

C. difficile surveillance

Quarterly report

July - September 2023

Key points

- CDI reports for hospital inpatients aged 2 years and over increased by 9% (from 94 to 102 episodes) during July - September 2023 compared to April - June 2023.
- CDI rate per 1,000 bed days increased by 8% during July - September 2023 compared to April - June 2023.
- CDI reports for community patients aged 2 years and over increased by 19% (from 75 to 89 episodes) during July - September 2023 compared to April - June 2023.
- CDI reports for hospital inpatients aged 2 years and over decreased by 5% between the 2021/22 and 2022/23 financial years.
- During July - September 2023 the most prevalent ribotypes for CDI inpatients are 078-like (24%), 014 (11%), 002 (8%) and 005 (8%) (Table 1). The most predominate community ribotypes are 078-like (22%) and 020 (8%) (Table 2).

For further information or clarification on HCAI definitions, please refer to previous reports or contact hcaini@hscni.net

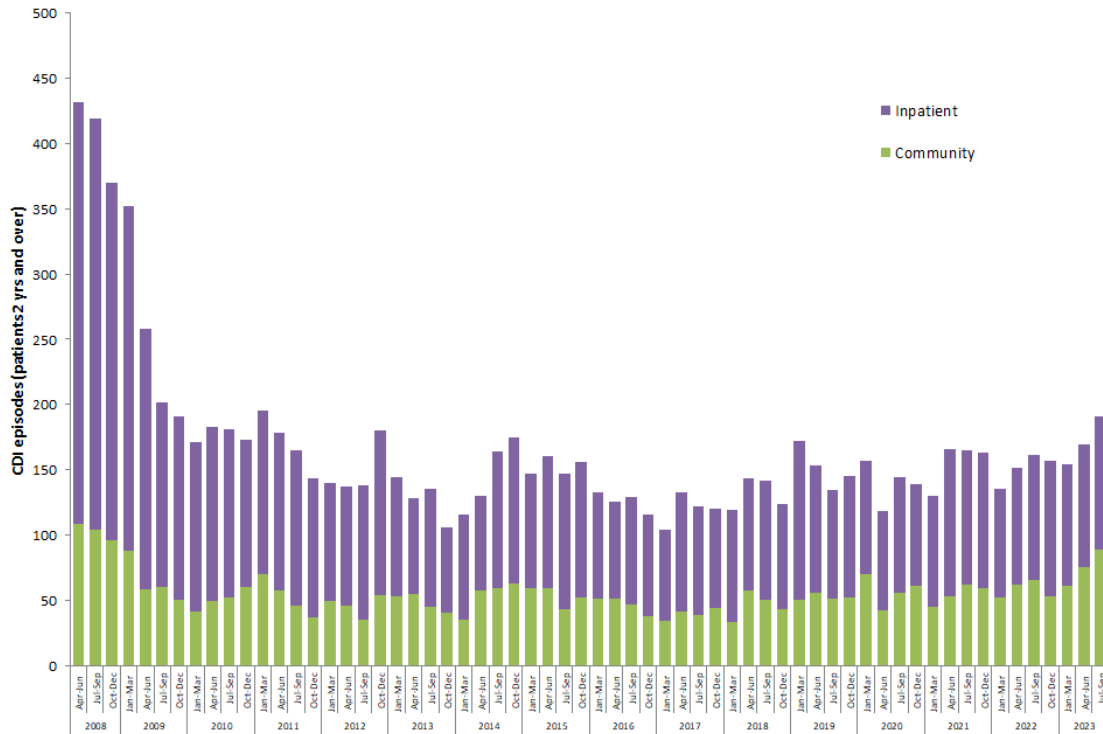


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 2 years), between 2008 and 2023

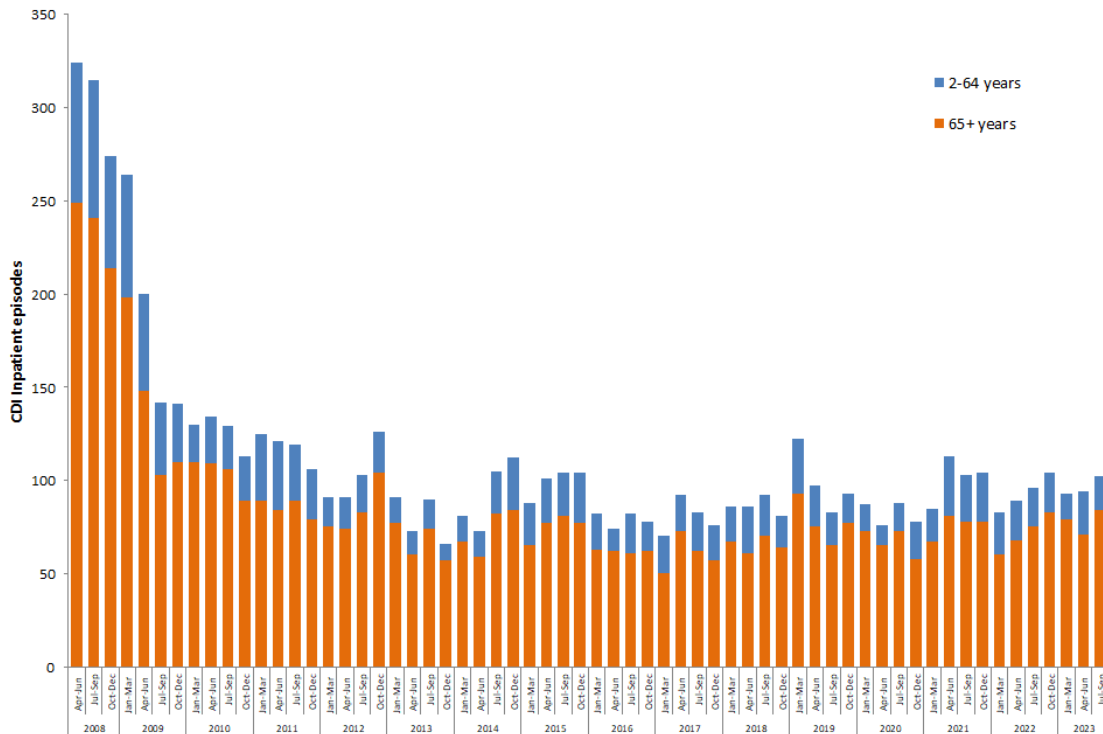


Figure 2a: Total CDI inpatient episodes, by age band, in Northern Ireland, by quarter, between 2008 and 2023

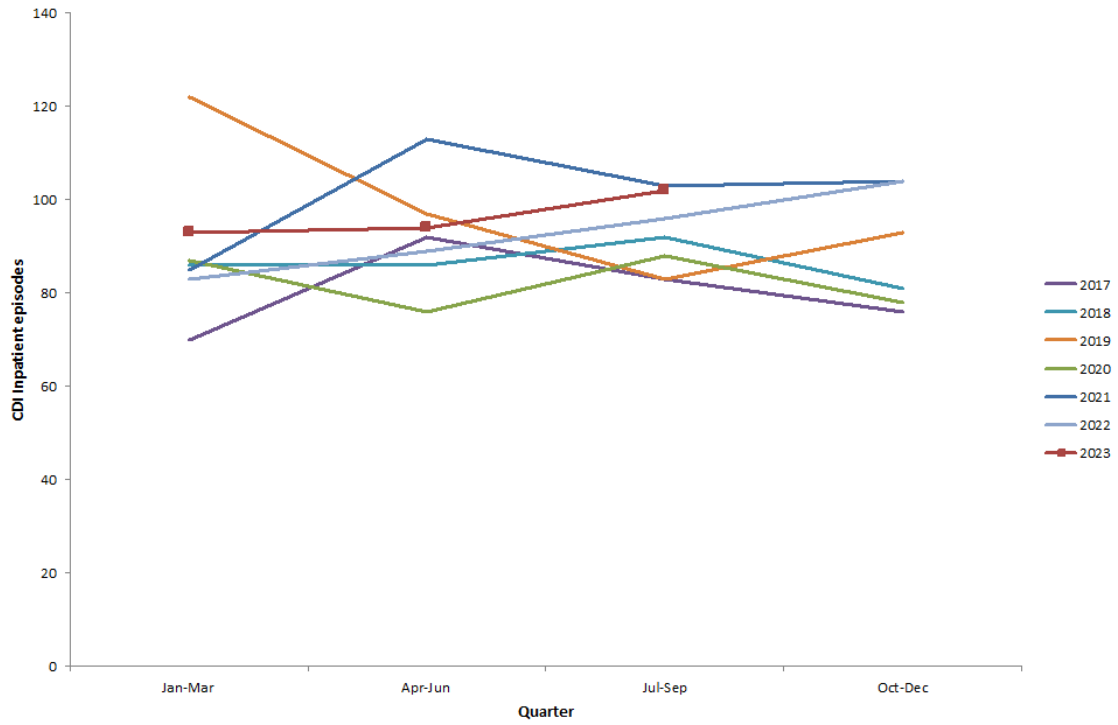


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients \geq 2 years), between 2017 and 2023

Statistical process control (SPC) charts

- SPC charts allow a distinction to be made between natural variation and 'special cause variation', where something unusual may be occurring. Trends in CDI rates since April 2008 are shown for each HSCT in appendix B.

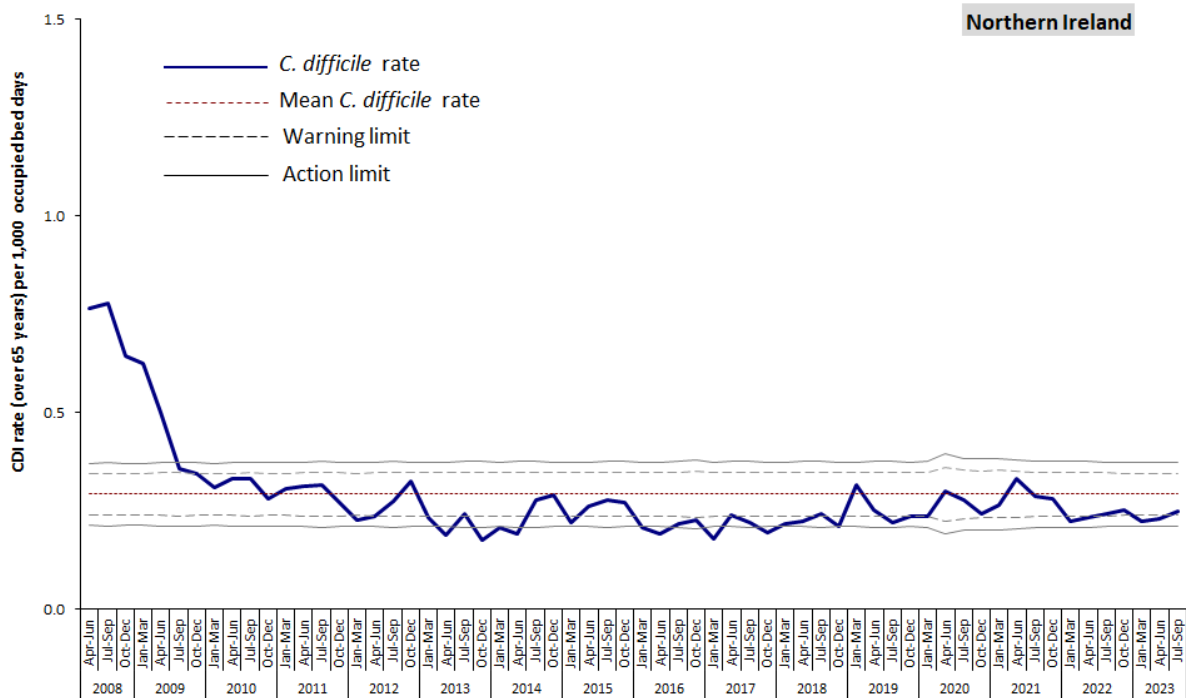


Figure 3: Statistical process control chart for quarterly *C. difficile* rates among inpatients in Northern Ireland aged 2 years and over (for HSCT level, see appendix B)

Results from the NI Ribotype Surveillance Programme

Table 1: A summary of *C. difficile* ribotypes in Hospital Inpatients aged 2 years and over, and the percentage of each against the overall total, in Northern Ireland during routine surveillance, October 2022 – September 2023.

Ribotype	Oct - Dec 2022		Jan - Mar 2023		Apr - Jun 2023		Jul - Sep 2023	
	Number	%	Number	%	Number	%	Number	%
001	4	3.8	2	2.2	3	3.2	2	2.0
002	13	12.5	16	17.2	4	4.3	8	7.8
005	7	6.7	13	14.0	6	6.4	8	7.8
011	2	1.9	3	3.2	5	5.3	3	2.9
014	8	7.7	9	9.7	6	6.4	11	10.8
015	13	12.5	7	7.5	10	10.6	5	4.9
018	2	1.9	2	2.2	0	0.0	1	1.0
020	8	7.7	4	4.3	3	3.2	5	4.9
023	3	2.9	2	2.2	11	11.7	6	5.9
078-like*	21	20.2	17	18.3	17	18.1	24	23.5
Other	16	15.4	15	16.1	17	18.1	15	14.7
Not groupable**	5	4.8	2	2.2	9	9.6	9	8.8
Not on ribotype list	1	1.0	1	1.1	2	2.1	5	4.9
Not isolated***	1	1.0	0	0.0	1	1.1	0	0.0
Total	104		93		94		102	

Table 2: A summary of *C. difficile* ribotypes in Community Patients aged 2 years and over, and the percentage of each against the overall total, in Northern Ireland during routine surveillance, October 2022 – September 2023.

Ribotype	Oct - Dec 2022		Jan - Mar 2023		Apr - Jun 2023		Jul - Sep 2023	
	Number	%	Number	%	Number	%	Number	%
001	0	0.0	0	0.0	3	3.9	2	2.2
002	8	15.1	9	14.8	12	15.8	5	5.6
005	4	7.5	6	9.8	2	2.6	6	6.7
011	0	0.0	1	1.6	0	0.0	2	2.2
014	7	13.2	4	6.6	3	3.9	6	6.7
015	4	7.5	4	6.6	4	5.3	4	4.5
018	0	0.0	1	1.6	0	0.0	6	6.7
020	4	7.5	1	1.6	9	11.8	7	7.9
023	2	3.8	2	3.3	6	7.9	0	0.0
078-like*	8	15.1	13	21.3	15	19.7	20	22.5
Other	7	13.2	14	23.0	7	9.2	18	20.2
Not groupable**	3	5.7	4	6.6	2	2.6	4	4.5
Not on ribotype list	3	5.7	2	3.3	13	17.1	9	10.1
Not isolated***	3	5.7	0	0.0	0	0.0	0	0.0
Total	53		61		76		89	

* 078-Like means this isolate is PCR ribotype 078, or a very closely related (Clade 5) strain e.g. 126,193

** 'Not groupable' ribotypes do not match existing profiles

*** 'Not isolated' indicates isolates that have no ribotype information supplied, with at least six weeks since the date of the specimen.

Table 3: Descriptive data for *C. difficile* ribotypes 078-like, 014 and 005 in Northern Ireland Hospital Inpatients and Community Patients, July – September 2023.

		078-like* (n = 44)		014 (n = 17)		005 (n = 14)	
Age							
	range	42-95		20-93		41-94	
	median	83		74		79	
Sex							
		n	%	n	%	n	%
	Female	26	59.1	10	58.8	9	64.3
	Male	18	40.9	7	41.2	5	35.7
Trust							
	Belfast	11	25.0	5	29.4	3	21.4
	Northern	5	11.4	1	5.9	2	14.3
	South Eastern	15	34.1	7	41.2	3	21.4
	Southern	4	9.1	2	11.8	4	28.6
	Western	9	20.5	2	11.8	2	14.3
Source							
	Inpatient	23	52.3	10	58.8	7	50.0
	Community~	21	47.7	7	41.2	7	50.0

~ Community specimens include those taken from Accident and Emergency, Outpatients, GPs, Hospice, Care Homes, Hospital Care at Home and Psychiatric facilities.



Figure 4: Quarterly rates of *C. difficile* among inpatients aged 2 years and over, by HSCT, January 2022 – September 2023, compared with annual Northern Ireland and HSCT rates for 2023

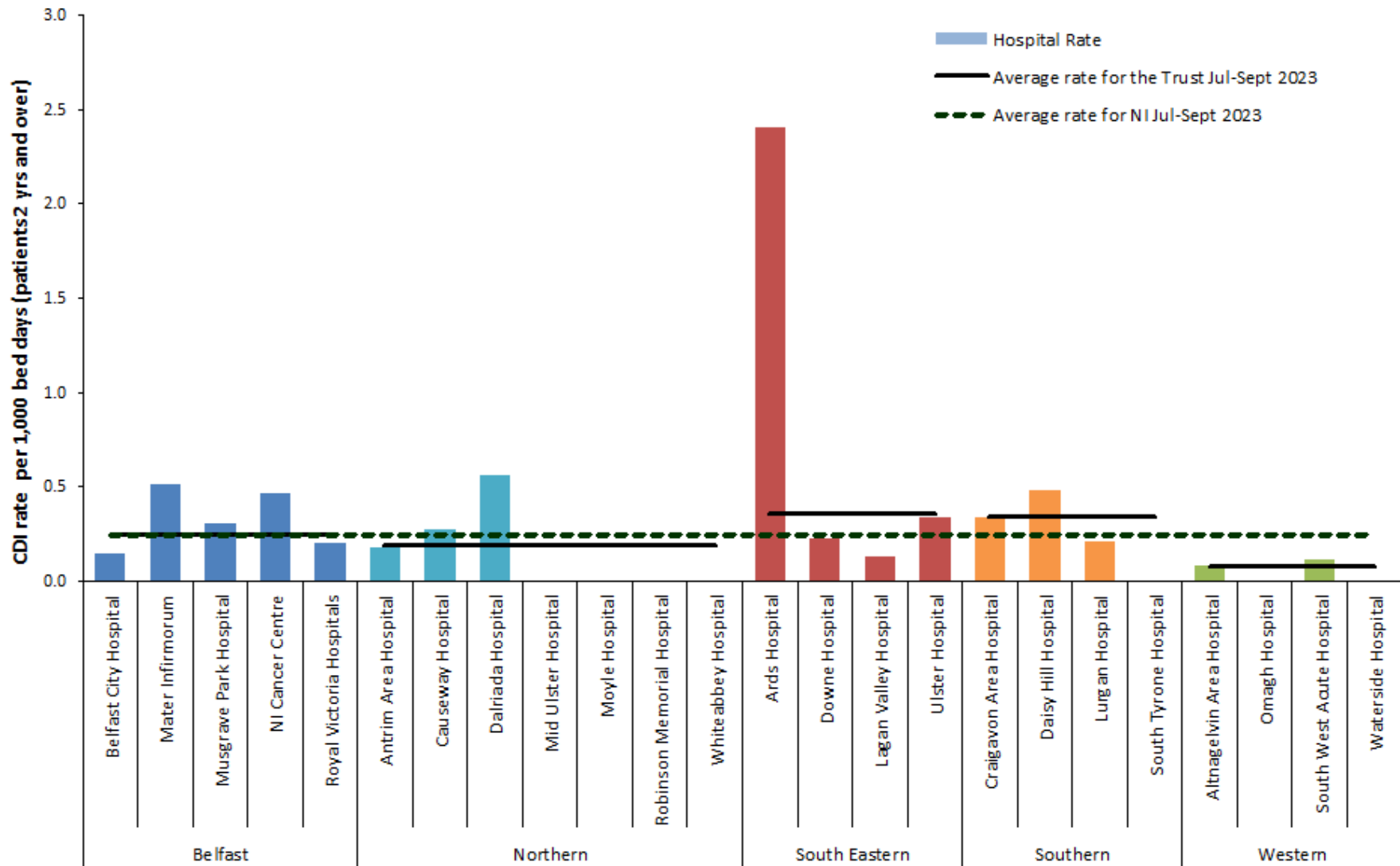


Figure 5: *C. difficile* rates during July - September 2023 Inpatients aged 2 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)

Appendix A

Table 4: Quarterly rates of *C. difficile* reports in patients aged 2 years and over, by hospital, Oct 22 – Sep 23.

Hospital	Oct - Dec 2022	Jan - Mar 2023	Apr - Jun 2023	Jul - Sep 2023
Belfast City Hospital	0.156	0.079	0.221	0.147
Mater Infirmorum	0.177	0.437	0.062	0.514
Musgrave Park Hospital	0.062	0.111	0.282	0.308
NICCO	0.000	0.000	0.471	0.463
Royal Group of Hospitals	0.188	0.283	0.202	0.199
Belfast Health & Social Care Trust	0.163	0.251	0.206	0.248
Antrim Area Hospital	0.230	0.093	0.163	0.175
Causeway Hospital	0.106	0.153	0.161	0.275
Dalriada Hospital	0.000	0.000	0.000	0.560
Mid Ulster Hospital	0.000	0.000	0.000	0.000
Moyle Hospital	0.000	0.000	0.000	0.000
Robinson Memorial Hospital	0.000	0.000	0.000	0.000
Whiteabbey Hospital	0.302	0.000	0.000	0.000
Northern Health & Social Care Trust	0.182	0.097	0.144	0.194
Ards Hospital	0.000	0.000	0.583	2.402
Downe Hospital	0.491	0.715	0.230	0.228
Lagan Valley Hospital	0.407	0.687	0.000	0.131
Ulster Hospital	0.258	0.156	0.292	0.340
South Eastern Health & Social Care Trust	0.280	0.240	0.265	0.358
Craigavon Area Hospital	0.294	0.397	0.348	0.335
Daisy Hill Hospital	0.330	0.216	0.421	0.479
Lurgan Hospital	0.425	0.000	0.217	0.211
South Tyrone Hospital	0.000	0.000	0.000	0.000
Southern Health & Social Care Trust	0.296	0.305	0.341	0.345
Altnagelvin Area Hospital	0.578	0.296	0.218	0.081
Omagh Hospital	0.647	0.301	0.000	0.000
South West Acute Hospital	0.158	0.000	0.343	0.115
Waterside Hospital	0.359	0.170	0.000	0.000
Western Health & Social Care Trust	0.437	0.205	0.221	0.079
NI TOTAL	0.252	0.225	0.230	0.248

Table 5: Quarterly *C. difficile* reports in patients aged 2 years and over, by HSCT, Oct 22 – Sep 23.

Trust	Oct - Dec 2022 Episodes	Jan - Mar 2023 Episodes	Apr - Jun 2023 Episodes	Jul - Sep 2023 Episodes
Belfast Health & Social Care Trust	22	34	28	33
Northern Health & Social Care Trust	13	7	10	14
South Eastern Health & Social Care Trust	20	17	19	26
Southern Health & Social Care Trust	21	22	23	24
Western Health & Social Care Trust	28	13	14	5
NI TOTAL	104	93	94	102
NI community TOTAL	53	61	75	89

Appendix A

Table 6: Quarterly rates of *C. difficile* reports in patients aged 65 years and over, by hospital, Oct 22 – Sep 23.

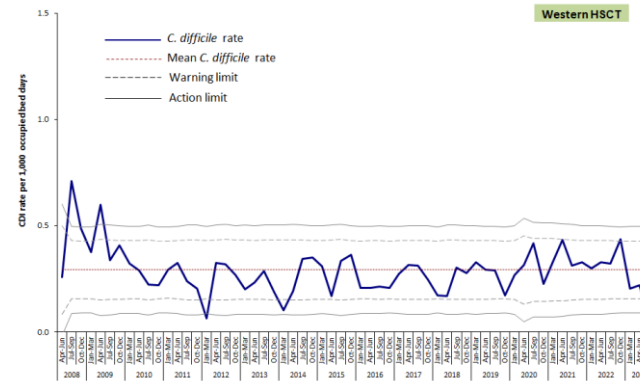
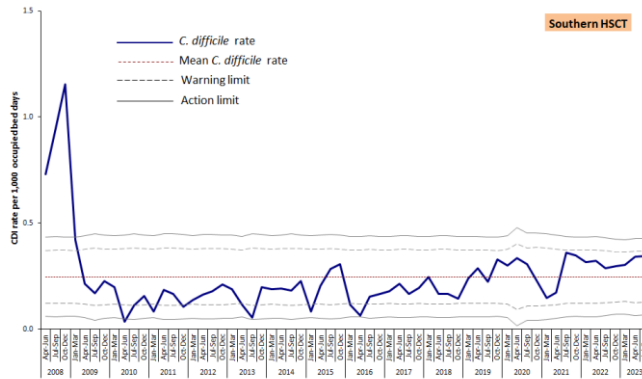
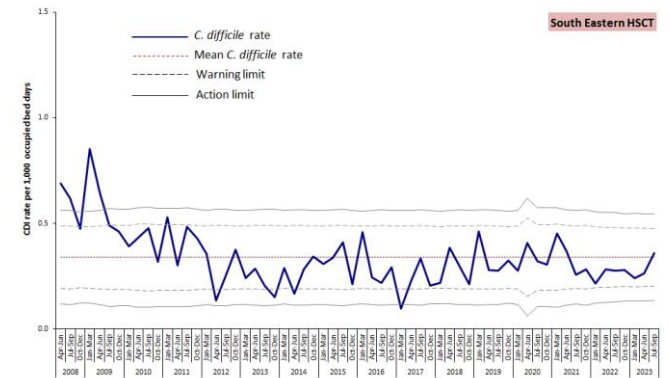
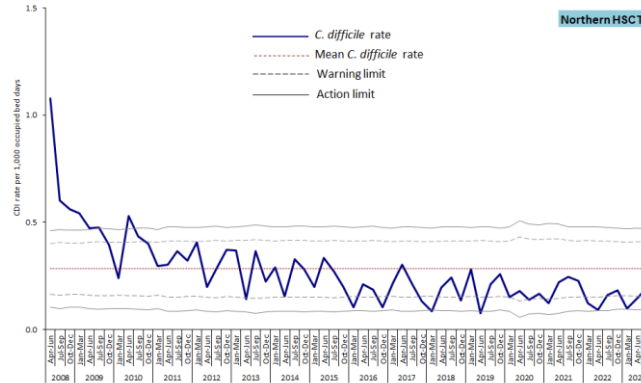
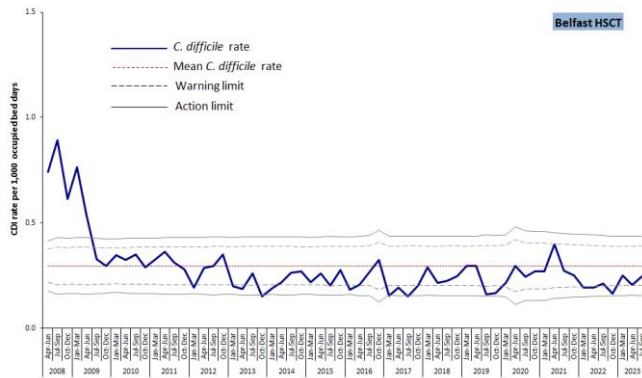
Hospital	Oct - Dec 2022	Jan - Mar 2023	Apr - Jun 2023	Jul - Sep 2023
Belfast City Hospital	0.326	0.000	0.344	0.170
Mater Infirmorum	0.230	0.478	0.080	0.570
Musgrave Park Hospital	0.095	0.169	0.265	0.474
NICCO	0.000	0.000	1.074	0.464
Royal Group of Hospitals	0.231	0.540	0.265	0.340
Belfast Health & Social Care Trust	0.211	0.414	0.261	0.391
Antrim Area Hospital	0.323	0.108	0.174	0.276
Causeway Hospital	0.087	0.171	0.264	0.338
Dalriada Hospital	0.000	0.000	0.000	0.799
Mid Ulster Hospital	0.000	0.000	0.000	0.000
Moyle Hospital	0.000	0.000	0.000	0.000
Robinson Memorial Hospital	0.000	0.000	0.000	0.000
Whiteabbey Hospital	0.348	0.000	0.000	0.000
Northern Health & Social Care Trust	0.231	0.106	0.166	0.270
Ards Hospital	0.000	0.000	0.641	2.481
Downe Hospital	0.533	0.829	0.259	0.248
Lagan Valley Hospital	0.491	0.806	0.000	0.155
Ulster Hospital	0.337	0.169	0.423	0.443
South Eastern Health & Social Care Trust	0.362	0.299	0.362	0.456
Craigavon Area Hospital	0.440	0.516	0.348	0.530
Daisy Hill Hospital	0.362	0.355	0.592	0.515
Lurgan Hospital	0.479	0.000	0.229	0.219
South Tyrone Hospital	0.000	0.000	0.000	0.000
Southern Health & Social Care Trust	0.389	0.391	0.369	0.459
Altnagelvin Area Hospital	0.779	0.453	0.271	0.046
Omagh Hospital	0.703	0.320	0.000	0.000
South West Acute Hospital	0.149	0.000	0.381	0.078
Waterside Hospital	0.543	0.264	0.000	0.000
Western Health & Social Care Trust	0.543	0.284	0.261	0.048
NI TOTAL	0.329	0.310	0.280	0.336

Table 7: Quarterly *C. difficile* reports in patients aged 65 years and over, by HSCT, Oct 22 – Sep 23.

Trust	Oct - Dec 2022 Episodes	Jan - Mar 2023 Episodes	Apr - Jun 2023 Episodes	Jul - Sep 2023 Episodes
Belfast Health & Social Care Trust	15	30	19	27
Northern Health & Social Care Trust	11	5	8	13
South Eastern Health & Social Care Trust	17	14	17	22
Southern Health & Social Care Trust	18	18	16	20
Western Health & Social Care Trust	22	12	11	2
NI TOTAL	83	79	71	84
NI community TOTAL	43	47	61	67

Appendix B

Trends in *C. difficile* rates in inpatients aged 2 years and over, by HSCT and quarter, 2008 – 2023



Appendix C

Table 8: C. *difficile* reports among inpatients in Northern Ireland aged 2 years and over, by financial year and HSCT

HSCT	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Belfast	197	169	163	110	139	129	114	113	132	107	101	128	107
Northern	120	94	80	64	62	59	48	49	57	47	34	52	37
South Eastern	98	91	61	56	67	86	52	61	83	72	76	69	75
Southern	22	33	42	32	39	53	34	50	44	71	50	74	82
Western	64	50	65	48	71	64	56	64	65	63	66	80	81
Northern Ireland	501	437	411	310	378	391	304	337	381	360	327	403	382

Table 9: C. *difficile* reports among inpatients in Northern Ireland aged 65 years and over, by financial year and HSCT

HSCT	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Belfast	147	117	124	90	103	102	90	83	98	80	80	84	78
Northern	103	75	73	56	54	43	39	37	48	39	27	39	31
South Eastern	80	72	50	50	53	70	39	50	67	68	68	60	66
Southern	17	28	33	25	27	40	27	39	32	57	37	56	64
Western	46	35	58	37	53	43	40	50	41	45	51	58	66
Northern Ireland	393	327	338	258	290	298	235	259	286	289	263	297	305