

C. difficile surveillance

Quarterly report

April - June 2020

Key points

- CDI reports for hospital inpatients aged 65 years and over decreased by 10% (from 73 to 66 episodes) during April – June 2020 compared to January – March 2020.
- CDI rate per 1,000 bed days increased by 44% during April – June 2020 compared to January – March 2020.
- CDI reports for community patients aged 65 years and over decreased by 40% (from 58 to 35 episodes) during April – June 2020 compared to January – March 2020.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, decreased by 24% during April – June 2020 compared to January – March 2020 (from 157 to 119 episodes).
- CDI reports for hospital inpatients aged 65 years and over increased by 1% between the 2018/19 and 2019/20 financial years.
- During April - June 2020 the most prevalent ribotypes for CDI inpatients are 015 (10%), 020 (9%) and 078 (9%) (Table 1). The most predominate community ribotypes are 002 (17%), 078 (10%) and 193 (7%) (Table 2).

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

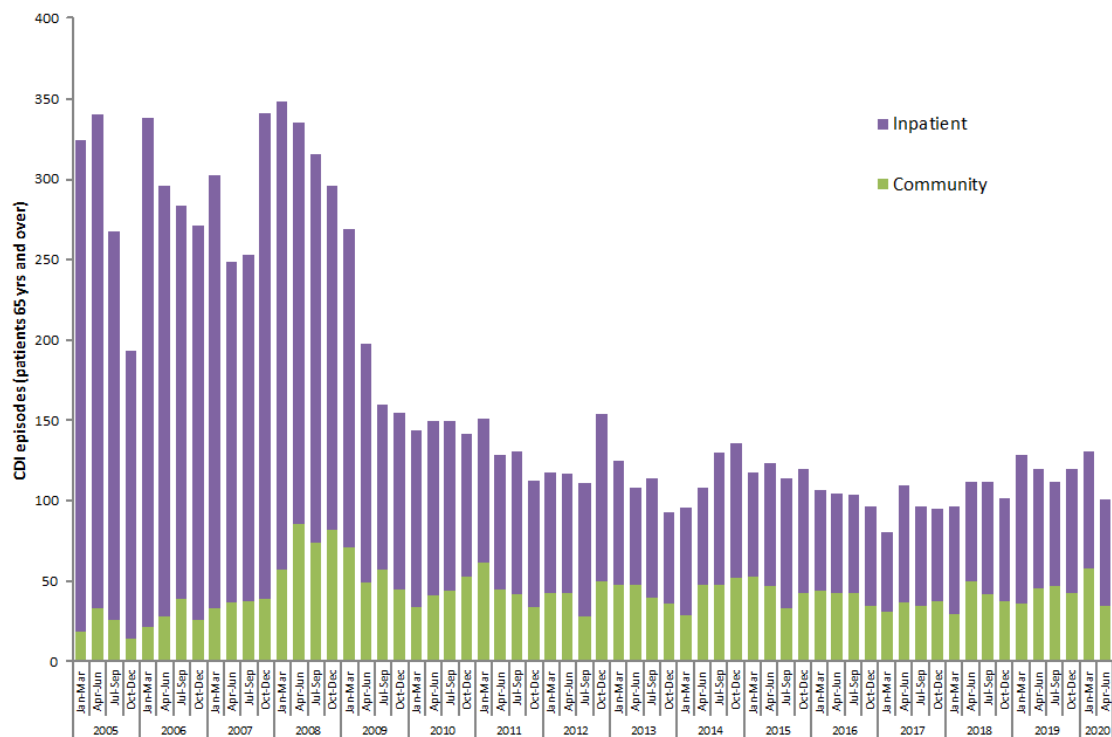


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2020

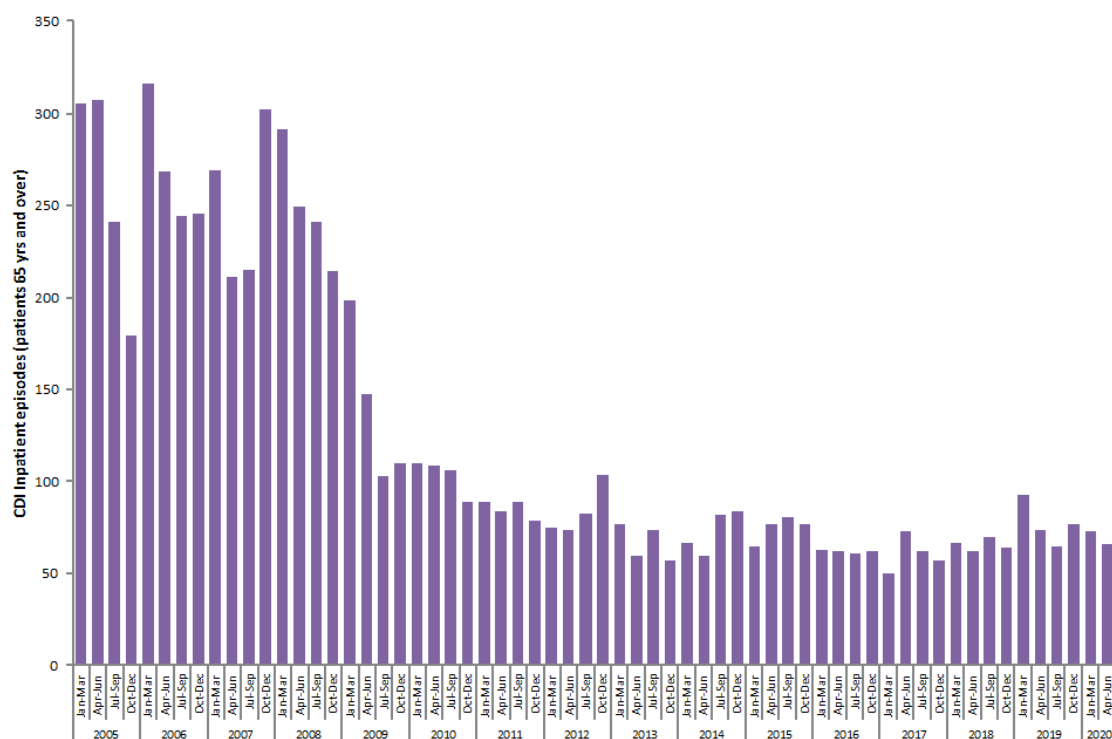


Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2020

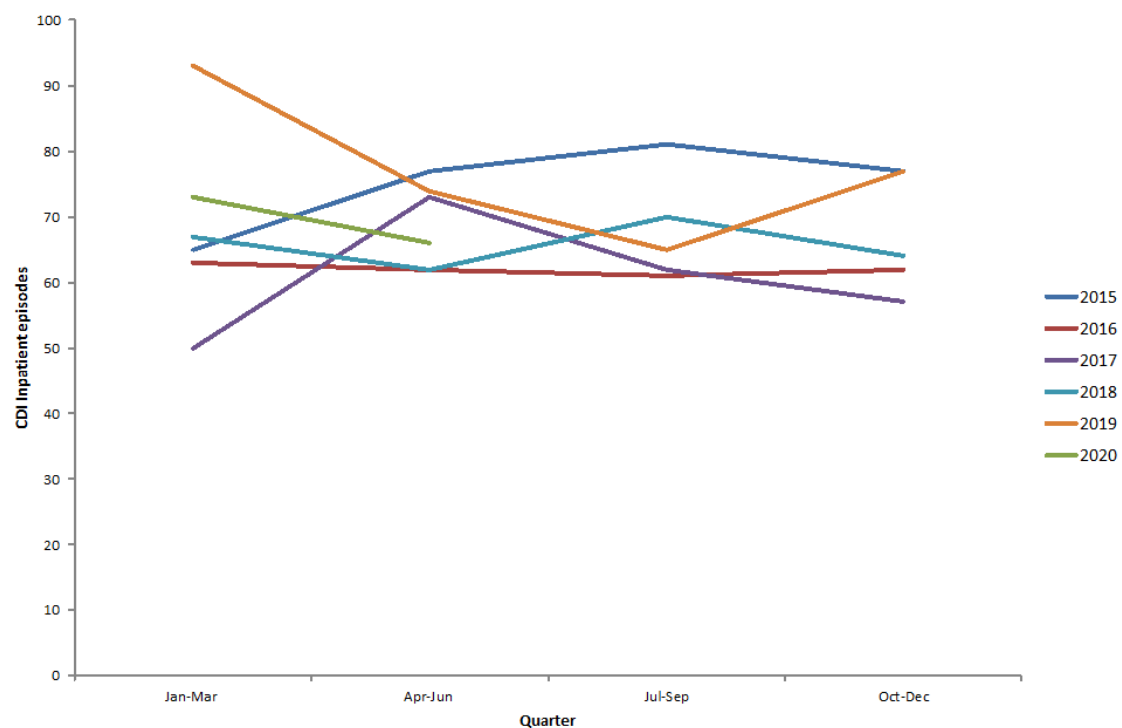


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2015 and 2020

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.

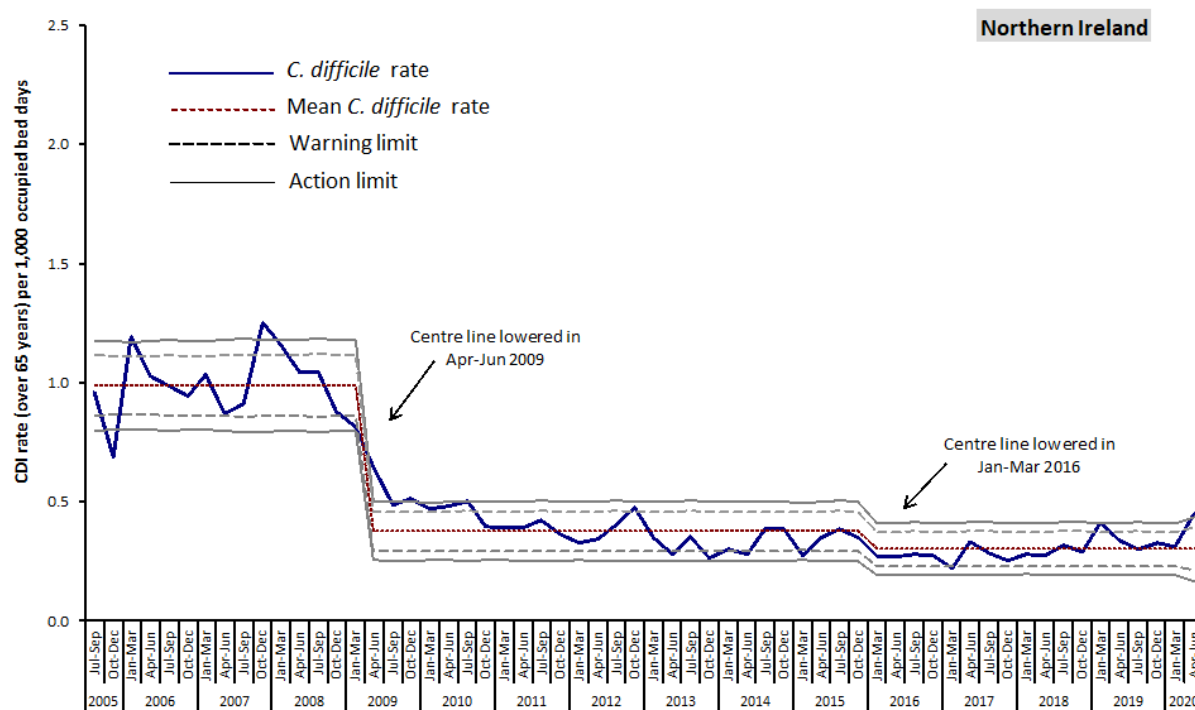


Figure 3: Statistical process control chart for quarterly *C. difficile* rates among inpatients in Northern Ireland aged 65 years and over (for HSCT level, see appendix B)

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, July 2019 – June 2020.

Ribotype	Jul - Sep 2019		Oct - Dec 2019		Jan - Mar 2020		Apr - Jun 2020	
	Number	%	Number	%	Number	%	Number	%
001	2	2.4	1	1.1	1	1.1	0	0.0
002	26	31.3	27	29.0	11	12.6	5	6.5
005	4	4.8	7	7.5	5	5.7	5	6.5
011	1	1.2	0	0.0	1	1.1	1	1.3
014	4	4.8	9	9.7	5	5.7	3	3.9
015	5	6.0	4	4.3	8	9.2	8	10.4
018	0	0.0	0	0.0	1	1.1	0	0.0
020	7	8.4	7	7.5	4	4.6	7	9.1
023	0	0.0	1	1.1	1	1.1	2	2.6
078	9	10.8	14	15.1	16	18.4	7	9.1
193	2	2.4	1	1.1	1	1.1	0	0.0
Other	11	13.3	12	12.9	22	25.3	23	29.9
Not groupable**	6	7.2	2	2.2	3	3.4	3	3.9
Not on ribotype list	5	6.0	5	5.4	4	4.6	11	14.3
Not isolated***	1	1.2	3	3.2	4	4.6	2	2.6
Total	83		93		87		77	

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, July 2019 – June 2020.

Ribotype	Jul - Sep 2019		Oct - Dec 2019		Jan - Mar 2020		Apr - Jun 2020	
	Number	%	Number	%	Number	%	Number	%
001	0	0.0	1	1.9	2	2.9	1	2.4
002	16	30.8	15	28.8	10	14.3	7	16.7
005	5	9.6	4	7.7	2	2.9	1	2.4
011	0	0.0	0	0.0	2	2.9	1	2.4
014	2	3.8	1	1.9	7	10.0	1	2.4
015	2	3.8	4	7.7	5	7.1	2	4.8
018	1	1.9	0	0.0	3	4.3	2	4.8
020	1	1.9	2	3.8	2	2.9	1	2.4
023	2	3.8	2	3.8	0	0.0	1	2.4
078	3	5.8	13	25.0	10	14.3	4	9.5
193	1	1.9	0	0.0	1	1.4	3	7.1
Other	6	11.5	6	11.5	16	22.9	8	19.0
Not groupable**	3	5.8	1	1.9	2	2.9	0	0.0
Not on ribotype list	8	15.4	3	5.8	5	7.1	8	19.0
Not isolated***	2	3.8	0	0.0	3	4.3	2	4.8
Total	52		52		70		42	

* Figures are provisional

** '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, 078 and 015 in Northern Ireland Hospital Inpatients and Community Patients, April – June 2020.

		002 (n =12)		078 (n = 11)		015 (n = 10)	
Age							
	range	4-95		59-95		63-91	
	median	78		88		75	
Sex		n	%	n	%	n	%
	Female	7	58.3	7	63.6	5	50.0
	Male	5	41.7	4	36.4	5	50.0
Trust							
	Belfast	4	33.3	3	27.3	2	20.0
	Northern	4	33.3	3	27.3	1	10.0
	South Eastern	2	16.7	0	0.0	3	30.0
	Southern	2	16.7	1	9.1	1	10.0
	Western	0	0.0	4	36.4	3	30.0
Source							
	Inpatient	5	41.7	7	63.6	8	80.0
	Community*	7	58.3	4	36.4	2	20.0

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

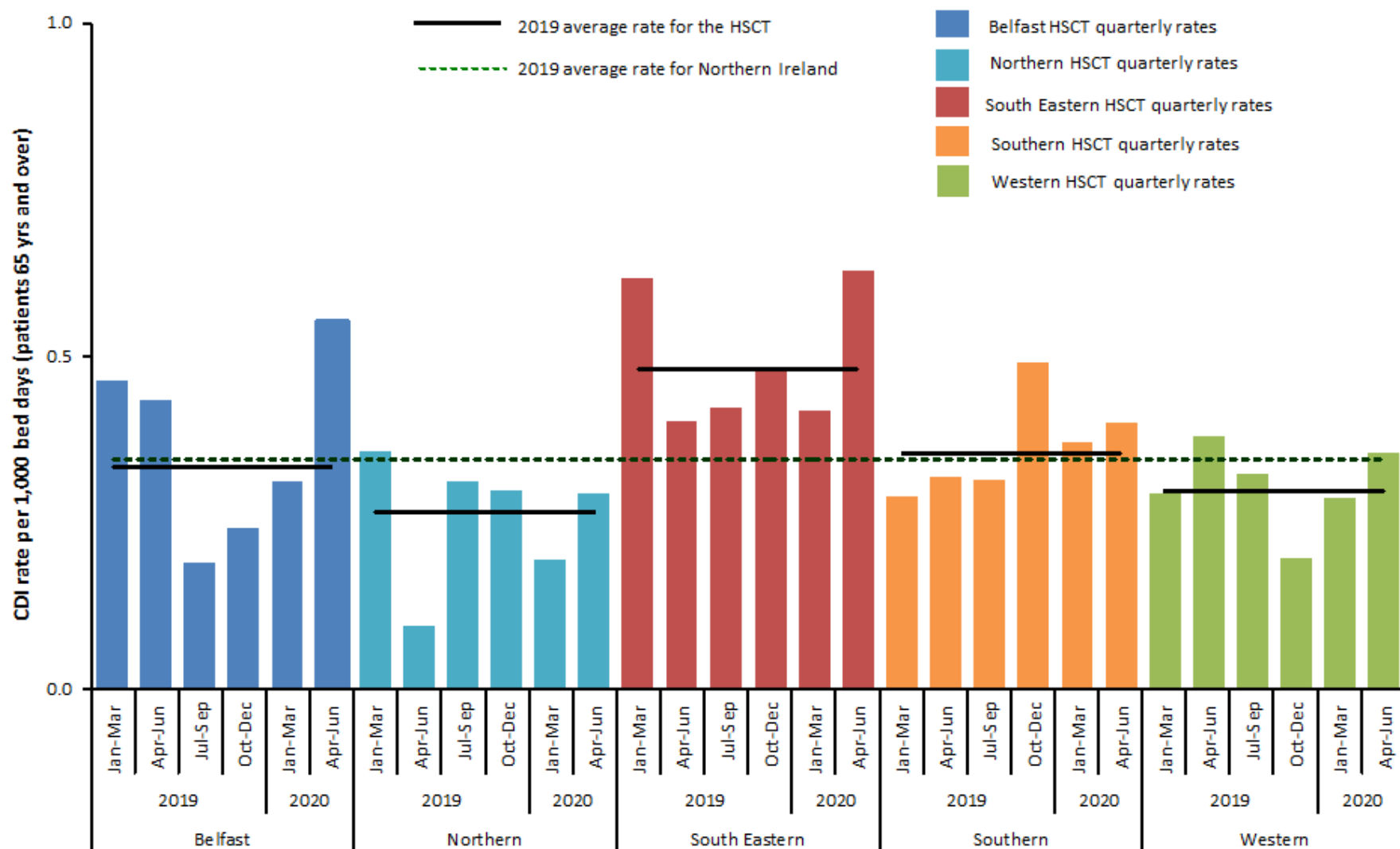


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2019 – June 2020, compared with annual Northern Ireland and HSCT rates for 2019

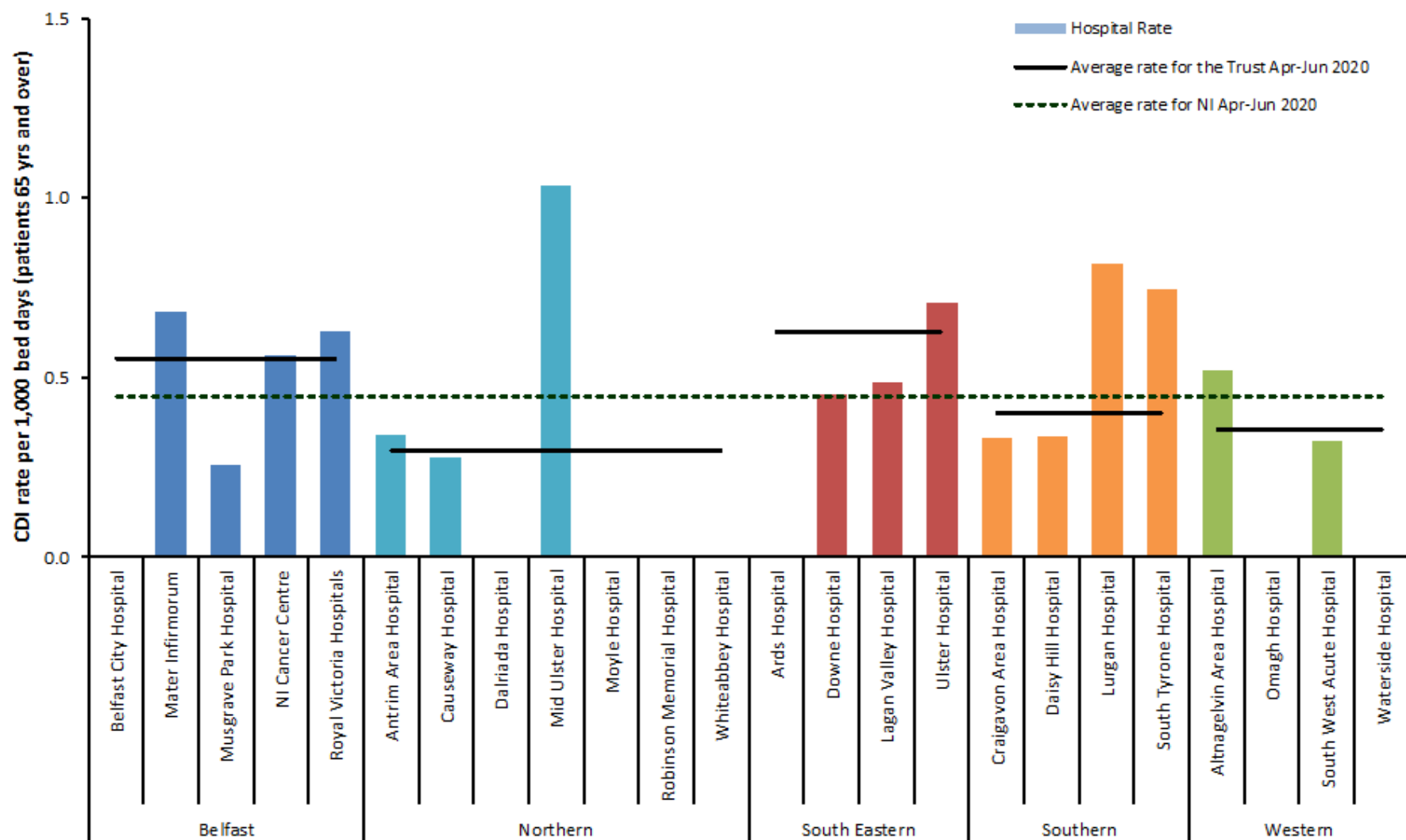


Figure 5: *C. difficile* rates during April – June 2020 - Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)

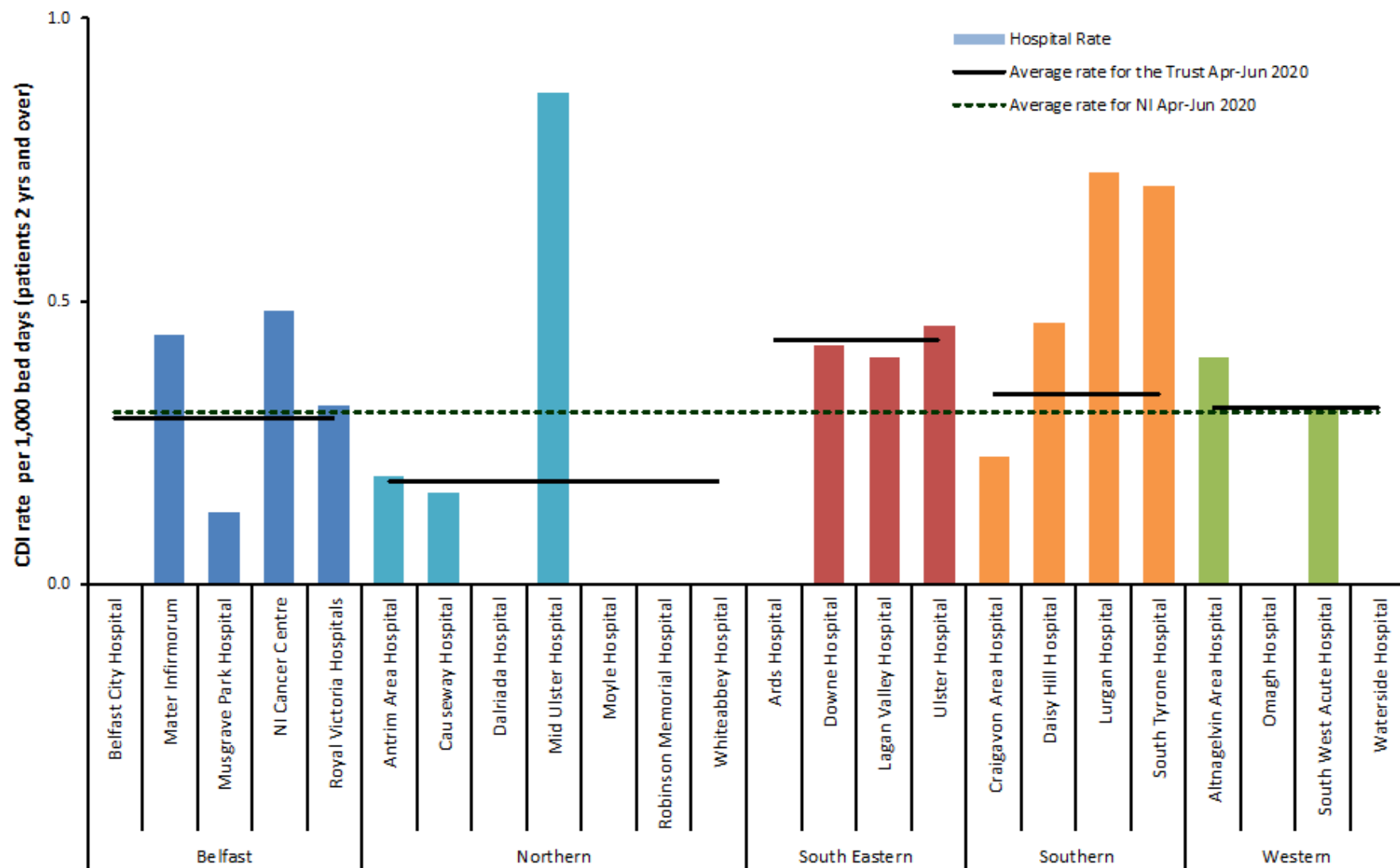


Figure 6: *C. difficile* rates April – June 2020 Inpatients aged two years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 5)

Appendix A

Table 4: Quarterly rates of *C. difficile* reports in patients aged 65 years and over, by hospital, July 2019 – June 2020.

Hospital	Jul - Sep 2019	Oct - Dec 2019	Jan - Mar 2020	Apr - Jun 2020
Belfast City Hospital	0.315	0.057	0.339	0.000
Mater Infirmorum	0.112	0.512	0.714	0.682
Musgrave Park Hospital	0.000	0.240	0.112	0.259
NICCO	0.870	0.000	0.000	0.559
Royal Group of Hospitals	0.139	0.281	0.254	0.628
Belfast Health & Social Care Trust	0.189	0.243	0.312	0.552
Antrim Area Hospital	0.436	0.493	0.194	0.337
Causeway Hospital	0.208	0.098	0.281	0.281
Dalriada Hospital	0.000	0.000	0.000	0.000
Mid Ulster Hospital	0.000	0.000	0.604	1.034
Moyle Hospital	0.000	0.000	0.000	0.000
Robinson Memorial Hospital	0.000	0.000	0.000	0.000
Whiteabbey Hospital	0.322	0.000	0.000	0.000
Northern Health & Social Care Trust	0.313	0.298	0.195	0.294
Ards Hospital	0.000	0.000	0.000	0.000
Downe Hospital	0.000	0.313	0.649	0.450
Lagan Valley Hospital	0.187	0.339	0.000	0.483
Ulster Hospital	0.525	0.542	0.491	0.707
South Eastern Health & Social Care Trust	0.421	0.476	0.416	0.626
Craigavon Area Hospital	0.282	0.645	0.321	0.328
Daisy Hill Hospital	0.506	0.407	0.652	0.334
Lurgan Hospital	0.242	0.234	0.250	0.816
South Tyrone Hospital	0.000	0.000	0.000	0.746
Southern Health & Social Care Trust	0.314	0.489	0.368	0.399
Altnagelvin Area Hospital	0.385	0.346	0.541	0.517
Omagh Hospital	0.346	0.000	0.000	0.000
South West Acute Hospital	0.328	0.074	0.077	0.320
Waterside Hospital	0.000	0.000	0.000	0.000
Western Health & Social Care Trust	0.323	0.197	0.288	0.353
NI TOTAL	0.297	0.327	0.312	0.448

Table 5: Quarterly episodes of *C. difficile* in patients aged 65 years and over, by Trust

Trust	Jul - Sep 2019 Episodes	Oct - Dec 2019 Episodes	Jan - Mar 2020 Episodes	Apr - Jun 2020 Episodes
Belfast Health & Social Care Trust	12	17	22	20
Northern Health & Social Care Trust	13	13	9	9
South Eastern Health & Social Care Trust	16	20	17	17
Southern Health & Social Care Trust	12	19	14	10
Western Health & Social Care Trust	12	8	11	10
NI TOTAL	65	77	73	66
NI community TOTAL	47	43	58	35

Appendix A

Table 6: Quarterly number and rate of *C. difficile* reports in patients aged two years and over, by hospital, July 2019 – June 2020.

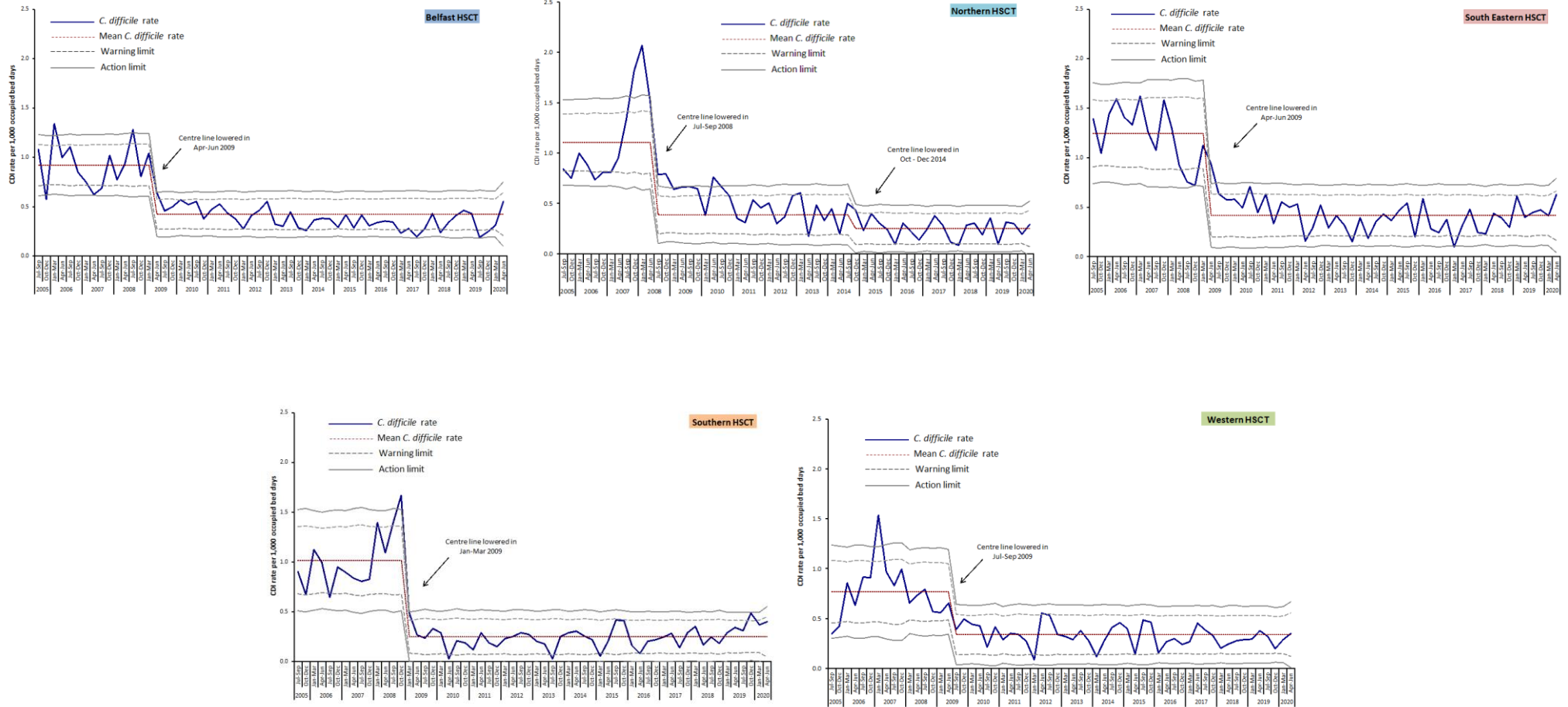
Hospital	Jul - Sep 2019	Oct - Dec 2019	Jan - Mar 2020	Apr - Jun 2020
Belfast City Hospital	0.274	0.075	0.280	0.000
Mater Infirmorum	0.150	0.433	0.589	0.441
Musgrave Park Hospital	0.000	0.134	0.068	0.127
NICCO	0.374	0.000	0.212	0.482
Royal Group of Hospitals	0.134	0.172	0.154	0.314
Belfast Health & Social Care Trust	0.159	0.168	0.215	0.295
Antrim Area Hospital	0.284	0.393	0.153	0.194
Causeway Hospital	0.118	0.055	0.176	0.163
Dalriada Hospital	0.000	0.000	0.000	0.000
Mid Ulster Hospital	0.000	0.000	0.665	0.870
Moyle Hospital	0.000	0.000	0.000	0.000
Robinson Memorial Hospital	0.000	0.000	0.000	0.000
Whiteabbey Hospital	0.264	0.263	0.000	0.000
Northern Health & Social Care Trust	0.212	0.260	0.152	0.181
Ards Hospital	0.000	0.000	0.000	0.000
Downe Hospital	0.000	0.265	0.545	0.421
Lagan Valley Hospital	0.145	0.273	0.000	0.401
Ulster Hospital	0.321	0.346	0.306	0.455
South Eastern Health & Social Care Trust	0.275	0.324	0.278	0.432
Craigavon Area Hospital	0.206	0.410	0.302	0.225
Daisy Hill Hospital	0.304	0.233	0.371	0.462
Lurgan Hospital	0.230	0.220	0.232	0.728
South Tyrone Hospital	0.000	0.000	0.000	0.704
Southern Health & Social Care Trust	0.223	0.328	0.300	0.336
Altnagelvin Area Hospital	0.286	0.274	0.442	0.400
Omagh Hospital	0.305	0.000	0.000	0.000
South West Acute Hospital	0.390	0.053	0.059	0.312
Waterside Hospital	0.000	0.000	0.000	0.000
Western Health & Social Care Trust	0.291	0.171	0.267	0.314
NI TOTAL	0.219	0.237	0.236	0.304

Table 7: Quarterly episodes of *C. difficile* in patients aged two years and over, by Trust

Trust	Jul - Sep 2019 Episodes	Oct - Dec 2019 Episodes	Jan - Mar 2020 Episodes	Apr - Jun 2020 Episodes
Belfast Health & Social Care Trust	20	22	26	23
Northern Health & Social Care Trust	14	18	10	9
South Eastern Health & Social Care Trust	17	21	17	17
Southern Health & Social Care Trust	14	21	18	14
Western Health & Social Care Trust	18	11	16	14
NI TOTAL	83	93	87	77
NI community TOTAL	52	52	70	42

Appendix B

Trends in *C. difficile* rates in inpatients aged 65 years and over, by HSCT and quarter, 2005 – 2020



Appendix C

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

HSCT	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Belfast	280	327	163	147	117	124	90	103	102	90	83	99	81
Northern	297	172	102	103	75	73	56	54	43	39	37	48	39
South Eastern	199	135	98	80	72	50	50	53	70	39	50	68	68
Southern	134	164	37	17	28	33	25	27	40	27	39	32	57
Western	109	104	71	46	35	58	37	53	43	40	50	41	45
Northern Ireland	1019	902	471	393	327	338	258	290	298	235	259	288	290