

C. difficile surveillance

Quarterly report

January - March 2015

Key points

- CDI reports for hospital inpatients aged 65 years and over decreased by 23% (from 84 to 65 episodes) during January-March 2015 compared to October-December 2014.
- CDI rate per 1,000 bed days decreased by 29% during January-March 2015 compared to October-December 2014.
- CDI reports for community patients aged 65 years and over increased by 2% (from 52 to 53 episodes) during January-March 2015 compared to October-December 2014.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, decreased by 16% during January-March 2015 compared to October-December 2014 (from 175 to 147 episodes).
- CDI reports for hospital inpatients aged 65 years and over increased by 3% between the 2013/14 and 2014/15 financial years.
- During January-March 2015 the most prevalent ribotypes for CDI inpatients are 078 (13%), 014 (13%), 015 (6%) and 005 (6%) (Table 1) and in the community are 078 (27%), 005 (10%) 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)

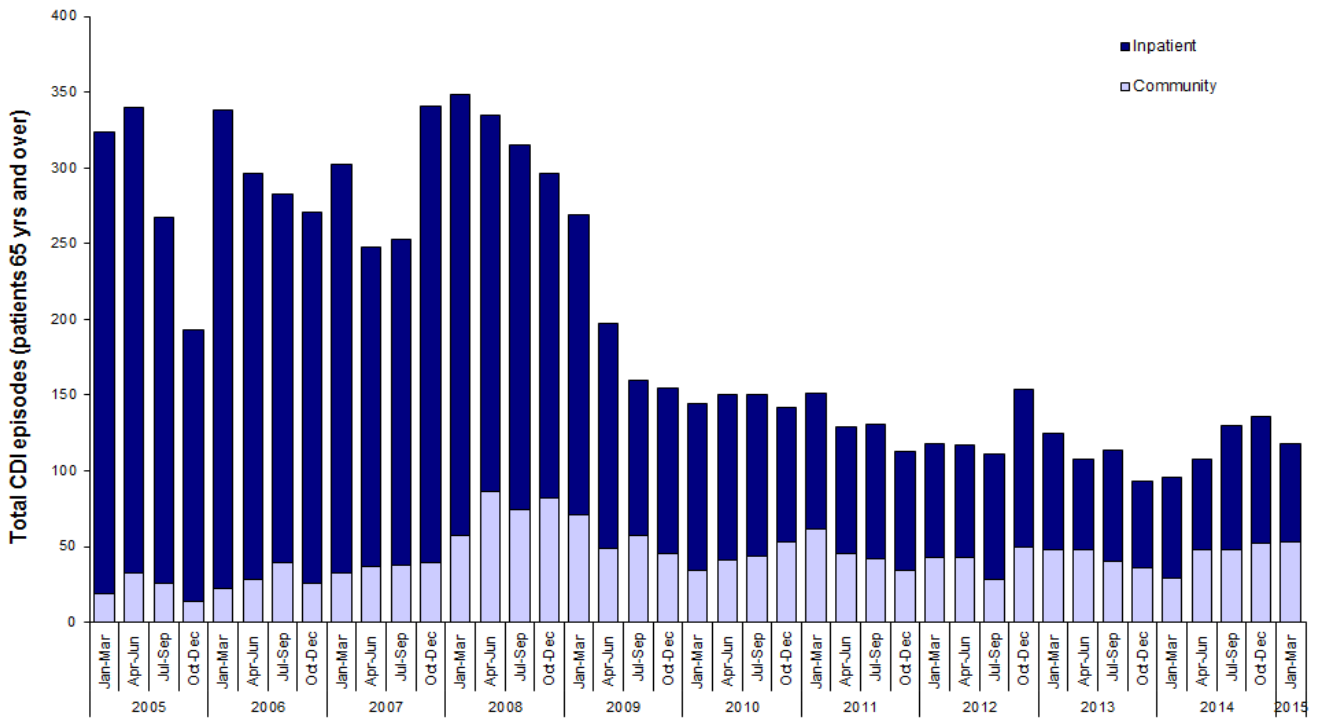


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2015

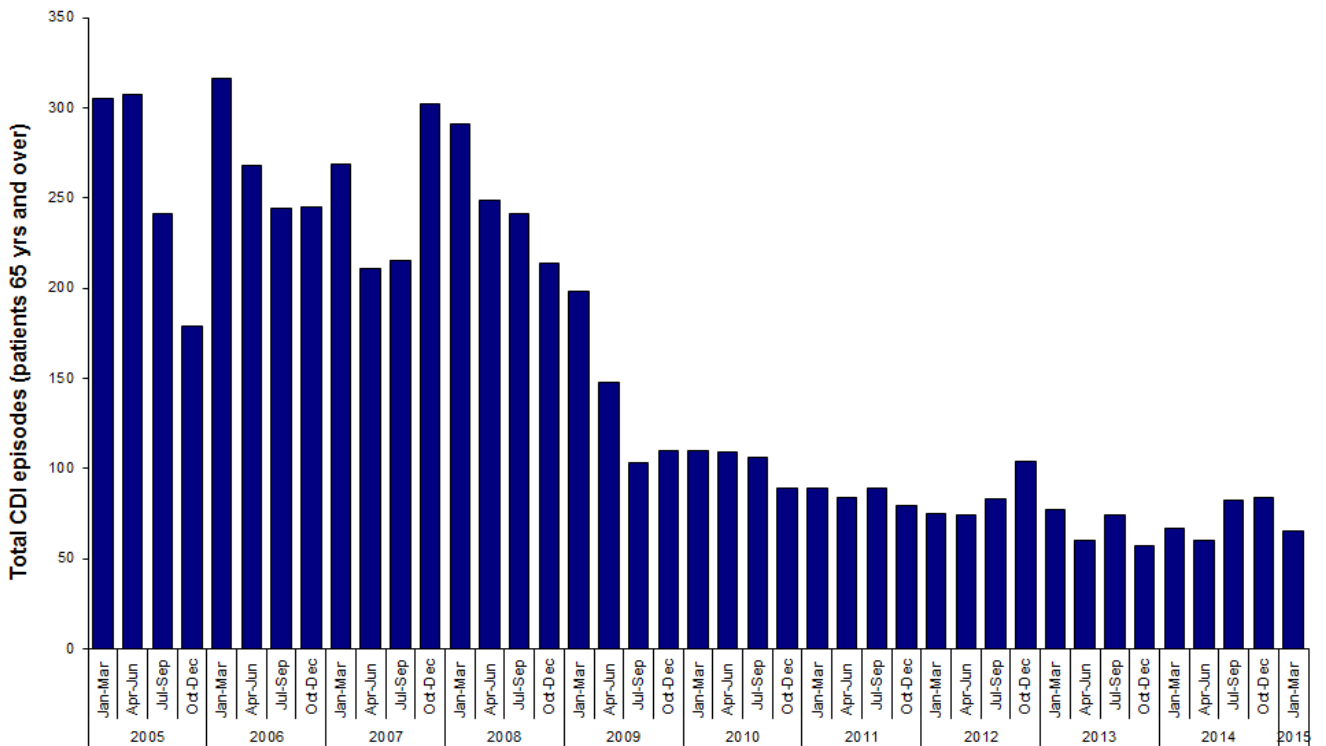


Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2015

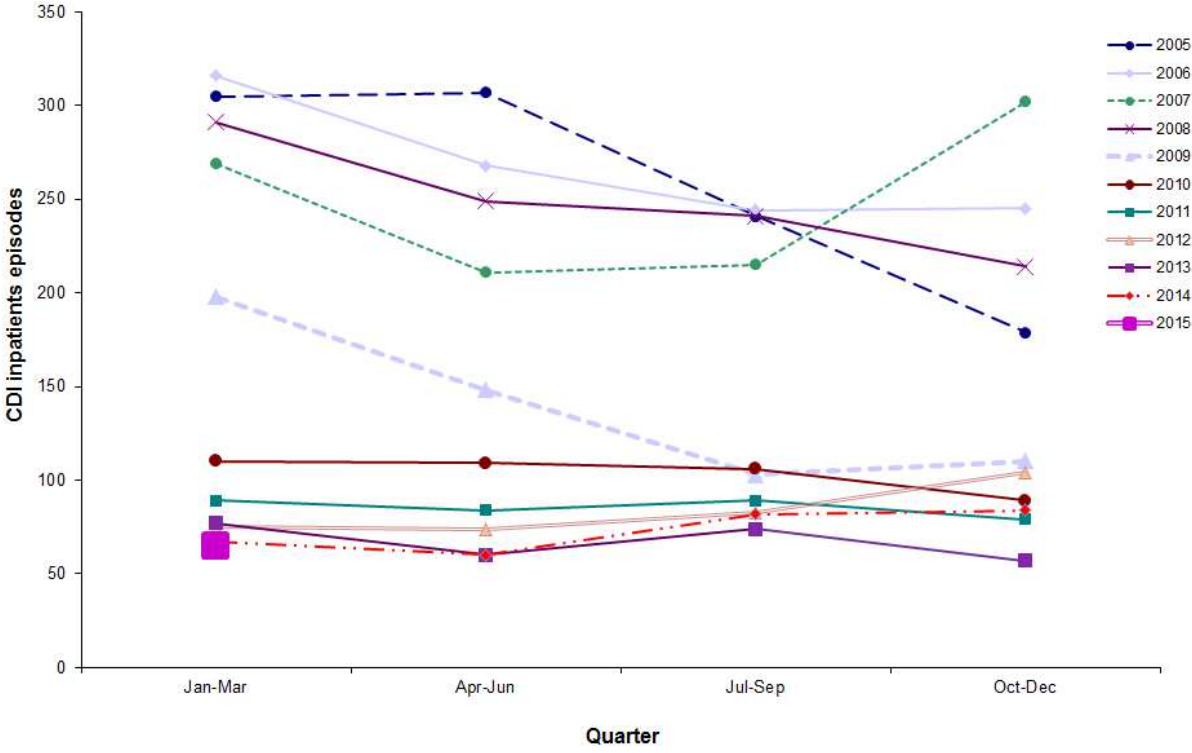


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2015

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.

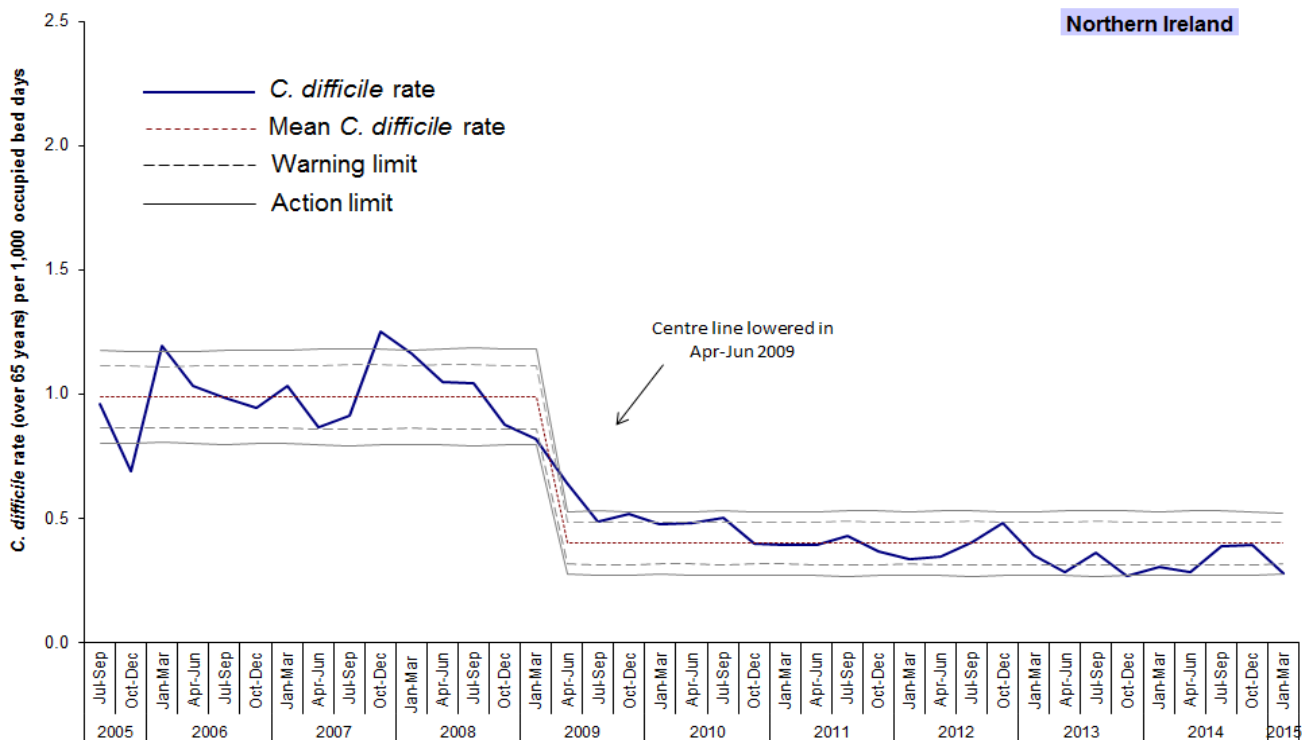


Figure 3: Statistical process control chart for quarterly *C. difficile* rates among inpatients in Northern Ireland aged 65 years and over (for HSCT level, see appendix B)

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, April 2014 - March 2015

Ribotype	Apr - Jun 2014		Jul - Sep 2014		Oct - Dec 2014		Jan - Mar 2015	
	Number	%	Number	%	Number	%	Number	%
001	2	2.7	4	3.8	1	0.9	2	2.3
002	4	5.4	9	8.6	5	4.5	4	4.5
005	3	4.1	10	9.5	8	7.1	5	5.7
014	3	4.1	8	7.6	13	11.6	11	12.5
014/020	0	0.0	1	1.0	2	1.8	0	0.0
015	2	2.7	9	8.6	5	4.5	5	5.7
020	2	2.7	5	4.8	9	8.0	3	3.4
023	6	8.1	3	2.9	2	1.8	2	2.3
027	0	0.0	0	0.0	0	0.0	0	0.0
078	20	27.0	19	18.1	13	11.6	11	12.5
106	1	1.4	1	1.0	1	0.9	2	2.3
193	3	4.1	1	1.0	4	3.6	1	1.1
Other	13	17.6	19	18.1	23	20.5	16	18.2
Not groupable**	5	6.8	6	5.7	7	6.3	7	8.0
Not on ribotype list	5	6.8	1	1.0	8	7.1	5	5.7
Not isolated***	5	6.8	9	8.6	11	9.8	14	15.9
Total	74		105		112		88	

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 2014 - March 2015

Ribotype	Apr - Jun 2014		Jul - Sep 2014		Oct - Dec 2014		Jan - Mar 2015	
	Number	%	Number	%	Number	%	Number	%
001	0	0.0	0	0.0	1	1.6	1	1.7
002	5	8.9	4	6.8	7	11.1	2	3.4
005	5	8.9	3	5.1	3	4.8	6	10.2
014	4	7.1	11	18.6	6	9.5	4	6.8
014/020	0	0.0	0	0.0	1	1.6	0	0.0
015	4	7.1	7	11.9	4	6.3	3	5.1
020	0	0.0	2	3.4	1	1.6	1	1.7
023	1	1.8	2	3.4	7	11.1	6	10.2
027	1	1.8	0	0.0	0	0.0	0	0.0
078	17	30.4	15	25.4	13	20.6	16	27.1
106	0	0.0	1	1.7	1	1.6	1	1.7
193	1	1.8	3	5.1	1	1.6	2	3.4
Other	9	16.1	4	6.8	3	4.8	8	13.6
Not groupable**	3	5.4	2	3.4	8	12.7	2	3.4
Not on ribotype list	6	10.7	1	1.7	3	4.8	2	3.4
Not isolated***	0	0.0	4	6.8	4	6.3	5	8.5
Total	56		59		63		59	

* 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, 014 and 005 in Northern Ireland Hospital Inpatients and Community Patients, January - March 2015

	078 (n = 27)		014 (n = 15)		005 (n = 11)		
Age	range	4 - 96	38 - 89	50 - 90			
	median	82	75	65			
Sex	n	%	n	%	n	%	
	Female	18	66.7	11	73.3	7	63.6
	Male	9	33.3	4	26.7	4	36.4
Trust							
	Belfast	9	33.3	4	26.7	5	45.5
	Northern	8	29.6	4	26.7	2	18.2
	South Eastern	4	14.8	2	13.3	2	18.2
	Southern	0	0.0	2	13.3	1	9.1
	Western	6	22.2	3	20.0	1	9.1
Source							
	Inpatient	11	40.7	11	73.3	5	45.5
	Community*	16	59.3	4	26.7	6	54.5

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

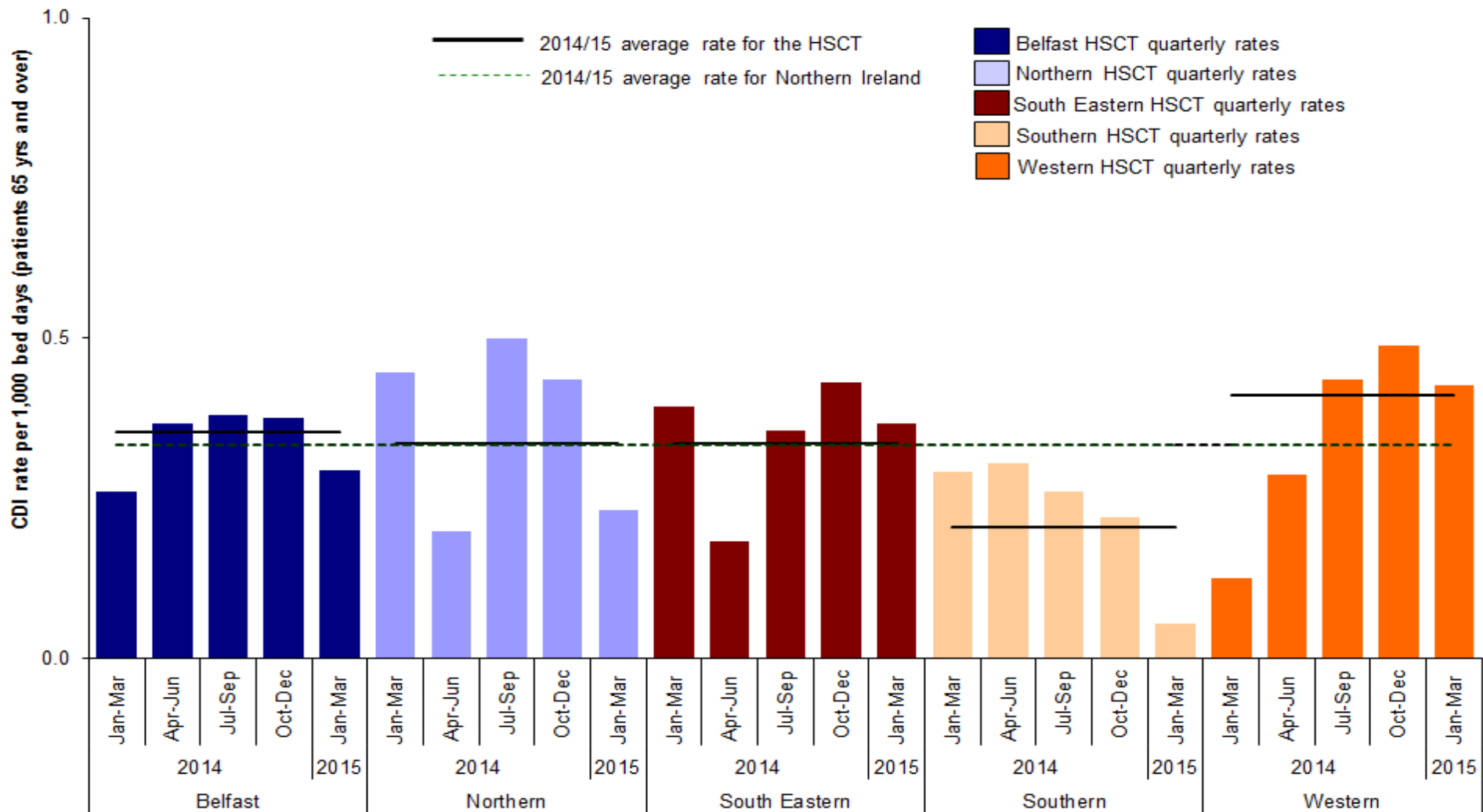


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2014 - March 2015, compared with financial year Northern Ireland and HSCT rates for 2014/15

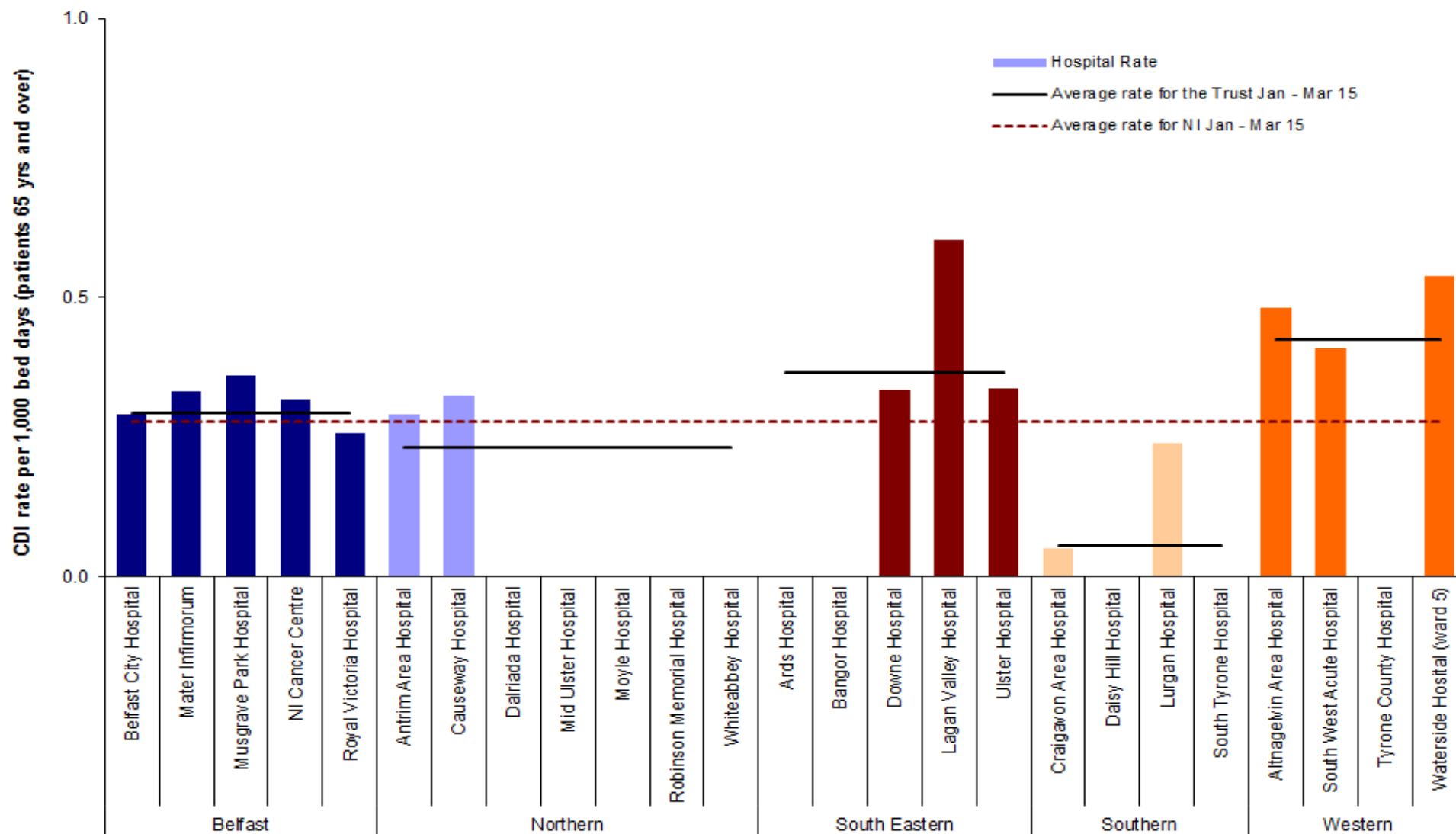


Figure 5: *C. difficile* rates during January - March 2015 - Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)

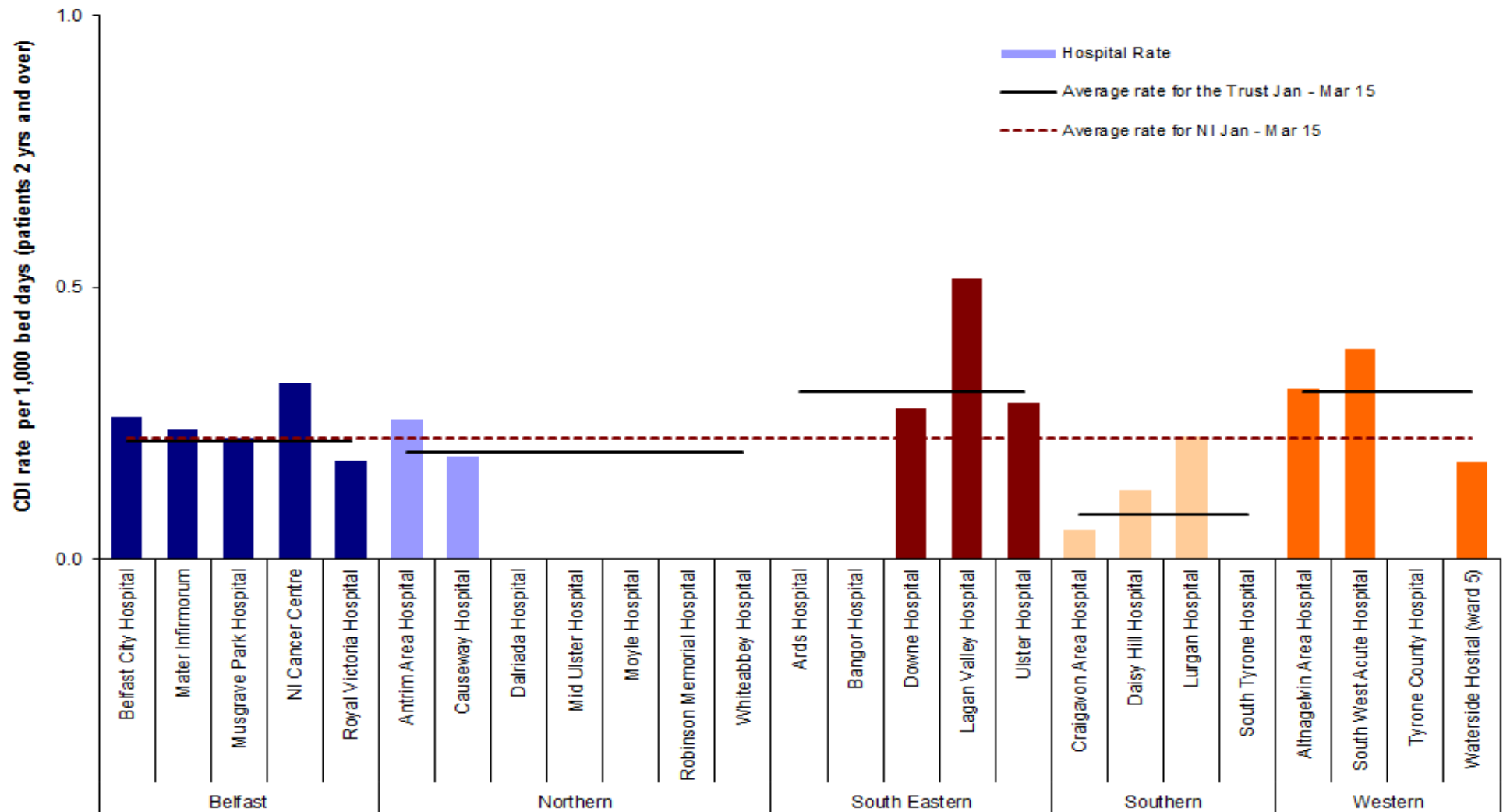


Figure 6: *C. difficile* rates during January - March 2015 - Inpatients aged two years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 6)

Appendix A

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

Hospital	Apr - Jun 2014	Jul - Sept 2014	Oct - Dec 2014	Jan - March 2015
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.403	0.451	0.370	0.291
Mater Infirmorum	0.277	0.270	0.816	0.332
Musgrave Park Hospital	0.097	0.094	0.176	0.360
NICCO (formerly at Belvoir Park)	0.310	0.365	0.000	0.318
Royal Group of Hospitals	0.483	0.487	0.321	0.256
Belfast Health & Social Care Trust	0.367	0.380	0.375	0.294
Antrim Area Hospital	0.181	0.671	0.666	0.290
Causeway Hospital	0.117	0.562	0.225	0.323
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	0.000	0.000	0.000	0.000
Whiteabbey Hospital	0.878	0.278	0.304	0.000
Northern Health & Social Care Trust	0.198	0.500	0.435	0.231
Ards Hospital	0.000	0.000	0.000	0.000
Bangor Hospital	0.661	0.643	0.000	0.000
Downe Hospital	0.000	0.325	0.963	0.335
Lagan Valley Hospital	0.000	0.000	0.330	0.604
Ulster Hospital	0.228	0.439	0.430	0.337
South Eastern Health & Social Care Trust	0.183	0.356	0.431	0.366
Craigavon Area Hospital	0.286	0.484	0.227	0.050
Daisy Hill Hospital	0.245	0.000	0.385	0.000
Lurgan Hospital	0.239	0.000	0.000	0.238
South Tyrone Hospital	0.643	0.000	0.000	0.000
Southern Health & Social Care Trust	0.304	0.259	0.219	0.055
Altnagelvin Area Hospital	0.246	0.577	0.340	0.481
South West Acute Hospital	0.282	0.295	0.830	0.409
Tyrone County Hospital	0.751	0.000	0.000	0.000
Waterside Hospital (Wards 1, 2, 3, 5)	0.000	0.521	0.615	0.539
Western Health & Social Care Trust	0.287	0.436	0.488	0.426
NI TOTAL	0.281	0.388	0.390	0.278

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

Trust	Apr - Jun 2014	Jul - Sept 2014	Oct - Dec 2014	Jan - March 2015
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	26	27	27	23
Northern Health & Social Care Trust	8	19	17	10
South Eastern Health & Social Care Trust	7	14	17	15
Southern Health & Social Care Trust	10	8	7	2
Western Health & Social Care Trust	9	14	16	15
NI TOTAL	60	82	84	65
NI community TOTAL	48	48	52	53

Appendix A

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

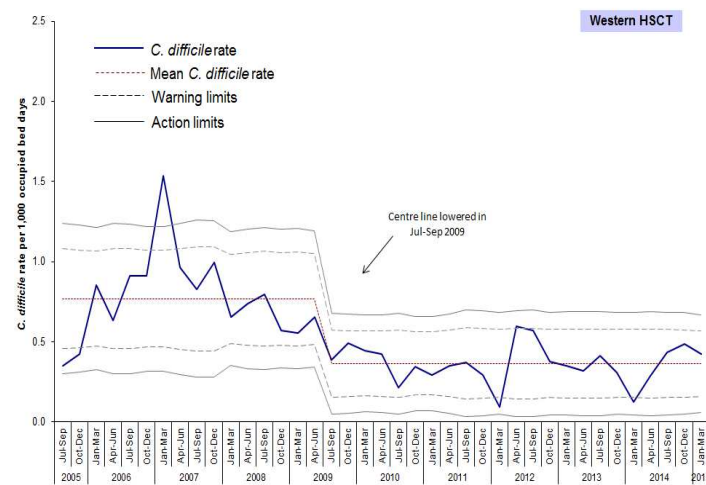
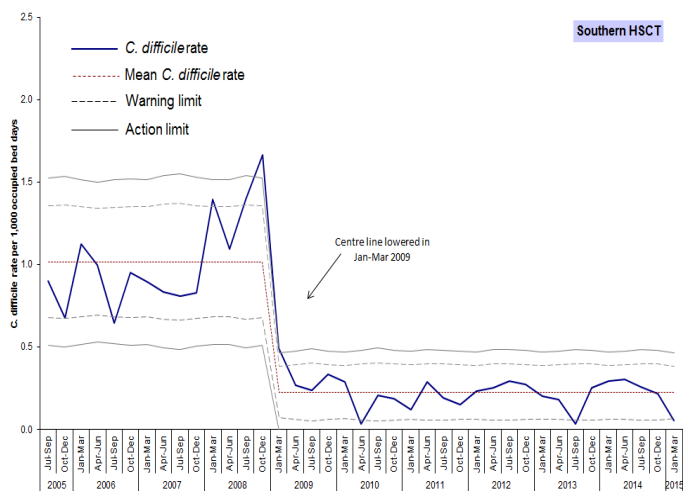
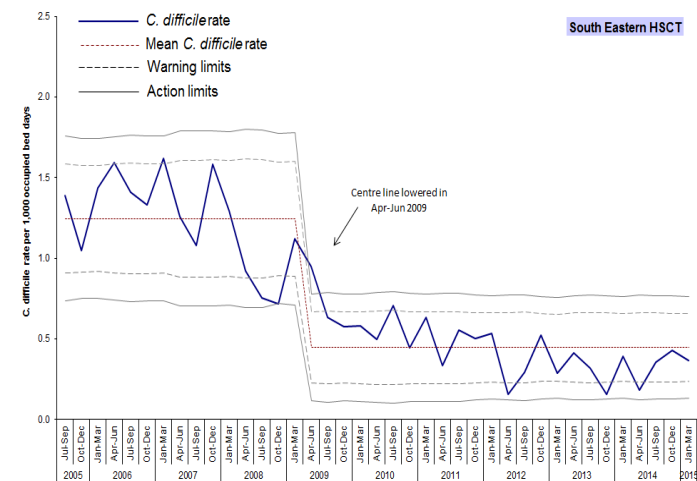
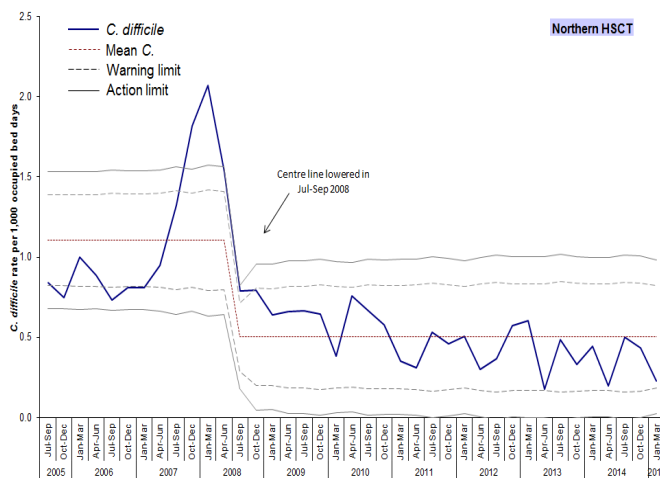
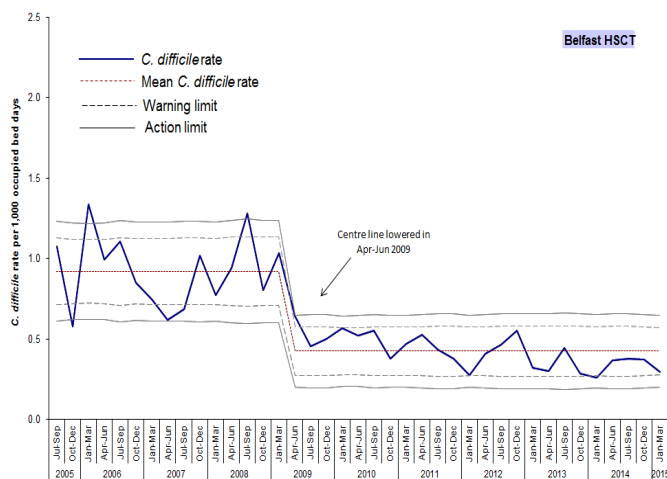
Hospital	Apr - Jun 2014	Jul - Sept 2014	Oct - Dec 2014	Jan - March 2015
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.306	0.354	0.336	0.263
Mater Infirmorum	0.209	0.151	0.443	0.239
Musgrave Park Hospital	0.055	0.058	0.161	0.222
NICCO (formerly at Belvoir Park)	0.170	0.337	0.164	0.325
Royal Group of Hospitals	0.233	0.300	0.232	0.181
Belfast Health & Social Care Trust	0.220	0.262	0.271	0.217
Antrim Area Hospital	0.159	0.416	0.401	0.255
Causeway Hospital	0.062	0.300	0.124	0.189
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	0.000	0.000	0.000	0.000
Whiteabbey Hospital	0.869	0.272	0.263	0.000
Northern Health & Social Care Trust	0.154	0.328	0.281	1.325
Ards Hospital	0.000	0.000	0.000	0.000
Bangor Hospital	0.618	0.585	0.000	0.000
Downe Hospital	0.000	0.257	1.325	0.276
Lagan Valley Hospital	0.000	0.142	0.277	0.516
Ulster Hospital	0.199	0.304	0.294	0.288
South Eastern Health & Social Care Trust	0.168	0.281	0.343	0.308
Craigavon Area Hospital	0.145	0.272	0.283	0.055
Daisy Hill Hospital	0.198	0.000	0.197	0.127
Lurgan Hospital	0.229	0.229	0.000	0.226
South Tyrone Hospital	0.595	0.000	0.000	0.000
Southern Health & Social Care Trust	0.192	0.182	0.226	0.083
Altnagelvin Area Hospital	0.181	0.380	0.259	0.314
South West Acute Hospital	0.237	0.379	0.645	0.386
Tyrone County Hospital	0.716	0.000	0.000	0.000
Waterside Hospital (Wards 1, 2, 3, 5)	0.000	0.182	0.187	0.179
Western Health & Social Care Trust	0.207	0.343	0.350	0.308
NI TOTAL	0.194	0.277	0.290	0.222

Table 7: Quarterly episodes of *C. difficile* reports in patients aged two years and over, by Trust, April 2014 - March 2015

Trust	Apr - Jun 2014	Jul - Sept 2014	Oct - Dec 2014	Jan - March 2015
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	31	37	39	32
Northern Health & Social Care Trust	10	21	18	13
South Eastern Health & Social Care Trust	10	17	21	19
Southern Health & Social Care Trust	11	10	13	5
Western Health & Social Care Trust	12	20	21	19
NI TOTAL	74	105	112	88
NI community TOTAL	56	59	63	59

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