

# *C. difficile* surveillance

## Quarterly report

### April - June 2016

#### Key points

- CDI reports for hospital inpatients aged 65 years and over decreased by 2% (from 63 to 62 episodes) during April – June 2016 compared to January – March 2016.
- CDI rate per 1,000 bed days remained the same (0.272) during April – June 2016 compared to January – March 2016.
- CDI reports for community patients aged 65 years and over decreased by 2% (from 44 to 43 episodes) during April – June 2016 compared to January – March 2016.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, decreased by 6% during April – June 2016 compared to January – March 2016 (from 133 to 125 episodes).
- CDI reports for hospital inpatients aged 65 years and over increased by 2% between the 2014/15 and 2015/16 financial years.
- During April – June 2016 the most prevalent ribotypes for CDI inpatients are 078 (24%), 005 (8%), 020 (7%) and 193 (7%) (Table 1) and in the community are 078 (32%), 015 (8%) and 002 (8%) (Table 2).

For further information or clarification on HCAI definitions, please refer to previous reports or contact [hcaini@hscni.net](mailto:hcaini@hscni.net)

# Surveillance of *C. difficile* infection (CDI)

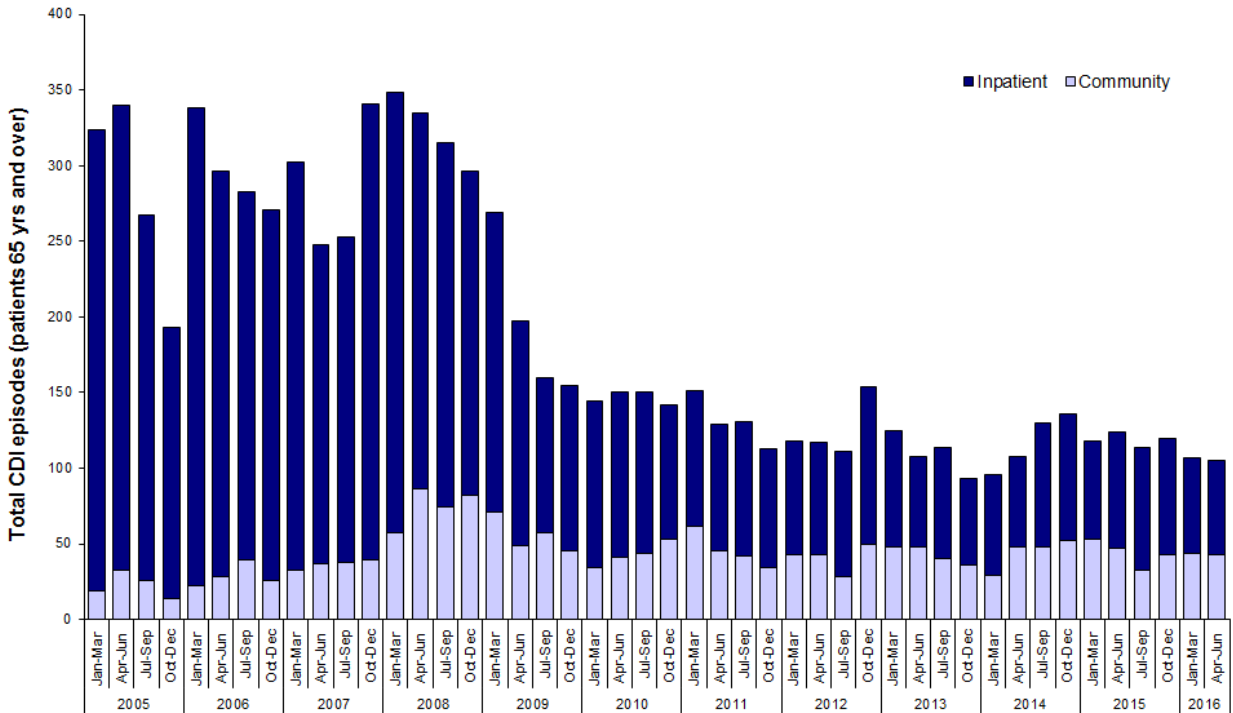


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2016

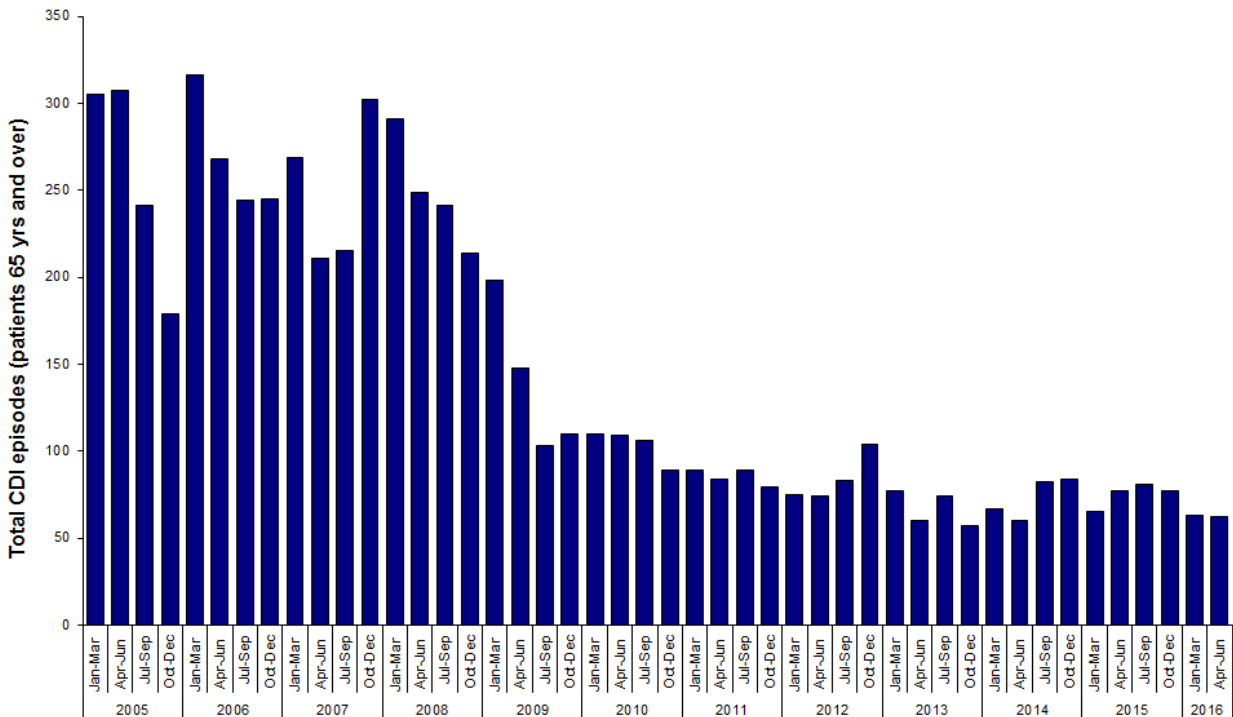
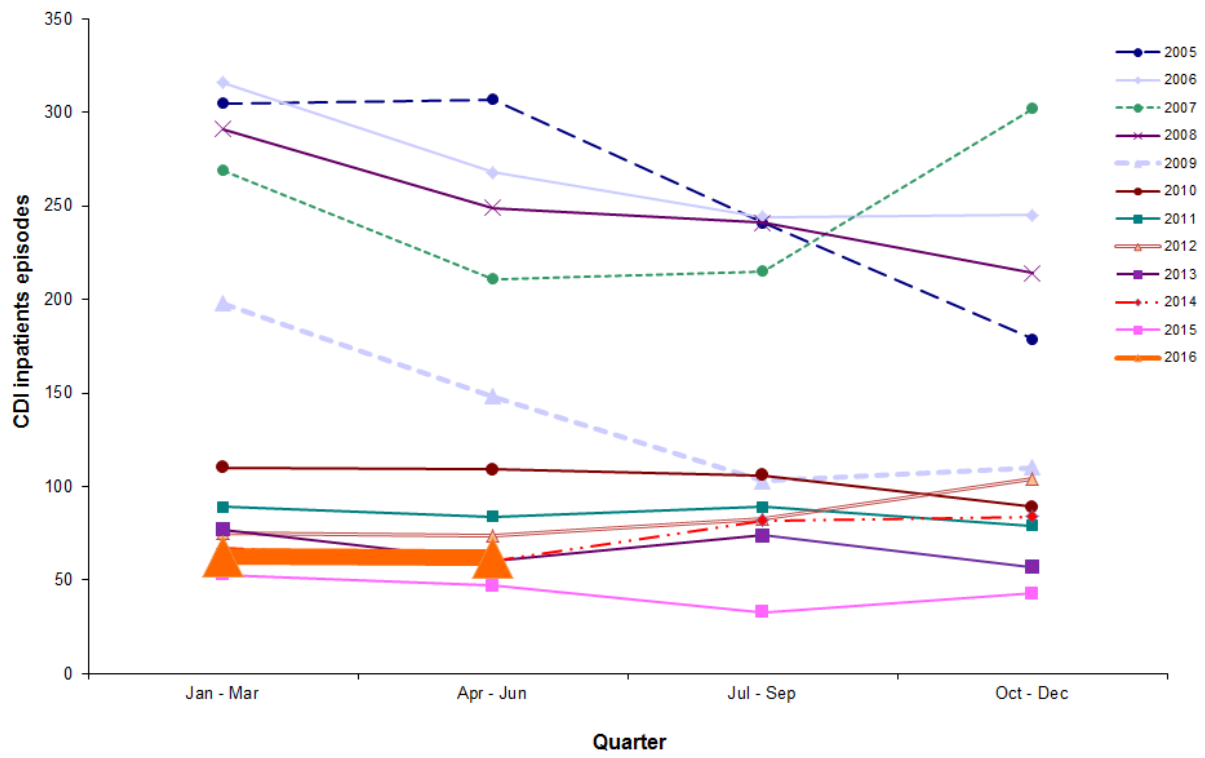


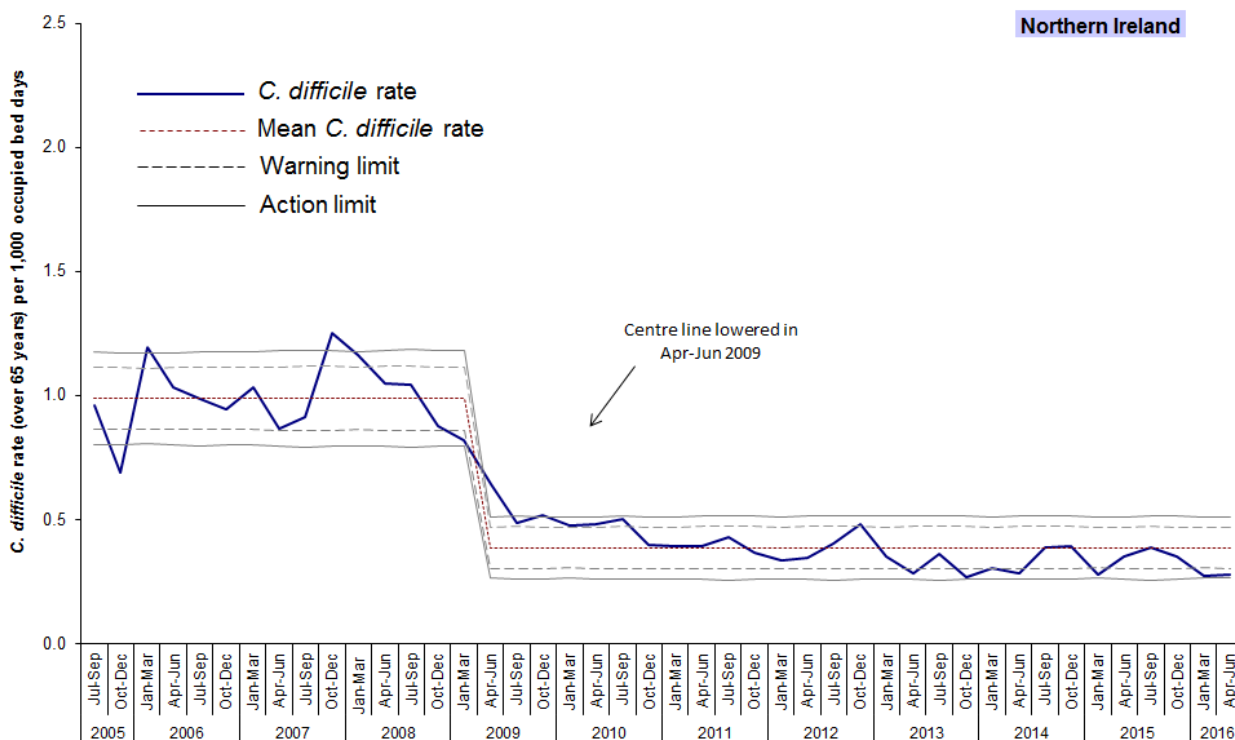
Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2016



**Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients  $\geq$  65 years), between 2005 and 2016**

### 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, July 2015 - June 2016**

Ribotype	Jul - Sep 2015		Oct - Dec 2015		Jan - Mar 2016		Apr - Jun 2016	
	Number	%	Number	%	Number	%	Number	%
001	2	1.9	10	9.5	6	7.3	1	1.3
002	11	10.6	9	8.6	8	9.8	4	5.3
005	2	1.9	7	6.7	2	2.4	6	8.0
014	8	7.7	12	11.4	4	4.9	2	2.7
015	12	11.5	17	16.2	5	6.1	1	1.3
020	4	3.8	8	7.6	4	4.9	5	6.7
023	3	2.9	6	5.7	5	6.1	2	2.7
027	1	1.0	0	0.0	0	0.0	0	0.0
078	10	9.6	6	5.7	16	19.5	18	24.0
106	0	0.0	0	0.0	1	1.2	2	2.7
193	2	1.9	3	2.9	1	1.2	5	6.7
Other	25	24.0	18	17.1	11	13.4	13	17.3
Not groupable**	8	7.7	4	3.8	9	11.0	9	12.0
Not on ribotype list	8	7.7	4	3.8	5	6.1	4	5.3
Not isolated***	8	7.7	1	1.0	5	6.1	3	4.0
<b>Total</b>	<b>104</b>		<b>105</b>		<b>82</b>		<b>75</b>	

**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, July 2015 - June 2016**

Ribotype	Jul - Sep 2015		Oct - Dec 2015		Jan - Mar 2016		Apr - Jun 2016	
	Number	%	Number	%	Number	%	Number	%
001	0	0.0	4	7.7	0	0.0	3	6.0
002	3	7.0	3	5.8	4	7.8	4	8.0
005	3	7.0	3	5.8	4	7.8	0	0.0
014	3	7.0	2	3.8	4	7.8	1	2.0
015	6	14.0	6	11.5	4	7.8	4	8.0
020	1	2.3	3	5.8	1	2.0	1	2.0
023	4	9.3	1	1.9	3	5.9	1	2.0
027	1	2.3	0	0.0	0	0.0	0	0.0
078	5	11.6	8	15.4	13	25.5	16	32.0
106	0	0.0	2	3.8	1	2.0	1	2.0
193	0	0.0	0	0.0	2	3.9	3	6.0
Other	12	27.9	10	19.2	7	13.7	7	14.0
Not groupable**	4	9.3	4	7.7	3	5.9	6	12.0
Not on ribotype list	1	2.3	5	9.6	2	3.9	0	0.0
Not isolated***	0	0.0	1	1.9	3	5.9	3	6.0
<b>Total</b>	<b>43</b>		<b>52</b>		<b>51</b>		<b>50</b>	

\* 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, 002 and 193 in Northern Ireland Hospital Inpatients and Community Patients, April - June 2016**

	078 (n = 34)		002 (n = 8)		193 (n = 8)	
<b>Age</b>						
range	62 - 101		71 - 91		60 - 87	
median	80		85		79	
<b>Sex</b>						
	n	%	n	%	n	%
Female	16	47.1	5	62.5	5	62.5
Male	18	52.9	3	37.5	3	37.5
<b>Trust</b>						
Belfast	9	26.5	4	50.0	1	12.5
Northern	10	29.4	0	0.0	3	37.5
South Eastern	5	14.7	2	25.0	0	0.0
Southern	1	2.9	0	0.0	0	0.0
Western	9	26.5	2	25.0	4	50.0
<b>Source</b>						
Inpatient	18	52.9	4	50.0	5	62.5
Community*	16	47.1	4	50.0	3	37.5

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

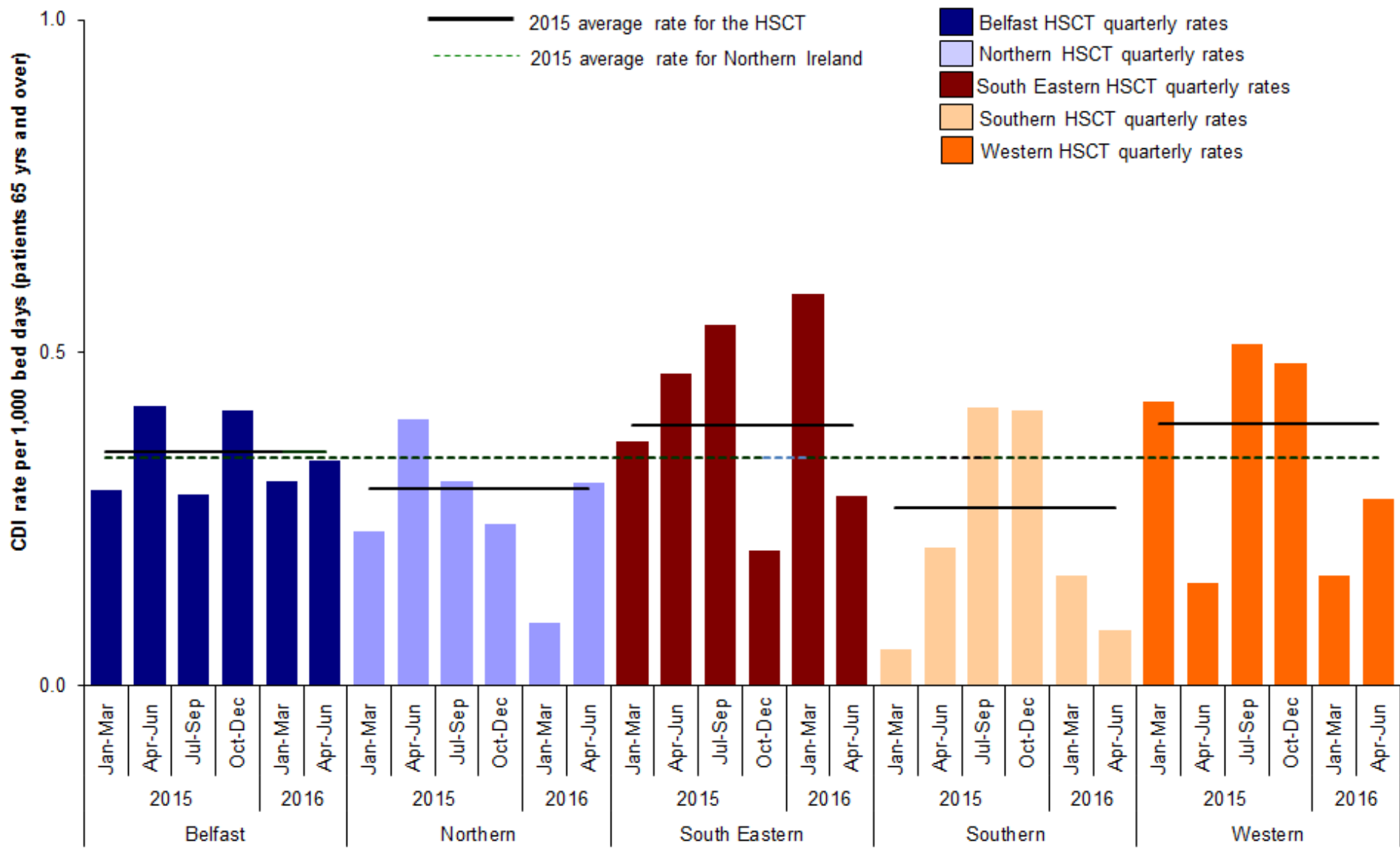


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2015 - June 2016, compared with annual Northern Ireland and HSCT rates for 2015

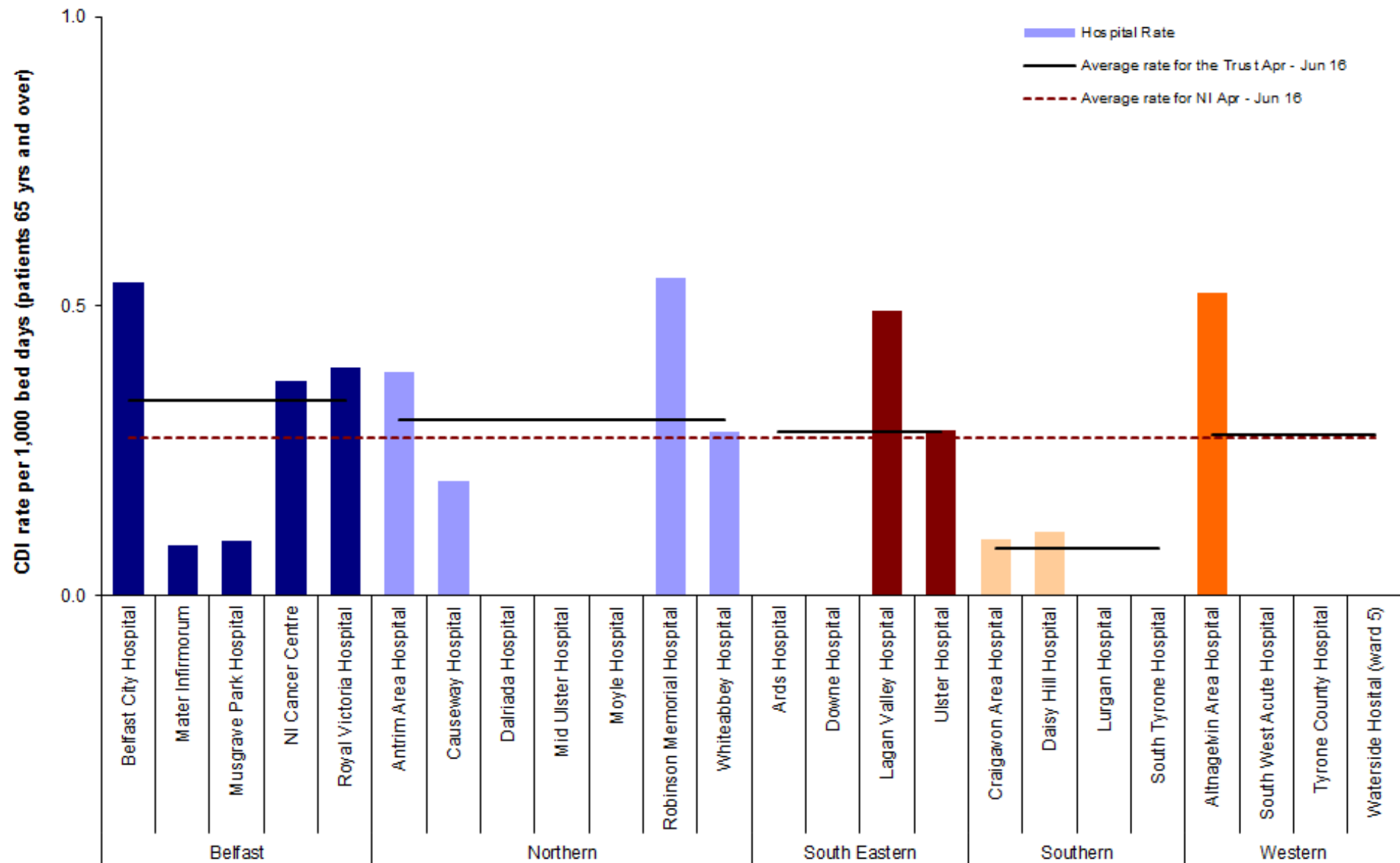


Figure 5: *C. difficile* rates during April - June 2016 - Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)



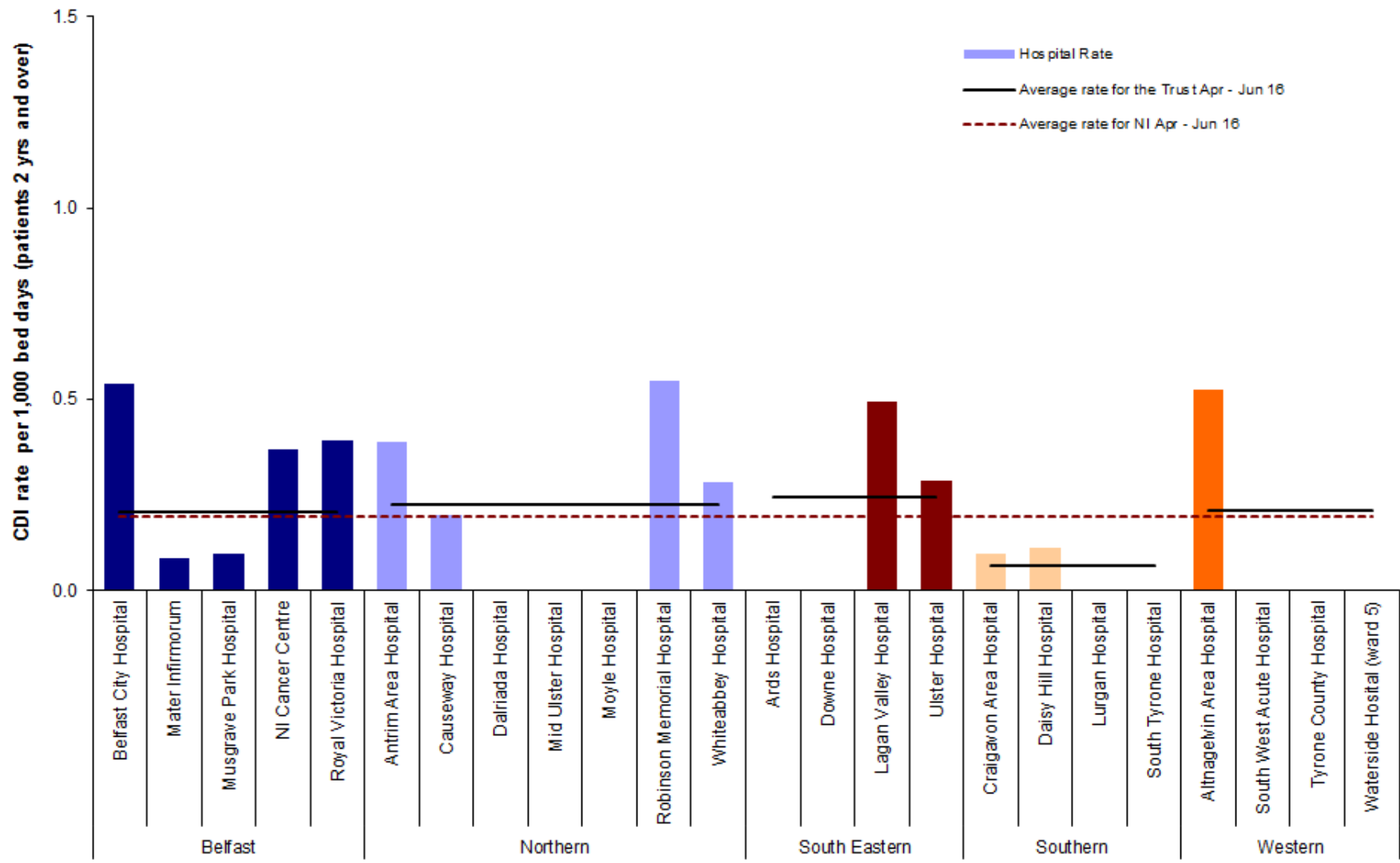


Figure 6: *C. difficile* rates during April - June 2016 - Inpatients aged two years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 5)

## Appendix A

**Table 4: Quarterly rate of *C. difficile* reports in patients aged 65 years and over, by hospital, July 2015 - June 2016**

Hospital	Jul - Sept 2015	Oct - Dec 2015	Jan - Mar 2016	Apr - Jun 2016
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.442	0.618	0.211	0.540
Mater Infirmorum	0.179	0.346	0.526	0.086
Musgrave Park Hospital	0.101	0.000	0.182	0.094
NICCO (formerly at Belvoir Park)	0.000	1.073	0.000	0.370
Royal Group of Hospitals	0.325	0.392	0.356	0.393
<b>Belfast Health &amp; Social Care Trust</b>	<b>0.286</b>	<b>0.412</b>	<b>0.307</b>	<b>0.338</b>
Antrim Area Hospital	0.385	0.352	0.171	0.387
Causeway Hospital	0.444	0.219	0.000	0.198
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	0.548
Whiteabbey Hospital	0.000	0.000	0.000	0.283
<b>Northern Health &amp; Social Care Trust</b>	<b>0.307</b>	<b>0.242</b>	<b>0.094</b>	<b>0.303</b>
Ards Hospital	0.000	0.000	0.000	0.000
Downe Hospital	0.753	0.342	0.687	0.000
Lagan Valley Hospital	0.915	0.334	0.808	0.492
Ulster Hospital	0.475	0.172	0.565	0.286
<b>South Eastern Health &amp; Social Care Trust</b>	<b>0.542</b>	<b>0.202</b>	<b>0.587</b>	<b>0.284</b>
Craigavon Area Hospital	0.531	0.369	0.291	0.097
Daisy Hill Hospital	0.399	0.247	0.000	0.110
Lurgan Hospital	0.256	1.021	0.000	0.000
South Tyrone Hospital	0.000	0.343	0.000	0.000
<b>Southern Health &amp; Social Care Trust</b>	<b>0.418</b>	<b>0.413</b>	<b>0.164</b>	<b>0.082</b>
Altnagelvin Area Hospital	0.630	0.663	0.205	0.523
South West Acute Hospital	0.500	0.369	0.160	0.000
Tyrone County Hospital	0.000	0.000	0.000	0.000
Waterside Hospital (Wards 1, 2, 3, 5)	0.000	0.000	0.000	0.000
<b>Western Health &amp; Social Care Trust</b>	<b>0.512</b>	<b>0.483</b>	<b>0.165</b>	<b>0.279</b>
<b>NI TOTAL</b>	<b>0.389</b>	<b>0.353</b>	<b>0.272</b>	<b>0.272</b>

**Table 5: Quarterly episodes of *C. difficile* reports in patients aged 65 years and over, by Trust, July 2015 - June 2016**

Trust	Jul - Sept 2015	Oct - Dec 2015	Jan - Mar 2016	Apr - Jun 2016
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	20	29	23	23
Northern Health & Social Care Trust	12	10	4	13
South Eastern Health & Social Care Trust	20	8	24	11
Southern Health & Social Care Trust	13	14	6	3
Western Health & Social Care Trust	16	16	6	10
<b>NI TOTAL</b>	<b>81</b>	<b>77</b>	<b>63</b>	<b>62</b>
<b>NI community TOTAL</b>	<b>33</b>	<b>43</b>	<b>44</b>	<b>43</b>

## Appendix A

**Table 6: Quarterly rate of *C. difficile* reports in patients aged two years and over, by hospital, July 2015 - June 2016**

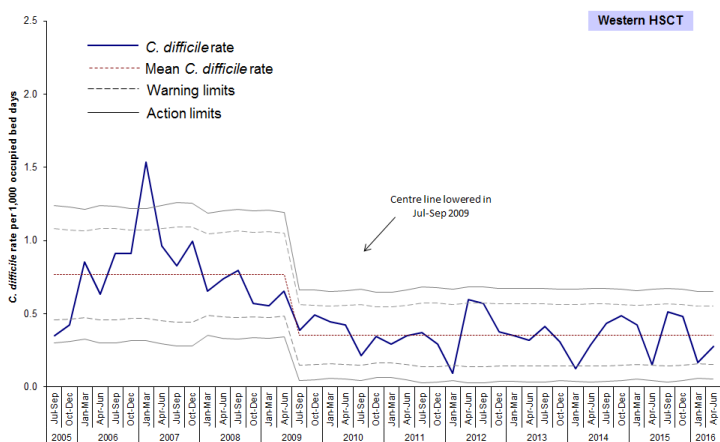
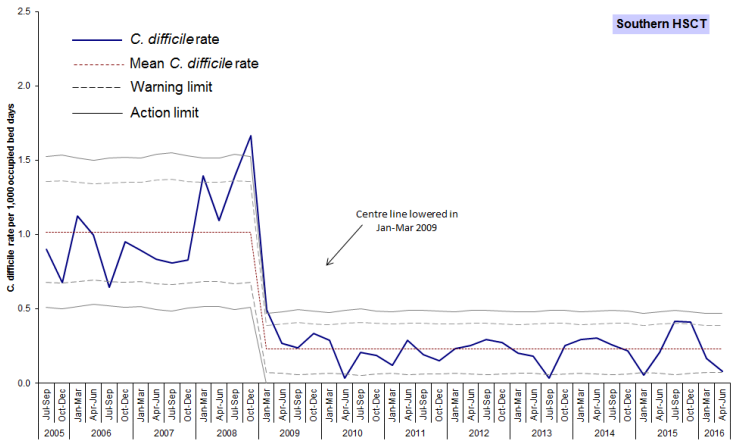
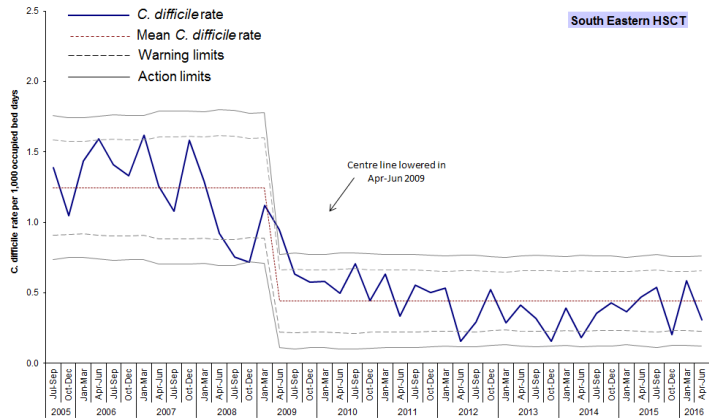
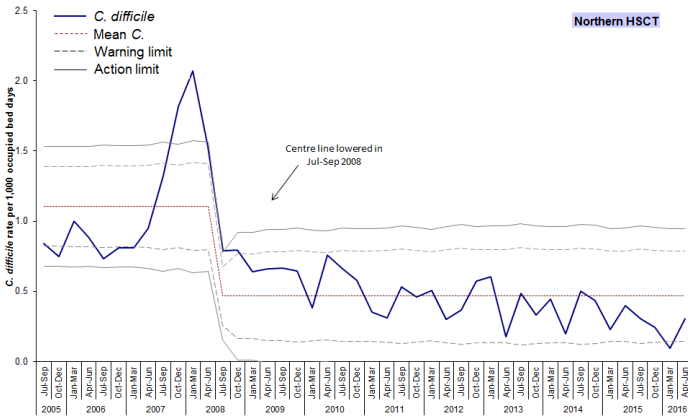
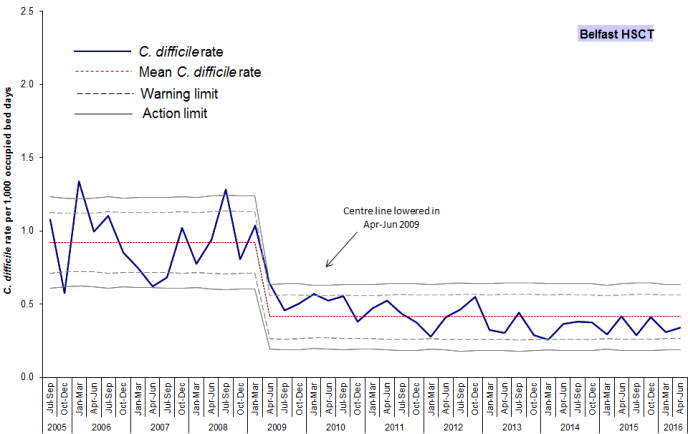
Hospital	Jul - Sept 2015	Oct - Dec 2015	Jan - Mar 2016	Apr - Jun 2016
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.328	0.436	0.141	0.361
Mater Infirmorum	0.202	0.251	0.301	0.075
Musgrave Park Hospital	0.061	0.000	0.111	0.057
NICCO (formerly at Belvoir Park)	0.000	0.668	0.171	0.172
Royal Group of Hospitals	0.207	0.250	0.184	0.212
<b>Belfast Health &amp; Social Care Trust</b>	<b>0.204</b>	<b>0.275</b>	<b>0.182</b>	<b>0.207</b>
Antrim Area Hospital	0.328	0.235	0.153	0.284
Causeway Hospital	0.316	0.242	0.060	0.115
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	0.547
Whiteabbey Hospital	0.000	0.000	0.000	0.259
<b>Northern Health &amp; Social Care Trust</b>	<b>0.270</b>	<b>0.198</b>	<b>0.104</b>	<b>0.226</b>
Ards Hospital	0.000	0.000	0.000	0.000
Downe Hospital	0.591	0.284	0.528	0.000
Lagan Valley Hospital	0.743	0.563	0.783	0.526
Ulster Hospital	0.362	0.163	0.420	0.227
<b>South Eastern Health &amp; Social Care Trust</b>	<b>0.410</b>	<b>0.212</b>	<b>0.459</b>	<b>0.245</b>
Craigavon Area Hospital	0.344	0.276	0.159	0.079
Daisy Hill Hospital	0.207	0.197	0.061	0.063
Lurgan Hospital	0.233	0.929	0.000	0.000
South Tyrone Hospital	0.000	0.348	0.000	0.000
<b>Southern Health &amp; Social Care Trust</b>	<b>0.283</b>	<b>0.307</b>	<b>0.114</b>	<b>0.065</b>
Altnagelvin Area Hospital	0.419	0.511	0.276	0.362
South West Acute Hospital	0.318	0.230	0.162	0.000
Tyrone County Hospital	0.000	0.000	0.000	0.000
Waterside Hospital (Wards 1, 2, 3, 5)	0.000	0.000	0.000	0.000
<b>Western Health &amp; Social Care Trust</b>	<b>0.333</b>	<b>0.364</b>	<b>0.207</b>	<b>0.208</b>
<b>NI TOTAL</b>	<b>0.279</b>	<b>0.271</b>	<b>0.206</b>	<b>0.194</b>

**Table 7: Quarterly episodes of *C. difficile* reports in patients aged 2 years and over, by Trust, July 2015 - June 2016**

Trust	Jul - Sept 2015	Oct - Dec 2015	Jan - Mar 2016	Apr - Jun 2016
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	28	38	26	28
Northern Health & Social Care Trust	17	13	7	15
South Eastern Health & Social Care Trust	24	13	29	15
Southern Health & Social Care Trust	16	18	7	4
Western Health & Social Care Trust	19	22	13	13
<b>NI TOTAL</b>	<b>104</b>	<b>104</b>	<b>82</b>	<b>75</b>
<b>NI community TOTAL</b>	<b>43</b>	<b>52</b>	<b>51</b>	<b>50</b>

# Appendix B

Trends in *C. difficile* rates in inpatients aged 65 years and over, by HSCT and quarter, 2005–2016



## Appendix C

**Table 6: *C. difficile* reports among inpatients in Northern Ireland aged 65 years and over, by financial year and HSCT**

<b>HSCT</b>	<b>Financial Year</b>										
	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Belfast	352	336	280	327	163	147	117	124	90	103	102
Northern	184	172	297	172	102	103	75	73	56	54	43
South Eastern	243	256	199	135	98	80	72	50	50	53	70
Southern	168	130	134	164	37	17	28	33	25	27	40
Western	96	132	109	104	71	46	35	58	37	54	43
<b>Northern Ireland</b>	<b>1043</b>	<b>1026</b>	<b>1019</b>	<b>902</b>	<b>471</b>	<b>393</b>	<b>327</b>	<b>338</b>	<b>258</b>	<b>291</b>	<b>298</b>