

C. difficile surveillance

Quarterly report

January - March 2023

Key points

- CDI reports for hospital inpatients aged 2 years and over decreased by 11% (from 104 to 93 episodes) during January – March 2023 compared to October – December 2022.
- CDI rate per 1,000 bed days decreased by 11% during January – March 2023 compared to October - December 2022.
- CDI reports for community patients aged 2 years and over increased by 14% (from 51 to 58 episodes) during January – March 2023 compared to October - December 2022.
- CDI reports for hospital inpatients aged 2 years and over decreased by 5% between the 2021/22 and 2022/23 financial years.
- During January - March 2023 the most prevalent ribotypes for CDI inpatients are 078-like (18%), 002 (17%) and 005 (14%) (Table 1). The most predominate community ribotypes are also 078-like (21%), 002 (16%) and 005 (9%) (Table 2).

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

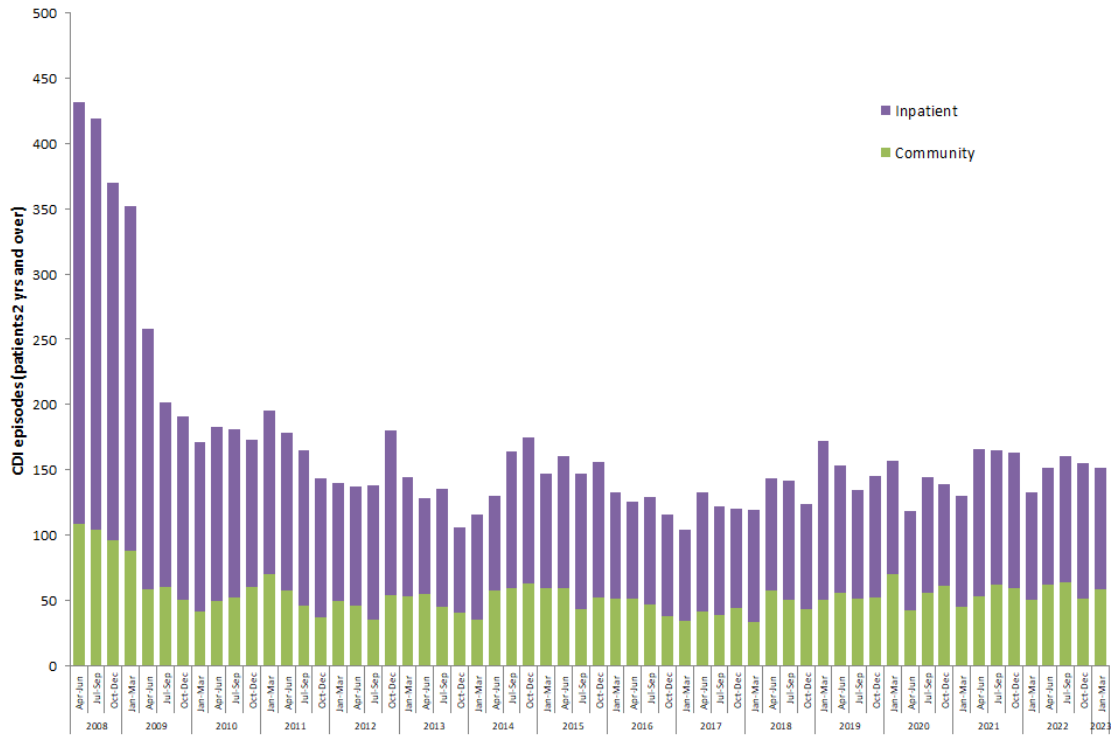


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 2 years), between 2008 and 2023

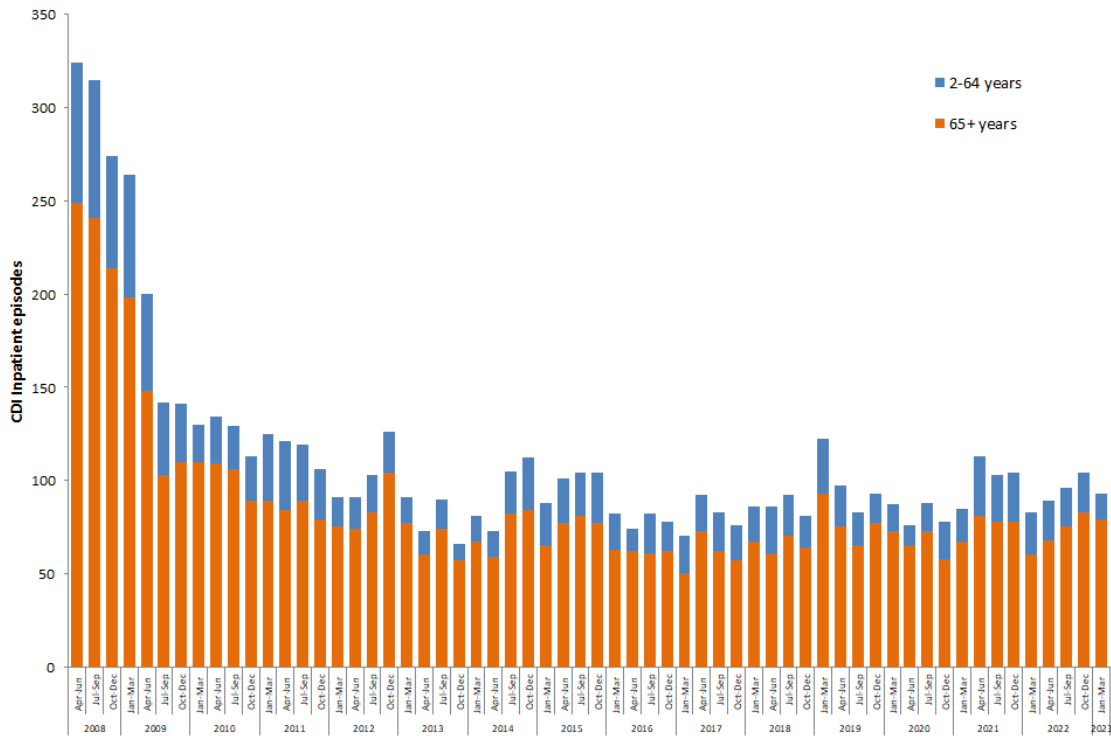


Figure 2a: Total CDI inpatient episodes, by age band, in Northern Ireland, by quarter, between 2008 and 2023

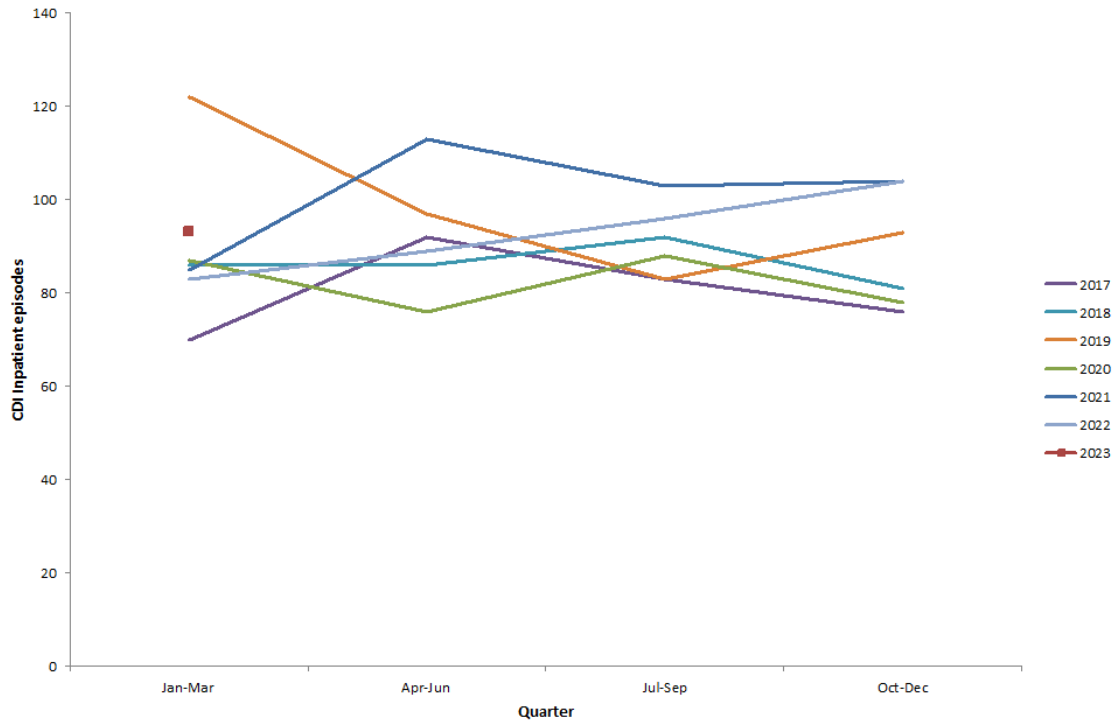


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients \geq 2 years), between 2017 and 2023

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.

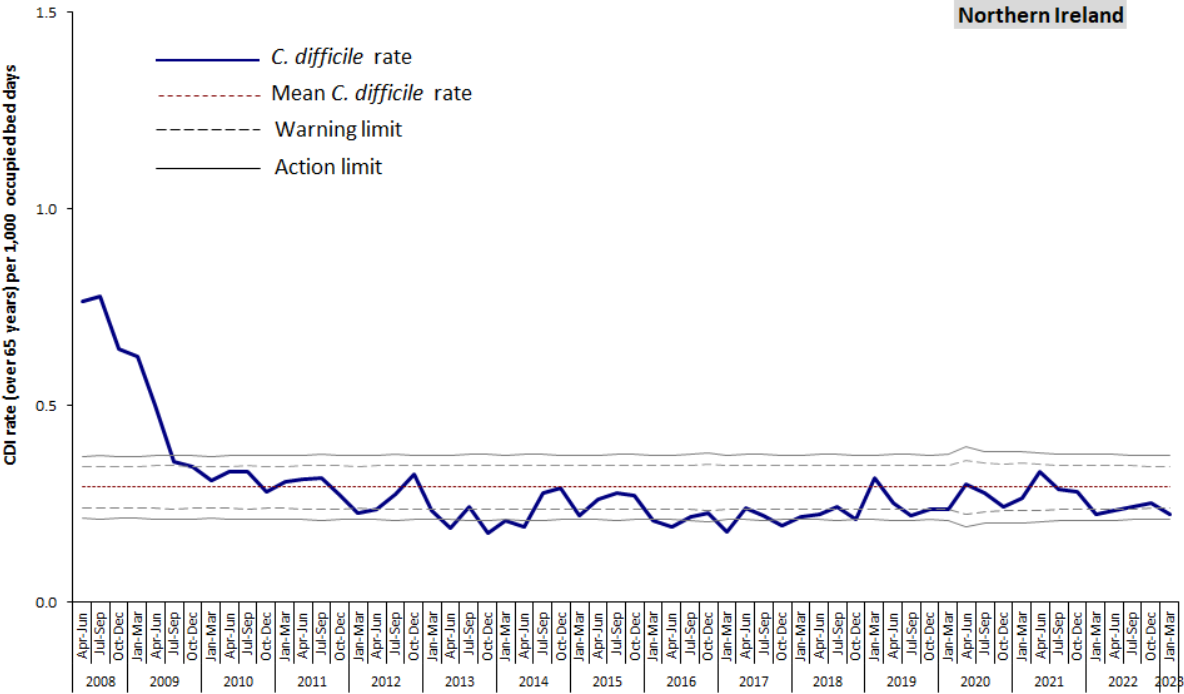


Figure 3: Statistical process control chart for quarterly *C. difficile* rates among inpatients in Northern Ireland aged 2 years and over (for HSCT level, see appendix B)

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, April 2022 – March 2023

Ribotype	Apr - Jun 2022		Jul - Sep 2022		Oct - Dec 2022		Jan - Mar 2023	
	Number	%	Number	%	Number	%	Number	%
001	1	1.1	1	1.0	4	3.8	2	2.2
002	8	9.0	6	6.3	13	12.5	16	17.2
005	3	3.4	5	5.2	7	6.7	13	14.0
011	1	1.1	2	2.1	2	1.9	3	3.2
014	7	7.9	11	11.5	8	7.7	9	9.7
015	5	5.6	9	9.4	13	12.5	7	7.5
018	0	0.0	0	0.0	2	1.9	2	2.2
020	10	11.2	6	6.3	8	7.7	4	4.3
023	2	2.2	10	10.4	3	2.9	2	2.2
078-like*	25	28.1	22	22.9	21	20.2	17	18.3
Other	16	18.0	15	15.6	16	15.4	15	16.1
Not groupable**	7	7.9	3	3.1	5	4.8	2	2.2
Not on ribotype list	3	3.4	3	3.1	1	1.0	1	1.1
Not isolated***	1	1.1	3	3.1	1	1.0	0	0.0
Total	89		96		104		93	

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, April 2022 – March 2023.

Ribotype	Apr - Jun 2022		Jul - Sep 2022		Oct - Dec 2022		Jan - Mar 2023	
	Number	%	Number	%	Number	%	Number	%
001	1	1.6	1	1.6	0	0.0	0	0.0
002	6	9.7	7	10.9	8	15.7	9	15.5
005	3	4.8	6	9.4	4	7.8	5	8.6
011	4	6.5	0	0.0	0	0.0	1	1.7
014	7	11.3	6	9.4	7	13.7	4	6.9
015	4	6.5	3	4.7	4	7.8	4	6.9
018	1	1.6	0	0.0	0	0.0	1	1.7
020	7	11.3	3	4.7	4	7.8	1	1.7
023	2	3.2	4	6.3	2	3.9	2	3.4
078-like*	13	21.0	18	28.1	5	9.8	12	20.7
Other	5	8.1	9	14.1	7	13.7	12	20.7
Not groupable**	3	4.8	3	4.7	3	5.9	4	6.9
Not on ribotype list	4	6.5	4	6.3	4	7.8	3	5.2
Not isolated***	2	3.2	0	0.0	3	5.9	0	0.0
Total	62		64		51		58	

* 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, 002 and 005 in Northern Ireland Hospital Inpatients and Community Patients, January – March 2023.

	078-like* (n = 29)		002 (n = 25)		005 (n = 18)	
Age						
range	37-95		4-95		37-93	
median	85		76		76	
Sex						
	n	%	n	%	n	%
Female	18	62.1	15	60.0	12	66.7
Male	11	37.9	10	40.0	6	33.3
Trust						
Belfast	6	20.7	7	28.0	4	22.2
Northern	5	17.2	0	0.0	1	5.6
South Eastern	2	6.9	7	28.0	4	22.2
Southern	7	24.1	5	20.0	3	16.7
Western	9	31.0	6	24.0	6	33.3
Source						
Inpatient	17	58.6	16	64.0	13	72.2
Community~	12	41.4	9	36.0	5	27.8

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

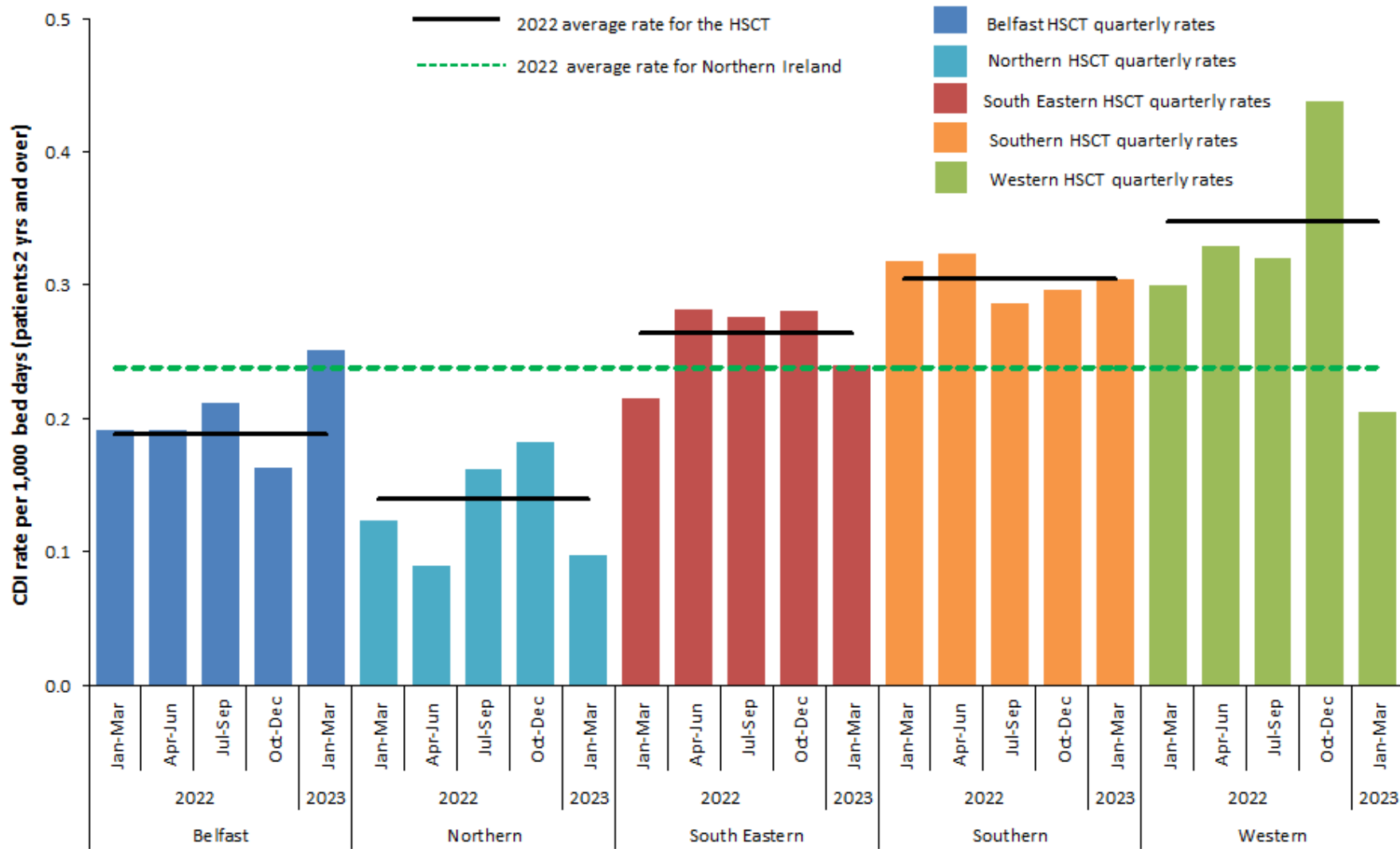


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 2 years and over, by HSCT, January 2022 – March 2023, compared with annual Northern Ireland and HSCT rates for 2022

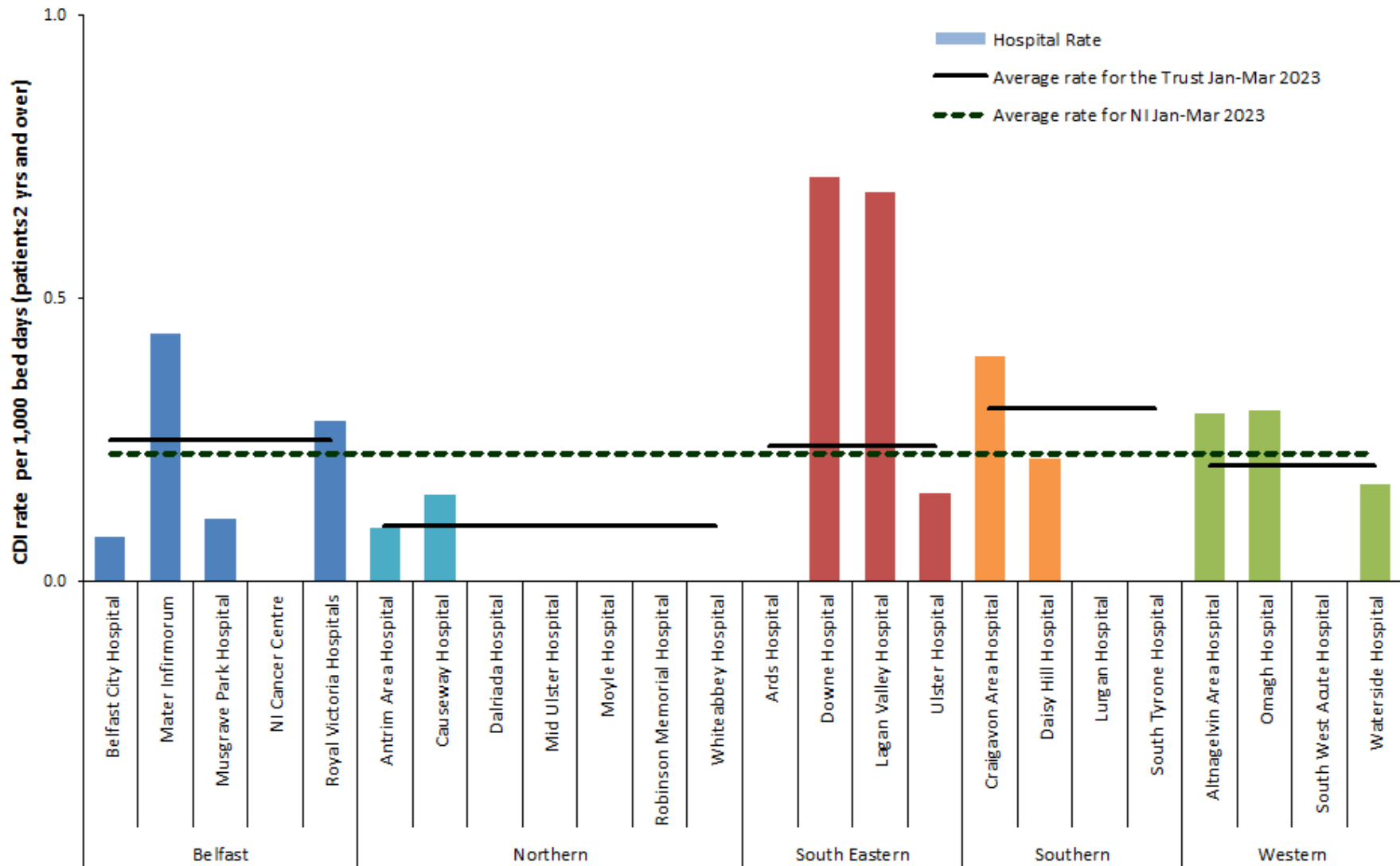


Figure 5: *C. difficile* rates during January - March 2023 Inpatients aged 2 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)

Appendix A

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

Hospital	Apr - Jun 2022	Jul - Sep 2022	Oct - Dec 2022	Jan - Mar 2023
Belfast City Hospital	0.425	0.086	0.156	0.079
Mater Infirmorum	0.254	0.244	0.177	0.437
Musgrave Park Hospital	0.000	0.067	0.062	0.111
NICCO	0.000	0.000	0.000	0.000
Royal Group of Hospitals	0.191	0.261	0.188	0.283
Belfast Health & Social Care Trust	0.191	0.212	0.163	0.251
Antrim Area Hospital	0.049	0.144	0.230	0.093
Causeway Hospital	0.056	0.277	0.106	0.153
Dalriada Hospital	0.711	0.000	0.000	0.000
Mid Ulster Hospital	0.000	0.000	0.000	0.000
Moyle Hospital	0.000	0.000	0.000	0.000
Robinson Memorial Hospital	0.992	0.000	0.000	0.000
Whiteabbey Hospital	0.306	0.000	0.302	0.000
Northern Health & Social Care Trust	0.090	0.162	0.182	0.097
Ards Hospital	1.180	0.000	0.000	0.000
Downe Hospital	1.038	0.507	0.491	0.715
Lagan Valley Hospital	0.279	0.137	0.407	0.687
Ulster Hospital	0.201	0.286	0.258	0.156
South Eastern Health & Social Care Trust	0.282	0.276	0.280	0.240
Craigavon Area Hospital	0.336	0.217	0.294	0.397
Daisy Hill Hospital	0.270	0.364	0.330	0.216
Lurgan Hospital	0.646	0.644	0.425	0.000
South Tyrone Hospital	0.000	0.277	0.000	0.000
Southern Health & Social Care Trust	0.323	0.287	0.296	0.305
Altnagelvin Area Hospital	0.316	0.339	0.578	0.296
Omagh Hospital	0.649	0.000	0.647	0.301
South West Acute Hospital	0.395	0.385	0.158	0.000
Waterside Hospital	0.000	0.179	0.359	0.170
Western Health & Social Care Trust	0.329	0.320	0.437	0.205
NI TOTAL	0.233	0.244	0.252	0.225

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

Trust	Apr - Jun 2022 Episodes	Jul - Sep 2022 Episodes	Oct - Dec 2022 Episodes	Jan - Mar 2023 Episodes
Belfast Health & Social Care Trust	24	27	22	34
Northern Health & Social Care Trust	6	11	13	7
South Eastern Health & Social Care Trust	19	19	20	17
Southern Health & Social Care Trust	20	19	21	22
Western Health & Social Care Trust	20	20	28	13
NI TOTAL	89	96	104	93
NI community TOTAL	62	64	51	58

Appendix A

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

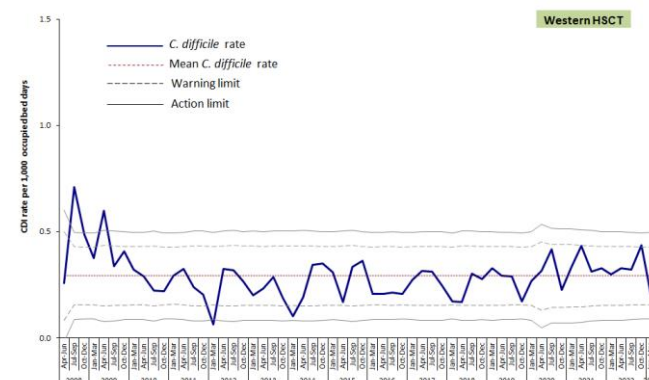
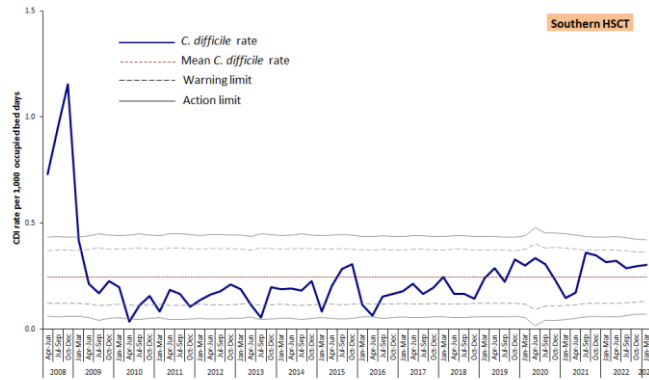
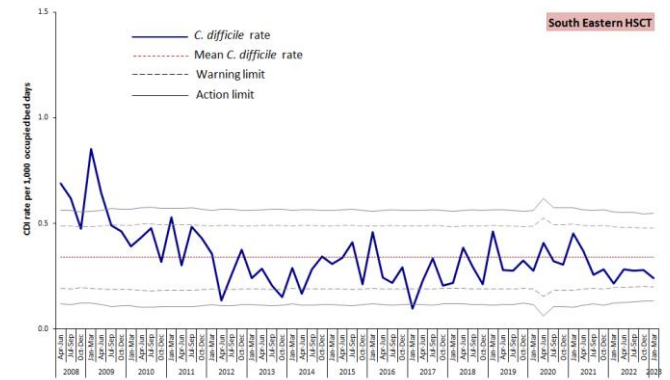
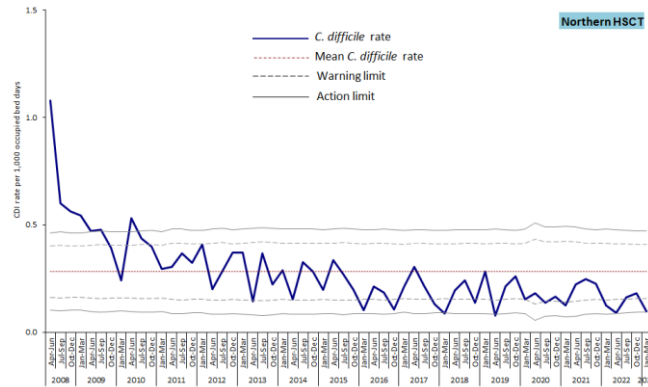
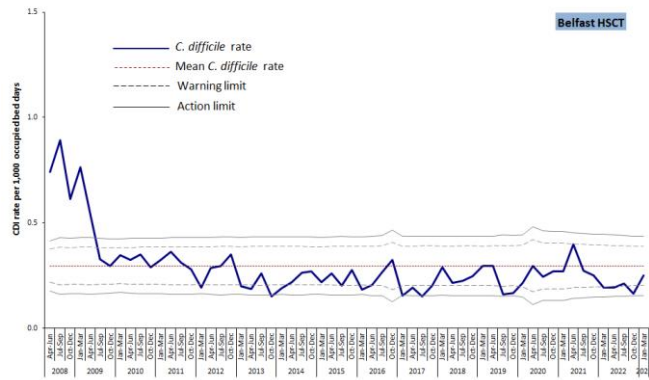
Hospital	Apr - Jun 2022	Jul - Sep 2022	Oct - Dec 2022	Jan - Mar 2023
Belfast City Hospital	0.385	0.000	0.326	0.000
Mater Infirmorum	0.163	0.236	0.230	0.478
Musgrave Park Hospital	0.000	0.108	0.095	0.169
NICCO	0.000	0.000	0.000	0.000
Royal Group of Hospitals	0.321	0.395	0.231	0.540
Belfast Health & Social Care Trust	0.272	0.279	0.211	0.414
Antrim Area Hospital	0.078	0.185	0.323	0.108
Causeway Hospital	0.093	0.450	0.087	0.171
Dalriada Hospital	0.979	0.000	0.000	0.000
Mid Ulster Hospital	0.000	0.000	0.000	0.000
Moyle Hospital	0.000	0.000	0.000	0.000
Robinson Memorial Hospital	1.181	0.000	0.000	0.000
Whiteabbey Hospital	0.000	0.000	0.348	0.000
Northern Health & Social Care Trust	0.114	0.223	0.231	0.106
Ards Hospital	1.400	0.000	0.000	0.000
Downe Hospital	1.209	0.583	0.533	0.829
Lagan Valley Hospital	0.344	0.000	0.491	0.806
Ulster Hospital	0.302	0.442	0.337	0.169
South Eastern Health & Social Care Trust	0.412	0.382	0.362	0.299
Craigavon Area Hospital	0.404	0.357	0.440	0.516
Daisy Hill Hospital	0.339	0.102	0.362	0.355
Lurgan Hospital	0.688	0.455	0.479	0.000
South Tyrone Hospital	0.000	0.290	0.000	0.000
Southern Health & Social Care Trust	0.385	0.303	0.389	0.391
Altnagelvin Area Hospital	0.347	0.439	0.779	0.453
Omagh Hospital	0.711	0.000	0.703	0.320
South West Acute Hospital	0.455	0.522	0.149	0.000
Waterside Hospital	0.000	0.271	0.543	0.264
Western Health & Social Care Trust	0.382	0.419	0.543	0.284
NI TOTAL	0.308	0.316	0.329	0.310

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

Trust	Apr - Jun 2022 Episodes	Jul - Sep 2022 Episodes	Oct - Dec 2022 Episodes	Jan - Mar 2023 Episodes
Belfast Health & Social Care Trust	15	18	15	30
Northern Health & Social Care Trust	5	10	11	5
South Eastern Health & Social Care Trust	18	17	17	14
Southern Health & Social Care Trust	15	13	18	18
Western Health & Social Care Trust	15	17	22	12
NI TOTAL	68	75	83	79
NI community TOTAL	52	49	42	44

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