

C. difficile surveillance

Quarterly report

January - March 2019

Key points

- CDI reports for hospital inpatients aged 65 years and over increased by 45% (from 64 to 93 episodes) during January – March 2019 compared to October - December 2018.
- CDI rate per 1,000 bed days increased by 41% January – March 2019 compared to October - December 2018.
- CDI reports for community patients aged 65 years and over decreased by 5% (from 38 to 36 episodes) during January – March 2019 compared to October - December 2018.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, increased by 39% during January – March 2019 compared to October - December 2018 (from 124 to 172 episodes).
- CDI reports for hospital inpatients aged 65 years and over increased by 12% between the 2017/18 and 2018/19 financial years.
- During January - March 2019 the most prevalent ribotypes for CDI inpatients are 002 (42.6%), 078 (12.3%), 014 and 020 (both 5.7%) (Table 1). The most predominate community ribotypes are 002 (28%), 078 (20%) and 015 (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)

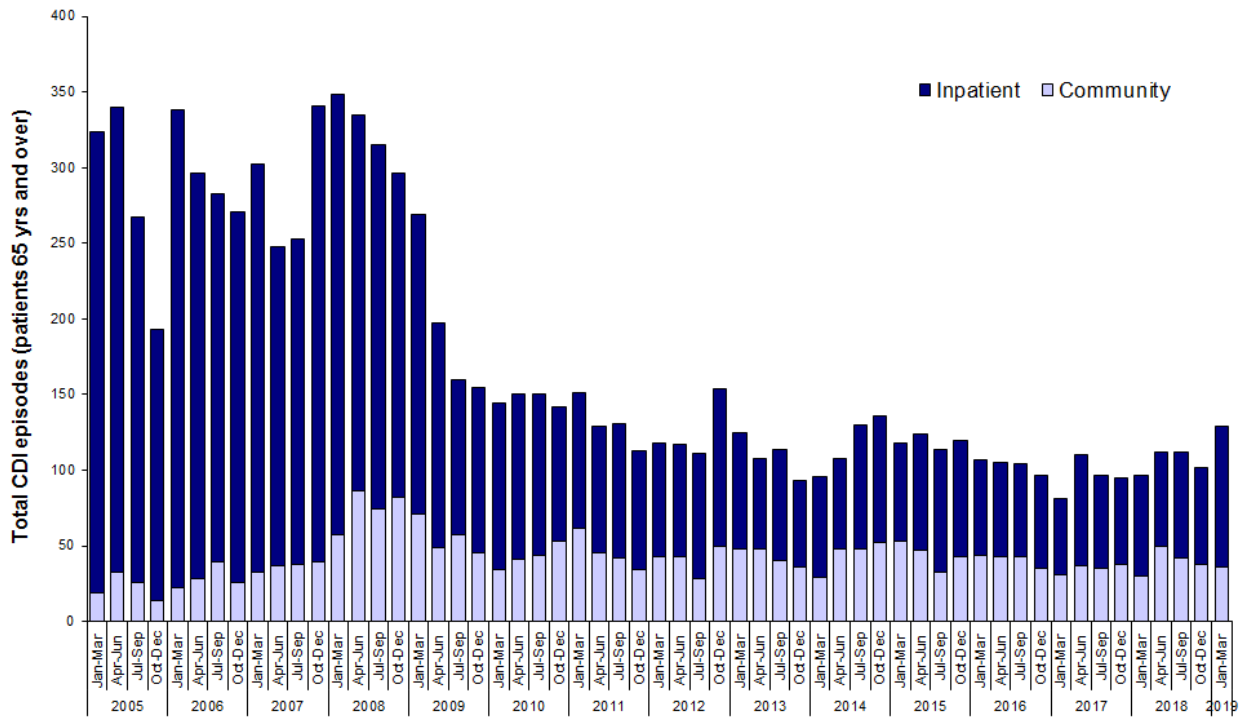


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2019

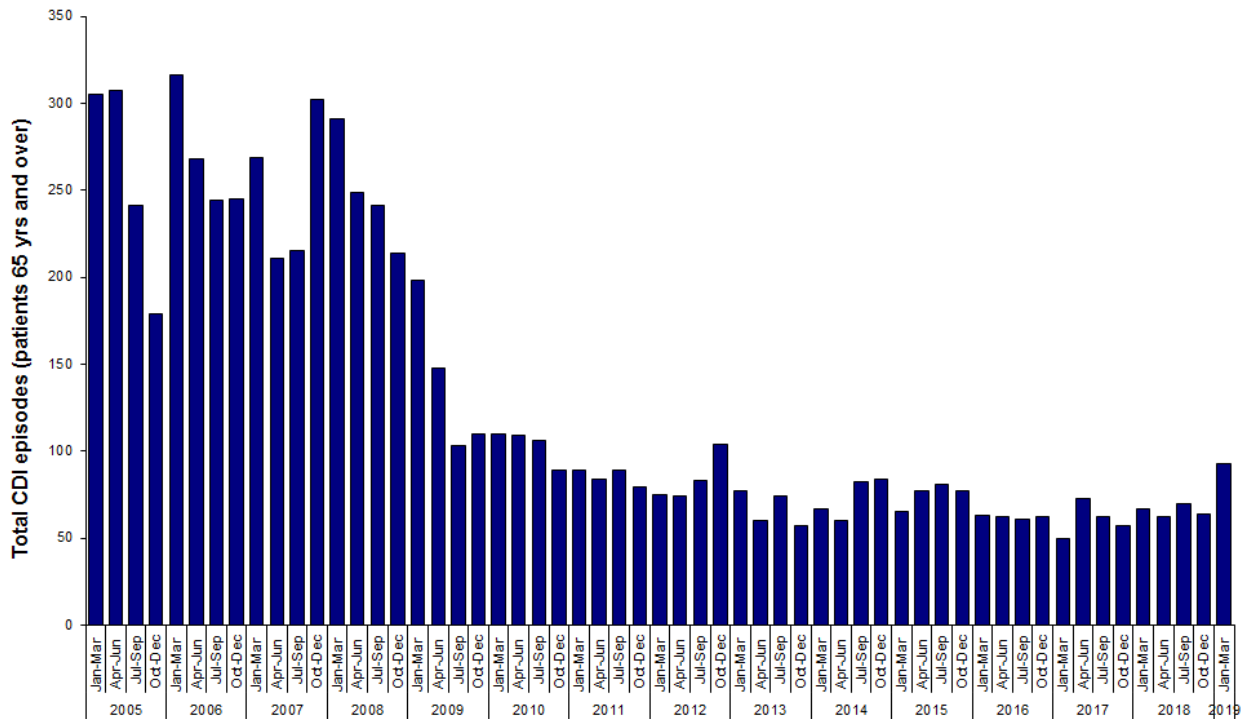


Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2019

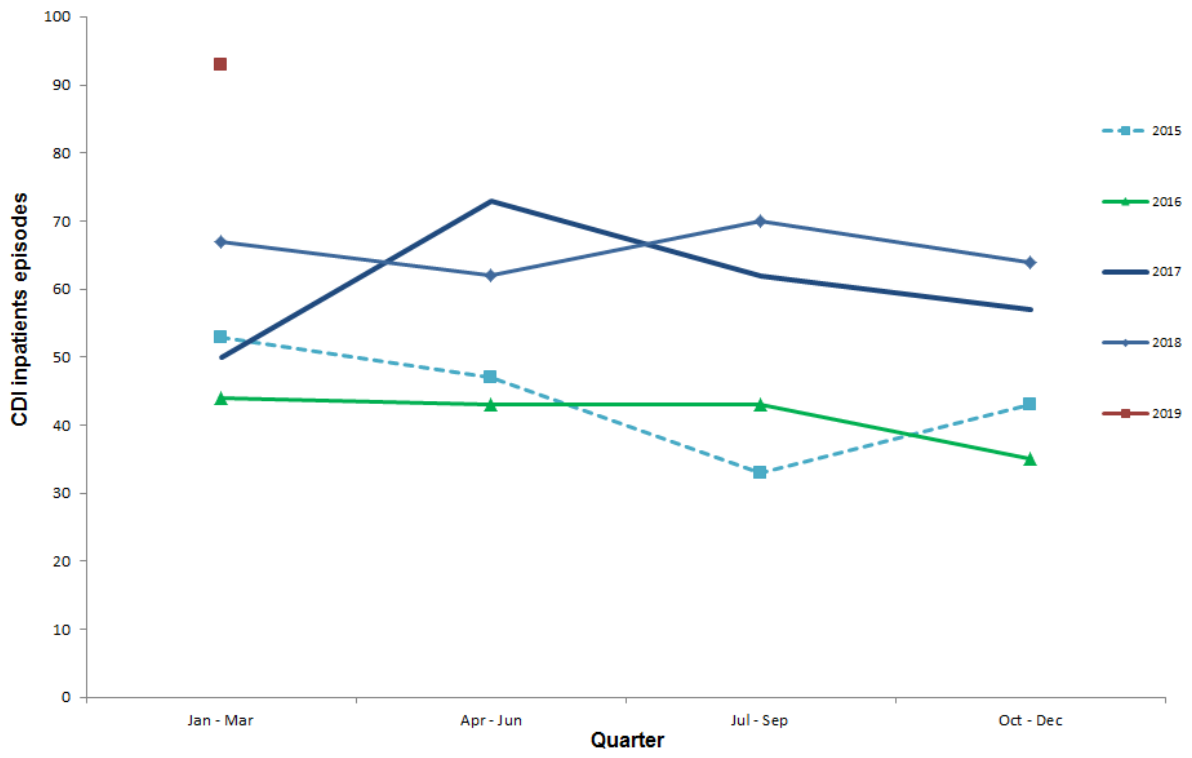


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients \geq 65 years), between 2008 and 2019

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.

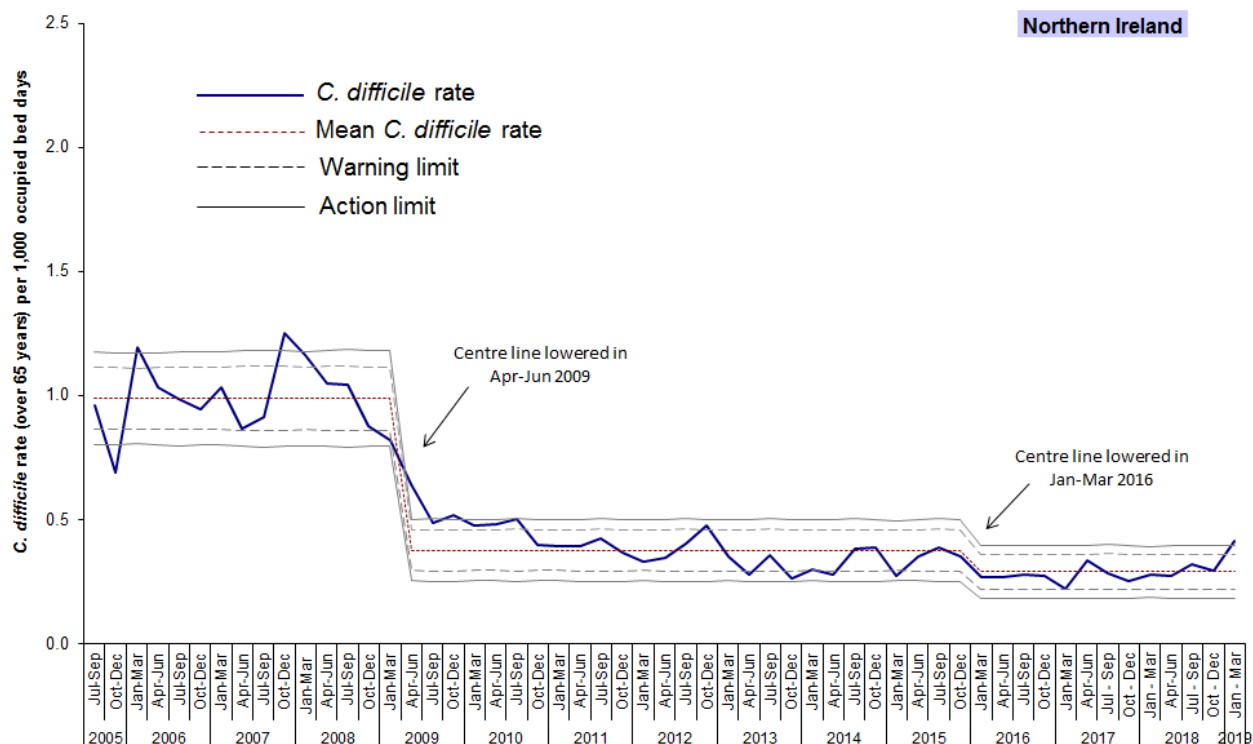


Figure 3: Statistical process control chart for quarterly *C. difficile* rates among inpatients in Northern Ireland aged 65 years and over (for HSCT level, see appendix B)

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 2018 – March 2019.

Ribotype	Apr - Jun 2018		Jul - Sep 2018		Oct - Dec 2018		Jan - Mar 2019	
	Number	%	Number	%	Number	%	Number	%
001	2	2.3	3	3.3	1	1.2	1	0.8
002	20	23.3	12	13.0	8	9.9	52	42.6
005	4	4.7	7	7.6	6	7.4	4	3.3
011	1	1.2	1	1.1	3	3.7	2	1.6
014	6	7.0	6	6.5	9	11.1	7	5.7
015	3	3.5	9	9.8	5	6.2	3	2.5
018	2	2.3	0	0.0	1	1.2	1	0.8
020	4	4.7	8	8.7	4	4.9	7	5.7
023	3	3.5	4	4.3	0	0.0	2	1.6
078	8	9.3	8	8.7	9	11.1	15	12.3
193	0	0.0	3	3.3	1	1.2	2	1.6
Other	19	22.1	19	20.7	22	27.2	13	10.7
Not groupable**	6	7.0	7	7.6	6	7.4	5	4.1
Not on ribotype list	6	7.0	5	5.4	6	7.4	3	2.5
Not isolated***	2	2.3	0	0.0	0	0.0	5	4.1
Total	86		92		81		122	

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 2018 – March 2019.

Ribotype	Apr - Jun 2018		Jul - Sep 2018		Oct - Dec 2018		Jan - Mar 2019	
	Number	%	Number	%	Number	%	Number	%
001	1	1.8	3	6.0	0	0.0	0	0.0
002	8	14.3	10	20.0	11	25.6	14	28.0
005	2	3.6	1	2.0	3	7.0	4	8.0
011	4	7.1	2	4.0	2	4.7	0	0.0
014	4	7.1	3	6.0	0	0.0	1	2.0
015	4	7.1	3	6.0	3	7.0	5	10.0
018	2	3.6	1	2.0	0	0.0	1	2.0
020	1	1.8	0	0.0	0	0.0	0	0.0
023	4	7.1	1	2.0	1	2.3	1	2.0
078	8	14.3	9	18.0	9	20.9	10	20.0
193	0	0.0	0	0.0	0	0.0	1	2.0
Other	10	17.9	12	24.0	8	18.6	4	8.0
Not groupable**	2	3.6	2	4.0	3	7.0	3	6.0
Not on ribotype list	6	10.7	3	6.0	3	7.0	5	10.0
Not isolated***	0	0.0	0	0.0	0	0.0	1	2.0
Total	56		50		43		50	

* 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 002, 014 and 078 in Northern Ireland Hospital Inpatients and Community Patients, January – March 2019.

	002 (n =66)		014 (n = 8)		078 (n = 25)	
Age						
range	19-94		34-94		23-90	
median	77		83		80	
Sex						
	n	%	n	%	n	%
Female	43	65.2	7	87.5	11	44.0
Male	23	34.8	1	12.5	14	56.0
Trust						
Belfast	25	37.9	3	37.5	4	16.0
Northern	12	18.2	1	12.5	5	20.0
South Eastern	17	25.8	2	25.0	7	28.0
Southern	7	10.6	0	0.0	3	12.0
Western	5	7.6	2	25.0	6	24.0
Source						
Inpatient	52	78.8	7	87.5	15	60.0
Community*	14	21.2	1	12.5	10	40.0

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

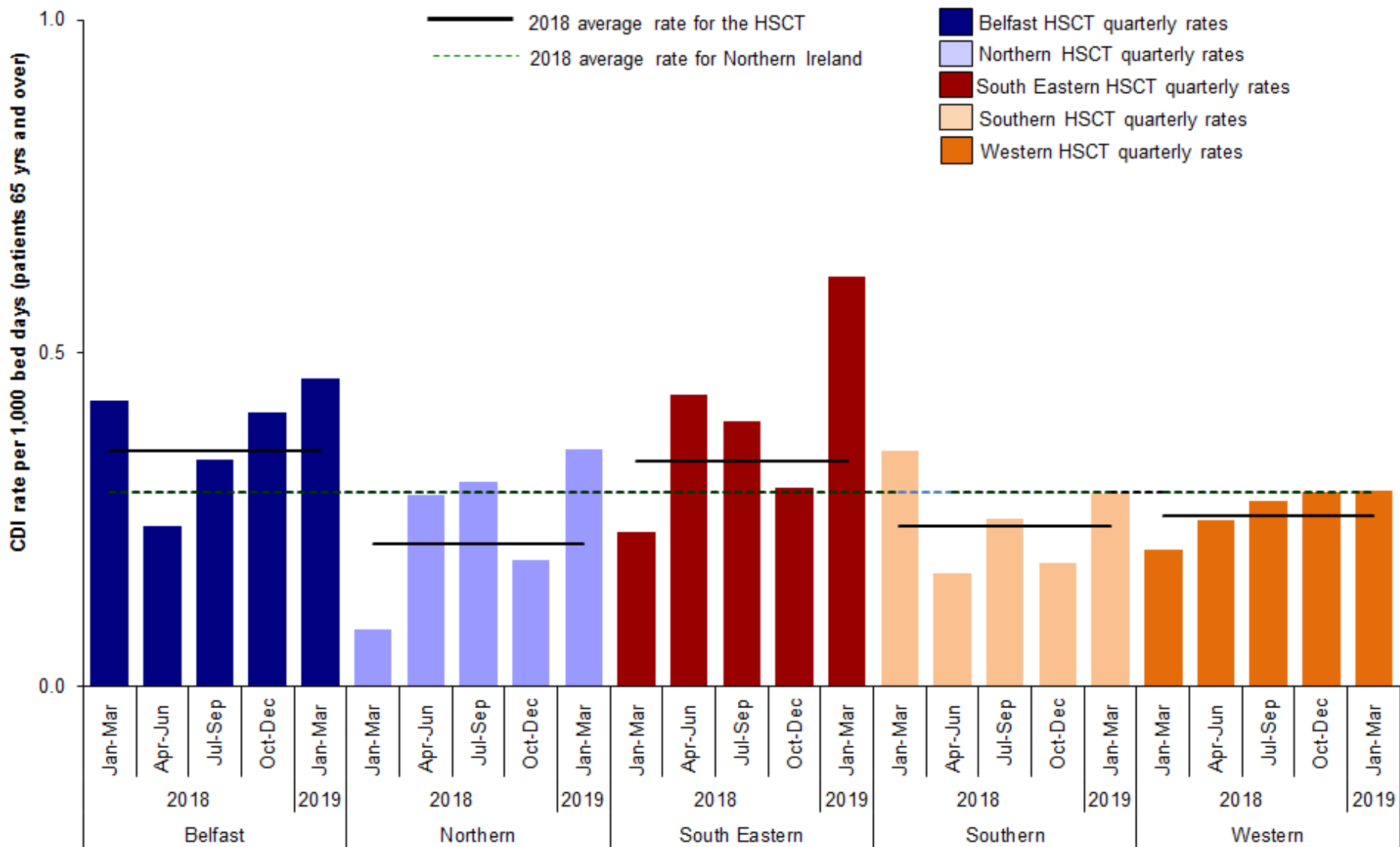


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2018 – March 2019, compared with annual Northern Ireland and HSCT rates for 2018

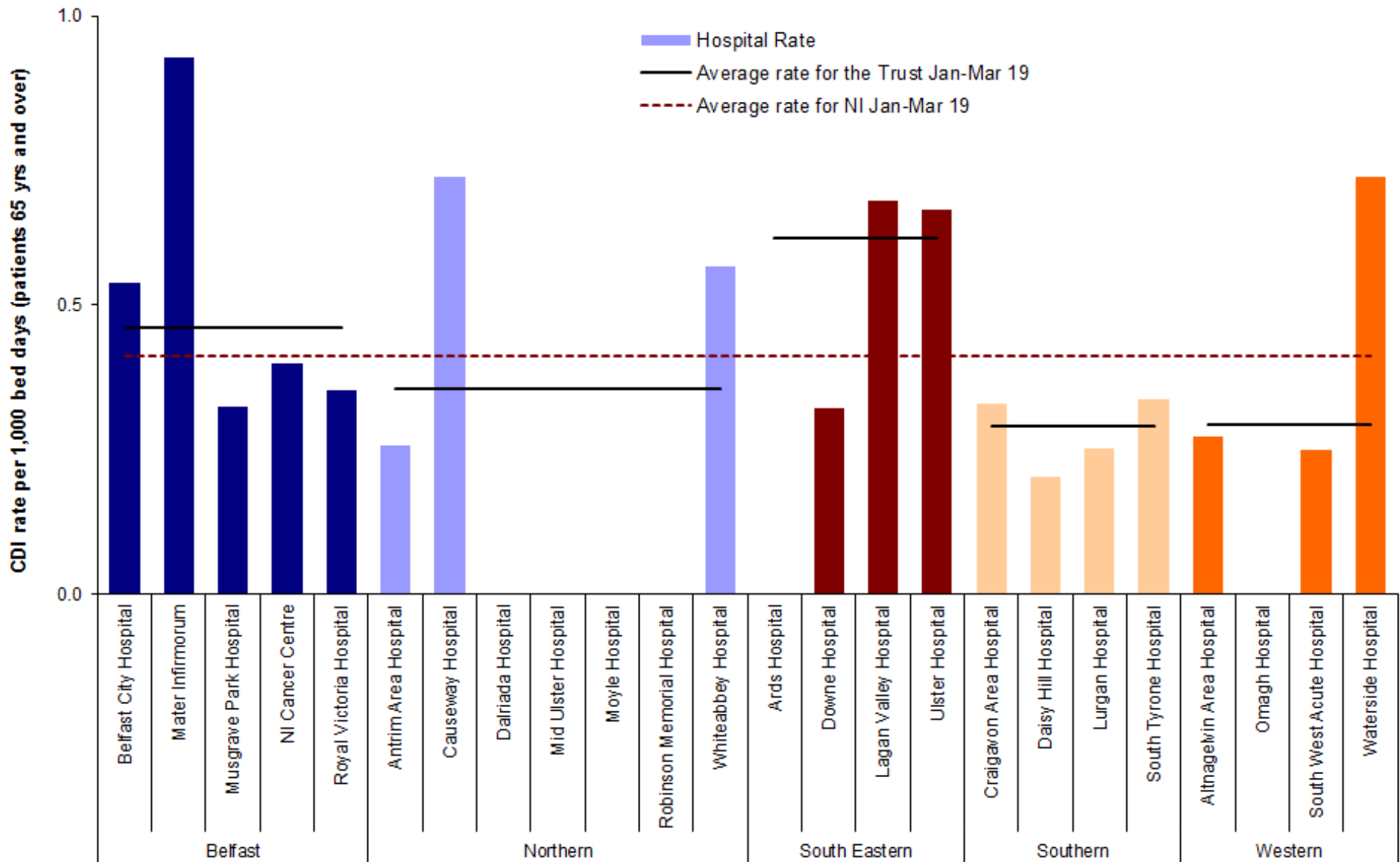


Figure 5: *C. difficile* rates during January - March 2019 - Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)

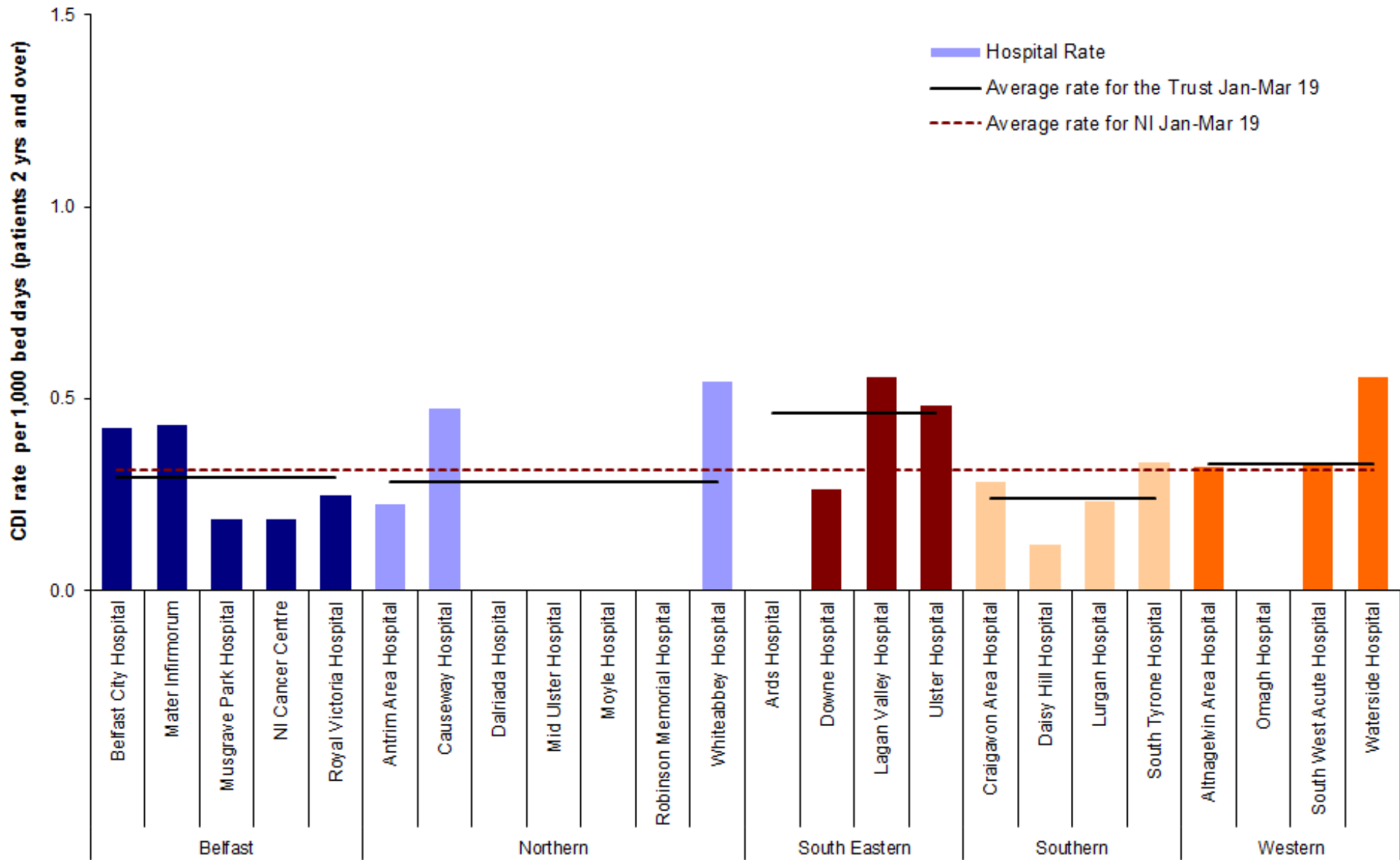


Figure 6: *C. difficile* rates January – March 2019 - Inpatients aged two years and over, by hospital, including HSC Trust rates and average rate for Northern Ireland (see appendix A, Table 5)

Appendix A

Table 4: Quarterly rate of *C. difficile* reports in patients aged 65 years and over, by hospital, April 2018 – March 2019.

Hospital	Apr - Jun 2018	Jul - Sep 2018	Oct - Dec 2018	Jan-Mar 2019
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.163	0.357	0.454	0.539
Mater Infirmorum	0.347	0.383	0.178	0.928
Musgrave Park Hospital	0.456	0.000	0.116	0.325
NICCO (formerly at Belvoir Park)	0.424	0.000	0.749	0.398
Royal Group of Hospitals	0.177	0.453	0.540	0.353
Belfast Health & Social Care Trust	0.240	0.340	0.411	0.462
Antrim Area Hospital	0.347	0.387	0.172	0.258
Causeway Hospital	0.402	0.416	0.204	0.722
Dalriada Hospital	0.000	0.000	0.000	0.000
Mid Ulster Hospital	0.000	0.000	0.613	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	0.315	0.567
Northern Health & Social Care Trust	0.286	0.306	0.190	0.355
Ards Hospital	0.592	0.000	0.000	0.000
Downe Hospital	0.313	1.007	0.330	0.320
Lagan Valley Hospital	0.532	0.206	0.169	0.680
Ulster Hospital	0.387	0.389	0.339	0.664
South Eastern Health & Social Care Trust	0.411	0.396	0.298	0.615
Craigavon Area Hospital	0.207	0.359	0.227	0.331
Daisy Hill Hospital	0.110	0.106	0.133	0.202
Lurgan Hospital	0.000	0.000	0.000	0.252
South Tyrone Hospital	0.346	0.341	0.284	0.338
Southern Health & Social Care Trust	0.169	0.250	0.184	0.289
Altnagelvin Area Hospital	0.282	0.445	0.316	0.272
Tyrone County / Omagh Hospital	0.371	0.000	0.000	0.000
South West Acute Hospital	0.250	0.175	0.330	0.248
Waterside Hospital	0.000	0.000	0.251	0.723
Western Health & Social Care Trust	0.249	0.278	0.291	0.294
NI TOTAL	0.268	0.318	0.293	0.413

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

Trust	Apr - Jun 2017	Jul - Sep 2017	Oct - Dec 2017	Jan - Mar 2018
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	18	23	27	31
Northern Health & Social Care Trust	12	13	8	15
South Eastern Health & Social Care Trust	16	15	12	25
Southern Health & Social Care Trust	6	9	6	11
Western Health & Social Care Trust	9	10	11	11
NI TOTAL	61	70	64	93
NI community TOTAL	50	42	38	36

Appendix A

Table 6: Quarterly rate of *C. difficile* reports in patients aged two years and over, by hospital, April 2018 – March 2019.

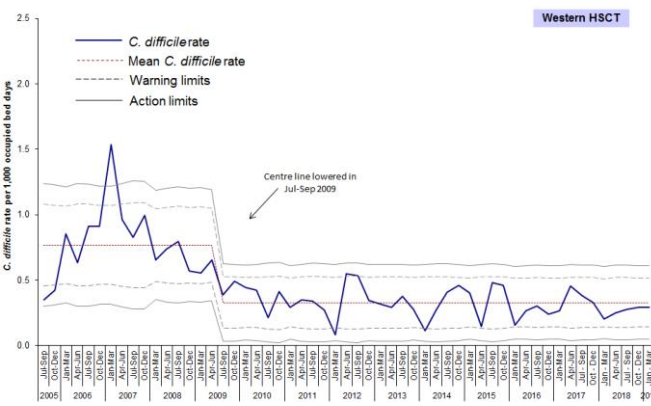
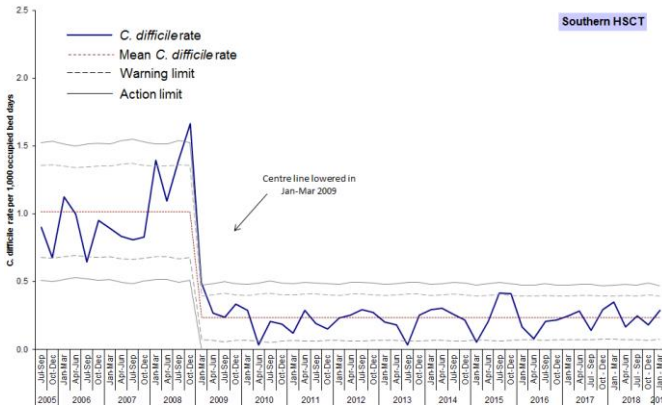
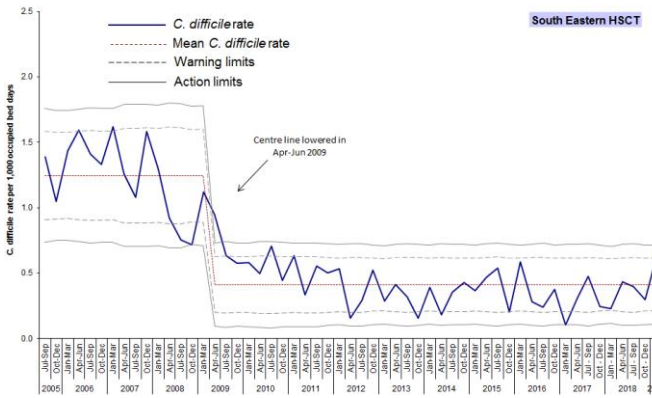
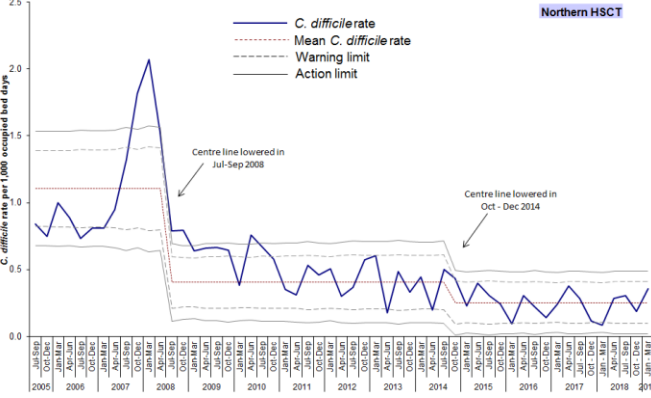
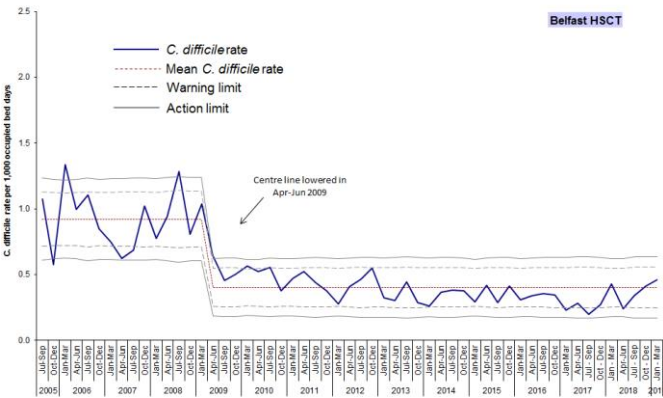
Hospital	Apr - Jun 2018	Jul - Sep 2018	Oct - Dec 2018	Jan - Mar 2019
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.185	0.221	0.311	0.423
Mater Infirmorum	0.326	0.224	0.162	0.430
Musgrave Park Hospital	0.250	0.000	0.131	0.186
NICCO (formerly at Belvoir Park)	0.189	0.000	0.372	0.184
Royal Group of Hospitals	0.245	0.296	0.263	0.247
Belfast Health & Social Care Trust	0.242	0.225	0.247	0.296
Antrim Area Hospital	0.206	0.286	0.129	0.225
Causeway Hospital	0.294	0.292	0.118	0.474
Dalriada Hospital	0.000	0.000	0.000	0.000
Mid Ulster Hospital	0.000	0.000	0.545	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	0.264	0.546
Northern Health & Social Care Trust	0.195	0.241	0.135	0.282
Ards Hospital	0.587	0.000	0.000	0.000
Downe Hospital	0.267	0.837	0.279	0.262
Lagan Valley Hospital	0.574	0.316	0.141	0.555
Ulster Hospital	0.359	0.263	0.224	0.480
South Eastern Health & Social Care Trust	0.384	0.294	0.212	0.463
Craigavon Area Hospital	0.215	0.214	0.104	0.284
Daisy Hill Hospital	0.065	0.063	0.247	0.121
Lurgan Hospital	0.000	0.000	0.000	0.232
South Tyrone Hospital	0.324	0.322	0.313	0.334
Southern Health & Social Care Trust	0.167	0.164	0.145	0.240
Altnagelvin Area Hospital	0.183	0.479	0.260	0.321
Omagh Hospital	0.334	0.000	0.000	0.000
South West Acute Hospital	0.168	0.115	0.326	0.333
Waterside Hospital	0.000	0.000	0.359	0.554
Western Health & Social Care Trust	0.168	0.301	0.276	0.328
NI TOTAL	0.233	0.241	0.210	0.316

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

Trust	Apr - Jun 2018	Jul - Sep 2018	Oct - Dec 2018	Jan - Mar 2019
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	29	30	33	40
Northern Health & Social Care Trust	13	16	9	19
South Eastern Health & Social Care Trust	24	18	13	28
Southern Health & Social Care Trust	10	10	9	15
Western Health & Social Care Trust	10	18	17	20
NI TOTAL	86	92	81	122
NI community TOTAL	57	50	43	50

Appendix B

Trends in *C. difficile* rates in inpatients aged 65 years and over, by HSCT and quarter, 2005 – 2019



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												
	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Belfast	336	280	327	163	147	117	124	90	103	102	90	83	99
Northern	172	297	172	102	103	75	73	56	54	43	39	37	48
South Eastern	256	199	135	98	80	72	50	50	53	70	39	50	69
Southern	130	134	164	37	17	28	33	25	27	40	27	39	32
Western	132	109	104	71	46	35	58	37	53	43	40	50	41
Northern Ireland	1026	1019	902	471	393	327	338	258	290	298	235	259	289