

C. difficile surveillance

Quarterly report

October - December 2017

Key points

- CDI reports for hospital inpatients aged 65 years and over decreased by 8% (from 62 to 57 episodes) during October - December 2017 compared to July - September 2017.
- CDI rate per 1,000 bed days decreased by 12% during October - December 2017 compared to July - September 2017.
- CDI reports for community patients aged 65 years and over increased by 9% (from 35 to 38 episodes) during October - December 2017 compared to July - September 2017.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, decreased by 2% during October - December 2017 compared to July - September 2017 (from 122 to 120 episodes).
- CDI reports for hospital inpatients aged 65 years and over decreased by 21% between the 2015/16 and 2016/17 financial years.
- During October - December 2017 the most prevalent ribotypes for CDI inpatients are 002 (18%), 014 (12%) and 020 (9%) (Table 1) and in the community are 015 (14%), 002 (11%) and 014 (11%) (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)

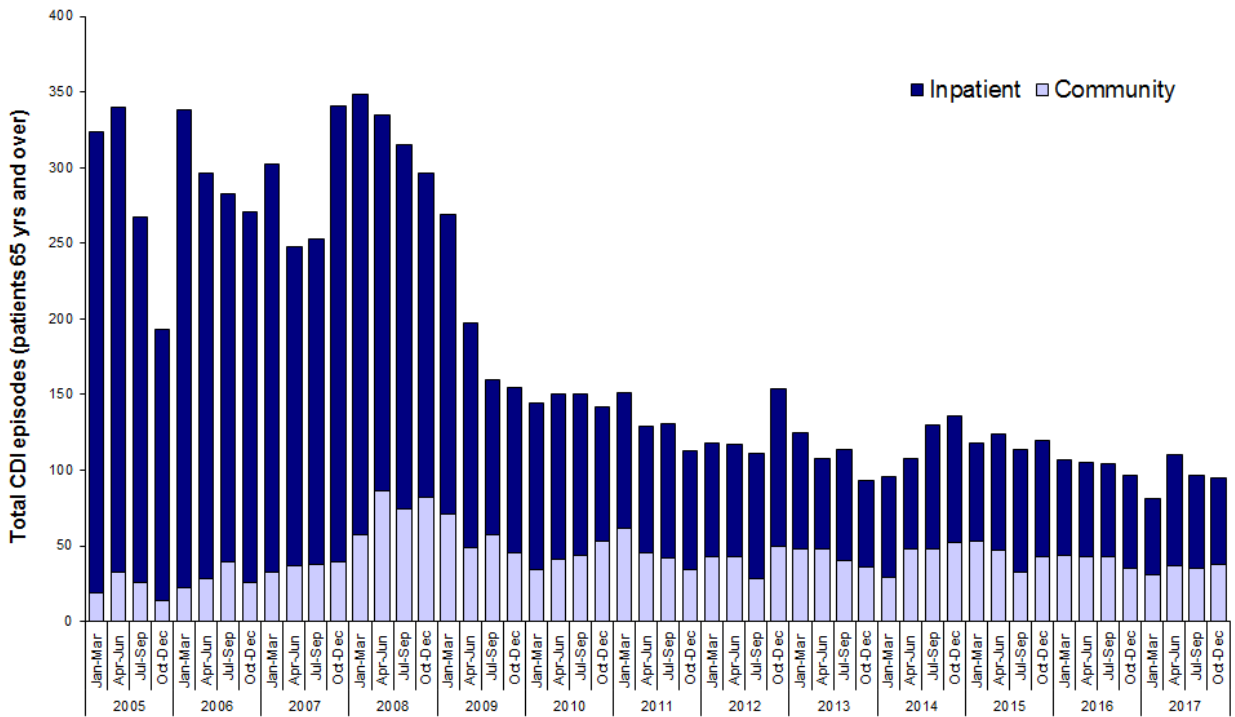


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2017

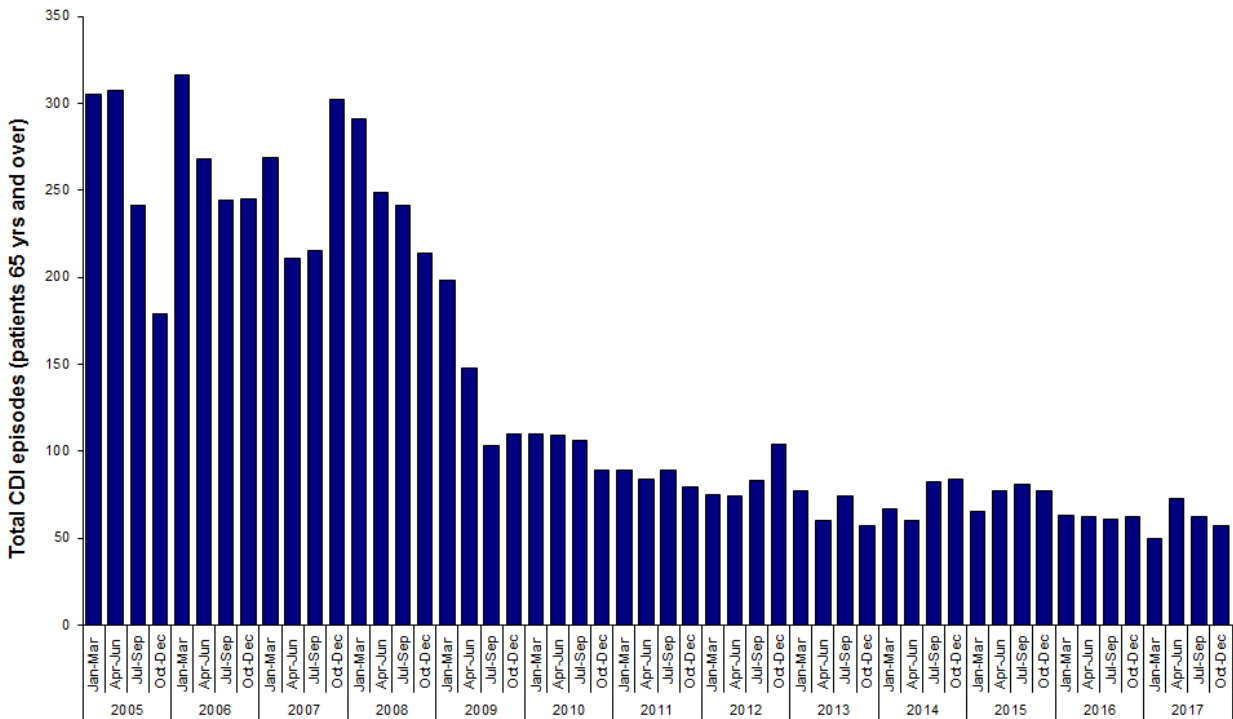


Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2017

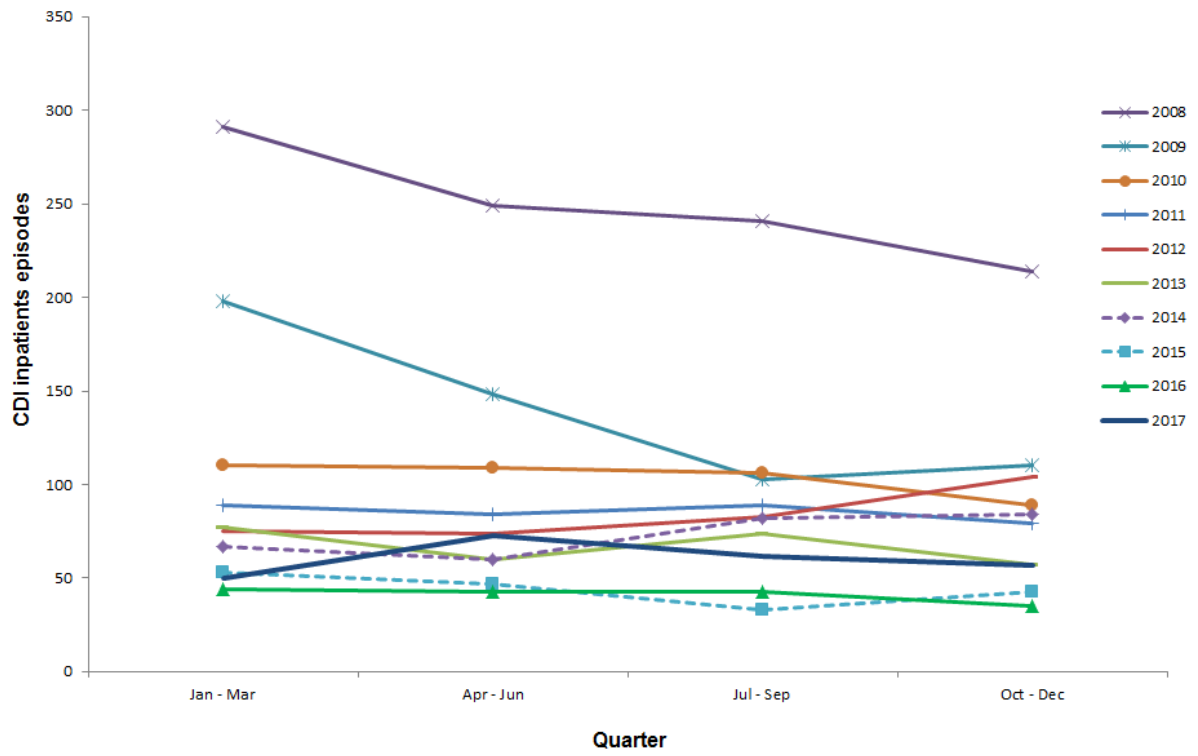


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients \geq 65 years), between 2008 and 2017

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.

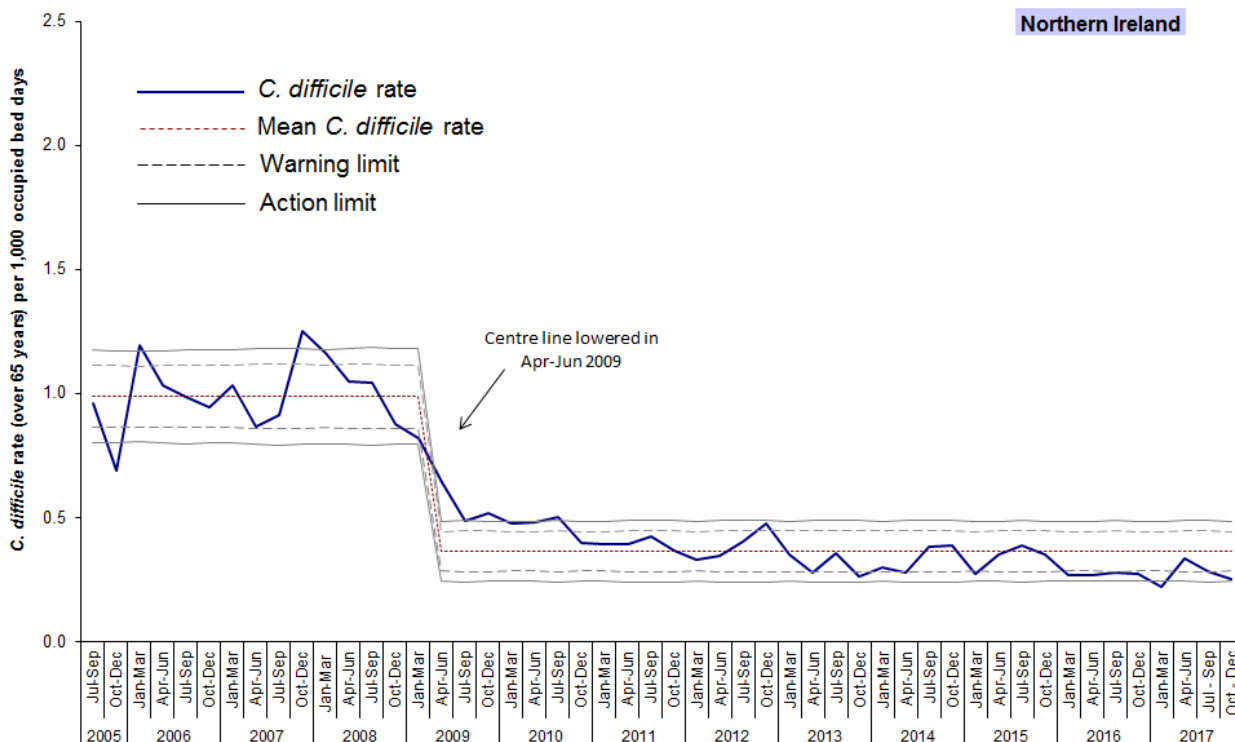


Figure 3: Statistical process control chart for quarterly *C. difficile* rates among inpatients in Northern Ireland aged 65 years and over (for HSCT level, see appendix B)

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, January – December 2017.

Ribotype	Jan - Mar 2017		Apr - Jun 2017		Jul - Sep 2017		Oct - Dec 2017	
	Number	%	Number	%	Number	%	Number	%
001	3	4.3	3	3.3	4	4.8	2	2.6
002	10	14.3	8	8.7	12	14.5	14	18.4
005	2	2.9	4	4.3	5	6.0	2	2.6
011	2	2.9	3	3.3	4	4.8	2	2.6
014	8	11.4	9	9.8	7	8.4	9	11.8
015	4	5.7	7	7.6	10	12.0	5	6.6
018	1	1.4	0	0.0	3	3.6	5	6.6
020	5	7.1	4	4.3	3	3.6	7	9.2
023	2	2.9	8	8.7	3	3.6	5	6.6
078	7	10.0	15	16.3	9	10.8	3	3.9
193	2	2.9	2	2.2	7	8.4	1	1.3
Other	15	21.4	23	25.0	11	13.3	14	18.4
Not groupable**	3	4.3	3	3.3	2	2.4	2	2.6
Not on ribotype list	3	4.3	1	1.1	1	1.2	4	5.3
Not isolated***	3	4.3	2	2.2	2	2.4	1	1.3
Total	70		92		83		76	

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 2017.

Ribotype	Jan - Mar 2017		Apr - Jun 2017		Jul - Sep 2017		Oct - Dec 2017	
	Number	%	Number	%	Number	%	Number	%
001	0	0.0	0	0.0	2	5.1	2	4.5
002	4	11.8	5	12.2	5	12.8	5	11.4
005	0	0.0	6	14.6	0	0.0	0	0.0
011	1	2.9	0	0.0	0	0.0	1	2.3
014	2	5.9	3	7.3	4	10.3	5	11.4
015	1	2.9	7	17.1	3	7.7	6	13.6
018	1	2.9	1	2.4	1	2.6	1	2.3
020	0	0.0	2	4.9	1	2.6	3	6.8
023	2	5.9	1	2.4	0	0.0	2	4.5
078	7	20.6	4	9.8	6	15.4	4	9.1
193	3	8.8	1	2.4	4	10.3	0	0.0
Other	5	14.7	8	19.5	10	25.6	7	15.9
Not groupable**	5	14.7	2	4.9	1	2.6	4	9.1
Not on ribotype list	1	2.9	0	0.0	1	2.6	3	6.8
Not isolated***	2	5.9	1	2.4	1	2.6	1	2.3
Total	34		41		39		44	

* 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. *Note: 1 CDI record in Oct-Dec 2017 was not tested and classified as Not isolated.*

Note: No Ribotype 027 results reported during Jan-Dec 2017.

Table 3: Descriptive data for *C. difficile* ribotypes 002, 014 and 015 in Northern Ireland Hospital Inpatients and Community Patients, October - December 2017.

	002 (n =19)		014 (n = 14)		015 (n = 11)	
Age						
range	55 - 98		2 - 92		50 - 87	
median	82		82		77	
Sex						
	n	%	n	%	n	%
Female	18	94.7	8	57.1	7	63.6
Male	1	5.3	6	42.9	4	36.4
Trust						
Belfast	7	36.8	8	57.1	5	45.5
Northern	7	36.8	0	0.0	3	27.3
South Eastern	2	10.5	2	14.3	0	0.0
Southern	2	10.5	1	7.1	1	9.1
Western	1	5.3	3	21.4	2	18.2
Source						
Inpatient	14	73.7	9	64.3	5	45.5
Community*	5	26.3	5	35.7	6	54.5

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

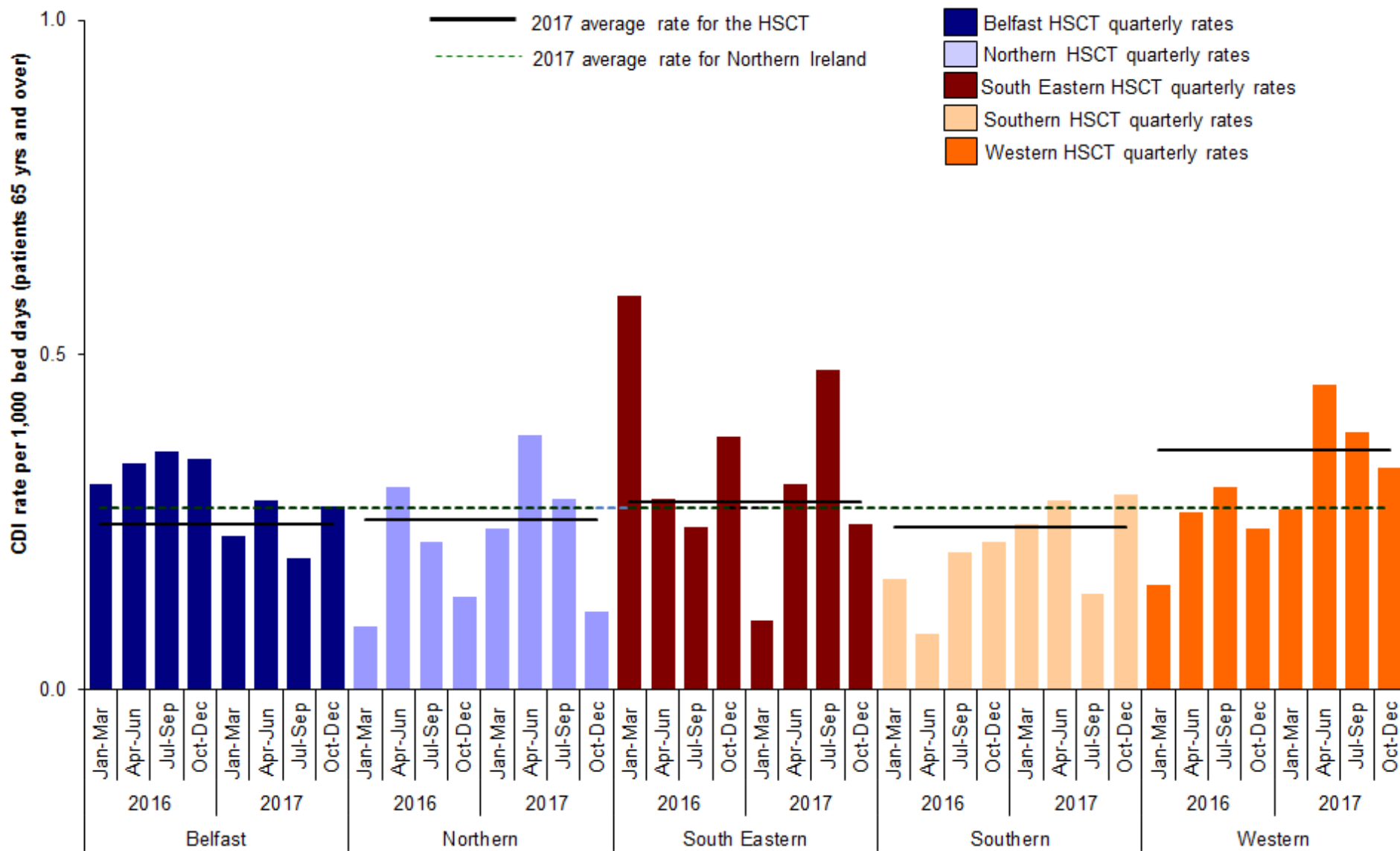


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2016 - December 2017, compared with annual Northern Ireland and HSCT rates for 2017

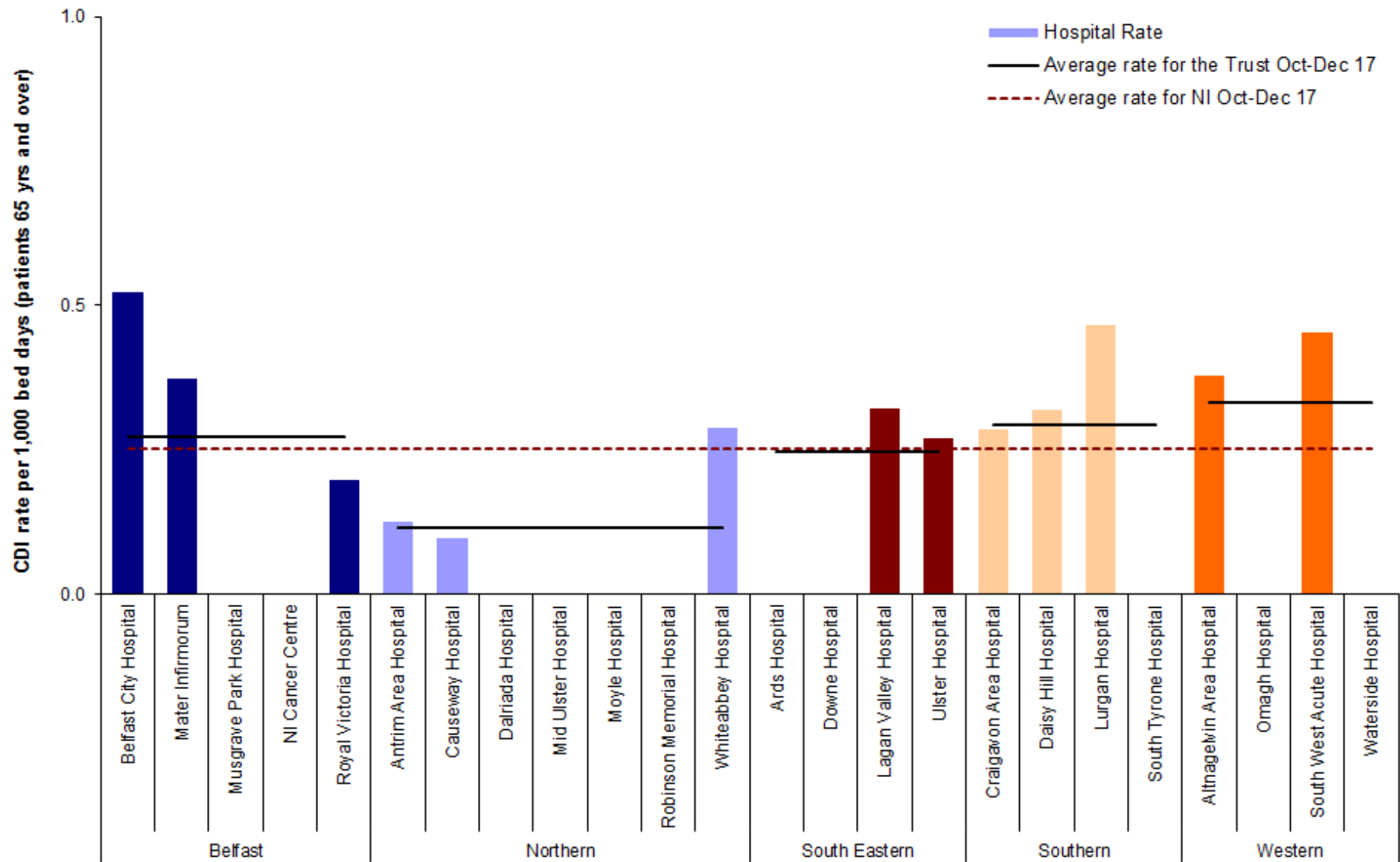


Figure 5: *C. difficile* rates during October - December 2017 - Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)

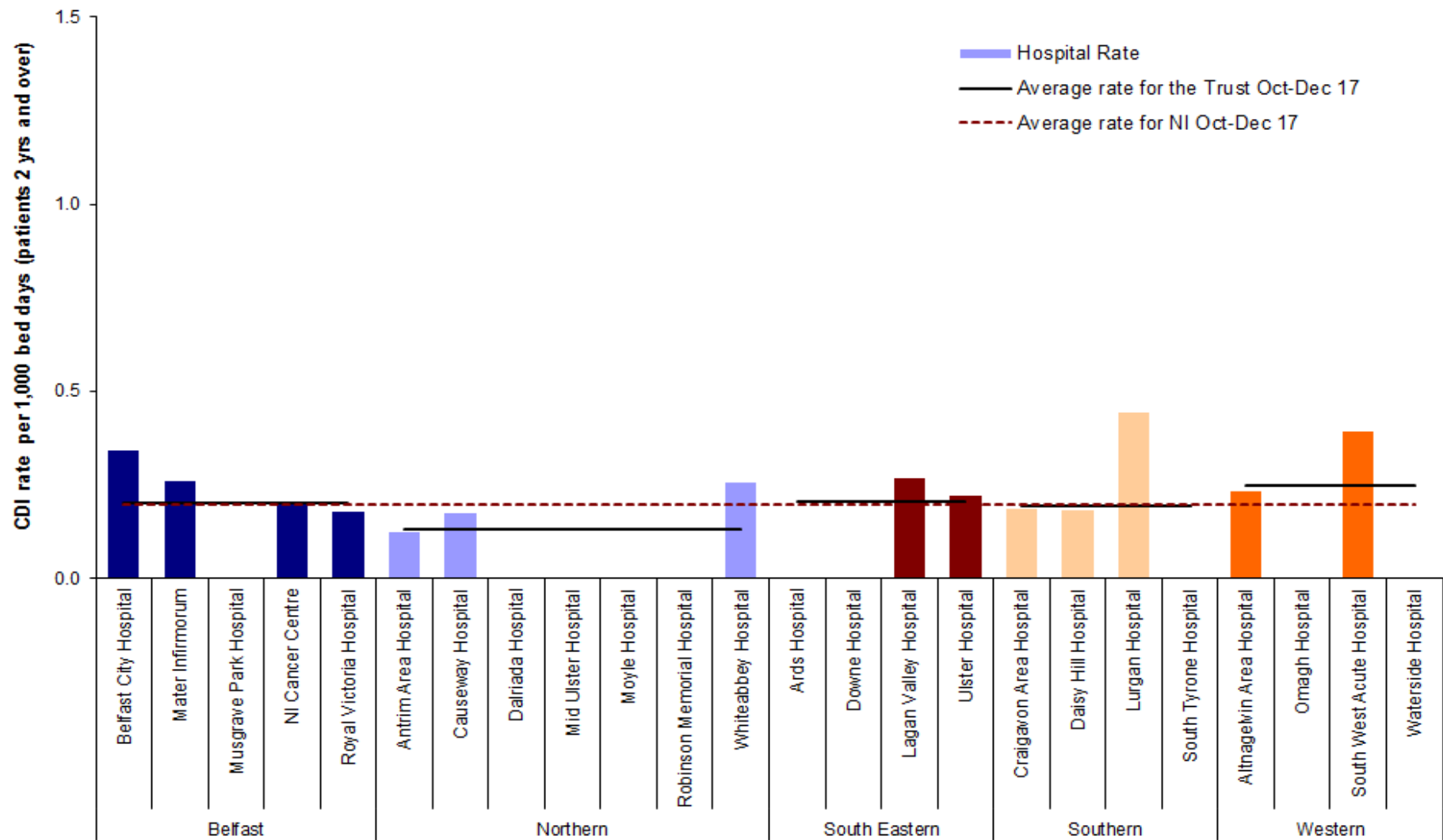


Figure 6: *C. difficile* rates during October - December 2017 - Inpatients aged two years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 5)

Appendix A

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

Hospital	Jan - Mar 2017	Apr - Jun 2017	Jul - Sep 2017	Oct - Dec 2017
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.386	0.173	0.234	0.523
Mater Infirmorum	0.097	0.201	0.394	0.374
Musgrave Park Hospital	0.000	0.555	0.000	0.000
NICCO (formerly at Belvoir Park)	0.000	0.392	0.000	0.000
Royal Group of Hospitals	0.270	0.280	0.181	0.197
Belfast Health & Social Care Trust	0.230	0.282	0.196	0.273
Antrim Area Hospital	0.244	0.441	0.380	0.127
Causeway Hospital	0.286	0.511	0.338	0.098
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	0.747	0.000	0.000
Robinson Memorial Hospital	0.000	0.000	0.000	0.000
Whiteabbey Hospital	0.545	0.000	0.000	0.287
Northern Health & Social Care Trust	0.240	0.379	0.284	0.115
Ards Hospital	0.000	0.000	0.000	0.000
Downe Hospital	0.330	0.647	0.000	0.000
Lagan Valley Hospital	0.000	0.000	0.166	0.322
Ulster Hospital	0.105	0.355	0.630	0.270
South Eastern Health & Social Care Trust	0.102	0.307	0.478	0.246
Craigavon Area Hospital	0.286	0.259	0.212	0.286
Daisy Hill Hospital	0.108	0.331	0.110	0.318
Lurgan Hospital	0.263	0.000	0.000	0.466
South Tyrone Hospital	0.388	0.724	0.000	0.000
Southern Health & Social Care Trust	0.246	0.283	0.143	0.292
Altnagelvin Area Hospital	0.212	0.601	0.324	0.378
Tyrone County / Omagh Hospital	0.000	0.778	0.401	0.000
South West Acute Hospital	0.510	0.288	0.433	0.453
Waterside Hospital	0.000	0.000	0.498	0.000
Western Health & Social Care Trust	0.269	0.456	0.383	0.331
NI TOTAL	0.219	0.333	0.285	0.251

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

Trust	Jan - Mar 2017	Apr - Jun 2017	Jul - Sep 2017	Oct - Dec 2017
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	16	19	13	19
Northern Health & Social Care Trust	11	16	12	5
South Eastern Health & Social Care Trust	4	12	18	10
Southern Health & Social Care Trust	9	10	5	11
Western Health & Social Care Trust	10	16	14	12
NI TOTAL	50	73	62	57
NI community TOTAL	31	37	35	38

Appendix A

Table 6: Quarterly rate of *C. difficile* reports in patients aged two years and over, by hospital, Jan 2017 – Dec 2017

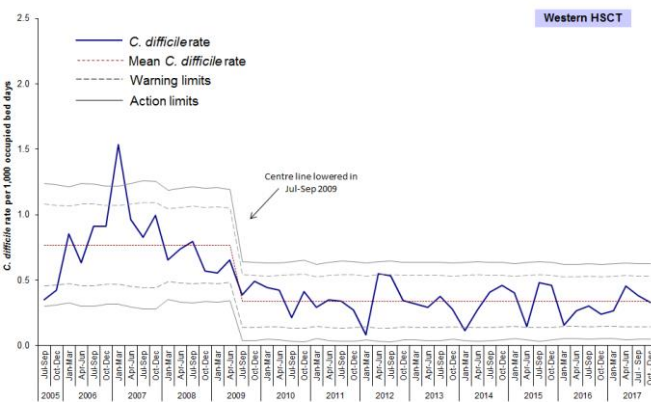
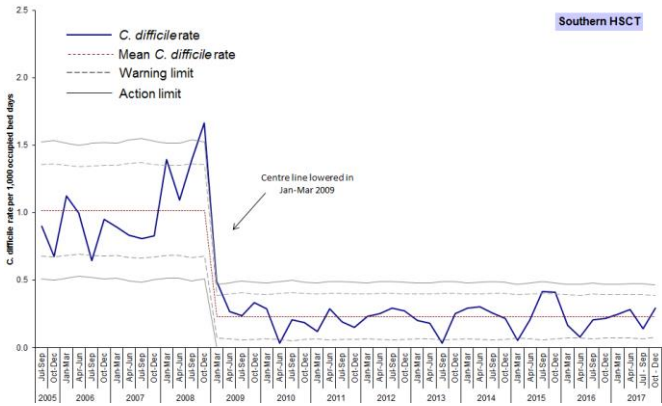
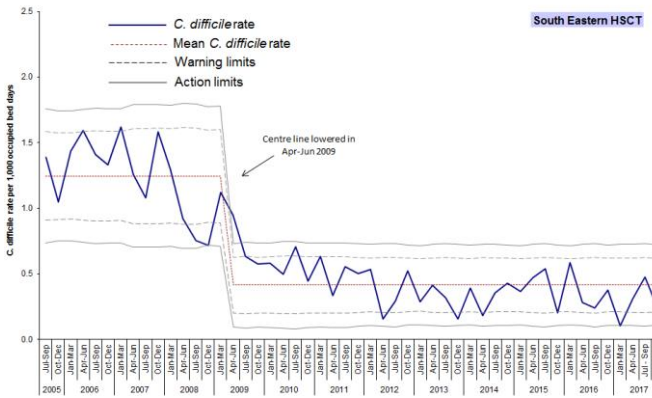
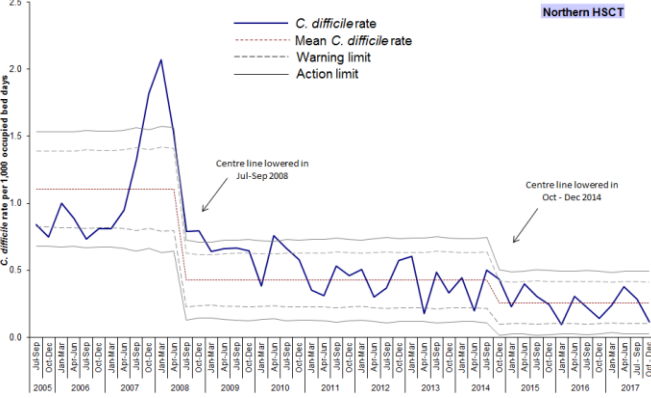
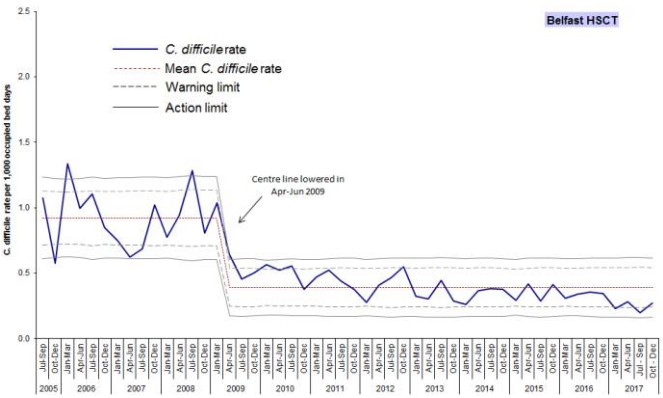
Hospital	Jan - Mar 2017	Apr - Jun 2017	Jul - Sep 2017	Oct - Dec 2017
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.254	0.217	0.187	0.343
Mater Infirmorum	0.053	0.161	0.324	0.261
Musgrave Park Hospital	0.000	0.316	0.000	0.000
NICCO (formerly at Belvoir Park)	0.000	0.375	0.000	0.197
Royal Group of Hospitals	0.187	0.147	0.137	0.176
Belfast Health & Social Care Trust	0.153	0.192	0.152	0.202
Antrim Area Hospital	0.196	0.283	0.283	0.125
Causeway Hospital	0.282	0.496	0.183	0.174
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	0.718	0.000	0.000
Robinson Memorial Hospital	0.000	0.000	0.000	0.000
Whiteabbey Hospital	0.520	0.000	0.000	0.256
Northern Health & Social Care Trust	0.214	0.303	0.212	0.132
Ards Hospital	0.000	0.000	0.000	0.000
Downe Hospital	0.258	0.521	0.000	0.000
Lagan Valley Hospital	0.000	0.132	0.277	0.268
Ulster Hospital	0.104	0.227	0.377	0.220
South Eastern Health & Social Care Trust	0.098	0.227	0.332	0.207
Craigavon Area Hospital	0.182	0.216	0.217	0.186
Daisy Hill Hospital	0.126	0.188	0.126	0.182
Lurgan Hospital	0.233	0.000	0.000	0.444
South Tyrone Hospital	0.359	0.670	0.000	0.000
Southern Health & Social Care Trust	0.179	0.215	0.166	0.195
Altnagelvin Area Hospital	0.258	0.372	0.318	0.233
Tyrone County / Omagh Hospital	0.000	0.711	0.376	0.000
South West Acute Hospital	0.385	0.236	0.280	0.394
Waterside Hospital	0.171	0.000	0.338	0.000
Western Health & Social Care Trust	0.275	0.314	0.311	0.246
NI TOTAL	0.179	0.240	0.219	0.196

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

Trust	Jan - Mar 2017	Apr - Jun 2017	Jul - Sep 2017	Oct - Dec 2017
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	21	26	20	27
Northern Health & Social Care Trust	15	20	14	9
South Eastern Health & Social Care Trust	6	14	20	13
Southern Health & Social Care Trust	11	13	10	12
Western Health & Social Care Trust	17	19	19	15
NI TOTAL	70	92	83	76
NI community TOTAL	34	41	39	44

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