

# *C. difficile* surveillance

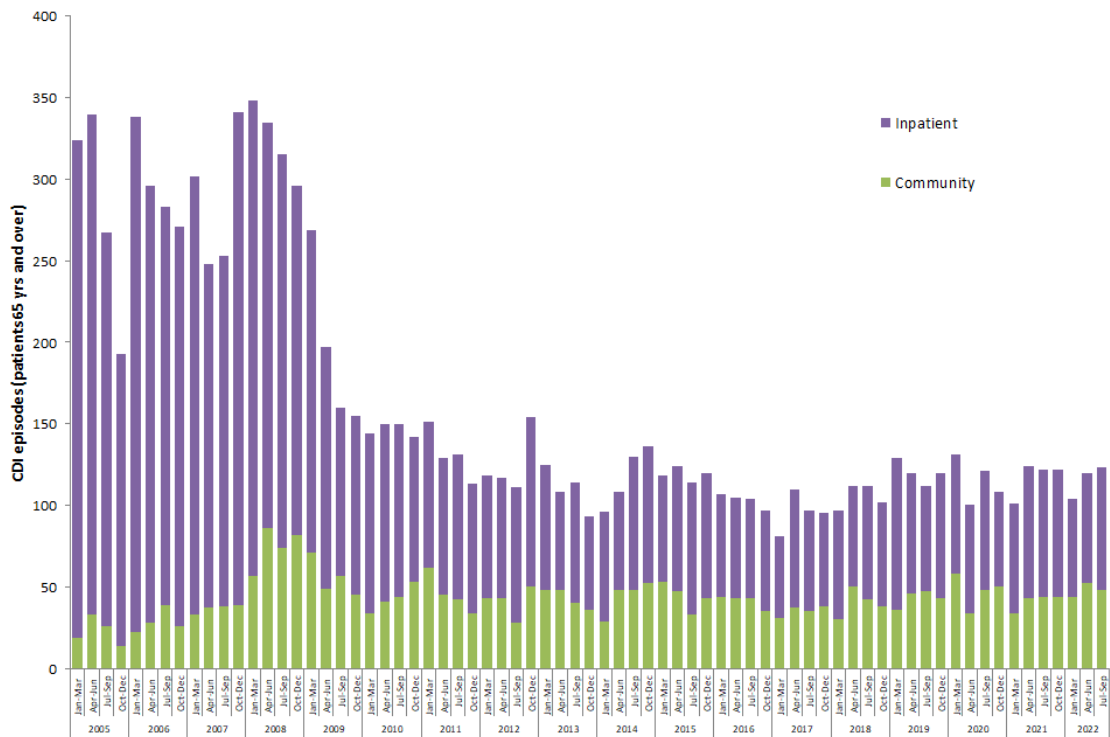
## Quarterly report

### July - September 2022

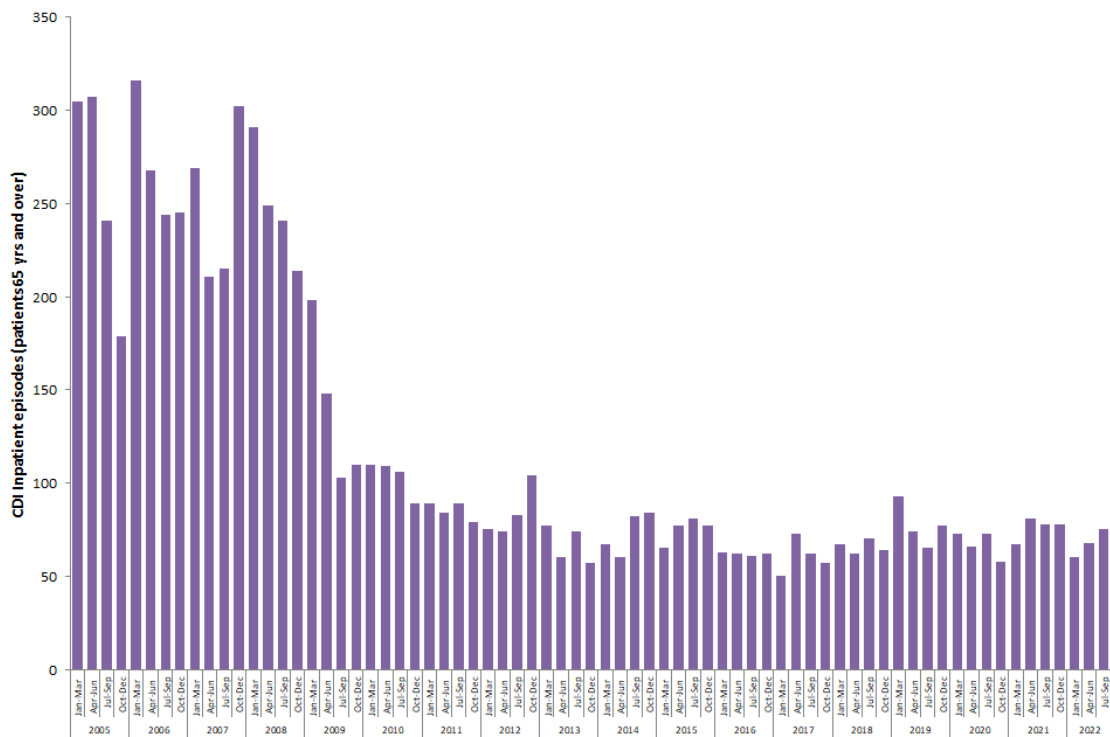
#### Key points

- CDI reports for hospital inpatients aged 65 years and over increased by 10% (from 68 to 75 episodes) during July - September 2022 compared to April - June 2022.
- CDI rate per 1,000 bed days increased by 3% during July - September 2022 compared to April - June 2022.
- CDI reports for community patients aged 65 years and over decreased by 8% (from 52 to 48 episodes) during July - September 2022 compared to April - June 2022.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over, increased by 5% during July - September 2022 compared to April - June 2022 (from 151 to 159 episodes).
- CDI reports for hospital inpatients aged 65 years and over increased by 13% between the 2020/21 and 2021/22 financial years.
- During July - September 2022 the most prevalent ribotypes for CDI inpatients are 078 (18%), 014 (11%) and 023 (10%) (Table 1). The most predominate community ribotypes are 078 (19%), 002 (11%), 005 (10%) and 014 (10%) (Table 2).

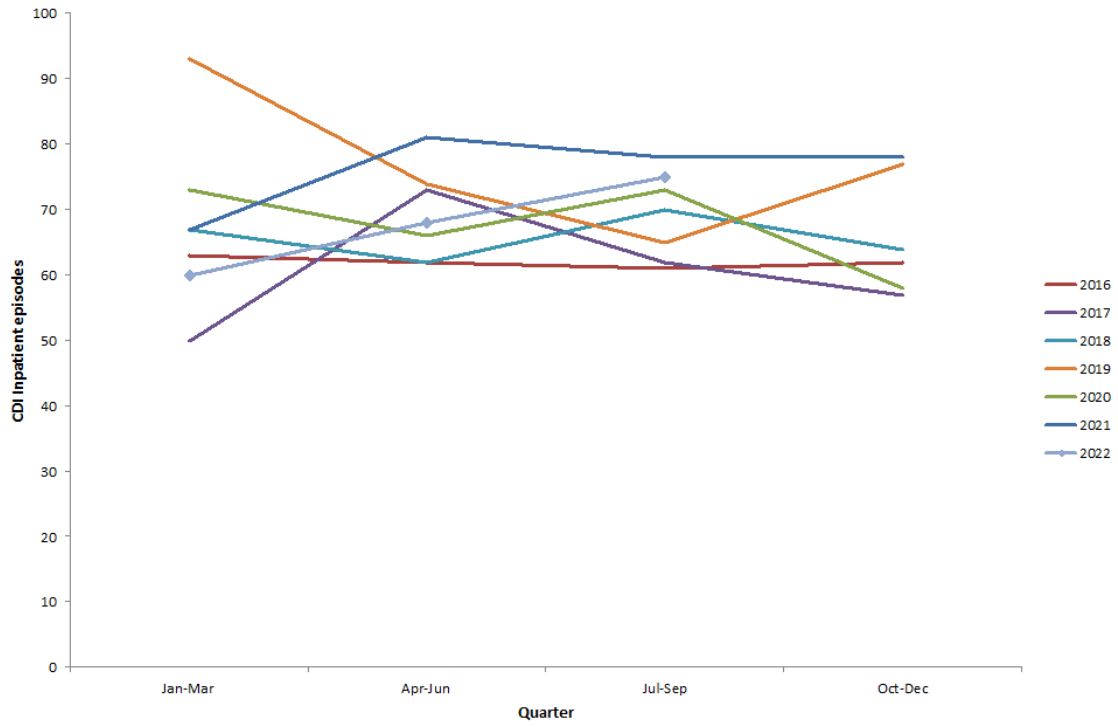
For further information or clarification on HCAI definitions, please refer to previous reports or contact [hcaini@hscni.net](mailto:hcaini@hscni.net)



**Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2022**



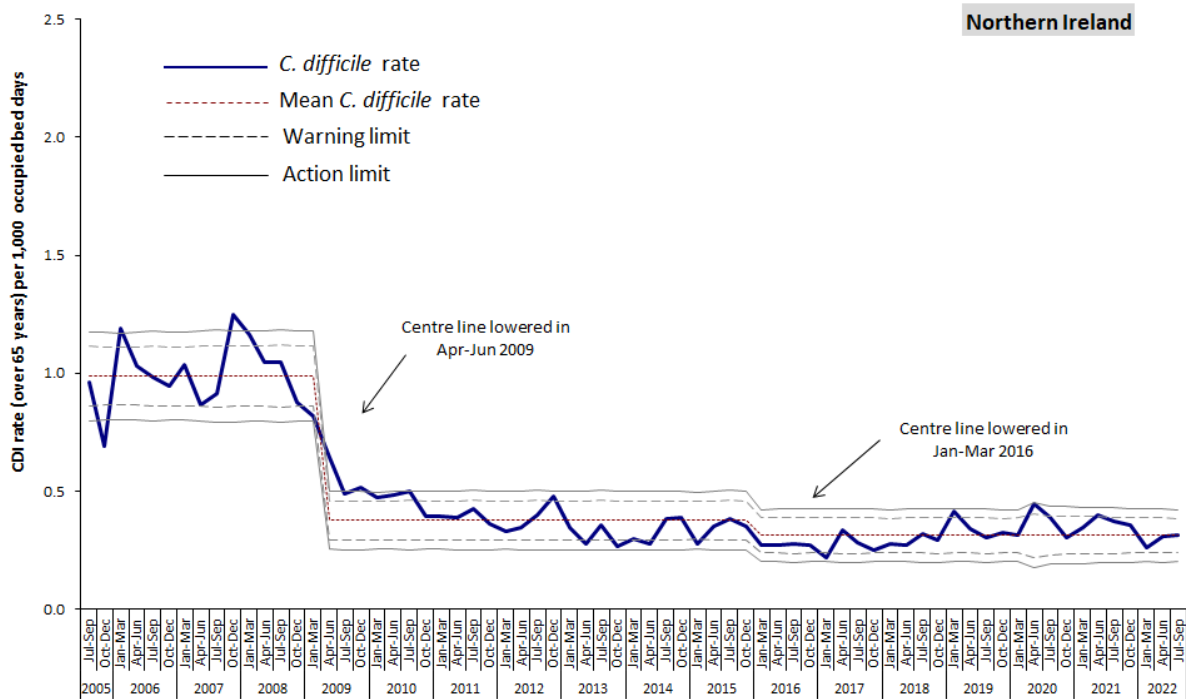
**Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2022**



**Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients  $\geq$  65 years), between 2016 and 2022**

## 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 2021 – September 2022.**

Ribotype	Oct - Dec 2021		Jan - Mar 2022		Apr - Jun 2022		Jul - Sep 2022	
	Number	%	Number	%	Number	%	Number	%
001	1	1.0	2	2.4	1	1.1	1	1.0
002	9	8.7	8	9.6	8	9.0	6	6.3
005	7	6.7	5	6.0	3	3.4	5	5.2
011	2	1.9	2	2.4	1	1.1	2	2.1
014	7	6.7	9	10.8	7	7.9	11	11.5
015	6	5.8	3	3.6	5	5.6	9	9.4
018	3	2.9	0	0.0	0	0.0	0	0.0
020	9	8.7	8	9.6	10	11.2	6	6.3
023	0	0.0	4	4.8	2	2.2	10	10.4
078	16	15.4	12	14.5	14	15.7	17	17.7
193	2	1.9	3	3.6	10	11.2	3	3.1
Other	23	22.1	15	18.1	17	19.1	16	16.7
Not groupable**	9	8.7	8	9.6	7	7.9	3	3.1
Not on ribotype list	7	6.7	3	3.6	3	3.4	4	4.2
Not isolated***	3	2.9	1	1.2	1	1.1	3	3.1
<b>Total</b>	<b>104</b>		<b>83</b>		<b>89</b>		<b>96</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 2021 – September 2022.**

Ribotype	Oct - Dec 2021		Jan - Mar 2022		Apr - Jun 2022		Jul - Sep 2022	
	Number	%	Number	%	Number	%	Number	%
001	0	0.0	0	0.0	1	1.6	1	1.6
002	12	20.3	10	20.0	6	9.7	7	11.1
005	7	11.9	6	12.0	3	4.8	6	9.5
011	1	1.7	0	0.0	4	6.5	0	0.0
014	4	6.8	5	10.0	7	11.3	6	9.5
015	1	1.7	4	8.0	4	6.5	3	4.8
018	3	5.1	1	2.0	1	1.6	0	0.0
020	4	6.8	3	6.0	7	11.3	3	4.8
023	0	0.0	0	0.0	2	3.2	4	6.3
078	5	8.5	6	12.0	7	11.3	12	19.0
193	1	1.7	1	2.0	6	9.7	5	7.9
Other	13	22.0	8	16.0	5	8.1	10	15.9
Not groupable**	3	5.1	3	6.0	3	4.8	3	4.8
Not on ribotype list	5	8.5	2	4.0	4	6.5	3	4.8
Not isolated***	0	0.0	1	2.0	2	3.2	0	0.0
<b>Total</b>	<b>59</b>		<b>50</b>		<b>62</b>		<b>63</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, 014 and 023 in Northern Ireland Hospital Inpatients and Community Patients, July - September 2022.**

	078 (n = 29)		014 (n = 17)		023 (n = 14)	
<b>Age</b>						
range	57-97		14-96		38-81	
median	79		74		70	
<b>Sex</b>						
	n	%	n	%	n	%
Female	14	48.3	8	47.1	4	28.6
Male	15	51.7	9	52.9	10	71.4
<b>Trust</b>						
Belfast	3	10.3	4	23.5	4	28.6
Northern	4	13.8	3	17.6	1	7.1
South Eastern	6	20.7	3	17.6	1	7.1
Southern	7	24.1	3	17.6	4	28.6
Western	9	31.0	4	23.5	4	28.6
<b>Source</b>						
Inpatient	17	58.6	11	64.7	10	71.4
Community*	12	41.4	6	35.3	4	28.6

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

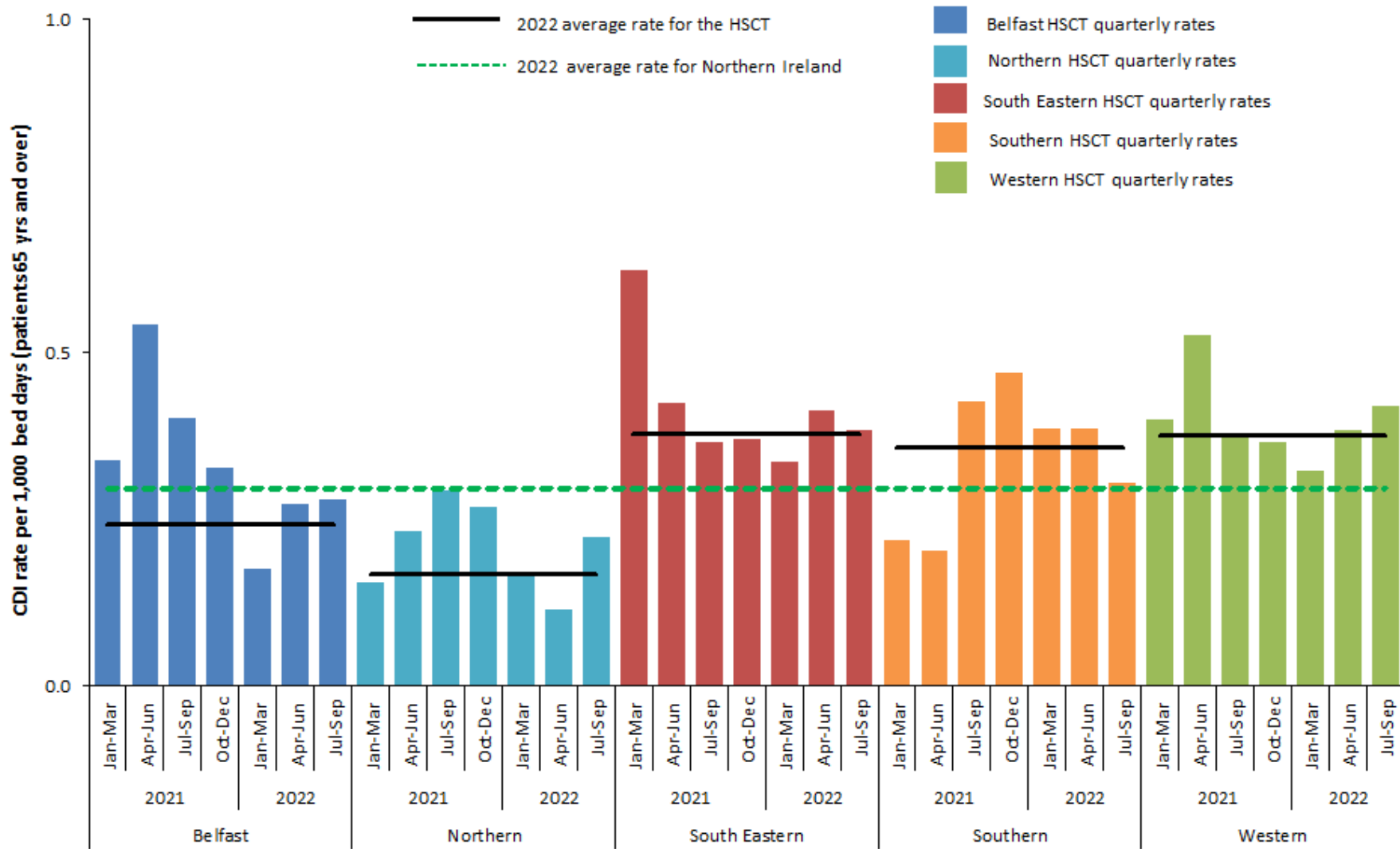


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, January 2021 – September 2022, compared with annual Northern Ireland and HSCT rates for 2022



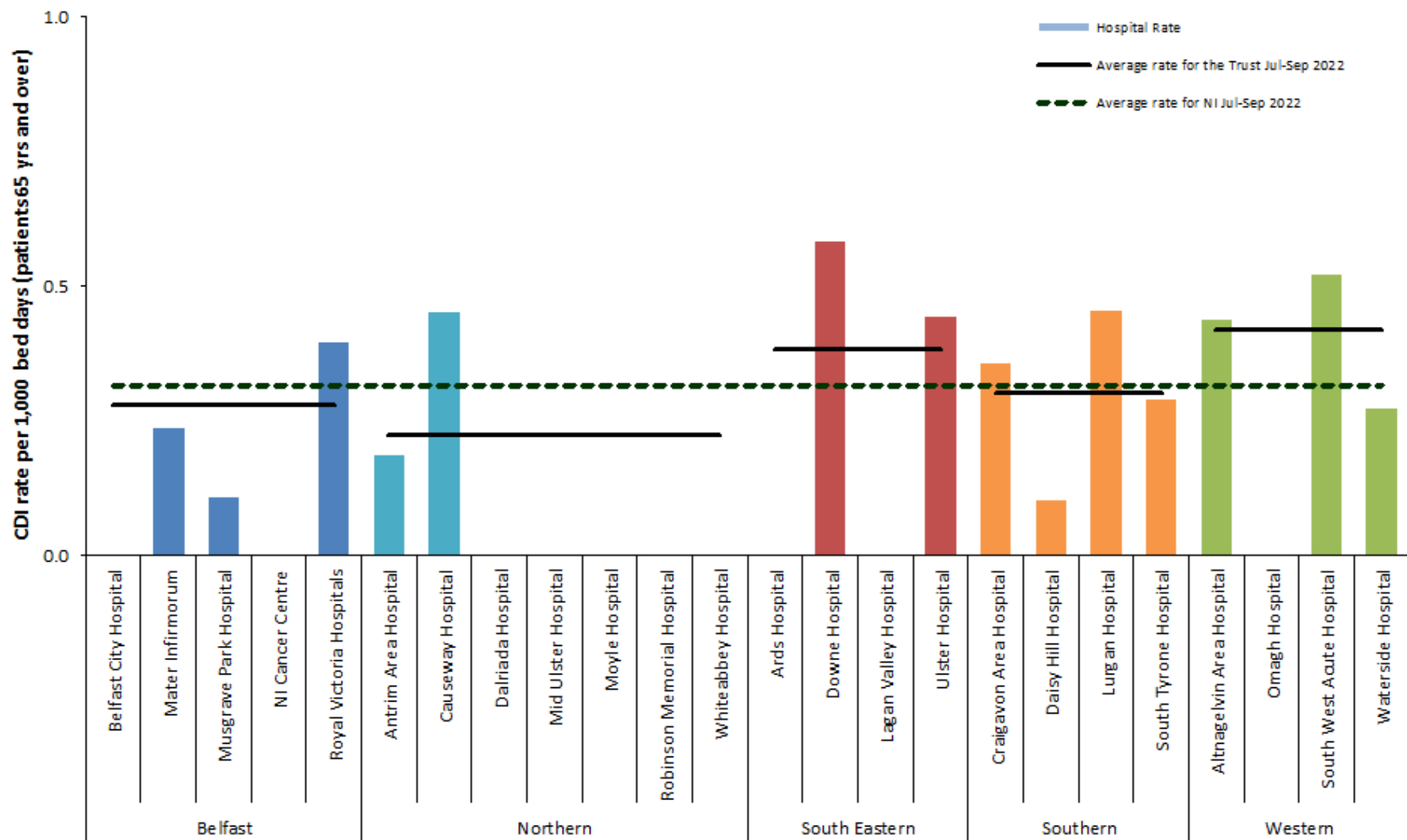


Figure 5: *C. difficile* rates during July - September 2022 Inpatients aged 65 years and over, by hospital, including HSCCT rates and average rate for Northern Ireland (see appendix A, Table 4)

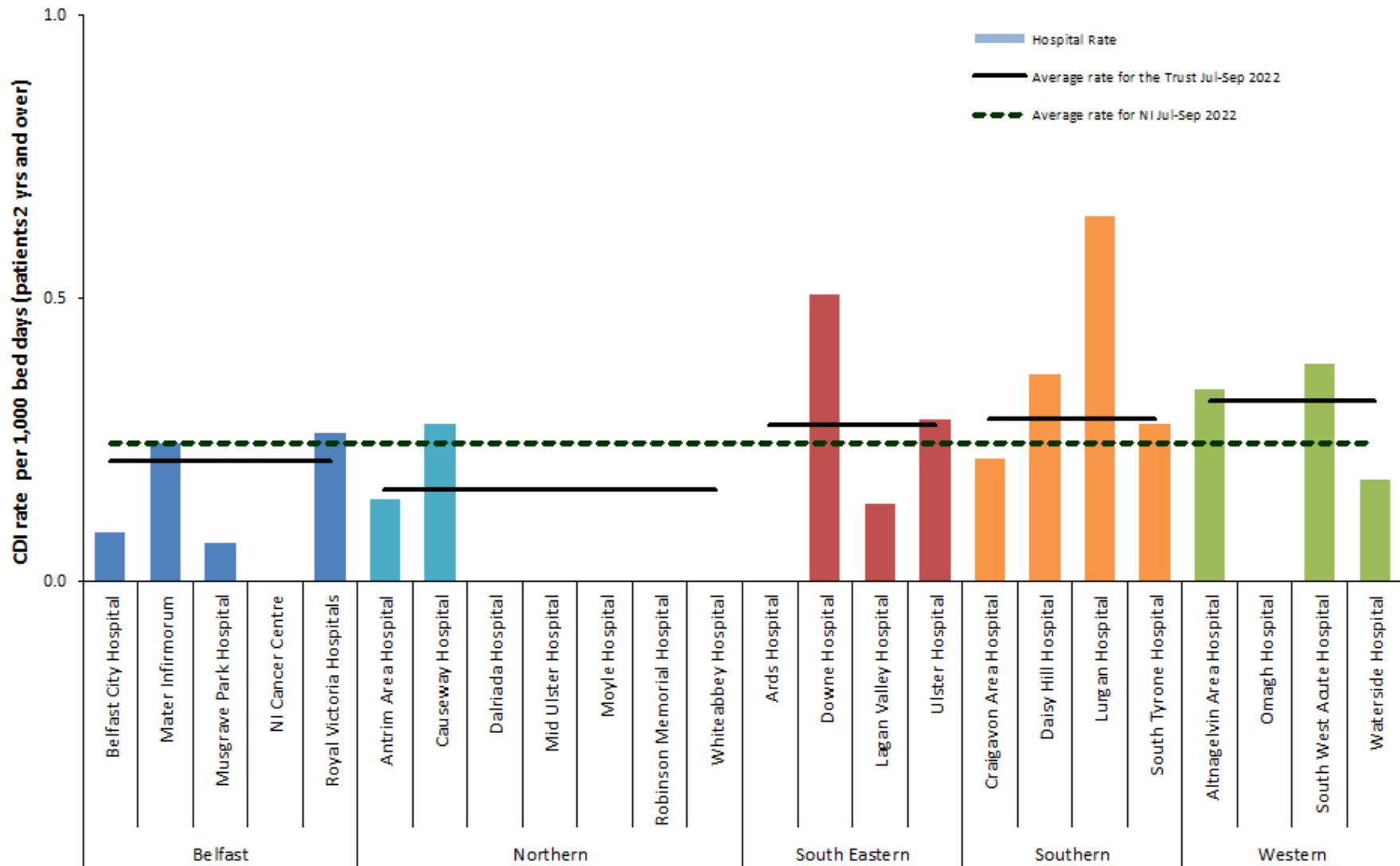


Figure 6: *C. difficile* rates July - September 2022 Inpatients aged two years and over, by hospital, including HSC rates and average rate for Northern Ireland (see appendix A, Table 6)

## Appendix A

**Table 4: Quarterly rates of *C. difficile* in patients aged 65 years and over, by hospital, Oct 21 – Sep 22.**

Hospital	Oct - Dec 2021	Jan - Mar 2022	Apr - Jun 2022	Jul - Sep 2022
Belfast City Hospital	1.058	0.230	0.385	0.000
Mater Infirmorum	0.176	0.084	0.163	0.236
Musgrave Park Hospital	0.101	0.101	0.000	0.108
NICCO	0.952	0.524	0.000	0.000
Royal Group of Hospitals	0.300	0.200	0.321	0.395
<b>Belfast Health &amp; Social Care Trust</b>	<b>0.326</b>	<b>0.175</b>	<b>0.272</b>	<b>0.279</b>
Antrim Area Hospital	0.334	0.158	0.078	0.185
Causeway Hospital	0.298	0.294	0.093	0.450
Dalriada Hospital	0.000	0.000	0.979	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	1.181	0.000
Whiteabbey Hospital	0.000	0.000	0.000	0.000
<b>Northern Health &amp; Social Care Trust</b>	<b>0.266</b>	<b>0.162</b>	<b>0.114</b>	<b>0.223</b>
Ards Hospital	0.000	0.000	1.400	0.000
Downe Hospital	0.000	0.000	1.209	0.583
Lagan Valley Hospital	0.383	0.180	0.344	0.000
Ulster Hospital	0.422	0.411	0.302	0.442
<b>South Eastern Health &amp; Social Care Trust</b>	<b>0.370</b>	<b>0.334</b>	<b>0.412</b>	<b>0.382</b>
Craigavon Area Hospital	0.541	0.408	0.404	0.357
Daisy Hill Hospital	0.669	0.448	0.339	0.102
Lurgan Hospital	0.000	0.000	0.688	0.455
South Tyrone Hospital	0.000	0.510	0.000	0.290
<b>Southern Health &amp; Social Care Trust</b>	<b>0.469</b>	<b>0.385</b>	<b>0.385</b>	<b>0.303</b>
Altnagelvin Area Hospital	0.507	0.444	0.347	0.439
Omagh Hospital	0.359	0.345	0.711	0.000
South West Acute Hospital	0.162	0.246	0.455	0.522
Waterside Hospital	0.288	0.000	0.000	0.271
<b>Western Health &amp; Social Care Trust</b>	<b>0.365</b>	<b>0.321</b>	<b>0.382</b>	<b>0.419</b>
<b>NI TOTAL</b>	<b>0.354</b>	<b>0.264</b>	<b>0.308</b>	<b>0.316</b>

**Table 5: Quarterly *C. difficile* reports in patients aged 65 years and over, by HSCT, Oct 21 – Sep 22.**

Trust	Oct - Dec 2021 Episodes	Jan - Mar 2022 Episodes	Apr - Jun 2022 Episodes	Jul - Sep 2022 Episodes
Belfast Health & Social Care Trust	20	11	15	18
Northern Health & Social Care Trust	11	7	5	10
South Eastern Health & Social Care Trust	15	14	18	17
Southern Health & Social Care Trust	18	15	15	13
Western Health & Social Care Trust	14	13	15	17
<b>NI TOTAL</b>	<b>78</b>	<b>60</b>	<b>68</b>	<b>75</b>
<b>NI community TOTAL</b>	<b>44</b>	<b>44</b>	<b>52</b>	<b>48</b>

## Appendix A

**Table 6: Quarterly rates of *C. difficile* in patients aged two years and over, by hospital, Oct 21 – Sep 22.**

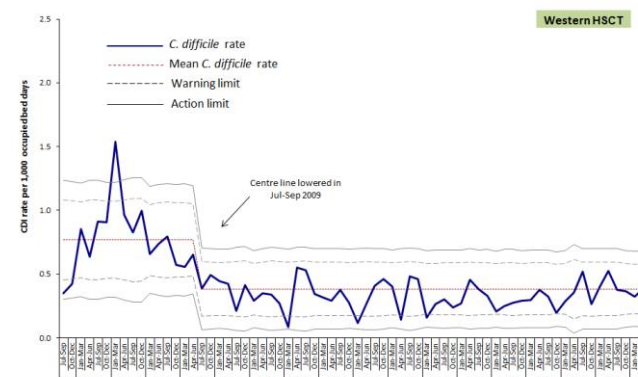
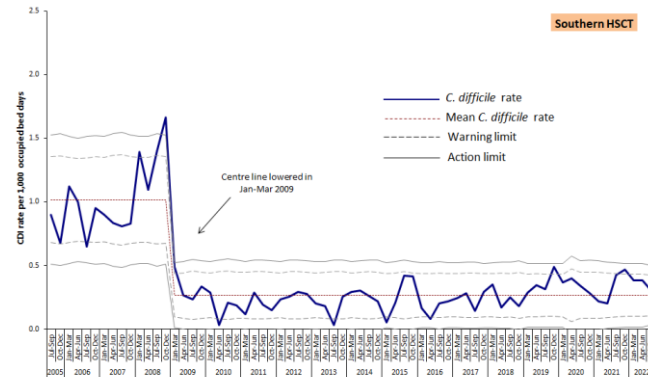
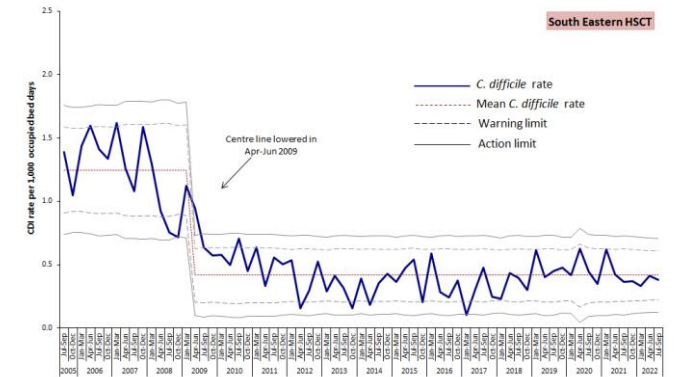
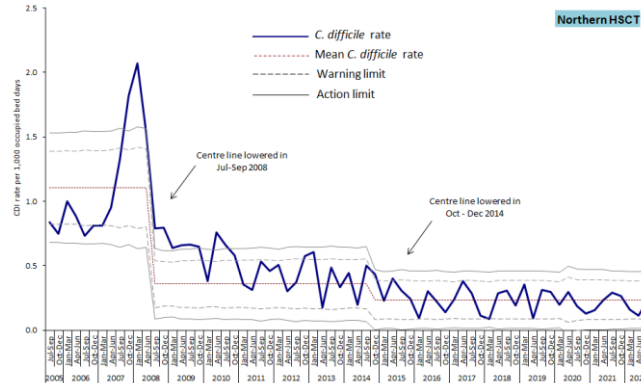
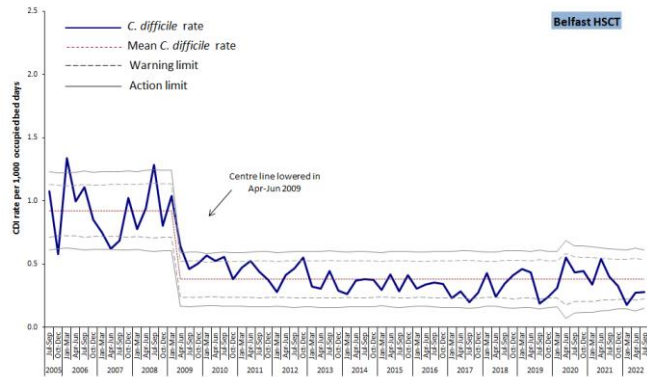
Hospital	Oct - Dec 2021	Jan - Mar 2022	Apr - Jun 2022	Jul - Sep 2022
Belfast City Hospital	0.857	0.385	0.425	0.086
Mater Infirmorum	0.133	0.135	0.254	0.244
Musgrave Park Hospital	0.067	0.068	0.000	0.067
NICCO	1.001	0.505	0.000	0.000
Royal Group of Hospitals	0.185	0.183	0.191	0.261
<b>Belfast Health &amp; Social Care Trust</b>	<b>0.250</b>	<b>0.191</b>	<b>0.191</b>	<b>0.212</b>
Antrim Area Hospital	0.299	0.126	0.049	0.144
Causeway Hospital	0.173	0.177	0.056	0.277
Dalriada Hospital	0.000	0.000	0.711	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	0.992	0.000
Whiteabbey Hospital	0.000	0.000	0.306	0.000
<b>Northern Health &amp; Social Care Trust</b>	<b>0.226</b>	<b>0.123</b>	<b>0.090</b>	<b>0.162</b>
Ards Hospital	0.000	0.000	1.180	0.000
Downe Hospital	0.000	0.000	1.038	0.507
Lagan Valley Hospital	0.290	0.144	0.279	0.137
Ulster Hospital	0.311	0.246	0.201	0.286
<b>South Eastern Health &amp; Social Care Trust</b>	<b>0.282</b>	<b>0.215</b>	<b>0.282</b>	<b>0.276</b>
Craigavon Area Hospital	0.355	0.337	0.336	0.217
Daisy Hill Hospital	0.496	0.316	0.270	0.364
Lurgan Hospital	0.000	0.000	0.646	0.644
South Tyrone Hospital	0.000	0.488	0.000	0.277
<b>Southern Health &amp; Social Care Trust</b>	<b>0.348</b>	<b>0.317</b>	<b>0.323</b>	<b>0.287</b>
Altnagelvin Area Hospital	0.404	0.347	0.316	0.339
Omagh Hospital	0.335	0.333	0.649	0.000
South West Acute Hospital	0.225	0.173	0.395	0.385
Waterside Hospital	0.181	0.384	0.000	0.179
<b>Western Health &amp; Social Care Trust</b>	<b>0.328</b>	<b>0.299</b>	<b>0.329</b>	<b>0.320</b>
<b>NI TOTAL</b>	<b>0.280</b>	<b>0.222</b>	<b>0.233</b>	<b>0.244</b>

**Table 7: Quarterly *C. difficile* reports in patients aged two years and over, by HSCT, Oct 21 – Sep 22.**

Trust	Oct - Dec 2021 Episodes	Jan - Mar 2022 Episodes	Apr - Jun 2022 Episodes	Jul - Sep 2022 Episodes
Belfast Health & Social Care Trust	30	23	24	27
Northern Health & Social Care Trust	15	8	6	11
South Eastern Health & Social Care Trust	17	14	19	19
Southern Health & Social Care Trust	22	20	20	19
Western Health & Social Care Trust	20	18	20	20
<b>NI TOTAL</b>	<b>104</b>	<b>83</b>	<b>89</b>	<b>96</b>
<b>NI community TOTAL</b>	<b>59</b>	<b>50</b>	<b>62</b>	<b>63</b>

## Appendix B

### Trends in *C. difficile* rates in inpatients aged 65 years and over, by HSCT and quarter, 2005 – 2022



## Appendix C

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

HSCT	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Belfast	163	147	117	124	90	103	102	90	83	98	80	80	84
Northern	102	103	75	73	56	54	43	39	37	48	39	27	39
South Eastern	98	80	72	50	50	53	70	39	50	67	68	68	60
Southern	37	17	28	33	25	27	40	27	39	32	57	37	56
Western	71	46	35	58	37	53	43	40	50	41	45	51	58
Northern Ireland	471	393	327	338	258	290	298	235	259	286	289	263	297