

Infection Prevention & Control Report to Trust Board

Meeting Date – 2nd May 2019

1. Executive Summary

Reduction Targets 2018/19

The Department of Health (DoH) for Northern Ireland (NI) issued healthcare-associated infection (HCAI) reduction targets for 2018/19.

For Meticillin-Resistant *Staphylococcus aureus* (MRSA) bacteraemia, the Trust's target was five cases. That was the same target as was required in the previous year and one case more than the number actually reported in 2017/18 (four).

The Trust's reduction target for *Clostridium difficile* (*C. difficile*) associated disease was 56; a reduction of eight cases or 12.5% compared to the previous year.

In response to the O'Neill Review on Antimicrobial Resistance, the United Kingdom adopted two ambitions in relation to human health, i.e. to improve antibiotic prescribing and to reduce gram-negative bacteraemias (GNBs).

In 2018/19 the DoH NI introduced targets for reducing healthcare-associated GNBs, specifically *Escherichia coli*, *Klebsiella species* and *Pseudomonas aeruginosa*. The Western Trust was expected to achieve one fewer case in 2018/19 (49 cases) compared to the baseline figure of 2017/18 (50 cases), which equates to a reduction of 2%.

MRSA Bacteraemia Performance 2018/19

A total of seven MRSA bacteraemia cases were reported in 2018/19. Six were categorised as community-associated as they occurred less than 48 hours after admission to hospital (definition used by the Public Health Agency [PHA]) and one case was classified as healthcare-associated as it occurred more than 48 hours after admission. As such, the reduction target set was not achieved.

C. difficile Performance 2018/19

A total of 65 cases of *C. difficile* were reported in 2018/19, so the challenging reduction target was not met. 35 of the cases were classified as healthcare-acquired or associated as they occurred more than 72 hours after admission to hospital (definition used by the PHA). However, this is not always an accurate predictor of being healthcare-associated. The remainder (30) were categorised as community-acquired as the patients presented with symptoms within a 72 hour period after admission.

GNB Performance 2018/19

A total of 49 healthcare-associated GNB cases were reported during 2018/19. Therefore, the reduction target was achieved, with a reduction of 2%.

NB: It has just come to the Infection Prevention & Control (IP&C) Team's notice that there is an error in HI-Surv, the PHA's web-based surveillance system used to record GNBs. This incorrectly categorised two GNBs from April 2018 as community-associated when they were actually healthcare-associated. This means the figures provided in previous reports were two fewer than in reality. The current report has been amended to reflect the correct number of

cases and the HI-Surv error has been referred to the PHA for rectification.

Incidents/ Outbreaks

Ward 32 ESU, Altnagelvin Hospital: Following a suspected outbreak of *C. difficile* (four patients with one already known positive [index case from the Royal Victoria Hospital; RVH]), all IP&C measures were put in place. Two patients returned the same ribotype, one of which was the already known positive patient transferred from RVH (the index case). Typing for the other patients was different. The ribotype for both these patients is not a prevalent ribotype for either the Western Trust or NI. Further fingerprint testing was unable to be carried out as the index case sample was from another trust. Therefore, transmission for one patient is likely and cannot be ruled out.

NNICU, Altnagelvin Hospital: Two babies tested positive for MRSA colonisation (bacteria on their body but not ill as a result of this) and a third baby transferred to RVH was positive on arrival (this baby was negative on admission to NNICU the day prior to transfer to RVH). All IP&C measures are in place and typing has been requested. IP&C practice audits are all compliant, all repeat screens of contact babies are negative and environmental screening is also negative. Continued surveillance and screening are ongoing.

2. *S. aureus* Bacteraemia Performance

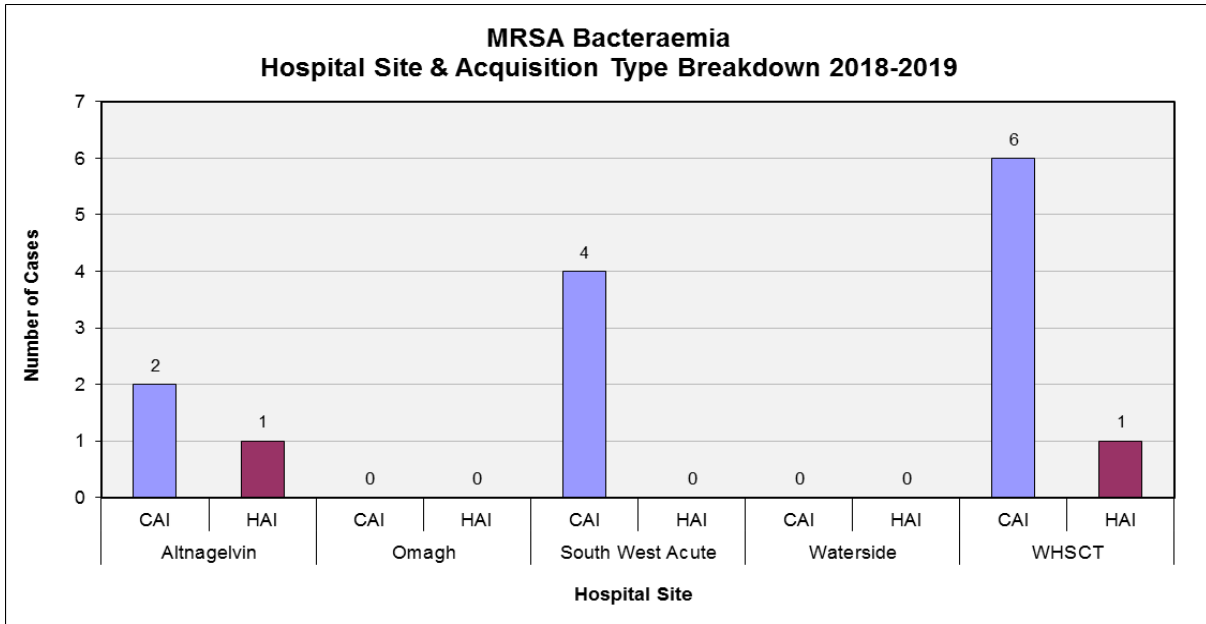
MRSA Bacteraemia

The 2018/19 reduction target for MRSA bacteraemia was five cases. In the year to the end of March 2019 seven MRSA bacteraemias were reported, six of which were categorised as community-associated. As such, the reduction target was not met and there was an increase of 75% compared to 2017/18.

The PHA has advised that community-associated infections will remain as part of the target/published figures. These cases are not related to the healthcare environment, which limits the Trust's ability to influence a reduction in numbers. All community-associated cases are, however, reviewed to ensure there has not been any healthcare intervention within the previous 48 hours. The PHA presents the number of cases according to the time of sampling following hospital admission; although, as stated by the PHA, this should not be taken as inferred attribution of infection (hospital or community).

A breakdown of the cases by hospital site and acquisition type is given in the chart below.

Key:
CAI Community-associated infection
HAI Hospital-associated infection

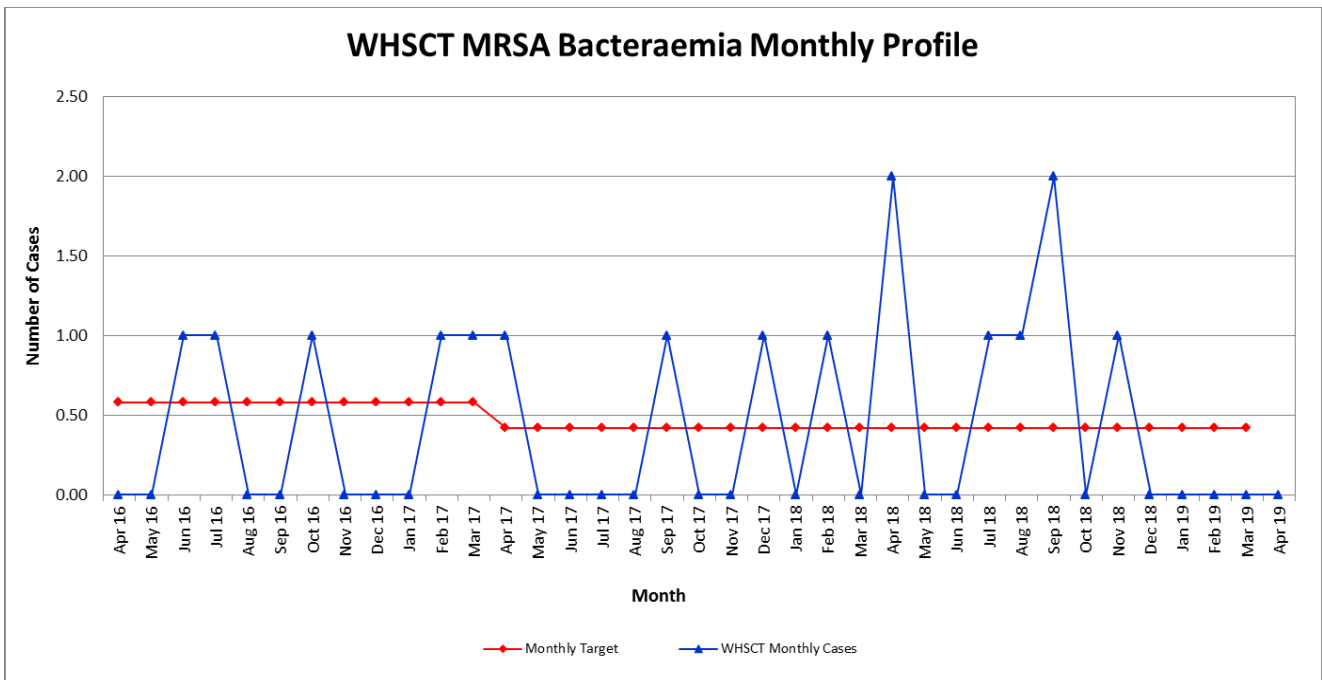


The new reduction target for 2019/20 has not yet been issued.

Since the beginning of April 2019 no new cases have been reported.

As of 19th April 2019, the total number of days since the last Trust hospital-associated MRSA bacteraemia is:

Altnagelvin – 165 days (Last recorded case was in Ward 42)
 South West Acute Hospital (SWAH) – 1161 days (Last recorded case was in Ward 8)
 Tyrone County Hospital/ Omagh Hospital &
 Primary Care Complex (OHPCC) – 1550 days (Last recorded case was in the Rehab Unit)



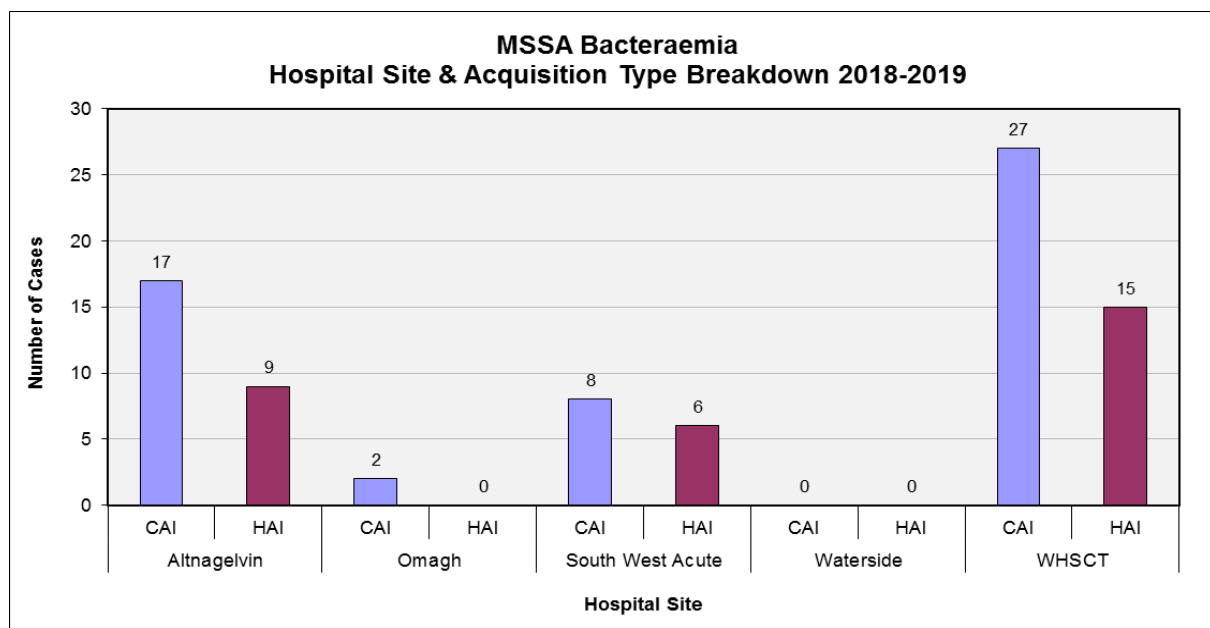
* The value for Apr 19 is subject to change as the report was compiled prior to the end of the month.

Meticillin-Sensitive Staphylococcus aureus (MSSA) Bacteraemia

There was no reduction target associated with MSSA bacteraemia for 2018/19, however surveillance remained mandatory. MSSA is part of the skin normal flora of approximately 25-30% of the well population. It is, therefore, more difficult to control endogenous (self) exposure, which is the reason for removing the target associated with this organism. The controls in place for MRSA will go some way to protect patients, but do not provide the same level of safeguard because of the ubiquitous nature of the organism.

In the year to the end of March 2019 a total of 42 MSSA bacteraemias were reported. A breakdown of the cases by hospital site and acquisition type is given in the chart below.

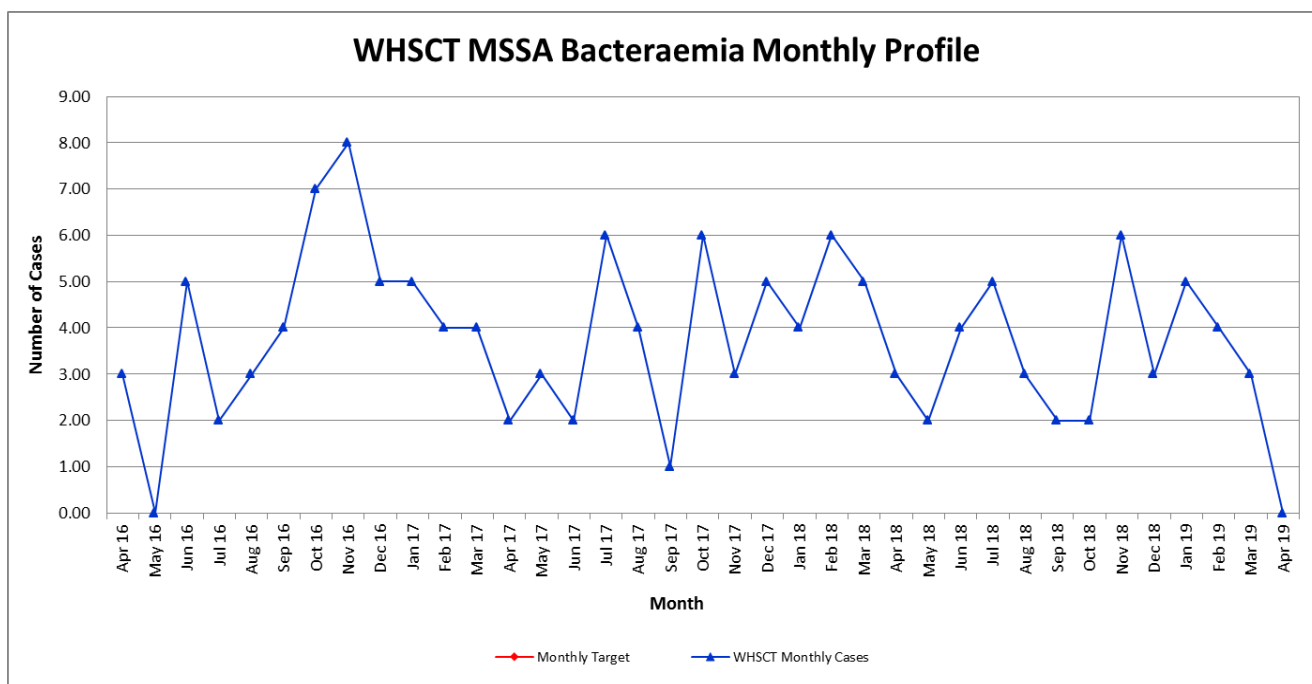
Key:
CAI Community-associated infection
HAI Hospital-associated infection



Since the beginning of April 2019 no new cases have been reported.

As of 19th April 2019, the total number of days since the last Trust hospital-associated MSSA bacteraemia is as follows:

Altnagelvin – 47 days	(Last recorded case was in Ward 24)
SWAH – 23 days	(Last recorded case was in Ward 3)
OHPCC – 550 days	(Last recorded case was in the Rehab Unit)



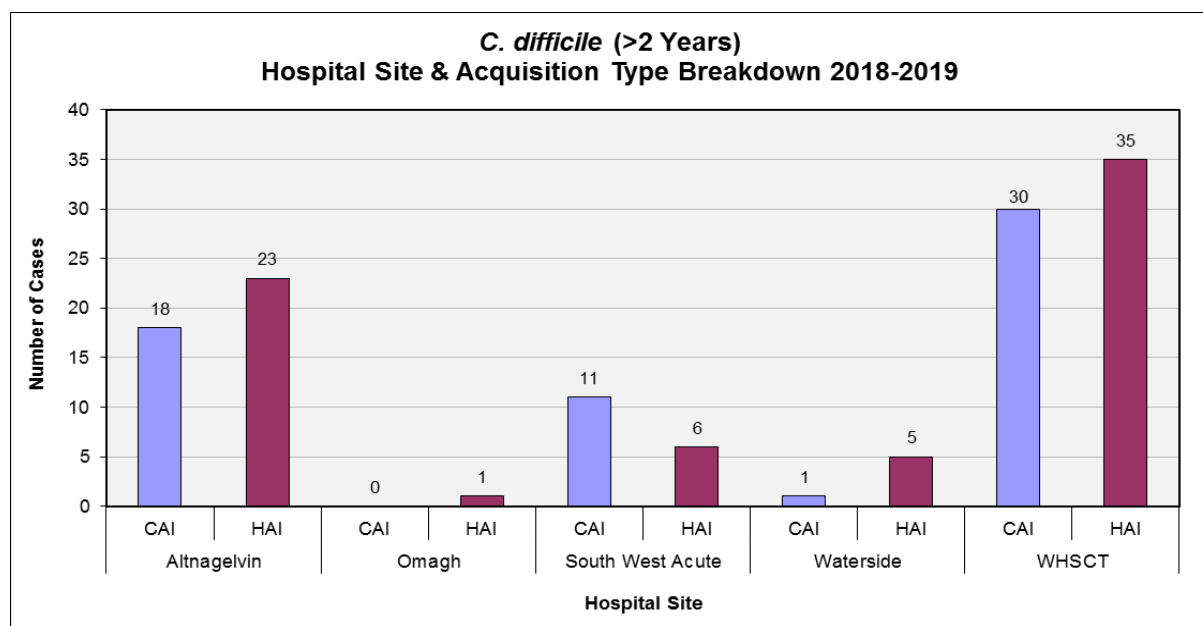
* The value for Apr 19 is subject to change as the report was compiled prior to the end of the month.

3. C. difficile Performance

The 2018/19 target for *C. difficile* (\geq two years) was 56 cases, which equates to a reduction of 12.5% on the baseline figure of 2017/18 (64 cases). This target was not met. In the year to the end of March 2019 the Trust actually reported 65 cases, with 30 of those being categorised as community-associated. That is an overall increase of 1.56% compared to the previous year and comprises a decrease in healthcare-associated infection cases of 2.78% versus an increase in community-acquired infection cases of 7.14%.

A breakdown of the cases by hospital site and acquisition type is given in the chart below.

Key:
CAI Community-associated infection
HAI Hospital-associated infection



A breakdown of the healthcare-associated cases by ward is given in the table below.

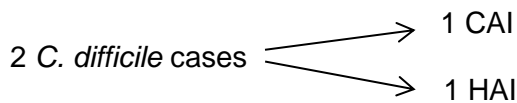
Hospital	Ward/ Department	Number of Cases
	Ward 2 TOU	3
	Ward 3	2
	Ward 5 EOU	1
	Ward 8 AHAN	1
	Ward 22 (former Ward 20)	3
	Ward 24 (former Ward 1)	2
	Ward 31	1
	Ward 32 ESU	5
	Ward 42	1
	Ward 44	1
	Ward 50	2
	ICU	1
	SWAH	Ward 2
Ward 6		2
Ward 9		1
OHPCC	Palliative Care	1
Waterside	Ward 1	2
	Ward 4	3

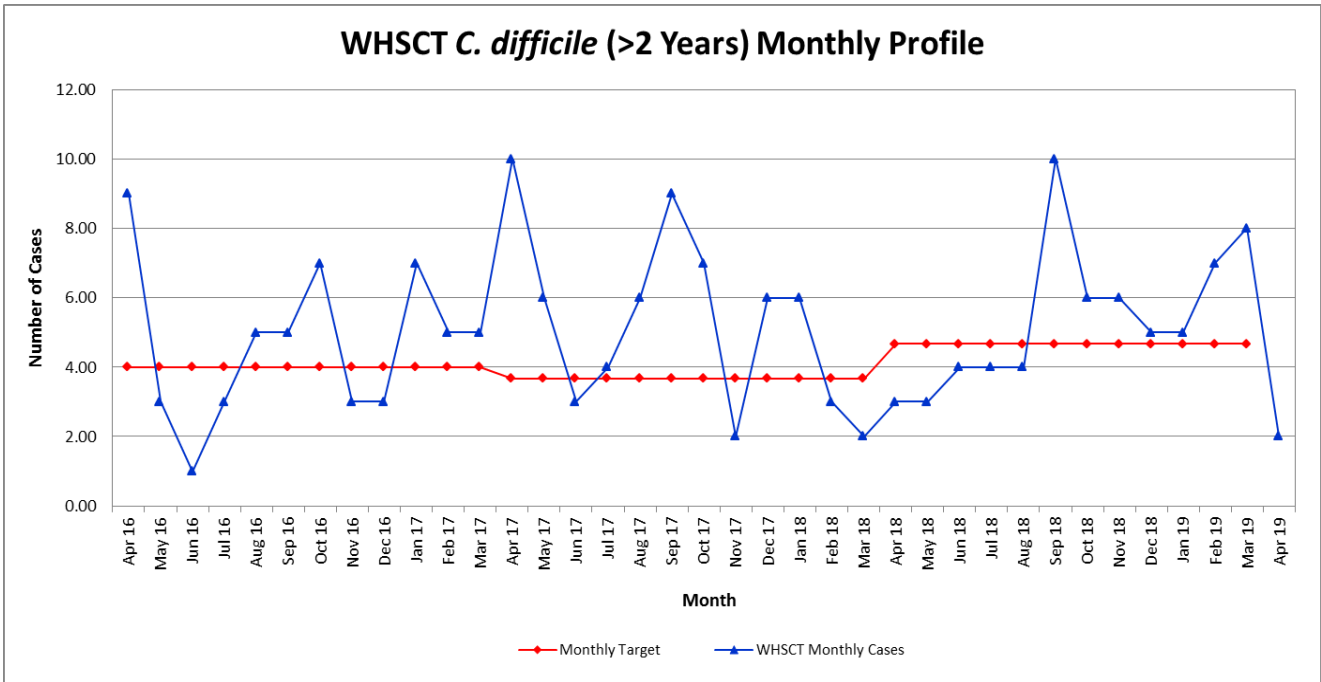
Preventable/ Non-Preventable

In respect of *C. difficile* cases occurring during 2018/19 a total of 34 root cause analyses (RCAs) have been conducted. The RCAs determined that five of the cases were preventable and 29 were non-preventable.

The new reduction target for 2019/20 has not yet been issued.

Since the last Report to Trust Board, which contained figures as at 27th March 2019, there have been two new cases of *C. difficile* (breakdown below). An RCA is pending for the HAI case.



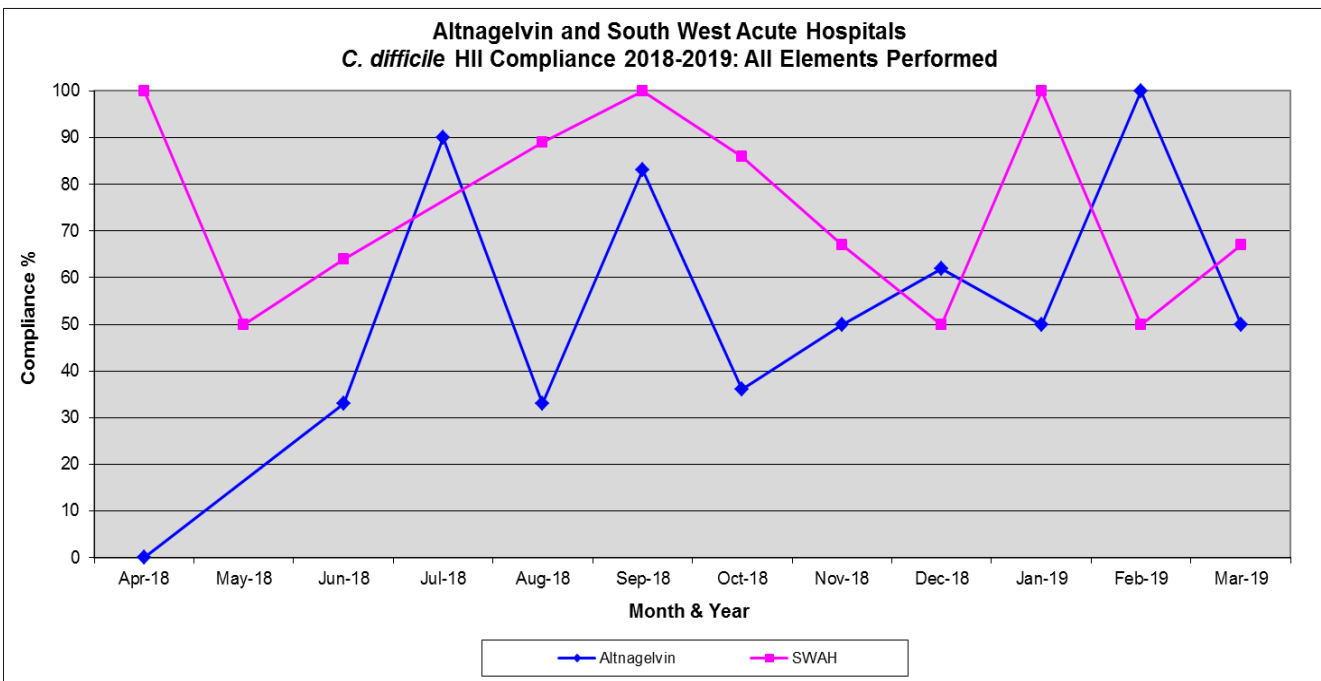


* The value for Apr 19 is subject to change as the report was compiled prior to the end of the month.

C. difficile Care Bundle and Care Pathway Audits

Evidence based care bundles are effective when all elements of care are performed consistently. Therefore, scores are represented as either Pass (100%) or Fail (anything less than 100%). Consistent compliance with the *C. difficile* care bundle remains a challenge. The findings indicate issues around prudent antimicrobial prescribing, environmental decontamination and isolation/ cohort nursing.

The graph below illustrates the overall compliance with all of the elements of the *C. difficile* high impact intervention (HII) care bundle for Altnagelvin and the SWAH.



4. Learning from Root Cause Analysis Process

RCA is a technique that helps answer the question of why an infection occurred in the first place. It seeks to identify the origin of the problem using a specific set of steps and tools to determine why it happened and to develop an action plan to reduce the likelihood of it happening again. Details of the learning from RCAs carried out during quarter four 2018 (October-December) follow.

C. difficile

15 *C. difficile* cases met the criteria for and were investigated by RCA within this period. 11 of the patients received antibiotics prescribed in hospital (three not appropriately), three received antibiotics prescribed by their GP (two not deemed appropriate by the RCA team) and eight patients were on proton pump inhibitors (PPIs). One of the patients had a previous history of Glutamate Dehydrogenase (GDH) and one had a previous history of *C. difficile* infection. Two of the cases were deemed to have been preventable.

The main causes of patients developing *C. difficile* associated diarrhoea were the use of antibiotics (nine patients), PPIs (three patients) and other reasons such as laxatives or other medication (three patients).

Examples of things that went wrong, identified during the RCA process, include:

- Delayed discharge due to the unavailability of an EMI bed and patient subsequently developed a hospital-acquired pneumonia.
- Patients not sampled within the appropriate timeframe.
- Patient was deemed medically fit for transfer to another hospital but then developed loose stools. The transfer went ahead without further review.
- Poor documentation, e.g. Bristol stool chart and urinary catheter care pathway.
- Off-guideline prescribing of antimicrobials.
- IP&C Team not informed that patient had a reoccurrence of *C. difficile*. Therefore, patient was not reviewed on *C. difficile* ward round and care was not audited until day 4 after symptoms returned.
- Incorrect labelling of a specimen. The positive result was, therefore, not reported by the Laboratory to the area which had sent it.
- Delay in isolating a patient.

MRSA Bacteraemia

One MRSA bacteraemia case met the criteria for and was investigated by RCA within this period. It was deemed to be preventable.

The root cause was likely a health care intervention involving a long-term urinary catheter. The catheter was discovered to be situated within the prostate and replacement was recommended. This was not actioned until two days later when a junior doctor deflated the balloon and advanced the catheter 10cm+ instead of replacing it using aseptic non-touch technique. The patient had a known history of MRSA but was not screened or commenced on chlorhexidine wash as per guidelines, so may have had skin colonisation when the catheter was advanced.

MSSA Bacteraemia

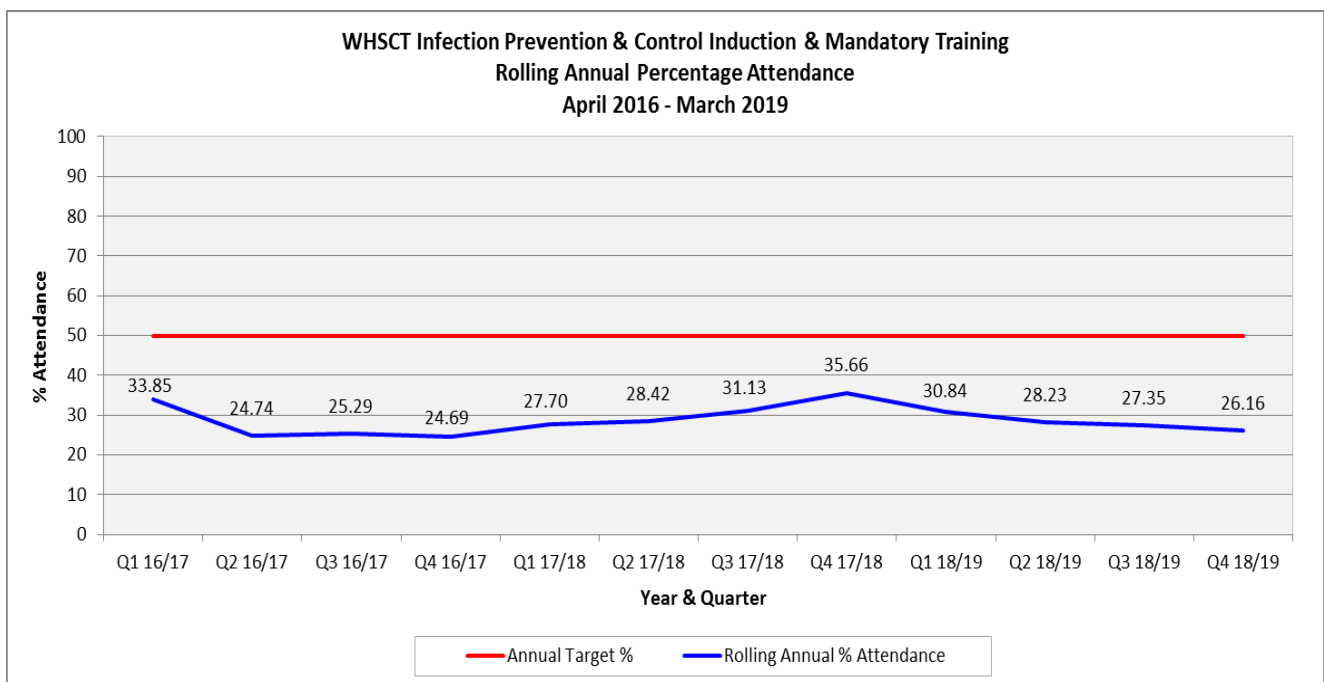
No RCAs of MSSA bacteraemia cases were carried out within this period.

5. Attendance at Infection Prevention & Control Training

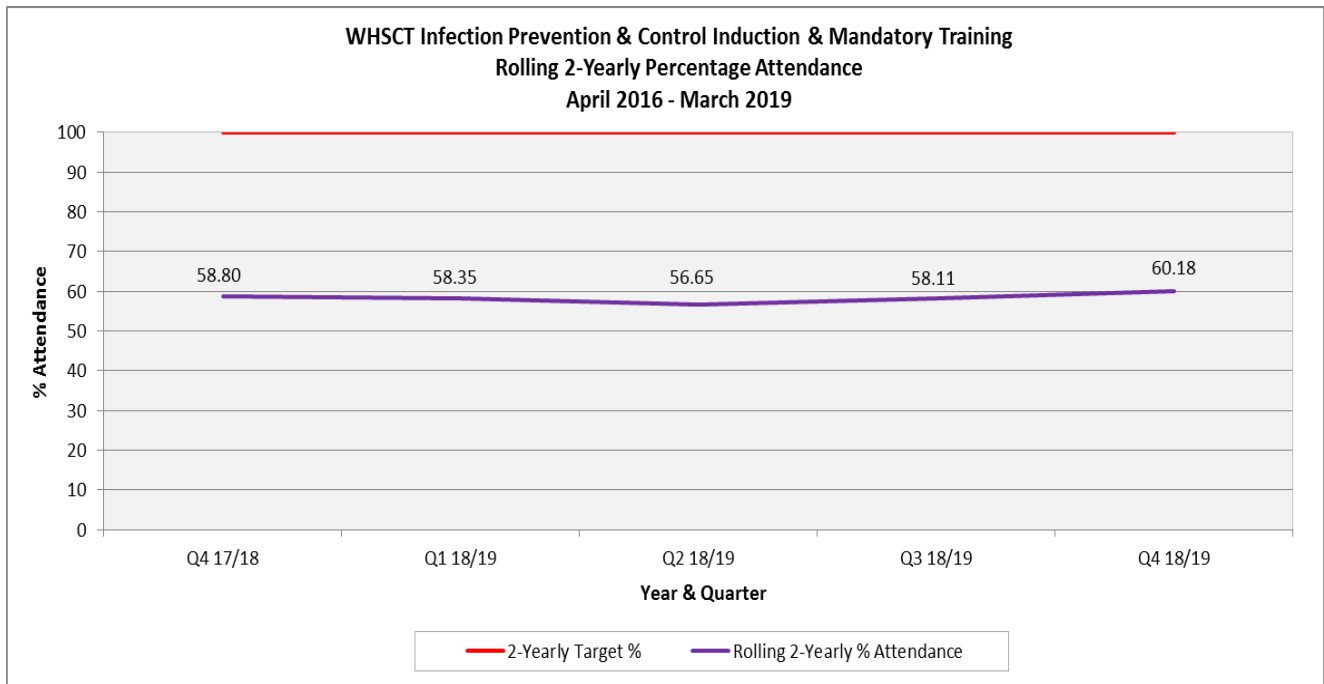
Induction/ Mandatory Training

93 Induction and Mandatory Training sessions were delivered by the IP&C Team during the period April 2018 to March 2019. That is an average of 1.94 sessions per week across the Trust. As of the end of March, 3545 staff had attended the training (1982 in the Northern Sector and 1563 in the Southern Sector).

The attendance target for each year is 50% of the total number of staff who require training. The actual attendance rate is 26.16% for the 12 months ending March 2019 – well below the required target. The regional e-learning programme is progressing well and this will support a new tiered structure for Mandatory IP&C Training with anticipated launch in September 2019.



As attendance at IP&C Training is required on a biennial basis, the attendance rate over a 24 month period has also been calculated. As of the end of March 2019 it is 60.18%.



Target attendance at IP&C Mandatory Training is included in Directorate IP&C Annual Improvement Plans and should be monitored through the Directorate Governance arrangements, as well as through the Chief Executive HCAI Accountability Forum.

6. Hand Hygiene Compliance

The Trust's overall self-reported hand hygiene scores are 85% when non-submission areas are included. These areas score an automatic 0%. 30 areas out of 193 applicable areas failed to submit scores for March 2019. They are as follows:

Altnagelvin – Ward 5 EOU, Ward 40, Cath Lab, Rheumatology, Emergency Department, Main Theatre 4, DESU Theatre 1, DESU Theatre 3, DESU Theatre 4, GUM Clinic, Pre-Op Assessment and Physiotherapy Outpatients

SWAH – Ward 1 MSAU, Ward 2, Labour Ward, Maternity Ward, Emergency Department, Cardiac Unit, Cardiac Investigations, Pre-Op Assessment and Physiotherapy Outpatients

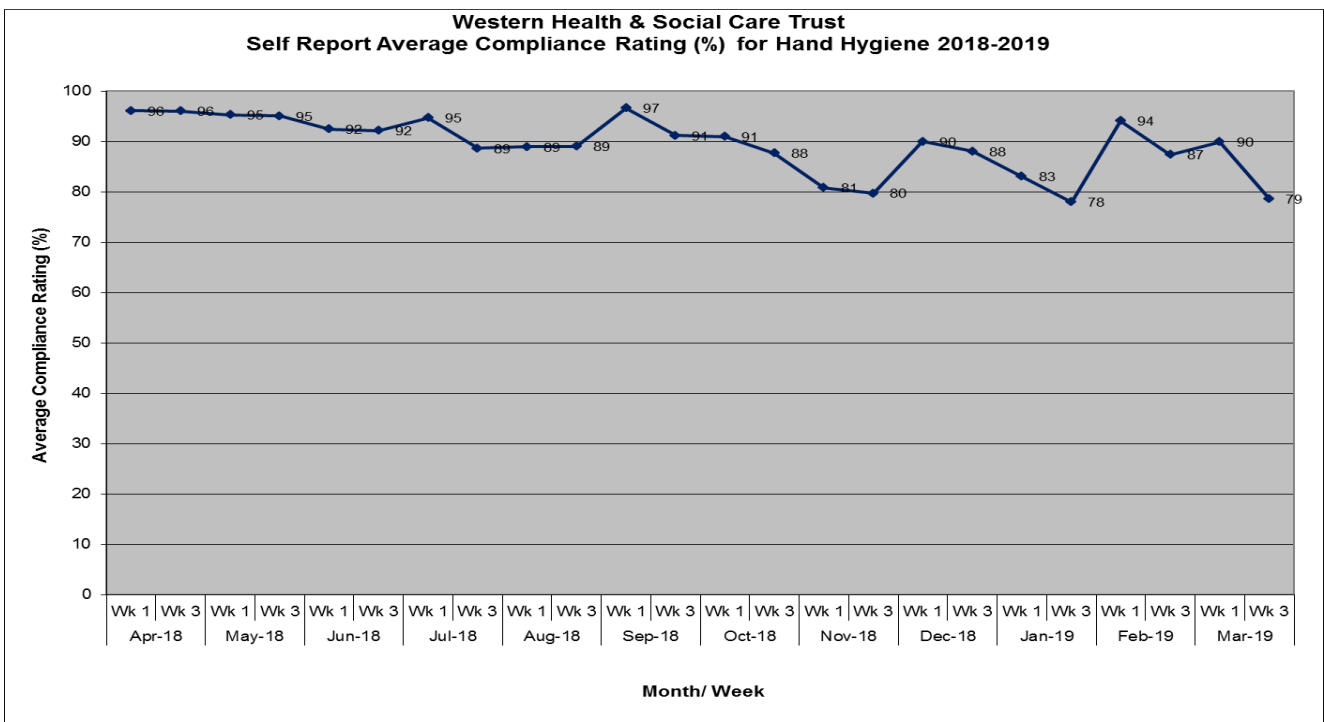
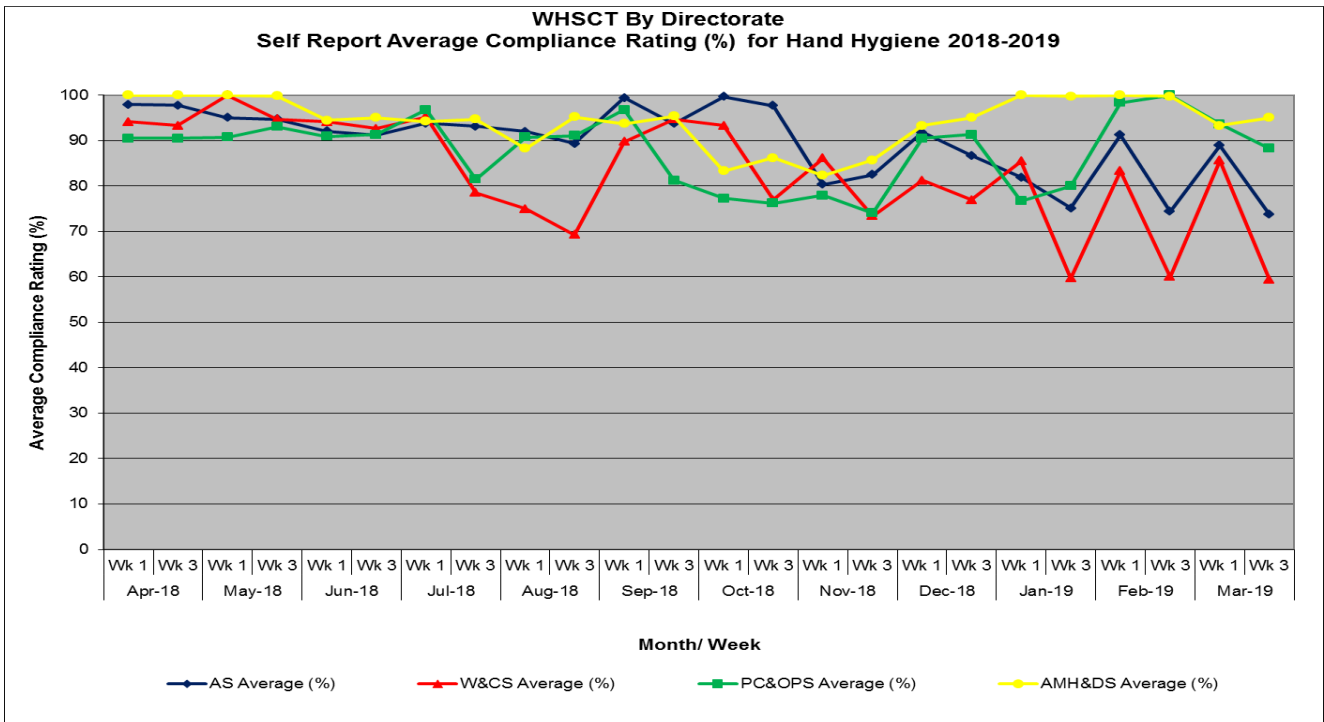
OHPCC – Cardiac Assessment Unit, Outpatients Department, Pre-Op Assessment and Physiotherapy Outpatients

Tyrone & Fermanagh Hospital – Lime Villa

Residential Homes –Thackeray Place Residential Home

Other Community – The Cottages Children's Respite, Avalon House and Crannog Intensive Treatment Team

Rheumatology, Main Theatre 4, DESU Theatre 1, DESU Theatre 3, DESU Theatre 4, GUM Clinic, Altnagelvin Emergency Department, SWAH Emergency Department, Altnagelvin Pre-Op Assessment, SWAH Pre-Op Assessment, OHPCC Pre-Op Assessment, Cardiac Investigations, Outpatients Department, Thackeray Place Residential Home, The Cottages Children's Respite, Avalon House and Crannog Intensive Treatment Team also did not submit scores for the previous month.



However, when adjusted for non-submission areas, the Trust’s overall self-reported hand hygiene scores improve to 100%.

The hand hygiene dashboard has been circulated to Directors for action through their governance arrangements.

It is important to note that scores from independent audits conducted by the IP&C Team and Lead Nurses tend to be lower than self-reported scores.