

C. difficile surveillance

Quarterly report

October - December 2022

Key points

- CDI reports for hospital inpatients aged 65 years and over increased by 11% (from 75 to 83 episodes) during October - December 2022 compared to July - September 2022.
- CDI rate per 1,000 bed days increased by 4% during October - December 2022 compared to July - September 2022.
- CDI reports for community patients aged 65 years and over decreased by 14% (from 49 to 42 episodes) during October - December 2022 compared to July - September 2022.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, decreased by 3% during October - December 2022 compared to July - September 2022. (from 160 to 155 episodes).
- CDI reports for hospital inpatients aged 65 years and over increased by 13% between the 2020/21 and 2021/22 financial years.
- During October - December 2022 the most prevalent ribotypes for CDI inpatients are 078-like (20%), 002 (13%) and 015 (13%) (Table 1). The most predominate community ribotypes are 002 (16%), 014 (14%) and 078-like (10%) (Table 2).

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

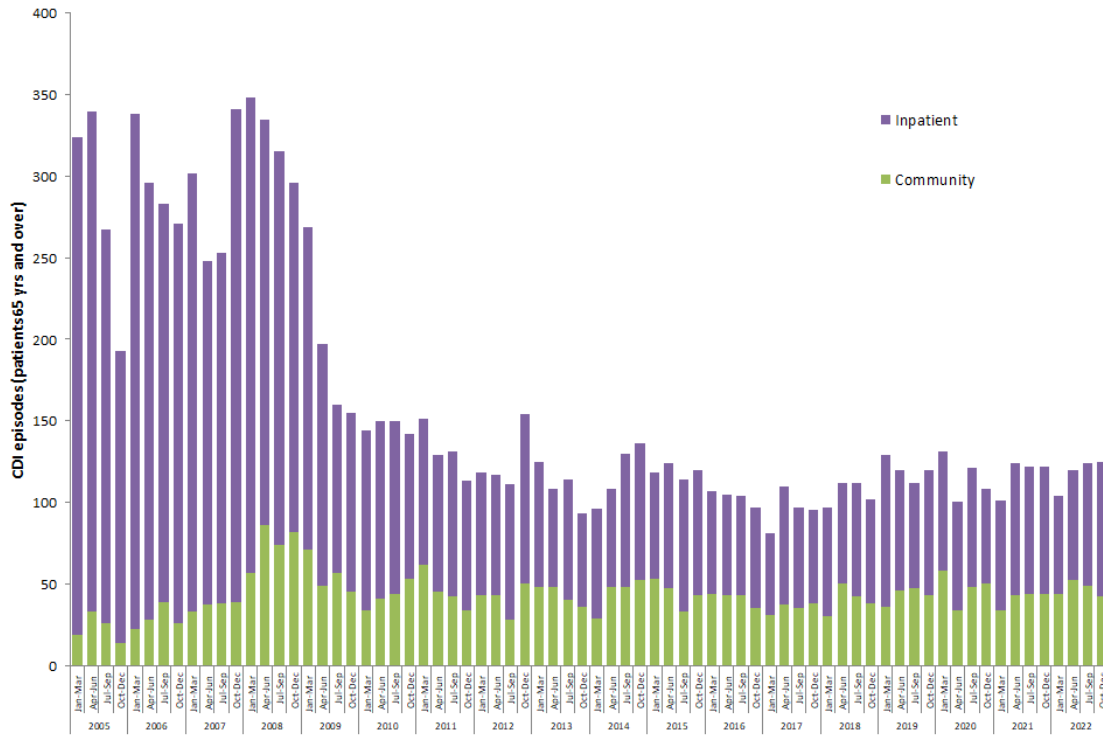


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2022

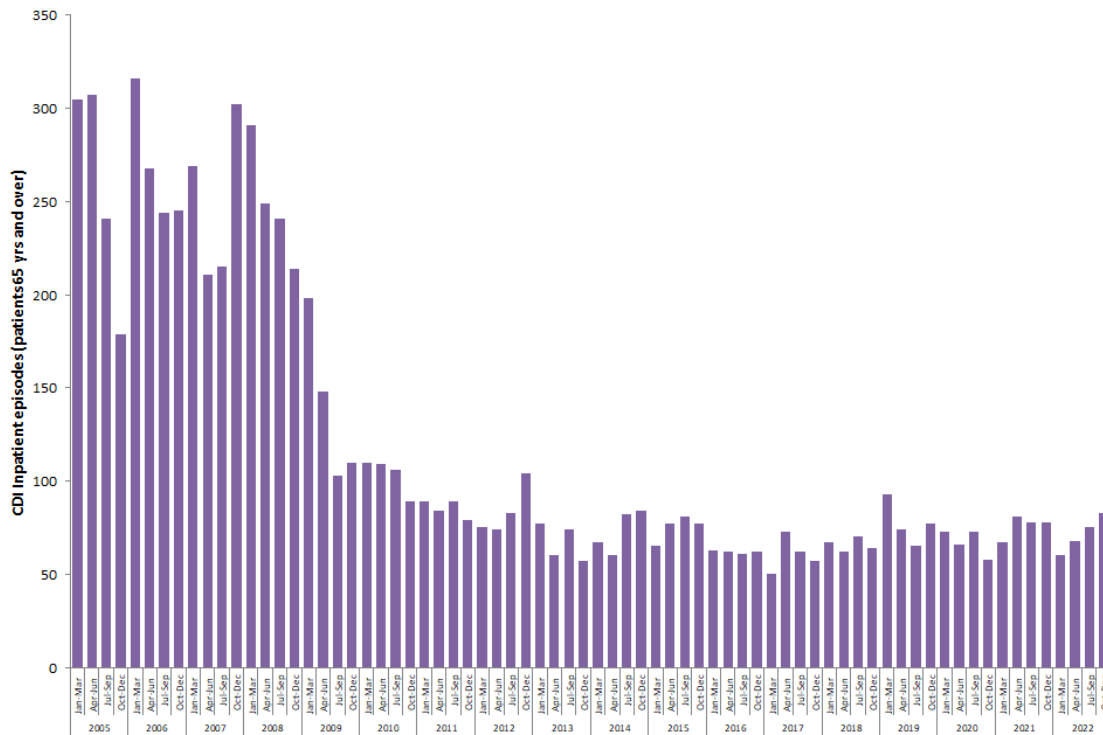


Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2022

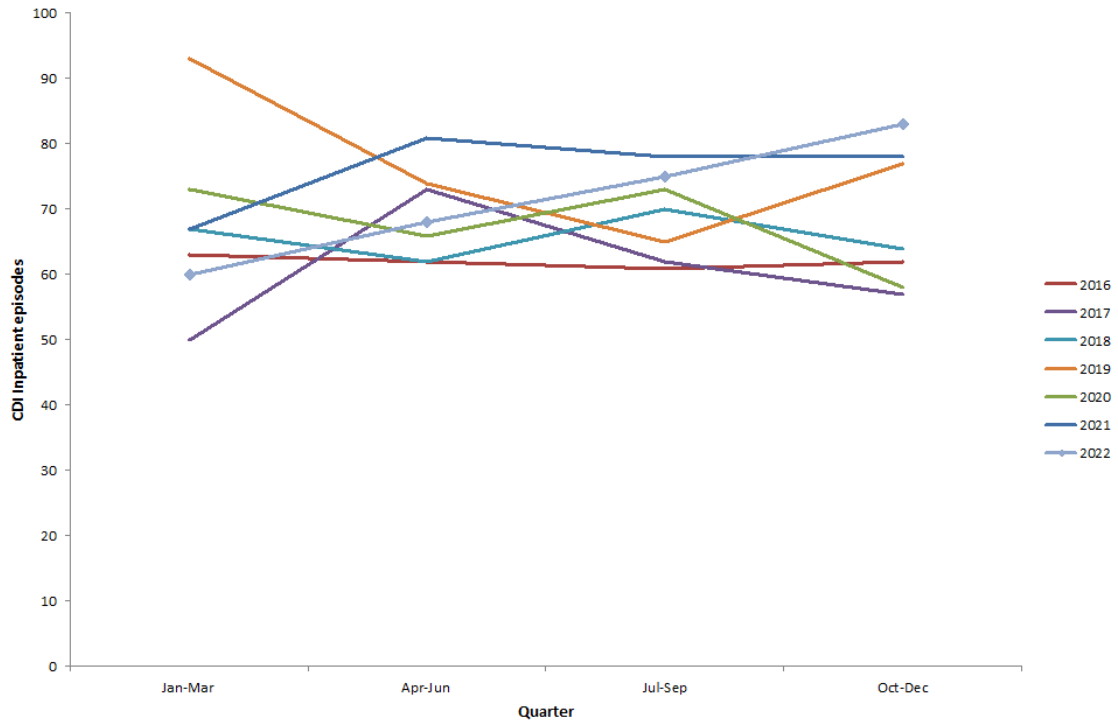


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2016 and 2022

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 July 2005 are shown for each HSCT in appendix B.

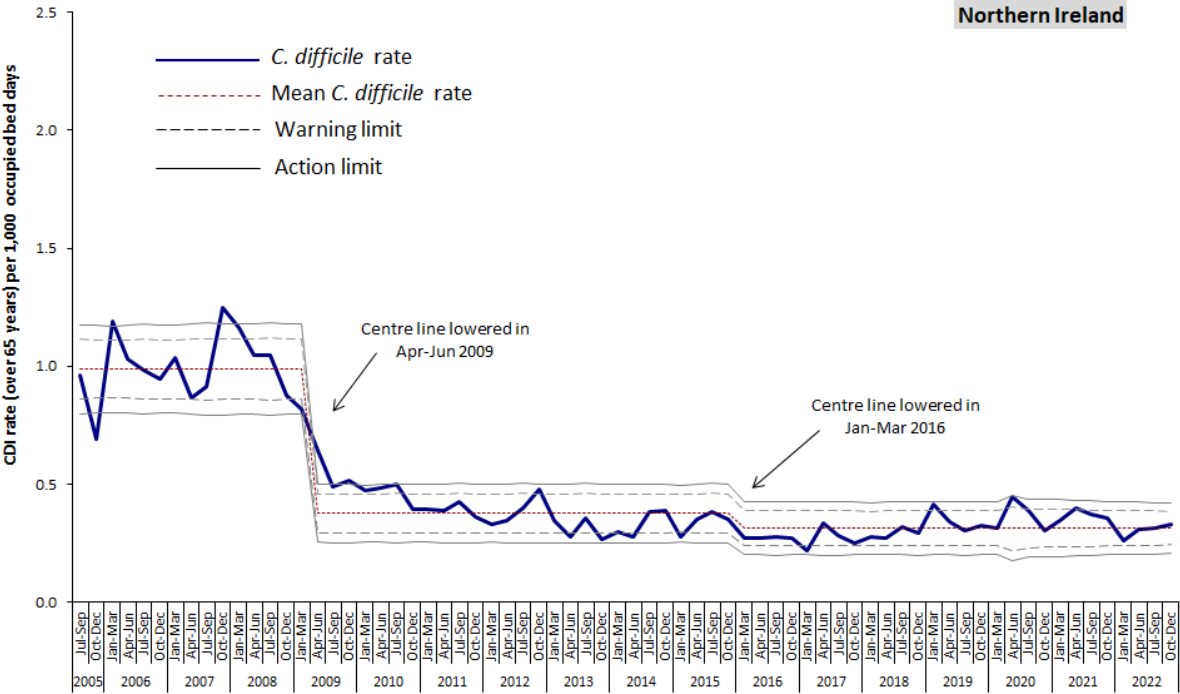


Figure 3: Statistical process control chart for quarterly *C. difficile* rates among inpatients in Northern Ireland aged 65 years and over (for HSCT level, see appendix B)

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 2022

Ribotype	Jan - Mar 2022		Apr - Jun 2022		Jul - Sep 2022		Oct - Dec 2022	
	Number	%	Number	%	Number	%	Number	%
001	2	2.4	1	1.1	1	1.0	4	3.8
002	8	9.6	8	9.0	6	6.3	13	12.5
005	5	6.0	3	3.4	5	5.2	7	6.7
011	2	2.4	1	1.1	2	2.1	2	1.9
014	9	10.8	7	7.9	11	11.5	8	7.7
015	3	3.6	5	5.6	9	9.4	13	12.5
018	0	0.0	0	0.0	0	0.0	2	1.9
020	8	9.6	10	11.2	6	6.3	8	7.7
023	4	4.8	2	2.2	10	10.4	3	2.9
078-like*	15	18.1	25	28.1	22	22.9	21	20.2
Other	15	18.1	16	18.0	15	15.6	16	15.4
Not groupable**	8	9.6	7	7.9	3	3.1	5	4.8
Not on ribotype list	3	3.6	3	3.4	3	3.1	1	1.0
Not isolated***	1	1.2	1	1.1	3	3.1	1	1.0
Total	83		89		96		104	

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 2022.

Ribotype	Jan - Mar 2022		Apr - Jun 2022		Jul - Sep 2022		Oct - Dec 2022	
	Number	%	Number	%	Number	%	Number	%
001	0	0.0	1	1.6	1	1.6	0	0.0
002	10	20.0	6	9.7	7	10.9	8	15.7
005	6	12.0	3	4.8	6	9.4	4	7.8
011	0	0.0	4	6.5	0	0.0	0	0.0
014	5	10.0	7	11.3	6	9.4	7	13.7
015	4	8.0	4	6.5	3	4.7	4	7.8
018	1	2.0	1	1.6	0	0.0	0	0.0
020	3	6.0	7	11.3	3	4.7	4	7.8
023	0	0.0	2	3.2	4	6.3	2	3.9
078-like*	7	14.0	13	21.0	18	28.1	5	9.8
Other	8	16.0	5	8.1	9	14.1	7	13.7
Not groupable**	3	6.0	3	4.8	3	4.7	3	5.9
Not on ribotype list	2	4.0	4	6.5	4	6.3	4	7.8
Not isolated***	1	2.0	2	3.2	0	0.0	3	5.9
Total	50		62		64		51	

* 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 015 in Northern Ireland Hospital Inpatients and Community Patients, October - December 2022.

		078-like* (n = 26)		002 (n = 21)		015 (n = 17)	
Age							
	range	51-97		29-94		35-94	
	median	79		76		80	
Sex							
		n	%	n	%	n	%
	Female	11	42.3	10	47.6	13	76.5
	Male	15	57.7	11	52.4	4	23.5
Trust							
	Belfast	6	23.1	6	28.6	2	11.8
	Northern	6	23.1	5	23.8	2	11.8
	South Eastern	1	3.8	2	9.5	4	23.5
	Southern	5	19.2	5	23.8	3	17.6
	Western	8	30.8	3	14.3	6	35.3
Source							
	Inpatient	21	80.8	13	61.9	13	76.5
	Community~	5	19.2	8	38.1	4	23.5

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

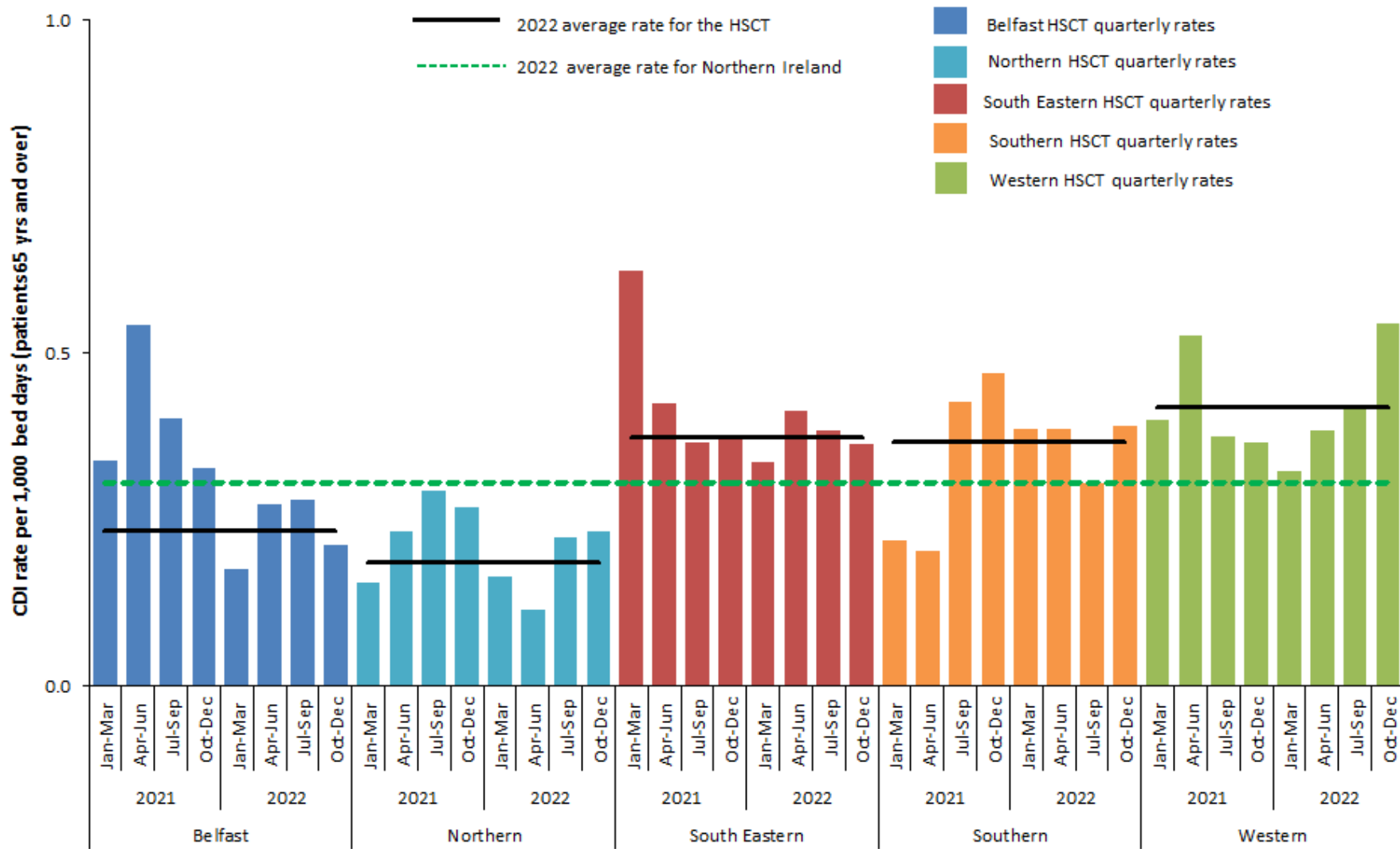


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2021 – December 2022, compared with annual Northern Ireland and HSCT rates for 2022

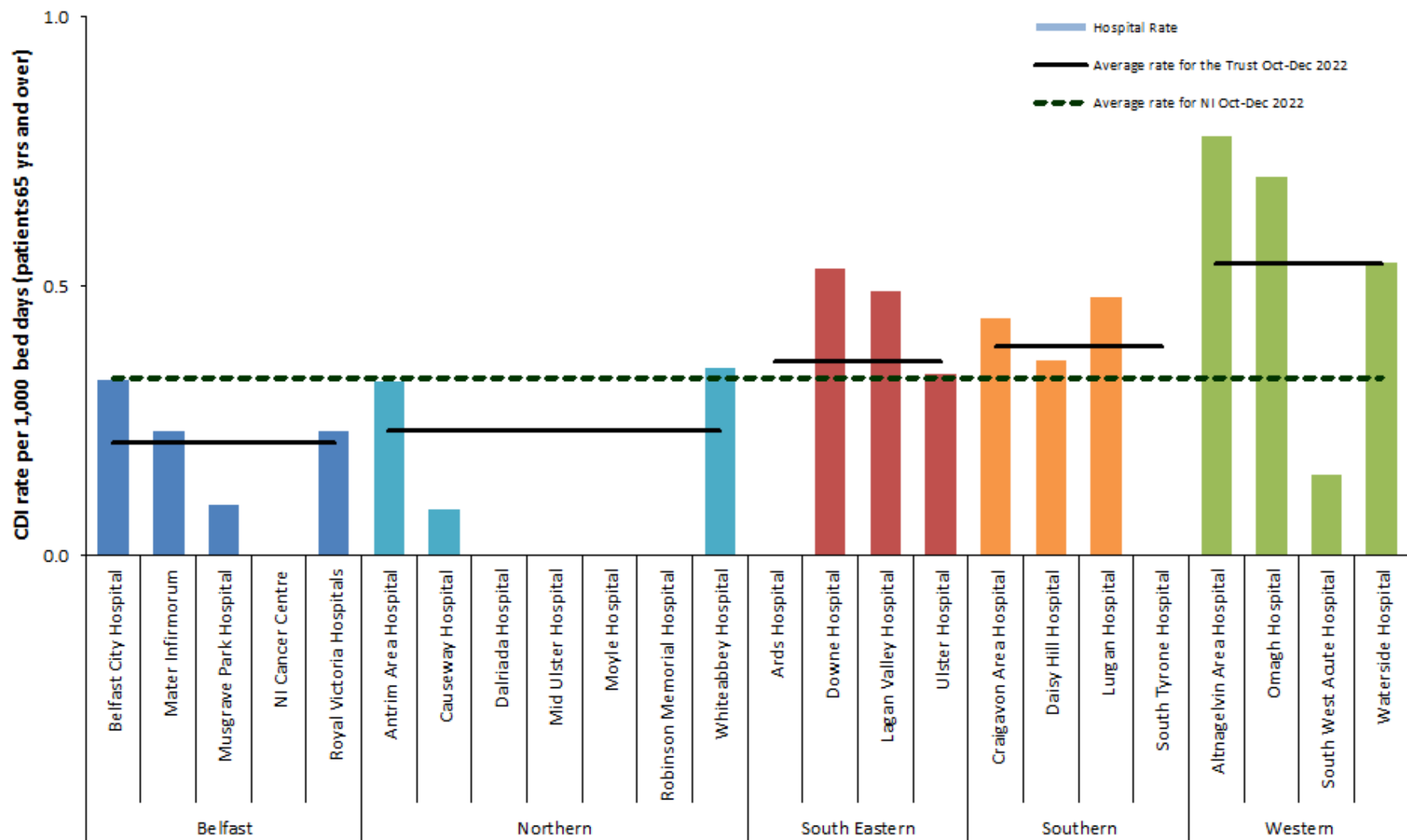


Figure 5: *C. difficile* rates during October - December 2022 Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)

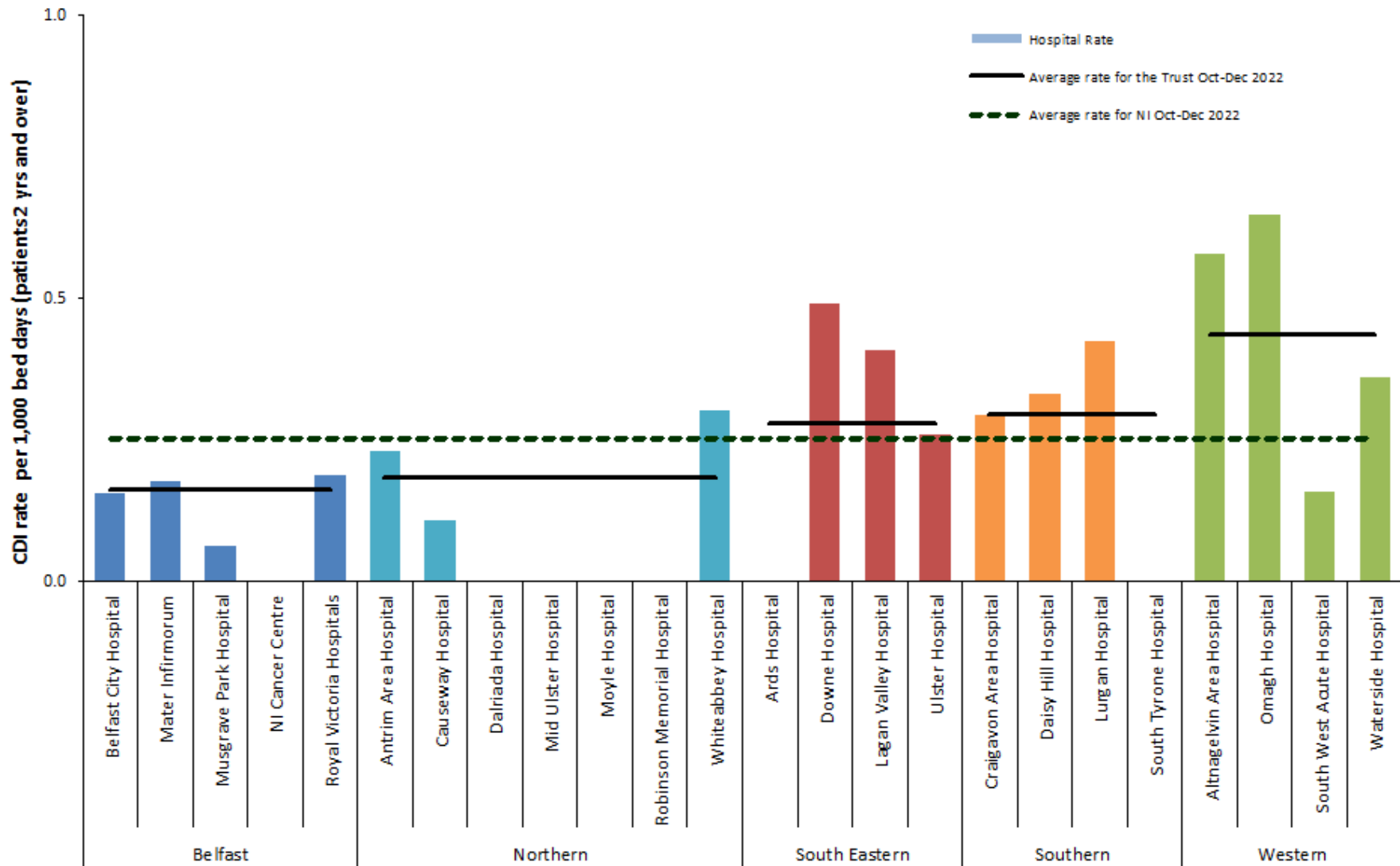


Figure 6: *C. difficile* rates October - December 2022 Inpatients aged two years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 6)

Appendix A

Table 4: Quarterly rates of *C. difficile* in patients aged 65 years and over, by hospital, Jan-Dec 22.

Hospital	Jan - Mar 2022	Apr - Jun 2022	Jul - Sep 2022	Oct - Dec 2022
Belfast City Hospital	0.230	0.385	0.000	0.326
Mater Infirmorum	0.084	0.163	0.236	0.230
Musgrave Park Hospital	0.101	0.000	0.108	0.095
NICCO	0.524	0.000	0.000	0.000
Royal Group of Hospitals	0.200	0.321	0.395	0.231
Belfast Health & Social Care Trust	0.175	0.272	0.279	0.211
Antrim Area Hospital	0.158	0.078	0.185	0.323
Causeway Hospital	0.294	0.093	0.450	0.087
Dalriada Hospital	0.000	0.979	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	0.000	1.181	0.000	0.000
Whiteabbey Hospital	0.000	0.000	0.000	0.348
Northern Health & Social Care Trust	0.162	0.114	0.223	0.231
Ards Hospital	0.000	1.400	0.000	0.000
Downe Hospital	0.000	1.209	0.583	0.533
Lagan Valley Hospital	0.180	0.344	0.000	0.491
Ulster Hospital	0.411	0.302	0.442	0.337
South Eastern Health & Social Care Trust	0.334	0.412	0.382	0.362
Craigavon Area Hospital	0.408	0.404	0.357	0.440
Daisy Hill Hospital	0.448	0.339	0.102	0.362
Lurgan Hospital	0.000	0.688	0.455	0.479
South Tyrone Hospital	0.510	0.000	0.290	0.000
Southern Health & Social Care Trust	0.385	0.385	0.303	0.389
Altnagelvin Area Hospital	0.444	0.347	0.439	0.779
Omagh Hospital	0.345	0.711	0.000	0.703
South West Acute Hospital	0.246	0.455	0.522	0.149
Waterside Hospital	0.000	0.000	0.271	0.543
Western Health & Social Care Trust	0.321	0.382	0.419	0.543
NI TOTAL	0.264	0.308	0.316	0.329

Table 5: Quarterly *C. difficile* reports in patients aged 65 years and over, by HSCT, Jan-Dec 22.

Trust	Jan - Mar 2022 Episodes	Apr - Jun 2022 Episodes	Jul - Sep 2022 Episodes	Oct - Dec 2022 Episodes
Belfast Health & Social Care Trust	11	15	18	15
Northern Health & Social Care Trust	7	5	10	11
South Eastern Health & Social Care Trust	14	18	17	17
Southern Health & Social Care Trust	15	15	13	18
Western Health & Social Care Trust	13	15	17	22
NI TOTAL	60	68	75	83
NI community TOTAL	44	52	49	42

Appendix A

Table 6: Quarterly rates of *C. difficile* in patients aged two years and over, by hospital, Jan-Dec 22.

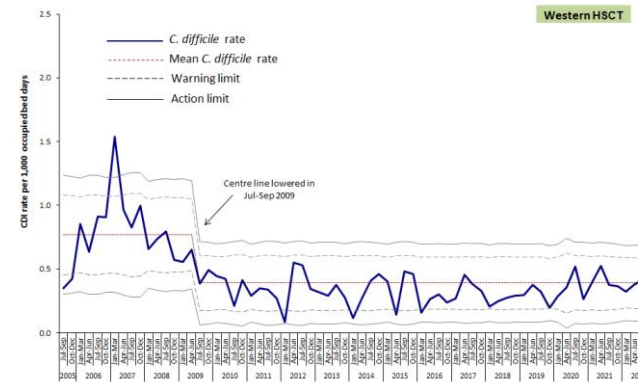
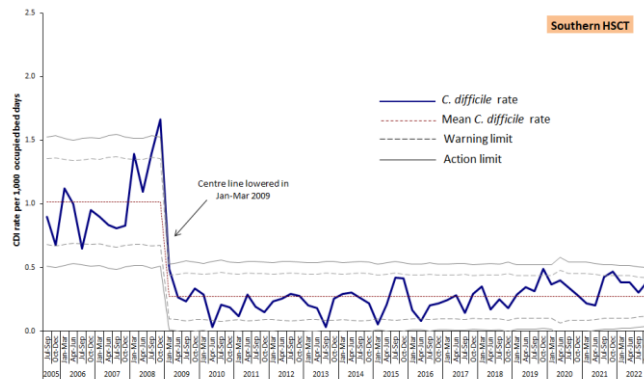
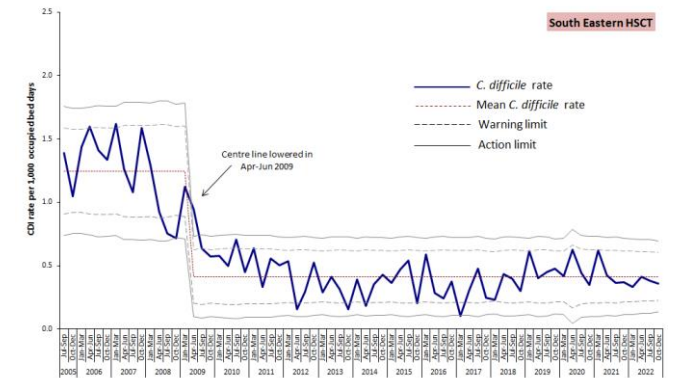
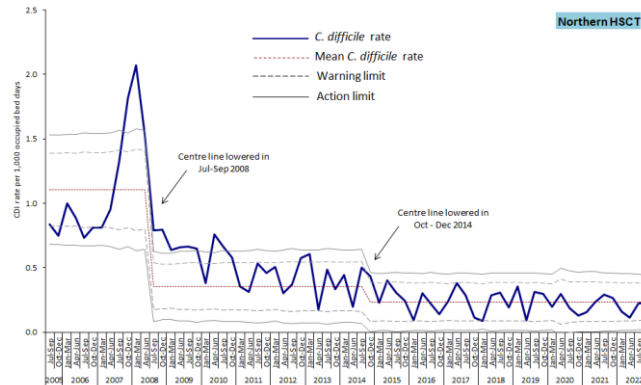
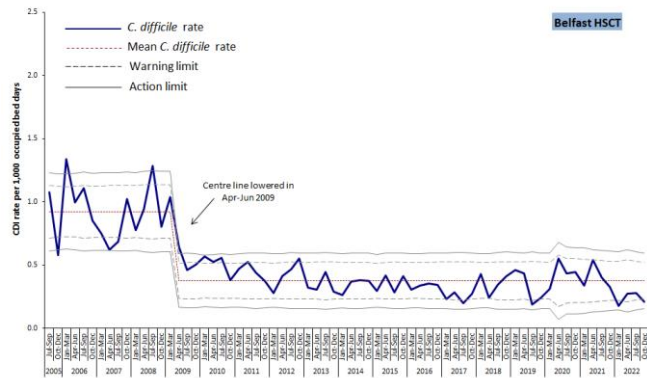
Hospital	Jan - Mar 2022	Apr - Jun 2022	Jul - Sep 2022	Oct - Dec 2022
Belfast City Hospital	0.385	0.425	0.086	0.156
Mater Infirmorum	0.135	0.254	0.244	0.177
Musgrave Park Hospital	0.068	0.000	0.067	0.062
NICCO	0.505	0.000	0.000	0.000
Royal Group of Hospitals	0.183	0.191	0.261	0.188
Belfast Health & Social Care Trust	0.191	0.191	0.212	0.163
Antrim Area Hospital	0.126	0.049	0.144	0.230
Causeway Hospital	0.177	0.056	0.277	0.106
Dalriada Hospital	0.000	0.711	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	0.000	0.992	0.000	0.000
Whiteabbey Hospital	0.000	0.306	0.000	0.302
Northern Health & Social Care Trust	0.123	0.090	0.162	0.182
Ards Hospital	0.000	1.180	0.000	0.000
Downe Hospital	0.000	1.038	0.507	0.491
Lagan Valley Hospital	0.144	0.279	0.137	0.407
Ulster Hospital	0.246	0.201	0.286	0.258
South Eastern Health & Social Care Trust	0.215	0.282	0.276	0.280
Craigavon Area Hospital	0.337	0.336	0.217	0.294
Daisy Hill Hospital	0.316	0.270	0.364	0.330
Lurgan Hospital	0.000	0.646	0.644	0.425
South Tyrone Hospital	0.488	0.000	0.277	0.000
Southern Health & Social Care Trust	0.317	0.323	0.287	0.296
Altnagelvin Area Hospital	0.347	0.316	0.339	0.578
Omagh Hospital	0.333	0.649	0.000	0.647
South West Acute Hospital	0.173	0.395	0.385	0.158
Waterside Hospital	0.384	0.000	0.179	0.359
Western Health & Social Care Trust	0.299	0.329	0.320	0.437
NI TOTAL	0.222	0.233	0.244	0.252

Table 7: Quarterly *C. difficile* reports in patients aged two years and over, by HSCT, Jan-Dec 22.

Trust	Jan - Mar 2022 Episodes	Apr - Jun 2022 Episodes	Jul - Sep 2022 Episodes	Oct - Dec 2022 Episodes
Belfast Health & Social Care Trust	23	24	27	22
Northern Health & Social Care Trust	8	6	11	13
South Eastern Health & Social Care Trust	14	19	19	20
Southern Health & Social Care Trust	20	20	19	21
Western Health & Social Care Trust	18	20	20	28
NI TOTAL	83	89	96	104
NI community TOTAL	50	62	64	51

Appendix B

Trends in *C. difficile* rates in inpatients aged 65 years and over, by HSCT and quarter, 2005 – 2022



Appendix C

Table 8: *C. difficile* reports among inpatients in Northern Ireland aged 65 years and over, by financial year and HSCT

HSCT	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Belfast	163	147	117	124	90	103	102	90	83	98	80	80	84
Northern	102	103	75	73	56	54	43	39	37	48	39	27	39
South Eastern	98	80	72	50	50	53	70	39	50	67	68	68	60
Southern	37	17	28	33	25	27	40	27	39	32	57	37	56
Western	71	46	35	58	37	53	43	40	50	41	45	51	58
Northern Ireland	471	393	327	338	258	290	298	235	259	286	289	263	297