

**Health Care  
Acquired  
Infections  
Surveillance, Q4  
and Year  
2018/19**

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**Wirral Intelligence  
Service**

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**August 2019**

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**For further information please contact:**

Wirral Intelligence Service

Email: [wirralintelligenceservice@wirral.gov.uk](mailto:wirralintelligenceservice@wirral.gov.uk)

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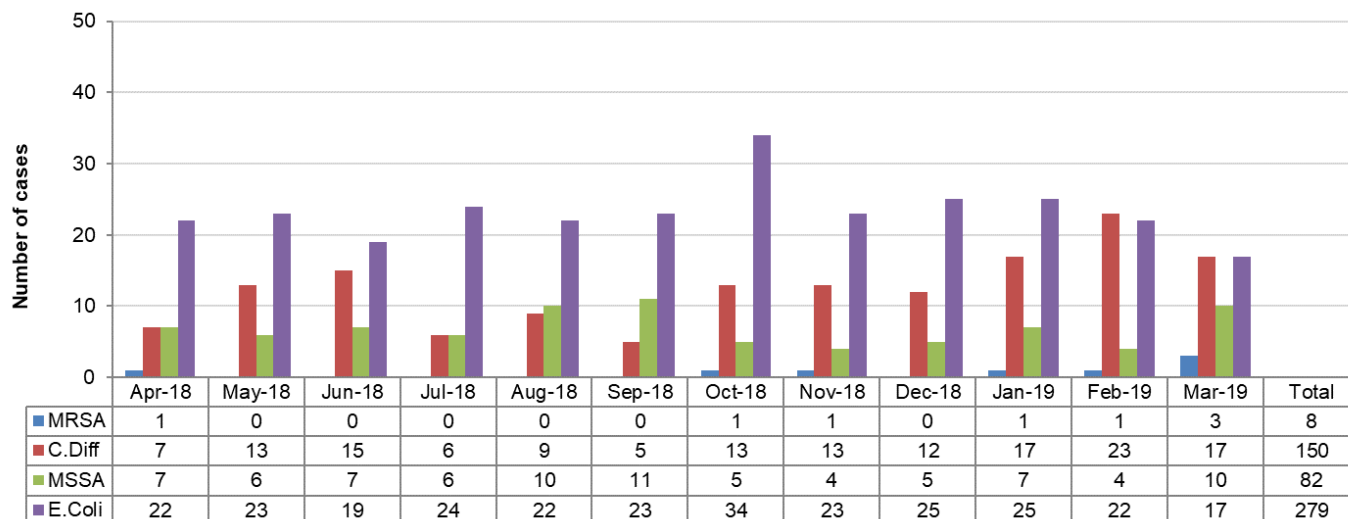
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## Health Care Acquired Infection (HCAI) Cases in Wirral

Health Care Acquired Infection (HCAI) cases are recorded in real-time on the HCAI Data Capture System (HCAI DCS), facilitated by Public Health England, for the following infections:

- Methicillin-resistant *Staphylococcus aureus* (MRSA) bloodstream infections
- *Clostridium difficile* (C. diff)
- Methicillin-sensitive *Staphylococcus aureus* (MSSA) bloodstream infections
- *Escherichia coli* (E. coli) bloodstream infections

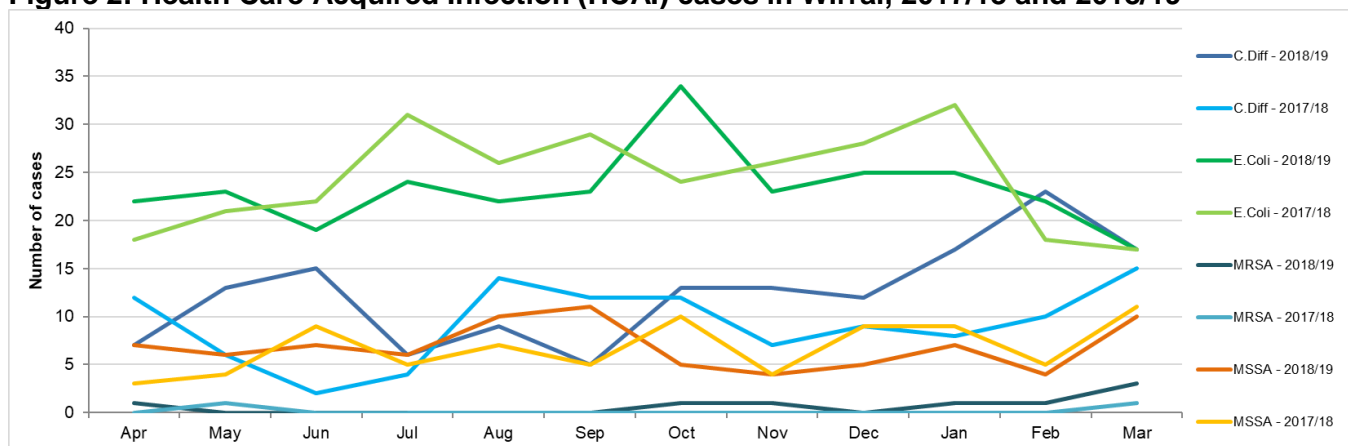
**Figure 1: Health Care Acquired Infection (HCAI) cases in Wirral, 2018/19**



Overall in 2018/19, there have been 519 HCAI cases reported on the HCAI DCS in Wirral; 8 MRSA bacteraemia, 82 MSSA bacteraemia, 150 C. Diff and 279 E. Coli bacteraemia cases. These figures show that E. Coli bacteraemia is the most prevalent HCAI recorded, making up 53.8% of all HCAI cases in Wirral for 2018/19.

Figure 2 illustrates that, in most instances, there is a consistent pattern of incidence throughout the year. However, C. Diff cases between 2017/18 and 2018/19 differ considerably. In June, cases are much higher during 2018/19 (n=15) than in 2017/18 (n=4). This sizeable difference is also noted in February; the number of cases reported in February 2017/18 was 10 compared to 23 in February 2018/19.

**Figure 2: Health Care Acquired Infection (HCAI) cases in Wirral, 2017/18 and 2018/19**



## Changing Definitions

In April 2017, the HCAI DCS system was updated to include new assignment categories; Hospital Onset and Community Onset. At the time of writing this report, these new categories were made available for retrospective cases. The 2018/19 report has therefore been produced using these new categories and figures are therefore not comparable to earlier annual or quarterly reports.

For more information, please see the [Glossary](#) section of this document, or visit the [HCAI DCS Helpdesk webpage](#).

## Methicillin-resistant Staphylococcus aureus (MRSA)

In Table 1, the most notable difference between 2018/19 and 2017/18 is that 8 cases of MRSA bacteraemia were reported in 2018/19 compared to only 2 in 2017/18; an increase of 300%.

Table 1 also shows that there were two “Hospital Onset” assigned cases of MRSA bacteraemia reported in 2017/18, compared to 4 cases over the same period in 2018/19. In contrast, no Community Onset cases were reported in 2017/18, compared to 4 cases in 2018/19.

**Table 1: MRSA bacteraemia cases by assignment reported during 2017/18 and 2018/19**

Year	Case Assignment	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
2018/19	Hospital Onset	0	0	0	0	0	0	1	1	0	0	0	2	4
	Community Onset	1	0	0	0	0	0	0	0	0	1	1	1	4
2017/18	Hospital Onset	0	1	0	0	0	0	0	0	0	0	0	1	2
	Community Onset	0	0	0	0	0	0	0	0	0	0	0	0	0

Previous reports can be accessed via the Wirral Intelligence Service website [here](#).

## Clostridium difficile (C. diff)

As Table 2 shows, in Quarter 4 of 2018/19 there were 57 cases of C. diff reported, compared to 33 cases during the same period in 2017/18 (an increase of 72.7%). In Quarter 4 of 2018/19, 56.1% of cases (n=32) were Hospital Onset, compared to 36.4% of cases (n=12) during the same period in 2017/18. Please see the Glossary on page 8 ([or click here](#)) for details on how cases are classed as Hospital Onset or Community Onset.

Overall in 2018/19, the number of C. Diff cases reported was 150, giving an average of 12.5 cases per month; this is an increase on 2017/18 where 121 cases were reported with a monthly average of 10.1 cases. The average number of Hospital Onset cases per month was 7 compared to 5.5 for those assigned as Community Onset in 2018/19.

**Table 2: C. diff cases by apportionment reported during 2017/18 and 2018/19**

Year	Case Assignment	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
2018/19	Hospital Onset	5	6	7	4	4	1	8	9	8	11	13	8	84
	Community Onset	2	7	8	2	5	4	5	4	4	6	10	9	66
2017/18	Hospital Onset	2	3	5	3	8	5	8	2	5	2	5	5	53
	Community Onset	10	3	7	1	6	7	4	5	4	6	5	10	68

**Figure 3: Number of C. Diff cases reported in Wirral by assigned onset, 2018/19**

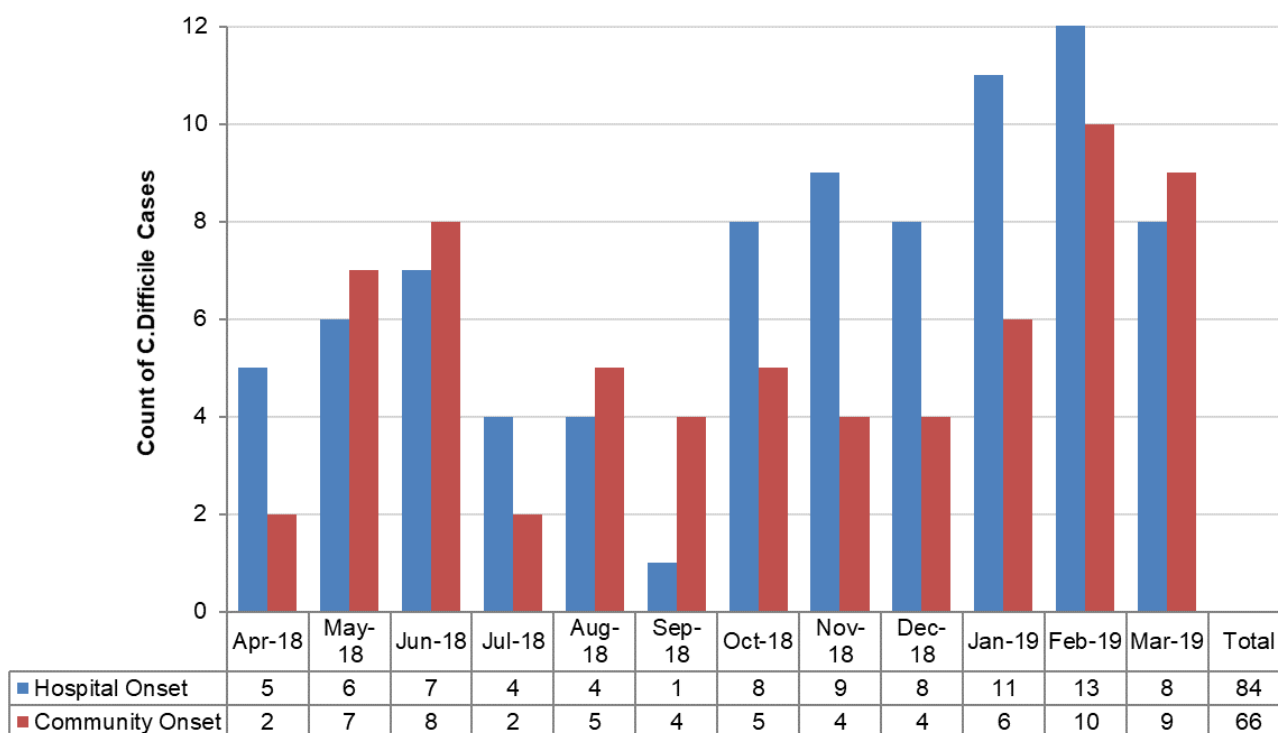


Figure 3 shows that the number of C. Diff cases assigned as Hospital and Community Onset varied throughout the year. However, the number of both, Hospital Onset and Community Onset, cases peaked in February 2019 (13 and 10 cases respectively).

Previous reports can be accessed via the Wirral Intelligence Service website [here](#).

## Methicillin-sensitive Staphylococcus aureus (MSSA)

As Table 3 shows, in Quarter 4 (2018/19) there were 21 cases of MSSA bacteraemia reported, compared to 25 cases during the same period in 2017/18; around a 20% decrease.

Overall in 2018/19, there were 82 cases of MSSA bacteraemia recorded; an increase of one case compared to 2017/18. This is an average of 6.8 cases per month in 2018/19; the same average as 2017/18.

**Table 3: Number of MSSA bacteraemia cases reported during 2017/18 and 2018/19**

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
2018/19	7	6	7	6	10	11	5	4	5	7	4	10	82
2017/18	3	4	9	5	7	5	10	4	9	9	5	11	81

Table 3 also shows that September 2019 recorded the highest number of MSSA bacteremia cases (n=11) during the period shown, which is nearly twice as high as the average number of cases per month; other peak months included August 2018 and March 2019 (both reporting 10 cases).

**Figure 4: Number of MSSA bacteremia cases reported in Wirral by assigned onset, 2018/19**

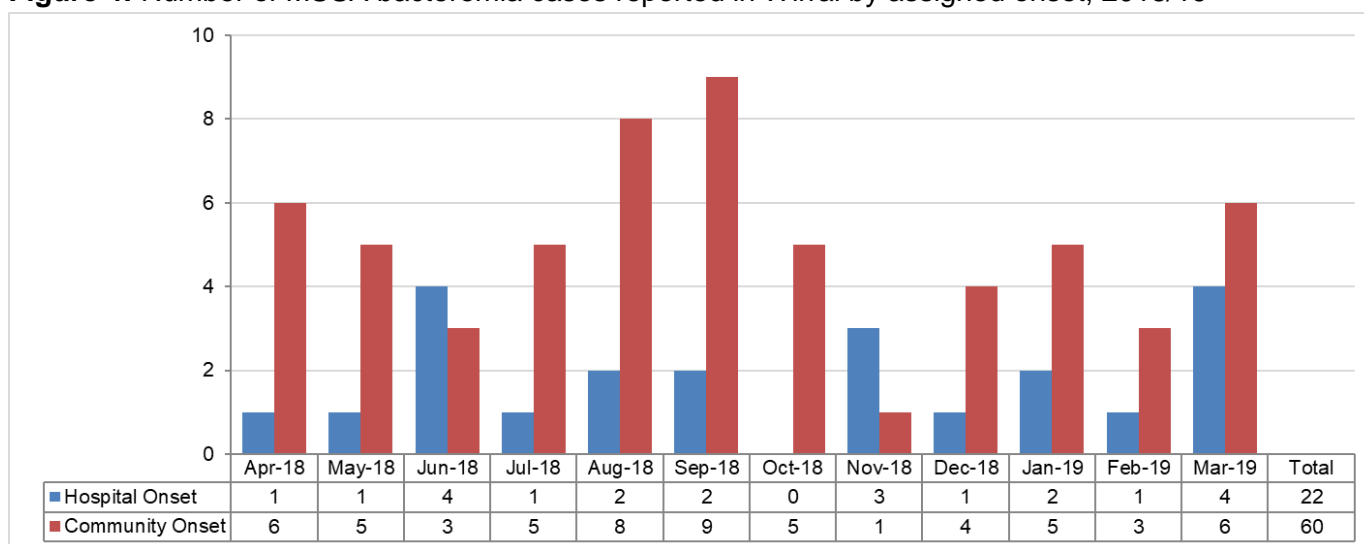


Figure 4 shows that most cases were Community Onset throughout the year; 73.2% of cases compared to 26.8% being assigned as Hospital Onset.

Previous reports can be accessed via the Wirral Intelligence Service website [here](#).

## Escherichia coli (E. coli)

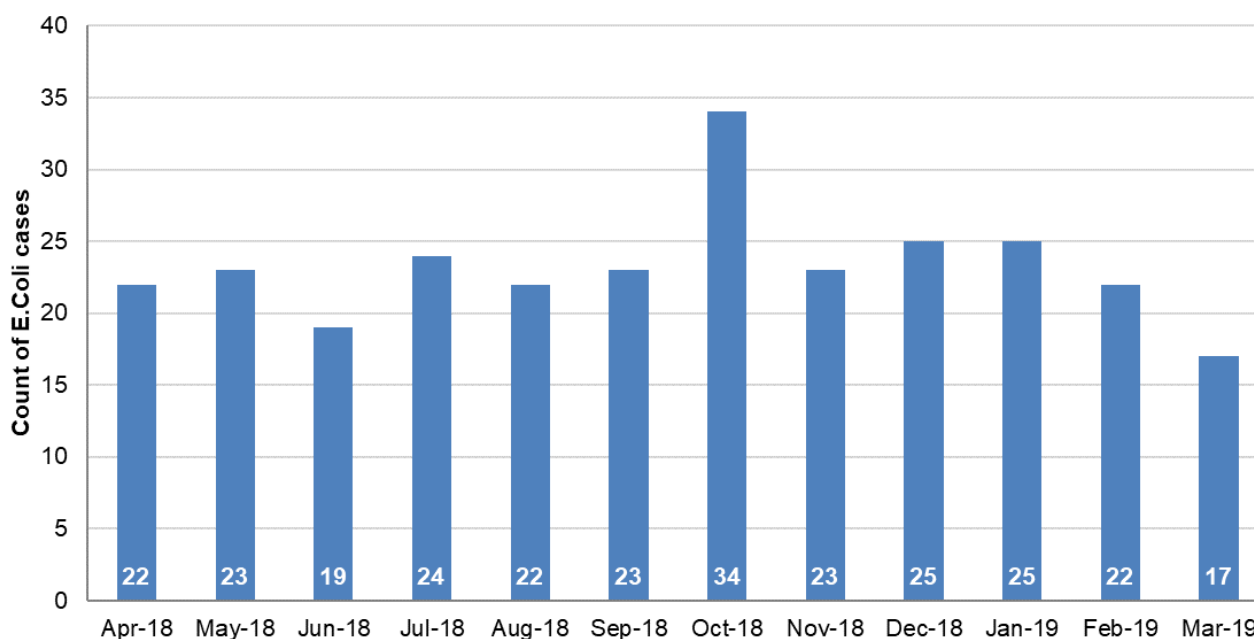
Table 4 shows that there were 64 cases of E. coli bacteraemia reported in Quarter 4 2018/19, compared to 67 cases during the same period in 2017/18; showing a slight decrease in cases.

This can also be seen in the number of cases overall for 2017/18 and 2018/19; there were 292 cases in 2017/18 compared to 279 in 2018/19 (a decrease of 13 cases or 4.5%). This is an average of 23.3 cases of E. Coli bacteraemia reported each month; slightly higher than the 2017/18 average of 24.3 cases per month.

**Table 4: Number of E. coli bacteraemia cases reported in Wirral, 2017/18 and 2018/19**

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
2018/19	22	23	19	24	22	23	34	23	25	25	22	17	279
2017/18	18	21	22	31	26	29	24	26	28	32	18	17	292

**Figure 5: Number of E. Coli bacteraemia cases reported in Wirral, 2017/18**



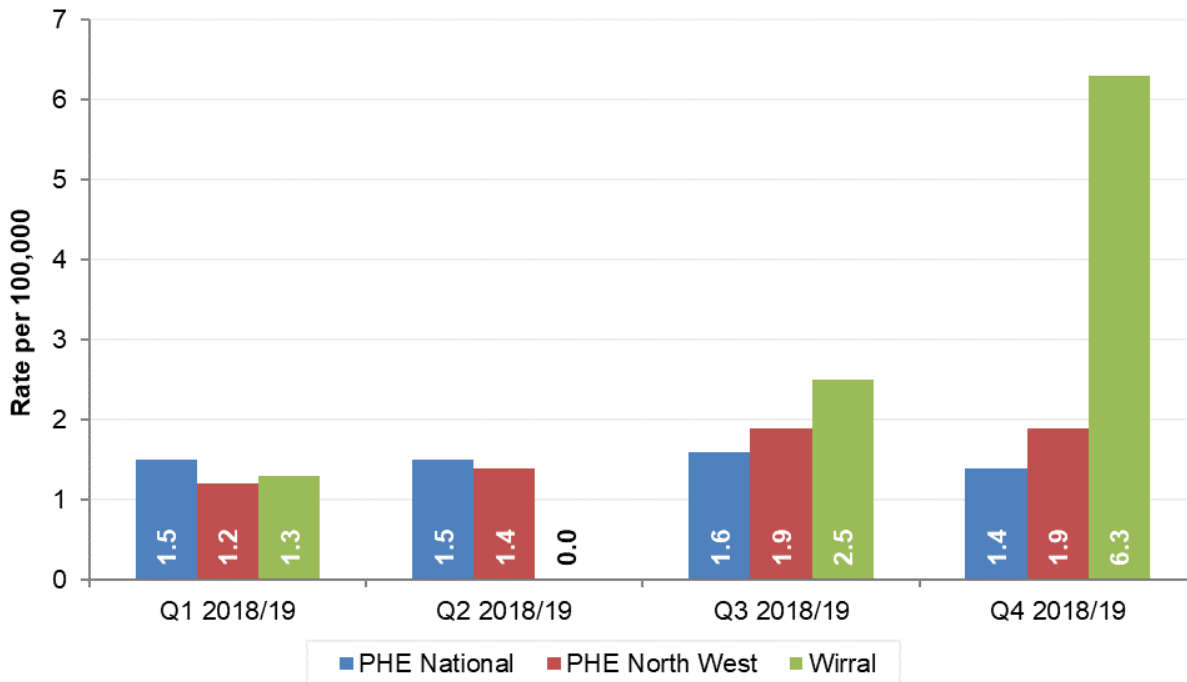
Previous reports can be accessed via the Wirral Intelligence Service website [here](#).

## National and Local Comparison

### Methicillin-resistant Staphylococcus aureus (MRSA)

As Figure 6 shows, Wirral had rates of MRSA infections lower than England for both Quarter 1 and Quarter 2. This trend changes mid-year with Wirral's rate of MRSA infections being higher than both, North West and England. The Quarter 4 rate for Wirral is, in fact, the highest rate since Quarter 2 in 2010/11 (6.3 and 8.7 per 100,000 respectively).

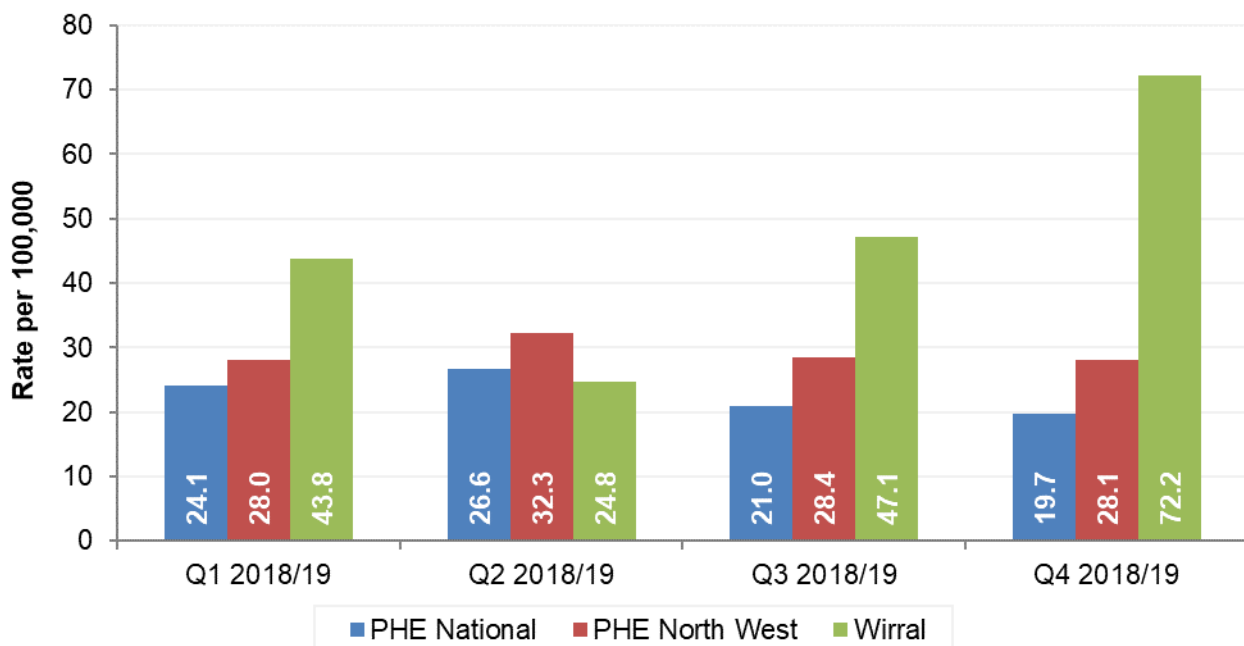
Figure 6: Rate of MRSA bacteraemia cases, England, North West and England, 2018/19, by quarter



### Clostridium difficile (C. diff)

Figure 7 shows that, apart from Quarter 2, Wirral consistently had C. difficile rates higher than England and the North West over the course of 2018/19.

Figure 7: Rate of C. diff cases, England, North West and Wirral, 2018/19, by quarter

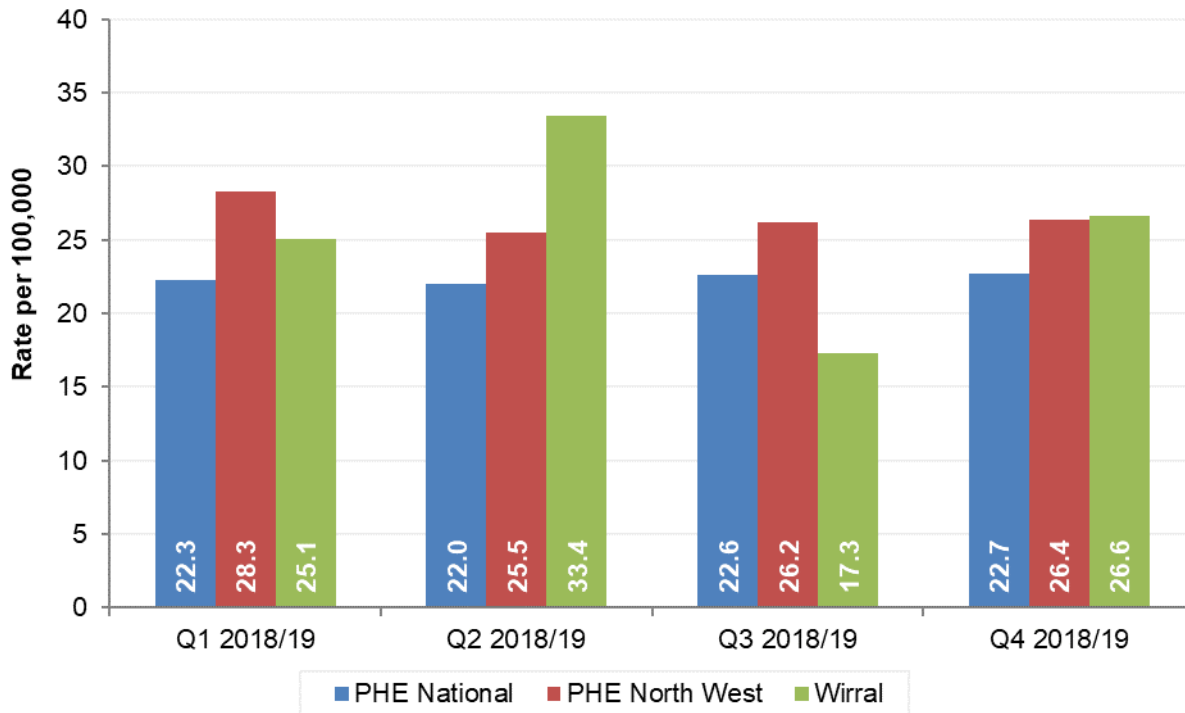




## Methicillin-sensitive Staphylococcus aureus (MSSA)

Figure 8 shows that Wirral had an MSSA bacteraemia incidence rate higher than England in Quarters 1, 2 and 4 (2018/19); Wirral was also higher than North West in Quarters 2 and 4.

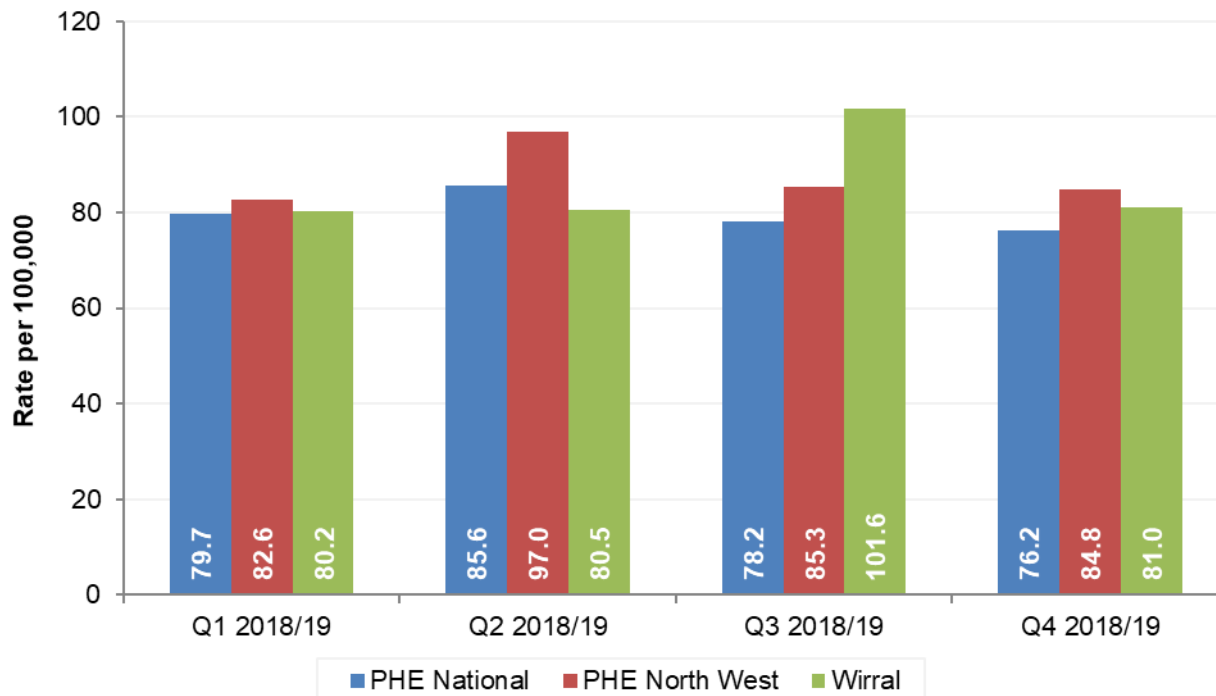
**Figure 8: Number of MSSA bacteraemia cases reported in England, North West and Wirral, 2018/19, by quarter**



## Escherichia coli (E. coli)

Figure 9 shows that E. coli bacteraemia rates in England and the North West appeared to increase from Quarter 2 (2018/19). The rate in Wirral is fairly consistent in 2018/19; Quarters 1, 2 and 3 are all around 80.0 per 100,000. However, there is a substantial increase in Quarter 3 (101.5 per 100,000); reasons for this are unclear.

**Figure 9: Number of E.coli bacteraemia cases in England, North-West and Wirral, 2017/18, by quarter**



### Note: Reducing E.coli bloodstream infections

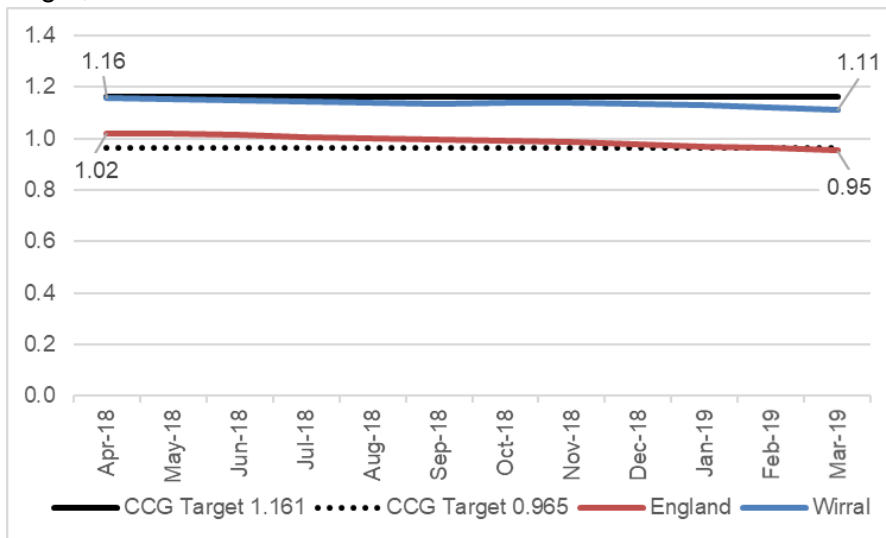
NHS Improvement announced a national ambition to reduce healthcare associated Gram-negative bloodstream infections (healthcare associated GNBSIs) by 50% by March 2021. E.coli is one of the largest GNBSI infection groups, with a total of 38,132 cases reported by NHS trusts in England between 1 April 2015 and 31 March 2016. Therefore the initial focus on GNBSI reduction will be targeted towards E.coli, which continues to be a reportable HCAI. As part of the same initiative to tackle GNBSI, NHS trusts have also been requested to collect and submit voluntary data detailing *Klebsiella* spp. and *Pseudomonas aeruginosa* infections with a facility for data capture has been enabled by PHE since 2017/18.

**Source:** (2017) *Preventing healthcare associated Gram-negative bloodstream infections: an improvement resource (May 2017)*, Public Health England/NHS Improvement, Accessed at: July 2017, Available at: <https://improvement.nhs.uk/resources/preventing-gram-negative-bloodstream-infections/>

## Antibiotic Prescribing, 2018/19

Inappropriate use of antimicrobials increases the risk to patients of colonisation and infection with resistant organisms and subsequent transmission to other patients. The increase in resistance is making antimicrobial agents less effective and contributing to infections that are hard to treat. Inappropriate antimicrobial prescribing is also associated with Clostridium difficile infection. The new national prescribing platform (ePact2) provides a dashboard around Antimicrobial Stewardship. Below are charts taken from the dashboard detailing Wirral's antibacterial prescribing rates over the last 12 months together with the percentage of these that are broad spectrum<sup>1</sup> items.

**Figure 10:** Rate of antibacterial items prescribed per STAR-PU<sup>2</sup>, England, Wirral and NHS England target, 2018/19

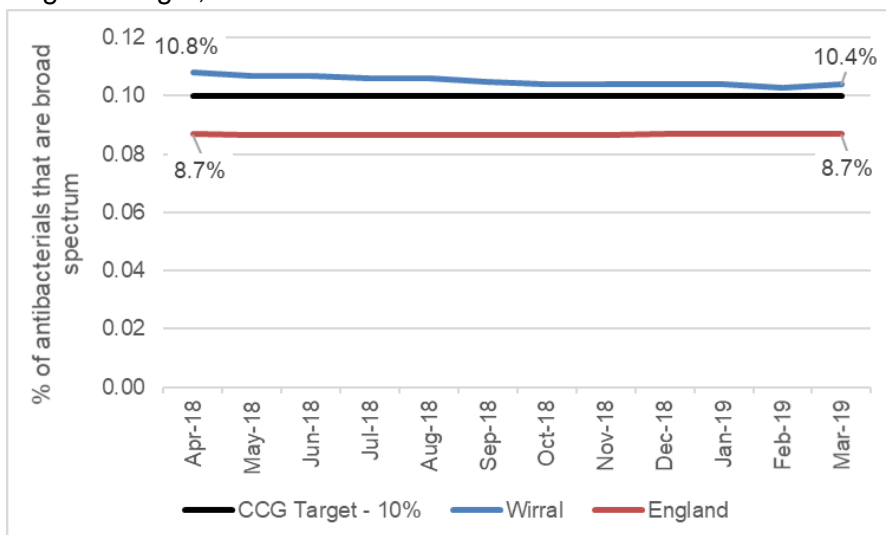


Source: ePact2, 2019

Note: STAR-PU<sup>2</sup> (Specific Therapeutic group Age-sex Related Prescribing Units) are weighted measures used in prescribing to take into account age and gender of the patient. The rate is based on a rolling 12 month period.

As Figure 10 shows, Wirral's rate has remained consistent over the year but has ultimately decreased in 2018/19 (as is the case nationally). However, it is still above the national average; 1.11 in Wirral compared to 0.95 nationally in March 2019. The two national targets for this indicator are 1.161 or 0.965 antibacterial items to be prescribed per STAR-PU. Wirral started 2018/19 below the higher of these targets and remained below this for the duration.

**Figure 11:** Rate (%) of prescribed antibacterial items that are broad spectrum<sup>1</sup>, England, Wirral and NHS England target, 2018/19



Source: ePact2, 2018

Note: Broad spectrum<sup>1</sup> items are (Co-amoxiclav, Cephalosporins and Quinolones). The rate (%) is calculated on a rolling 12 month basis.

As Figure 11 shows, the percentage of antibacterial items prescribed that are classed as broad spectrum decreased in Wirral during 2018/19. It is still however, above the national average; 10.4% compared to 8.7% nationally. The national target it for CCGs to reduce this proportion to 10% or below, which Wirral still exceeds.

## Appendix 1: HCAI, RightCare CCG Comparators, 2018/19

**Table 5:** Rates of 4 main HCAs by CCG, 2018/19

RightCare CCG Comparator	Rate per 100,000, 2018/19			
	C. Diff	E. Coli	MRSA	MSSA
Barnsley CCG	14.9	90.8	1.7	25.3
Doncaster CCG	26.1	90.1	1.6	27.7
Dudley CCG	27.7	81.2	0.9	26.5
Hartlepool & Stockton-On-Tees CCG	36.4	108.5	0.7	39.2
Mansfield & Ashfield CCG	46.0	99.5	0.0	31.3
Rotherham CCG	19.5	89.0	1.5	27.9
Southend CCG	27.3	84.5	2.8	20.0
St Helens CCG	21.9	98.1	1.1	44.8
Sunderland CCG	34.5	104.0	0.7	22.7
Wigan Borough CCG	21.1	69.3	1.9	24.5
Wirral CCG	46.7	86.9	2.5	24.9
<b>England</b>	<b>22.8</b>	<b>80.3</b>	<b>1.5</b>	<b>22.4</b>

Source: HCAI DCS, 2019

Note: Rates are 12 month rolling rates as at March 2018 for all cases of each HCAI; C. Diff, E. Coli, MRSA and MSSA

## Appendix 2: Antibiotic Prescribing, RightCare CCG Comparators, 2018/19

RightCare CCG Comparators	Prescribed antibiotic items per STAR-PU	% Broad Spectrum items
Barnsley CCG	1.07	5.8
Doncaster CCG	1.08	5.7
Dudley CCG	1.04	5.7
Hartlepool & Stockton-On-Tees CCG	1.03	7.7
Mansfield & Ashfield CCG	1.13	7.7
Rotherham CCG	1.03	6.3
Southend CCG	1.09	11.4
St Helens CCG	1.24	6.9
Sunderland CCG	1.21	9.2
Wigan Borough CCG	1.09	8.5
Wirral CCG	1.11	10.4
<b>England</b>	<b>0.95</b>	<b>8.7</b>

Source: ePact2, 2019

Note: Figures are 12-month rolling rates/proportions as at March 2019

### MRSA and MSSA

From 1 April 2018 all MRSA bacteraemia cases will be reported by time of infection against the time of the patient's admission. For cases where the infection onset is greater than 2 days after the date of admission, the assignment will be reported as 'hospital onset' cases; all other cases will be considered as 'community onset'.

For further information, please see "[Update on the reporting and monitoring arrangements and post-infection review process for MRSA bloodstream infections](#)" (NHS Improvement, 2018).

### C. difficile

Cases of C. difficile have 4 different onset categories:

- Symptoms >2 days after admission = Healthcare Onset – Healthcare Associated (HOHA)
- Symptoms <4 weeks after discharge = Community Onset – Healthcare Associated (COHA)
- Symptoms between 4-12 weeks after discharge = Community Onset Indeterminate Association (COIA)
- All other cases will be considered to be Community Onset Community Association (COCA)

For the purposes of this report, C. Difficile cases will be presented in the two broader categories; Healthcare Onset and Community Onset. For further information, please see the [C. Difficile Surveillance Update](#) (PHE, 2017).

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