

C. difficile surveillance

Quarterly report

July 2018 - September 2018

Key points

- CDI reports for hospital inpatients aged 65 years and over increased by 13% (from 62 to 70 episodes) during July - September 2018 compared to April - June 2018.
- CDI rate per 1,000 bed days decreased by 2.6% July - September 2018 compared to April - June 2018.
- CDI reports for community patients aged 65 years and over decreased by 10% (from 50 to 45 episodes) during July - September 2018 compared to April - June 2018.
- Total CDI reports, for hospital inpatients and community patients combined, aged two years and over remained at 143 during July - September 2018 compared to April - June 2018.
- CDI reports for hospital inpatients aged 65 years and over increased by 10% between the 2016/17 and 2017/18 financial years.
- During July - September 2018 the most prevalent ribotypes for CDI inpatients are 002 (13%), 015 (10%), 020 and 078 (both 10%) and 005 (9%) (Table 1) and in the community are 002 (20%), 078 (18%), and 001, 014 and 015 (all representing 6%) (Table 2).

For further information or clarification on HCAI definitions, please refer to previous reports or contact hcaini@hscni.net

Surveillance of *C. difficile* infection (CDI)

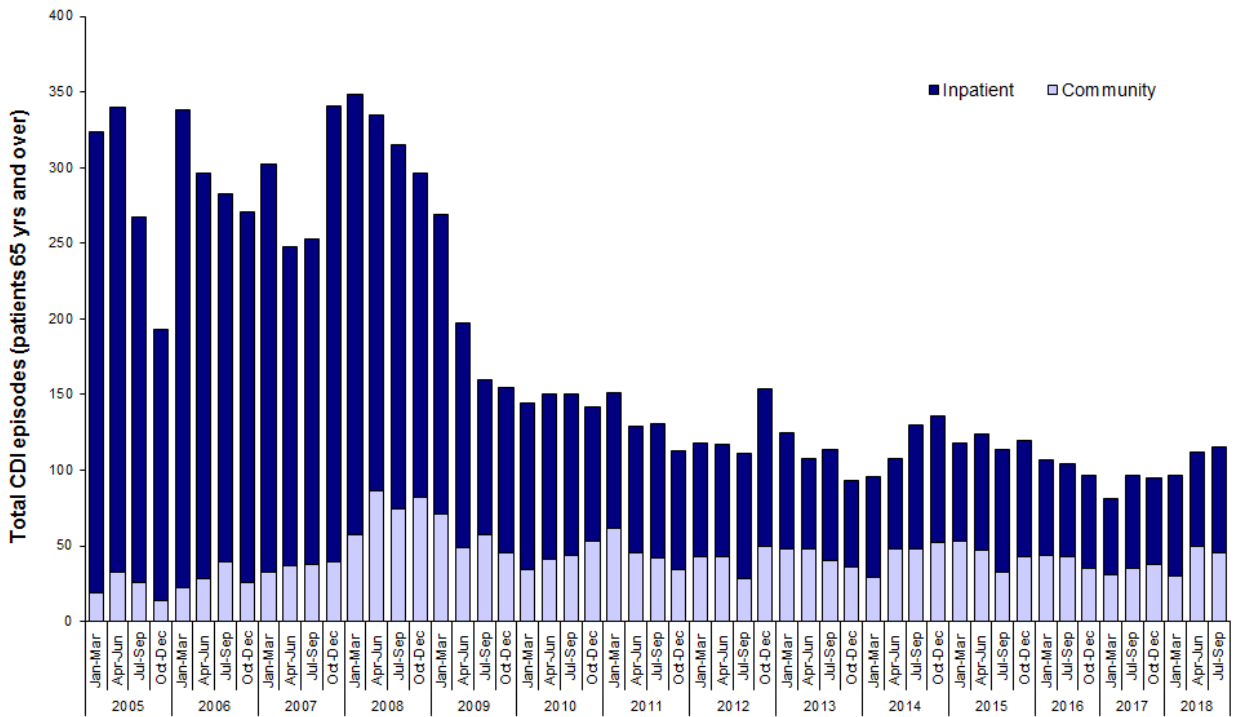


Figure 1: Total CDI episodes, inpatient and community, in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2018

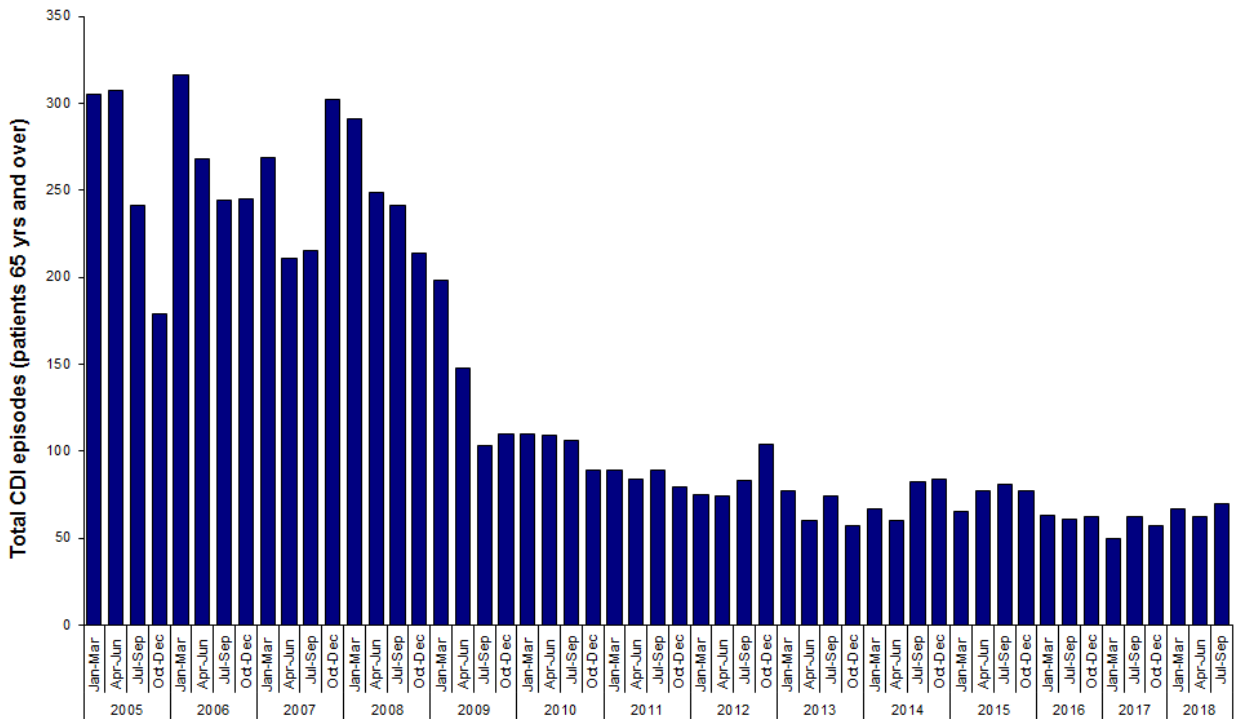


Figure 2a: Total CDI inpatient episodes in Northern Ireland, by quarter (patients ≥ 65 years), between 2005 and 2018

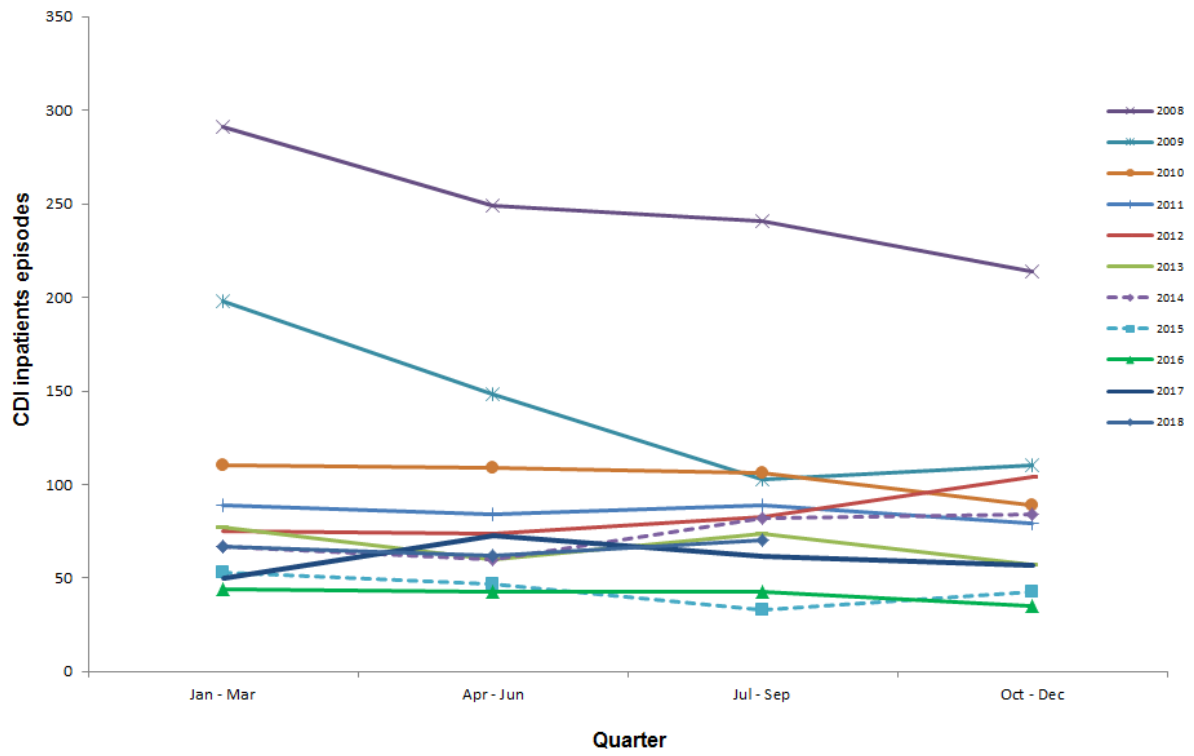


Figure 2b: Total CDI inpatient episodes in Northern Ireland, by quarter (patients \geq 65 years), between 2008 and 2018

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.

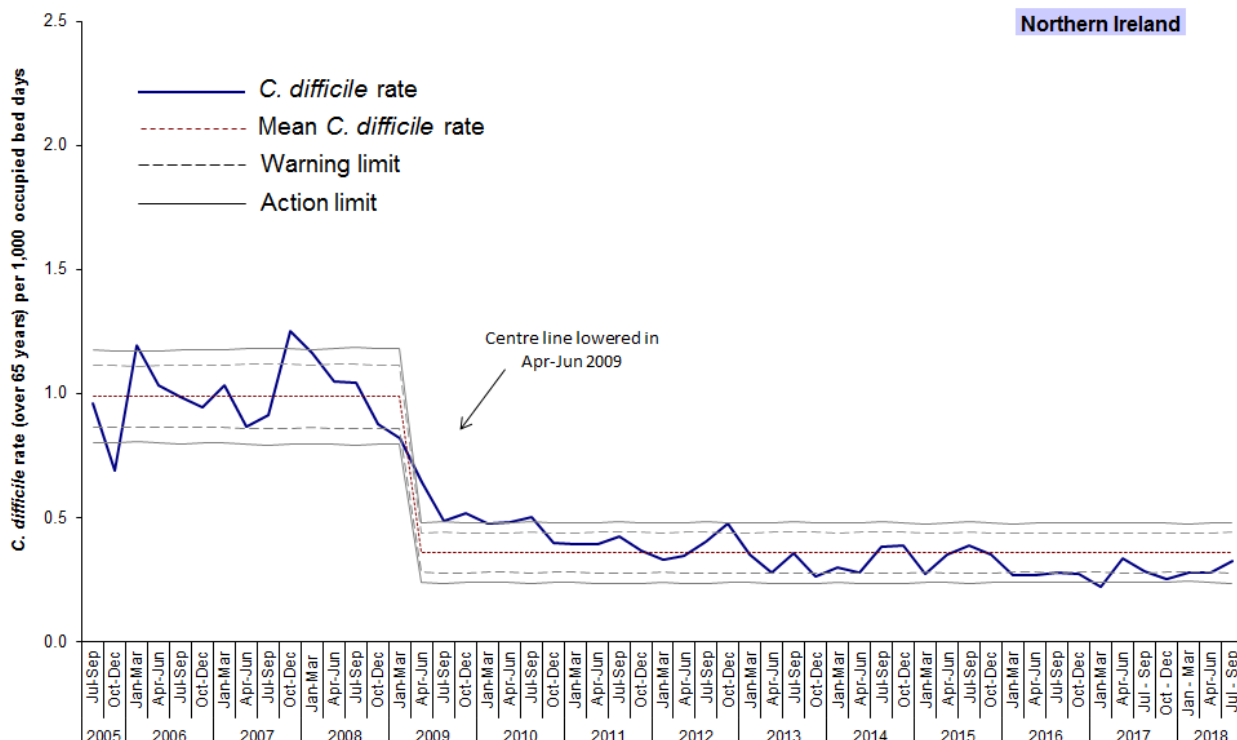


Figure 3: Statistical process control chart for quarterly *C. difficile* rates among inpatients in Northern Ireland aged 65 years and over (for HSCT level, see appendix B)

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, October 2017 – September 2018.

Ribotype	Oct - Dec 2017		Jan - Mar 2017		Apr - Jun 2018		Jul - Sep 2018	
	Number	%	Number	%	Number	%	Number	%
001	2	2.3	1	1.1	2	2.3	3	3.3
002	14	15.9	27	29.3	21	23.9	12	13
005	2	2.3	6	6.5	4	4.5	7	7.6
011	2	2.3	3	3.3	1	1.1	1	1.1
014	9	10.2	7	7.6	6	6.8	6	7
015	5	5.7	4	4.3	4	4.5	9	9.8
018	5	5.7	0	0.0	2	2.3	0	0.0
020	7	8.0	7	7.6	4	4.5	8	9
023	5	5.7	2	2.2	3	3.4	4	4.3
078	3	3.4	7	7.6	8	9.1	8	8.7
193	1	1.1	0	0.0	0	0.0	3	3.3
Other	14	15.9	15	16.3	19	21.6	19	20.7
Not groupable**	2	2.3	3	3.3	6	6.8	7	7.6
Not on ribotype list	4	4.5	4	4.3	6	6.8	5	5.4
Not isolated***	1	1.1	0	0.0	2	2.3	0	0.0
Total	76		86		88		92	

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 2017 – September 2018.

Ribotype	Oct - Dec 2017		Jan - March 2017		Apr - Jun 2018		Jul - Sep 2018	
	Number	%	Number	%	Number	%	Number	%
001	2	3.6	0	0.0	1	1.8	3	6.0
002	5	8.9	4	8.0	8	14.3	10	20
005	0	0.0	0	0.0	2	3.6	1	2.0
011	1	1.8	2	4.0	4	7.1	2	4.0
014	5	8.9	4	8.0	4	7.1	3	6
015	6	10.7	3	6.0	4	7.1	3	6
018	1	1.8	0	0.0	2	3.6	1	2.0
020	3	5.4	2	4.0	1	1.8	0	0.0
023	2	3.6	4	8.0	4	7.1	1	2.0
078	4	7.1	5	10.0	8	14.3	9	18.0
193	0	0.0	1	2.0	0	0.0	0	0.0
Other	7	12.5	3	6.0	10	17.9	12	24.0
Not groupable**	4	7.1	2	4.0	2	3.6	2	4.0
Not on ribotype list	3	5.4	2	4.0	6	10.7	3	6.0
Not isolated***	1	1.8	1	2.0	0	0.0	0	0.0
Total	44		33		56		50	

* 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 014 in Northern Ireland Hospital Inpatients and Community Patients, July - September 2018.

	002 (n =22)		014 (n = 9)		078 (n = 17)	
Age						
range	57-59		24-93		67-94	
median	84		74		82	
Sex						
	n	%	n	%	n	%
Female	14	63.6	7	77.8	9	52.9
Male	8	36.4	2	22.2	8	47.1
Trust						
Belfast	6	27.3	3	33.3	2	11.8
Northern	6	27.3	3	33.3	2	11.8
South Eastern	5	22.7	1	11.1	8	47.1
Southern	3	13.6	2	22.2	1	5.9
Western	2	9.1	0	0.0	4	23.5
Source						
Inpatient	12	54.5	6	66.7	8	47.1
Community*	10	45.5	3	33.3	9	52.9

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

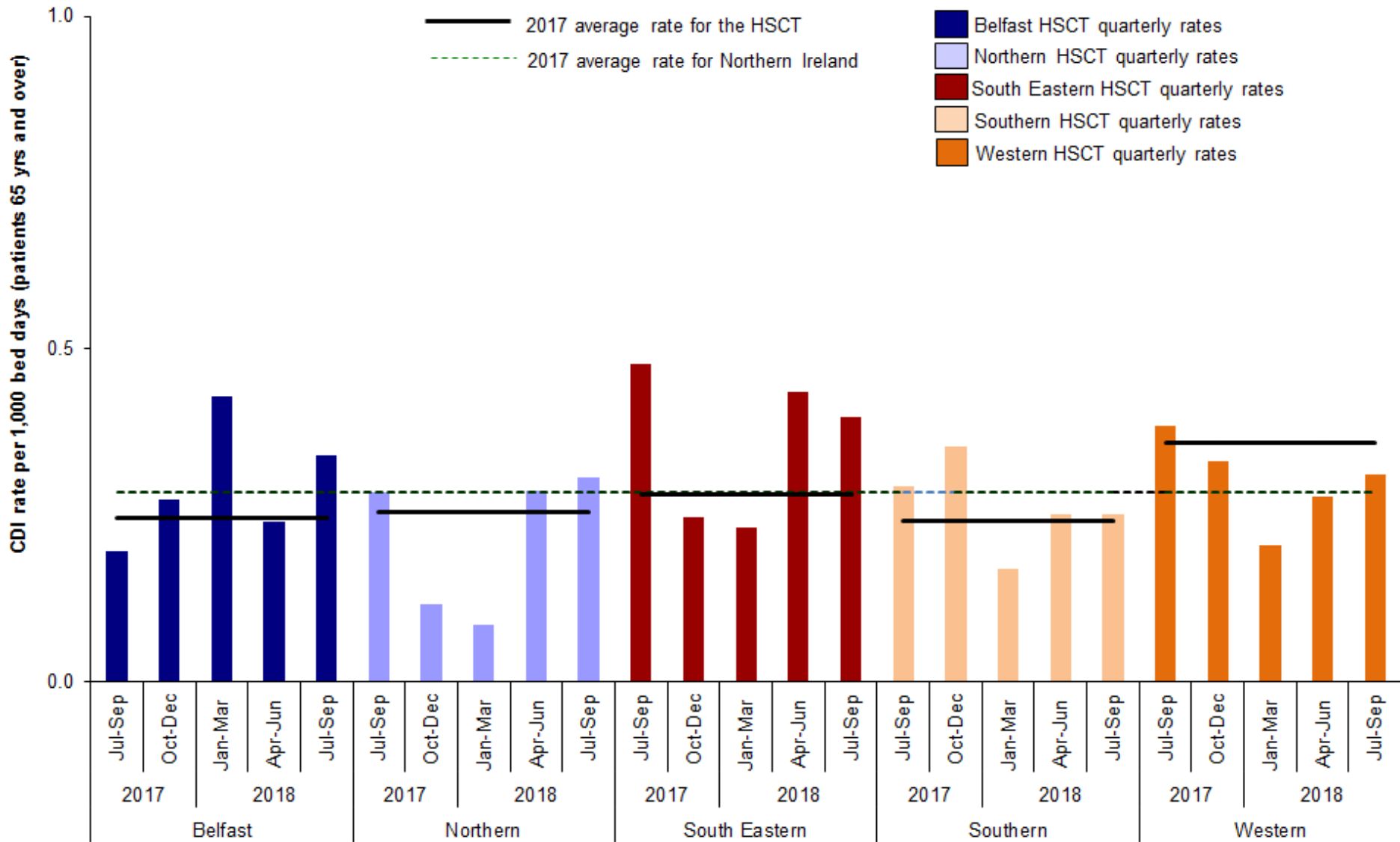


Figure 4: Quarterly rates of *C. difficile* among inpatients aged 65 years and over, by HSCT, July 2017 – September 2018, compared with annual Northern Ireland and HSCT rates for 2017

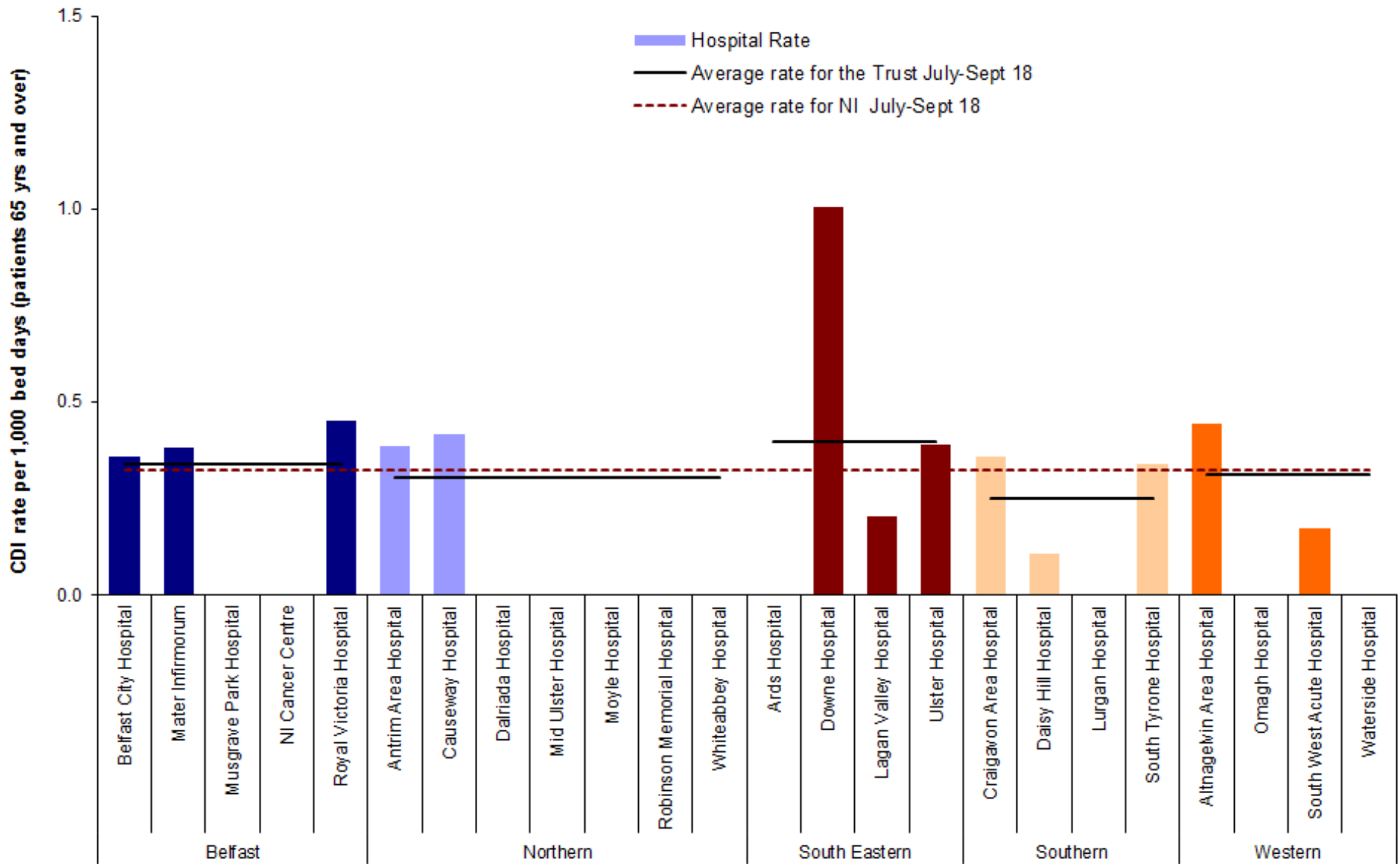


Figure 5: *C. difficile* rates during July - September 2018 - Inpatients aged 65 years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 4)

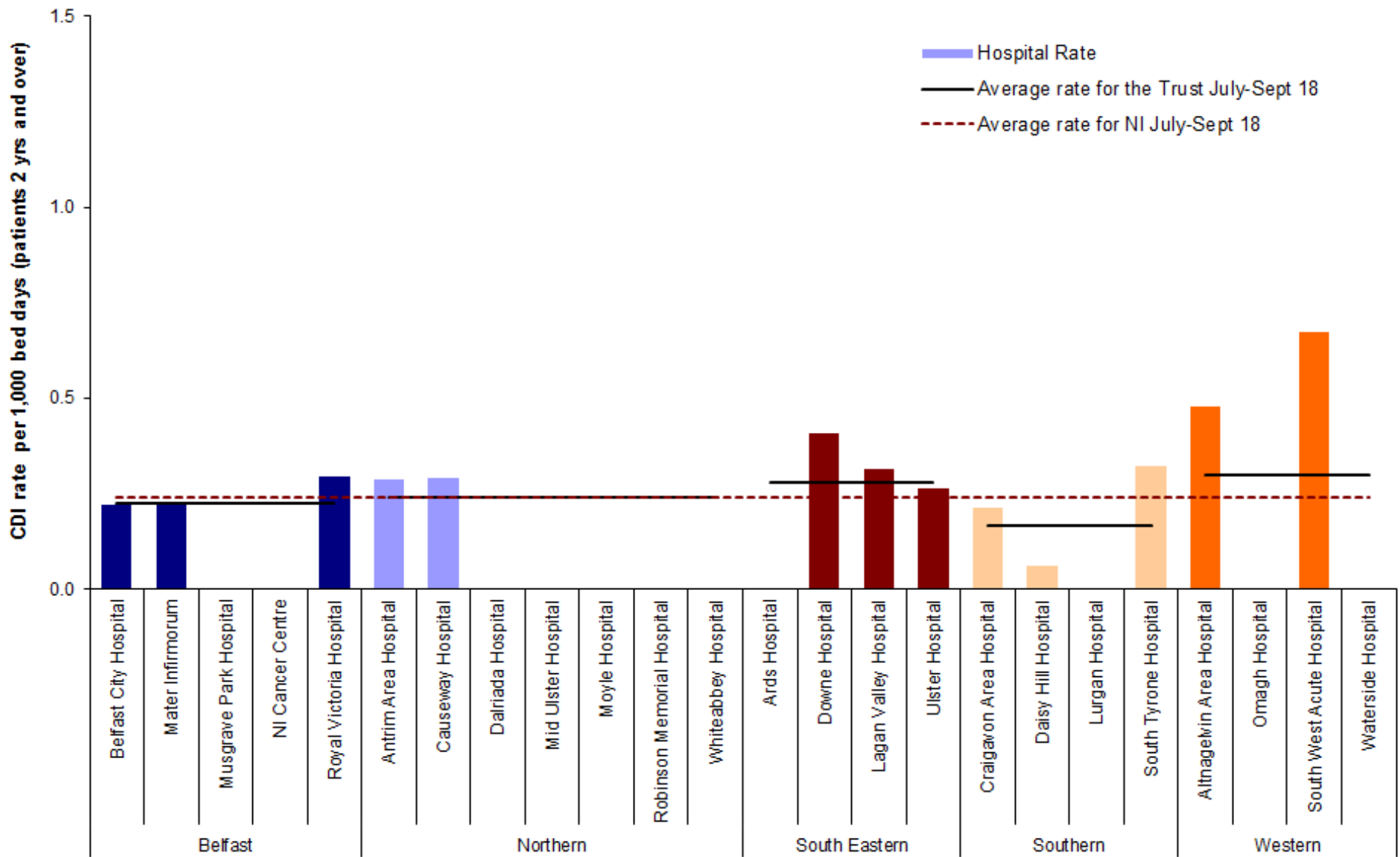


Figure 6: *C. difficile* rates during July - September 2018 - Inpatients aged two years and over, by hospital, including HSCT rates and average rate for Northern Ireland (see appendix A, Table 5)

Appendix A

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

Hospital	Oct - Dec 2017	Jan - Mar 2018	Apr - Jun 2018	Jul - Sept 2018
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.523	0.658	0.163	0.357
Mater Infirmorum	0.374	0.347	0.347	0.383
Musgrave Park Hospital	0.000	0.114	0.456	0.000
NICCO (formerly at Belvoir Park)	0.000	0.424	0.424	0.000
Royal Group of Hospitals	0.197	0.415	0.177	0.453
Belfast Health & Social Care Trust	0.273	0.429	0.240	0.340
Antrim Area Hospital	0.127	0.039	0.347	0.387
Causeway Hospital	0.098	0.286	0.402	0.416
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	0.287	0.000	0.000	0.000
Northern Health & Social Care Trust	0.115	0.086	0.286	0.306
Ards Hospital	0.000	0.000	0.592	0.000
Downe Hospital	0.000	0.584	0.313	1.007
Lagan Valley Hospital	0.322	0.162	0.532	0.206
Ulster Hospital	0.270	0.220	0.422	0.389
South Eastern Health & Social Care Trust	0.246	0.232	0.436	0.396
Craigavon Area Hospital	0.286	0.243	0.207	0.359
Daisy Hill Hospital	0.318	0.437	0.110	0.106
Lurgan Hospital	0.466	0.944	0.000	0.000
South Tyrone Hospital	0.000	0.000	0.346	0.341
Southern Health & Social Care Trust	0.292	0.352	0.169	0.250
Altnagelvin Area Hospital	0.378	0.254	0.282	0.445
Tyrone County / Omagh Hospital	0.000	0.000	0.371	0.000
South West Acute Hospital	0.453	0.080	0.250	0.175
Waterside Hospital	0.000	0.512	0.000	0.000
Western Health & Social Care Trust	0.331	0.230	0.277	0.311
NI TOTAL	0.251	0.279	0.277	0.324

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

Trust	Oct - Dec 2017	Jan - Mar 2018	Apr - Jun 2018	Jul - Sep 2018
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	19	32	18	23
Northern Health & Social Care Trust	5	4	12	13
South Eastern Health & Social Care Trust	10	10	17	15
Southern Health & Social Care Trust	11	13	6	9
Western Health & Social Care Trust	12	8	9	10
NI TOTAL	57	67	62	70
NI community TOTAL	38	30	50	45

Appendix A

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

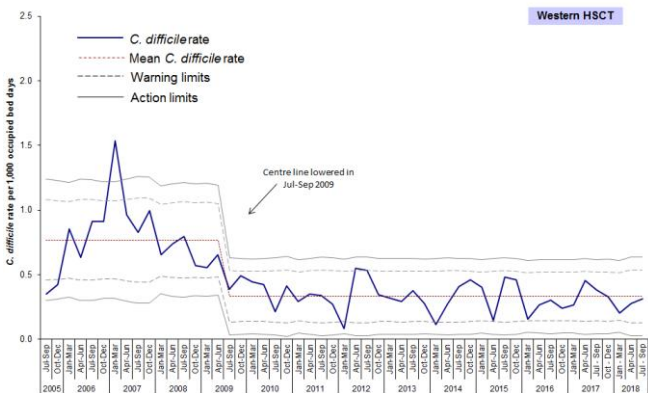
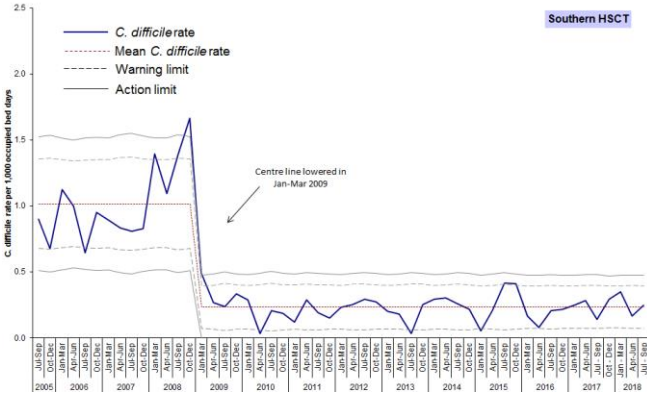
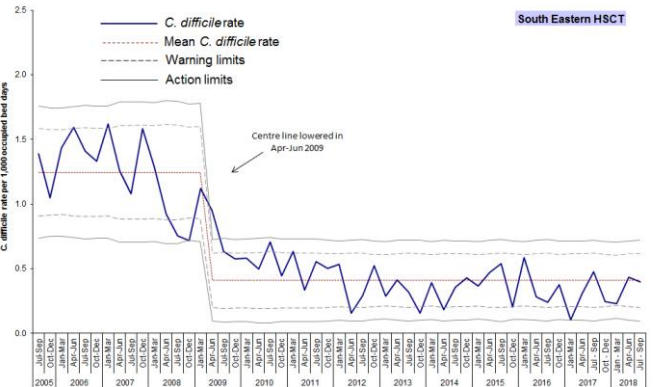
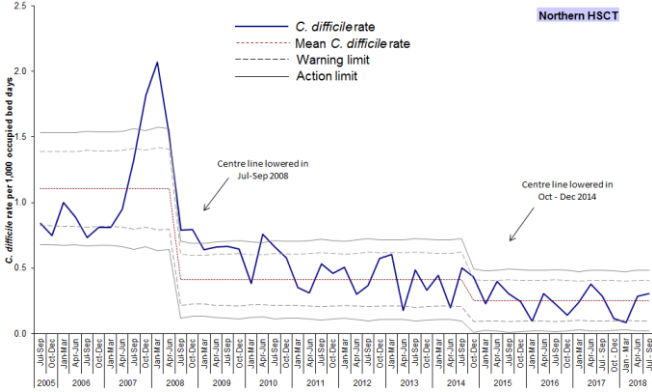
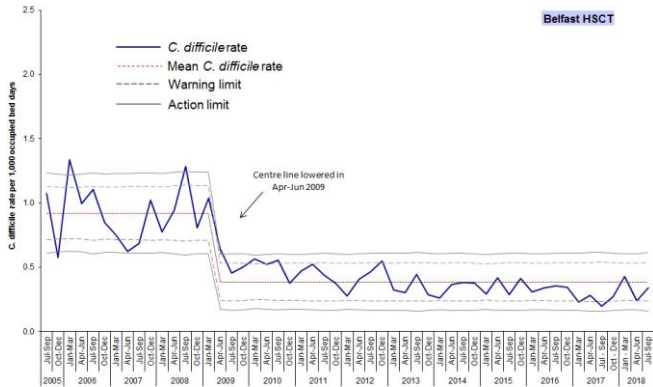
Hospital	Oct - Dec 2017	Jan - Mar 2018	Apr - Jun 2018	Jul - Sept 2018
	Rate	Rate	Rate	Rate
Belfast City Hospital	0.343	0.441	0.185	0.221
Mater Infirmorum	0.261	0.370	0.326	0.224
Musgrave Park Hospital	0.000	0.065	0.250	0.000
NICCO (formerly at Belvoir Park)	0.197	0.191	0.189	0.000
Royal Group of Hospitals	0.176	0.269	0.245	0.296
Belfast Health & Social Care Trust	0.202	0.291	0.242	0.225
Antrim Area Hospital	0.125	0.049	0.206	0.286
Causeway Hospital	0.174	0.228	0.294	0.292
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	0.256	0.000	0.000	0.000
Northern Health & Social Care Trust	0.132	0.086	0.195	0.241
Ards Hospital	0.000	0.000	0.587	0.000
Downe Hospital	0.000	0.507	0.267	0.409
Lagan Valley Hospital	0.268	0.131	0.574	0.316
Ulster Hospital	0.220	0.217	0.379	0.263
South Eastern Health & Social Care Trust	0.207	0.219	0.384	0.277
Craigavon Area Hospital	0.186	0.186	0.215	0.214
Daisy Hill Hospital	0.182	0.251	0.065	0.063
Lurgan Hospital	0.444	0.888	0.000	0.000
South Tyrone Hospital	0.000	0.000	0.324	0.322
Southern Health & Social Care Trust	0.195	0.245	0.167	0.164
Altnagelvin Area Hospital	0.233	0.222	0.183	0.479
Tyrone County / Omagh Hospital	0.000	0.000	0.334	0.000
South West Acute Hospital	0.394	0.300	0.168	0.673
Waterside Hospital	0.000	0.107	0.000	0.000
Western Health & Social Care Trust	0.246	0.172	0.168	0.301
NI TOTAL	0.196	0.217	0.233	0.239

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

Trust	Oct - Dec 2017	Jan - Mar 2018	Apr - Jun 2018	Jul - Sep 2018
	Episodes	Episodes	Episodes	Episodes
Belfast Health & Social Care Trust	27	40	29	30
Northern Health & Social Care Trust	9	6	13	16
South Eastern Health & Social Care Trust	13	14	24	18
Southern Health & Social Care Trust	12	15	10	10
Western Health & Social Care Trust	15	11	10	18
NI TOTAL	76	86	86	92
NI community TOTAL	44	33	57	50

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
Northern Ireland	1026	1019	902	471	393	327	338	258	290	298	235	259