

C. difficile surveillance

Quarterly report

October - December 2015

Key points

- CDI reports for hospital inpatients aged 65 years and over decreased by 5% (from 81 to 77 episodes) during October – December 2015 compared to July - September 2015.
- CDI rate per 1,000 bed days decreased by 9% during October - December 2015 compared to July - September 2015.
- CDI reports for community patients aged 65 years and over increased by 30% (from 33 to 43 episodes) during October - December 2015 compared to July - September 2015.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, increased by 6% during October - December 2015 compared to July – September 2015 (from 147 to 156 episodes).
- CDI reports for hospital inpatients aged 65 years and over increased by 13% between the 2013/14 and 2014/15 financial years.
- During October - December 2015 the most prevalent ribotypes for CDI inpatients are 015 (16%), 014 (12%) and 001 (10%) (Table 1) and in the community are 078 (15%), 015 (12%) and 001 (8%) (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)

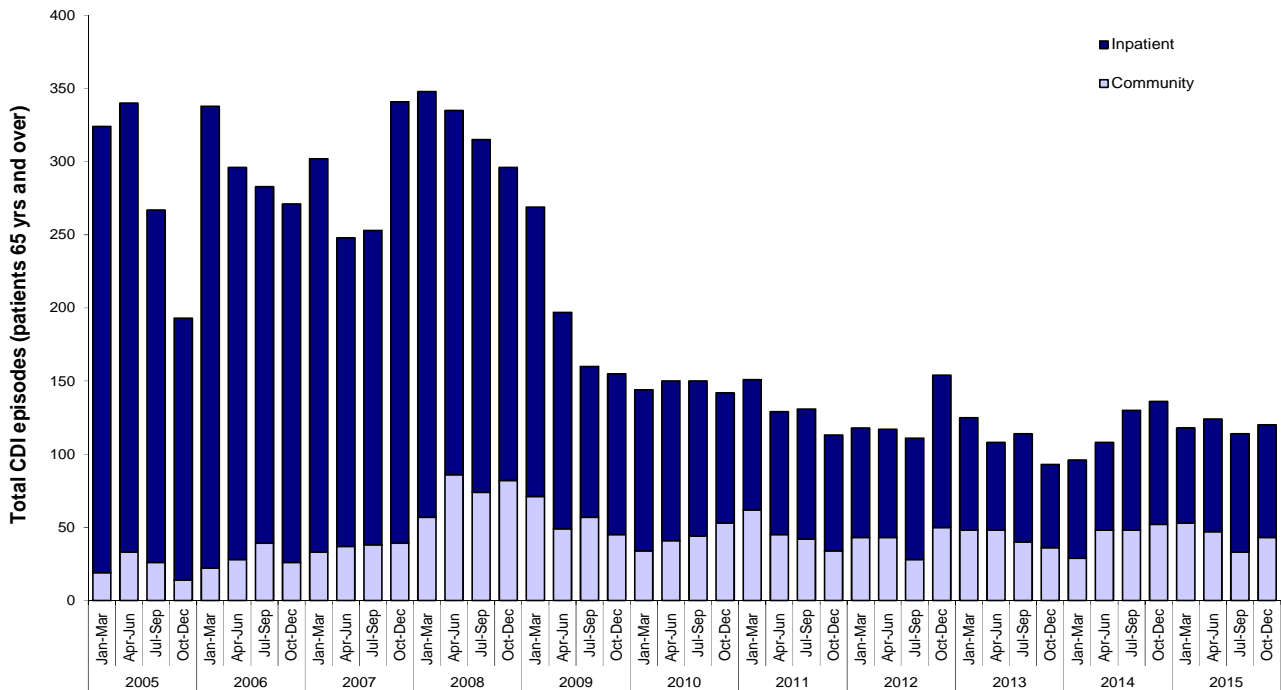


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2015

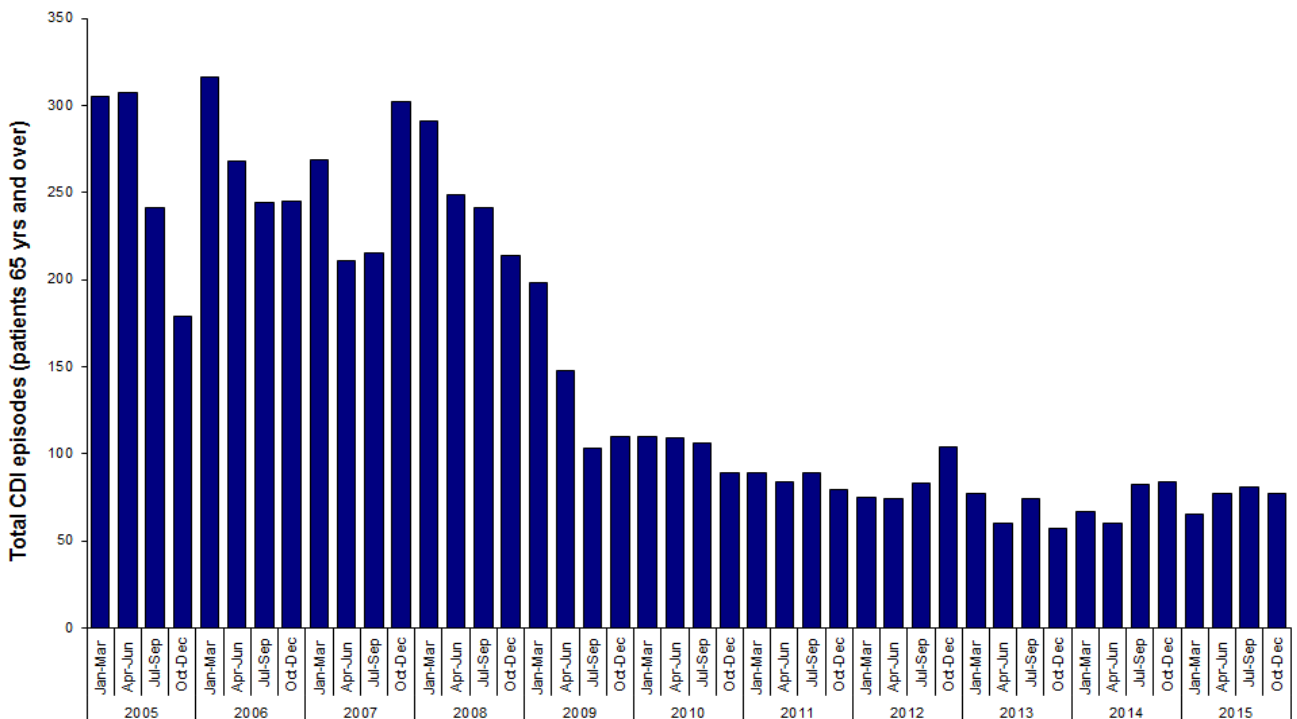


Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2015

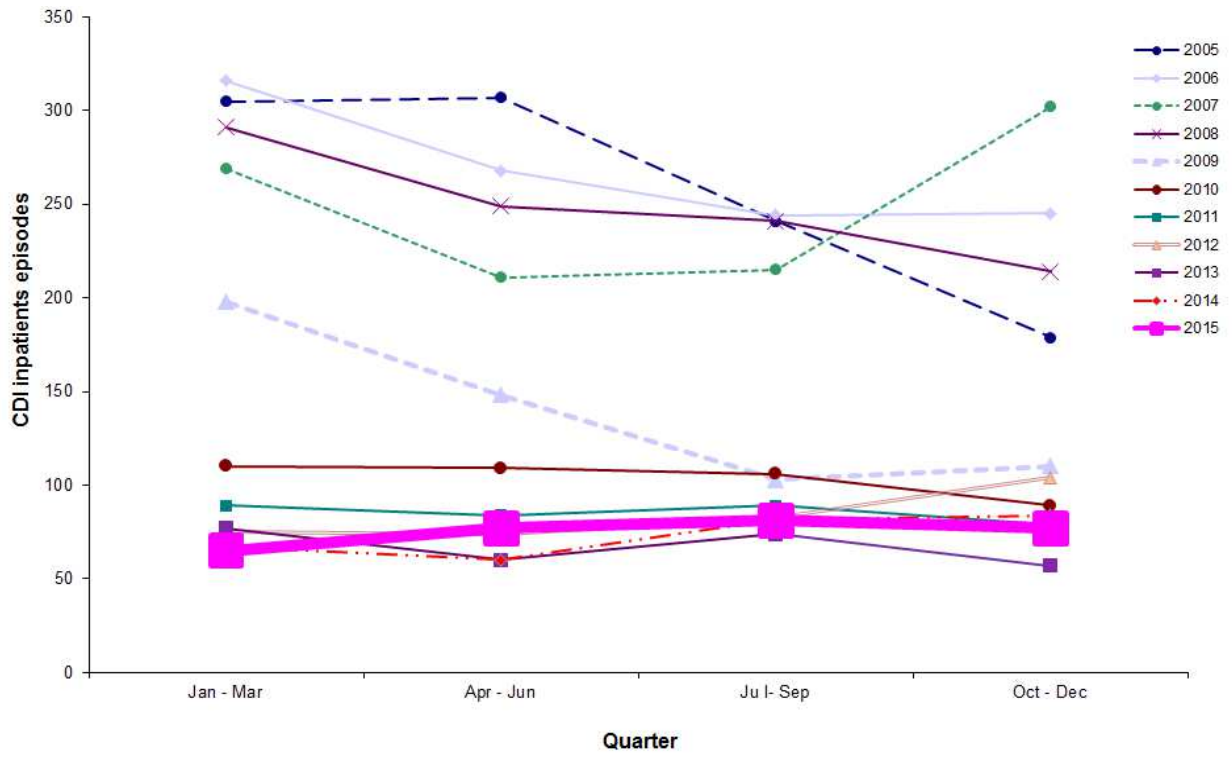


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2015

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.

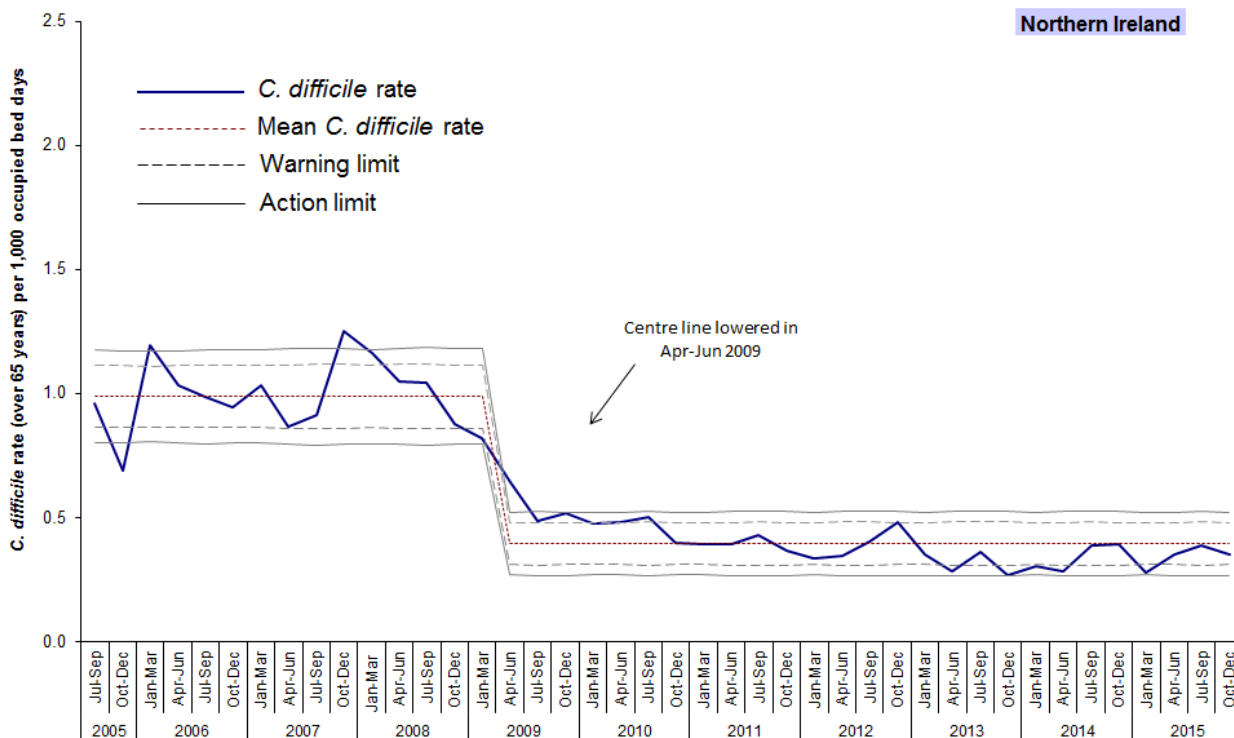


Figure 3: Statistical process control chart for quarterly *C. difficile* rates among inpatients in Northern Ireland aged 65 years and over (for HSCT level, see appendix B)

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, January - December 2015

Ribotype	Jan - Mar 2015		Apr - Jun 2015		Jul - Sep 2015		Oct - Dec 2015	
	Number	%	Number	%	Number	%	Number	%
001	2	2.3	6	5.9	2	1.9	10	9.6
002	4	4.5	16	15.8	11	10.6	9	8.7
005	5	5.7	6	5.9	2	1.9	7	6.7
014	11	12.5	12	11.9	8	7.7	12	11.5
014/020	0	0.0	0	0.0	0	0.0	0	0.0
015	5	5.7	4	4.0	12	11.5	17	16.3
020	3	3.4	6	5.9	4	3.8	8	7.7
023	2	2.3	4	4.0	3	2.9	6	5.8
027	0	0.0	0	0.0	1	1.0	0	0.0
078	11	12.5	8	7.9	10	9.6	6	5.8
106	2	2.3	0	0.0	0	0.0	0	0.0
193	1	1.1	5	5.0	2	1.9	3	2.9
Other	16	18.2	22	21.8	25	24.0	17	16.3
Not groupable**	7	8.0	4	4.0	8	7.7	4	3.8
Not on ribotype list	5	5.7	3	3.0	8	7.7	4	3.8
Not isolated***	14	15.9	5	5.0	8	7.7	1	1.0
Total	88		101		104		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, January - December 2015

Ribotype	Jan - Mar 2015		Apr - Jun 2015		Jul - Sep 2015		Oct - Dec 2015	
	Number	%	Number	%	Number	%	Number	%
001	1	1.7	1	1.7	0	0.0	4	7.7
002	2	3.4	3	5.1	3	7.0	3	5.8
005	6	10.2	5	8.5	3	7.0	3	5.8
014	4	6.8	3	5.1	3	7.0	2	3.8
014/020	0	0.0	0	0.0	0	0.0	0	0.0
015	3	5.1	3	5.1	6	14.0	6	11.5
020	1	1.7	2	3.4	1	2.3	3	5.8
023	6	10.2	3	5.1	4	9.3	1	1.9
027	0	0.0	0	0.0	1	2.3	0	0.0
078	16	27.1	16	27.1	5	11.6	8	15.4
106	1	1.7	0	0.0	0	0.0	2	3.8
193	2	3.4	4	6.8	0	0.0	0	0.0
Other	8	13.6	11	18.6	12	27.9	10	19.2
Not groupable**	2	3.4	2	3.4	4	9.3	4	7.7
Not on ribotype list	2	3.4	3	5.1	1	2.3	5	9.6
Not isolated***	5	8.5	3	5.1	0	0.0	1	1.9
Total	59		59		43		52	

* 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, 001 and 014 in Northern Ireland
Hospital Inpatients and Community Patients, October - December 2015**

		015 (n = 23)		078 (n = 14)		001 (n = 14)		014 (n = 14)	
Age	range	35 - 95		46 - 97		37 - 91		50 - 92	
	median	78		82		72		67	
Sex		n	%	n	%	n	%	n	%
	Female	14	60.9	8	57.1	5	35.7	6	42.9
	Male	9	39.1	6	42.9	9	64.3	8	57.1
Trust	Belfast	9	39.1	7	50.0	5	35.7	6	42.9
	Northern	3	13.0	1	7.1	3	21.4	2	14.3
	South Eastern	4	17.4	1	7.1	1	7.1	0	0.0
	Southern	4	17.4	1	7.1	2	14.3	4	28.6
	Western	3	13.0	4	28.6	3	21.4	2	14.3
Source	Inpatient	17	73.9	6	42.9	10	71.4	12	85.7
	Community*	6	26.1	8	57.1	4	28.6	2	14.3

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

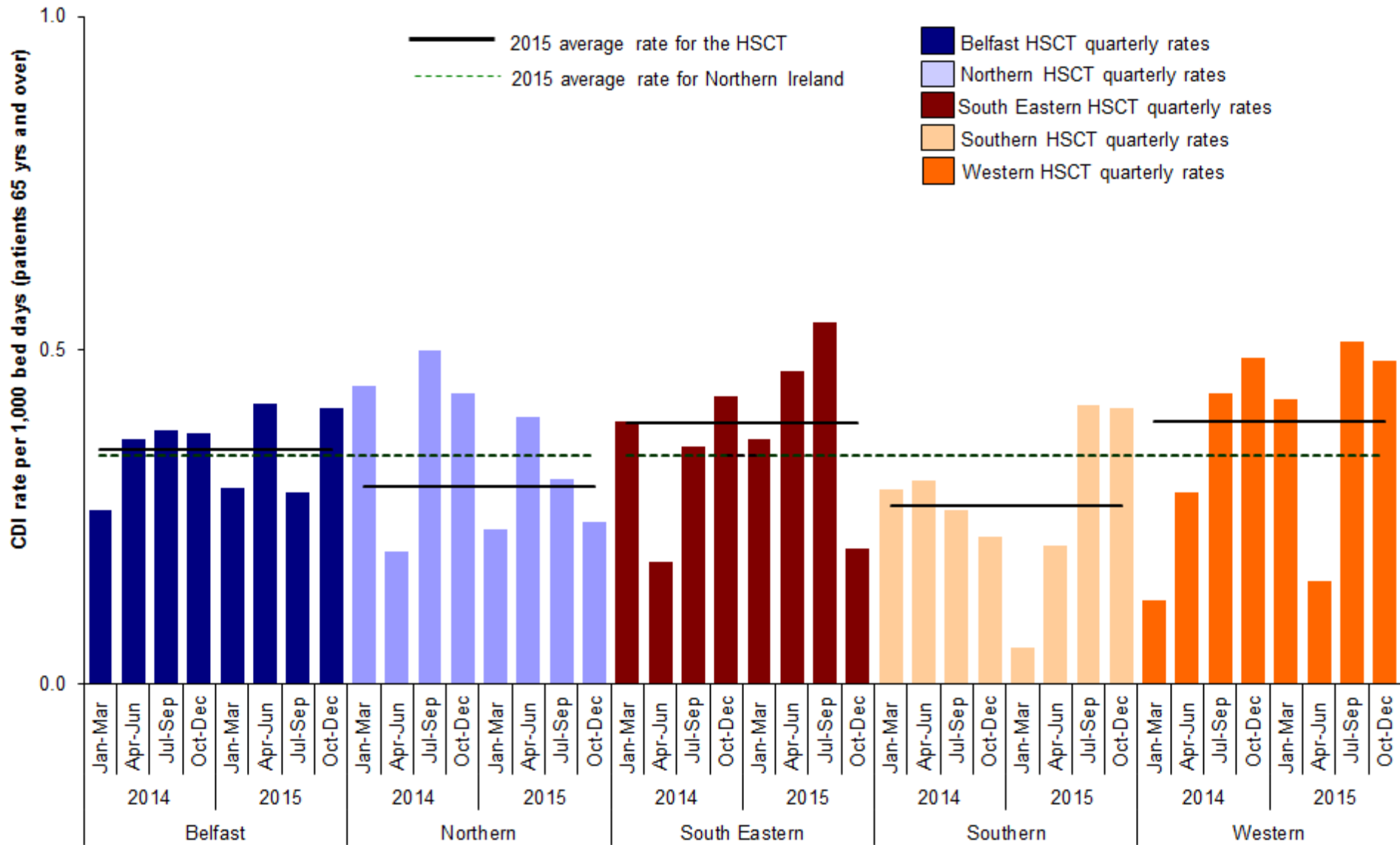


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2014 - December 2015, compared with annual Northern Ireland and HSCT rates for 2015

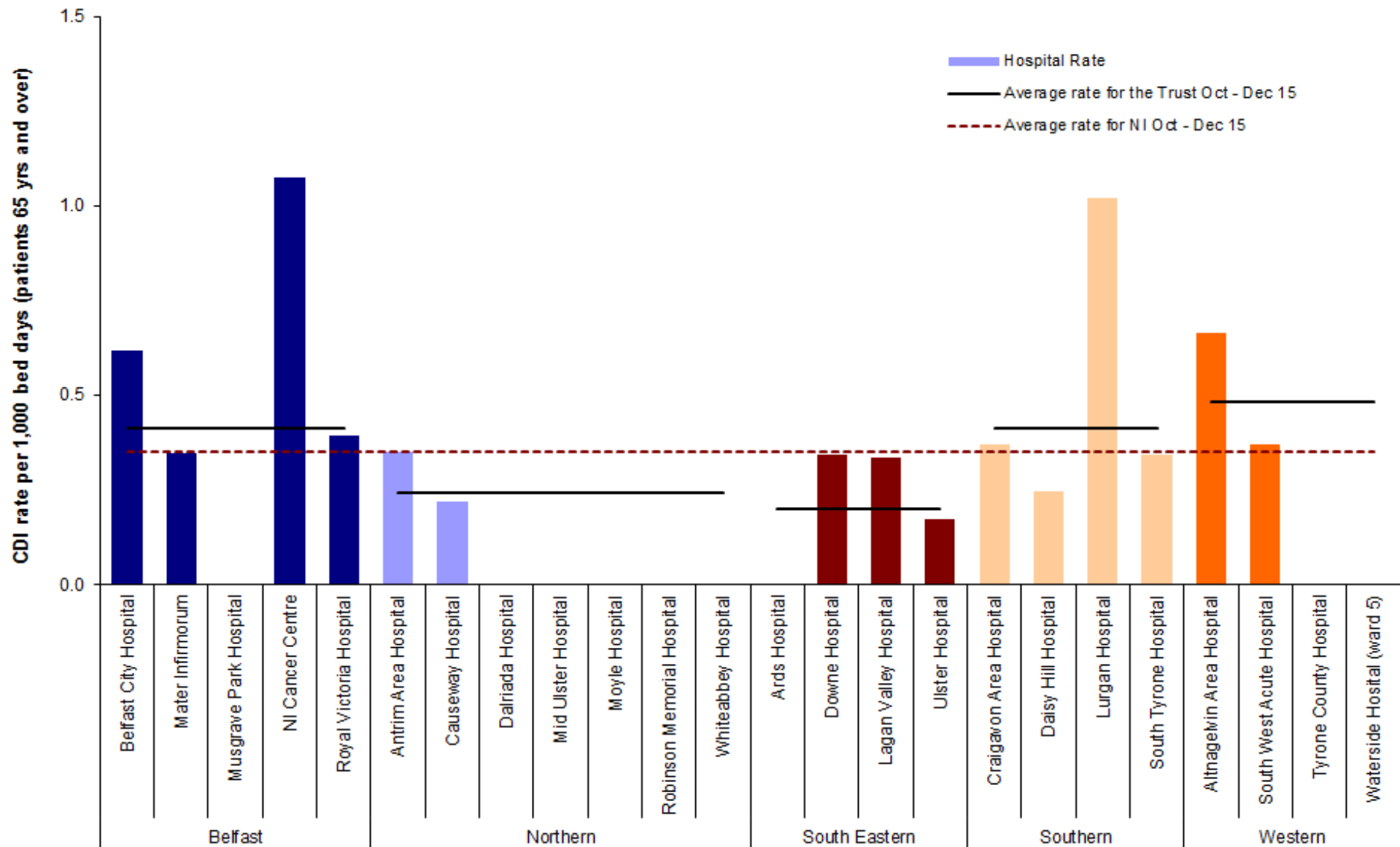


Figure 5: *C. difficile* rates during October - December 2015 - Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)

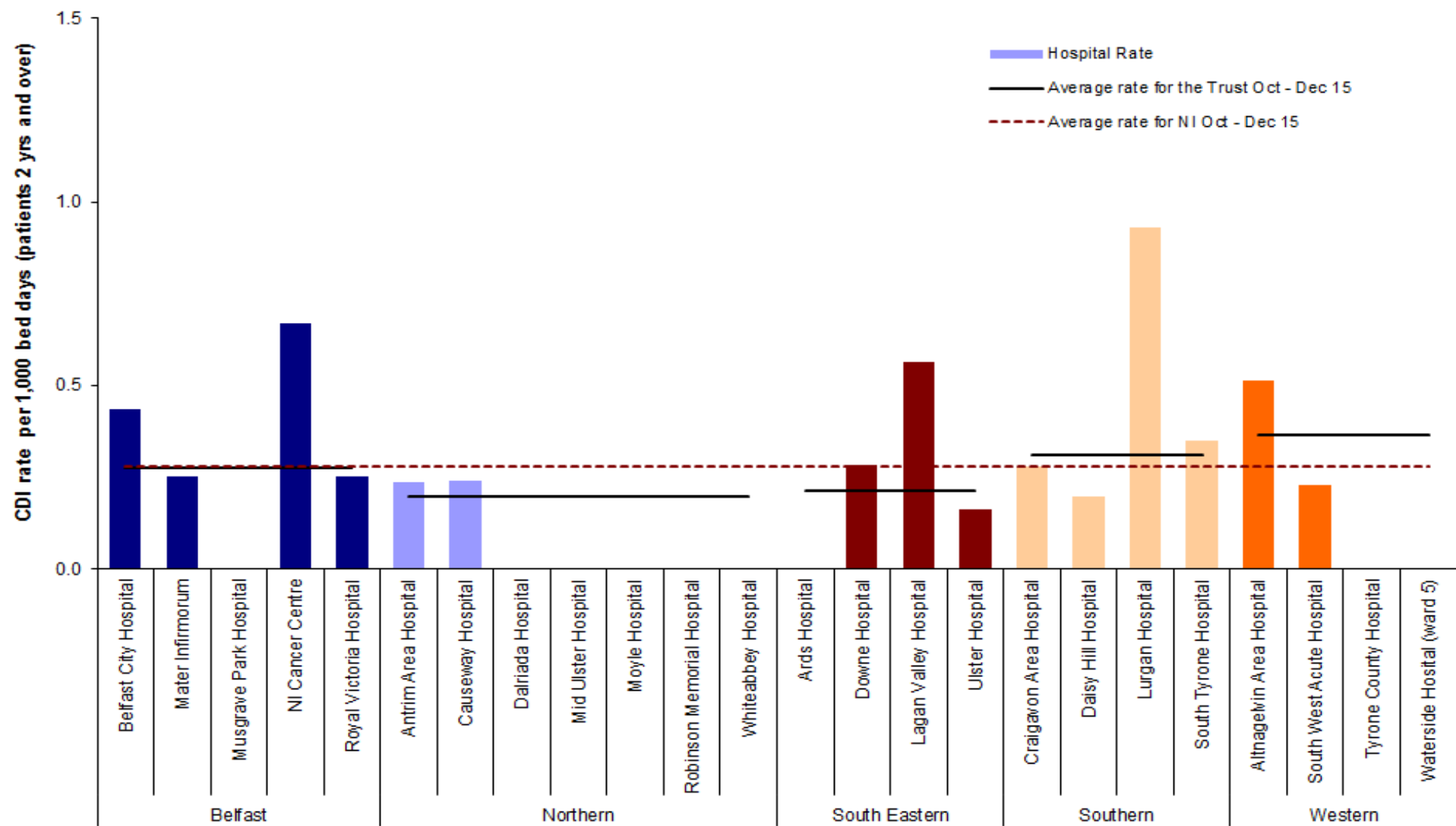


Figure 6: *C. difficile* rates during October - December 2015 - Inpatients aged two years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 6)

Appendix A

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

Hospital	Jan - Mar 2015	Apr - Jun 2015	Jul - Sept 2015	Oct - Dec 2015
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.291	0.452	0.442	0.618
Mater Infirmorum	0.332	0.956	0.179	0.346
Musgrave Park Hospital	0.360	0.099	0.101	0.000
NICCO (formerly at Belvoir Park)	0.318	0.656	0.000	1.073
Royal Group of Hospitals	0.256	0.273	0.325	0.392
Belfast Health & Social Care Trust	0.294	0.419	0.286	0.412
Antrim Area Hospital	0.290	0.478	0.385	0.352
Causeway Hospital	0.323	0.538	0.444	0.219
Dalriada Hospital	0.000	0.603	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	0.000	0.000	0.000	0.000
Northern Health & Social Care Trust	0.231	0.400	0.307	0.242
Ards Hospital	0.000	0.000	0.000	0.000
Downe Hospital	0.335	1.097	0.753	0.342
Lagan Valley Hospital	0.604	0.366	0.915	0.334
Ulster Hospital	0.337	0.453	0.475	0.172
South Eastern Health & Social Care Trust	0.366	0.469	0.542	0.202
Craigavon Area Hospital	0.050	0.274	0.531	0.369
Daisy Hill Hospital	0.000	0.000	0.399	0.247
Lurgan Hospital	0.238	0.494	0.256	1.021
South Tyrone Hospital	0.000	0.000	0.000	0.343
Southern Health & Social Care Trust	0.055	0.208	0.418	0.413
Altnagelvin Area Hospital	0.481	0.224	0.630	0.663
South West Acute Hospital	0.409	0.094	0.500	0.369
Tyrone County Hospital	0.000	0.000	0.000	0.000
Waterside Hospital (Wards 1, 2, 3, 5)	0.539	0.000	0.000	0.000
Western Health & Social Care Trust	0.426	0.153	0.512	0.483
NI TOTAL	0.278	0.352	0.389	0.353

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

Trust	Jan - Mar 2015	Apr - Jun 2015	Jul - Sept 2015	Oct - Dec 2015
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	23	30	20	29
Northern Health & Social Care Trust	10	17	12	10
South Eastern Health & Social Care Trust	15	18	20	8
Southern Health & Social Care Trust	2	7	13	14
Western Health & Social Care Trust	15	5	16	16
NI TOTAL	65	77	81	77
NI community TOTAL	53	47	33	43

Appendix A

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

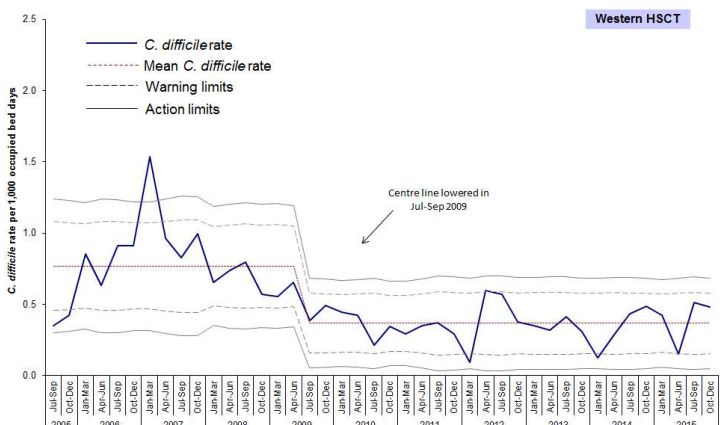
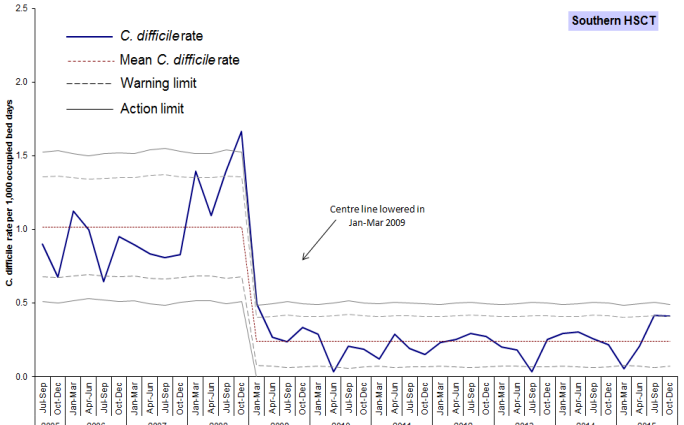
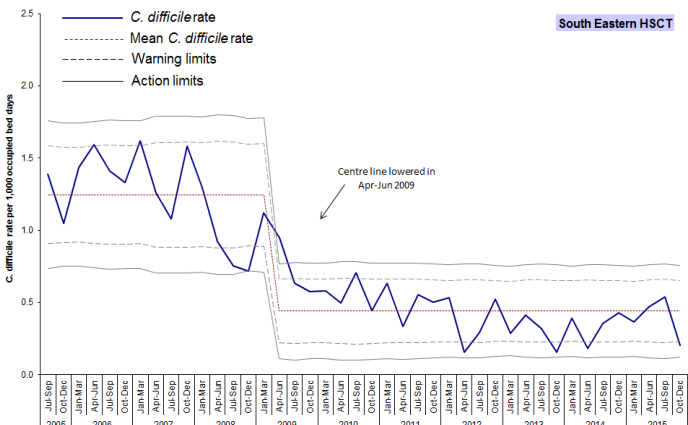
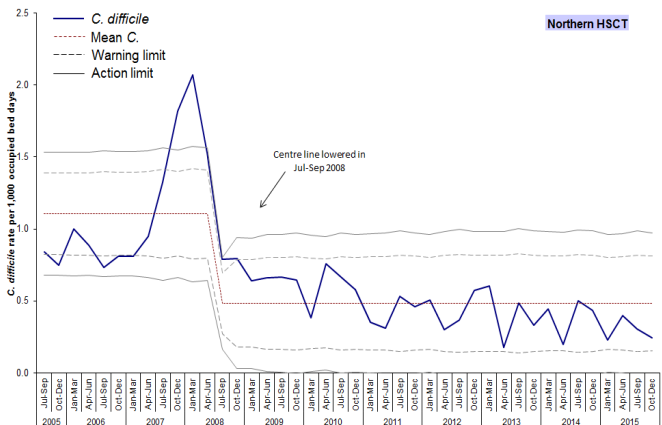
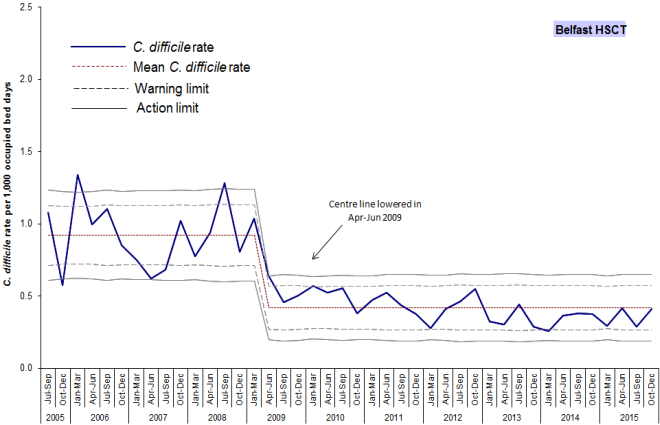
Hospital	Jan - Mar 2015	Apr - Jun 2015	Jul - Sept 2015	Oct - Dec 2015
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.263	0.317	0.328	0.436
Mater Infirmorum	0.239	0.625	0.202	0.251
Musgrave Park Hospital	0.222	0.058	0.061	0.000
NICCO (formerly at Belvoir Park)	0.325	0.662	0.000	0.668
Royal Group of Hospitals	0.181	0.145	0.209	0.250
Belfast Health & Social Care Trust	0.217	0.262	0.205	0.275
Antrim Area Hospital	0.255	0.415	0.328	0.235
Causeway Hospital	0.189	0.304	0.316	0.242
Dalriada Hospital	0.000	0.483	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	0.000	0.000	0.000	0.000
Northern Health & Social Care Trust	0.197	0.335	0.270	0.198
Ards Hospital	0.000	0.000	0.000	0.000
Downe Hospital	0.276	0.883	0.591	0.284
Lagan Valley Hospital	0.516	0.449	0.743	0.563
Ulster Hospital	0.288	0.292	0.362	0.163
South Eastern Health & Social Care Trust	0.308	0.336	0.410	0.212
Craigavon Area Hospital	0.055	0.224	0.347	0.279
Daisy Hill Hospital	0.127	0.130	0.210	0.199
Lurgan Hospital	0.226	0.469	0.233	0.929
South Tyrone Hospital	0.000	0.000	0.000	0.348
Southern Health & Social Care Trust	0.083	0.206	0.285	0.310
Altnagelvin Area Hospital	0.314	0.261	0.418	0.511
South West Acute Hospital	0.386	0.060	0.318	0.230
Tyrone County Hospital	0.000	0.000	0.000	0.000
Waterside Hospital (Wards 1, 2, 3, 5)	0.179	0.000	0.000	0.000
Western Health & Social Care Trust	0.308	0.169	0.333	0.364
NI TOTAL	0.222	0.263	0.280	0.271

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

Trust	Jan - Mar 2015	Apr - Jun 2015	Jul - Sept 2015	Oct - Dec 2015
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	32	37	28	38
Northern Health & Social Care Trust	13	22	17	13
South Eastern Health & Social Care Trust	19	20	24	13
Southern Health & Social Care Trust	5	12	16	18
Western Health & Social Care Trust	19	10	19	22
NI TOTAL	88	101	104	104
NI community TOTAL	59	59	43	52

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