

# *C. difficile* surveillance

## Quarterly report

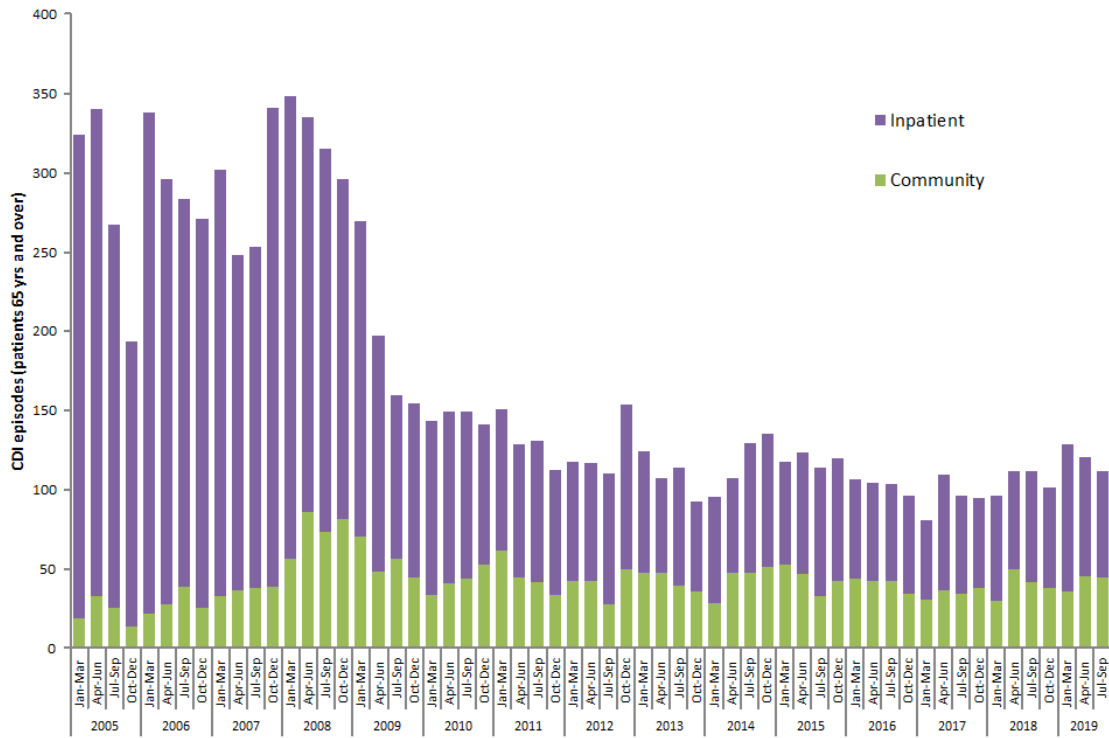
### July - September 2019

#### Key points

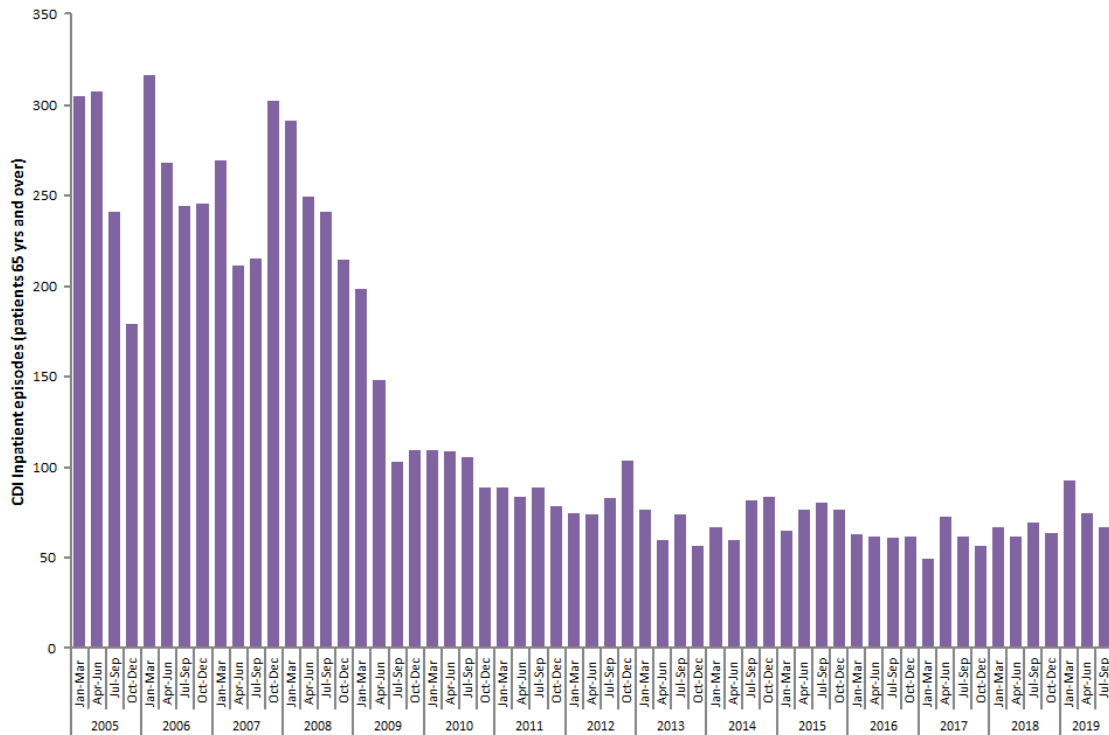
- CDI reports for hospital inpatients aged 65 years and over decreased by 11% (from 75 to 67 episodes) during July – September 2019 compared to April – June 2019.
- CDI rate per 1,000 bed days decreased by 8% during July – September 2019 compared to April – June 2019.
- CDI reports for community patients aged 65 years and over decreased by 2% (from 46 to 45 episodes) during July – September 2019 compared to April – June 2019.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, decreased by 11% during July – September 2019 compared to April – June 2019 (from 152 to 135 episodes).
- CDI reports for hospital inpatients aged 65 years and over increased by 12% between the 2017/18 and 2018/19 financial years.
- During July - September 2019 the most prevalent ribotypes for CDI inpatients are 002 (31%), 078 (11%) and 020 (8%) (Table 1). The most predominate community ribotypes are 002 (32%), 005 (10%) and 078 (6%) (Table 2).

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

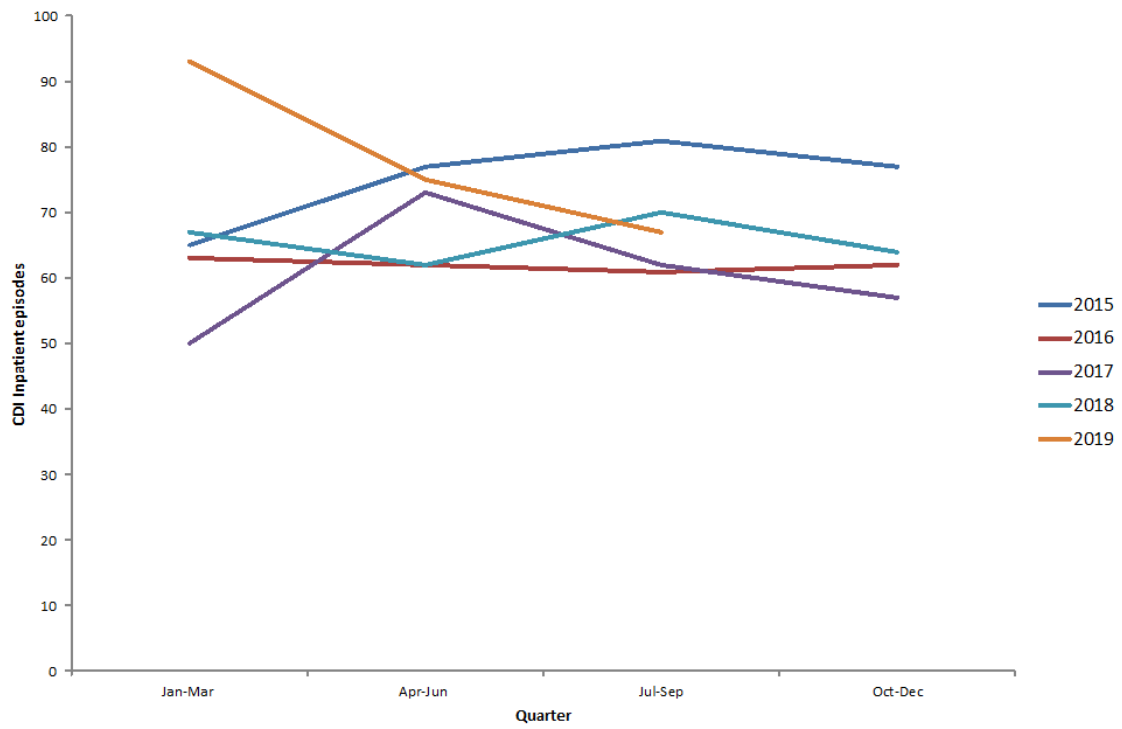
# Surveillance of *C. difficile* infection (CDI)



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



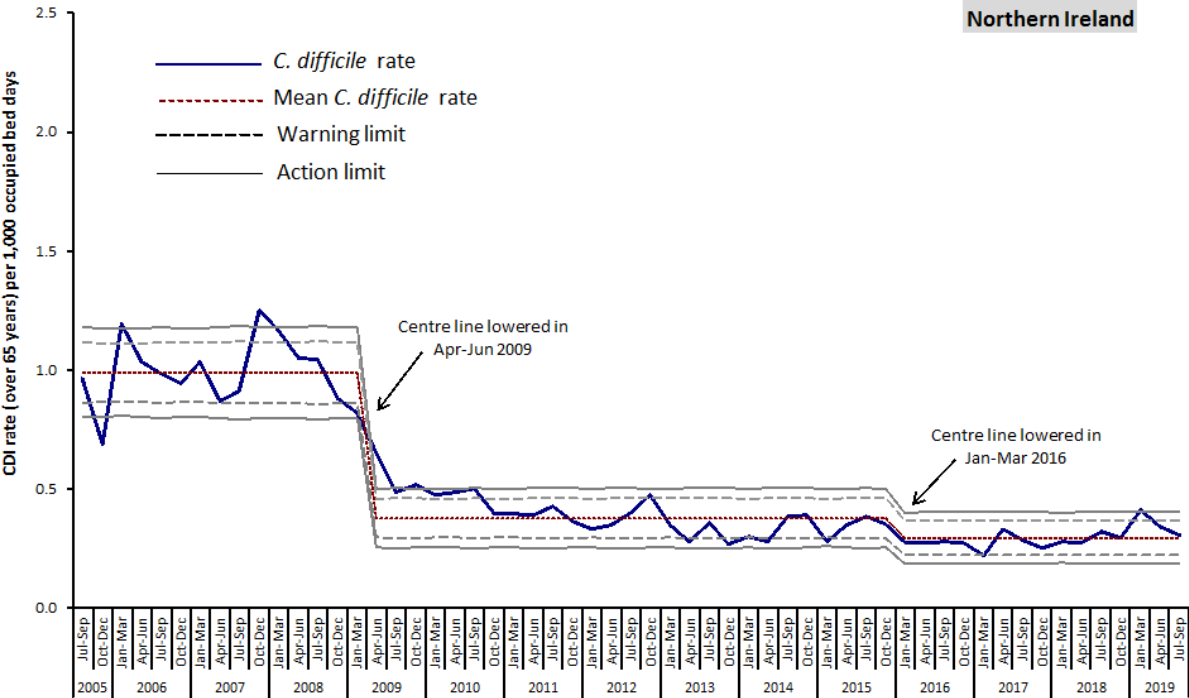
**Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2019**



**Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2015 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, October 2018 – September 2019.**

Ribotype	Oct - Dec 2018		Jan - Mar 2019		Apr - Jun 2019		Jul - Sep 2019	
	Number	%	Number	%	Number	%	Number	%
001	1	1.2	1	0.8	1	1.0	2	2.4
002	8	9.9	52	42.6	29	29.6	26	30.6
005	6	7.4	4	3.3	1	1.0	4	4.7
011	3	3.7	2	1.6	1	1.0	1	1.2
014	9	11.1	7	5.7	5	5.1	5	5.9
015	5	6.2	3	2.5	7	7.1	5	5.9
018	1	1.2	1	0.8	0	0.0	0	0.0
020	4	4.9	7	5.7	5	5.1	7	8.2
023	0	0.0	2	1.6	2	2.0	0	0.0
078	9	11.1	15	12.3	6	6.1	9	10.6
193	1	1.2	2	1.6	5	5.1	2	2.4
Other	22	27.2	13	10.7	15	15.3	12	14.1
Not groupable**	6	7.4	5	4.1	4	4.1	5	5.9
Not on ribotype list	6	7.4	3	2.5	13	13.3	5	5.9
Not isolated***	0	0.0	5	4.1	4	4.1	2	2.4
<b>Total</b>	<b>81</b>		<b>122</b>		<b>98</b>		<b>85</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, October 2018 – September 2019.**

Ribotype	Oct - Dec 2018		Jan - Mar 2019		Apr - Jun 2019		Jul - Sep 2019	
	Number	%	Number	%	Number	%	Number	%
001	0	0.0	0	0.0	1	1.8	0	0.0
002	11	25.6	14	28.0	17	30.9	16	32.0
005	3	7.0	4	8.0	4	7.3	5	10.0
011	2	4.7	0	0.0	0	0.0	0	0.0
014	0	0.0	1	2.0	3	5.5	1	2.0
015	3	7.0	5	10.0	1	1.8	2	4.0
018	0	0.0	1	2.0	0	0.0	1	2.0
020	0	0.0	0	0.0	1	1.8	1	2.0
023	1	2.3	1	2.0	2	3.6	2	4.0
078	9	20.9	10	20.0	7	12.7	3	6.0
193	0	0.0	1	2.0	5	9.1	1	2.0
Other	8	18.6	4	8.0	8	14.5	5	10.0
Not groupable**	3	7.0	3	6.0	0	0.0	3	6.0
Not on ribotype list	3	7.0	5	10.0	4	7.3	7	14.0
Not isolated***	0	0.0	1	2.0	2	3.6	3	6.0
<b>Total</b>	<b>43</b>		<b>50</b>		<b>55</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 002, 078 and 005 in Northern Ireland Hospital Inpatients and Community Patients, July – September 2019.**

	002 (n =42)		078 (n = 12)		005 (n = 9)	
<b>Age</b>						
range	13-101		55-95		42-90	
median	79		81		69	
<b>Sex</b>						
	n	%	n	%	n	%
Female	20	47.6	8	66.7	4	44.4
Male	22	52.4	4	33.3	5	55.6
<b>Trust</b>						
Belfast	14	33.3	1	8.3	2	22.2
Northern	8	19.0	3	25.0	1	11.1
South Eastern	6	14.3	1	8.3	2	22.2
Southern	10	23.8	2	16.7	0	0.0
Western	4	9.5	5	41.7	4	44.4
<b>Source</b>						
Inpatient	26	61.9	9	75.0	4	44.4
Community*	16	38.1	3	25.0	5	55.6

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

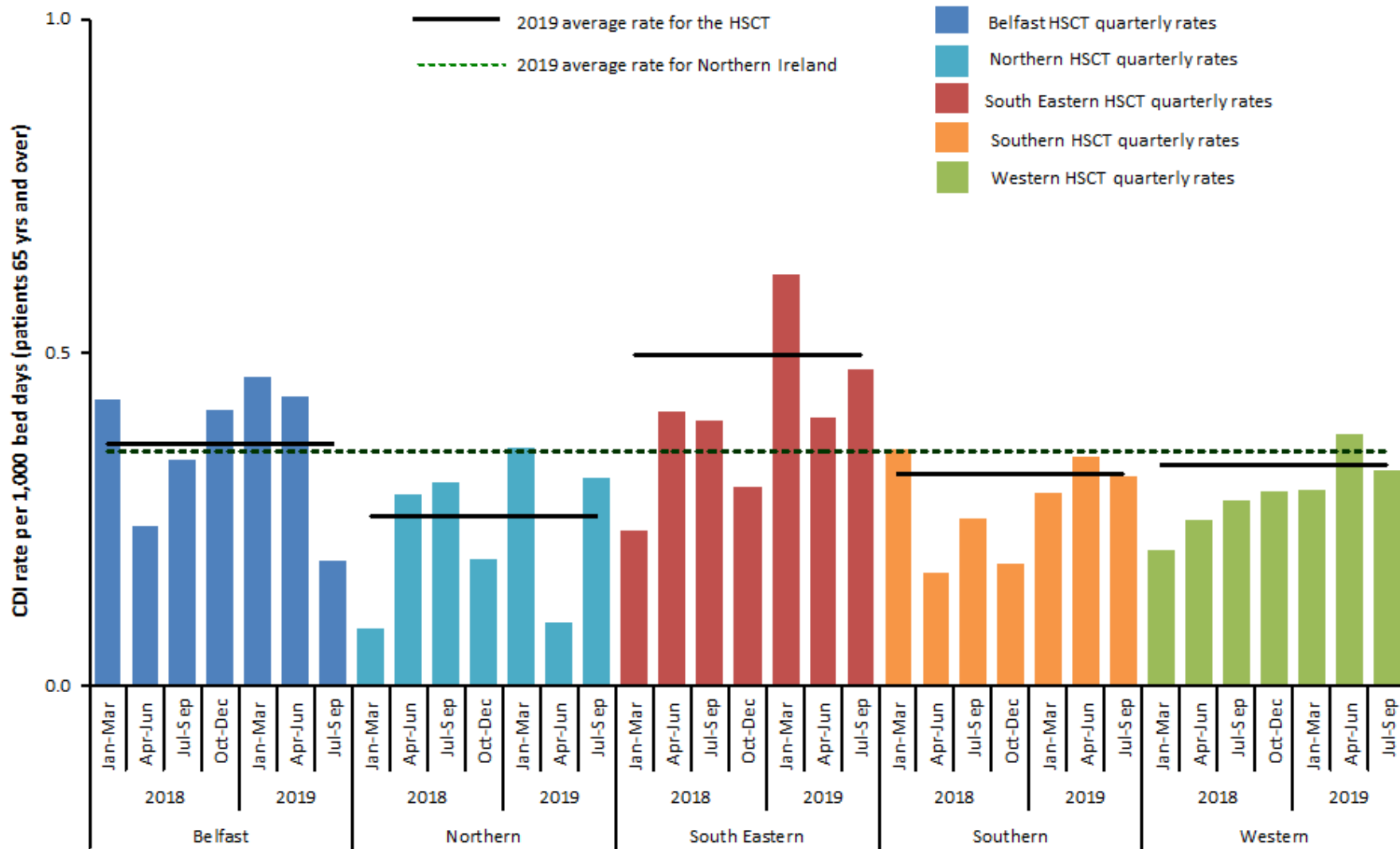


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2018 – September 2019, compared with annual Northern Ireland and HSCT rates for 2019



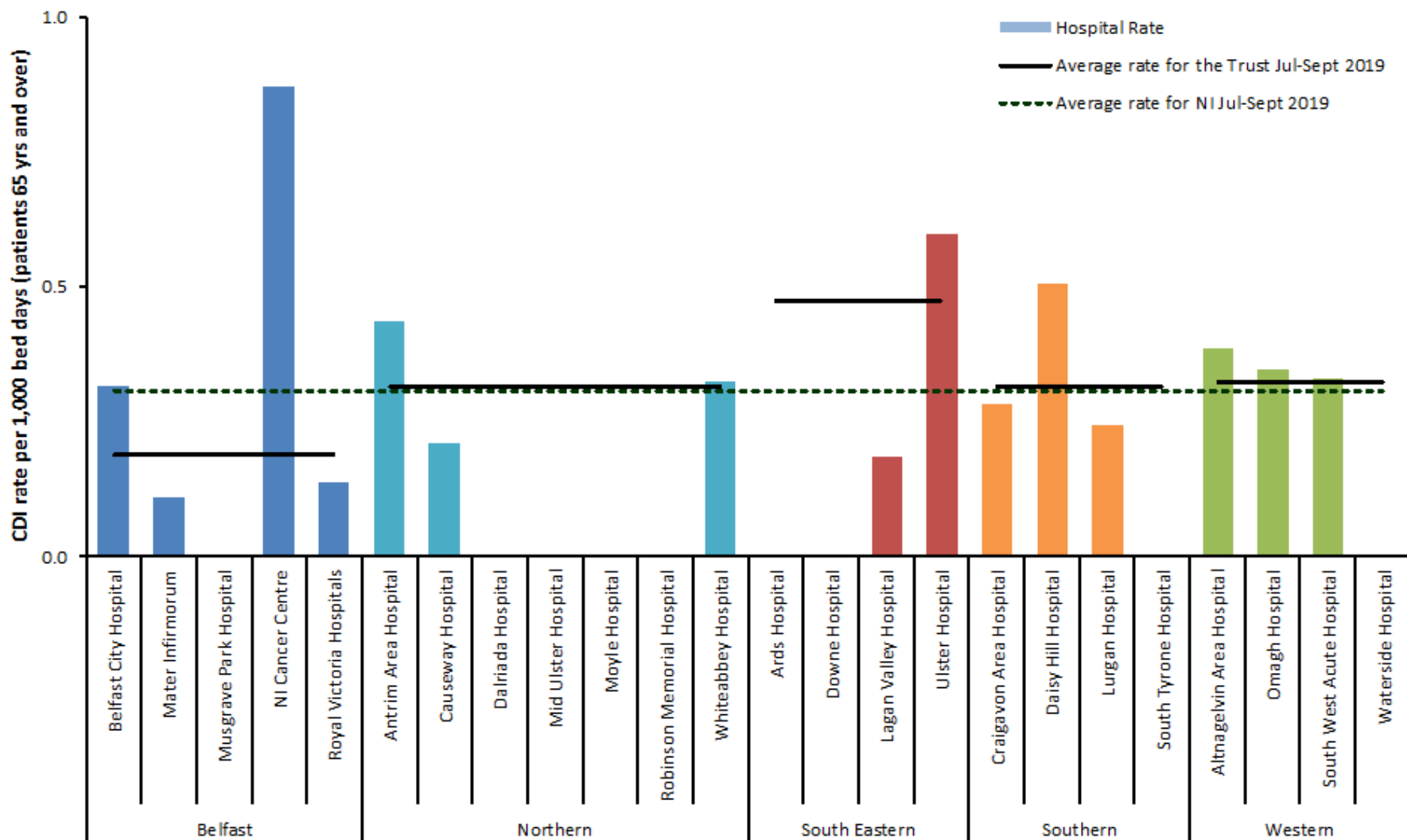


Figure 5: *C. difficile* rates during July - September 2019 - Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)

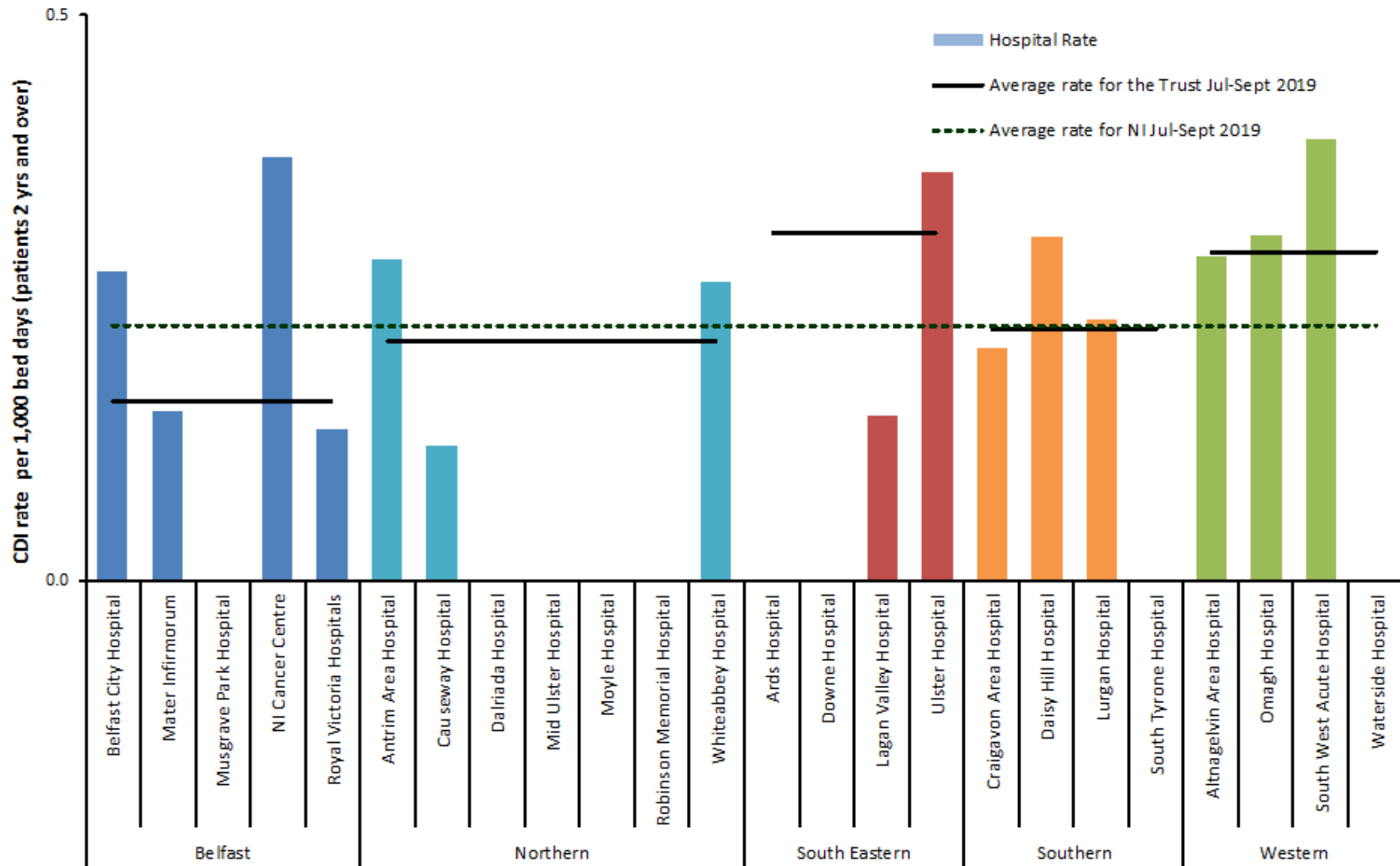


Figure 6: *C. difficile* rates July - September 2019 - Inpatients aged two years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 5)

## Appendix A

**Table 4: Quarterly rates of *C. difficile* reports in patients aged 65 years and over, by hospital, October 2018 – September 2019.**

Hospital	Oct - Dec 2018	Jan - Mar 2019	Apr - Jun 2019	Jul - Sep 2019
Belfast City Hospital	0.454	0.539	0.489	0.315
Mater Infirmorum	0.178	0.928	0.178	0.112
Musgrave Park Hospital	0.116	0.325	0.557	0.000
NICCO	0.749	0.398	0.750	0.870
Royal Group of Hospitals	0.540	0.353	0.431	0.139
<b>Belfast Health &amp; Social Care Trust</b>	<b>0.411</b>	<b>0.462</b>	<b>0.432</b>	<b>0.189</b>
Antrim Area Hospital	0.172	0.258	0.084	0.436
Causeway Hospital	0.204	0.722	0.199	0.208
Dalriada Hospital	0.000	0.000	0.000	0.000
Mid Ulster Hospital	0.613	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	0.315	0.567	0.000	0.322
<b>Northern Health &amp; Social Care Trust</b>	<b>0.190</b>	<b>0.355</b>	<b>0.094</b>	<b>0.313</b>
Ards Hospital	0.000	0.000	0.798	0.000
Downe Hospital	0.330	0.320	0.372	0.000
Lagan Valley Hospital	0.169	0.680	0.190	0.187
Ulster Hospital	0.339	0.664	0.426	0.595
<b>South Eastern Health &amp; Social Care Trust</b>	<b>0.298</b>	<b>0.615</b>	<b>0.401</b>	<b>0.474</b>
Craigavon Area Hospital	0.227	0.331	0.282	0.282
Daisy Hill Hospital	0.133	0.202	0.410	0.506
Lurgan Hospital	0.000	0.252	0.000	0.242
South Tyrone Hospital	0.284	0.338	0.736	0.000
<b>Southern Health &amp; Social Care Trust</b>	<b>0.184</b>	<b>0.289</b>	<b>0.318</b>	<b>0.314</b>
Altnagelvin Area Hospital	0.316	0.272	0.485	0.385
Omagh Hospital	0.000	0.000	0.366	0.346
South West Acute Hospital	0.330	0.248	0.335	0.328
Waterside Hospital	0.251	0.723	0.000	0.000
<b>Western Health &amp; Social Care Trust</b>	<b>0.291</b>	<b>0.294</b>	<b>0.377</b>	<b>0.323</b>
<b>NI TOTAL</b>	<b>0.293</b>	<b>0.413</b>	<b>0.334</b>	<b>0.307</b>

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

Trust	Oct - Dec 2018 Episodes	Jan - Mar 2019 Episodes	Apr - Jun 2019 Episodes	Jul - Sep 2019 Episodes
Belfast Health & Social Care Trust	27	31	30	12
Northern Health & Social Care Trust	8	15	4	13
South Eastern Health & Social Care Trust	12	25	15	18
Southern Health & Social Care Trust	6	11	12	12
Western Health & Social Care Trust	11	11	14	12
<b>NI TOTAL</b>	<b>64</b>	<b>93</b>	<b>75</b>	<b>67</b>
<b>NI community TOTAL</b>	<b>38</b>	<b>36</b>	<b>46</b>	<b>45</b>

## Appendix A

**Table 6: Quarterly rates of *C. difficile* reports in patients aged two years and over, by hospital, October 2018 – September 2019.**

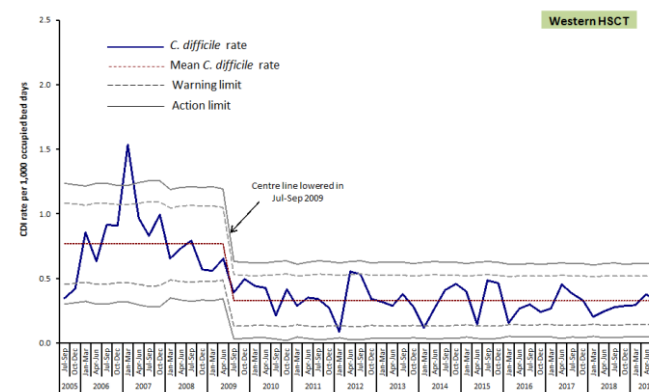
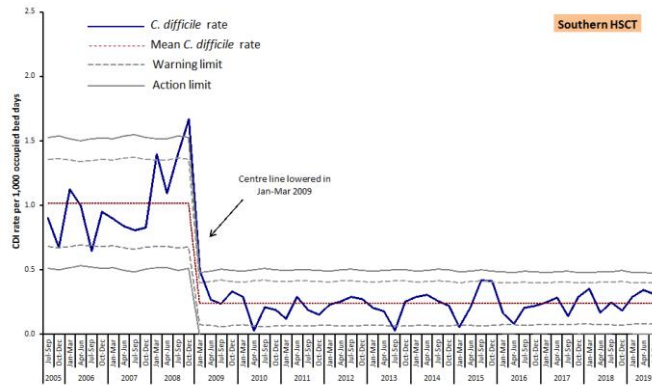
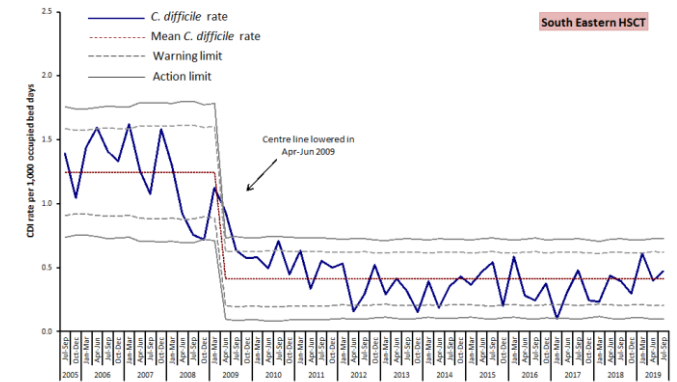
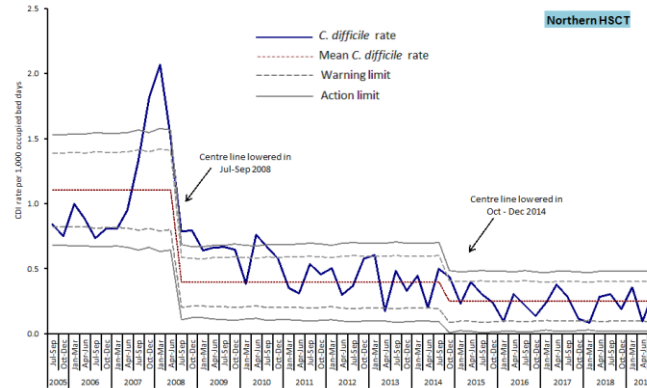
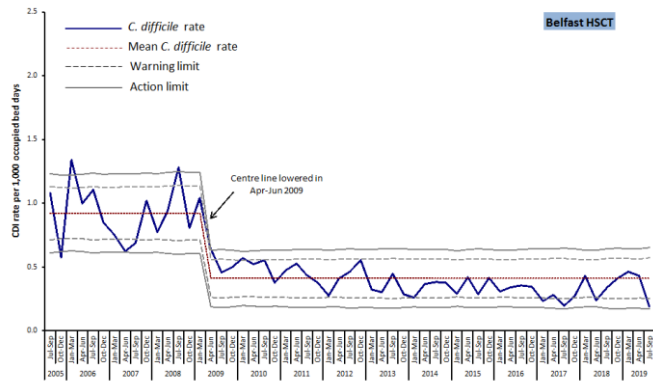
Hospital	Oct - Dec 2018	Jan - Mar 2019	Apr - Jun 2019	Jul - Sep 2019
Belfast City Hospital	0.311	0.423	0.401	0.274
Mater Infirmorum	0.162	0.430	0.179	0.150
Musgrave Park Hospital	0.131	0.186	0.364	0.000
NICCO	0.372	0.184	0.365	0.374
Royal Group of Hospitals	0.263	0.247	0.266	0.134
<b>Belfast Health &amp; Social Care Trust</b>	<b>0.247</b>	<b>0.296</b>	<b>0.300</b>	<b>0.159</b>
Antrim Area Hospital	0.129	0.225	0.077	0.284
Causeway Hospital	0.118	0.474	0.119	0.118
Dalriada Hospital	0.000	0.000	0.000	0.000
Mid Ulster Hospital	0.545	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	0.264	0.546	0.000	0.264
<b>Northern Health &amp; Social Care Trust</b>	<b>0.135</b>	<b>0.282</b>	<b>0.075</b>	<b>0.212</b>
Ards Hospital	0.000	0.000	0.588	0.000
Downe Hospital	0.279	0.262	0.268	0.000
Lagan Valley Hospital	0.141	0.555	0.136	0.145
Ulster Hospital	0.224	0.480	0.286	0.361
<b>South Eastern Health &amp; Social Care Trust</b>	<b>0.212</b>	<b>0.463</b>	<b>0.275</b>	<b>0.308</b>
Craigavon Area Hospital	0.104	0.284	0.285	0.206
Daisy Hill Hospital	0.247	0.121	0.318	0.304
Lurgan Hospital	0.000	0.232	0.000	0.230
South Tyrone Hospital	0.313	0.334	0.669	0.000
<b>Southern Health &amp; Social Care Trust</b>	<b>0.145</b>	<b>0.240</b>	<b>0.288</b>	<b>0.223</b>
Altnagelvin Area Hospital	0.260	0.321	0.377	0.286
Omagh Hospital	0.000	0.000	0.332	0.305
South West Acute Hospital	0.326	0.333	0.226	0.390
Waterside Hospital	0.359	0.554	0.000	0.000
<b>Western Health &amp; Social Care Trust</b>	<b>0.276</b>	<b>0.328</b>	<b>0.295</b>	<b>0.291</b>
<b>NI TOTAL</b>	<b>0.210</b>	<b>0.316</b>	<b>0.253</b>	<b>0.225</b>

**Table 6: Quarterly episodes of *C. difficile* in patients aged two years and over, by Trust**

Trust	Oct - Dec 2018 Episodes	Jan - Mar 2019 Episodes	Apr - Jun 2019 Episodes	Jul - Sep 2019 Episodes
Belfast Health & Social Care Trust	33	40	39	20
Northern Health & Social Care Trust	9	19	5	14
South Eastern Health & Social Care Trust	13	28	17	19
Southern Health & Social Care Trust	9	15	18	14
Western Health & Social Care Trust	17	20	18	18
<b>NI TOTAL</b>	<b>81</b>	<b>122</b>	<b>97</b>	<b>85</b>
<b>NI community TOTAL</b>	<b>43</b>	<b>50</b>	<b>55</b>	<b>50</b>

## 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	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