

# *C. difficile* surveillance

## Quarterly report

### April 2018 - June 2018

#### Key points

- CDI reports for hospital inpatients aged 65 years and over decreased by 7% (from 67 to 62 episodes) during April - June 2018 compared to January - March 2018.
- CDI rate per 1,000 bed days decreased by 1% April - June 2018 compared to January - March 2018.
- CDI reports for community patients aged 65 years and over increased by 67% (from 30 to 50 episodes) during April - June 2018 compared to January - March 2018.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, increased by 20% during April - June 2018 compared to January - March 2018 (from 119 to 143 episodes).
- CDI reports for hospital inpatients aged 65 years and over increased by 11% between the 2016/17 and 2017/18 financial years.
- During April - June 2018 the most prevalent ribotypes for CDI inpatients are 002 (24%), 078 (9%), 014 (7%) and 005 (5%), 020 (5%) and 106 (5%) (Table 1) and in the community are 002 (14%), 078 (14%), 011 (7%), 014 (7%), 015 (7%) and 023 (7%) (Table 2).

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

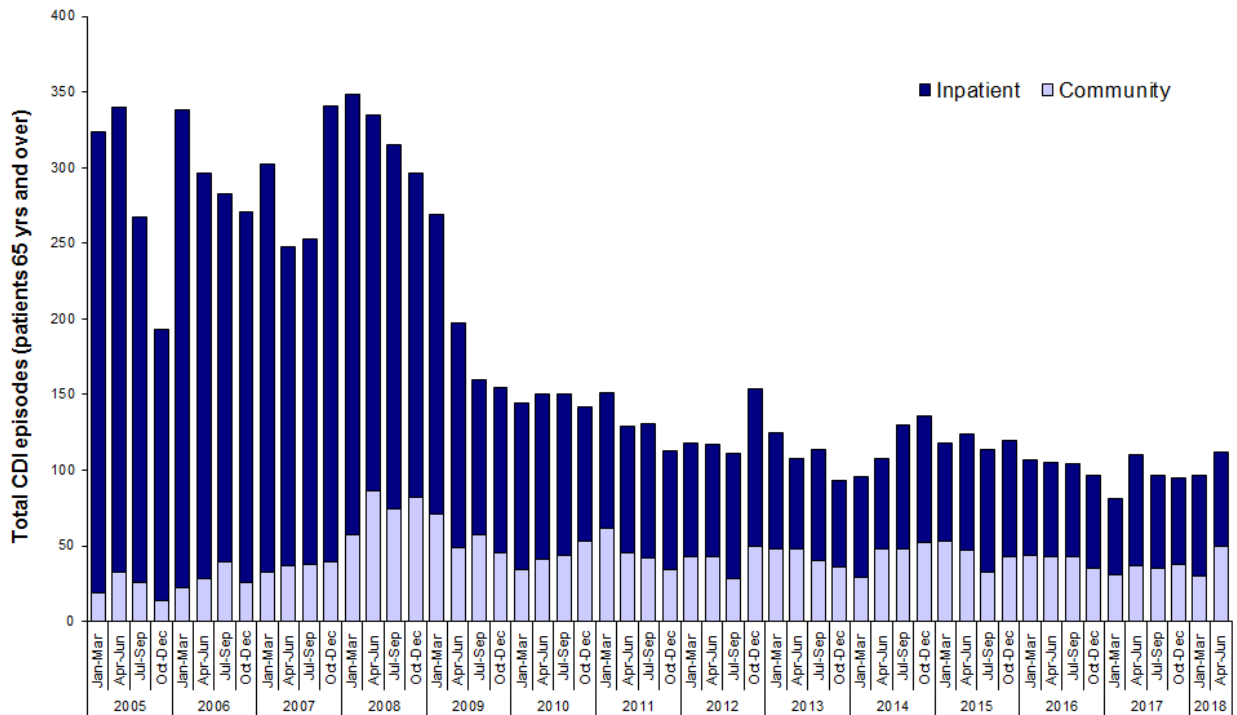


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2018

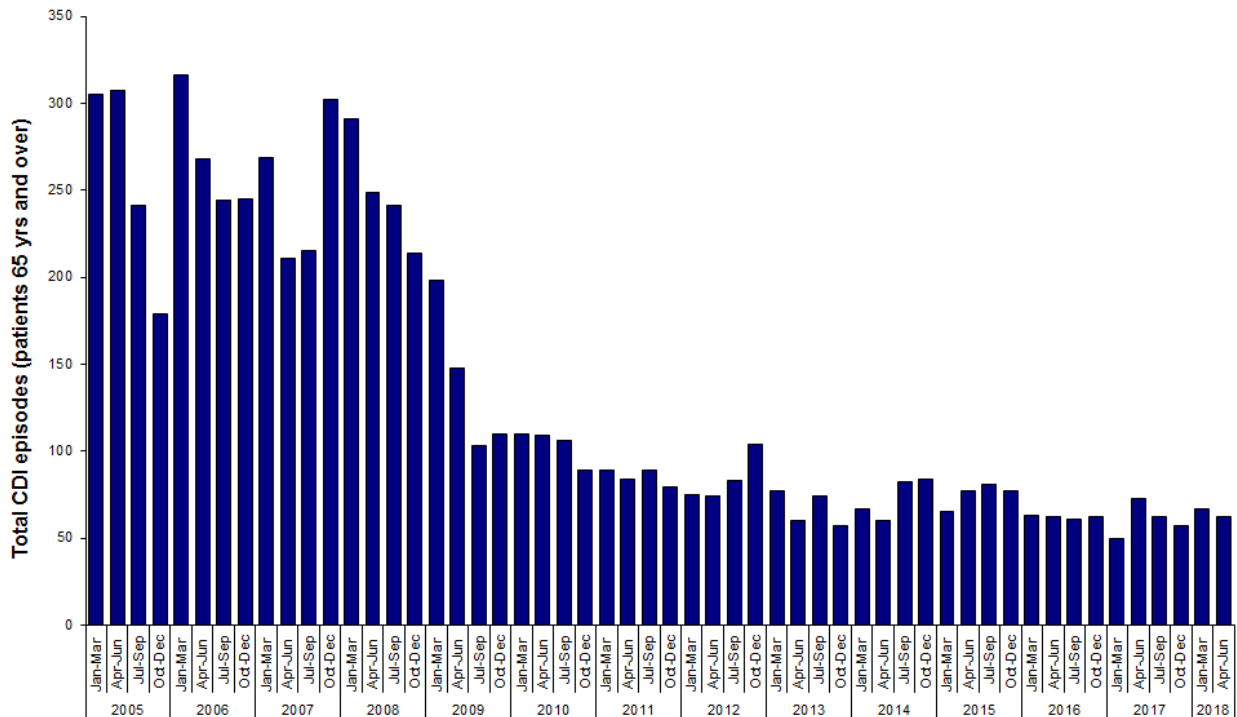
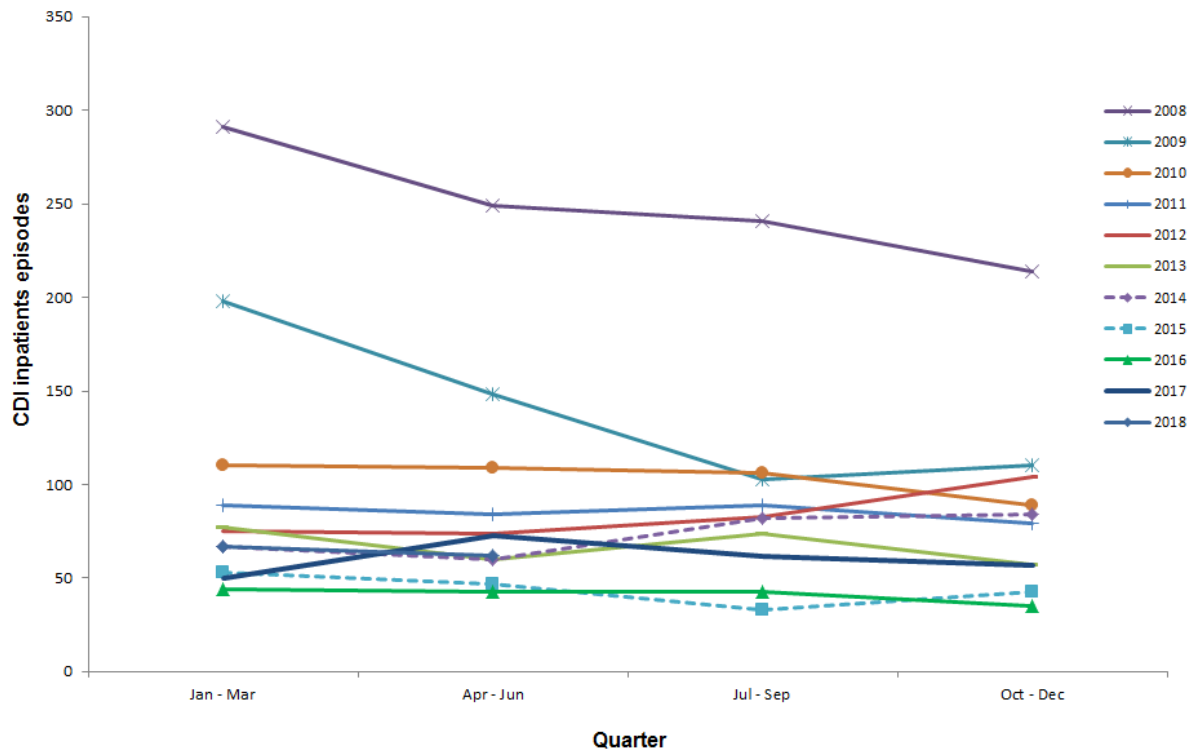


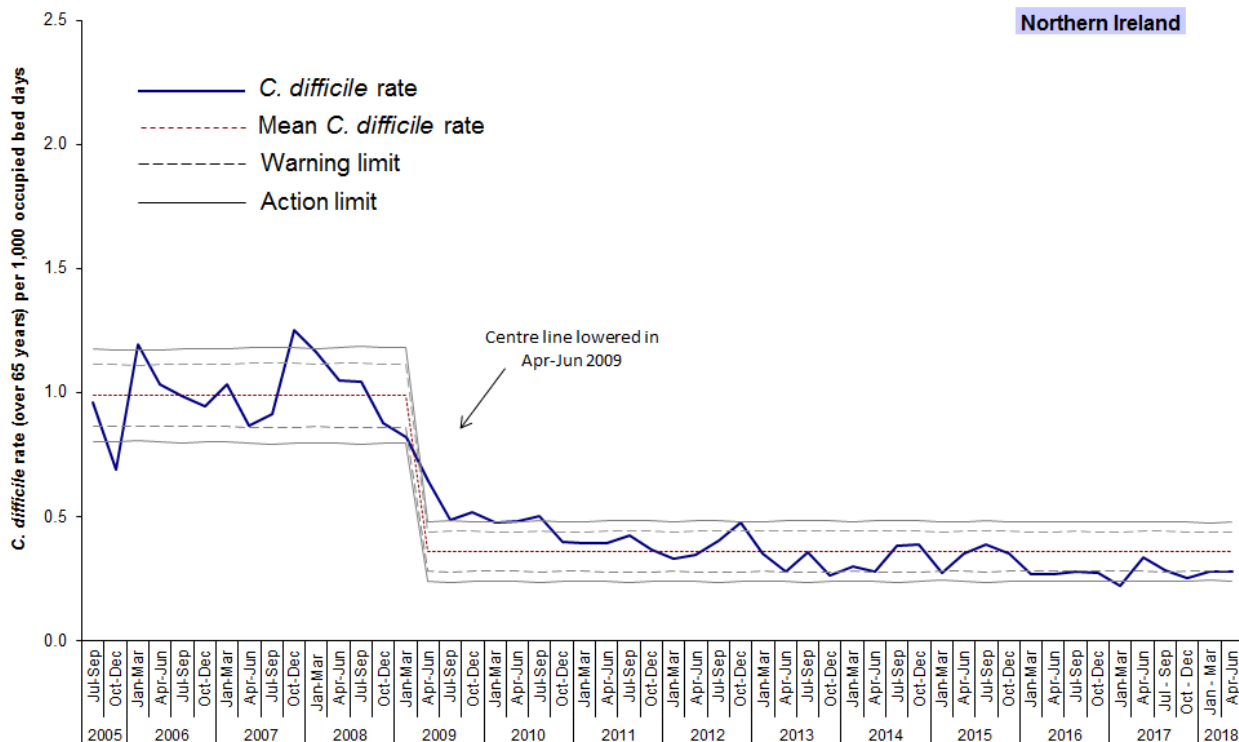
Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2018



**Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients  $\geq$  65 years), between 2008 and 2018**

**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 2017 – June 2018.**

Ribotype	Jul - Sep 2017		Oct - Dec 2017		Jan - Mar 2018		Apr - Jun 2018	
	Number	%	Number	%	Number	%	Number	%
001	4	4.7	2	2.3	1	1.2	2	2.3
002	12	14.0	14	15.9	27	31.4	21	24
005	5	5.8	2	2.3	6	7.0	4	4.5
011	4	4.7	2	2.3	3	3.5	1	1.1
014	7	8.1	9	10.2	7	8.1	6	7
015	10	11.6	5	5.7	4	4.7	4	4.5
018	3	3.5	5	5.7	0	0.0	2	2.3
020	3	3.5	7	8.0	7	8.1	4	5
023	3	3.5	5	5.7	2	2.3	3	3.4
078	9	10.5	3	3.4	7	8.1	8	9.1
193	7	8.1	1	1.1	0	0.0	0	0.0
Other	11	12.8	14	15.9	15	17.4	19	21.6
Not groupable**	2	2.3	2	2.3	3	3.5	6	6.8
Not on ribotype list	1	1.2	4	4.5	4	4.7	6	6.8
Not isolated***	2	2.3	1	1.1	0	0.0	2	2.3
<b>Total</b>	<b>83</b>		<b>76</b>		<b>86</b>		<b>88</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 2017 – June 2018.**

Ribotype	Jul - Sep 2017		Oct - Dec 2017		Jan - Mar 2018		Apr - Jun 2018	
	Number	%	Number	%	Number	%	Number	%
001	2	6.1	2	3.6	0	0.0	1	1.8
002	5	15.2	5	8.9	4	12.1	8	14
005	0	0.0	0	0.0	0	0.0	2	3.6
011	0	0.0	1	1.8	2	6.1	4	7.1
014	4	12.1	5	8.9	4	12.1	4	7
015	3	9.1	6	10.7	3	9.1	4	7
018	1	3.0	1	1.8	0	0.0	2	3.6
020	1	3.0	3	5.4	2	6.1	1	1.8
023	0	0.0	2	3.6	4	12.1	4	7.1
078	6	18.2	4	7.1	5	15.2	8	14.3
193	4	12.1	0	0.0	1	3.0	0	0.0
Other	10	30.3	7	12.5	3	9.1	10	17.9
Not groupable**	1	3.0	4	7.1	2	6.1	2	3.6
Not on ribotype list	1	3.0	3	5.4	2	6.1	6	10.7
Not isolated***	1	3.0	1	1.8	1	3.0	0	0.0
<b>Total</b>	<b>39</b>		<b>44</b>		<b>33</b>		<b>56</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. *Note: 1 CDI record in Oct-Dec 2017 was not tested and classified as Not isolated.*

**Table 3: Descriptive data for *C. difficile* ribotypes 002, 078 and 014 in Northern Ireland Hospital Inpatients and Community Patients, April - June 2018.**

	002 (n =29)		014 (n = 10)		078 (n = 16)	
<b>Age</b>						
range	7-99		0-90		67-101	
median	75		64		82	
<b>Sex</b>						
	n	%	n	%	n	%
Female	21	72.4	8	80.0	9	56.3
Male	8	27.6	2	20.0	7	43.8
<b>Trust</b>						
Belfast	14	48.3	3	30.0	1	6.3
Northern	3	10.3	4	40.0	6	37.5
South Eastern	4	13.8	1	10.0	6	37.5
Southern	3	10.3	1	10.0	1	6.3
Western	5	17.2	1	10.0	2	12.5
<b>Source</b>						
Inpatient	21	72.4	6	60.0	8	50.0
Community*	8	27.6	4	40.0	8	50.0

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

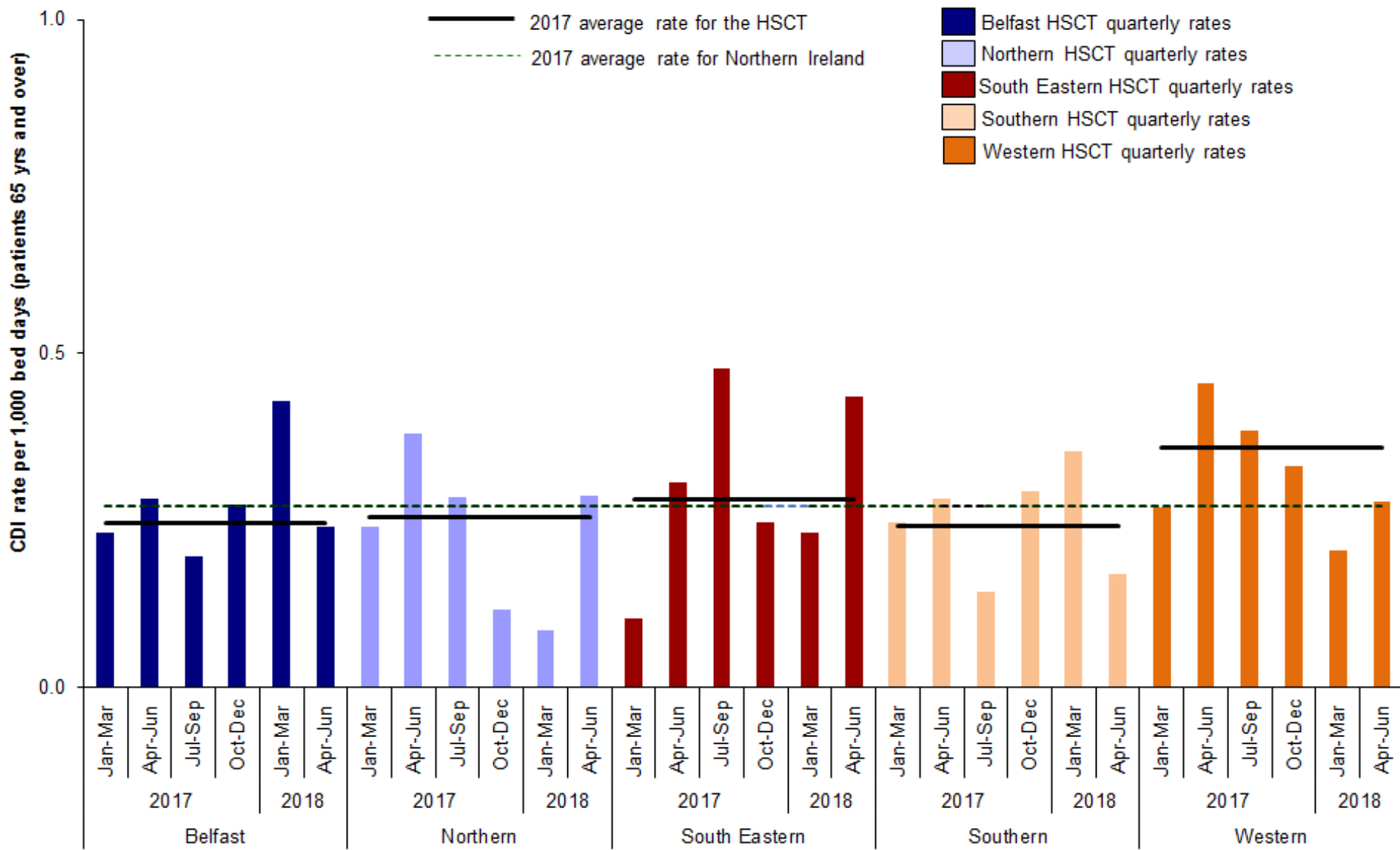


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2017 – June 2018, compared with annual Northern Ireland and HSCT rates for 2017

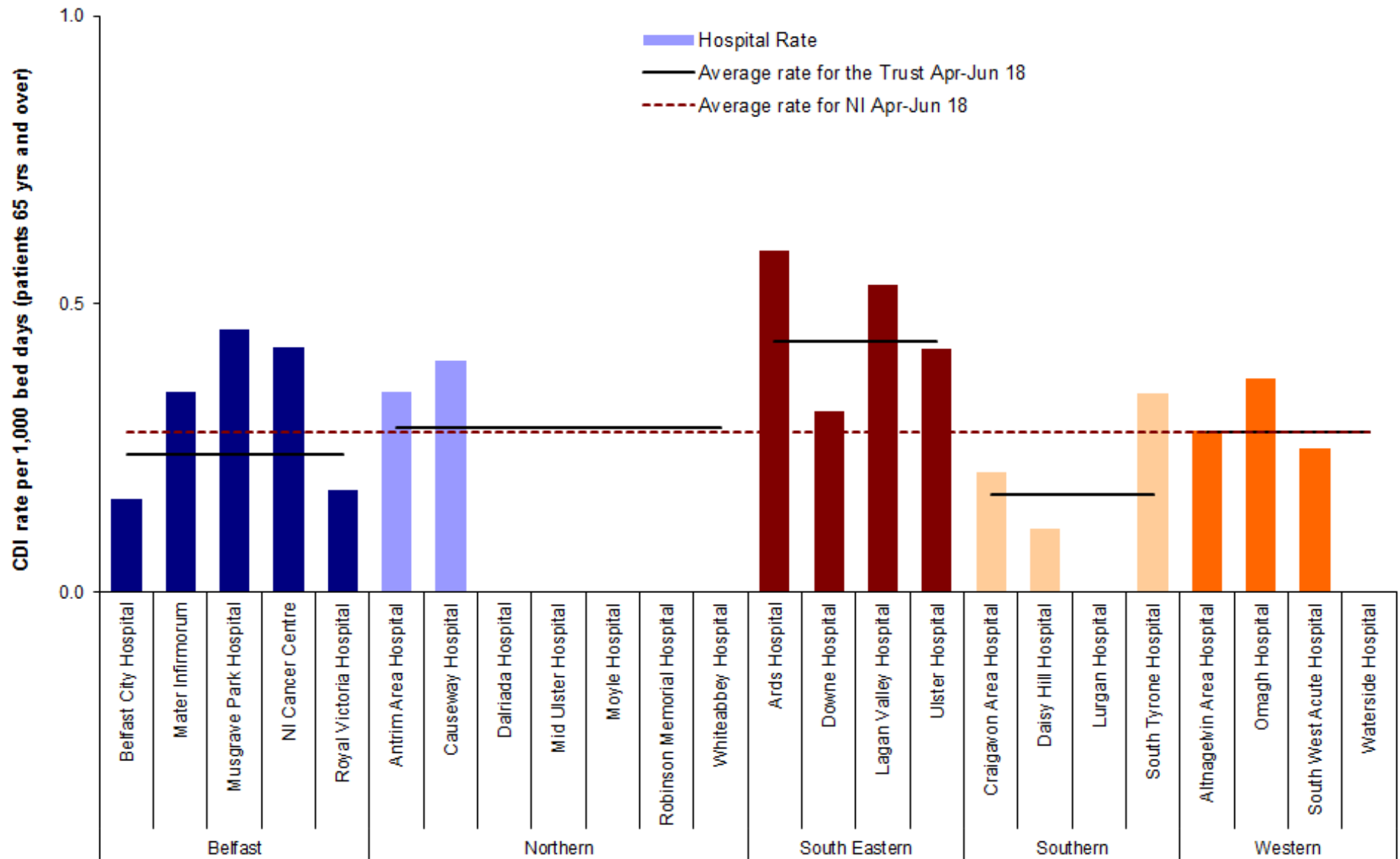


Figure 5: *C. difficile* rates during April - June 2018 - Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)



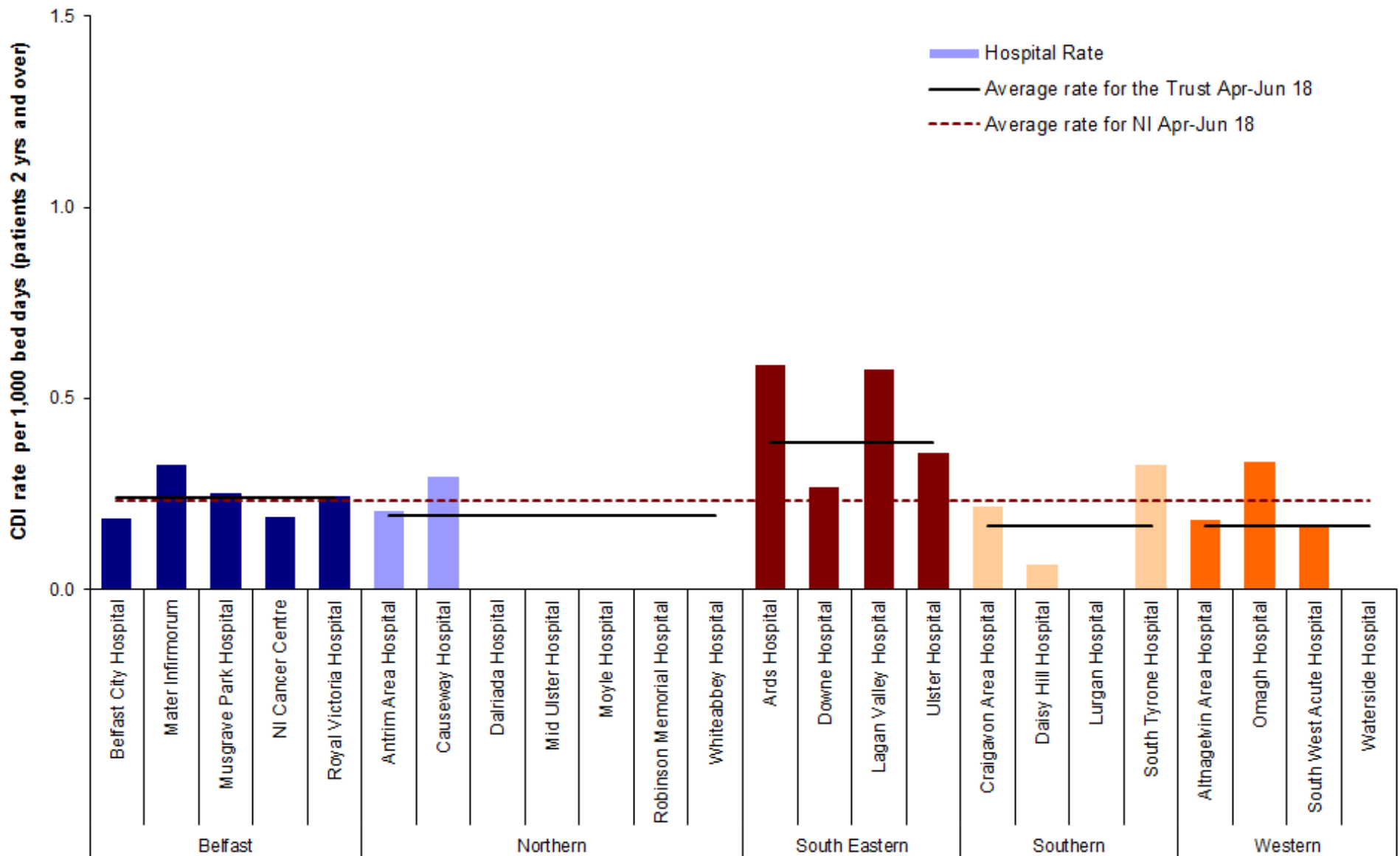


Figure 6: *C. difficile* rates during April - June 2018 - Inpatients aged two years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 5)

## Appendix A

**Table 4: Quarterly rate of *C. difficile* reports in patients aged 65 years and over, by hospital, July 2017 – June 2018**

Hospital	Jul - Sep 2017	Oct - Dec 2017	Jan - Mar 2018	Apr - Jun 2018
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.234	0.523	0.658	0.163
Mater Infirmorum	0.394	0.374	0.347	0.347
Musgrave Park Hospital	0.000	0.000	0.114	0.456
NICCO (formerly at Belvoir Park)	0.000	0.000	0.424	0.424
Royal Group of Hospitals	0.181	0.197	0.415	0.177
<b>Belfast Health &amp; Social Care Trust</b>	<b>0.196</b>	<b>0.273</b>	<b>0.429</b>	<b>0.240</b>
Antrim Area Hospital	0.380	0.127	0.039	0.347
Causeway Hospital	0.338	0.098	0.286	0.402
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	0.000	0.287	0.000	0.000
<b>Northern Health &amp; Social Care Trust</b>	<b>0.284</b>	<b>0.115</b>	<b>0.086</b>	<b>0.286</b>
Ards Hospital	0.000	0.000	0.000	0.592
Downe Hospital	0.000	0.000	0.584	0.313
Lagan Valley Hospital	0.166	0.322	0.162	0.532
Ulster Hospital	0.630	0.270	0.220	0.422
<b>South Eastern Health &amp; Social Care Trust</b>	<b>0.478</b>	<b>0.246</b>	<b>0.232</b>	<b>0.436</b>
Craigavon Area Hospital	0.212	0.286	0.243	0.207
Daisy Hill Hospital	0.110	0.318	0.437	0.110
Lurgan Hospital	0.000	0.466	0.944	0.000
South Tyrone Hospital	0.000	0.000	0.000	0.346
<b>Southern Health &amp; Social Care Trust</b>	<b>0.143</b>	<b>0.292</b>	<b>0.352</b>	<b>0.169</b>
Altnagelvin Area Hospital	0.324	0.378	0.254	0.282
Tyrone County / Omagh Hospital	0.401	0.000	0.000	0.371
South West Acute Hospital	0.433	0.453	0.080	0.250
Waterside Hospital	0.498	0.000	0.512	0.000
<b>Western Health &amp; Social Care Trust</b>	<b>0.383</b>	<b>0.331</b>	<b>0.230</b>	<b>0.277</b>
<b>NI TOTAL</b>	<b>0.285</b>	<b>0.251</b>	<b>0.279</b>	<b>0.277</b>

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

Trust	Jul - Sep 2017	Oct - Dec 2017	Jan - Mar 2018	Apr - Jun 2018
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	13	19	32	18
Northern Health & Social Care Trust	12	5	4	12
South Eastern Health & Social Care Trust	18	10	10	17
Southern Health & Social Care Trust	5	11	13	6
Western Health & Social Care Trust	14	12	8	9
<b>NI TOTAL</b>	<b>62</b>	<b>57</b>	<b>67</b>	<b>62</b>
<b>NI community TOTAL</b>	<b>35</b>	<b>38</b>	<b>30</b>	<b>50</b>

## Appendix A

**Table 6: Quarterly rate of *C. difficile* reports in patients aged two years and over, by hospital, July 2017 – June 2018**

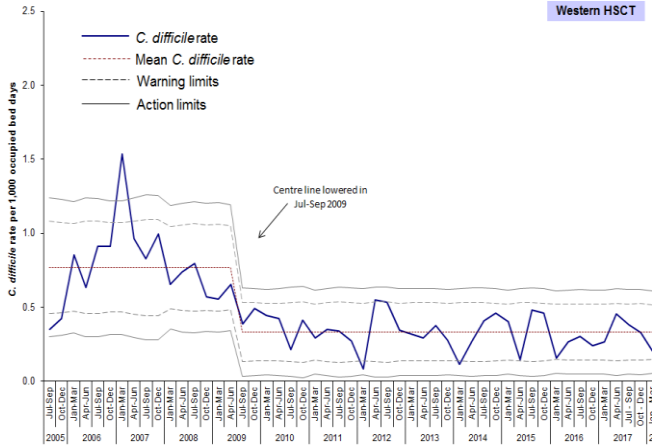
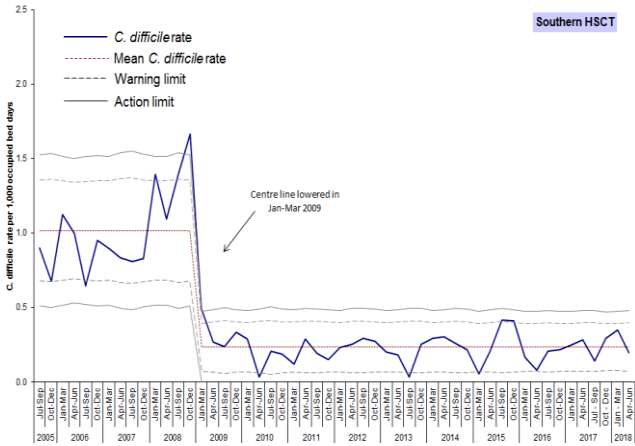
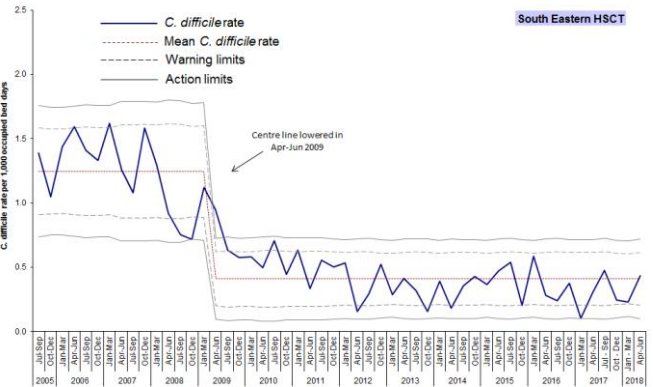
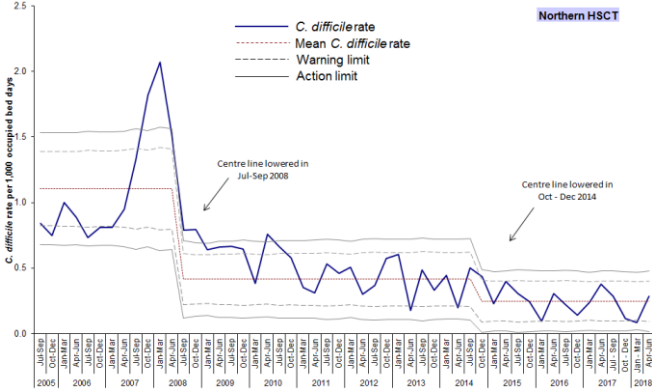
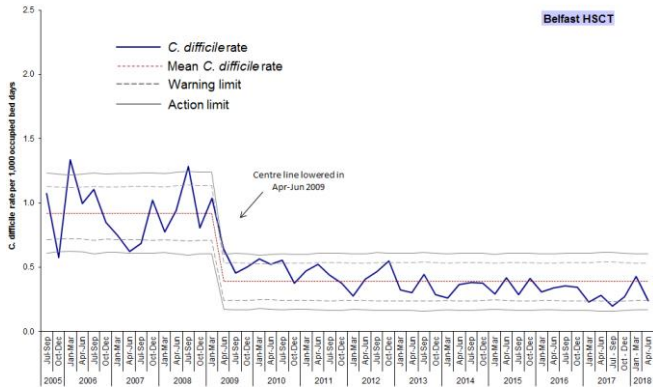
Hospital	Jul - Sep 2017	Oct - Dec 2017	Jan - Mar 2018	Apr - Jun 2018
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.187	0.343	0.441	0.185
Mater Infirmorum	0.324	0.261	0.370	0.326
Musgrave Park Hospital	0.000	0.000	0.065	0.250
NICCO (formerly at Belvoir Park)	0.000	0.197	0.191	0.189
Royal Group of Hospitals	0.137	0.176	0.269	0.245
<b>Belfast Health &amp; Social Care Trust</b>	<b>0.152</b>	<b>0.202</b>	<b>0.291</b>	<b>0.242</b>
Antrim Area Hospital	0.283	0.125	0.049	0.206
Causeway Hospital	0.183	0.174	0.228	0.294
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	0.000	0.256	0.000	0.000
<b>Northern Health &amp; Social Care Trust</b>	<b>0.212</b>	<b>0.132</b>	<b>0.086</b>	<b>0.195</b>
Ards Hospital	0.000	0.000	0.000	0.587
Downe Hospital	0.000	0.000	0.507	0.267
Lagan Valley Hospital	0.277	0.268	0.131	0.574
Ulster Hospital	0.377	0.220	0.217	0.379
<b>South Eastern Health &amp; Social Care Trust</b>	<b>0.332</b>	<b>0.207</b>	<b>0.219</b>	<b>0.384</b>
Craigavon Area Hospital	0.217	0.186	0.186	0.215
Daisy Hill Hospital	0.126	0.182	0.251	0.065
Lurgan Hospital	0.000	0.444	0.888	0.000
South Tyrone Hospital	0.000	0.000	0.000	0.324
<b>Southern Health &amp; Social Care Trust</b>	<b>0.166</b>	<b>0.195</b>	<b>0.245</b>	<b>0.167</b>
Altnagelvin Area Hospital	0.318	0.233	0.222	0.183
Tyrone County / Omagh Hospital	0.376	0.000	0.000	0.334
South West Acute Hospital	0.280	0.394	0.300	0.168
Waterside Hospital	0.338	0.000	0.107	0.000
<b>Western Health &amp; Social Care Trust</b>	<b>0.311</b>	<b>0.246</b>	<b>0.172</b>	<b>0.168</b>
<b>NI TOTAL</b>	<b>0.219</b>	<b>0.196</b>	<b>0.217</b>	<b>0.233</b>

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

Trust	Jul - Sep 2017	Oct - Dec 2017	Jan - Mar 2018	Apr - Jun 2018
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	20	27	40	29
Northern Health & Social Care Trust	14	9	6	13
South Eastern Health & Social Care Trust	20	13	14	24
Southern Health & Social Care Trust	10	12	15	10
Western Health & Social Care Trust	19	15	11	10
<b>NI TOTAL</b>	<b>83</b>	<b>76</b>	<b>86</b>	<b>86</b>
<b>NI community TOTAL</b>	<b>39</b>	<b>44</b>	<b>33</b>	<b>57</b>

# Appendix B

## Trends in *C. difficile* rates in inpatients aged 65 years and over, by HSCT and quarter, 2005 – 2018



## Appendix C

**Table 8: *C. difficile* reports among inpatients in Northern Ireland aged 65 years and over, by financial year and HSCT**

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