

C. difficile surveillance

Quarterly report

July - September 2015

Key points

- CDI reports for hospital inpatients aged 65 years and over increased by 5% (from 77 to 81 episodes) during July - September 2015 compared to April - June 2015.
- CDI rate per 1,000 bed days increased by 11% during July - September 2015 compared to April - June 2015.
- CDI reports for community patients aged 65 years and over decreased by 32% (from 47 to 32 episodes) during July - September 2015 compared to April - June 2015.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, decreased by 9% during July - September 2015 compared to April - June 2015 (from 160 to 146 episodes).
- CDI reports for hospital inpatients aged 65 years and over increased by 13% between the 2013/14 and 2014/15 financial years.
- During July - September 2015 the most prevalent ribotypes for CDI inpatients are 015 (12%), 002 (11%) and 078 (10%) (Table 1) and in the community are 015 (14%), 078 (12%) and 023 (10%) (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)

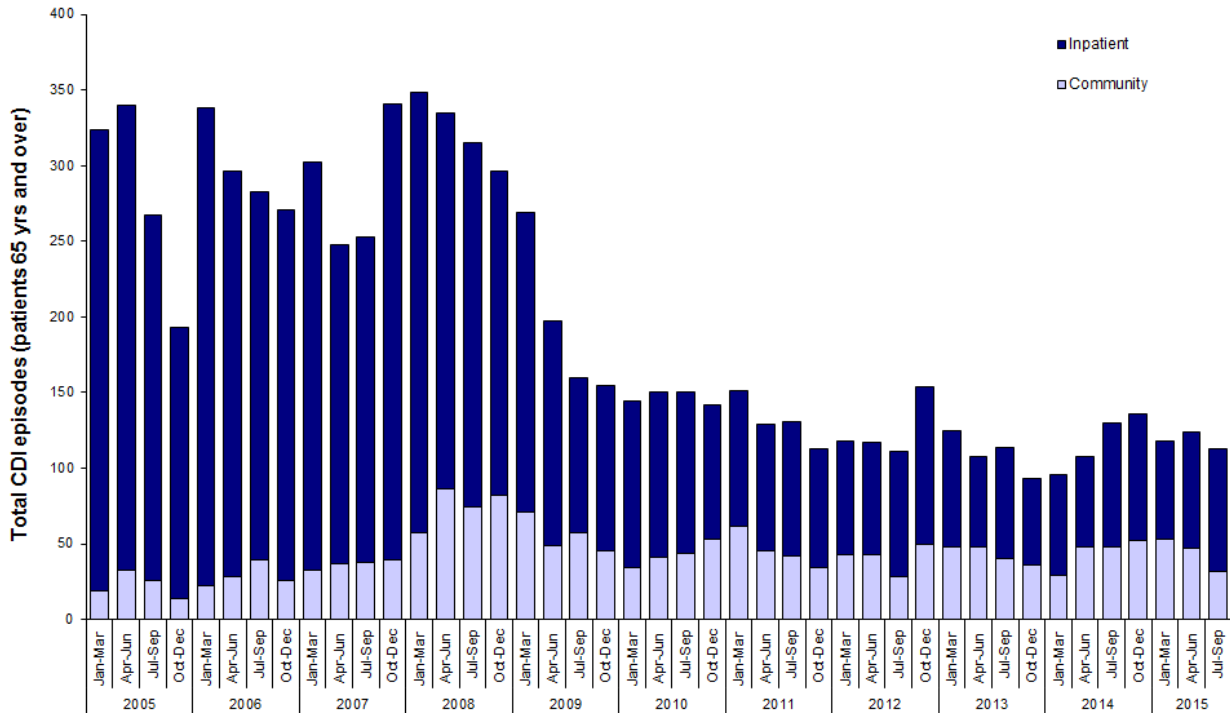


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2015

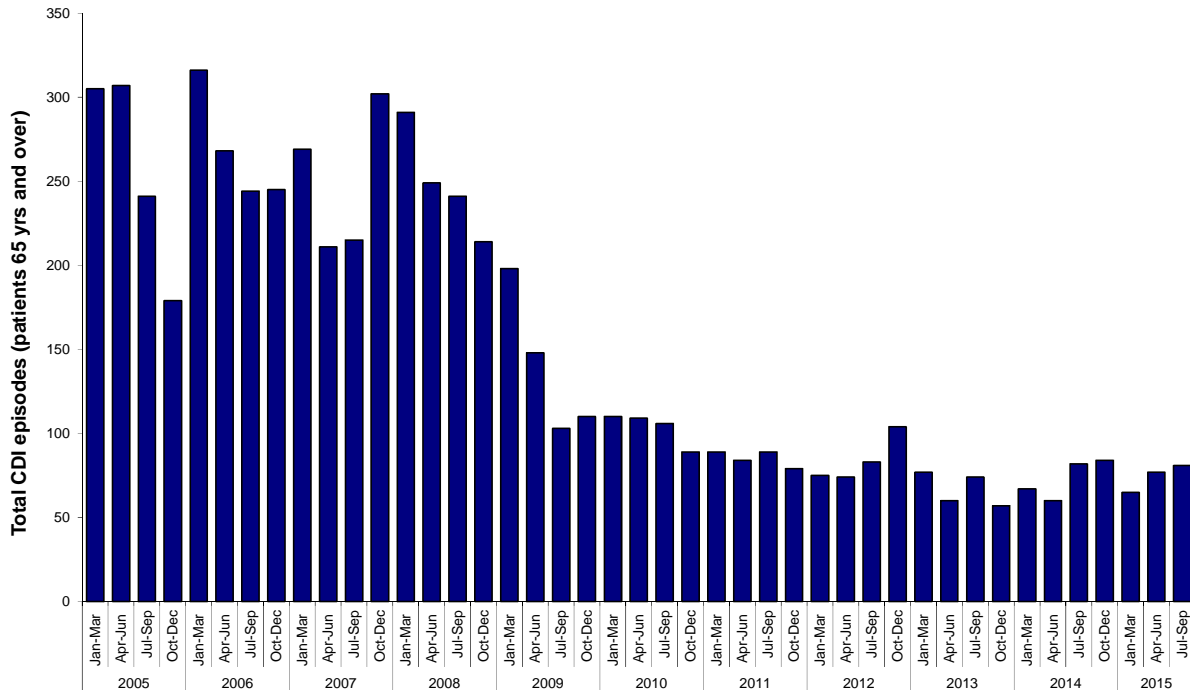


Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2015

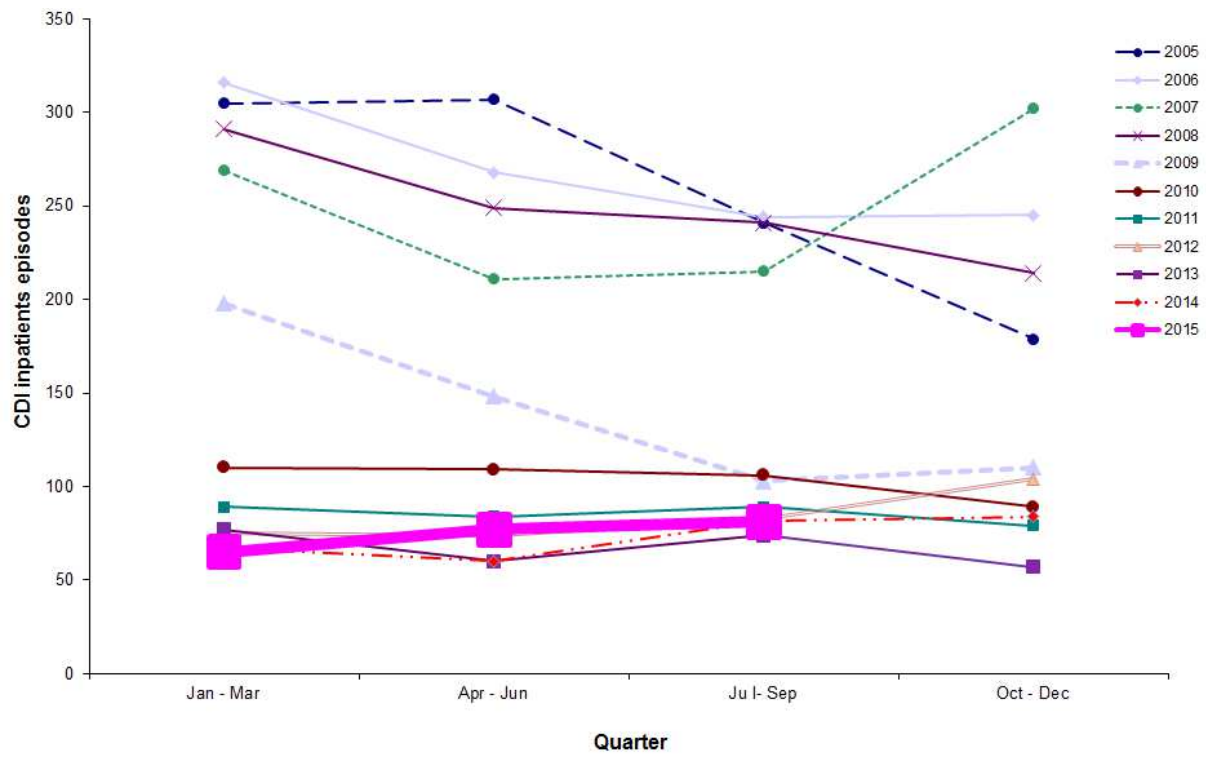


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients \geq 65 years), between 2005 and 2015

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.

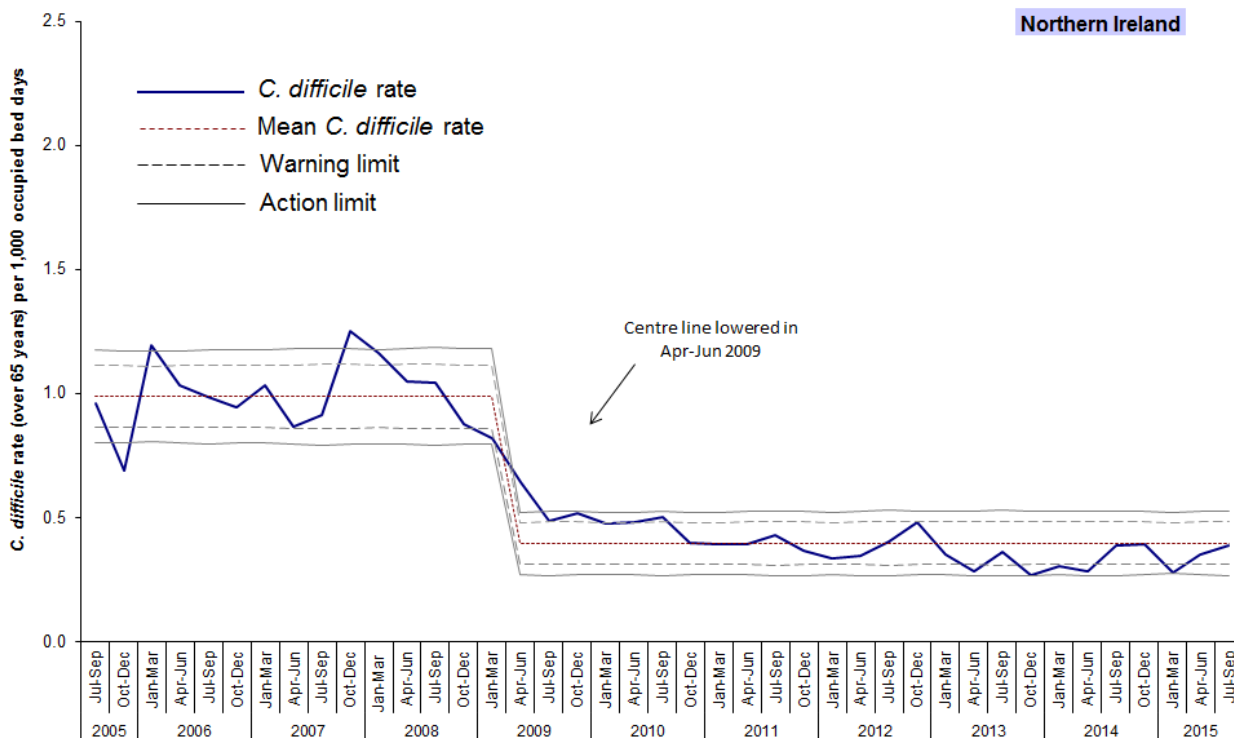


Figure 3: Statistical process control chart for quarterly *C. difficile* rates among inpatients in Northern Ireland aged 65 years and over (for HSCT level, see appendix B)

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 2014 - September 2015

Ribotype	Oct - Dec 2014		Jan - Mar 2015		Apr - Jun 2015		Jul - Sep 2015	
	Number	%	Number	%	Number	%	Number	%
001	1	0.9	2	2.3	6	5.9	2	1.9
002	5	4.5	4	4.5	16	15.8	11	10.6
005	8	7.1	5	5.7	6	5.9	2	1.9
014	13	11.6	11	12.5	12	11.9	8	7.7
014/020	2	1.8	0	0.0	0	0.0	0	0.0
015	5	4.5	5	5.7	4	4.0	12	11.5
020	9	8.0	3	3.4	6	5.9	4	3.8
023	2	1.8	2	2.3	4	4.0	3	2.9
027	0	0.0	0	0.0	0	0.0	1	1.0
078	13	11.6	11	12.5	8	7.9	10	9.6
106	1	0.9	2	2.3	0	0.0	0	0.0
193	4	3.6	1	1.1	5	5.0	2	1.9
Other	23	20.5	16	18.2	22	21.8	25	24.0
Not groupable**	7	6.3	7	8.0	4	4.0	8	7.7
Not on ribotype list	8	7.1	5	5.7	3	3.0	8	7.7
Not isolated***	11	9.8	14	15.9	5	5.0	8	7.7
Total	112		88		101		104	

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 2014 - September 2015

Ribotype	Oct - Dec 2014		Jan - Mar 2015		Apr - Jun 2015		Jul - Sep 2015	
	Number	%	Number	%	Number	%	Number	%
001	1	1.6	1	1.7	1	1.7	0	0.0
002	7	11.1	2	3.4	3	5.1	3	7.1
005	3	4.8	6	10.2	5	8.5	2	4.8
014	6	9.5	4	6.8	3	5.1	3	7.1
014/020	1	1.6	0	0.0	0	0.0	0	0.0
015	4	6.3	3	5.1	3	5.1	6	14.3
020	1	1.6	1	1.7	2	3.4	1	2.4
023	7	11.1	6	10.2	3	5.1	4	9.5
027	0	0.0	0	0.0	0	0.0	1	2.4
078	13	20.6	16	27.1	16	27.1	5	11.9
106	1	1.6	1	1.7	0	0.0	0	0.0
193	1	1.6	2	3.4	4	6.8	0	0.0
Other	3	4.8	8	13.6	11	18.6	12	28.6
Not groupable**	8	12.7	2	3.4	2	3.4	4	9.5
Not on ribotype list	3	4.8	2	3.4	3	5.1	1	2.4
Not isolated***	4	6.3	5	8.5	3	5.1	0	0.0
Total	63		59		59		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 015, 078 and 002 in Northern Ireland Hospital Inpatients and Community Patients, July - September 2015

	015 (n = 18)		078 (n = 15)		002 (n = 14)	
Age						
range	42 - 95		40 - 91		29 - 90	
median	71		82		77	
Sex						
	n	%	n	%	n	%
Female	9	50.0	6	40.0	9	64.3
Male	9	50.0	9	60.0	5	35.7
Trust						
Belfast	5	27.8	4	26.7	6	42.9
Northern	8	44.4	4	26.7	3	21.4
South Eastern	1	5.6	4	26.7	4	28.6
Southern	2	11.1	0	0.0	0	0.0
Western	2	11.1	3	20.0	1	7.1
Source						
Inpatient	12	66.7	10	66.7	11	78.6
Community*	6	33.3	5	33.3	3	21.4

* Community specimens include those taken from accident and emergency, outpatients, GPs, Hospice, Care Homes and psychiatric facilities

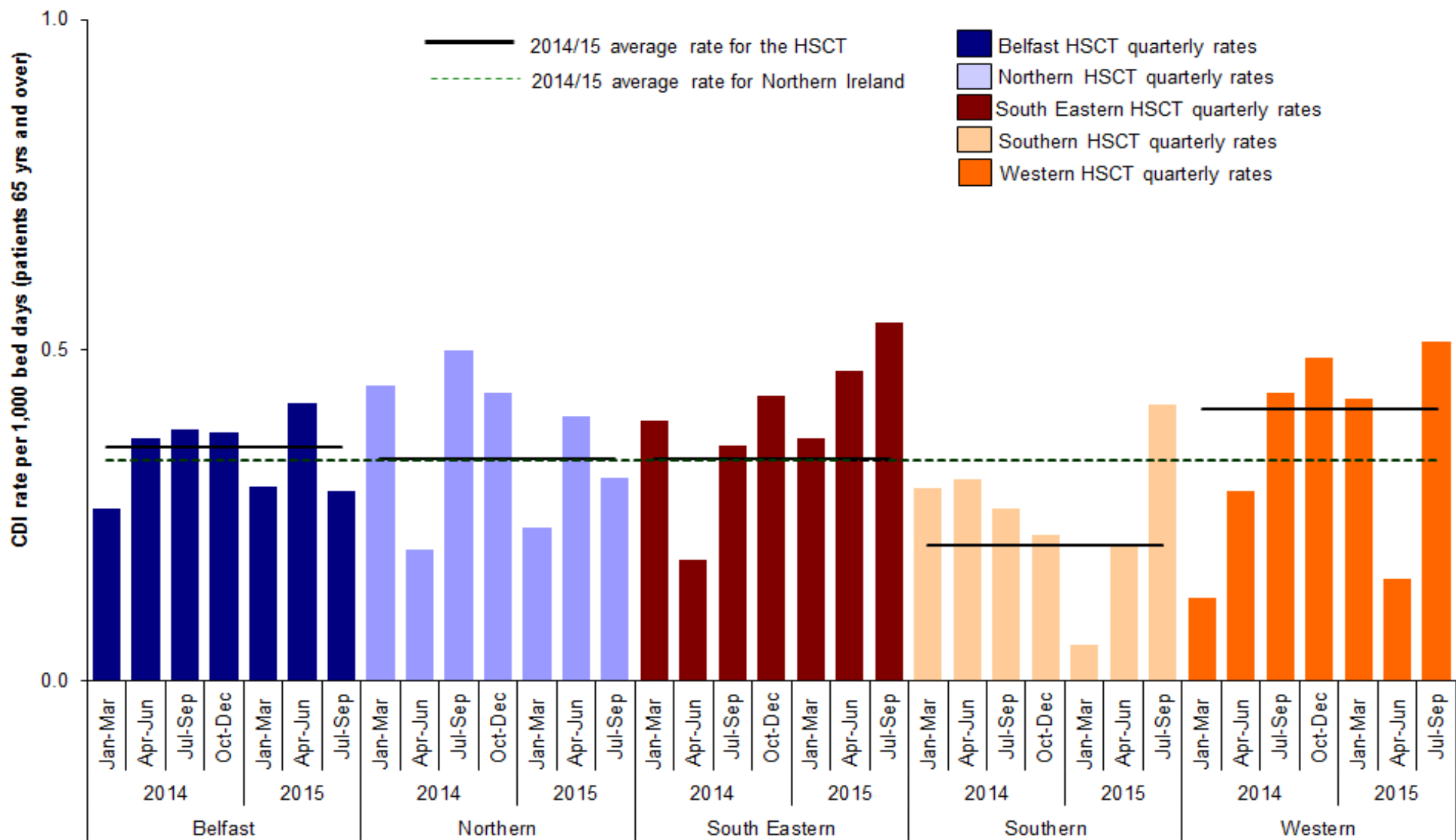


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2014 - September 2015, compared with financial year Northern Ireland and HSCT rates for 2014/15

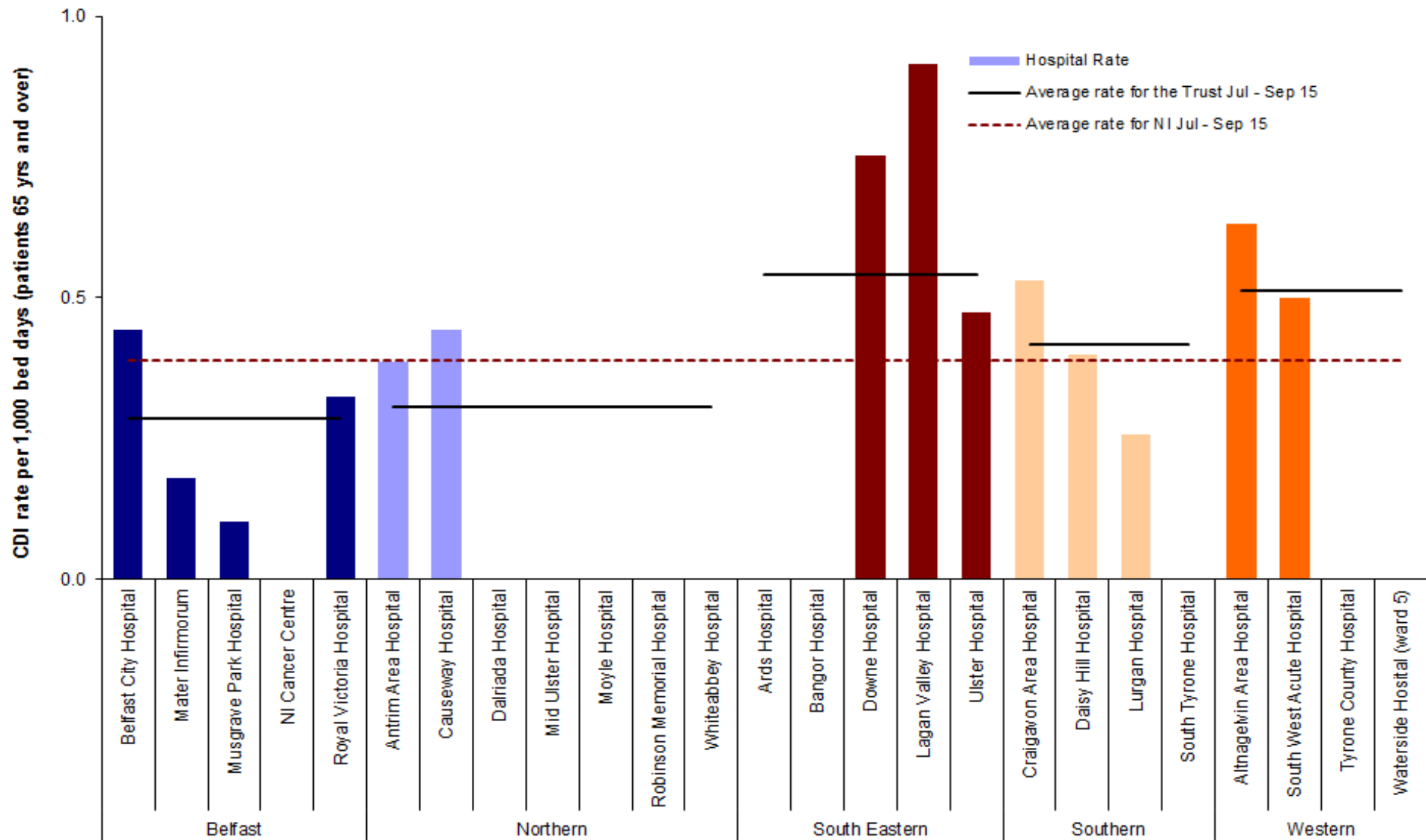


Figure 5: *C. difficile* rates during July - September 2015 - Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)

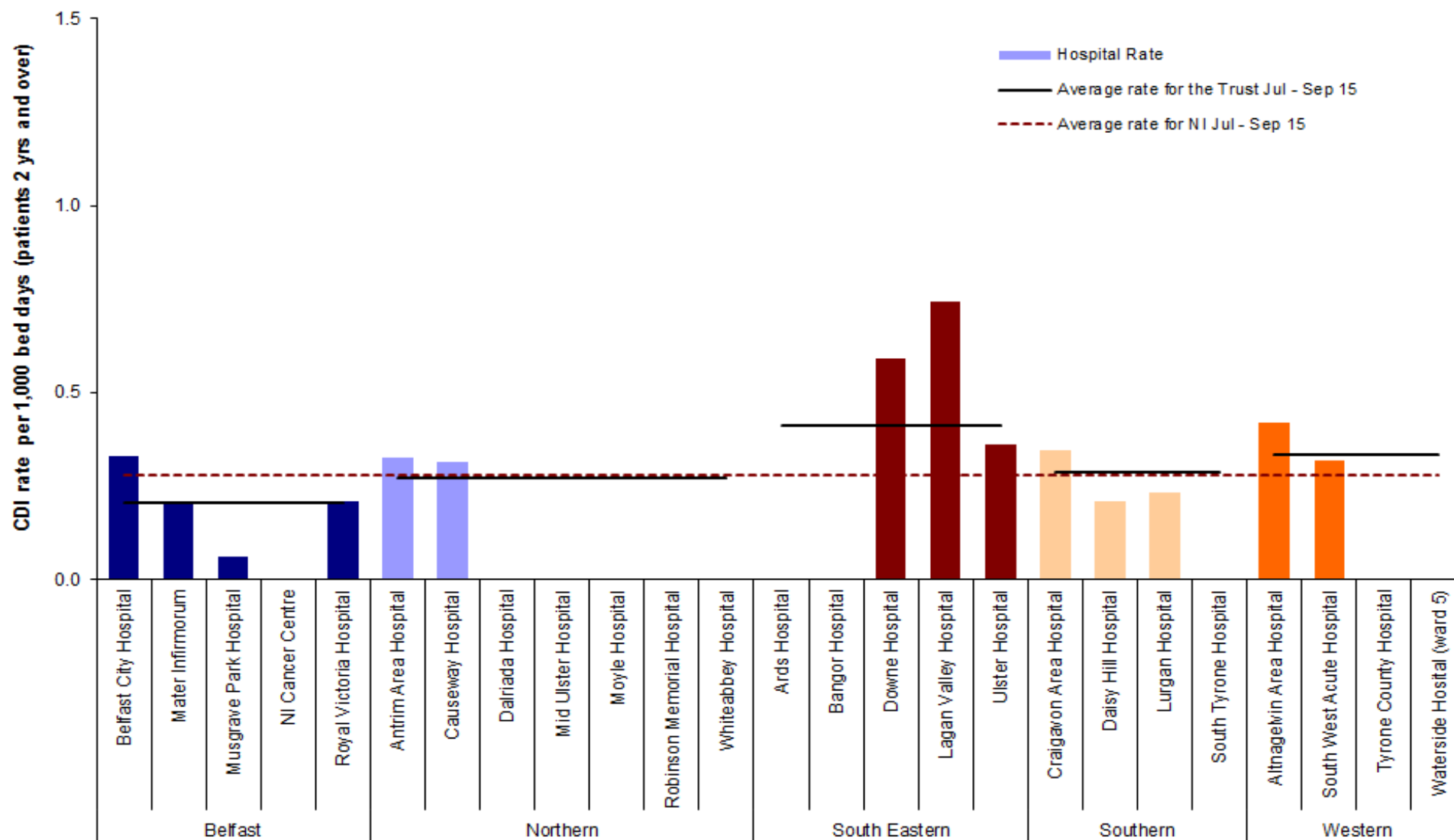


Figure 6: *C. difficile* rates during July - September 2015 - Inpatients aged two years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 6)

Appendix A

Table 4: Quarterly rate of *C. difficile* reports in patients aged 65 years and over, by hospital, October 2014 - September 2015

Hospital	Oct - Dec 2014	Jan - Mar 2015	Apr - Jun 2015	Jul - Sept 2015
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.370	0.291	0.452	0.442
Mater Infirmorum	0.816	0.332	0.956	0.179
Musgrave Park Hospital	0.176	0.360	0.099	0.101
NICCO (formerly at Belvoir Park)	0.000	0.318	0.656	0.000
Royal Group of Hospitals	0.321	0.256	0.273	0.325
Belfast Health & Social Care Trust	0.375	0.294	0.419	0.286
Antrim Area Hospital	0.666	0.290	0.478	0.385
Causeway Hospital	0.225	0.323	0.538	0.444
Dalriada Hospital	0.000	0.000	0.603	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	0.000	0.000	0.000	0.000
Whiteabbey Hospital	0.304	0.000	0.000	0.000
Northern Health & Social Care Trust	0.435	0.231	0.400	0.307
Ards Hospital	0.000	0.000	0.000	0.000
Bangor Hospital	0.000	0.000	0.000	0.000
Downe Hospital	0.963	0.335	1.097	0.753
Lagan Valley Hospital	0.330	0.604	0.366	0.915
Ulster Hospital	0.430	0.337	0.453	0.475
South Eastern Health & Social Care Trust	0.431	0.366	0.469	0.542
Craigavon Area Hospital	0.227	0.050	0.274	0.531
Daisy Hill Hospital	0.385	0.000	0.000	0.399
Lurgan Hospital	0.000	0.238	0.494	0.256
South Tyrone Hospital	0.000	0.000	0.000	0.000
Southern Health & Social Care Trust	0.219	0.055	0.208	0.418
Altnagelvin Area Hospital	0.340	0.481	0.224	0.630
South West Acute Hospital	0.830	0.409	0.094	0.500
Tyrone County Hospital	0.000	0.000	0.000	0.000
Waterside Hospital (Wards 1, 2, 3, 5)	0.615	0.539	0.000	0.000
Western Health & Social Care Trust	0.488	0.426	0.153	0.512
NI TOTAL	0.390	0.278	0.352	0.389

Table 5: Quarterly episodes of *C. difficile* reports in patients aged 65 years and over, by Trust, October 2014 - September 2015

Trust	Oct - Dec 2014	Jan - Mar 2015	Apr - Jun 2015	Jul - Sept 2015
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	27	23	30	20
Northern Health & Social Care Trust	17	10	17	12
South Eastern Health & Social Care Trust	17	15	18	20
Southern Health & Social Care Trust	7	2	7	13
Western Health & Social Care Trust	16	15	5	16
NI TOTAL	84	65	77	81
NI community TOTAL	52	53	47	32

Appendix A

Table 6: Quarterly rate of *C. difficile* reports in patients aged two years and over, by hospital, October 2014 - September 2015

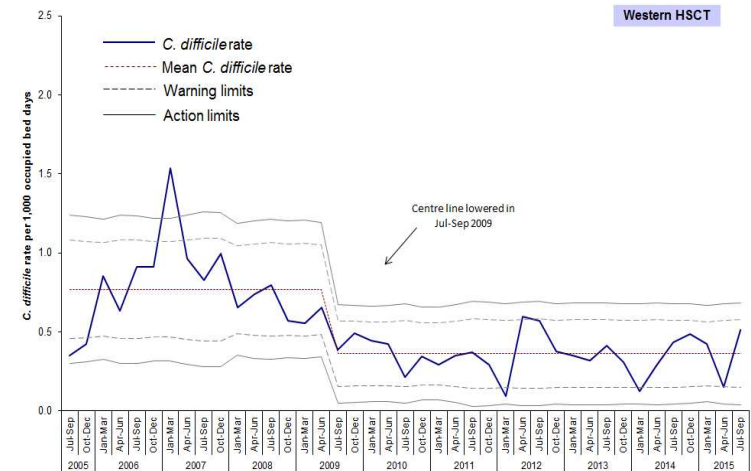
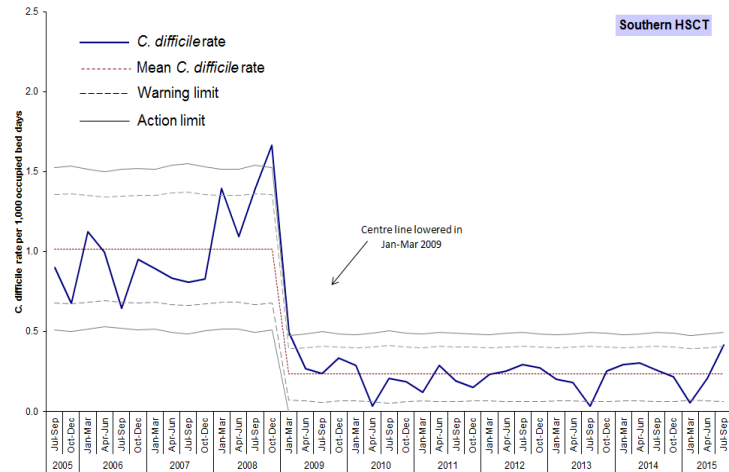
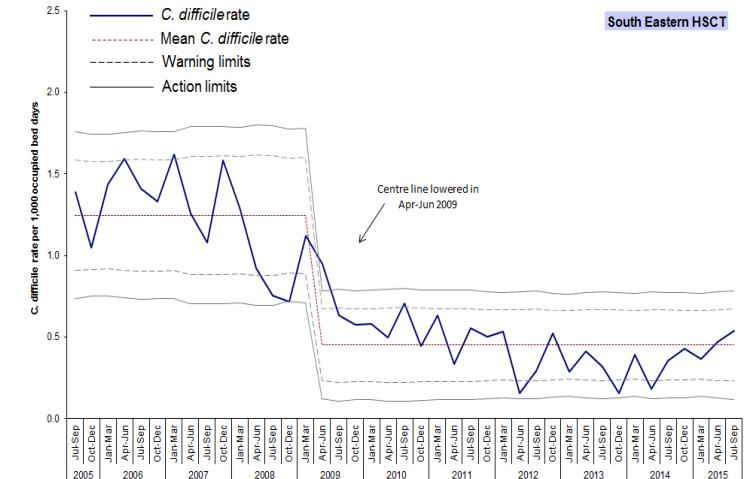
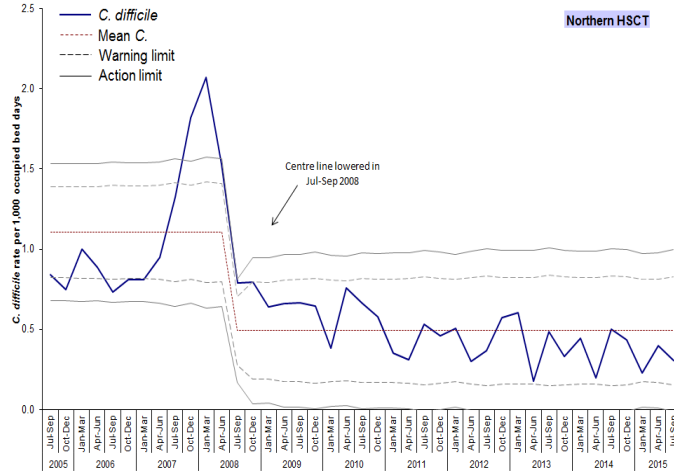
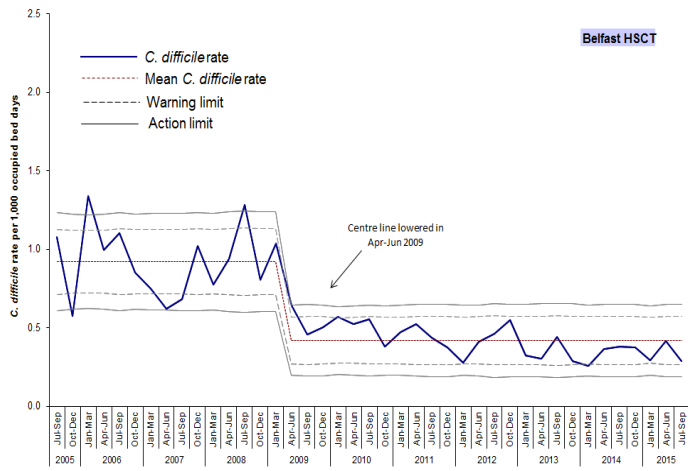
Hospital	Oct - Dec 2014	Jan - Mar 2015	Apr - Jun 2015	Jul - Sept 2015
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.336	0.263	0.317	0.328
Mater Infirmorum	0.443	0.239	0.625	0.202
Musgrave Park Hospital	0.161	0.222	0.058	0.061
NICCO (formerly at Belvoir Park)	0.164	0.325	0.662	0.000
Royal Group of Hospitals	0.232	0.181	0.145	0.209
Belfast Health & Social Care Trust	0.271	0.217	0.262	0.205
Antrim Area Hospital	0.401	0.255	0.415	0.328
Causeway Hospital	0.124	0.189	0.304	0.316
Dalriada Hospital	0.000	0.000	0.483	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	0.000	0.000	0.000	0.000
Whiteabbey Hospital	0.263	0.000	0.000	0.000
Northern Health & Social Care Trust	0.281	0.197	0.335	0.270
Ards Hospital	0.000	0.000	0.000	0.000
Bangor Hospital	0.000	0.000	0.000	0.000
Downe Hospital	1.325	0.276	0.883	0.591
Lagan Valley Hospital	0.277	0.516	0.449	0.743
Ulster Hospital	0.294	0.288	0.292	0.362
South Eastern Health & Social Care Trust	0.343	0.308	0.336	0.410
Craigavon Area Hospital	0.283	0.055	0.224	0.347
Daisy Hill Hospital	0.197	0.127	0.130	0.210
Lurgan Hospital	0.000	0.226	0.469	0.233
South Tyrone Hospital	0.000	0.000	0.000	0.000
Southern Health & Social Care Trust	0.226	0.083	0.206	0.285
Altnagelvin Area Hospital	0.259	0.314	0.261	0.418
South West Acute Hospital	0.645	0.386	0.060	0.318
Tyrone County Hospital	0.000	0.000	0.000	0.000
Waterside Hospital (Wards 1, 2, 3, 5)	0.187	0.179	0.000	0.000
Western Health & Social Care Trust	0.350	0.308	0.169	0.333
NI TOTAL	0.290	0.222	0.263	0.280

Table 7: Quarterly episodes of *C. difficile* reports in patients aged 2 years and over, by Trust, October 2014 - September 2015

Trust	Oct - Dec 2014	Jan - Mar 2015	Apr - Jun 2015	Jul - Sept 2015
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	39	32	37	28
Northern Health & Social Care Trust	18	13	22	17
South Eastern Health & Social Care Trust	21	19	20	24
Southern Health & Social Care Trust	13	5	12	16
Western Health & Social Care Trust	21	19	10	19
NI TOTAL	112	88	101	104
NI community TOTAL	63	59	59	42

Appendix B

Trends in *C. difficile* rates in inpatients aged 65 years and over, by HSCT and quarter, 2005–2015



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
Belfast	352	336	280	327	163	147	117	124	90	103
Northern	184	172	297	172	102	103	75	73	56	54
South Eastern	243	256	199	135	98	80	72	50	50	53
Southern	168	130	134	164	37	17	28	33	25	27
Western	96	132	109	104	71	46	35	58	37	54
Northern Ireland	1043	1026	1019	902	471	393	327	338	258	291