

Infection Prevention & Control Report to Trust Board

Meeting Date – 7th February 2019

1. Executive Summary

Reduction Targets

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

For Meticillin-Resistant *Staphylococcus aureus* (MRSA) bacteraemia, the Trust's target is five cases. That is the same target as was required last 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 is 56; a reduction of eight cases or 12.5% compared to last year.

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

As of 2018/19 the DoH NI has introduced targets for reducing healthcare-associated GNBs, specifically *Escherichia coli*, *Klebsiella species* and *Pseudomonas aeruginosa*. The Western Trust is 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%.

Current MRSA Bacteraemia Performance

Since the beginning of April 2018 seven MRSA bacteraemia cases have been reported. Six are 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 is classified as healthcare-associated as it occurred more than 48 hours after admission.

Current *C. difficile* Performance

So far this year 48 cases of *C. difficile* have been reported. 27 of the cases are 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 (21) are categorised as community-acquired as the patients presented with symptoms within a 72 hour period after admission.

Current GNB Performance

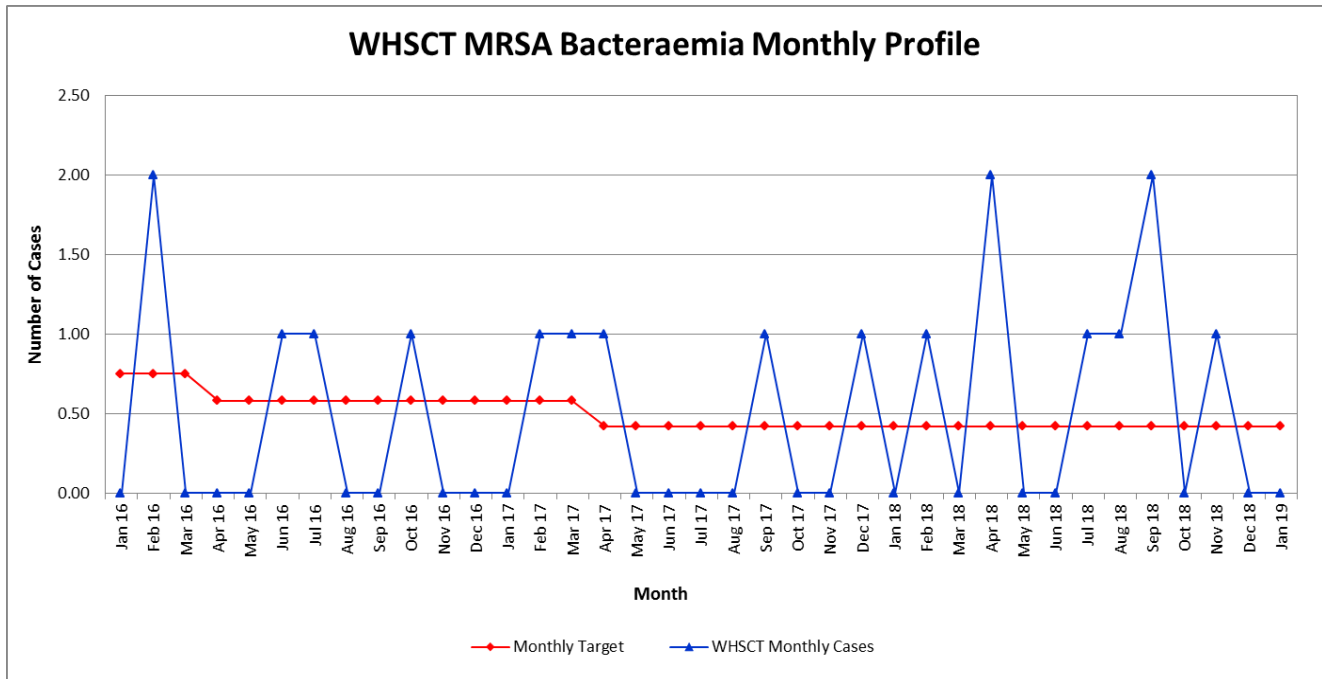
As of 24th January 2019, 38 healthcare-associated GNB cases have been reported. Therefore, the Trust is currently on track to meet the target, with a cumulative reduction of 8.81%.

2. S. aureus Bacteraemia Performance

MRSA Bacteraemia

The 2018/19 reduction target for MRSA bacteraemia is five cases.

So far this year the Trust has reported seven cases, six of which are categorised as community-associated. As such, the reduction target set has been exceeded, with an increase of 75% compared to last year, and cannot now be achieved.



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

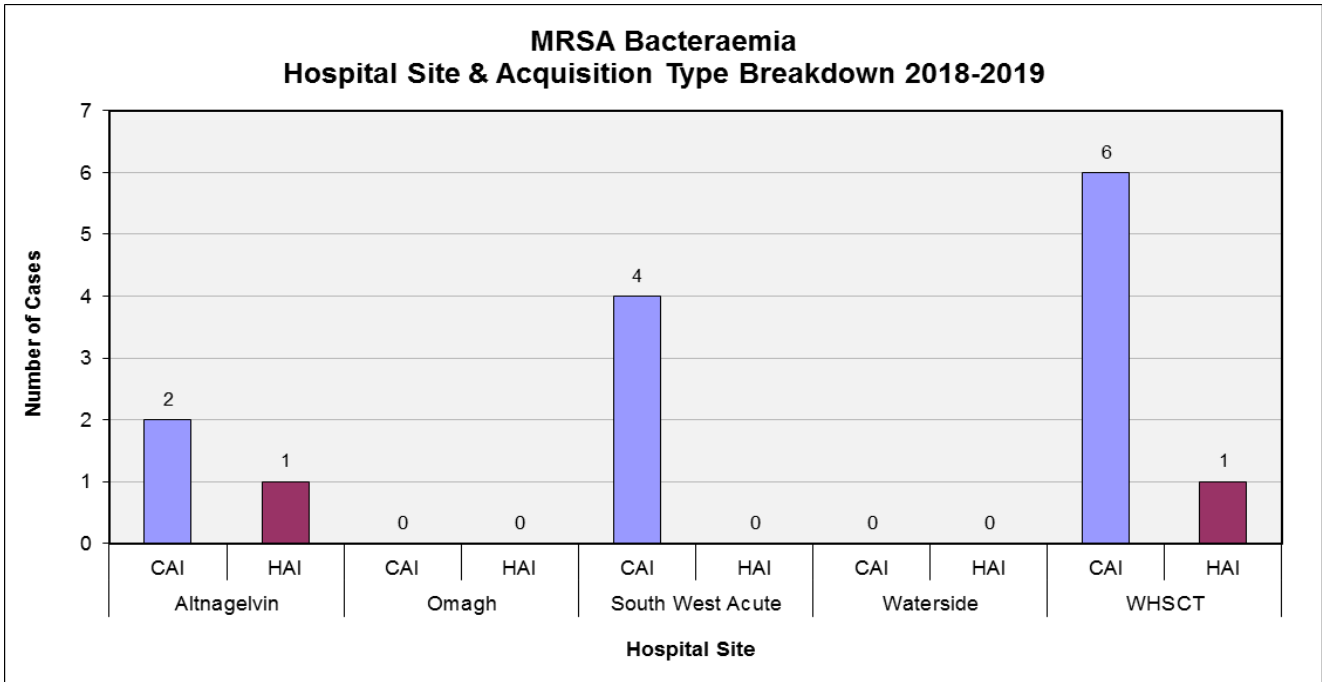
As of 24th January 2019, the total number of days since the last Trust hospital-associated MRSA bacteraemia is:

Altnagelvin Hospital – 80 days	(Last recorded case was in Ward 42)
South West Acute Hospital (SWAH) – 1076 days	(Last recorded case was in Ward 8)
Tyrone County Hospital/ Omagh Hospital & Primary Care Complex (OHPCC) – 1465 days	(Last recorded case was in the Rehab Unit)

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

Key:

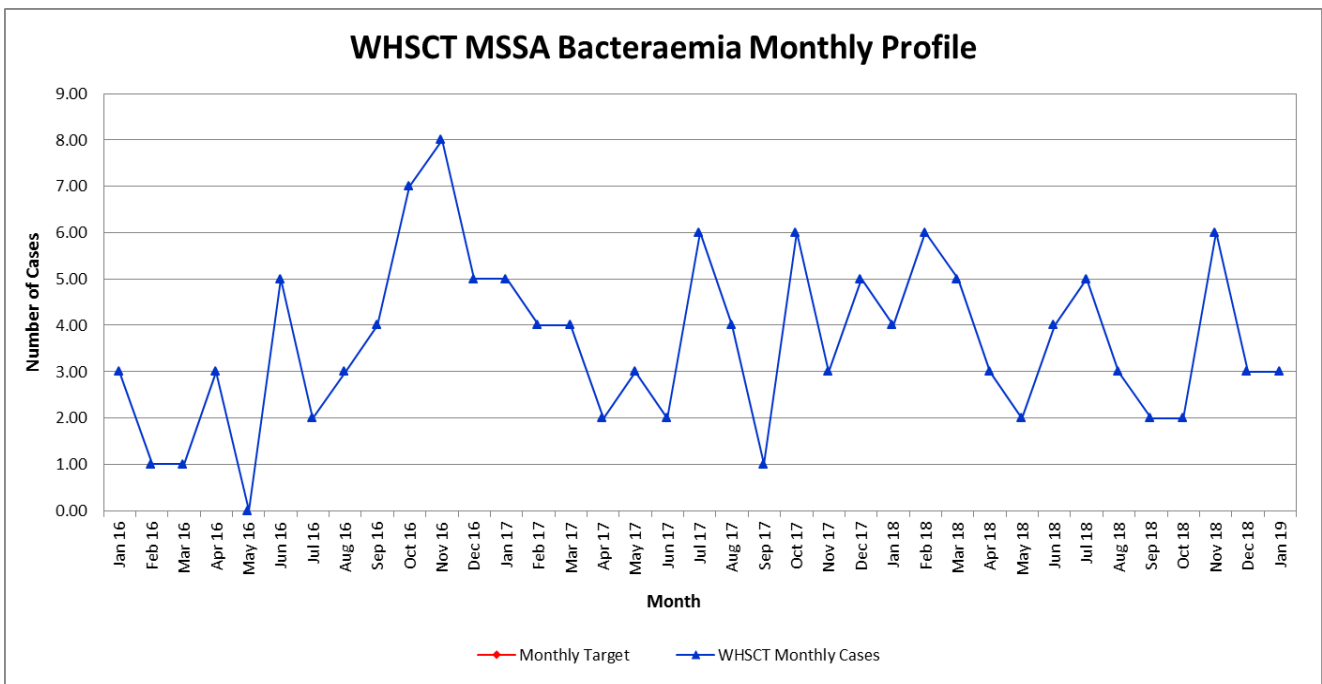
CAI Community-associated infection
HAI Hospital-associated infection



Meticillin-Sensitive Staphylococcus aureus (MSSA) Bacteraemia

There is no reduction target associated with MSSA bacteraemia for 2018/19, however surveillance remains 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.

So far this year the Trust has reported 33 cases.



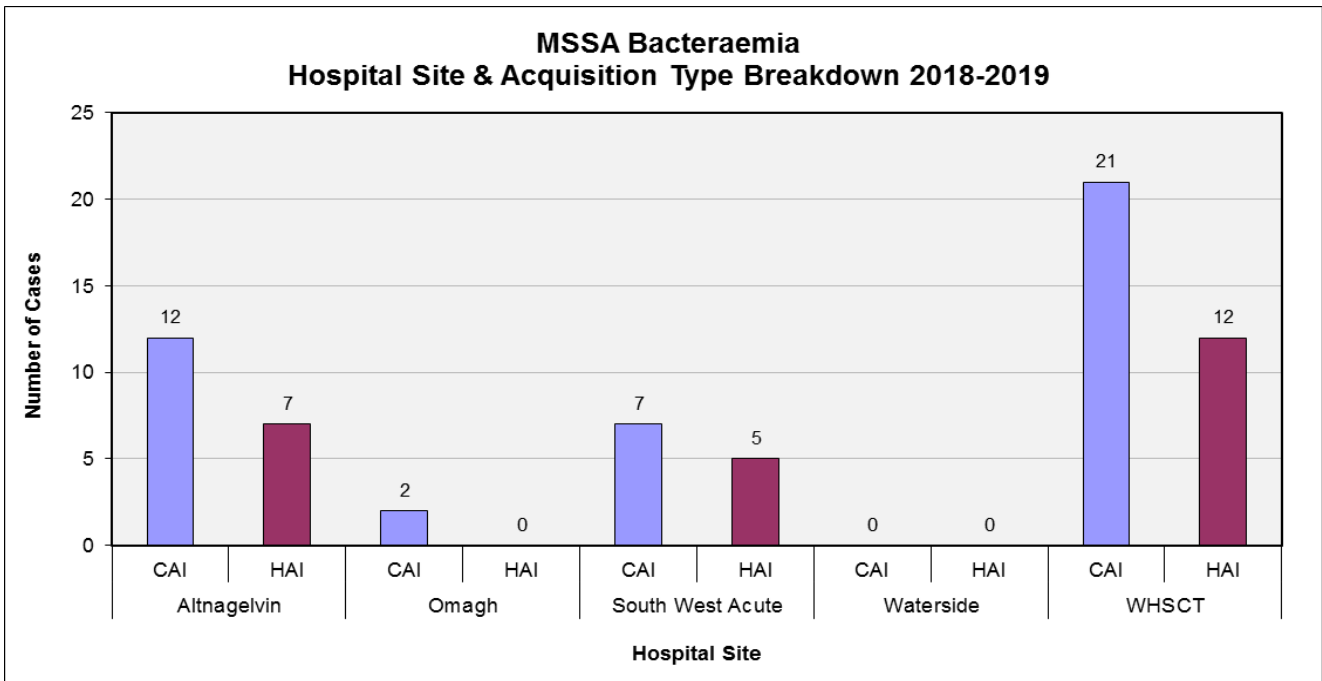
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Since the beginning of April 2018 12 cases have been categorised as Trust hospital-associated. As of 24th January 2019, the total number of days since the last Trust hospital-associated MSSA bacteraemia is as follows:

Altnagelvin – 35 days (Last recorded case was in HDU)
 SWAH – 8 days (Last recorded case was in ICU)
 OHPCC – 465 days (Last recorded case was in the Rehab Unit)

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

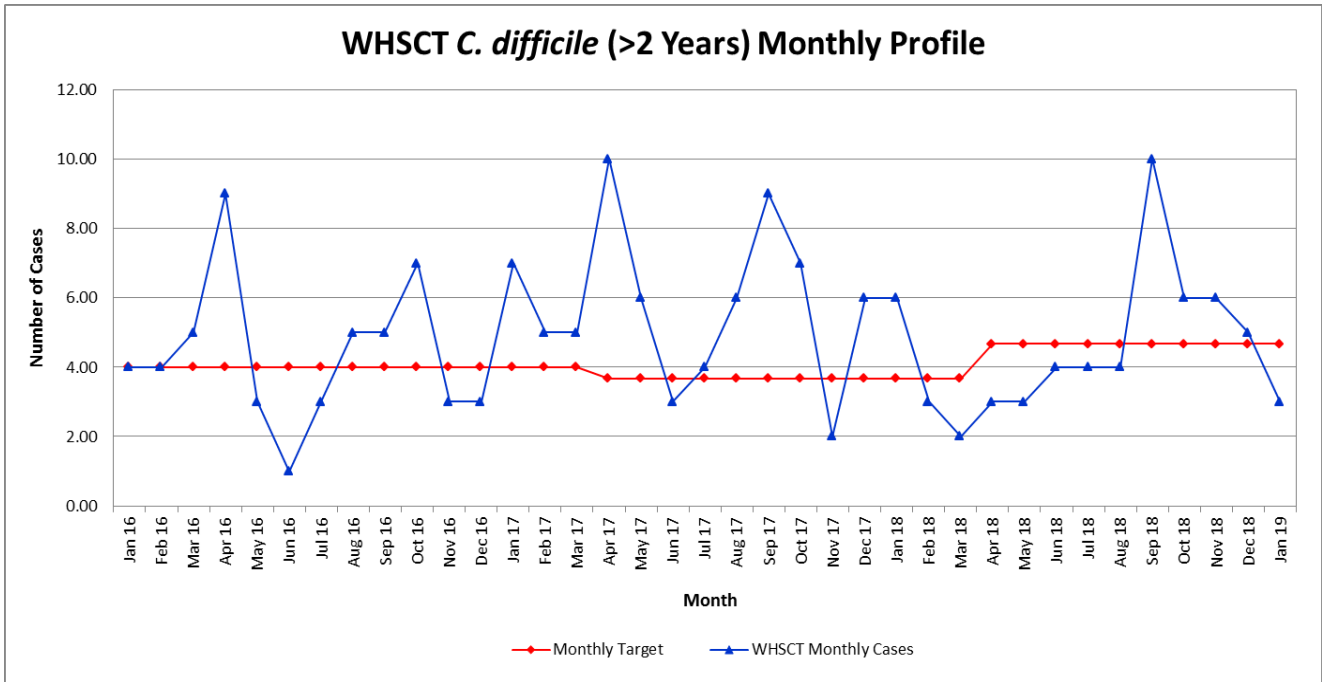
Key:
 CAI Community-associated infection
 HAI Hospital-associated infection



3. C. difficile Performance

The 2018/19 target for *C. difficile* (\geq two years) is 56 cases, which equates to a reduction of 12.5% on the baseline figure of 2017/18 (64 cases).

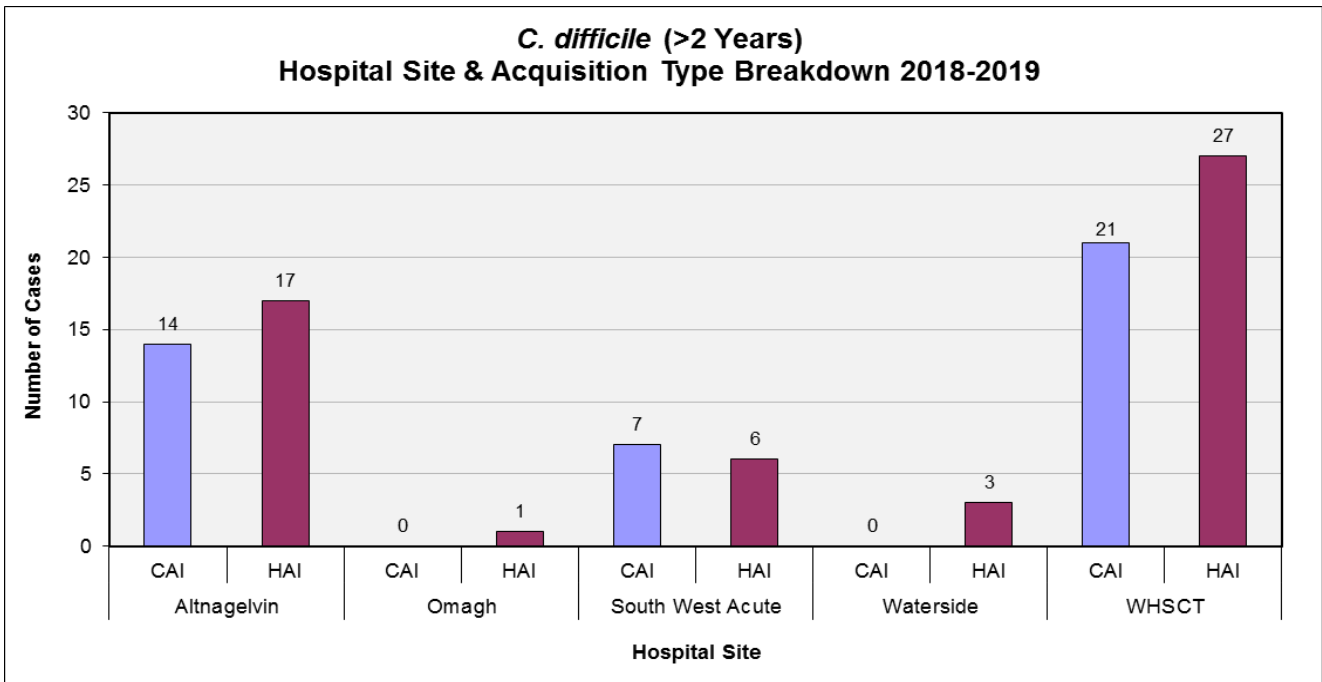
As of 24th January 2019, 48 cases have been reported, with 21 of those being categorised as community-associated. Therefore, the Trust is currently off profile, with a cumulative decrease of just 9.99% compared to 2017/18. This comprises a decrease in healthcare-associated infection cases of 10% versus a decrease in community-acquired infection cases of 9.99%.



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

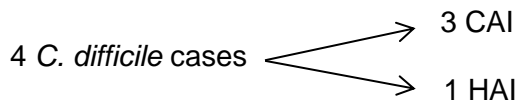
Key:
CAI Community-associated infection
HAI Hospital-associated infection



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

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

Since the last Report to Trust Board, which contained figures as at 28th December 2018, there have been four new cases of *C. difficile* (breakdown below). An RCA is pending for one of these cases (the HAI one).



Preventable/ Non-Preventable

Since the beginning of April 2018 a total of 29 RCAs have been conducted regarding *C. difficile*. The RCAs determined that five of the cases were preventable and 24 were non-preventable.

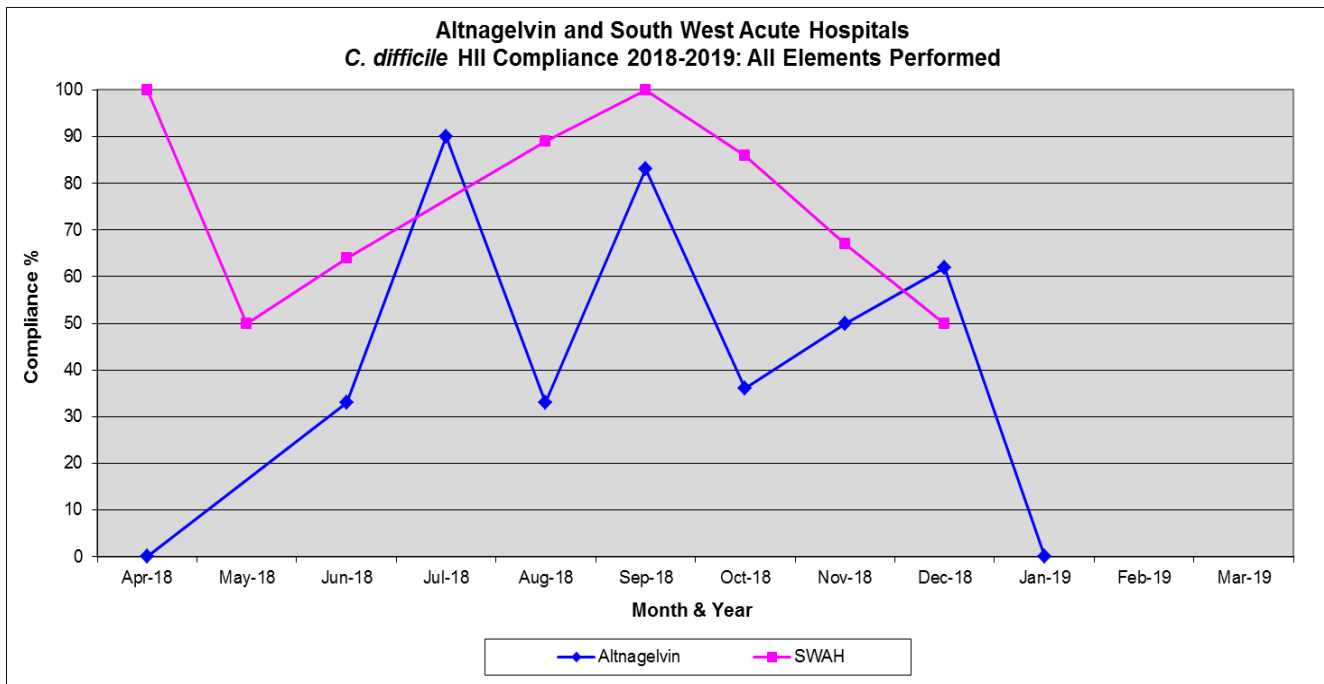
***C. difficile* Care Bundle and Care Pathway Audits**

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 antibiotic prescribing, environmental decontamination and isolation/ cohort nursing.

The dashboard below summarises the performance of wards/ departments audited by the Infection Prevention & Control (IP&C) Team since May 2018. On occasion more than one audit may be completed during the month for a particular ward/ department and an average score is shown below, marked (A).

		May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19
Ward 1, Alt	Care Bundle		50%	50%		50%	100%			
	Care Pathway					Pass	Pass			
Ward 2 TOU, Alt	Care Bundle							50%		
	Care Pathway							Pass		
Ward 3, Alt	Care Bundle		50%						60%	
	Care Pathway								Fail	
Ward 5 EOU, Alt	Care Bundle						67%			
	Care Pathway						Fail			
Ward 8 AHAN, Alt	Care Bundle						33%			
	Care Pathway						Pass			
Ward 20, Alt	Care Bundle				0%				100%	
	Care Pathway				Pass				Pass	
Ward 31, Alt	Care Bundle		0%		100%		50%			
	Care Pathway				Pass		Fail			
Ward 32 ESU, Alt	Care Bundle				33%		0%	0%	25% (A)	
	Care Pathway			Fail			Pass	Fail	Pass x 2	
Ward 40, Alt	Care Bundle									0%
	Care Pathway									Fail
Ward 41 AMU, Alt	Care Bundle			100%		100%				
	Care Pathway									
Ward 42, Alt	Care Bundle				0%				100%	
	Care Pathway								Pass	
ICU/ HDU, Alt	Care Bundle			100% (A)		100%	0% (A)	100%		
	Care Pathway					Pass	Pass x 2	Pass		
Ward 1 MSAU, SWAH	Care Bundle		0%				100%			
	Care Pathway		Pass				Pass			
Ward 2, SWAH	Care Bundle		80%			100%		33%	50%	
	Care Pathway		Pass			Pass		Pass	Fail	
Ward 5, SWAH	Care Bundle		100%							
	Care Pathway		Pass							
Ward 6, SWAH	Care Bundle		75%		67%		71% (A)	100%		
	Care Pathway		Fail		Pass		Pass x 2	Pass		
Ward 7, SWAH	Care Bundle				100%					
	Care Pathway				Pass					
Ward 8, SWAH	Care Bundle				100%					
	Care Pathway				Pass					
Ward 9, SWAH	Care Bundle	50% (A)					100%			
	Care Pathway	Pass x 2					Pass			
Rehabilitation Unit, OHPCC	Care Bundle					75%				
	Care Pathway					Pass				

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 three 2018 (July-September) follow.

C. difficile

11 *C. difficile* cases met the criteria for RCA investigation within this period. All 11 RCAs have been completed. Nine of the patients received antibiotics prescribed in hospital, two received antibiotics prescribed by their GP and 10 patients were on proton pump inhibitors. Five of the patients had a previous history of Glutamate Dehydrogenase (GDH) and three had a previous history of *C. difficile* infection. None of the cases were deemed to have been avoidable.

The main causes of patients developing *C. difficile* associated diarrhoea were:

- Appropriate use of antibiotics to treat infection, e.g. chest infection/ pneumonia, urinary tract infection (UTI).
- Altered gut flora secondary to reduced oral intake and secondary to chemotherapy required to treat lymphoma. The patient also received laxatives due to constipation as a result of analgesia required for pain associated with lymphoma.
- Recent hospital admissions (in the Western Trust and another trust) prior to the current one and received antibiotic treatment in both trusts. The patient had poor nutritional status/ intake and was previously GDH positive.
- Unknown acquisition of *C. difficile*. The patient had a previous history of *C. difficile* ribotypes 078 and 027, current ribotype 015. Not a known contact of *C. difficile*. Multiple hospital admissions with risk factors for *C. difficile* having received antibiotics for a chest infection deemed to be appropriate at RCA.
- *C. difficile* infection may have been progressed by the use of an intravenous broad spectrum antibiotic (only one dose prior to developing diarrhoea). The prescription was

not in keeping with the Trust's antibiotic guidelines. The patient was empirically treated for UTI/ community-acquired pneumonia.

- The patient self-administered IM injections for back pain prescribed by a G.P, which caused a gram-positive bacteraemia. This led to the repeat of an aortic valve replacement and receipt of appropriate antibiotics to treat the bacteraemia. This in turn caused *C. difficile* associated diarrhoea.

MRSA Bacteraemia

Three MRSA bacteraemia cases met the criteria for RCA investigation within this period. All three RCAs have been completed and all cases were deemed to be preventable.

The main root cause findings were:

- The patient was colonised with MRSA. There was a delay in actioning this result and incorrect decolonisation treatment was prescribed. The patient had a pressure sore, which was the entry point for the MRSA bacteraemia.
- Two cases were agreed to be contaminants of unknown origin, not true bacteraemias. There was a lack of traceability on the laboratory request forms regarding which staff members took the samples. Both patients attended the same department on the same day within hours of each other.

MSSA Bacteraemia

Three MSSA bacteraemia cases met the criteria for RCA investigation within this period. All three RCAs have been completed. One case was deemed to be preventable.

The main root cause findings were:

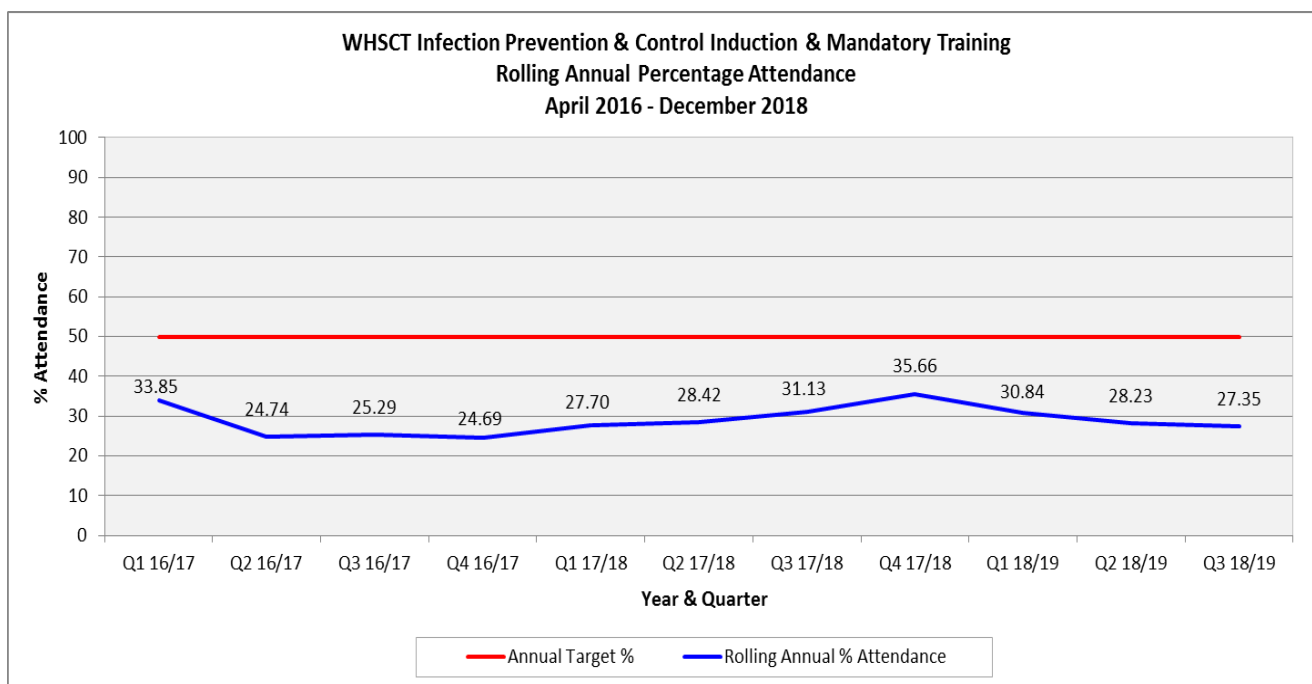
- Unreported falls, deterioration in physical state with increased risk of injury to soft tissue; buttonhole site. The likely entry point was the buttonhole site.
- Septic arthritic knee. The patient presented with a painful and swollen knee three days after an arthroscopy procedure.
- Central line infection leading to a bacteraemia. The vascath tip was positive and around the site was positive for *Staphylococcus aureus* the day before the blood cultures were taken. Due to patient's medical condition he was confused and very restless and he removed three venflons himself.

5. Attendance at Infection Prevention & Control Training

Induction/ Mandatory Training

68 Induction and Mandatory Training sessions were delivered by the IP&C Team during the period April to December 2018. That is an average of 1.89 sessions per week across the Trust. As of the end of December, 2518 staff have attended the training (1430 in the Northern Sector and 1088 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 27.35% for the 12 months ending December 2018 – well below the required target.



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.

The WHSCT has tried to benchmark attendance performance with other trusts but as yet there has been no response.

6. New and Updated Infection Prevention & Control Guidance

The following guidance was approved by the Chief Executive HCAI Accountability Forum in January 2019. It was an update of an existing document.

- Protocol for Identifying, Eliminating or Managing Built Environment Infection Control Risks During Planning, Construction, Renovation and Demolition Projects in Healthcare

