

# *C. difficile* surveillance

## Quarterly report

### January – March 2016

#### Key points

- CDI reports for hospital inpatients aged 65 years and over decreased by 18% (from 77 to 63 episodes) during January - March 2016 compared to October - December 2015.
- CDI rate per 1,000 bed days decreased by 23% during January - March 2016 compared to October - December 2015.
- CDI reports for community patients aged 65 years and over increased by 2% (from 43 to 44 episodes) during January - March 2016 compared to October - December 2015.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, decreased by 15% during January - March 2016 compared to October - December 2015 (from 156 to 133 episodes).
- CDI reports for hospital inpatients aged 65 years and over increased by 2% between the 2014/15 and 2015/16 financial years.
- During January - March 2016 the most prevalent ribotypes for CDI inpatients are 078 (20%), 002 (10%) and 001 (7%) (Table 1) and in the community are 078 (26%), 002 (8%), 005 (8%), 014 (8%) and 015 (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)

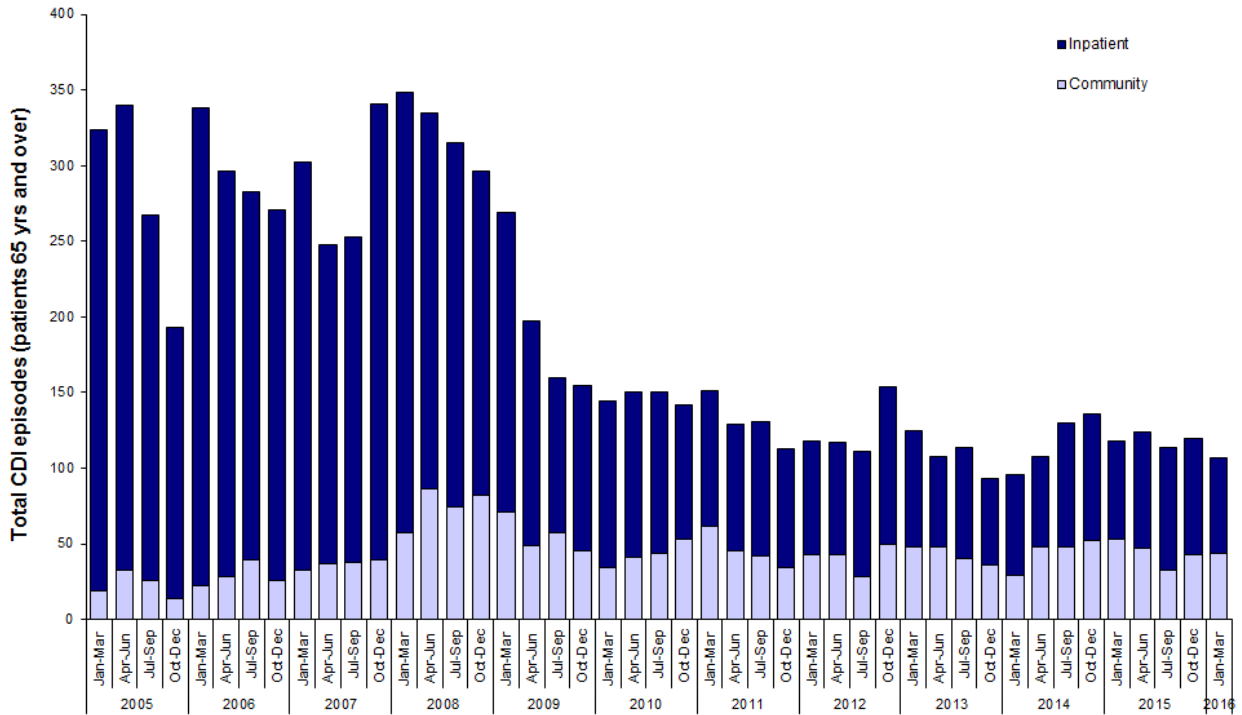


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2016

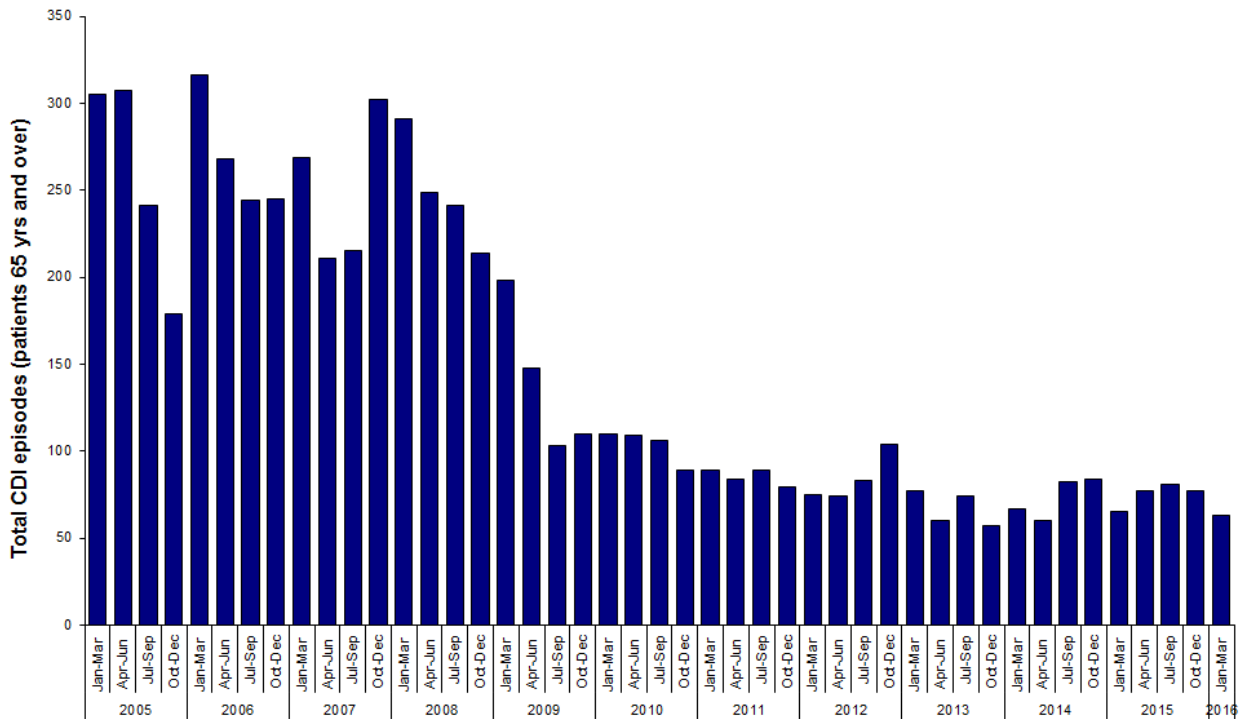


Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2016

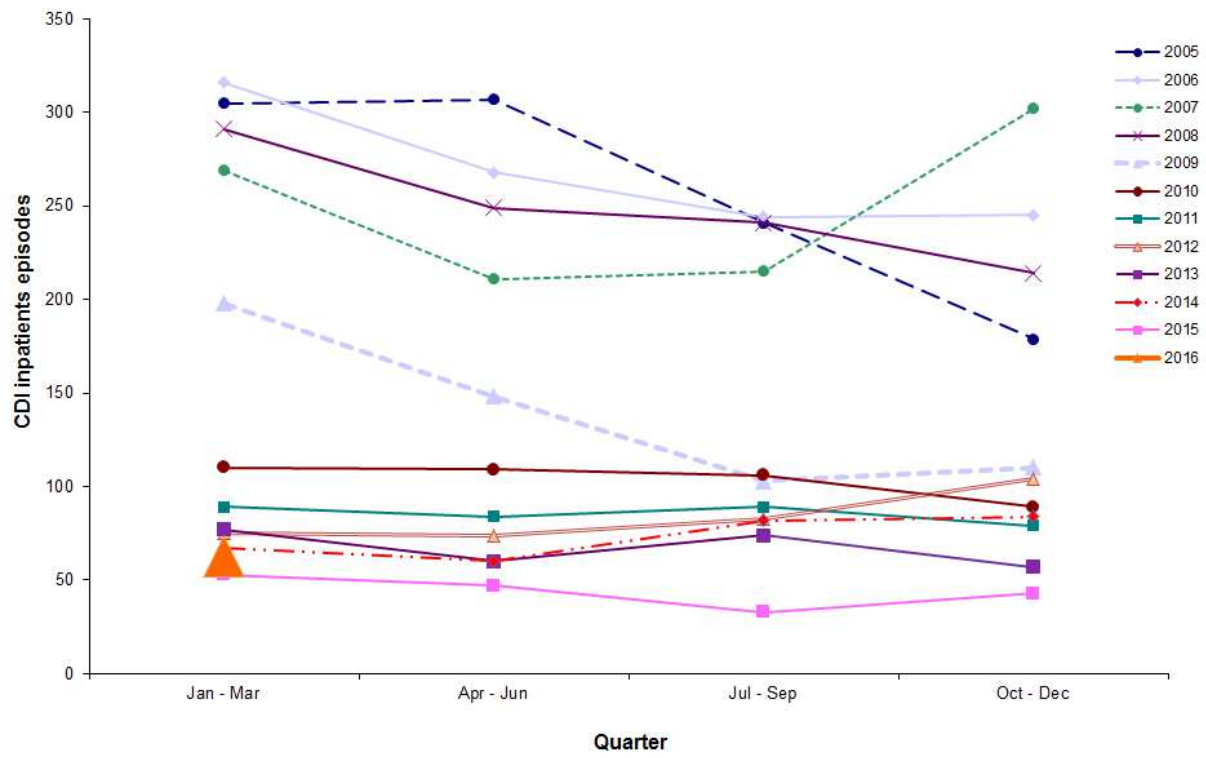
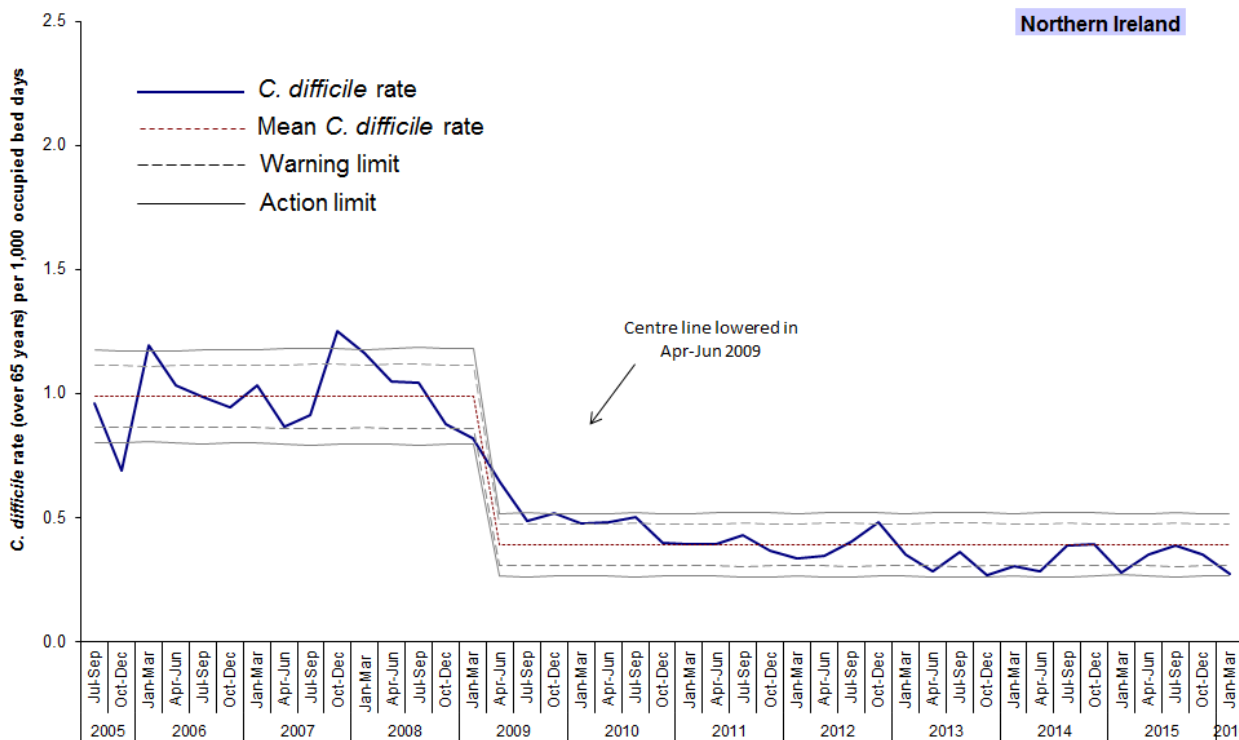


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients  $\geq$  65 years), between 2005 and 2016

**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, April 2015 - March 2016**

Ribotype	Apr - Jun 2015		Jul - Sep 2015		Oct - Dec 2015		Jan - Mar 2016	
	Number	%	Number	%	Number	%	Number	%
001	6	5.9	2	1.9	10	9.5	6	7.3
002	16	15.8	11	10.6	9	8.6	8	9.8
005	6	5.9	2	1.9	7	6.7	2	2.4
014	12	11.9	8	7.7	12	11.4	4	4.9
015	4	4.0	12	11.5	17	16.2	5	6.1
020	6	5.9	4	3.8	8	7.6	4	4.9
023	4	4.0	3	2.9	6	5.7	5	6.1
027	0	0.0	1	1.0	0	0.0	0	0.0
078	8	7.9	10	9.6	6	5.7	16	19.5
106	0	0.0	0	0.0	0	0.0	1	1.2
193	5	5.0	2	1.9	3	2.9	1	1.2
Other	22	21.8	25	24.0	18	17.1	11	13.4
Not groupable**	4	4.0	8	7.7	4	3.8	9	11.0
Not on ribotype list	3	3.0	8	7.7	4	3.8	5	6.1
Not isolated***	5	5.0	8	7.7	1	1.0	5	6.1
<b>Total</b>	<b>101</b>		<b>104</b>		<b>105</b>		<b>82</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, April 2015 - March 2016**

Ribotype	Apr - Jun 2015		Jul - Sep 2015		Oct - Dec 2015		Jan - Mar 2016	
	Number	%	Number	%	Number	%	Number	%
001	1	1.7	0	0.0	4	7.7	0	0.0
002	3	5.1	3	7.0	3	5.8	4	7.8
005	5	8.5	3	7.0	3	5.8	4	7.8
014	3	5.1	3	7.0	2	3.8	4	7.8
015	3	5.1	6	14.0	6	11.5	4	7.8
020	2	3.4	1	2.3	3	5.8	1	2.0
023	3	5.1	4	9.3	1	1.9	3	5.9
027	0	0.0	1	2.3	0	0.0	0	0.0
078	16	27.1	5	11.6	8	15.4	13	25.5
106	0	0.0	0	0.0	2	3.8	1	2.0
193	4	6.8	0	0.0	0	0.0	2	3.9
Other	11	18.6	12	27.9	10	19.2	7	13.7
Not groupable**	2	3.4	4	9.3	4	7.7	3	5.9
Not on ribotype list	3	5.1	1	2.3	5	9.6	2	3.9
Not isolated***	3	5.1	0	0.0	1	1.9	3	5.9
<b>Total</b>	<b>59</b>		<b>43</b>		<b>52</b>		<b>51</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 015 in Northern Ireland Hospital Inpatients and Community Patients, January - March 2016**

		078 (n = 29)		002 (n = 12)		015 (n = 9)	
<b>Age</b>		range		25 - 95		36 - 94	
		36 - 96		82		73	
		median		81		73	
<b>Sex</b>		n	%	n	%	n	%
Female		19	65.5	7	58.3	6	66.7
Male		10	34.5	5	41.7	3	33.3
<b>Trust</b>							
Belfast		10	34.5	3	25.0	2	22.2
Northern		9	31.0	3	25.0	3	33.3
South Eastern		6	20.7	3	25.0	4	44.4
Southern		1	3.4	1	8.3	0	0.0
Western		3	10.3	2	16.7	0	0.0
<b>Source</b>							
Inpatient		16	55.2	8	66.7	5	55.6
Community*		13	44.8	4	33.3	4	44.4

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

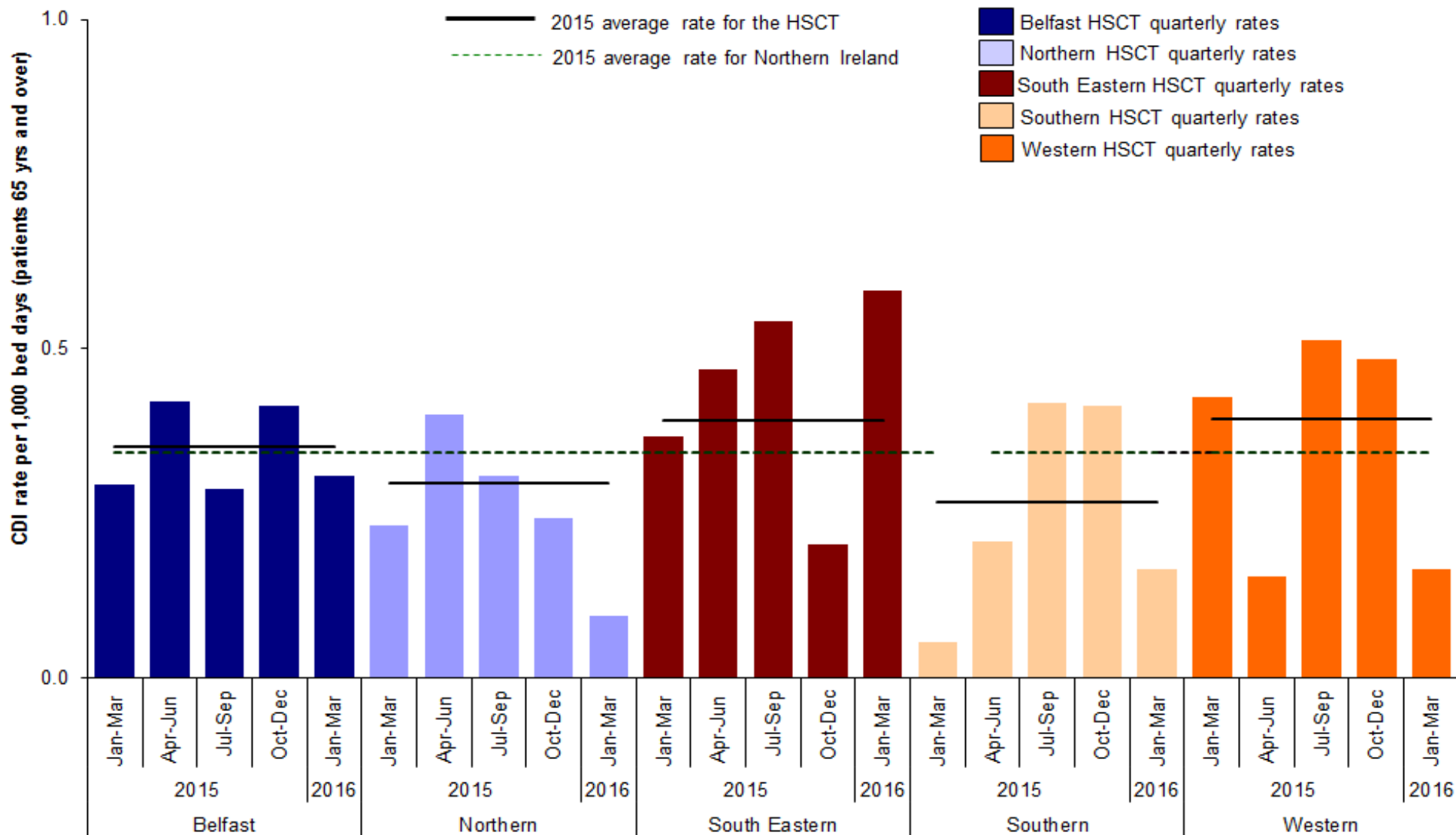


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2015 - March 2016, compared with annual Northern Ireland and HSCT rates for 2015

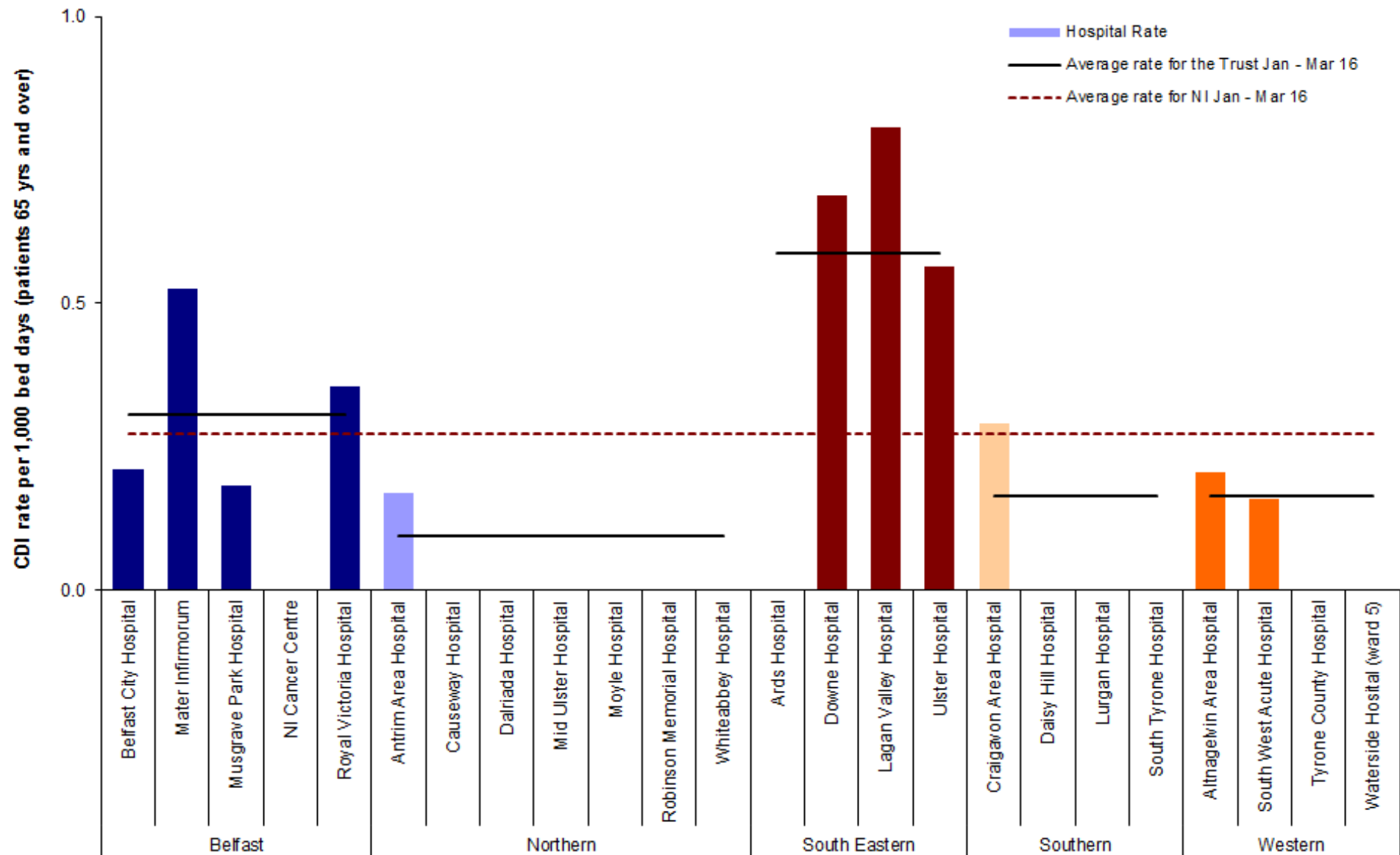


Figure 5: *C. difficile* rates during January - March 2016 - Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)



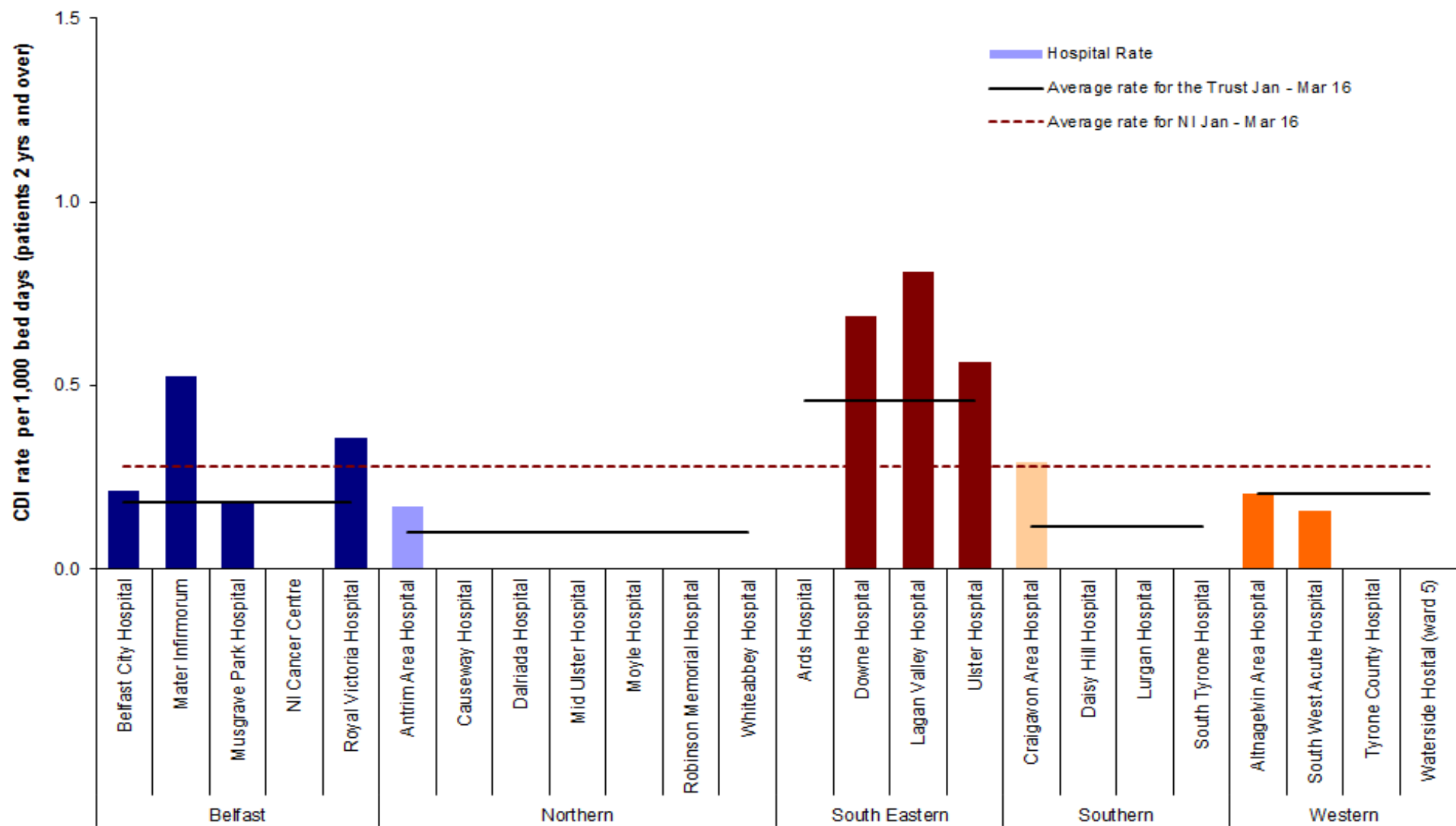


Figure 6: *C. difficile* rates during January - March 2016 - Inpatients aged two years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 6)

## Appendix A

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

Hospital	Apr - Jun 2015	Jul - Sept 2015	Oct - Dec 2015	Jan - Mar 2016
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.452	0.442	0.618	0.211
Mater Infirmorum	0.956	0.179	0.346	0.526
Musgrave Park Hospital	0.099	0.101	0.000	0.182
NICCO (formerly at Belvoir Park)	0.656	0.000	1.073	0.000
Royal Group of Hospitals	0.273	0.325	0.392	0.356
<b>Belfast Health &amp; Social Care Trust</b>	<b>0.419</b>	<b>0.286</b>	<b>0.412</b>	<b>0.307</b>
Antrim Area Hospital	0.478	0.385	0.352	0.171
Causeway Hospital	0.538	0.444	0.219	0.000
Dalriada Hospital	0.603	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	0.000	0.000	0.000	0.000
<b>Northern Health &amp; Social Care Trust</b>	<b>0.400</b>	<b>0.307</b>	<b>0.242</b>	<b>0.094</b>
Ards Hospital	0.000	0.000	0.000	0.000
Downe Hospital	1.097	0.753	0.342	0.687
Lagan Valley Hospital	0.366	0.915	0.334	0.808
Ulster Hospital	0.453	0.475	0.172	0.565
<b>South Eastern Health &amp; Social Care Trust</b>	<b>0.469</b>	<b>0.542</b>	<b>0.202</b>	<b>0.587</b>
Craigavon Area Hospital	0.274	0.531	0.369	0.291
Daisy Hill Hospital	0.000	0.399	0.247	0.000
Lurgan Hospital	0.494	0.256	1.021	0.000
South Tyrone Hospital	0.000	0.000	0.343	0.000
<b>Southern Health &amp; Social Care Trust</b>	<b>0.208</b>	<b>0.418</b>	<b>0.413</b>	<b>0.164</b>
Altnagelvin Area Hospital	0.224	0.630	0.663	0.205
South West Acute Hospital	0.094	0.500	0.369	0.160
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>0.153</b>	<b>0.512</b>	<b>0.483</b>	<b>0.165</b>
<b>NI TOTAL</b>	<b>0.352</b>	<b>0.389</b>	<b>0.353</b>	<b>0.272</b>

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

Trust	Apr - Jun 2015	Jul - Sept 2015	Oct - Dec 2015	Jan - Mar 2016
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	30	20	29	23
Northern Health & Social Care Trust	17	12	10	4
South Eastern Health & Social Care Trust	18	20	8	24
Southern Health & Social Care Trust	7	13	14	6
Western Health & Social Care Trust	5	16	16	6
<b>NI TOTAL</b>	<b>77</b>	<b>81</b>	<b>77</b>	<b>63</b>
<b>NI community TOTAL</b>	<b>47</b>	<b>33</b>	<b>43</b>	<b>44</b>

## Appendix A

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

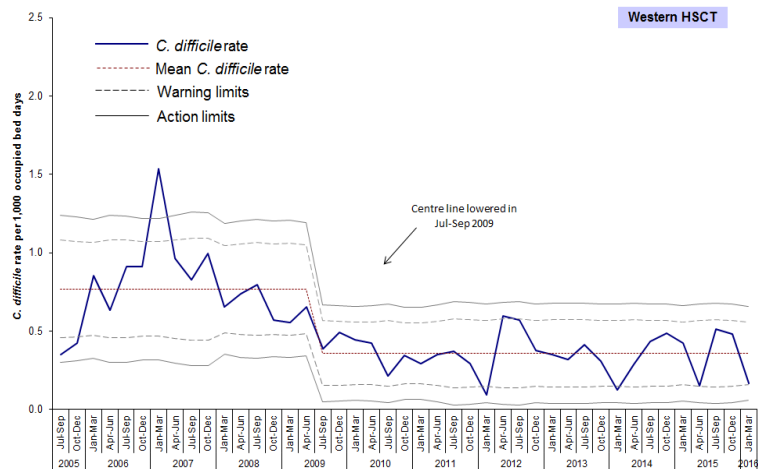
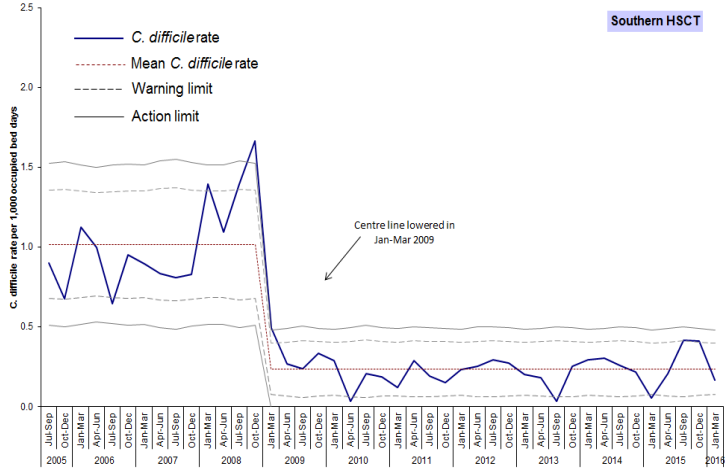
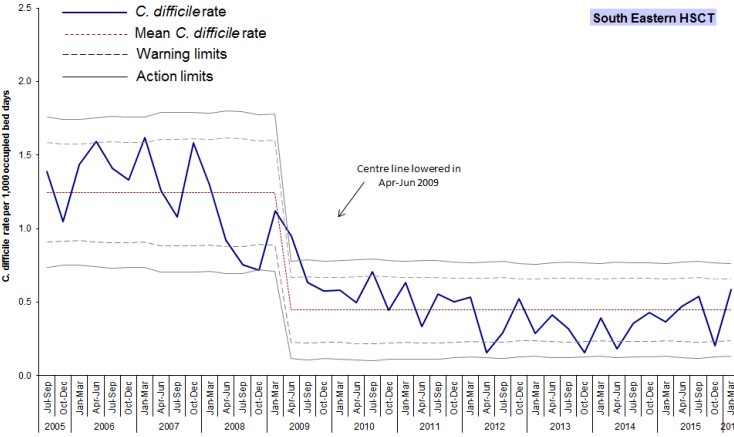
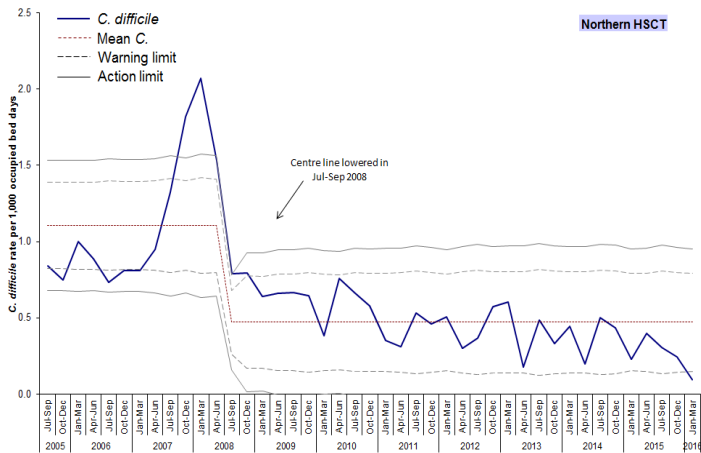
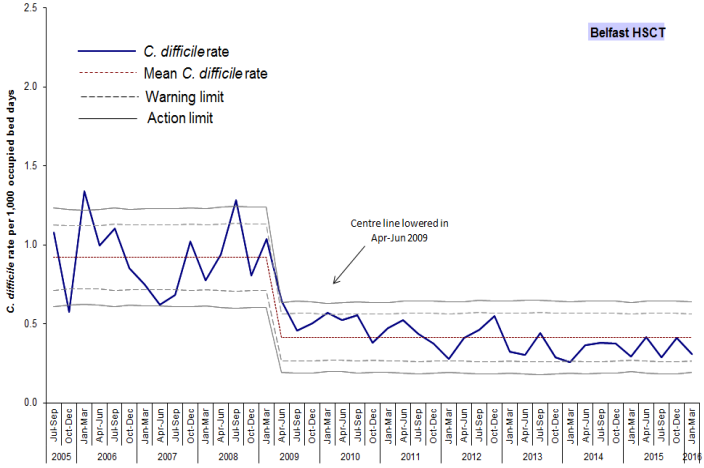
Hospital	Apr - Jun 2015	Jul - Sept 2015	Oct - Dec 2015	Jan - Mar 2016
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.317	0.328	0.436	0.141
Mater Infirmorum	0.625	0.202	0.251	0.301
Musgrave Park Hospital	0.058	0.061	0.000	0.111
NICCO (formerly at Belvoir Park)	0.662	0.000	0.668	0.171
Royal Group of Hospitals	0.145	0.209	0.250	0.184
<b>Belfast Health &amp; Social Care Trust</b>	<b>0.262</b>	<b>0.205</b>	<b>0.275</b>	<b>0.182</b>
Antrim Area Hospital	0.415	0.328	0.235	0.153
Causeway Hospital	0.304	0.316	0.242	0.060
Dalriada Hospital	0.483	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	0.000	0.000	0.000	0.000
<b>Northern Health &amp; Social Care Trust</b>	<b>0.335</b>	<b>0.270</b>	<b>0.198</b>	<b>0.101</b>
Ards Hospital	0.000	0.000	0.000	0.000
Downe Hospital	0.883	0.591	0.284	0.528
Lagan Valley Hospital	0.449	0.743	0.563	0.783
Ulster Hospital	0.292	0.362	0.163	0.420
<b>South Eastern Health &amp; Social Care Trust</b>	<b>0.336</b>	<b>0.410</b>	<b>0.212</b>	<b>0.459</b>
Craigavon Area Hospital	0.224	0.347	0.279	0.160
Daisy Hill Hospital	0.130	0.210	0.199	0.061
Lurgan Hospital	0.469	0.233	0.929	0.000
South Tyrone Hospital	0.000	0.000	0.348	0.000
<b>Southern Health &amp; Social Care Trust</b>	<b>0.206</b>	<b>0.285</b>	<b>0.310</b>	<b>0.115</b>
Altnagelvin Area Hospital	0.261	0.418	0.511	0.276
South West Acute Hospital	0.060	0.318	0.230	0.162
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>0.169</b>	<b>0.333</b>	<b>0.364</b>	<b>0.207</b>
<b>NI TOTAL</b>	<b>0.263</b>	<b>0.280</b>	<b>0.271</b>	<b>0.206</b>

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

Trust	Apr - Jun 2015	Jul - Sept 2015	Oct - Dec 2015	Jan - Mar 2016
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	37	28	38	26
Northern Health & Social Care Trust	22	17	13	7
South Eastern Health & Social Care Trust	20	24	13	29
Southern Health & Social Care Trust	12	16	18	7
Western Health & Social Care Trust	10	19	22	13
<b>NI TOTAL</b>	<b>101</b>	<b>104</b>	<b>104</b>	<b>82</b>
<b>NI community TOTAL</b>	<b>59</b>	<b>43</b>	<b>52</b>	<b>51</b>

# Appendix B

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



## Appendix C

**Table 8: *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>