

C. difficile surveillance

Quarterly report

January - March 2017

Key points

- CDI reports for hospital inpatients aged 65 years and over decreased by 19% (from 62 to 50 episodes) during January - March 2017 compared to October - December 2016.
- CDI rate per 1,000 bed days decreased by 20% during January - March 2017 compared to October - December 2016.
- CDI reports for community patients aged 65 years and over decreased by 11% (from 35 to 31 episodes) during January - March 2017 compared to October - December 2016.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, decreased by 10% during January - March 2017 compared to October - December 2016 (from 116 to 104 episodes).
- CDI reports for hospital inpatients aged 65 years and over decreased by 21% between the 2015/16 and 2016/17 financial years.
- During January - March 2017 the most prevalent ribotypes for CDI inpatients are 002 (14%), 014 (11%), and 078 (10%) (Table 1) and in the community are 078 (21%), 002 (12%) and 193 (9%) (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)

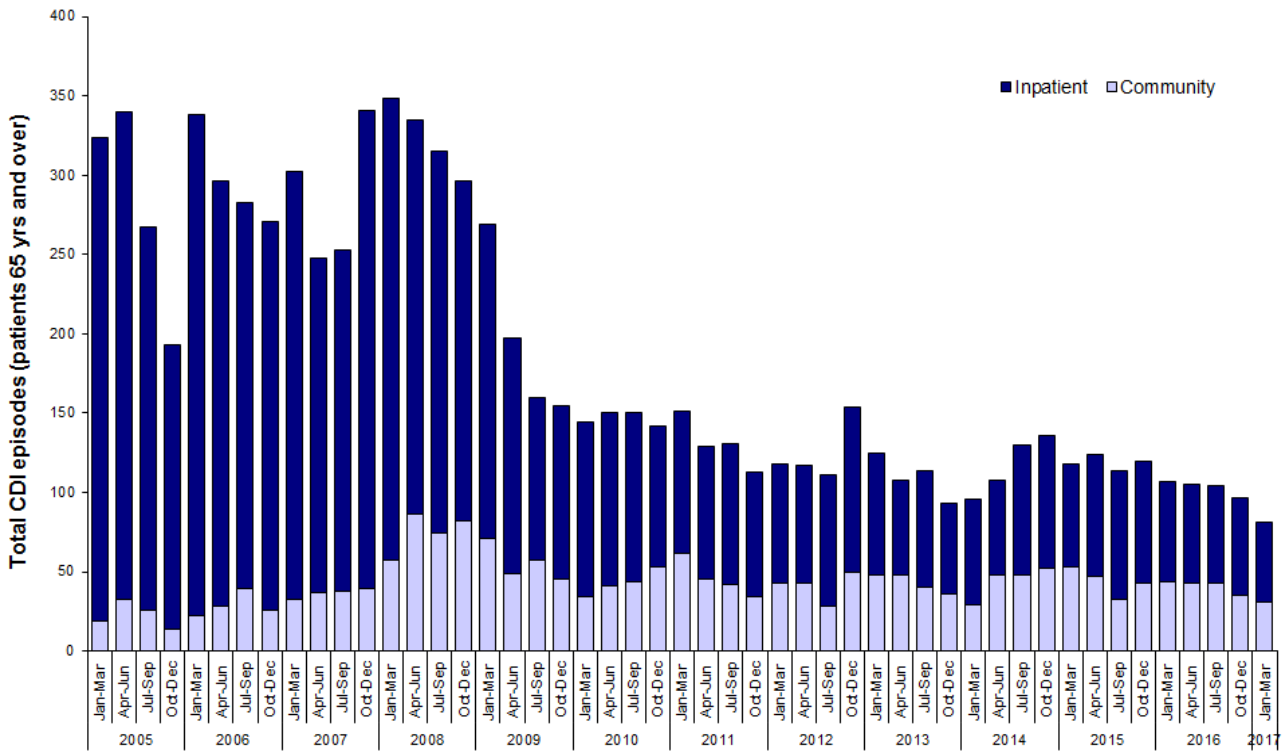


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2017

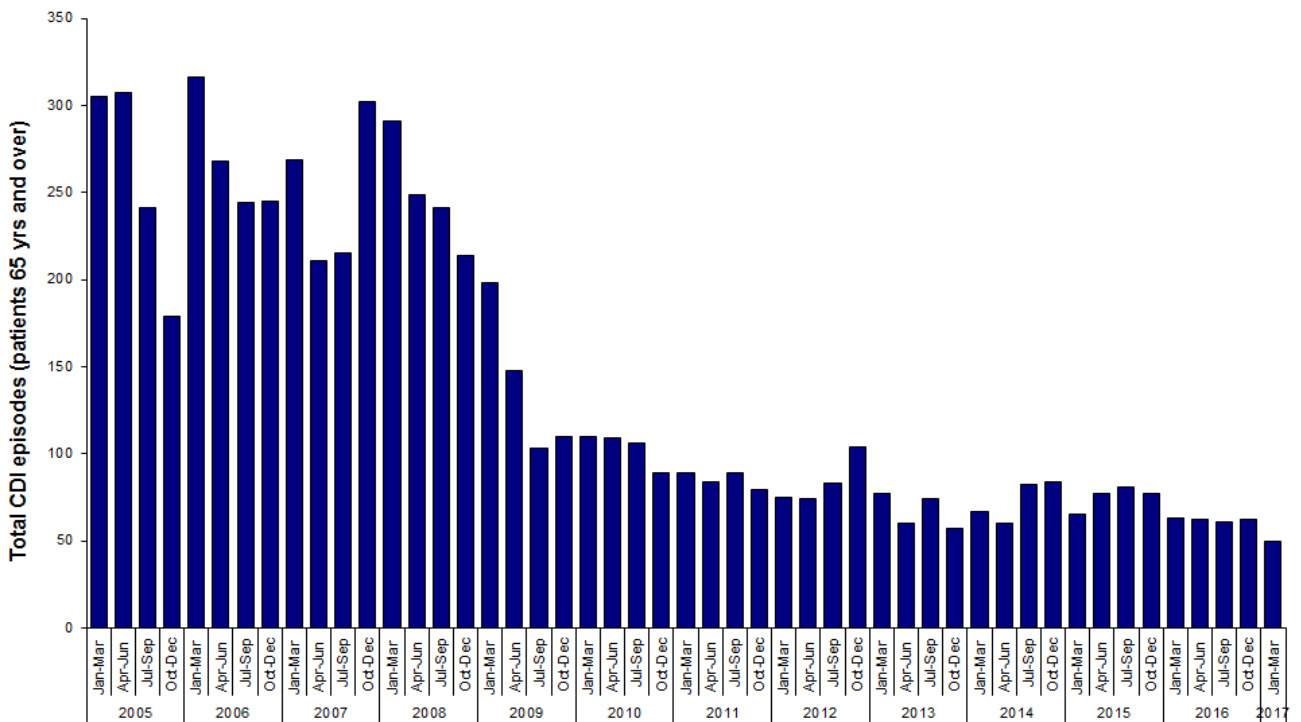


Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2017

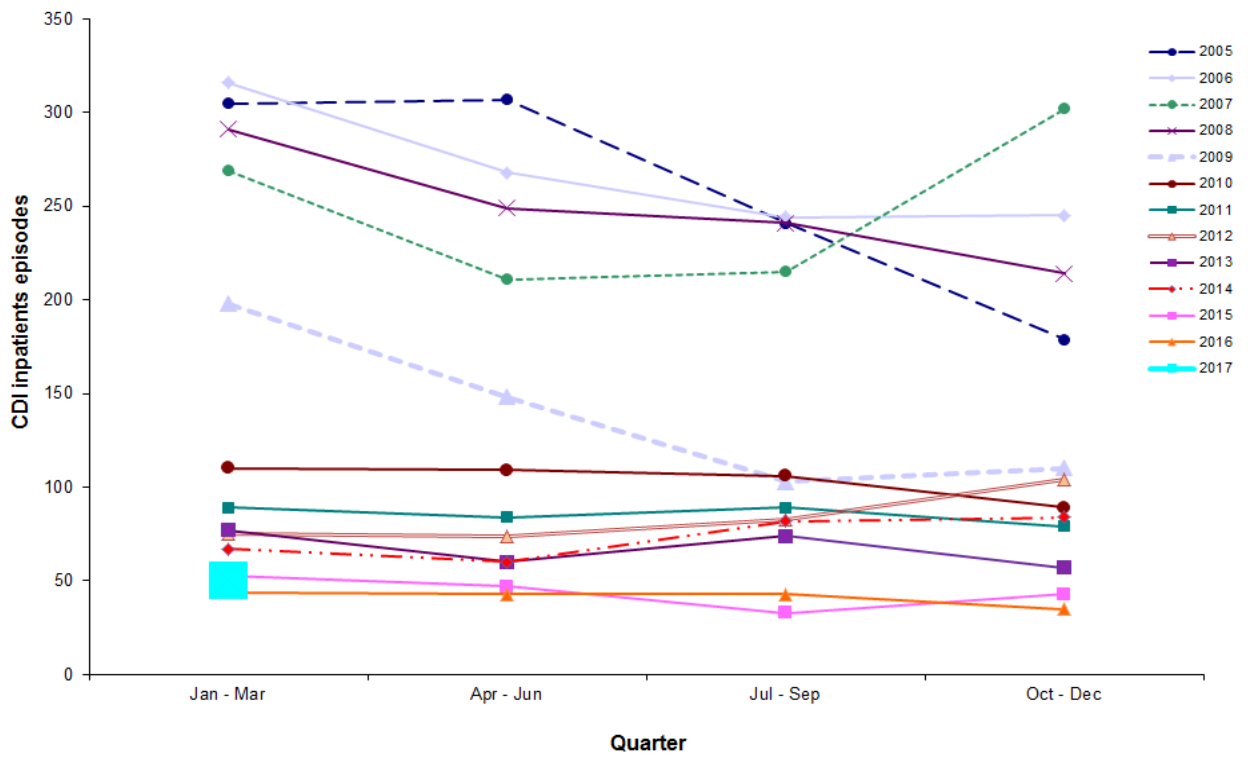


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2017

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.

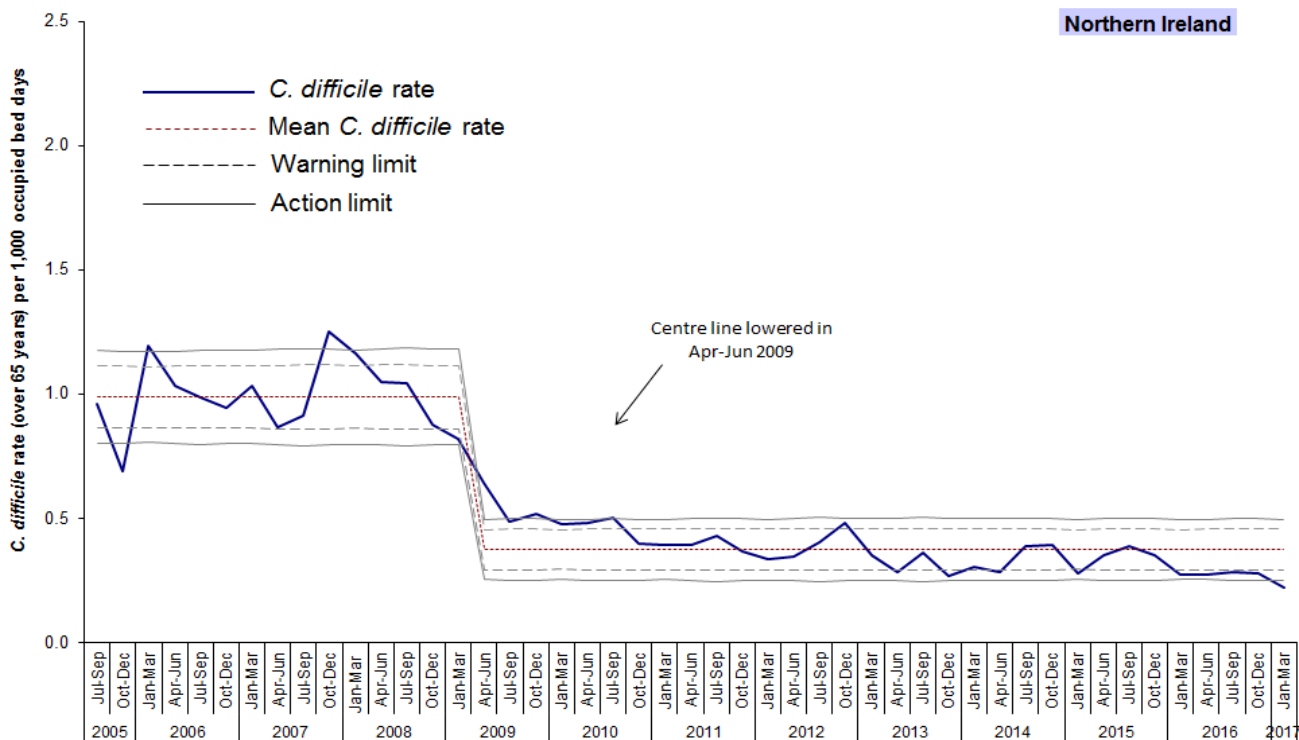


Figure 3: Statistical process control chart for quarterly *C. difficile* rates among inpatients in Northern Ireland aged 65 years and over (for HSCT level, see appendix B)

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, April 2016 - March 2017.

Ribotype	Apr - Jun 2016		Jul - Sep 2016		Oct - Dec 2016		Jan - Mar 2017	
	Number	%	Number	%	Number	%	Number	%
001	1	1.4	2	2.4	1	1.3	3	4.3
002	4	5.4	8	9.8	13	16.7	10	14.3
005	6	8.1	3	3.7	4	5.1	2	2.9
014	2	2.7	6	7.3	1	1.3	8	11.4
015	1	1.4	9	11.0	2	2.6	4	5.7
020	5	6.8	4	4.9	2	2.6	5	7.1
023	2	2.7	3	3.7	5	6.4	2	2.9
027	0	0.0	0	0.0	0	0.0	0	0.0
078	18	24.3	9	11.0	11	14.1	7	10.0
106	2	2.7	4	4.9	2	2.6	2	2.9
193	4	5.4	3	3.7	6	7.7	2	2.9
Other	13	17.6	16	19.5	17	21.8	16	22.9
Not groupable**	9	12.2	7	8.5	9	11.5	3	4.3
Not on ribotype list	4	5.4	4	4.9	1	1.3	3	4.3
Not isolated***	3	4.1	4	4.9	4	5.1	3	4.3
Total	74		82		78		70	

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 2016 - March 2017.

Ribotype	Apr - Jun 2016		Jul - Sep 2016		Oct - Dec 2016		Jan - Mar 2017	
	Number	%	Number	%	Number	%	Number	%
001	3	5.9	0	0.0	1	2.6	0	0.0
002	4	7.8	5	10.6	6	15.8	4	11.8
005	0	0.0	4	8.5	2	5.3	0	0.0
014	1	2.0	4	8.5	4	10.5	2	5.9
015	4	7.8	2	4.3	1	2.6	1	2.9
020	1	2.0	0	0.0	1	2.6	0	0.0
023	1	2.0	2	4.3	5	13.2	2	5.9
027	0	0.0	0	0.0	0	0.0	0	0.0
078	16	31.4	3	6.4	5	13.2	7	20.6
106	1	2.0	3	6.4	0	0.0	1	2.9
193	4	7.8	2	4.3	0	0.0	3	8.8
Other	7	13.7	10	21.3	3	7.9	6	17.6
Not groupable**	6	11.8	6	12.8	8	21.1	5	14.7
Not on ribotype list	0	0.0	3	6.4	2	5.3	1	2.9
Not isolated***	3	5.9	3	6.4	0	0.0	2	5.9
Total	51		47		38		34	

* 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, 002 and 014 in Northern Ireland Hospital Inpatients and Community Patients, January - March 2017.

		078 (n =14)		002 (n = 14)		014 (n = 10)	
Age		range		6 - 91		45 - 93	
		median		73		73	
Sex		n	%	n	%	n	%
Female		8	57.1	11	78.6	7	70.0
Male		6	42.9	3	21.4	3	30.0
Trust							
Belfast		1	7.1	4	28.6	6	60.0
Northern		8	57.1	4	28.6	1	10.0
South Eastern		0	0.0	0	0.0	0	0.0
Southern		0	0.0	0	0.0	1	10.0
Western		5	35.7	6	42.9	2	20.0
Source							
Inpatient		7	50.0	10	71.4	8	80.0
Community*		7	50.0	4	28.6	2	20.0

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

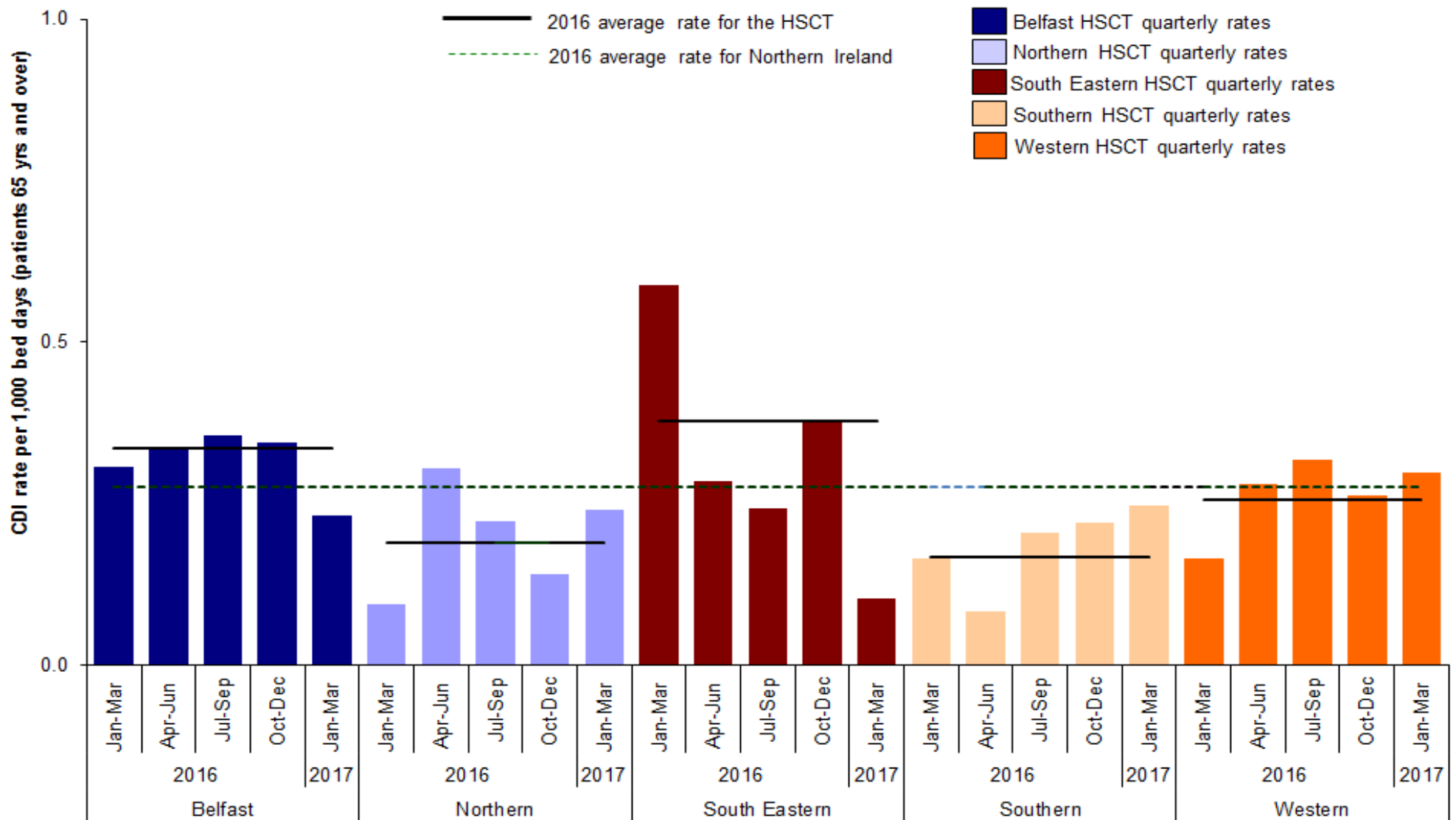


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2016 - March 2017, compared with annual Northern Ireland and HSCT rates for 2016

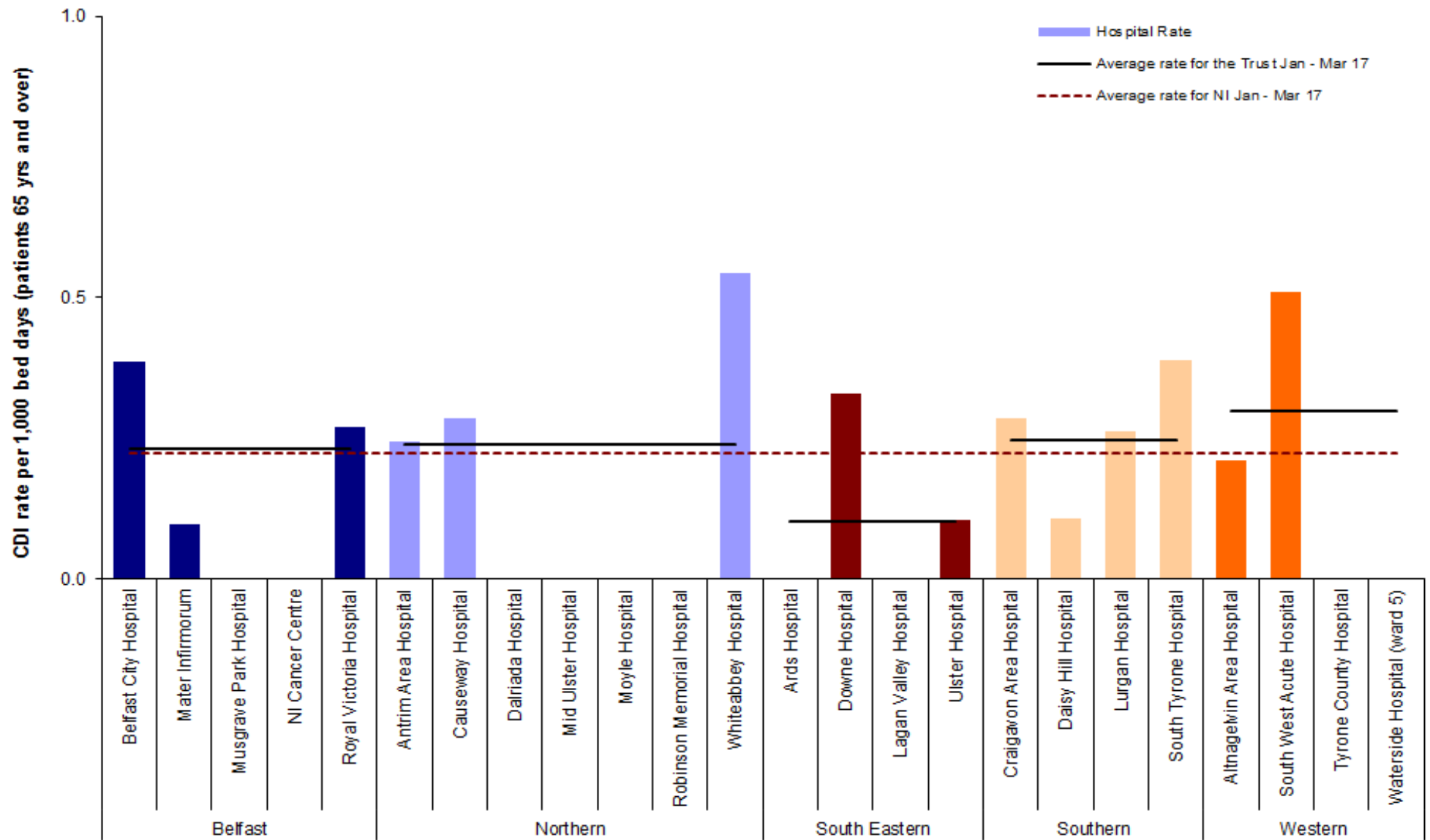


Figure 5: *C. difficile* rates during January - March 2017 - Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)

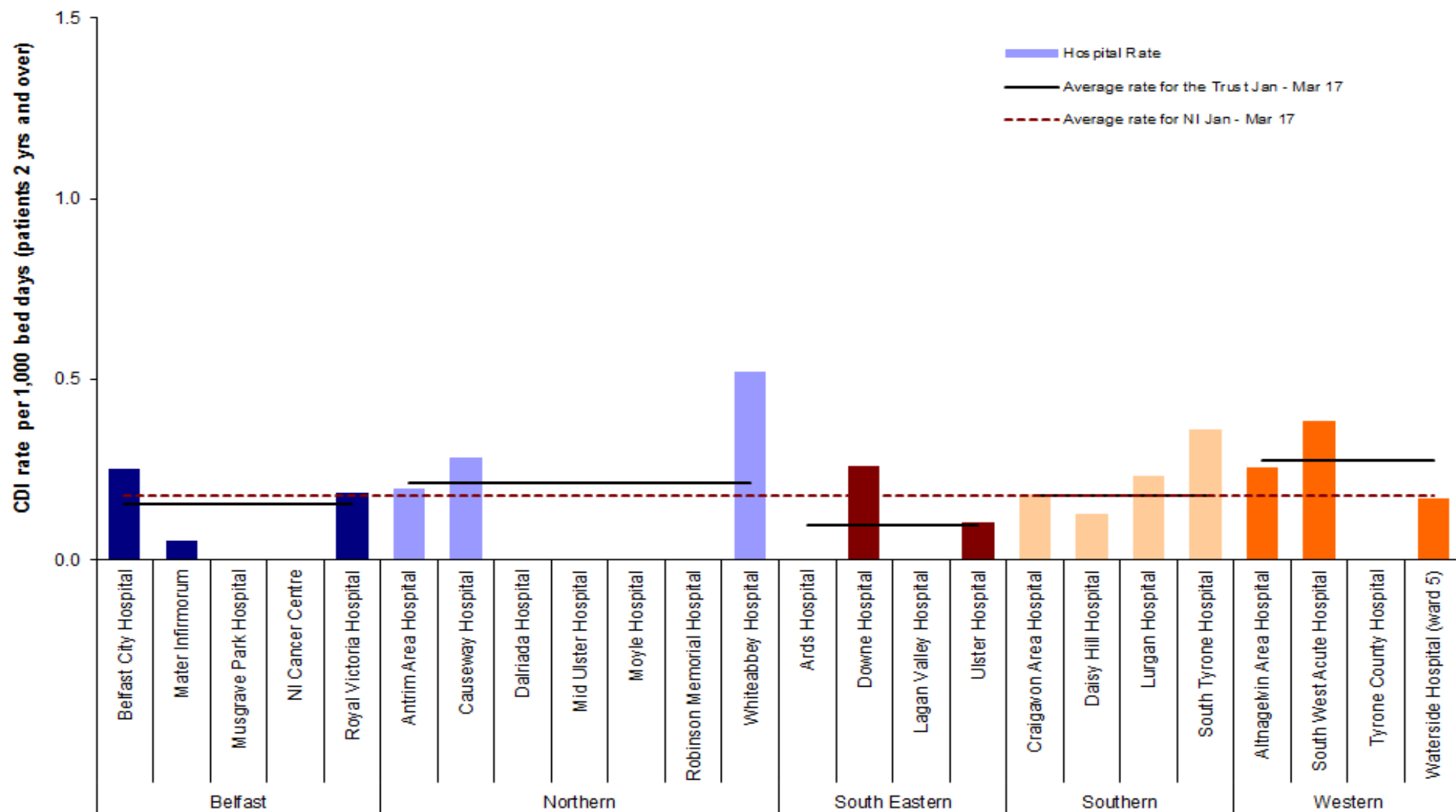


Figure 6: *C. difficile* rates during January - March 2017 - Inpatients aged two years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 6)

Appendix A

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

Hospital	Apr - Jun 2016	Jul - Sept 2016	Oct - Dec 2016	Jan - Mar 2017
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.540	0.423	0.351	0.386
Mater Infirmorum	0.086	0.092	0.381	0.097
Musgrave Park Hospital	0.094	0.302	0.200	0.000
NICCO (formerly at Belvoir Park)	0.370	1.006	0.000	0.000
Royal Group of Hospitals	0.393	0.364	0.406	0.270
Belfast Health & Social Care Trust	0.338	0.355	0.344	0.230
Antrim Area Hospital	0.387	0.305	0.208	0.244
Causeway Hospital	0.198	0.113	0.105	0.286
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	0.000
Robinson Memorial Hospital	0.548	0.000	0.000	0.000
Whiteabbey Hospital	0.283	0.276	0.000	0.545
Northern Health & Social Care Trust	0.303	0.221	0.139	0.240
Ards Hospital	0.000	0.620	0.000	0.000
Downe Hospital	0.000	0.699	0.320	0.330
Lagan Valley Hospital	0.492	0.346	0.799	0.000
Ulster Hospital	0.286	0.149	0.312	0.105
South Eastern Health & Social Care Trust	0.284	0.243	0.377	0.102
Craigavon Area Hospital	0.097	0.319	0.243	0.286
Daisy Hill Hospital	0.110	0.110	0.219	0.108
Lurgan Hospital	0.000	0.000	0.241	0.263
South Tyrone Hospital	0.000	0.000	0.000	0.388
Southern Health & Social Care Trust	0.082	0.205	0.219	0.246
Altnagelvin Area Hospital	0.523	0.491	0.366	0.212
South West Acute Hospital	0.000	0.172	0.083	0.510
Tyrone County Hospital	0.000	0.000	0.000	0.000
Waterside Hospital (Wards 1, 2, 3, 5)	0.000	0.000	1.610	0.000
Western Health & Social Care Trust	0.279	0.318	0.262	0.299

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

Trust	Apr - Jun 2016	Jul - Sept 2016	Oct - Dec 2016	Jan - Mar 2017
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	25	25	24	16
Northern Health & Social Care Trust	13	9	6	11
South Eastern Health & Social Care Trust	11	9	15	4
Southern Health & Social Care Trust	3	7	8	9
Western Health & Social Care Trust	10	11	9	10
NI TOTAL	62	61	62	50
NI community TOTAL	43	43	35	31

Appendix A

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

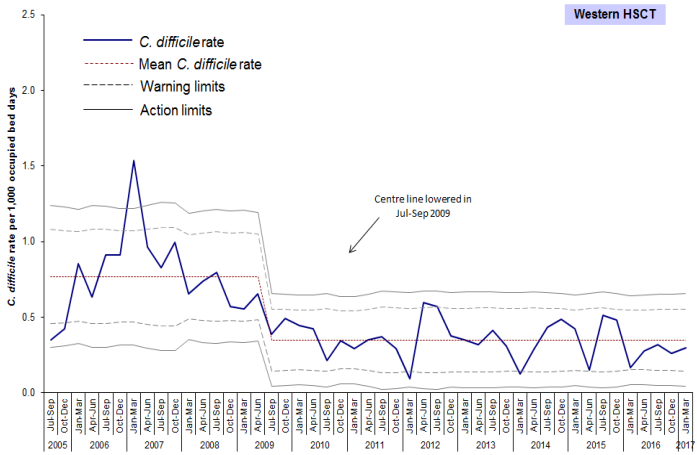
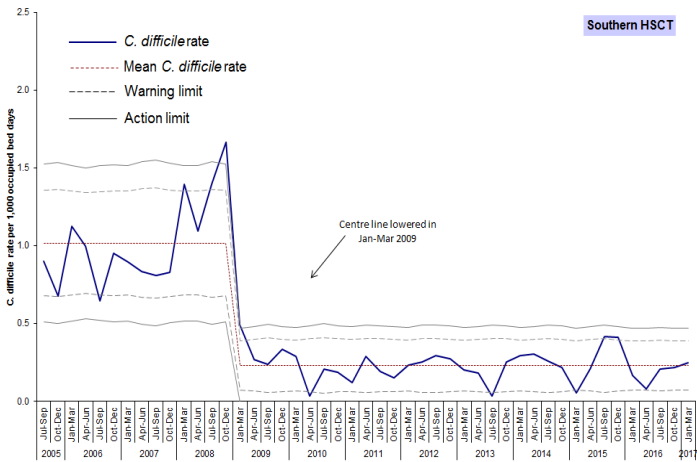
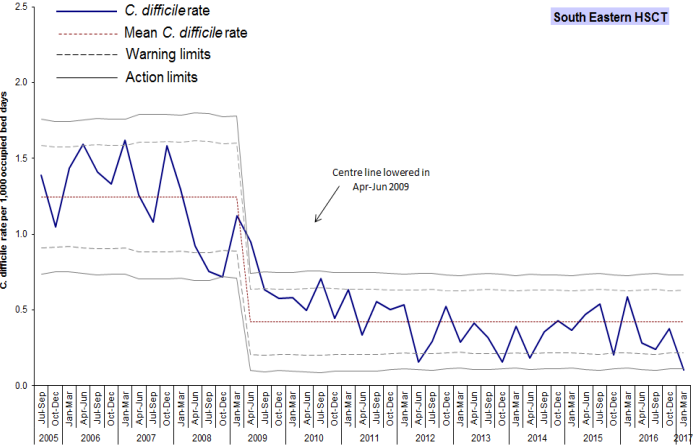
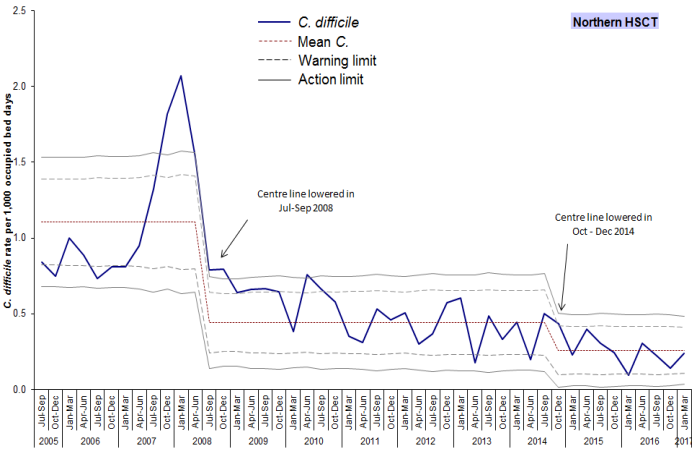
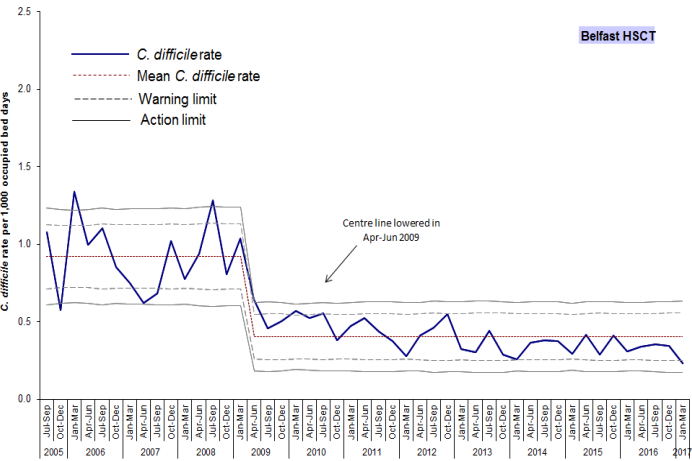
Hospital	Apr - Jun 2016	Jul - Sept 2016	Oct - Dec 2016	Jan - Mar 2017
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.361	0.339	0.257	0.254
Mater Infirmorum	0.075	0.077	0.208	0.053
Musgrave Park Hospital	0.057	0.242	0.117	0.000
NICCO (formerly at Belvoir Park)	0.172	0.706	0.191	0.000
Royal Group of Hospitals	0.212	0.243	0.680	0.187
Belfast Health & Social Care Trust	0.207	0.266	0.325	0.153
Antrim Area Hospital	0.258	0.241	0.125	0.196
Causeway Hospital	0.115	0.120	0.121	0.282
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	0.000
Robinson Memorial Hospital	0.547	0.000	0.000	0.000
Whiteabbey Hospital	0.259	0.266	0.000	0.520
Northern Health & Social Care Trust	0.211	0.186	0.104	0.214
Ards Hospital	0.000	0.601	0.000	0.000
Downe Hospital	0.000	0.570	0.271	0.258
Lagan Valley Hospital	0.526	0.423	0.660	0.000
Ulster Hospital	0.227	0.148	0.247	0.104
South Eastern Health & Social Care Trust	0.245	0.218	0.293	0.098
Craigavon Area Hospital	0.079	0.220	0.188	0.182
Daisy Hill Hospital	0.063	0.063	0.124	0.126
Lurgan Hospital	0.000	0.000	0.229	0.233
South Tyrone Hospital	0.000	0.000	0.000	0.359
Southern Health & Social Care Trust	0.065	0.153	0.165	0.179
Altnagelvin Area Hospital	0.362	0.312	0.277	0.258
South West Acute Hospital	0.000	0.114	0.107	0.385
Tyrone County Hospital	0.000	0.000	0.000	0.000
Waterside Hospital (Wards 1, 2, 3, 5)	0.000	0.000	0.176	0.171
Western Health & Social Care Trust	0.208	0.212	0.205	0.275
NI TOTAL	0.191	0.218	0.226	0.179

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

Trust	Apr - Jun 2016	Jul - Sept 2016	Oct - Dec 2016	Jan - Mar 2017
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	28	35	30	21
Northern Health & Social Care Trust	14	12	7	15
South Eastern Health & Social Care Trust	15	13	18	6
Southern Health & Social Care Trust	4	9	10	11
Western Health & Social Care Trust	13	13	13	17
NI TOTAL	74	82	78	70
NI community TOTAL	51	47	38	34

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