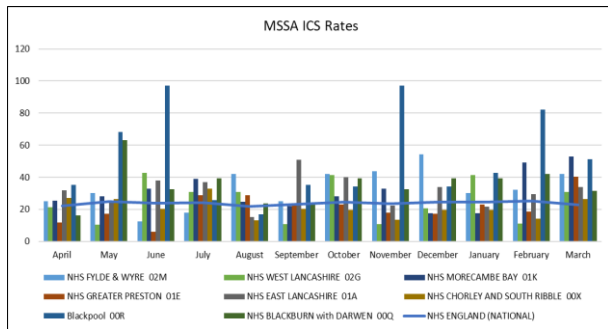
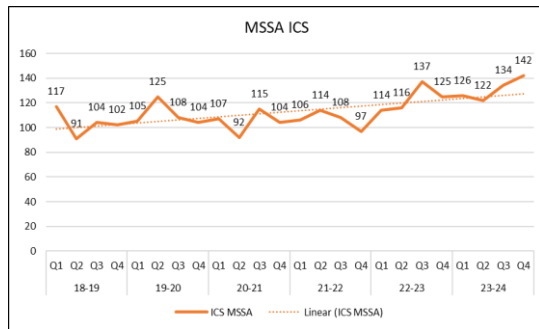
Post Infection Reviews are undertaken by the Acute Trusts for hospital cases and the ICB for community cases.

Learning is shared and may lead to targeted work for the IPC Team.

IPC Team Focus: Delivering Fundamentals of IPC forums covering environmental cleaning and chain of infection. Promoting hand hygiene and the use of standard precautions during communications with care settings and when undertaking audits.



Meticillin Susceptible Staphylococcus Aureus (MSSA)



Evaluation:

Across the ICS there has been an increase in Q4.

The North West has a slight increase however Nationally there has been a decrease in Q4.

MSSA data	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Total
B'pool	4	8	11	3	2	4	4	11	4	5	9	6	71
BwD	2	8	4	5	3	3	5	4	5	5	5	4	53
CSR	4	4	3	5	2	3	3	2	3	3	2	4	38
EL	10	8	12	12	5	16	13	7	11	7	9	11	121
FW	4	5	2	3	7	4	0	0	0	0	0	0	25
GP	2	3	1	5	5	4	0	0	0	0	0	0	20
MB	7	8	9	11	7	6	0	0	0	0	0	0	48
WL	2	1	4	3	3	1	0	0	0	0	0	0	14
Total Hospital onset	17	25	17	27	16	19	23	18	23	23	22	25	255
Total Community Onset	18	20	29	20	18	22	27	22	19	15	25	32	267
Total	35	45	46	47	34	41	48	40	42	38	47	57	520
Percentage change from last year	-5%	8%	11%	18%	7%	8%	9%	6%	3%	2%	2%	6%	-

MSSA data	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Total
BTH	4	7	6	3	3	3	6	15	4	6	6	5	68
ELHT	7	9	5	11	6	8	8	5	7	6	6	7	85
LTH	2	5	1	9	4	1	5	2	4	6	3	6	48
S&O	1	0	3	2	0	3	5	0	2	2	1	2	21
UHMB	3	4	3	1	3	5	5	9	2	3	5	3	46
Total	17	25	18	26	16	20	29	31	19	23	21	23	268
Percentage Last year	-6%	17%	7%	21%	9%	12%	18%	17%	13%	13%	14%	19%	-

Post Infection Reviews are not routinely completed for MSSA by the Acute Trusts or the ICB.

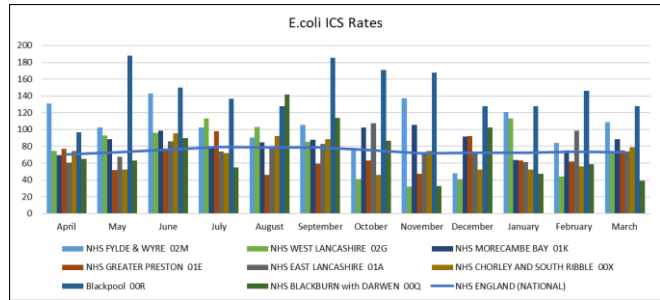
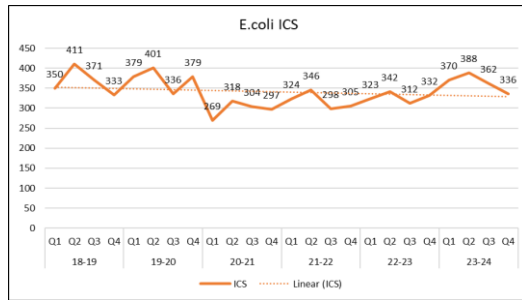
IPC Team Focus:

Specific AMR Forum delivered for care settings. See workflow section below for further information.

Promoting hand hygiene and the use of standard precautions during communications with care settings and when undertaking audits.



E.coli



Evaluation:

Across the ICS there has been a decrease in cases in cases in Q4.

When comparing to North West it is showing a similar patten however National cases have increased in Q4.

E.Coli data	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Total	Objective to Date	Breach
B'pool	11	22	17	16	15	21	20	19	15	15	16	15	202	100	102%
BwD	8	8	11	7	18	14	11	4	13	6	7	5	112	100	12%
CSR	11	8	14	11	14	13	7	11	8	8	8	12	125	114	10%
EL	19	22	27	24	26	26	35	23	23	20	30	24	299	260	15%
FW	21	17	23	17	15	17	13	22	8	20	13	18	204	122	67%
GP	13	9	13	17	8	10	11	8	16	11	10	13	139	121	15%
MB	19	25	27	22	24	24	29	29	26	0	0	0	225	234	-4%
WL	7	9	9	11	10	8	4	3	4	11	4	7	87	82	6%
I Hospital onset	52	60	48	45	55	53	45	52	39	39	51	49	588		
Community Onset	57	60	93	80	75	80	85	67	74	70	57	70	868		
Total	109	120	141	125	130	133	130	119	113	109	108	119	1456	1133	29%
Percentage change 22/23	8%	6%	15%	13%	12%	14%	14%	15%	15%	14%	13%	11%	-		

E. Coli data	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Total	Objective to Date	Breach
BTH	15	18	13	14	13	19	14	17	6	11	14	12	166	57	190%
ELHT	11	11	16	8	15	14	13	10	11	6	16	9	140	86	63%
LTH	7	11	10	10	8	8	6	7	8	6	7	13	101	63	60%
S&O	3	9	4	6	5	7	3	4	3	5	2	8	59	32	84%
UHMB	11	14	7	3	13	6	7	11	11	9	10	9	111	65	72%
Total	47	63	50	41	54	54	43	49	39	37	49	51	577	303	90%
Percentage change 22/23	31%	13%	7%	4%	7%	13%	7%	7%	4%	0%	2%	1%	-		

Post Infection Reviews are not routinely completed for E.coli by the Acute Trusts or the ICB.

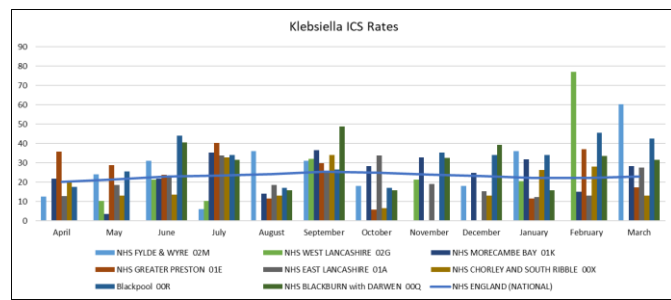
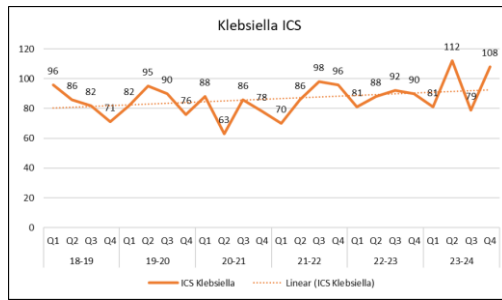
IPC Team Focus:

Delivering Hydration Heroes Sessions across day services. See workstreams section for further information.

Promoting hand hygiene and the use of standard precautions during communications with care settings and when undertaking audits.



Klebsiella spp.



Evaluation:

Across the ICS there has been a significant increase in cases in Q4 compared with Q3.

When comparing to North West and National data, the ICS is following the same trend, both North West data and National data show an increase in Q4

Klebsiella data	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Total	Objective to Date	Breach
B'pool	2	3	5	4	2	3	2	4	4	4	5	5	43	33	30%
BwD	0	0	5	4	2	6	2	4	5	2	4	4	38	29	31%
CSR	3	2	2	5	2	5	1	0	2	4	4	2	32	25	28%
EL	4	5	6	11	6	8	11	6	5	4	4	9	79	54	46%
FW	2	4	5	1	6	5	3	0	3	6	0	10	45	38	19%
GP	6	5	4	7	2	5	1	0	0	2	6	3	41	34	21%
MB	6	1	6	10	4	10	8	9	7	9	4	8	82	49	67%
WL	0	1	2	1	0	3	0	2	0	2	7	0	18	19	
Hospital onset	11	9	15	18	10	20	14	14	12	17	17	21	178		
Community Onset	12	12	20	25	14	25	14	11	13	16	17	20	199		
Total	23	21	35	43	24	45	28	25	26	33	34	41	378	281	35%
Percentage change 22/23	-4%	-23%	-2%	18%	12%	13%	4%	4%	4%	4%	4%	8%	-		

Klebsiella data	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Total	Objective to Date	Breach
BTH	2	4	3	2	3	2	3	2	4	5	4	5	39	27	43%
ELHT	0	2	4	5	4	8	3	5	4	1	4	7	47	27	72%
LTH	5	2	2	5	0	4	2	0	1	3	4	2	30	17	80%
S&O	0	2	2	1	2	2	2	2	1	2	1	1	18	9	108%
UHMB	4	0	2	5	3	5	5	8	4	7	3	7	53	13	299%
Total	11	10	13	18	12	21	15	17	14	18	16	22	187		
Percentage change 22/23	-21%	-19%	-11%	16%	16%	16%	8%	9%	11%	12%	9%	15%	-		

Post Infection Reviews are not routinely completed for Klebsiella by the Acute Trusts or the ICB.

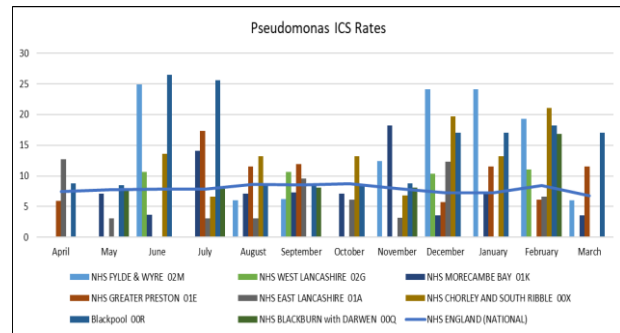
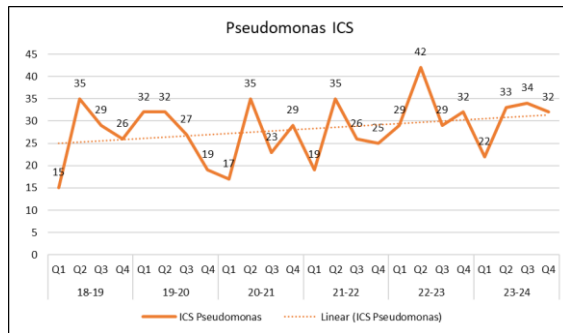


IPC Team Focus:

Delivering Fundamentals of IPC forums covering environmental cleaning and chain of infection. Promoting hand hygiene and the use of standard precautions during communications with care settings.



Pseudomonas Aeruginosa



Evaluation:

Across the ICS there has been a slight decrease in cases in Q4.

When comparing to North West, and National data they have decreased, the ICS is following the same trend,

Pseudo data	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Total	Objective to Date	Breach
B'pool	1	1	3	3	1	1	1	1	2	2	2	2	20	7	187%
BwD	0	1	0	1	0	1	0	1	0	0	2	0	6	4	52%
CSR	0	0	2	1	2	0	2	1	3	2	3	0	16	13	23%
EL	4	1	0	1	1	3	2	1	4	0	2	0	19	13	47%
FW	0	0	4	0	1	1	0	2	4	4	3	1	20	13	54%
GP	1	0	0	3	2	2	0	0	1	2	1	2	14	10	41%
MB	0	2	1	4	2	2	2	5	1	2	0	1	22	20	10%
WL	0	0	1	0	0	1	0	0	1	0	1	0	4	8	
Hospital onset	3	3	8	6	7	8	5	7	6	8	10	3	74		
Community onset	3	2	3	7	2	3	2	4	10	4	4	3	47		
Total	5	4	8	10	8	10	6	10	14	10	12	4	101	88	15%
Percentage change 22/23	-14%	-21%	-24%	-10%	-21%	-23%	-26%	-21%	-11%	-6%	-1%	-8%	-		

Pseudo data	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Total	Objective to Date	Breach
BTH	0	0	5	1	1	1	0	3	2	2	3	2	20	12	67%
ELHT	3	2	0	1	1	1	1	0	1	1	4	0	15	5	223%
LTH	0	0	0	2	3	4	0	0	2	4	1	1	17	8	113%
S&O	1	0	1	1	1	0	0	0	0	0	2	1	7	3	113%
UHMB	0	1	0	2	2	2	1	4	1	1	0	0	14	6	133%
Total	4	3	6	7	8	8	2	7	6	8	10	4	73	34	115%
Percentage change 22/23	300%	-22%	-38%	29%	-28%	-23%	30%	-25%	-20%	-12%	-7%	-11%	-		

Post Infection Reviews are not routinely completed for Pseudomonas Aeruginosa by the Acute Trusts or the ICB.



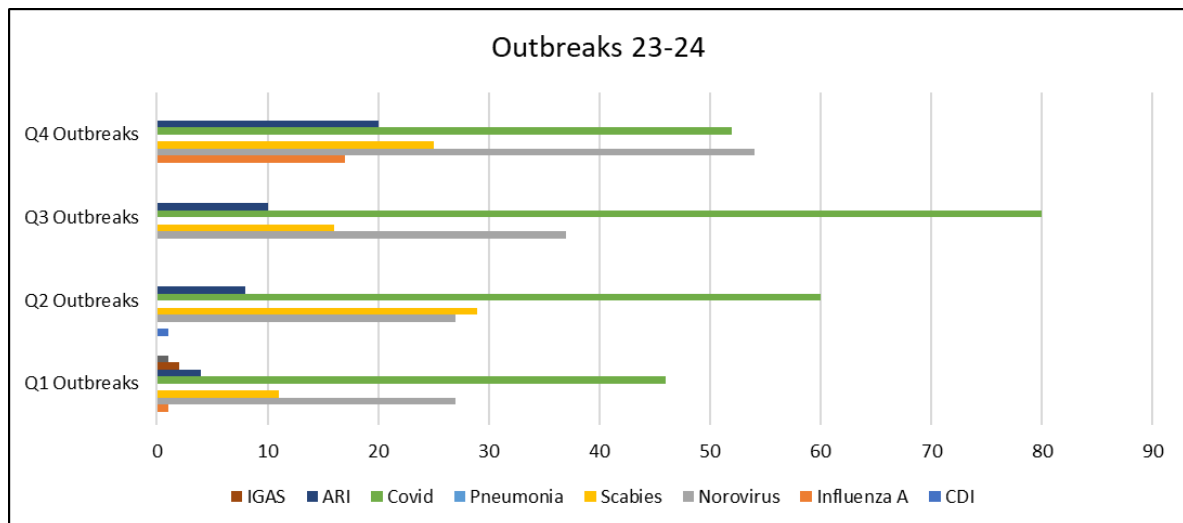
IPC Team Focus:

Delivering Fundamentals of IPC forums covering environmental cleaning and chain of infection. Promoting hand hygiene and the use of standard precautions during communications with care settings.



Outbreaks

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



There has been an increase in Norovirus in Q4. Covid cases were highest in Q3. There was an increase in scabies outbreaks across the ICS, these peaked in Q2 the team have worked with providers to giving advice on managing the outbreaks.

IPC Team Focus:

The team have produced several resources to assist care settings managing their scabies outbreaks to include;

- a booklet which has been produced based on [UKHSA National Guidance](#) which includes detailed information regarding cleaning, laundry and line listing information for both confirmed cases of residents and staff
- an agreed process with the IPC Team at the ICB detailing when to escalate cases
- settings now also have a named worker from LCC IPC Team providing continuity during the whole of the outbreak. The same named worker will also chair any Incident Management Team (IMT) Meetings if required.
- A bitesize video detailing how to apply the topical treatment correctly. This video is sent to settings reporting an incident or outbreak.

The team have produced a bitesize video to support influenza outbreaks in care settings, promoting the vaccine and recognising the signs and symptoms.

There was a forum held in Q4 on outbreak management covering scabies, CDI, ARI (including covid), and iGAS.

IPC Projects and Work Streams

In addition to routine work undertaken by the team such as auditing and assisting in managing outbreaks, the team have also undertaken target project work aligning to the three team priorities.

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:

- Understand the chain of infection and how it can be broken.
- Familiarisation of standard precautions
- Build upon knowledge of how infections can be prevented/controlled.

There were 77 attendees in 23-24 held over 5 sessions.

Infection Prevention Care Champion Forum

The IPC team have held 3 Social Care Infection Prevention Champions Forums in 2023-24. These are held over 6 sessions across the county to enable attendance from all areas. The attendance below is from Lancashire and BwD care settings.

Topic	No of sessions	No of attendees
Sepsis	6	107
AMR	6	79
Outbreak Management <small>* 1 session due to be held in Q1 24-25</small>	5	75

Domiciliary Care Forum

The team have undertaken the first session aimed at staff who provide care for people living in their own homes in the community. It included the standard precautions to prevent and manage infections including PPE, Hand Hygiene, Oral Health, Hydration and Catheter Care, 12 domiciliary care providers attended across the 2 sessions.

IPC Conferences 2023

The IPC Team held our own conference on Friday 20th October opened by Dr Sakthi Karunanithi.

All tickets sold out; however, some did not attend due to outbreak status of the setting. There was a total of 69 attendees and good representation from each area of Lancashire and BwD.

Speakers attended from NWAS, Morecambe Bay NHS and LTHTR, and a series of workshops were run by the IPC team.

The feedback from the attendees was very positive, all workshops were scored between 1-5 (5 being very useful). All workshops had an average score of 4.66 or higher.



Overall conference satisfaction was very good – 70.7% very satisfied, 26.8% satisfied and 2.4% (1 response) somewhat satisfied. None were 'not satisfied' or 'not at all satisfied.'

The IPC Team also presented two posters at the Infection Prevention Society National Conference in October 2023, held in Liverpool. These centred around the work the team have undertaken in relation to producing our own booklet detailing the management of scabies in care settings and the hydration work undertaken in day services.



IPS Conference
Posters size A0 - Hydr



IPS Conference
Poster - Scabies final,

Hand Hygiene School Awareness Sessions

These sessions are free for schools to book directly with the team and are available to primary schools from Reception to Year 6. Hand hygiene is key to breaking the chain of infection and to embed this learning early with children is paramount.

Sessions are differentiated dependent on Key Stage and a PowerPoint presentation has been developed to share with class teacher prior to the visit.

34 hand hygiene sessions took place in 23-24 across Lancashire and BwD.



HH pp.pptx

Hydration Heroes Sessions

There have been 8 Hydration Heroes session taken place in 2023-24 at day care services. These were held to raise awareness of hydration and recognising the signs of dehydration, prevent UTI's and in turn reduce E.coli infections. The sessions have all received 100% positive feedback.



Hydration Heroes
pilot evaluation repor

Audits – care homes

The IPC team have prioritised audits of care homes in the following areas:

- A CQC rating of 'inadequate' or 'requires improvement'
- Homes that have previously received a 'red' RAG rated IPC Audit and,
- Care homes with no previous IPC Audit.

A total of 183 care home audits were completed in 2023-24

North - 63			Central - 55			East - 54			BwD - 11		
Red	Amber	Green	Red	Amber	Green	Red	Amber	Green	Red	Amber	Green
2	12	49	3	13	39	1	10	43		1	10



The team also audited 8 LCC Day Centres and 38 nursery/pre-school settings. These audits were not RAG rated.

IPC and Leadership Training for Care Home Managers

The IPC team have offered a free pilot short course on leadership to care home managers, helping them to improve skills in others and focusing on human factors and change behaviour. The course leads on to using the skills for an IPC innovation supported by the IPC team. 5 settings are currently attending the course that will be completed over 4 months.

Restore 2 Training

Sessions included an overview of Sepsis/RESTORE2, focusing on recognising the early signs of deterioration, supporting decision making and promoting effective communication between health care providers. There were 2 sessions held aimed at clinical/nonclinical staff who have responsibility for undertaking resident observations, to expand their knowledge around Sepsis /RESTORE2 and help them understand the diagnosis, treatment, and management.

Nutrition & Hydration Week

This year's campaign ran from 11th – 17th March and the concept was to deliver nutrition and hydration sessions across the Lancashire footprint to service users in their residential/nursing homes and day centres, to build awareness and promote choice to prevent malnutrition and dehydration. A total of 202 people attended the information sessions. The split between residents, service users and staff.

Quality Improvement

The IPC team have run their 2nd course of Quality Improvement in 23-24. The aim of the course was to equip care home participants with the methodology required to embed a piece of QI work into their setting which contributed to infection prevention and control and would have a positive benefit for residents, staff, and visitors. The course received excellent feedback and 8 care settings successfully completed the course.



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Conclusion

The report has highlighted the excellent work the IPC Team undertake to assist in reducing the HCAs and other infections for those receiving health and social care, children, and members of the public.

The IPC Team being selected to present two posters at the Infection Prevention Society National Conference in October 2023 was an excellent opportunity to showcase the teams work and network.

Acute Trust have developed action plans to reduce infections that have seen an increase from an acute perspective and the action plan presented at their Infection Prevention and Control Committee Meetings for oversight and scrutiny.

The IPC Team will continue to support stakeholders and partners whilst working towards the three priorities outlined at the start of this report.



Glossary - Appendix 1

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 (APRHA). 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 methicillin. 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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