

C. difficile surveillance

Quarterly report

July - September 2017

Key points

- CDI reports for hospital inpatients aged 65 years and over decreased by 15% (from 73 to 62 episodes) during July - September 2017 compared to April - June 2017.
- CDI rate per 1,000 bed days decreased by 14% during July - September 2017 compared to April - June 2017.
- CDI reports for community patients aged 65 years and over decreased by 5% (from 37 to 35 episodes) during July - September 2017 compared to April - June 2017.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, decreased by 8% during July - September 2017 compared to April - June 2017 (from 133 to 122 episodes).
- CDI reports for hospital inpatients aged 65 years and over decreased by 21% between the 2015/16 and 2016/17 financial years.
- During July - September 2017 the most prevalent ribotypes for CDI inpatients are 002 (14%), 015 (12%) and 078 (11%) (Table 1) and in the community are 078 (15%) and 002 (13%) (Table 2).

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

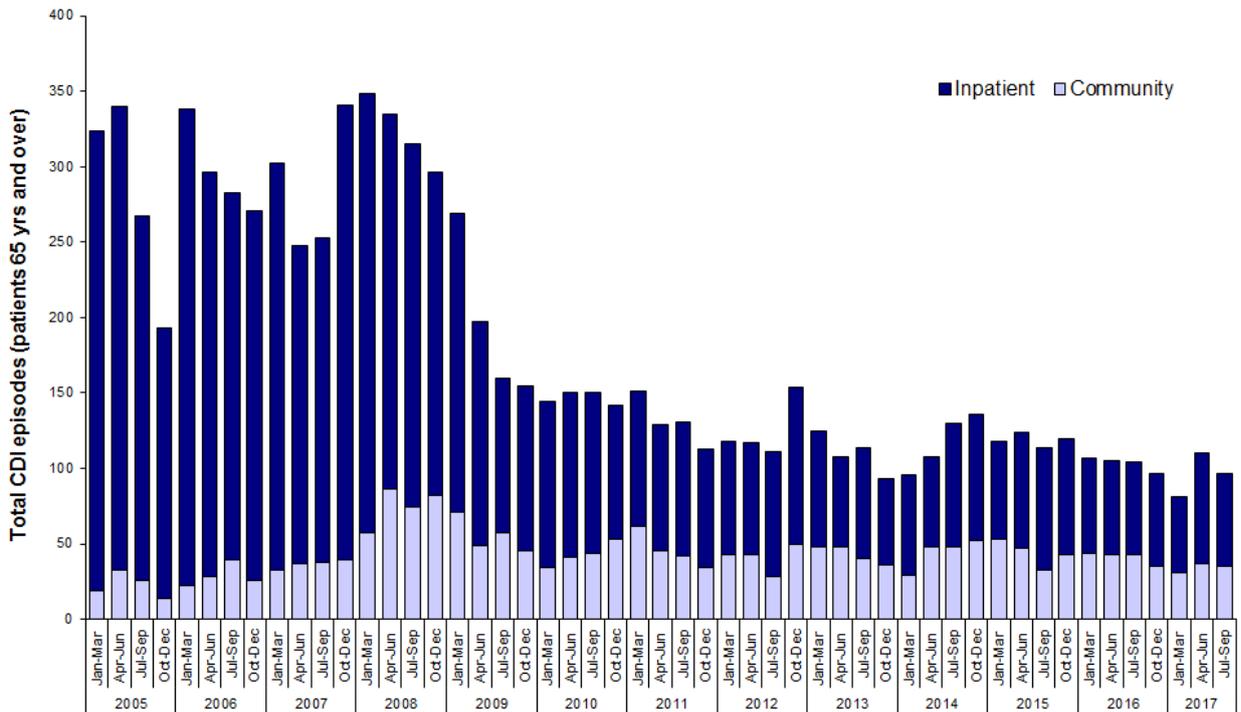


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2017

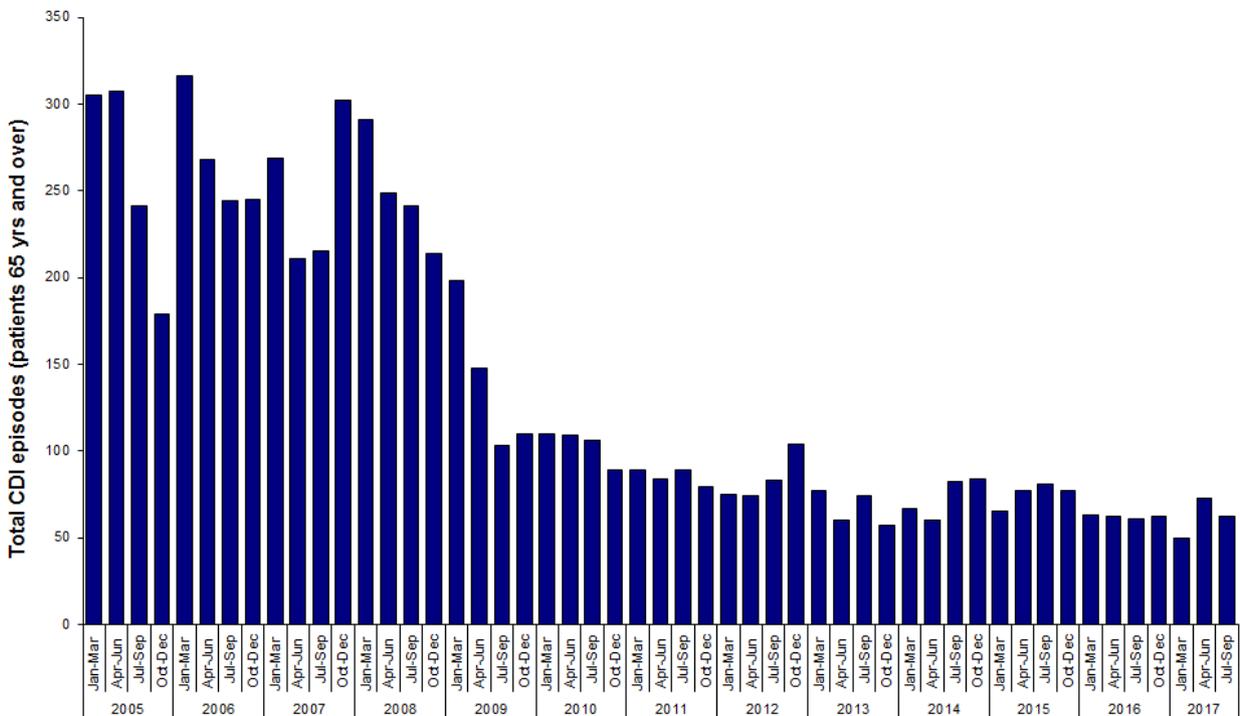


Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2017

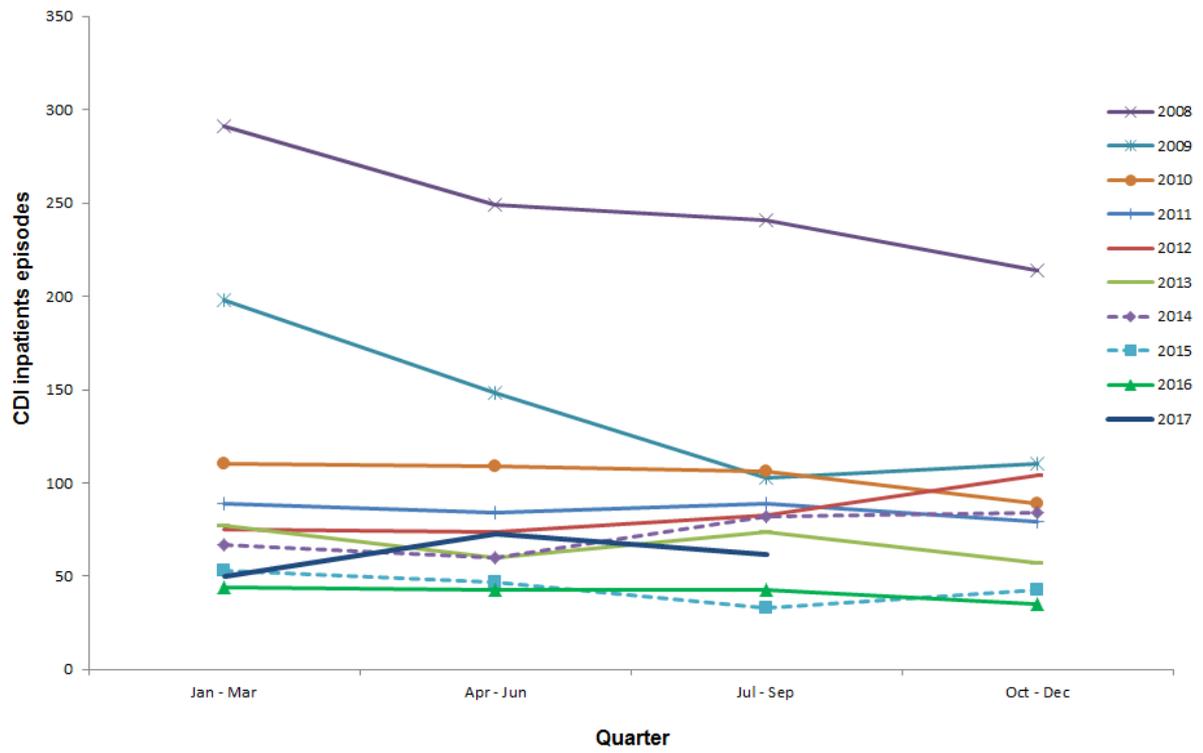


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients \geq 65 years), between 2008 and 2017

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.

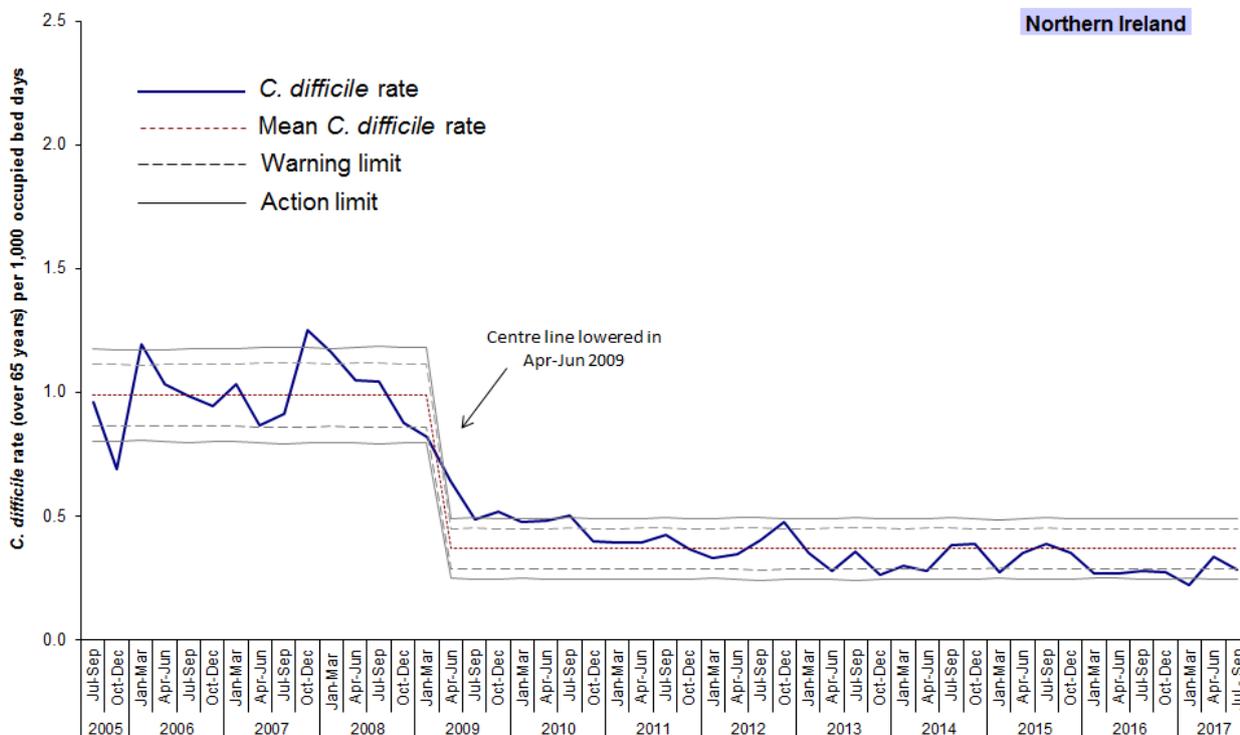


Figure 3: Statistical process control chart for quarterly *C. difficile* rates among inpatients in Northern Ireland aged 65 years and over (for HSCT level, see appendix B)

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, October 2016 - September 2017.

Ribotype	Oct - Dec 2016		Jan - Mar 2017		Apr - Jun 2017		Jul - Sep 2017	
	Number	%	Number	%	Number	%	Number	%
001	1	1.3	3	4.3	3	3.3	4	4.8
002	13	16.7	10	14.3	8	8.7	12	14.5
005	4	5.1	2	2.9	4	4.3	5	6.0
014	1	1.3	8	11.4	9	9.8	7	8.4
015	2	2.6	4	5.7	7	7.6	10	12.0
017	0	0.0	2	2.9	1	1.1	0	0.0
020	2	2.6	5	7.1	4	4.3	3	3.6
023	5	6.4	2	2.9	8	8.7	3	3.6
027	0	0.0	0	0.0	0	0.0	0	0.0
078	11	14.1	7	10.0	15	16.3	9	10.8
106	2	2.6	2	2.9	1	1.1	0	0.0
193	6	7.7	2	2.9	2	2.2	7	8.4
Other	17	21.8	14	20.0	23	25.0	18	21.7
Not groupable**	9	11.5	3	4.3	4	4.3	2	2.4
Not on ribotype list	1	1.3	3	4.3	1	1.1	1	1.2
Not isolated***	4	5.1	3	4.3	2	2.2	2	2.4
Total	78		70		92		83	

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, October 2016 - September 2017.

Ribotype	Oct - Dec 2016		Jan - Mar 2017		Apr - Jun 2017		Jul - Sep 2017	
	Number	%	Number	%	Number	%	Number	%
001	1	2.6	0	0.0	0	0.0	2	5.1
002	6	15.8	4	11.8	5	12.2	5	12.8
005	2	5.3	0	0.0	6	14.6	0	0.0
014	4	10.5	2	5.9	3	7.3	4	10.3
015	1	2.6	1	2.9	7	17.1	3	7.7
017	0	0.0	1	2.9	1	2.4	0	0.0
020	1	2.6	0	0.0	2	4.9	1	2.6
023	5	13.2	2	5.9	1	2.4	0	0.0
027	0	0.0	0	0.0	0	0.0	0	0.0
078	5	13.2	7	20.6	4	9.8	6	15.4
106	0	0.0	1	2.9	0	0.0	2	5.1
193	0	0.0	3	8.8	1	2.4	4	10.3
Other	3	7.9	5	14.7	7	17.1	8	20.5
Not groupable**	8	21.1	5	14.7	3	7.3	2	5.1
Not on ribotype list	2	5.3	1	2.9	0	0.0	1	2.6
Not isolated***	0	0.0	2	5.9	1	2.4	1	2.6
Total	38		34		41		39	

* 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, July – September 2017.

		002 (n = 17)		078 (n = 15)		015 (n = 13)	
Age							
	range	16 - 96		41 - 90		70 - 90	
	median	80		81		78	
Sex							
		n	%	n	%	n	%
	Female	10	58.8	5	33.3	5	38.5
	Male	7	41.2	10	66.7	8	61.5
Trust							
	Belfast	5	29.4	2	13.3	2	15.4
	Northern	3	17.6	5	33.3	4	30.8
	South Eastern	4	23.5	4	26.7	4	30.8
	Southern	1	5.9	3	20.0	1	7.7
	Western	4	23.5	1	6.7	2	15.4
Source							
	Inpatient	12	70.6	9	60.0	10	76.9
	Community*	5	29.4	6	40.0	3	23.1

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

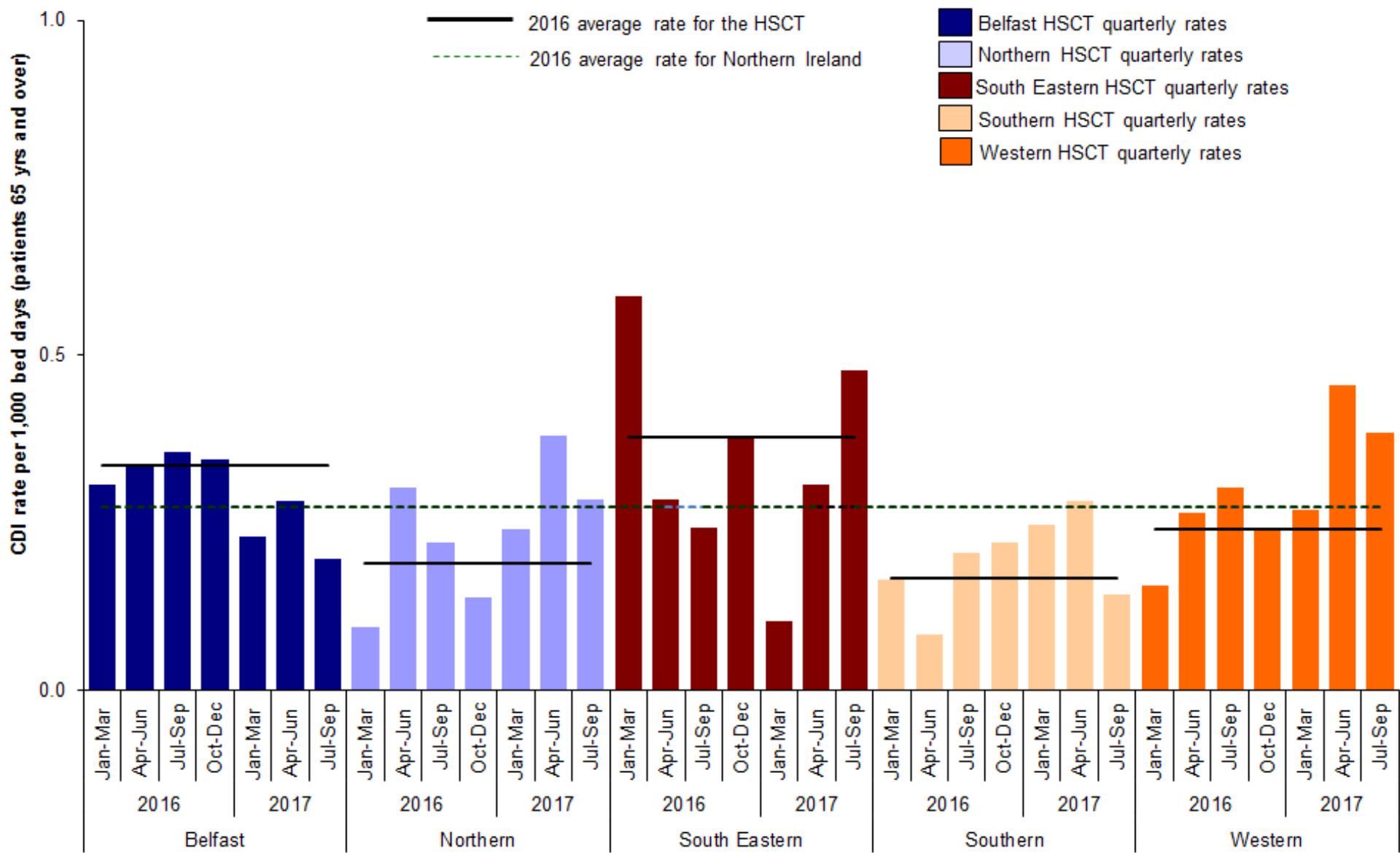


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2016 - September 2017, compared with annual Northern Ireland and HSCT rates for 2016

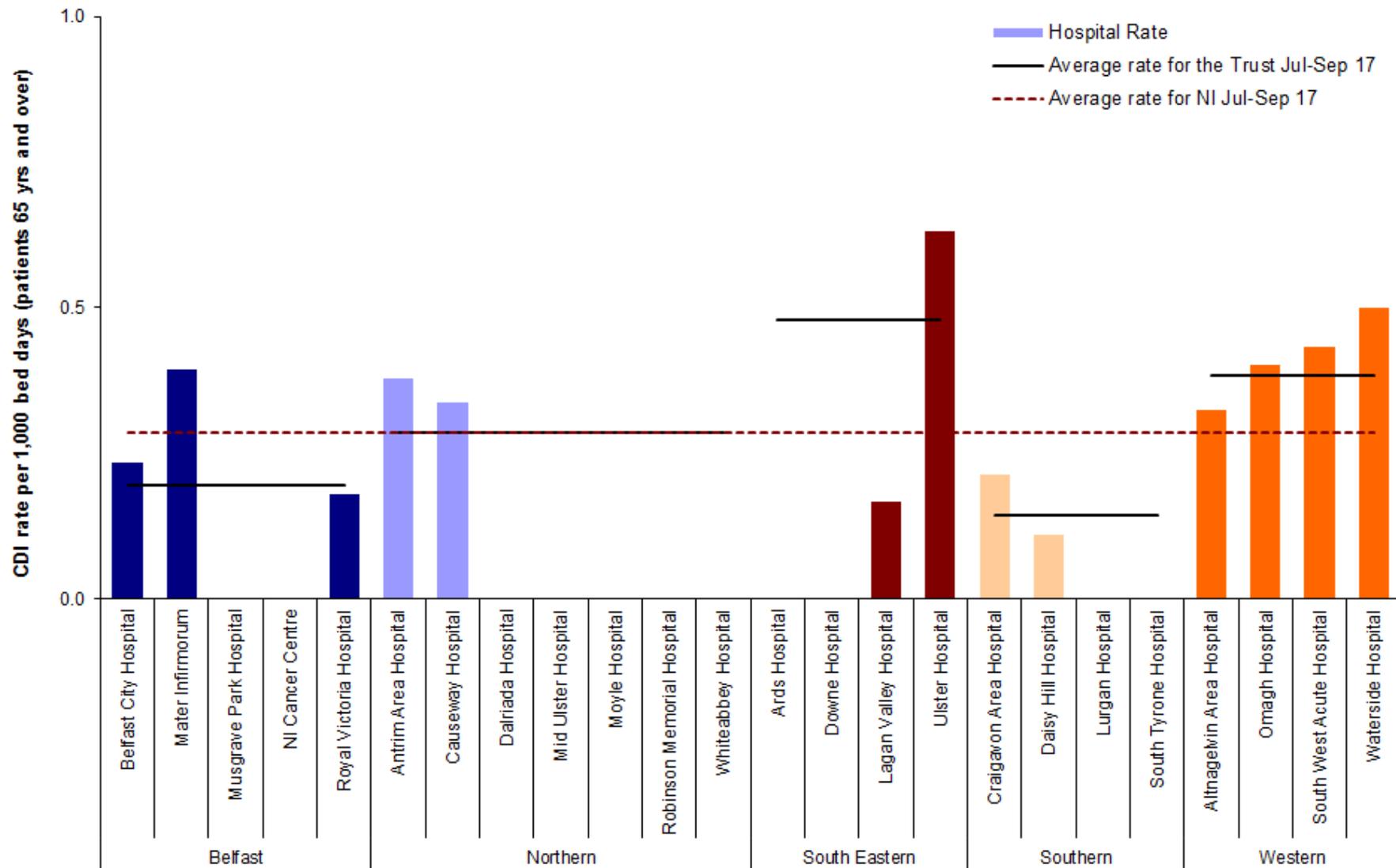


Figure 5: *C. difficile* rates during July - September 2017 - Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)

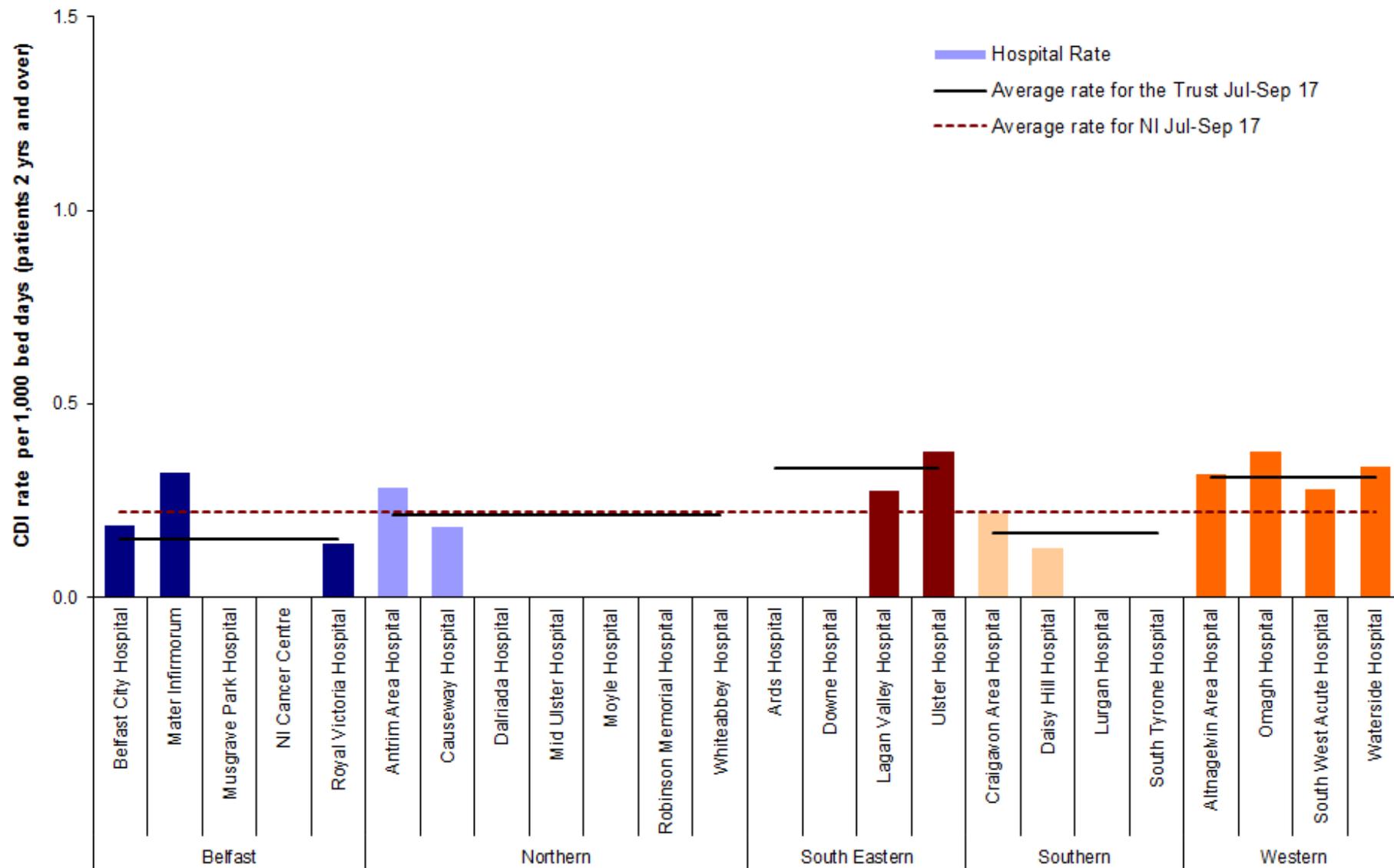


Figure 6: *C. difficile* rates during July - September 2017 - Inpatients aged two years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 5)

Appendix A

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

Hospital	Oct - Dec 2016	Jan - Mar 2017	Apr - Jun 2017	Jul - Sep 2017
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.351	0.386	0.173	0.234
Mater Infirmorum	0.381	0.097	0.201	0.394
Musgrave Park Hospital	0.200	0.000	0.555	0.000
NICCO (formerly at Belvoir Park)	0.000	0.000	0.392	0.000
Royal Group of Hospitals	0.406	0.270	0.280	0.181
Belfast Health & Social Care Trust	0.344	0.230	0.282	0.196
Antrim Area Hospital	0.208	0.244	0.441	0.380
Causeway Hospital	0.105	0.286	0.511	0.338
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	0.747	0.000
Robinson Memorial Hospital	0.000	0.000	0.000	0.000
Whiteabbey Hospital	0.000	0.545	0.000	0.000
Northern Health & Social Care Trust	0.139	0.240	0.379	0.284
Ards Hospital	0.000	0.000	0.000	0.000
Downe Hospital	0.320	0.330	0.647	0.000
Lagan Valley Hospital	0.799	0.000	0.000	0.166
Ulster Hospital	0.312	0.105	0.355	0.630
South Eastern Health & Social Care Trust	0.377	0.102	0.307	0.478
Craigavon Area Hospital	0.243	0.286	0.259	0.212
Daisy Hill Hospital	0.219	0.108	0.331	0.110
Lurgan Hospital	0.241	0.263	0.000	0.000
South Tyrone Hospital	0.000	0.388	0.724	0.000
Southern Health & Social Care Trust	0.219	0.246	0.283	0.143
Altnagelvin Area Hospital	0.366	0.212	0.601	0.324
South West Acute Hospital	0.083	0.510	0.288	0.433
Tyrone County / Omagh Hospital	0.000	0.000	0.778	0.401
Waterside Hospital	0.263	0.000	0.000	0.498
Western Health & Social Care Trust	0.240	0.269	0.456	0.383
NI TOTAL	0.273	0.219	0.333	0.285

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

Trust	Oct - Dec 2016	Jan - Mar 2017	Apr - Jun 2017	Jul - Sep 2017
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	24	16	19	13
Northern Health & Social Care Trust	6	11	16	12
South Eastern Health & Social Care Trust	15	4	12	18
Southern Health & Social Care Trust	8	9	10	5
Western Health & Social Care Trust	9	10	16	14
NI TOTAL	62	50	73	62
NI community TOTAL	35	31	37	35

Appendix A

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

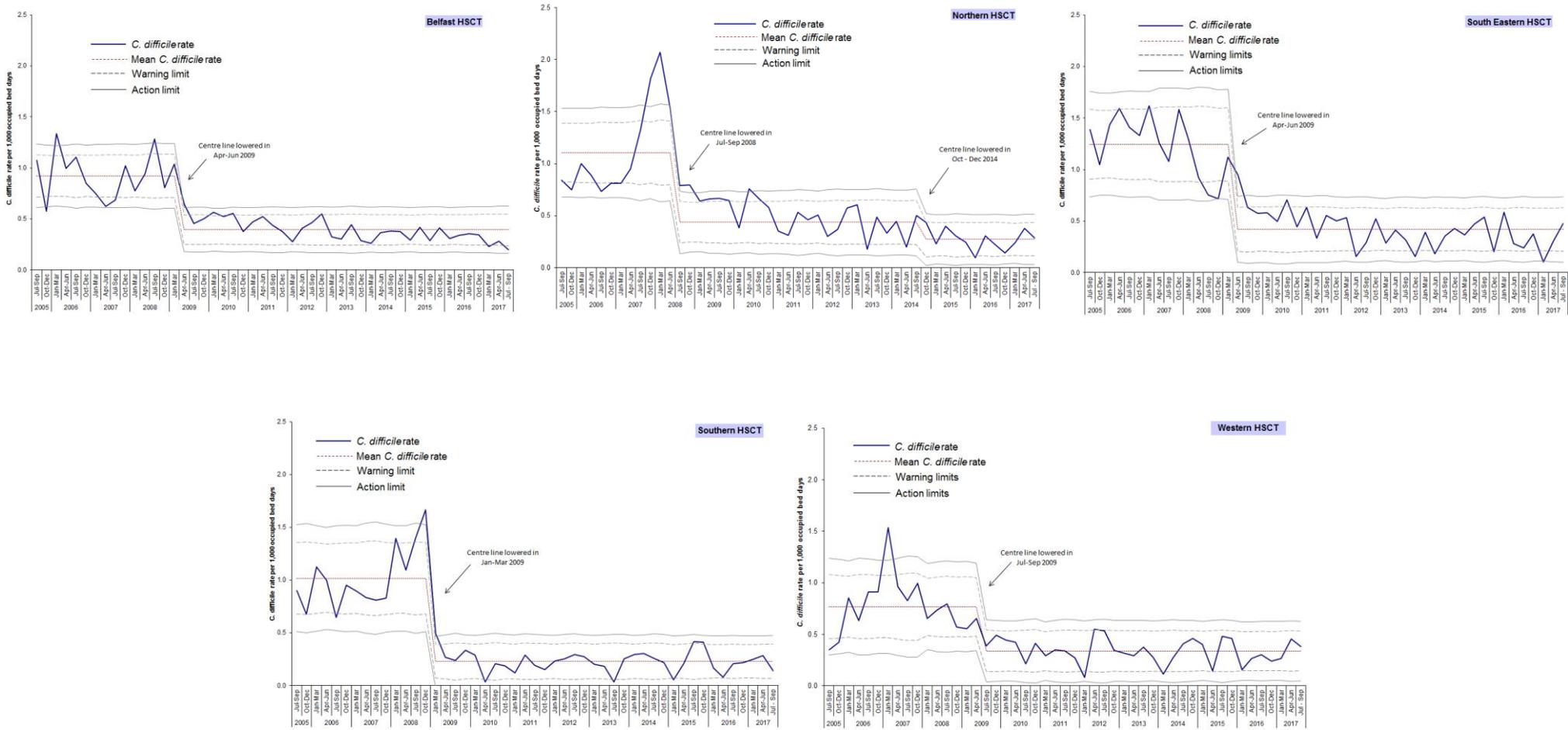
Hospital	Oct - Dec 2016	Jan - Mar 2017	Apr - Jun 2017	Jul - Sep 2017
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.257	0.254	0.217	0.187
Mater Infirmorum	0.208	0.053	0.161	0.324
Musgrave Park Hospital	0.117	0.000	0.316	0.000
NICCO (formerly at Belvoir Park)	0.191	0.000	0.375	0.000
Royal Group of Hospitals	0.680	0.187	0.147	0.137
Belfast Health & Social Care Trust	0.325	0.153	0.192	0.152
Antrim Area Hospital	0.125	0.196	0.283	0.283
Causeway Hospital	0.121	0.282	0.496	0.183
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	0.718	0.000
Robinson Memorial Hospital	0.000	0.000	0.000	0.000
Whiteabbey Hospital	0.000	0.520	0.000	0.000
Northern Health & Social Care Trust	0.104	0.214	0.303	0.212
Ards Hospital	0.000	0.000	0.000	0.000
Downe Hospital	0.271	0.258	0.521	0.000
Lagan Valley Hospital	0.660	0.000	0.132	0.277
Ulster Hospital	0.247	0.104	0.227	0.377
South Eastern Health & Social Care Trust	0.293	0.098	0.227	0.332
Craigavon Area Hospital	0.188	0.182	0.216	0.217
Daisy Hill Hospital	0.124	0.126	0.188	0.126
Lurgan Hospital	0.229	0.233	0.000	0.000
South Tyrone Hospital	0.000	0.359	0.670	0.000
Southern Health & Social Care Trust	0.165	0.179	0.215	0.166
Altnagelvin Area Hospital	0.277	0.258	0.372	0.318
South West Acute Hospital	0.107	0.385	0.236	0.280
Tyrone County / Omagh Hospital	0.000	0.000	0.711	0.376
Waterside Hospital	0.176	0.171	0.000	0.338
Western Health & Social Care Trust	0.205	0.275	0.314	0.311
NI TOTAL	0.226	0.179	0.240	0.219

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

Trust	Oct - Dec 2016	Jan - Mar 2017	Apr - Jun 2017	Jul - Sep 2017
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	30	21	26	20
Northern Health & Social Care Trust	7	15	20	14
South Eastern Health & Social Care Trust	18	6	14	20
Southern Health & Social Care Trust	10	11	13	10
Western Health & Social Care Trust	13	17	19	19
NI TOTAL	78	70	92	83
NI community TOTAL	38	34	41	39

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