



**WIRRAL
INTELLIGENCE
SERVICE**

Health Care Acquired Infections Surveillance, Q4 and Year 2017/18

Wirral Intelligence Service

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Health Care Acquired Infections Surveillance, Q4 and Year 2017/18

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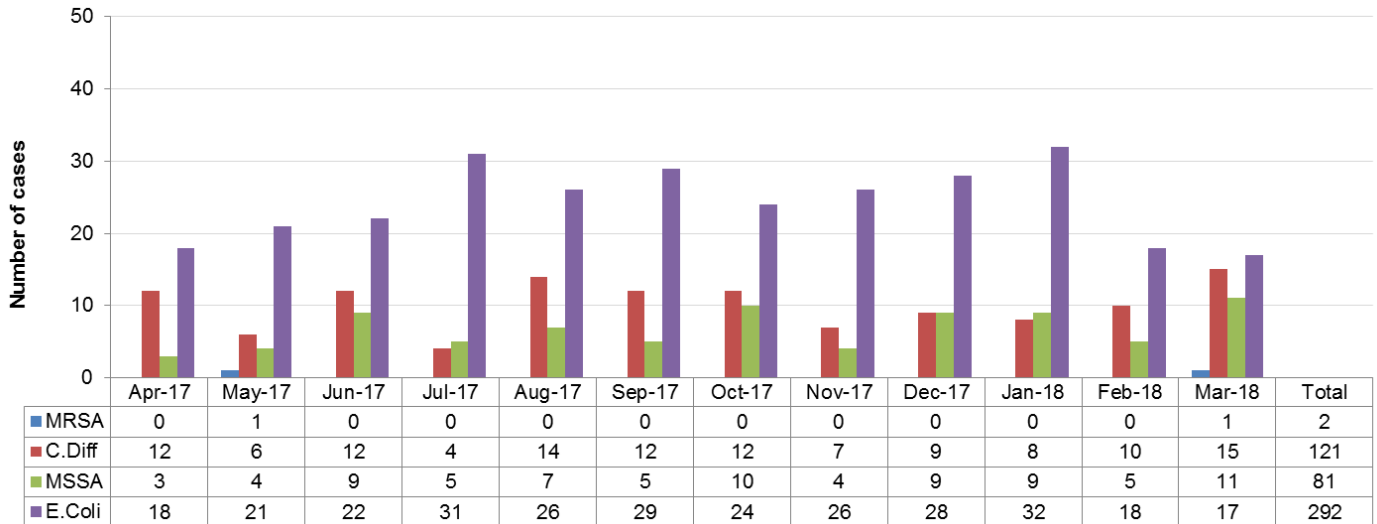
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Health Care Acquired Infection (HCAI) Cases in Wirral

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)
- Clostridium difficile (C. diff)
- Methicillin-sensitive Staphylococcus aureus (MSSA)
- Escherichia coli (E. coli)

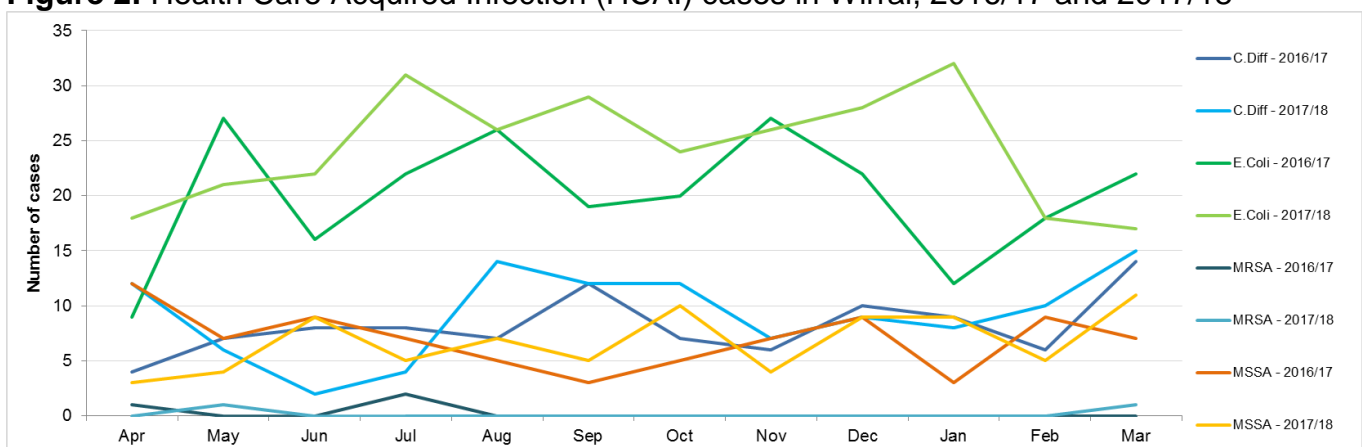
Figure 1: Health Care Acquired Infection (HCAI) cases in Wirral, 2017/18



Overall in 2017/18, there have been 496 HCAI cases reported on the HCAI DCS in Wirral; 2 MRSA, 81 MSSA, 121 C. Diff and 292 E. Coli cases. These figures show that E. Coli is the most prevalent HCAI recorded, making up 60% of all HCAI cases in Wirral for 2017/18.

Figure 2 shows the trend of reported cases for each of the four infections included in this report in 2016/17 and 2017/18. As the chart illustrates, in most instances, there is a consistent pattern of incidence throughout the year. However, E. Coli showed a noticeable difference between the last quarter of the year for 2016/17 and 2017/18; in Q4 2016/17 the number of E. Coli cases started low and increased, whereas in Q4 2017/18 this was reversed.

Figure 2: Health Care Acquired Infection (HCAI) cases in Wirral, 2016/17 and 2017/18



Methicillin-resistant Staphylococcus aureus (MRSA)

As Table 1 shows, between January and March (2017/18), there was 1 (Trust assigned) case of MRSA reported.

There were no CCG assigned cases of MRSA reported in 2017/18, compared to 3 cases over the same period in 2016/17. In contrast, 2 Trust-assigned cases were reported in 2017/18, compared to no cases in 2016/17. Please see the Glossary on page 8 ([or click here](#)) for details on how cases are CCG and Trust assigned.

Table 1: MRSA cases by assignment reported during 2016/17 and 2017/18

Year	Case Assignment	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
2017/18	Trust Assigned	0	1	0	0	0	0	0	0	0	0	0	1	2
	CCG Assigned	0	0	0	0	0	0	0	0	0	0	0	0	0
2016/17	Trust Assigned	0	0	0	0	0	0	0	0	0	0	0	0	0
	CCG Assigned	1	0	0	2	0	0	0	0	0	0	0	0	3

The 2016/17 report can be accessed via the Wirral Intelligence Service website [here](#).

Clostridium difficile (C. diff)

As Table 2 shows, in Quarter 4 of 2017/18 there were 33 cases of C. diff reported, compared to 29 cases during the same period in 2016/17 (an increase of 14%). In Quarter 4 of 2017/18, 54% of cases (n=21) were Non-Trust apportioned, compared to 6.2% of cases (n=18) during the same period in 2016/17. Please see the Glossary on page 8 ([or click here](#)) for details on how cases are classed as Trust or Non-Trust apportioned.

Overall in 2017/18, the number of C. Diff cases reported was 121, giving an average of 10.1 cases per month; this is an increase on 2016/17 where 98 cases were reported with a monthly average of 8.2 cases. For 2017/18 case assignment was broadly equally split with more cases being Non-Trust apportioned.

The average number of Non-Trust apportioned cases per month was 5.7 compared to 4.4 for those apportioned to Trusts.

Table 2: C. diff cases by apportionment reported during 2016/17 and 2017/18

Year	Case Assignment	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
2017/18	Trust apportioned	2	3	5	3	8	5	8	2	5	2	5	5	53
	Non-Trust apportioned	10	3	7	1	6	7	4	5	4	6	5	10	68
2016/17	Trust apportioned	2	3	3	4	5	9	2	3	4	4	3	4	46
	Non-Trust apportioned	2	4	5	4	2	3	5	3	6	5	3	10	52

Figure 3: Number of C. Diff cases reported in Wirral by apportioned organisation, 2017/18

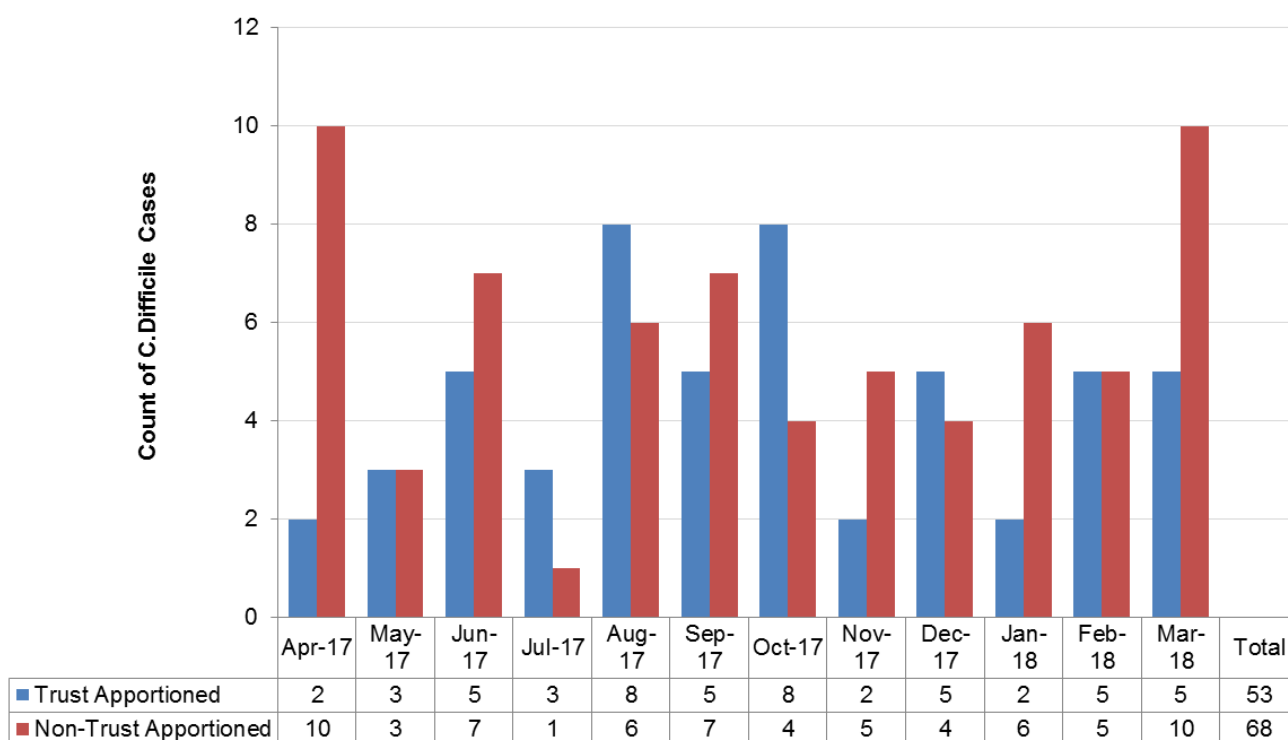


Figure 3 shows that the number of C. Diff cases apportioned to Trust and Non-Trust organisation varied throughout the year; Non-Trust apportioned cases peaked in April 2017 and March 2018 (10 cases in both months), whereas Trust apportioned cases were highest in August and September 2017 (8 in both months).

The 2016/17 report can be accessed via the Wirral Intelligence Service website [here](#)

Methicillin-sensitive Staphylococcus aureus (MSSA)

As Table 3 shows, in Quarter 4 (2017/18) there were 25 cases of MSSA reported, compared to 19 cases during the same period in 2016/17; a 32% increase.

Overall in 2017/18, there were 81 cases of MSSA recorded; a decrease of 2 cases (or 2.5%) compared to 2016/17. This is an average of 6.8 cases per month in 2017/18; slightly lower than the same monthly average of 6.9 for 2016/17.

Table 3: Number of MSSA cases reported during 2016/17 and 2017/18

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
2017/18	3	4	9	5	7	5	10	4	9	9	5	11	81
2016/17	12	7	9	7	5	3	5	7	9	3	9	7	83

Table 3 also shows that March 2018 recorded the highest number of MSSA cases (n=11) during the period shown, which was nearly twice as high as the average number of cases per month; other peak months included October 2017 (n=10) and June 2017, December 2017 and January 2018 (9 cases per month).

Figure 4: Number of MSSA cases reported in Wirral by apportioned organisation, 2017/18

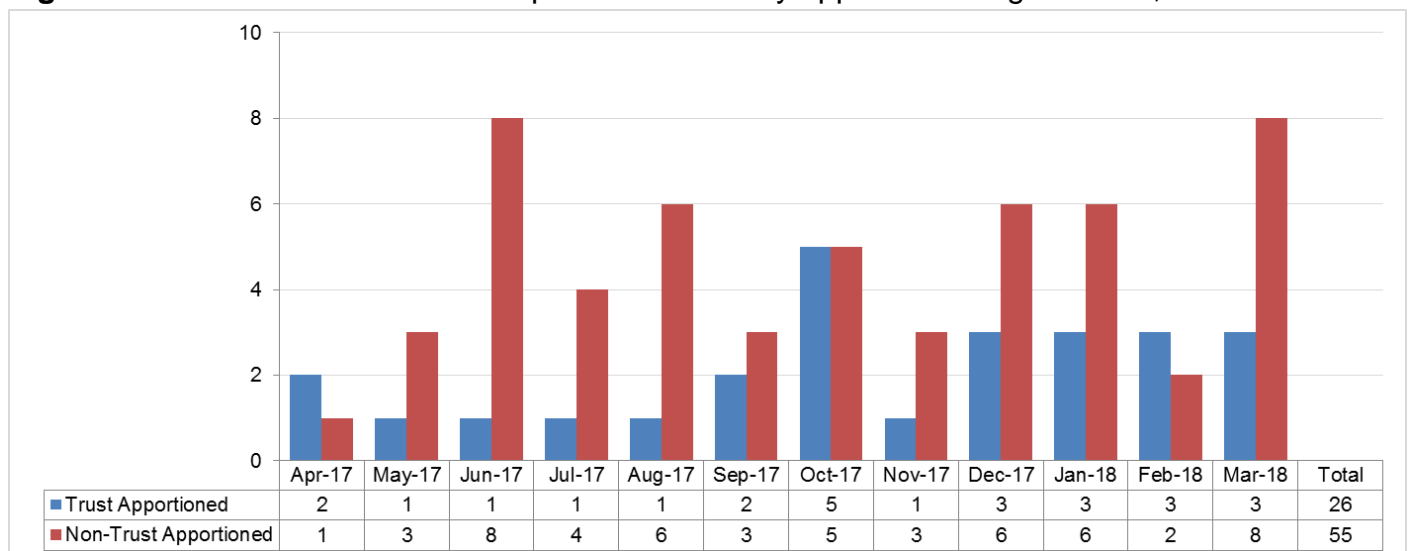


Figure 4 shows that most cases were Non-Trust apportioned throughout the year. The exception to this is October 2017 where cases were evenly apportioned.

The 2016/17 report can be accessed via the Wirral Intelligence Service website [here](#).

Escherichia coli (E. coli)

Table 4 shows that there were 67 cases of E. coli reported in Quarter 4 2017/18, compared to 52 cases during the same period in 2016/17; an increase of around 29% (or 15 cases).

Overall in 2017/18, there were 292 cases; this means an additional 52 cases or an increase of 22%. This is an average of 24.3 cases of E. Coli reported each month; slightly higher than the 2016/17 average of 20.0 cases per month.

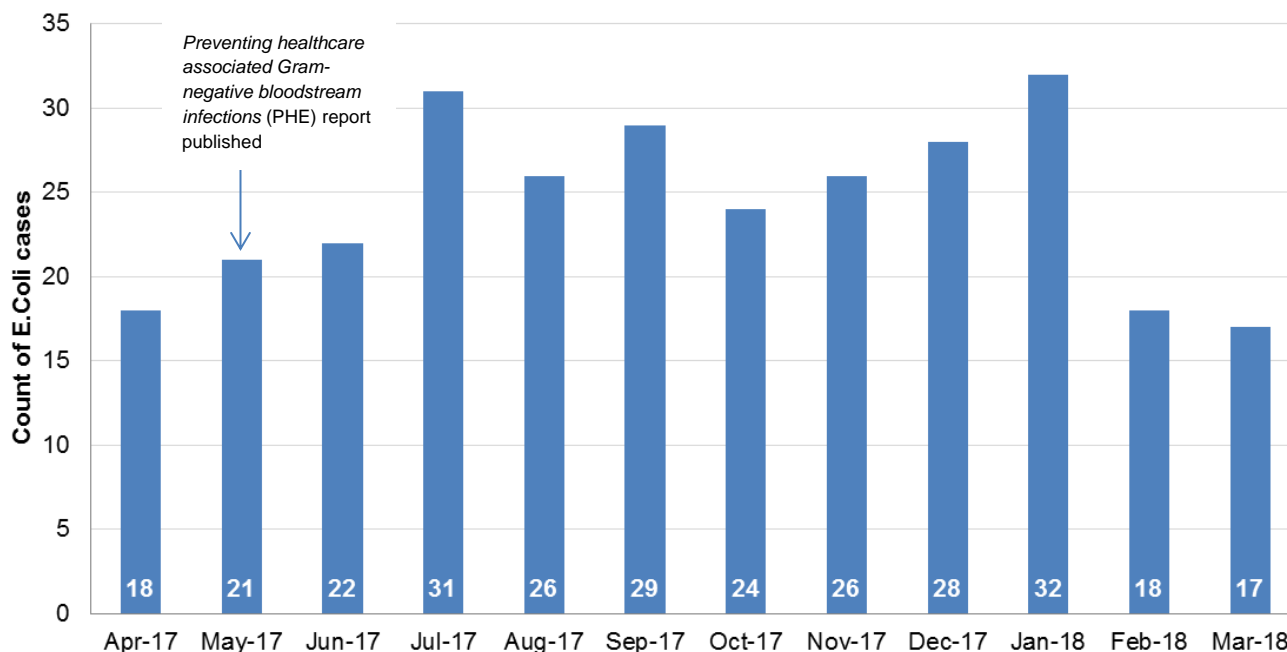
It is, however, difficult to determine whether this increase is attributable to increased incidence of E. Coli, better recording following the NHS Improvement ambition ([see note below](#)) or a mixture of both.

Table 4: Number of E. coli cases reported in Wirral, 2016/17 and 2017/18

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
2017/18	18	21	22	31	26	29	24	26	28	32	18	17	292
2016/17	9	27	16	22	26	19	20	27	22	12	18	22	240

Figure 5 shows some seasonality relating to incidence, with highest numbers reported between July 2017 (31 cases) and January 2018 (32 cases), when compared to the remaining months (Apr-Jun 2017 and Feb-Mar 2018).

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



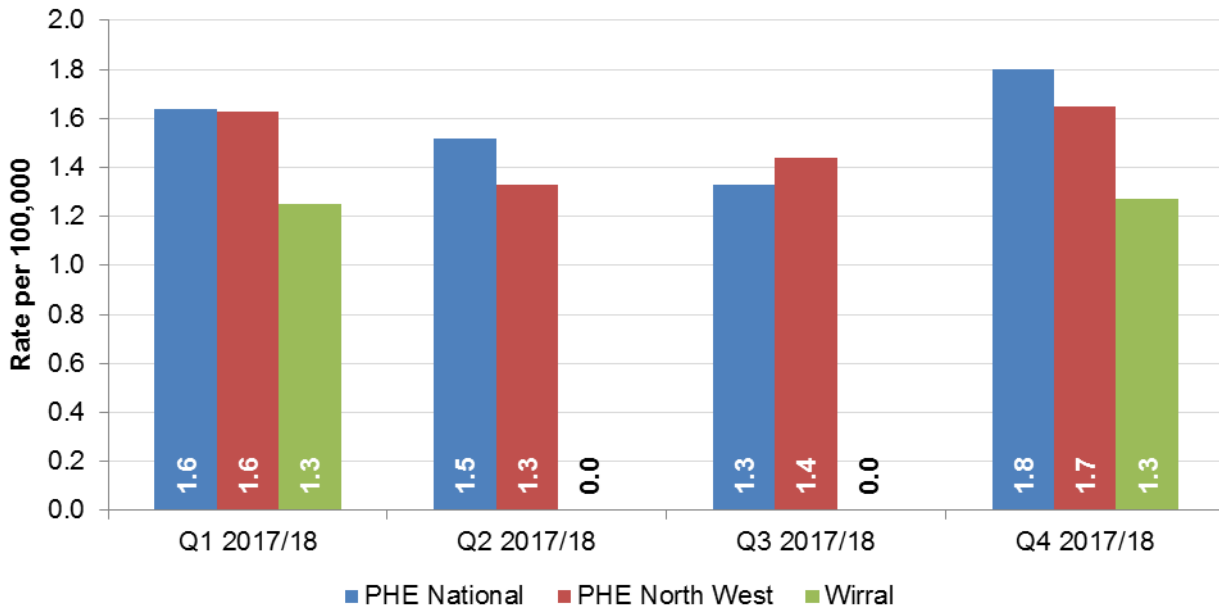
The 2016/17 report can be accessed via the Wirral Intelligence Service website [here](#).

National and Local Comparison

Methicillin-resistant Staphylococcus aureus (MRSA)

As Figure 6 shows, Wirral had a lower rate of MRSA infections than both the North West and England for all four quarters of 2017/18.

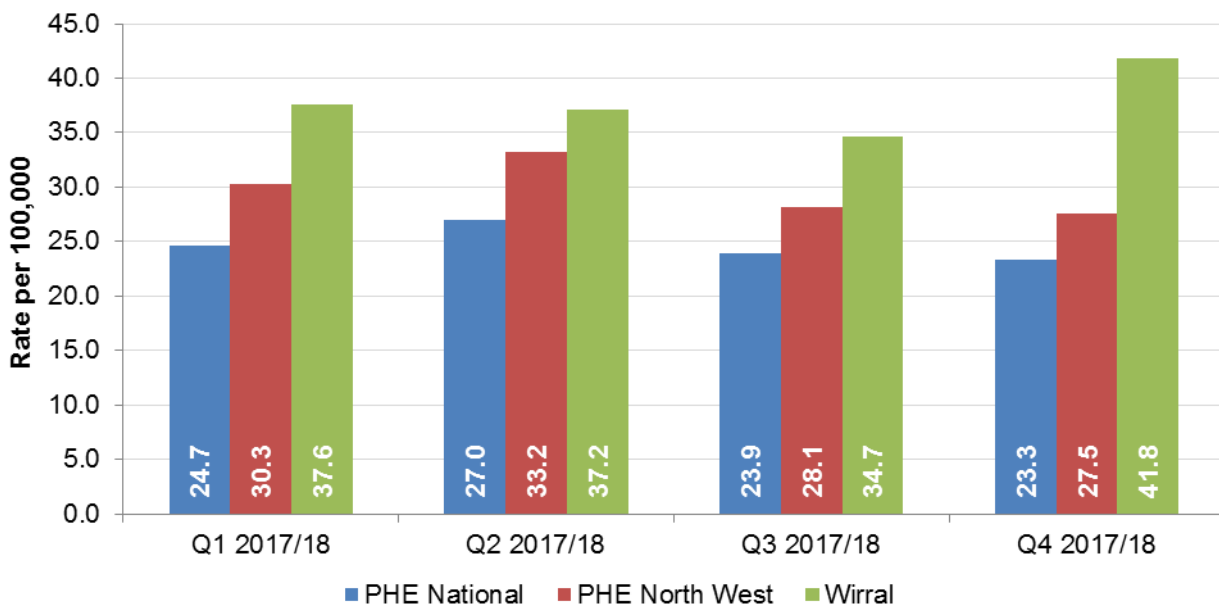
Figure 6: Rate of MRSA cases, England, North West and England, 2017/18, by quarter



Clostridium difficile (C. diff)

Figure 7 shows that Wirral consistently had C. difficile rates higher than England and the North West over the 4 quarters of 2017/18.

Figure 7: Rate of C. diff cases, England, North West and Wirral, 2017/18, by quarter

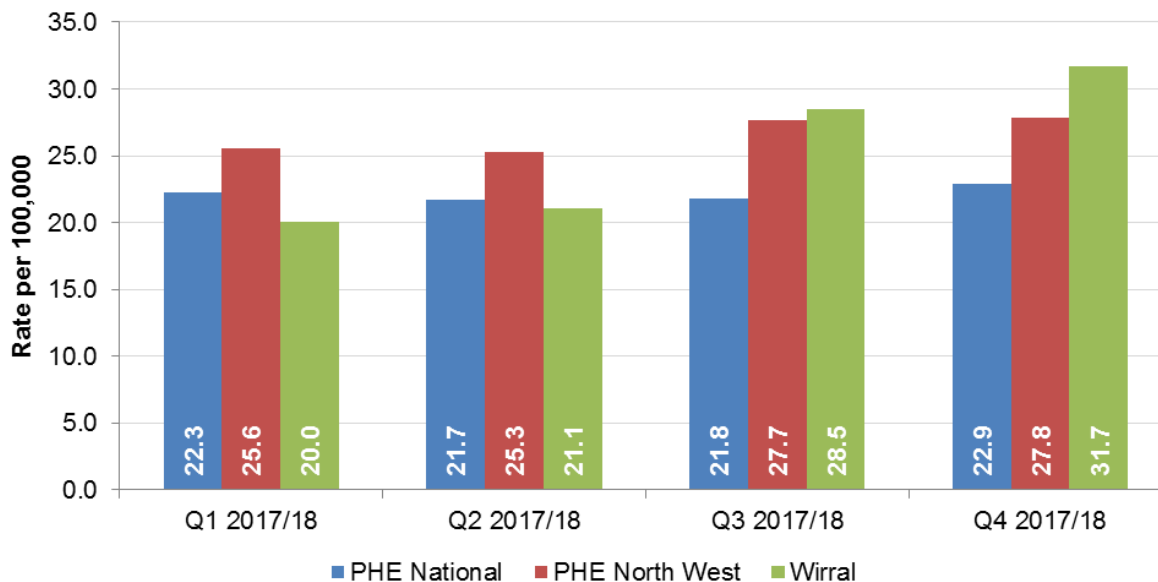


It is important that fluctuations in the rate of C. difficile cases are monitored in order to ensure efficient responses are made to sporadic increases. Work is currently being undertaken in relation to historic peaks of C. difficile cases to identify and analyse previous incidence.

Methicillin-sensitive Staphylococcus aureus (MSSA)

Figure 8 shows that Wirral had an MSSA incidence rate higher than both England and the North West in Quarters 3 and 4 (2017/18), but lower than England and the North West in Quarters 1 and 2. Overall in 2017/18, the rate in Wirral was 25.3 per 100,000; this was lower than the North West (26.6) but higher than England (22.2).

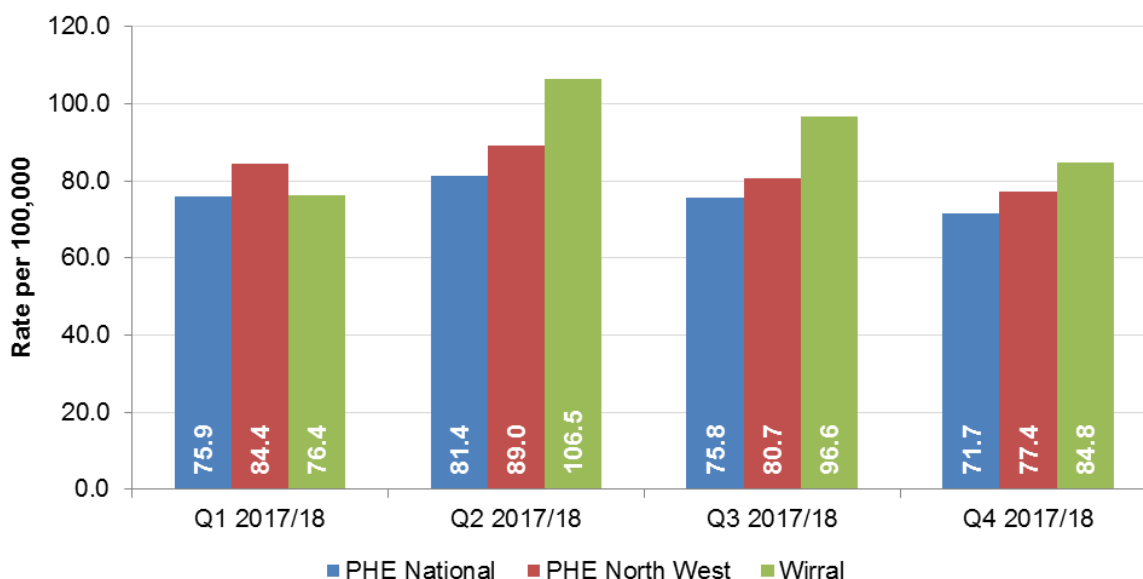
Figure 8: Number of MSSA cases reported in England, North West and Wirral, 2017/18, by quarter



Escherichia coli (E. coli)

Figure 9 shows that E. coli rates in England and the North West appeared to decrease from Quarter 2 (2017/18). However the rate of infection was higher than both the North West and England following a substantial increase in cases reported in Q2 2017/18,. Reasons for this are unclear, however, it may be down to improved recording ([see note below](#)). Overall in 2017/18, the rate of E. coli in Wirral was 91.2; this was higher than both North West (82.9) and England (76.2).

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



Note: Reducing E.coli bloodstream infections

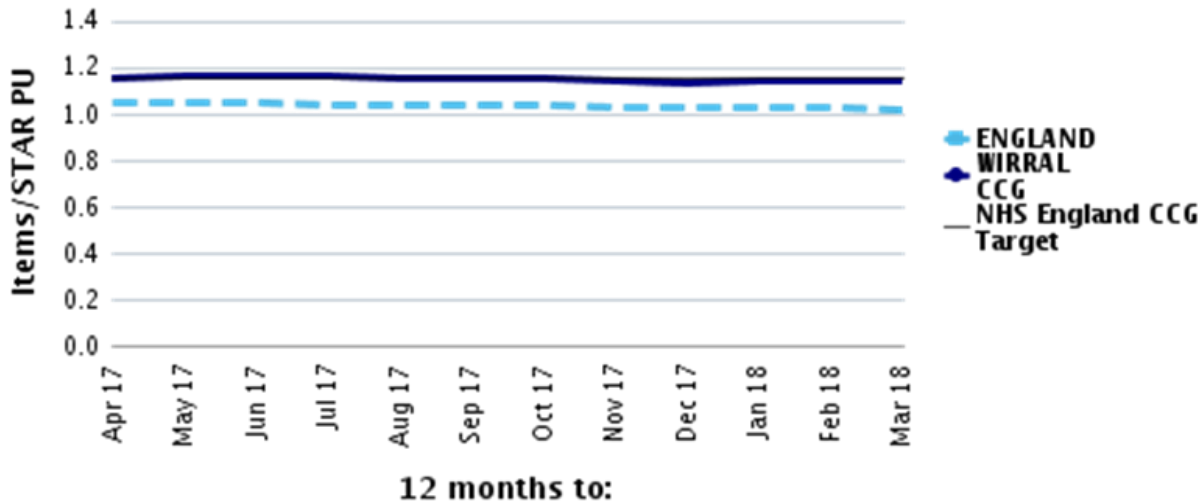
NHS Improvement recently announced a national ambition to reduce healthcare associated Gram-negative blood stream infections (healthcare associated GNBSIs) by 50% by March 2021. E.coli is one of the largest GNBSI infection groups, with a total of 38,132 cases reported by NHS trusts in England between 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 during the period 1 April 2017 to 31 March 2018.

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, 2017/18

Inappropriate antimicrobial prescribing has been implicated in the acquisition of some HCAI's, 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 spectrum¹ items.

Figure 10: Rate of antibacterial items prescribed per STAR-PU², England, Wirral and NHS England target, 2017/18

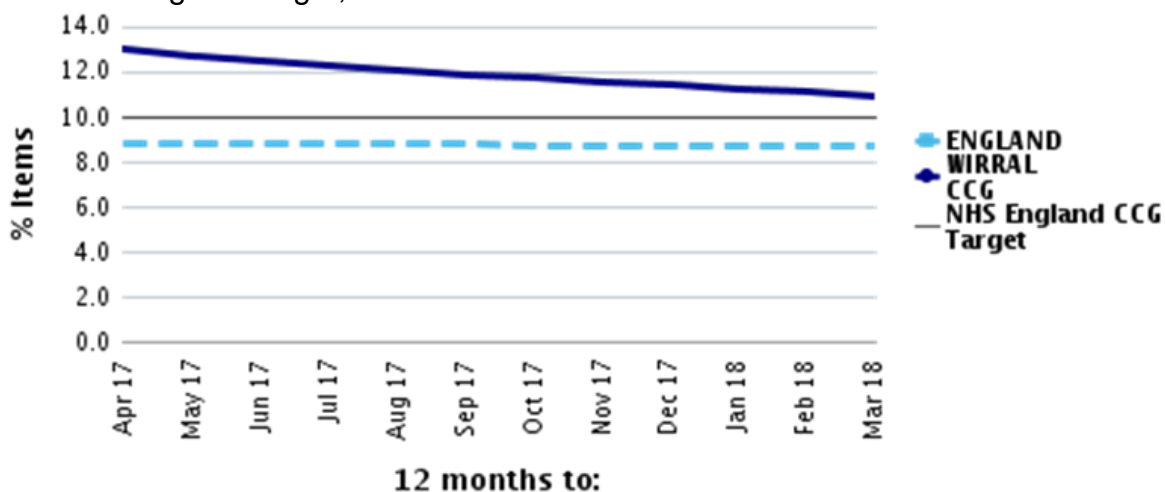


Source: ePact2, 2018

Note: STAR-PU² (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 2017/18 (as is the case nationally). However, it is still above the national average; 1.149 in Wirral compared to 1.022 nationally in March 2018. The national target for this indicator is for 1.161 antibacterial items to be prescribed per STAR-PU. Wirral equalled this target in September 2017 and has remained below this threshold for the remainder of 2017/18.

Figure 11: Rate (%) of prescribed antibacterial items that are broad spectrum¹, England, Wirral and NHS England target, 2017/18



Source: ePact2, 2018

Note: Broad spectrum¹ 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 2017/18. It is still however, above the national average; 11.0% compared to 8.7% nationally. The national target it for CCGs to reduce this proportion to 10% or below, which Wirral still exceeds. There is also a local ambition to reduce the proportion of broad spectrum items by 20% annually meaning a reduction of 2.6% from March 2017 to March 2018; the actual reduction in Wirral was 2.2%.

It should be noted however, that a substantial reduction in the number of antibacterial items prescribed overall will have affected Wirral's ability to achieve this target for 2017/18.

Appendix 1: HCAI, RightCare CCG Comparators, 2017/18

Table 5: Rates of 4 main HCAs by CCG, 2017/18

RightCare CCG Comparator	Rate per 100,000, 2017/18			
	C. Diff	E. Coli	MRSA	MSSA
NHS Barnsley CCG	19.9	81.7	0.8	22.8
NHS Durham Dales, Easington & Sedgefield CCG	21.9	91.4	0.7	24.0
NHS North Tyneside CCG	19.7	98.9	1.0	29.5
NHS Rotherham CCG	27.5	76.4	1.5	17.2
NHS South Sefton CCG	28.3	86.9	0.6	20.1
NHS St Helens CCG	34.2	108.2	1.1	42.6
NHS Stockport CCG	32.7	82.3	1.4	23.7
NHS Sunderland CCG	32.0	102.5	1.8	24.5
NHS Wakefield CCG	26.1	81.9	2.4	22.3
NHS Wigan Borough CCG	29.4	61.6	1.5	23.5
NHS Wirral CCG	37.4	91.2	0.6	24.9
England	24.0	74.3	1.5	21.6

Source: AMR local indicators profile, Public Health Outcomes Framework, 2018

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, 2017/18

RightCare CCG Comparator	Prescribed antibiotic items per STAR-PU	% Broad Spectrum items
NHS Barnsley CCG	1.12	6.0%
NHS Durham Dales, Easington & Sedgefield CCG	1.28	5.3%
NHS North Tyneside CCG	1.17	8.2%
NHS Rotherham CCG	1.14	6.5%
NHS South Sefton CCG	1.19	7.9%
NHS St Helens CCG	1.35	6.6%
NHS Stockport CCG	1.17	5.6%
NHS Sunderland CCG	1.28	9.5%
NHS Wakefield CCG	1.17	5.6%
NHS Wigan Borough CCG	1.13	8.0%
NHS Wirral CCG	1.15	11.0%
England	1.02	8.7%

Source: NHS Business Services Authority, 2018

Note: Figures are 12-month rolling rates/proportions as at March 2018

MRSA

From 1 April 2013 all MRSA bacteraemia cases were subject to the Post Infection Review. Based upon these individual investigations an MRSA case would then be assigned to an acute Trust or CCG based on the organisation primarily responsible for mitigating actions. As apportioning is based solely on other data items collected the process can be carried out on current data to allow the time series to be continued.

C. difficile

Trust apportioned:

Any NHS patient specimens taken on the fourth day of admission onwards (eg day 4 when day 1 equals day of admission) at an acute Trust (including cases with unspecified specimen location) for inpatients, day-patients, emergency assessment, or unspecified patient category.

Records with a missing admission date (where the specimen location is acute Trust or missing and the patient category is inpatient, day-patient, emergency assessment, or unspecified) are also included.

Non-Trust apportioned:

Any NHS patient specimens not apportioned to the above. This will typically include the following groups:

- Any acute Trust specimens taken on either the day of admission or the two subsequent days (eg days 1, 2, 3 where day 1 equals day of admission).
- Any specimens from patients attending an acute Trust who are not inpatient, day-patient or under emergency assessment (e.g. non admitted patients).
- Any specimens from patients attending an identifiable healthcare location **except** an acute Trust. This will typically include GP, nursing home, non-acute NHS hospital and private patients.

These definitions have been extracted from the “HCAI Data Capture System, User Manual: Overview of Trust Apportioning Algorithm” available at:

https://hcaidcs.phe.org.uk/ContentManagement/LinksAndAnnouncements/HCAIDCS_Supporting_Documents_Algorithms_Apportioning_UserGuide_V2.0.pdf

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