

C. difficile surveillance

Quarterly report

October-December 2023

Key points

- CDI reports for hospital inpatients aged 2 years and over decreased by 5% (from 102 to 97 episodes) during October-December 2023 compared to July-September 2023.
- CDI rate per 1,000 bed days decreased by 6% during October-December 2023 compared to July-September 2023.
- CDI reports for community patients aged 2 years and over decreased by 2% (from 89 to 87 episodes) during October-December 2023 compared to July-September 2023.
- During October – December 2023 the most prevalent ribotypes for CDI inpatients are 020 (16%), 002 (15%) 078-like (8%) (Table 1). The most predominate community ribotypes are 078-like (14%), 002 (13%) and 023(11%) (Table 2).
- Please note: Bed Day data were not available for SEHSCT hospitals and estimates were used this quarter (averages taken for Q4, 2019-2022).

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

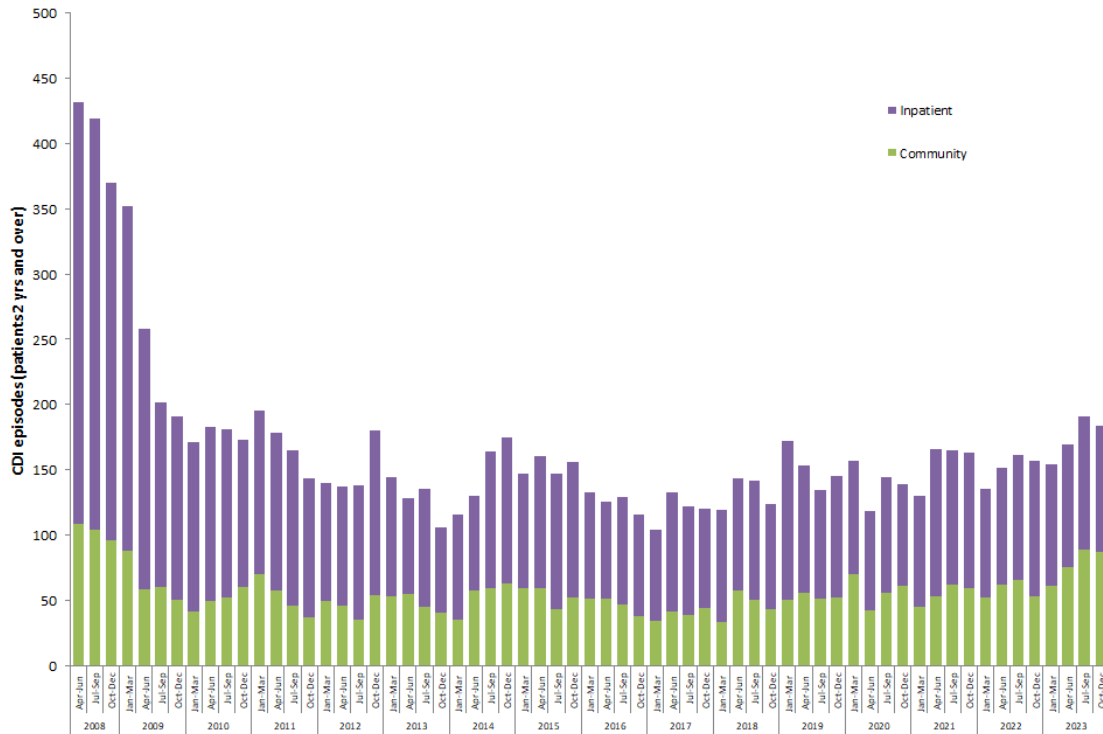


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 2 years), between 2008 and 2023

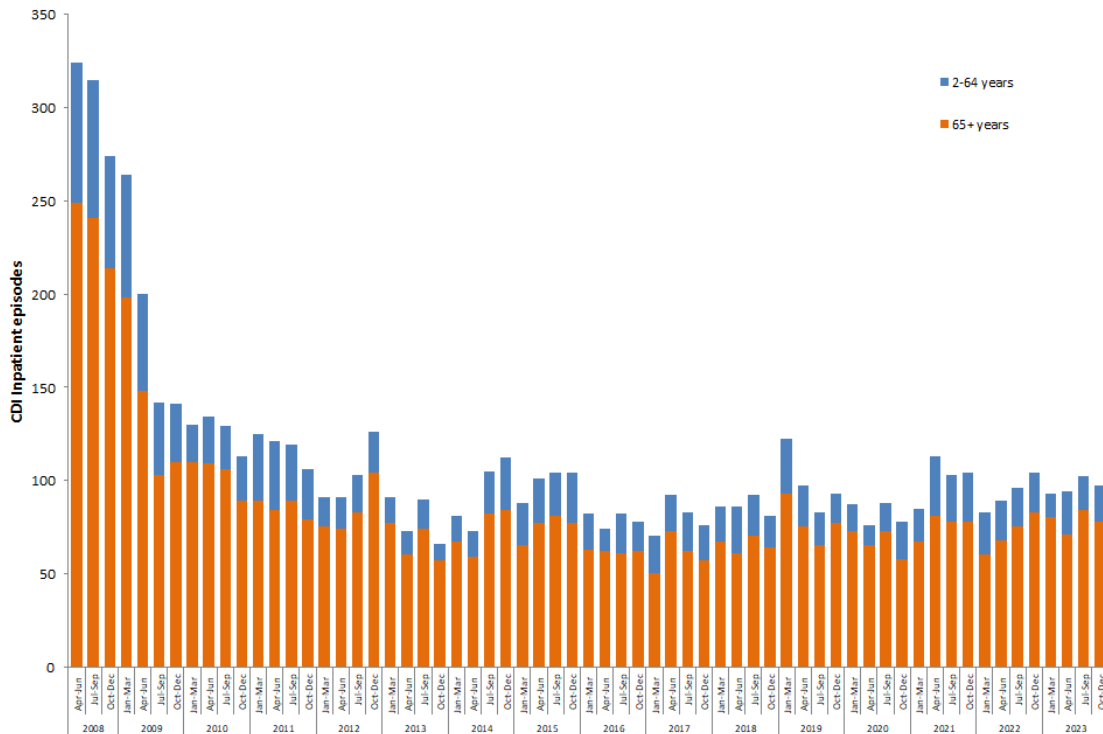


Figure 2a: Total CDI inpatient episodes, by age band, in Northern Ireland, by quarter, between 2008 and 2023

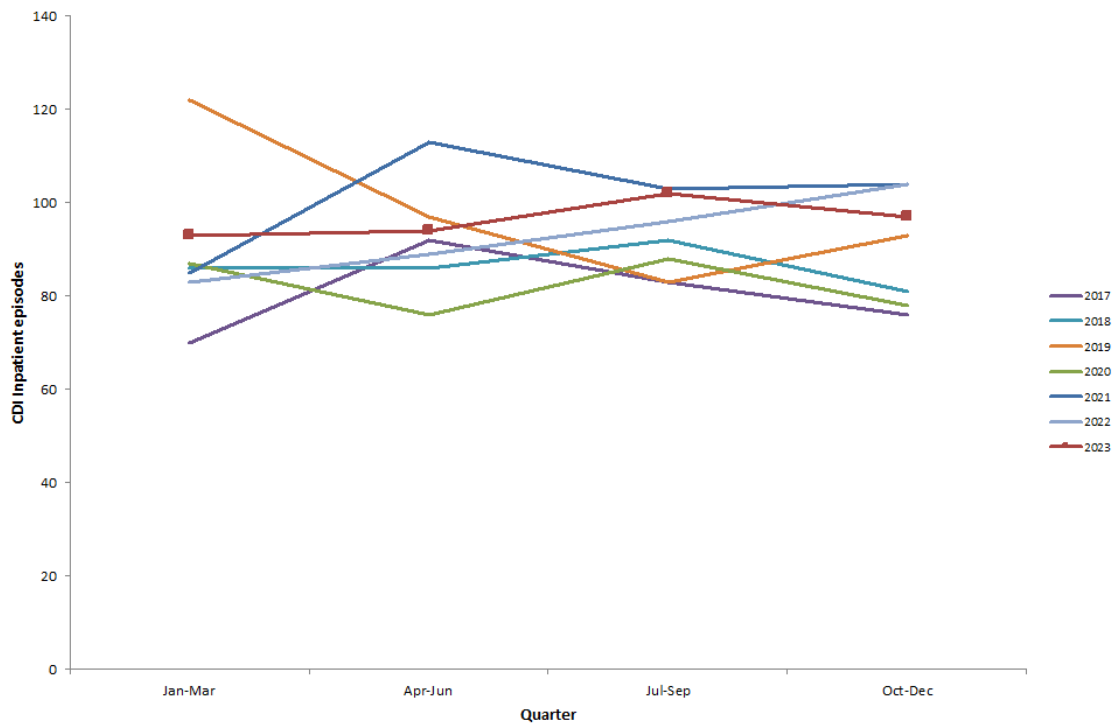


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients \geq 2 years), between 2017 and 2023

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.

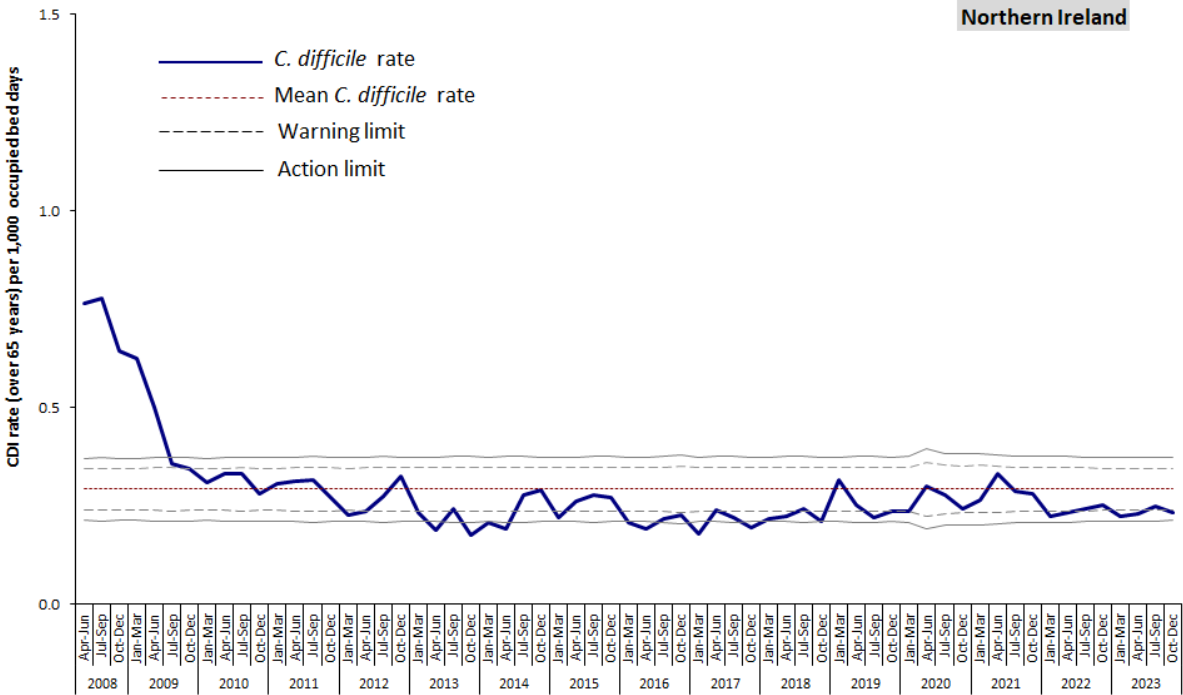


Figure 3: Statistical process control chart for quarterly *C. difficile* rates among inpatients in Northern Ireland aged 2 years and over (for HSCT level, see appendix B)

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, January – December 2023.

Ribotype	Jan - Mar 2023		Apr - Jun 2023		Jul - Sep 2023		Oct - Dec 2023	
	Number	%	Number	%	Number	%	Number	%
001	2	2.2	3	3.2	2	2.0	6	6.2
002	16	17.2	4	4.3	8	7.8	15	15.5
005	13	14.0	6	6.4	8	7.8	5	5.2
011	3	3.2	5	5.3	3	2.9	2	2.1
014	9	9.7	6	6.4	11	10.8	7	7.2
015	7	7.5	10	10.6	5	4.9	6	6.2
018	2	2.2	0	0.0	1	1.0	0	0.0
020	4	4.3	3	3.2	5	4.9	16	16.5
023	2	2.2	11	11.7	6	5.9	7	7.2
078-like*	17	18.3	17	18.1	24	23.5	8	8.2
Other	15	16.1	17	18.1	15	14.7	20	20.6
Not groupable**	2	2.2	9	9.6	9	8.8	2	2.1
Not on ribotype list	1	1.1	2	2.1	5	4.9	3	3.1
Not isolated***	0	0.0	1	1.1	0	0.0	0	0.0
Total	93		94		102		97	

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, January – December 2023.

Ribotype	Jan - Mar 2023		Apr - Jun 2023		Jul - Sep 2023		Oct - Dec 2023	
	Number	%	Number	%	Number	%	Number	%
001	0	0.0	3	4.0	2	2.2	2	2.3
002	9	14.8	12	16.0	5	5.6	11	12.6
005	6	9.8	2	2.7	6	6.7	3	3.4
011	1	1.6	0	0.0	2	2.2	3	3.4
014	4	6.6	3	4.0	6	6.7	8	9.2
015	4	6.6	4	5.3	4	4.5	6	6.9
018	1	1.6	0	0.0	6	6.7	1	1.1
020	1	1.6	9	12.0	7	7.9	6	6.9
023	2	3.3	6	8.0	0	0.0	10	11.5
078-like*	13	21.3	15	20.0	20	22.5	12	13.8
Other	14	23.0	7	9.3	18	20.2	17	19.5
Not groupable**	4	6.6	2	2.7	4	4.5	3	3.4
Not on ribotype list	2	3.3	12	16.0	9	10.1	4	4.6
Not isolated***	0	0.0	0	0.0	0	0.0	1	1.1
Total	61		75		89		87	

* 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 002, 020 and 078-like* in Northern Ireland Hospital Inpatients and Community Patients, October – December 2023.

	002 (n = 26)		020 (n = 22)		078-like* (n = 44)	
Age						
range	30-98		27-92		70-95	
median	81		81		82	
Sex						
	n	%	n	%	n	%
Female	13	50.0	17	77.3	10	50.0
Male	13	50.0	5	22.7	10	50.0
Trust						
Belfast	9	34.6	7	31.8	3	15.0
Northern	5	19.2	3	13.6	3	15.0
South Eastern	6	23.1	1	4.5	6	30.0
Southern	4	15.4	8	36.4	7	35.0
Western	2	7.7	3	13.6	1	5.0
Source						
Inpatient	15	57.7	16	72.7	8	40.0
Community~	11	42.3	6	27.3	12	60.0

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

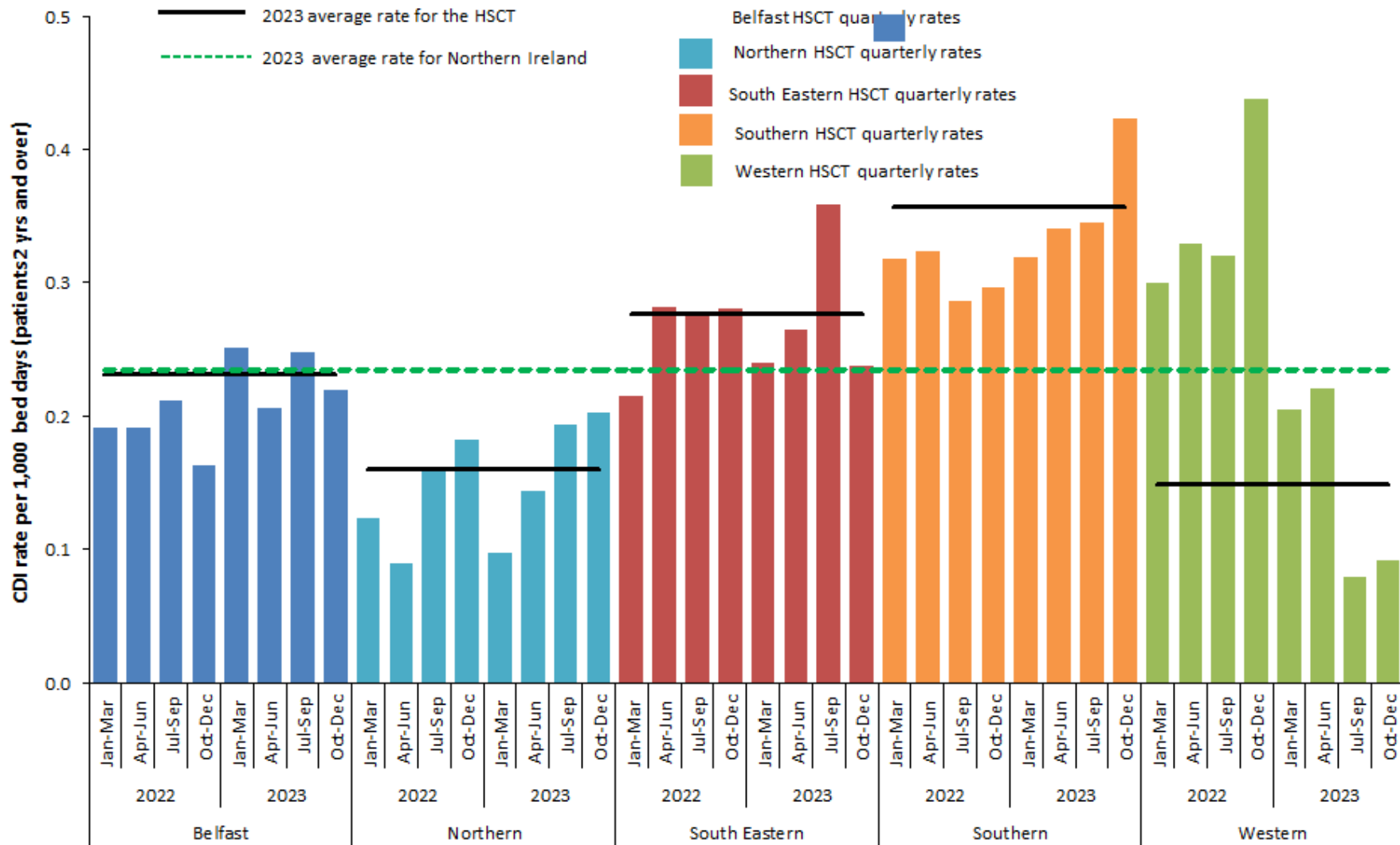


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 2 years and over, by HSCT, January 2022 – December 2023, compared with annual Northern Ireland and HSCT rates for 2023

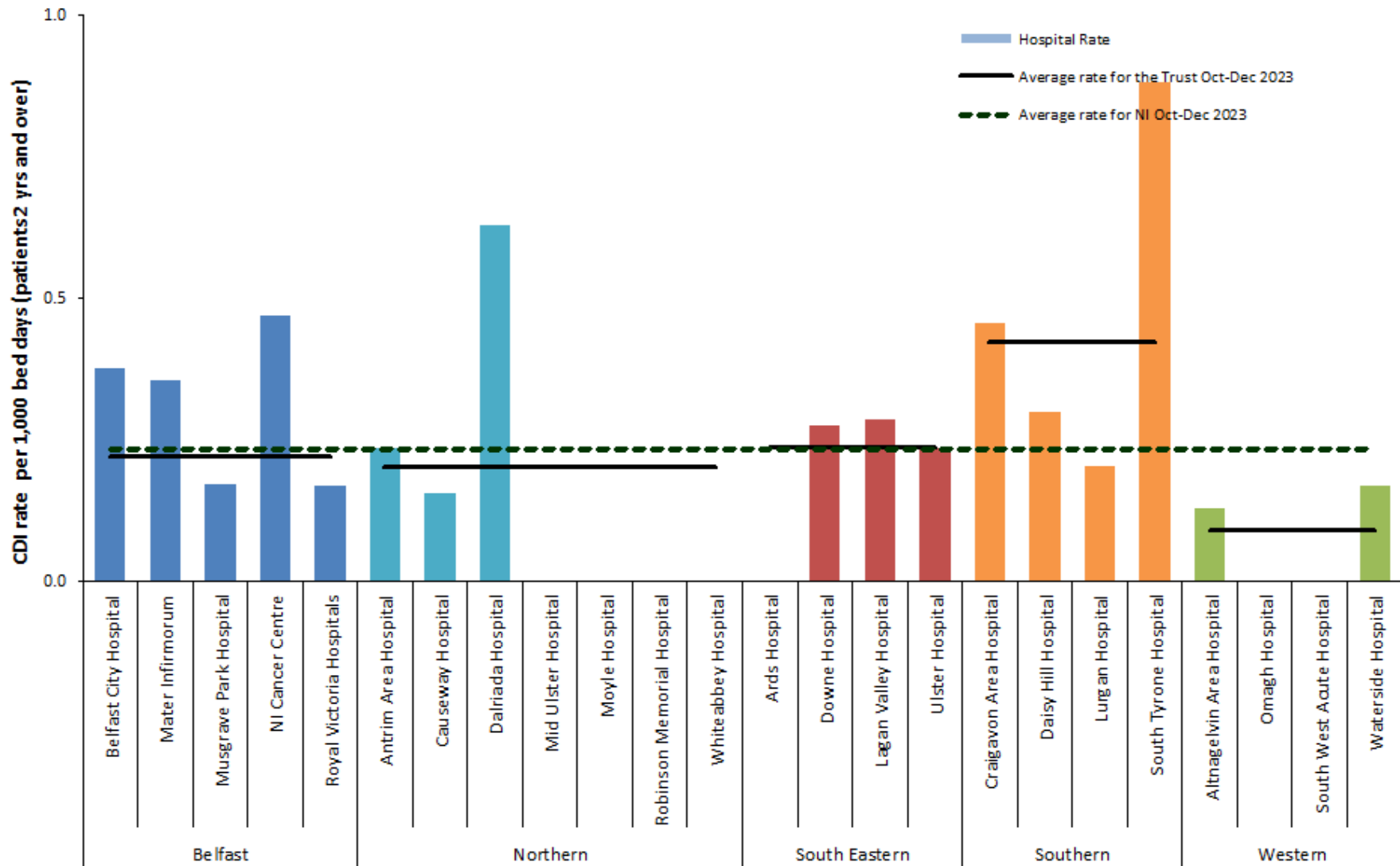


Figure 5: *C. difficile* rates during October - December 2023 Inpatients aged 2 years and over, by hospital, including HSC Trust rates and average rate for Northern Ireland (see appendix A, Table 4)

Appendix A

Table 4: Quarterly rates of *C. difficile* reports in patients aged 2 years and over, by hospital, Jan – Dec 2023.

Hospital	Jan-Mar 2023	Apr-Jun 2023	Jul-Sep 2023	Oct-Dec 2023
Belfast City Hospital	0.079	0.221	0.147	0.375
Mater Infirmorum	0.437	0.062	0.514	0.356
Musgrave Park Hospital	0.111	0.282	0.308	0.172
NICCO	0.000	0.471	0.463	0.471
Royal Group of Hospitals	0.283	0.202	0.199	0.168
Belfast Health & Social Care Trust	0.251	0.206	0.248	0.220
Antrim Area Hospital	0.093	0.163	0.175	0.236
Causeway Hospital	0.153	0.161	0.275	0.155
Dalriada Hospital	0.000	0.000	0.560	0.630
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	0.000	0.000	0.000	0.000
Northern Health & Social Care Trust	0.097	0.144	0.194	0.202
Ards Hospital	0.000	0.583	2.402	0.000
Downe Hospital	0.715	0.230	0.228	0.274
Lagan Valley Hospital	0.687	0.000	0.131	0.286
Ulster Hospital	0.156	0.292	0.340	0.236
South Eastern Health & Social Care Trust	0.240	0.265	0.358	0.238
Craigavon Area Hospital	0.397	0.348	0.335	0.457
Daisy Hill Hospital	0.216	0.421	0.479	0.300
Lurgan Hospital	0.000	0.217	0.211	0.204
South Tyrone Hospital	0.000	0.000	0.000	0.882
Southern Health & Social Care Trust	0.305	0.341	0.345	0.423
Altnagelvin Area Hospital	0.296	0.218	0.081	0.130
Omagh Hospital	0.301	0.000	0.000	0.000
South West Acute Hospital	0.000	0.343	0.115	0.000
Waterside Hospital	0.170	0.000	0.000	0.168
Western Health & Social Care Trust	0.205	0.221	0.079	0.091
NI TOTAL	0.225	0.230	0.248	0.234

Table 5: Quarterly *C. difficile* reports in patients aged 2 years and over, by HSCT, Jan – Dec 2023.

Trust	Jan-Mar 2023 Episodes	Apr-Jun 2023 Episodes	Jul-Sep 2023 Episodes	Oct-Dec 2023 Episodes
Belfast Health & Social Care Trust	34	28	33	31
Northern Health & Social Care Trust	7	10	14	15
South Eastern Health & Social Care Trust	17	19	26	15
Southern Health & Social Care Trust	22	23	24	30
Western Health & Social Care Trust	13	14	5	6
NI TOTAL	93	94	102	97
NI community TOTAL	61	75	89	87

Appendix A

Table 6: Quarterly rates of *C. difficile* reports in patients aged 65 years and over, by hospital, Jan – Dec 2023.

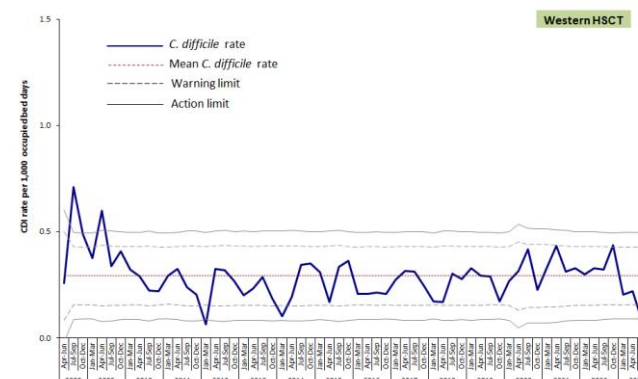
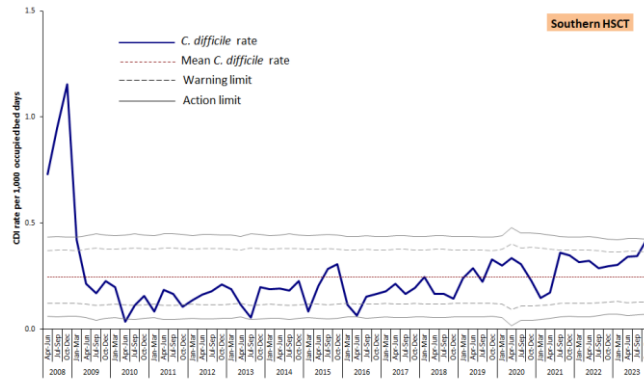
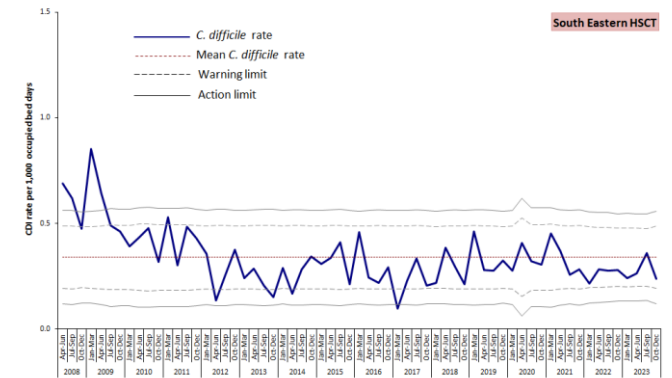
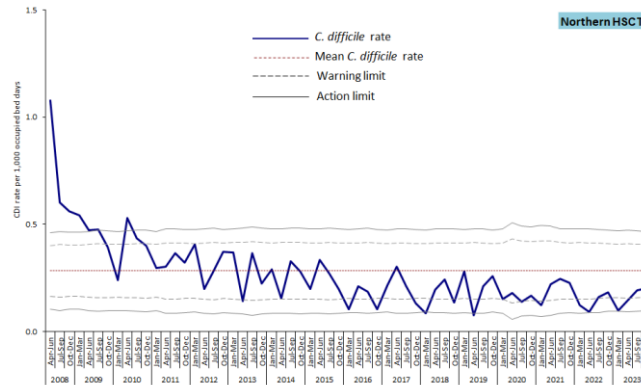
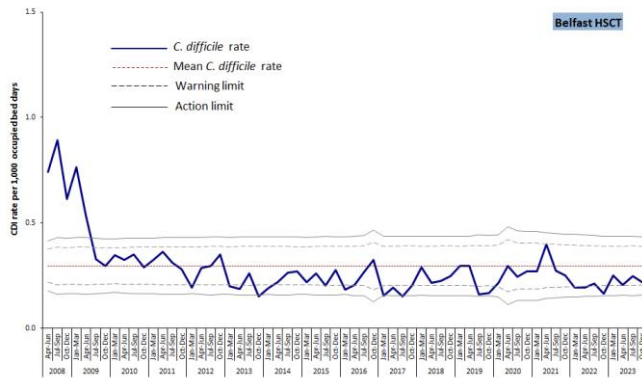
Hospital	Jan-Mar 2023	Apr-Jun 2023	Jul-Sep 2023	Oct-Dec 2023
Belfast City Hospital	0.000	0.344	0.170	0.495
Mater Infirmorum	0.478	0.080	0.570	0.459
Musgrave Park Hospital	0.169	0.265	0.474	0.179
NICCO	0.000	1.074	0.464	0.902
Royal Group of Hospitals	0.540	0.265	0.340	0.277
Belfast Health & Social Care Trust	0.414	0.261	0.391	0.330
Antrim Area Hospital	0.108	0.174	0.276	0.326
Causeway Hospital	0.171	0.264	0.338	0.246
Dalriada Hospital	0.000	0.000	0.799	0.656
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	0.000	0.000	0.000	0.000
Northern Health & Social Care Trust	0.106	0.166	0.270	0.281
Ards Hospital	0.000	0.641	2.481	0.000
Downe Hospital	0.829	0.259	0.248	0.278
Lagan Valley Hospital	0.806	0.000	0.155	0.331
Ulster Hospital	0.169	0.423	0.443	0.264
South Eastern Health & Social Care Trust	0.299	0.362	0.456	0.267
Craigavon Area Hospital	0.516	0.348	0.530	0.528
Daisy Hill Hospital	0.355	0.592	0.515	0.397
Lurgan Hospital	0.000	0.229	0.219	0.217
South Tyrone Hospital	0.000	0.000	0.000	0.949
Southern Health & Social Care Trust	0.391	0.369	0.459	0.497
Altnagelvin Area Hospital	0.453	0.271	0.046	0.133
Omagh Hospital	0.320	0.000	0.000	0.000
South West Acute Hospital	0.000	0.381	0.078	0.000
Waterside Hospital	0.264	0.000	0.000	0.256
Western Health & Social Care Trust	0.284	0.261	0.048	0.093
NI TOTAL	0.310	0.280	0.336	0.300

Table 7: Quarterly *C. difficile* reports in patients aged 65 years and over, by HSCT, Jan – Dec 2023.

Trust	Jan-Mar 2023 Episodes	Apr-Jun 2023 Episodes	Jul-Sep 2023 Episodes	Oct-Dec 2023 Episodes
Belfast Health & Social Care Trust	30	19	27	25
Northern Health & Social Care Trust	5	8	13	14
South Eastern Health & Social Care Trust	14	17	22	12
Southern Health & Social Care Trust	18	16	20	23
Western Health & Social Care Trust	12	11	2	4
NI TOTAL	79	71	84	78
NI community TOTAL	47	61	67	78

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