

C. difficile surveillance

Quarterly report

April - June 2017

Key points

- CDI reports for hospital inpatients aged 65 years and over increased by 46% (from 50 to 73 episodes) during April - June 2017 compared to January – March 2017.
- CDI rate per 1,000 bed days increased by 53% during April - June 2017 compared to January – March 2017.
- CDI reports for community patients aged 65 years and over increased by 19% (from 31 to 37 episodes) during April - June 2017 compared to January – March 2017.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, increased by 28% during April - June 2017 compared to January - March 2017 (from 104 to 133 episodes).
- CDI reports for hospital inpatients aged 65 years and over decreased by 21% between the 2015/16 and 2016/17 financial years.
- During April - June 2017 the most prevalent ribotypes for CDI inpatients are 078 (16%), 014 (10%), 002 (9%) and 023 (9%) (Table 1) and in the community are 015 (17%), 005 (15%) and 002 (12%) (Table 2).

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

Surveillance of *C. difficile* infection (CDI)

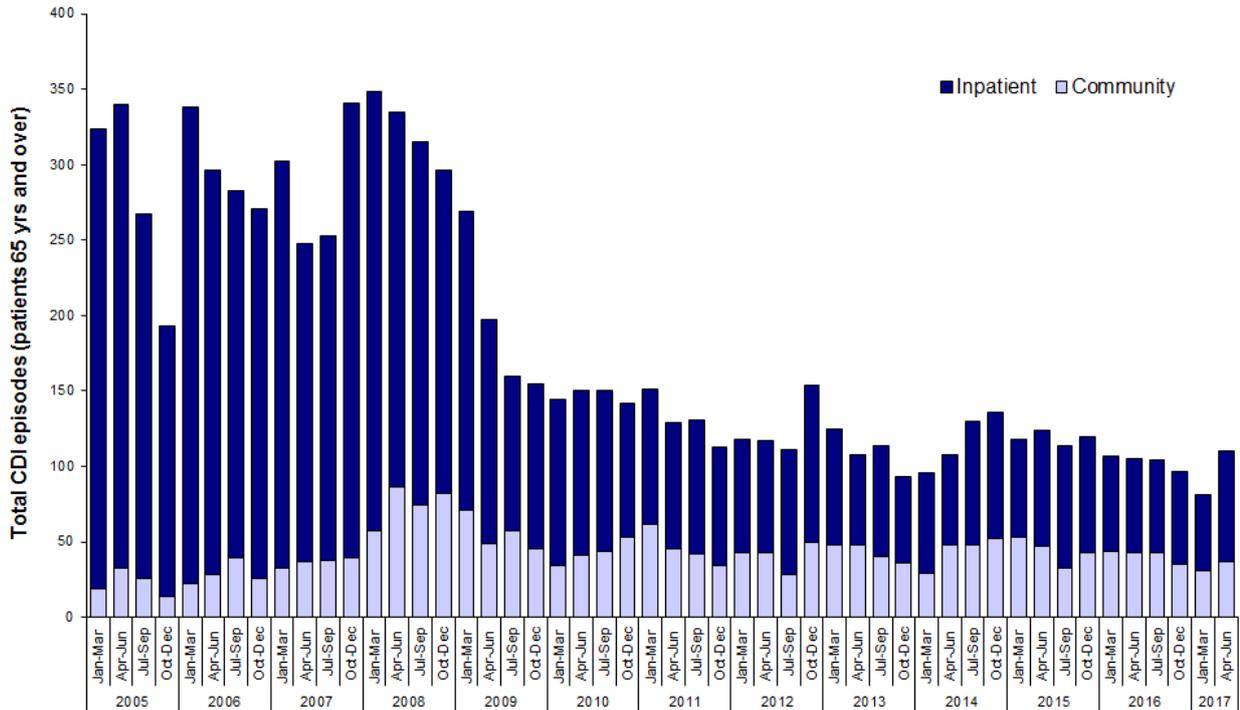


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2017

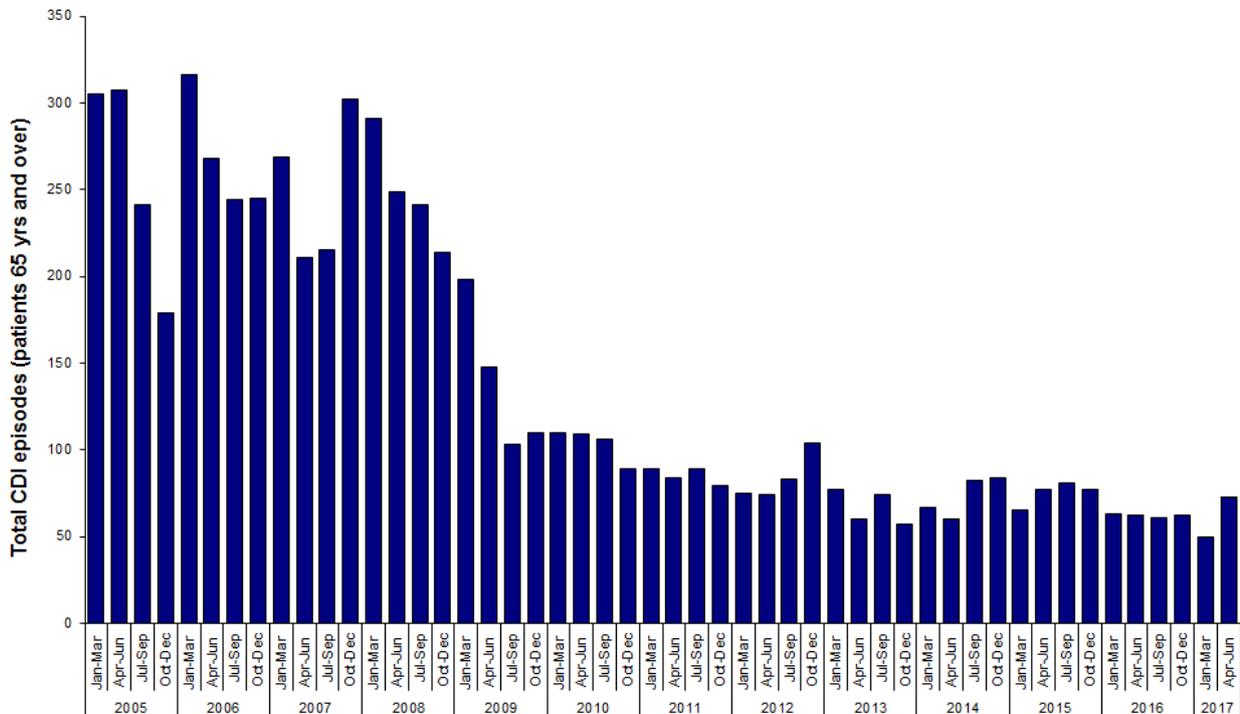


Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2017

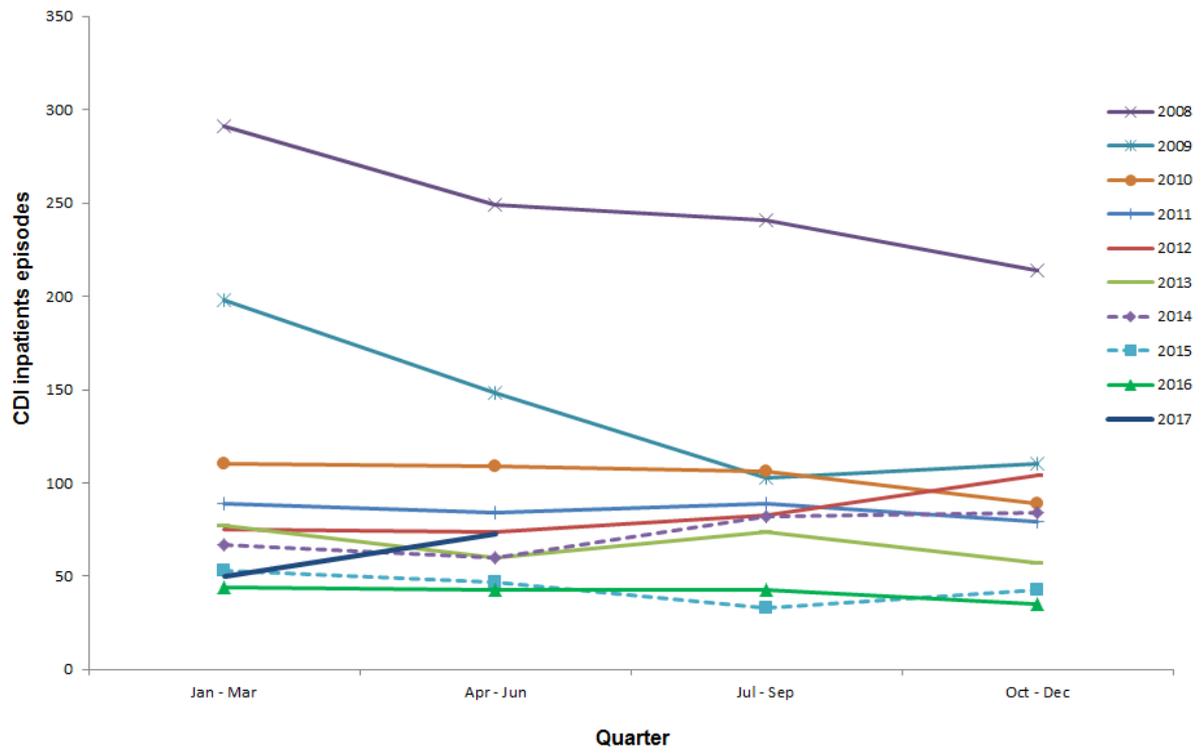


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients \geq 65 years), between 2008 and 2017

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.

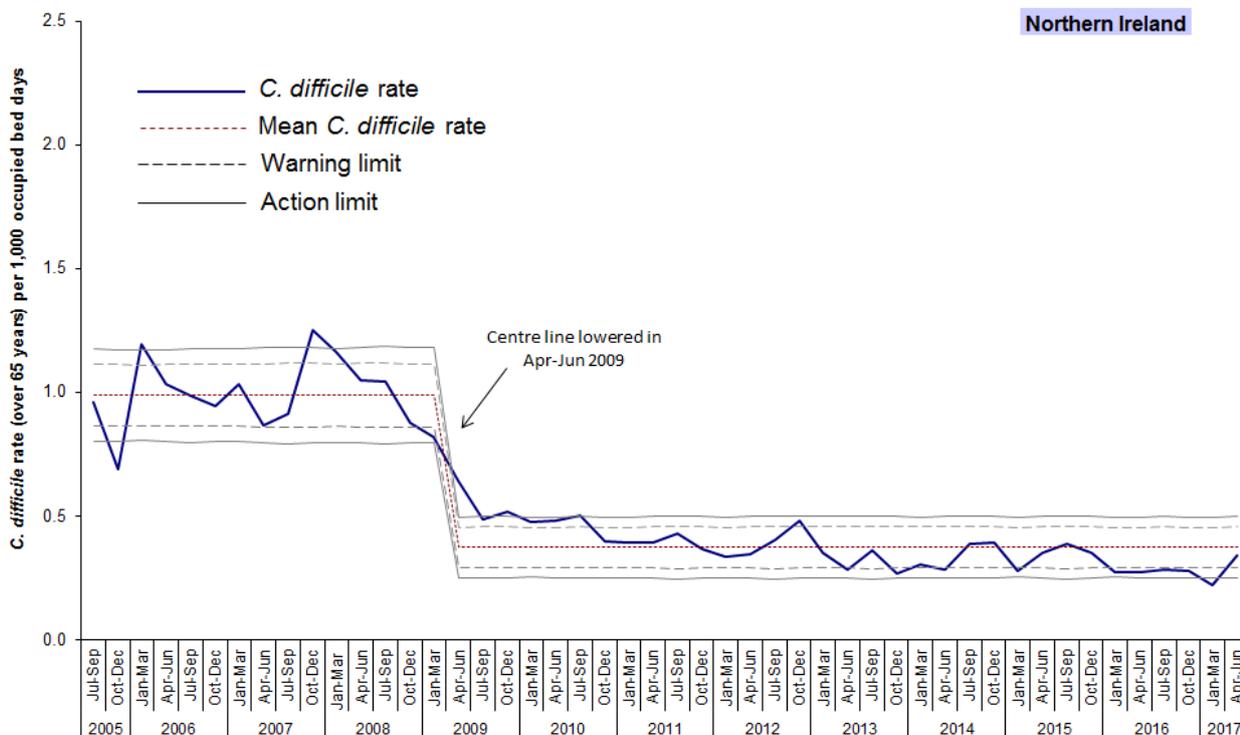


Figure 3: Statistical process control chart for quarterly *C. difficile* rates among inpatients in Northern Ireland aged 65 years and over (for HSCT level, see appendix B)

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 2016 - June 2017.

Ribotype	Jul - Sep 2016		Oct - Dec 2016		Jan - Mar 2017		Apr - Jun 2017	
	Number	%	Number	%	Number	%	Number	%
001	2	2.4	1	1.3	3	4.3	3	3.3
002	8	9.8	13	16.7	10	14.3	8	8.7
005	3	3.7	4	5.1	2	2.9	4	4.3
014	6	7.3	1	1.3	8	11.4	9	9.8
015	9	11.0	2	2.6	4	5.7	7	7.6
017	0	0.0	0	0.0	2	2.9	1	1.1
020	4	4.9	2	2.6	5	7.1	4	4.3
023	3	3.7	5	6.4	2	2.9	8	8.7
027	0	0.0	0	0.0	0	0.0	0	0.0
078	9	11.0	11	14.1	7	10.0	15	16.3
106	4	4.9	2	2.6	2	2.9	1	1.1
193	3	3.7	6	7.7	2	2.9	2	2.2
Other	16	19.5	17	21.8	14	20.0	23	25.0
Not groupable**	7	8.5	9	11.5	3	4.3	4	4.3
Not on ribotype list	4	4.9	1	1.3	3	4.3	1	1.1
Not isolated***	4	4.9	4	5.1	3	4.3	2	2.2
Total	82		78		70		92	

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 2016 - June 2017.

Ribotype	Jul - Sep 2016		Oct - Dec 2016		Jan - Mar 2017		Apr - Jun 2017	
	Number	%	Number	%	Number	%	Number	%
001	0	0.0	1	2.6	0	0.0	0	0.0
002	5	10.6	6	15.8	4	11.8	5	12.2
005	4	8.5	2	5.3	0	0.0	6	14.6
014	4	8.5	4	10.5	2	5.9	3	7.3
015	2	4.3	1	2.6	1	2.9	7	17.1
017	0	0.0	0	0.0	1	2.9	1	2.4
020	0	0.0	1	2.6	0	0.0	2	4.9
023	2	4.3	5	13.2	2	5.9	1	2.4
027	0	0.0	0	0.0	0	0.0	0	0.0
078	3	6.4	5	13.2	7	20.6	4	9.8
106	3	6.4	0	0.0	1	2.9	0	0.0
193	2	4.3	0	0.0	3	8.8	1	2.4
Other	10	21.3	3	7.9	5	14.7	7	17.1
Not groupable**	6	12.8	8	21.1	5	14.7	3	7.3
Not on ribotype list	3	6.4	2	5.3	1	2.9	0	0.0
Not isolated***	3	6.4	0	0.0	2	5.9	1	2.4
Total	47		38		34		41	

* 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 078, 015 and 002 in Northern Ireland Hospital Inpatients and Community Patients, April – June 2017.

		078 (n =19)		015 (n = 14)		002 (n = 13)	
Age							
	range	41 - 91		51 - 94		56 - 92	
	median	78		86		83	
Sex		n	%	n	%	n	%
	Female	12	63.2	8	57.1	8	61.5
	Male	7	36.8	6	42.9	5	38.5
Trust							
	Belfast	5	26.3	1	7.1	1	7.7
	Northern	6	31.6	5	35.7	1	7.7
	South Eastern	2	10.5	4	28.6	2	15.4
	Southern	3	15.8	2	14.3	1	7.7
	Western	3	15.8	2	14.3	8	61.5
Source							
	Inpatient	15	78.9	7	50.0	8	61.5
	Community*	4	21.1	7	50.0	5	38.5

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

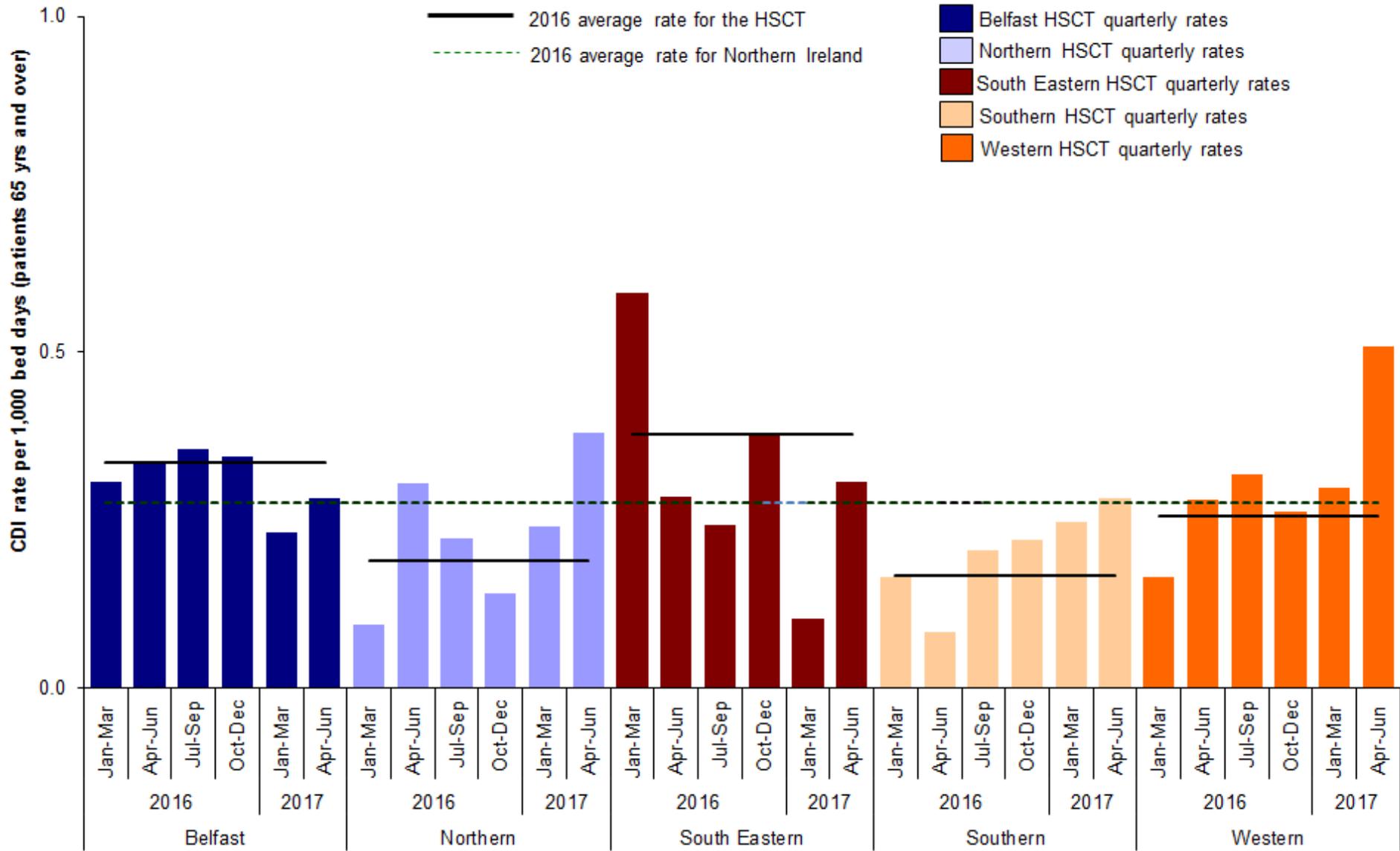


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2016 - June 2017, compared with annual Northern Ireland and HSCT rates for 2016

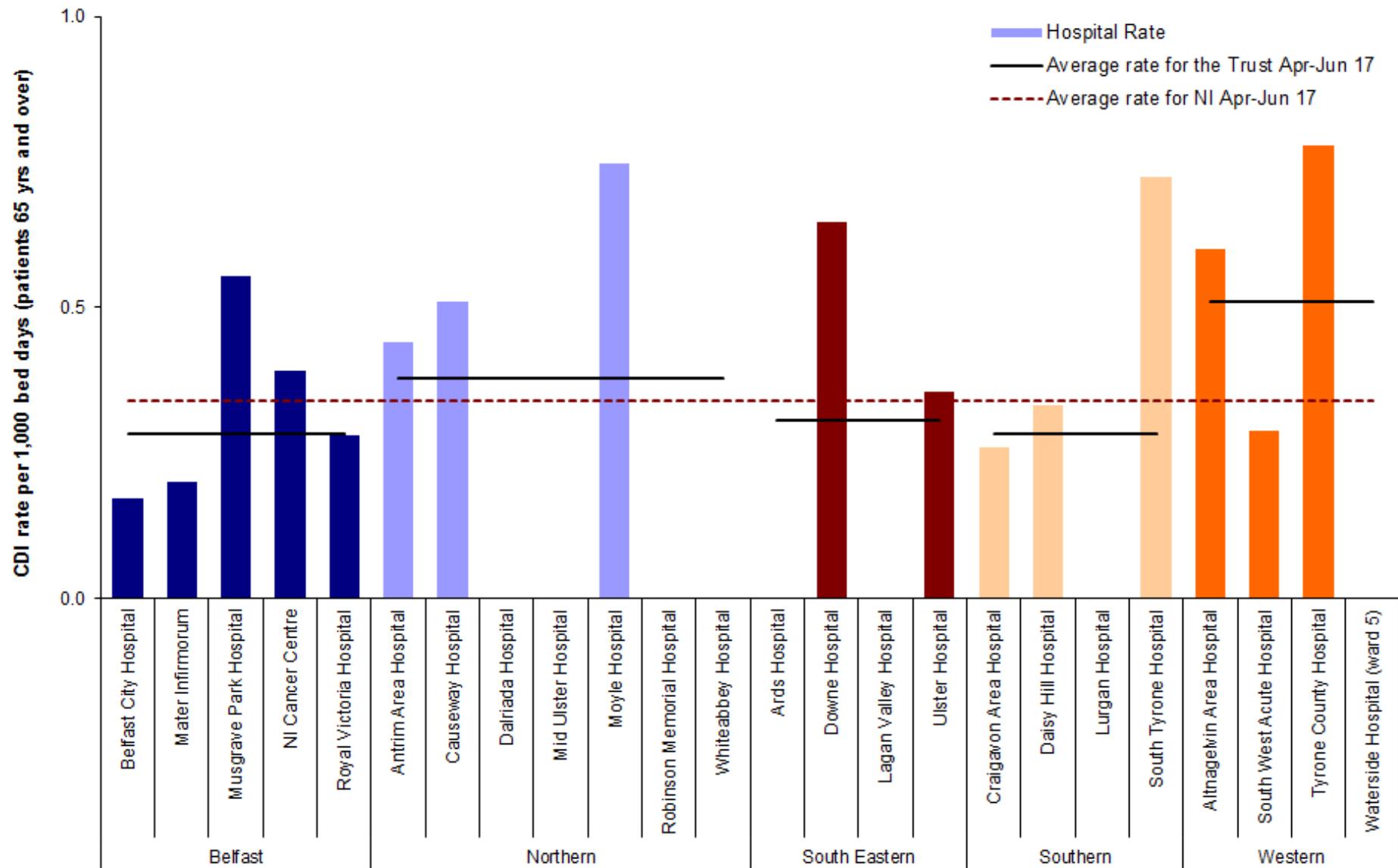


Figure 5: *C. difficile* rates during April - June 2017 - Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)

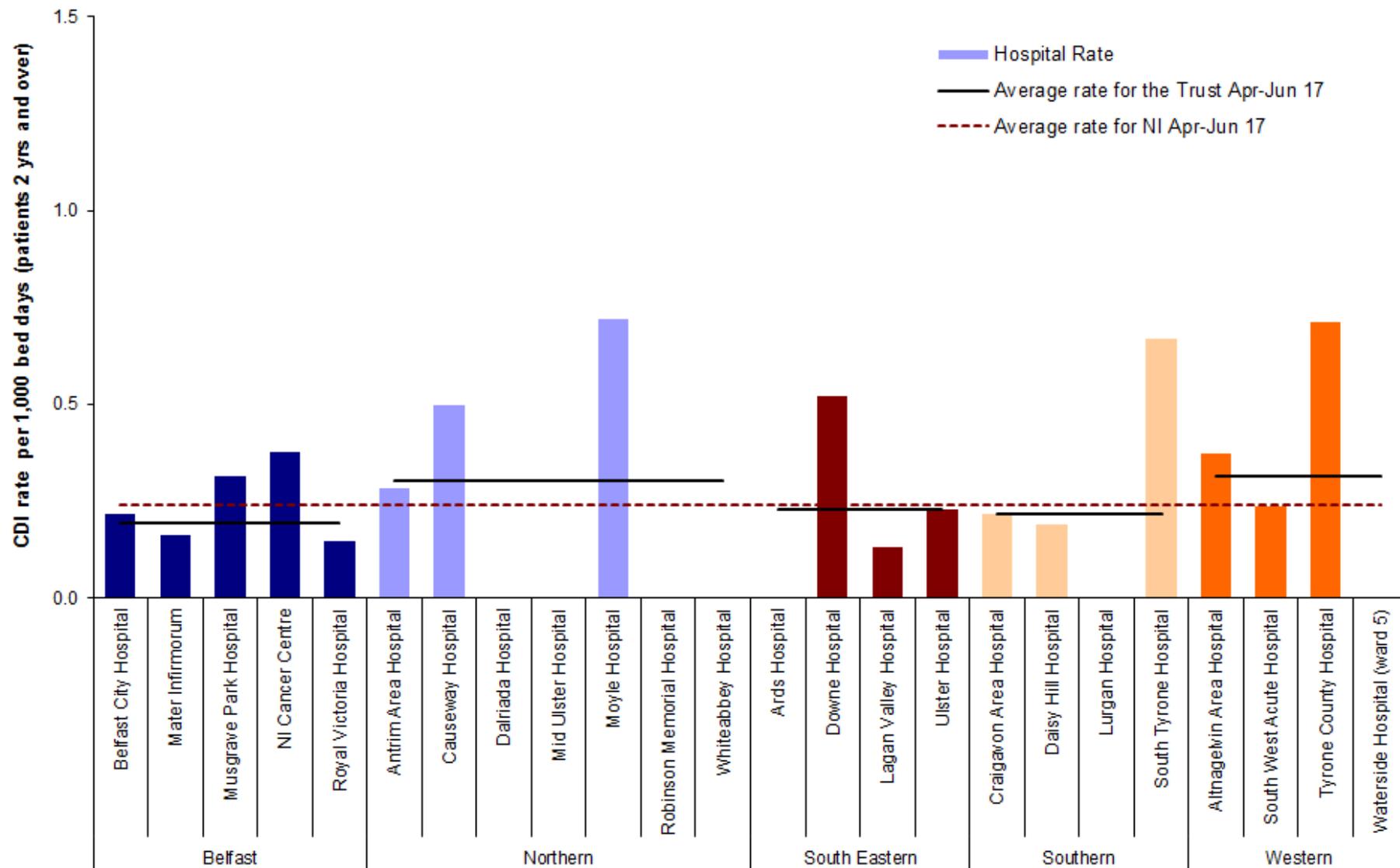


Figure 6: *C. difficile* rates during April - June 2017 - Inpatients aged two years and over, by hospital, including HSCCT rates and average rate for Northern Ireland (see appendix A, Table 6)

Appendix A

Table 4: Quarterly rate of *C. difficile* reports in patients aged 65 years and over, by hospital, July 2016 - June 2017

Hospital	Jul - Sept 2016	Oct - Dec 2016	Jan - Mar 2017	Apr - Jun 2017
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.423	0.351	0.386	0.173
Mater Infirmorum	0.092	0.381	0.097	0.201
Musgrave Park Hospital	0.302	0.200	0.000	0.555
NICCO (formerly at Belvoir Park)	1.006	0.000	0.000	0.392
Royal Group of Hospitals	0.364	0.406	0.270	0.280
Belfast Health & Social Care Trust	0.355	0.344	0.230	0.282
Antrim Area Hospital	0.305	0.208	0.244	0.441
Causeway Hospital	0.113	0.105	0.286	0.511
Dalriada Hospital	0.000	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	0.747
Robinson Memorial Hospital	0.000	0.000	0.000	0.000
Whiteabbey Hospital	0.276	0.000	0.545	0.000
Northern Health & Social Care Trust	0.221	0.139	0.240	0.379
Ards Hospital	0.620	0.000	0.000	0.000
Downe Hospital	0.699	0.320	0.330	0.647
Lagan Valley Hospital	0.346	0.799	0.000	0.000
Ulster Hospital	0.149	0.312	0.105	0.355
South Eastern Health & Social Care Trust	0.243	0.377	0.102	0.307
Craigavon Area Hospital	0.319	0.243	0.286	0.259
Daisy Hill Hospital	0.110	0.219	0.108	0.331
Lurgan Hospital	0.000	0.241	0.263	0.000
South Tyrone Hospital	0.000	0.000	0.388	0.724
Southern Health & Social Care Trust	0.205	0.219	0.246	0.283
Altnagelvin Area Hospital	0.491	0.366	0.212	0.601
South West Acute Hospital	0.172	0.083	0.510	0.288
Tyrone County Hospital	0.000	0.000	0.000	0.778
Waterside Hospital (Wards 1, 2, 3, 5)	0.000	1.610	0.000	0.000
Western Health & Social Care Trust	0.318	0.262	0.299	0.509
NI TOTAL	0.281	0.277	0.222	0.339

Table 5: Quarterly episodes of *C. difficile* reports in patients aged 65 years and over, by Trust, July 2016 - June 2017

Trust	Jul - Sept 2016	Oct - Dec 2016	Jan - Mar 2017	Apr - Jun 2017
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	25	24	16	19
Northern Health & Social Care Trust	9	6	11	16
South Eastern Health & Social Care Trust	9	15	4	12
Southern Health & Social Care Trust	7	8	9	10
Western Health & Social Care Trust	11	9	10	16
NI TOTAL	61	62	50	73
NI community TOTAL	43	35	31	37

Appendix A

Table 6: Quarterly rate of *C. difficile* reports in patients aged two years and over, by hospital, July 2016 - June 2017

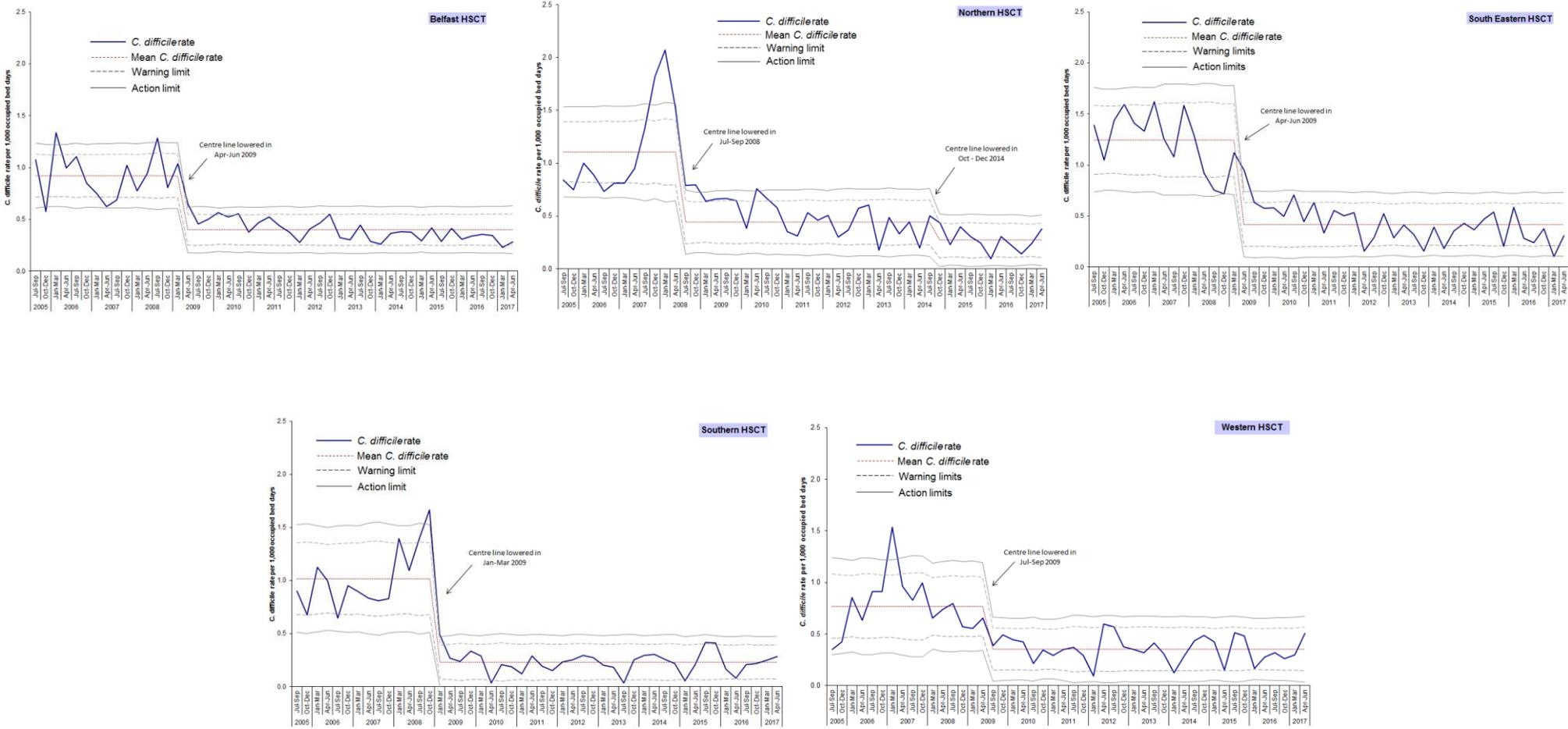
Hospital	Jul - Sept 2016	Oct - Dec 2016	Jan - Mar 2017	Apr - Jun 2017
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.339	0.257	0.254	0.217
Mater Infirmorum	0.077	0.208	0.053	0.161
Musgrave Park Hospital	0.242	0.117	0.000	0.316
NICCO (formerly at Belvoir Park)	0.706	0.191	0.000	0.375
Royal Group of Hospitals	0.243	0.680	0.187	0.147
Belfast Health & Social Care Trust	0.266	0.325	0.153	0.190
Antrim Area Hospital	0.241	0.125	0.196	0.283
Causeway Hospital	0.120	0.121	0.282	0.496
Dalriada Hospital	0.000	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	0.718
Robinson Memorial Hospital	0.000	0.000	0.000	0.000
Whiteabbey Hospital	0.266	0.000	0.520	0.000
Northern Health & Social Care Trust	0.186	0.104	0.214	0.300
Ards Hospital	0.601	0.000	0.000	0.000
Downe Hospital	0.570	0.271	0.258	0.521
Lagan Valley Hospital	0.423	0.660	0.000	0.132
Ulster Hospital	0.148	0.247	0.104	0.227
South Eastern Health & Social Care Trust	0.218	0.293	0.098	0.230
Craigavon Area Hospital	0.220	0.188	0.182	0.216
Daisy Hill Hospital	0.063	0.124	0.126	0.188
Lurgan Hospital	0.000	0.229	0.233	0.000
South Tyrone Hospital	0.000	0.000	0.359	0.670
Southern Health & Social Care Trust	0.153	0.165	0.179	0.220
Altnagelvin Area Hospital	0.312	0.277	0.258	0.372
South West Acute Hospital	0.114	0.107	0.385	0.236
Tyrone County Hospital	0.000	0.000	0.000	0.711
Waterside Hospital (Wards 1, 2, 3, 5)	0.000	0.176	0.171	0.000
Western Health & Social Care Trust	0.212	0.205	0.275	0.310
NI TOTAL	0.218	0.226	0.179	0.240

Table 7: Quarterly episodes of *C. difficile* reports in patients aged 2 years and over, by Trust, July 2016 - June 2017

Trust	Jul - Sept 2016	Oct - Dec 2016	Jan - Mar 2017	Apr - Jun 2017
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	35	30	21	26
Northern Health & Social Care Trust	12	7	15	20
South Eastern Health & Social Care Trust	13	18	6	14
Southern Health & Social Care Trust	9	10	11	13
Western Health & Social Care Trust	13	13	17	19
NI TOTAL	82	78	70	92
NI community TOTAL	47	38	34	41

Appendix B

Trends in *C. difficile* rates in inpatients aged 65 years and over, by HSCT and quarter, 2005–2017



Appendix C

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

HSCT	Financial Year											
	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Belfast	352	336	280	327	163	147	117	124	90	103	102	90
Northern	184	172	297	172	102	103	75	73	56	54	43	39
South Eastern	243	256	199	135	98	80	72	50	50	53	70	39
Southern	168	130	134	164	37	17	28	33	25	27	40	27
Western	96	132	109	104	71	46	35	58	37	53	43	40
Northern Ireland	1043	1026	1019	902	471	393	327	338	258	290	298	235