Western Health and Social Care Trust

Infection Prevention & Control Report to Trust Board

Meeting Date – 1st November 2018

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 six MRSA bacteraemia cases have been reported. All are categorised as community-associated as they occurred less than 48 hours after admission to hospital (definition used by the Public Health Agency [PHA]).

Current *C. difficile* Performance

So far this year 33 cases of *C. difficile* have been reported. 17 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 (16) are classified as community-acquired as the patients presented with symptoms within a 72 hour period after admission.

Current GNB Performance

So far this year 29 healthcare-associated GNB cases have been reported. Therefore, the Trust is currently off profile, with a cumulative reduction of just 0.57%.

Increased Incidence/ Outbreak of Glycopeptide-Resistant Enterococci (GRE) in ICU/ HDU, Altnagelvin

There have been a total of six positive cases of GRE in ICU/ HDU, Altnagelvin, since the end of July 2018. Typing for four of the cases (one further typing is awaited) is EC-14, indicating possible transmission. EC-14 was the predominant strain of GRE (12 cases) identified in a previous outbreak during 2017. The Infection Prevention & Control (IP&C) Team have been providing support and carrying out audits in relation to IP&C practice. Compliance has been suboptimal regarding hand hygiene, isolation precautions and decontamination of patient

care equipment. Department improvement plans are in place and improvement in IP&C practices has been noted this week. Admission and weekly screening of patients for GRE in ICU/ HDU is to commence on 29th October 2018 for a period of one month to ascertain the prevalence of GRE in patients admitted to the unit. A further incident meeting is to be convened on the return of the last typing result.

MRSA in ICU, Altnagelvin

During September 2018, two patients were identified in ICU, Altnagelvin, with MRSA colonisation. These have been returned as indistinguishable fingerprinting, also suggesting person to person transmission.

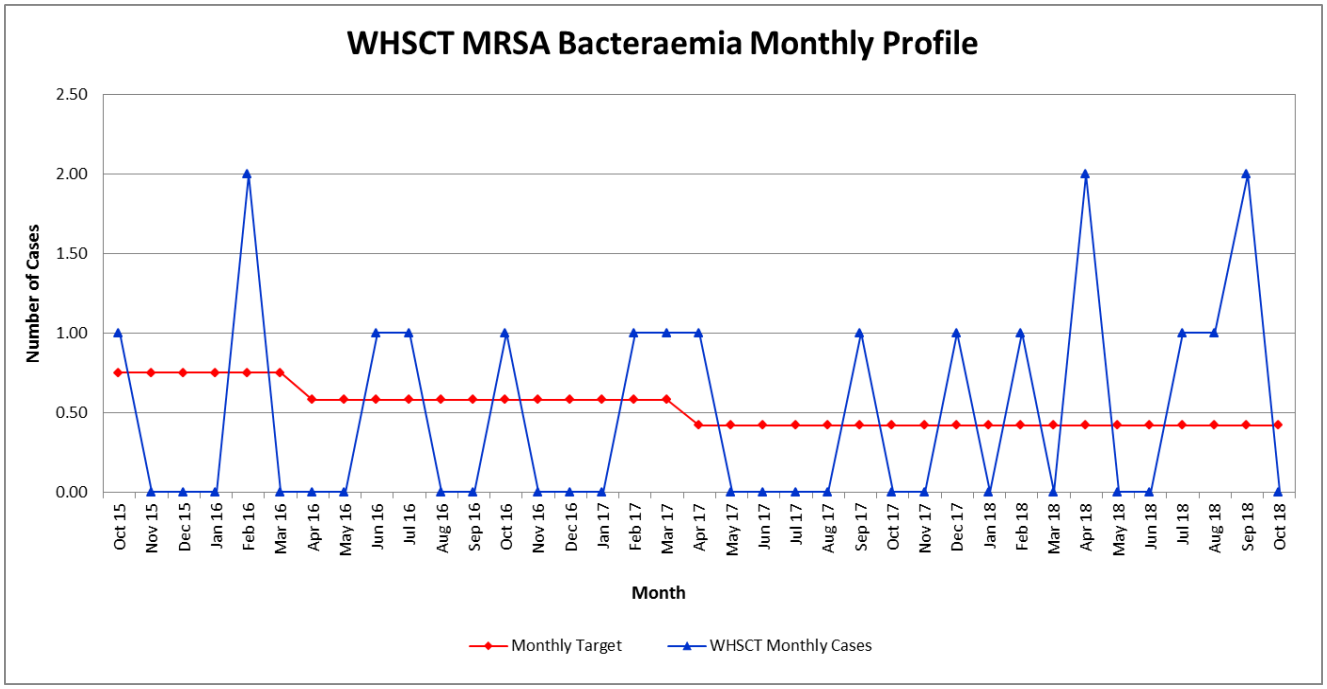
2. *S. aureus* Bacteraemia Performance

MRSA Bacteraemia

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

So far this year the Trust has reported six cases, all of which are categorised as community-associated. As such, the reduction target set has been exceeded, with an increase of 50% compared to last year, and cannot now be achieved.

The two most recent bacteraemia cases have been investigated by root cause analysis (RCA). The MRSAs identified have been typed and further fingerprinting has found that the isolates are identical and indicate person to person transmission. The blood cultures were both taken in the Emergency Department, South West Acute Hospital (SWAH), within four hours of each other. The RCAs have determined that these two cases were most likely contaminants and not clinically significant organisms. A range of other skin contaminants were also identified in the blood cultures in both cases, both patients were screened and not colonised with MRSA, plus the clinical presentation and response to treatment were not consistent with MRSA bacteraemia. This suggests there was suboptimal practice employed by the staff who took the blood cultures. A number of actions and learning have been identified to be taken forward within the department.



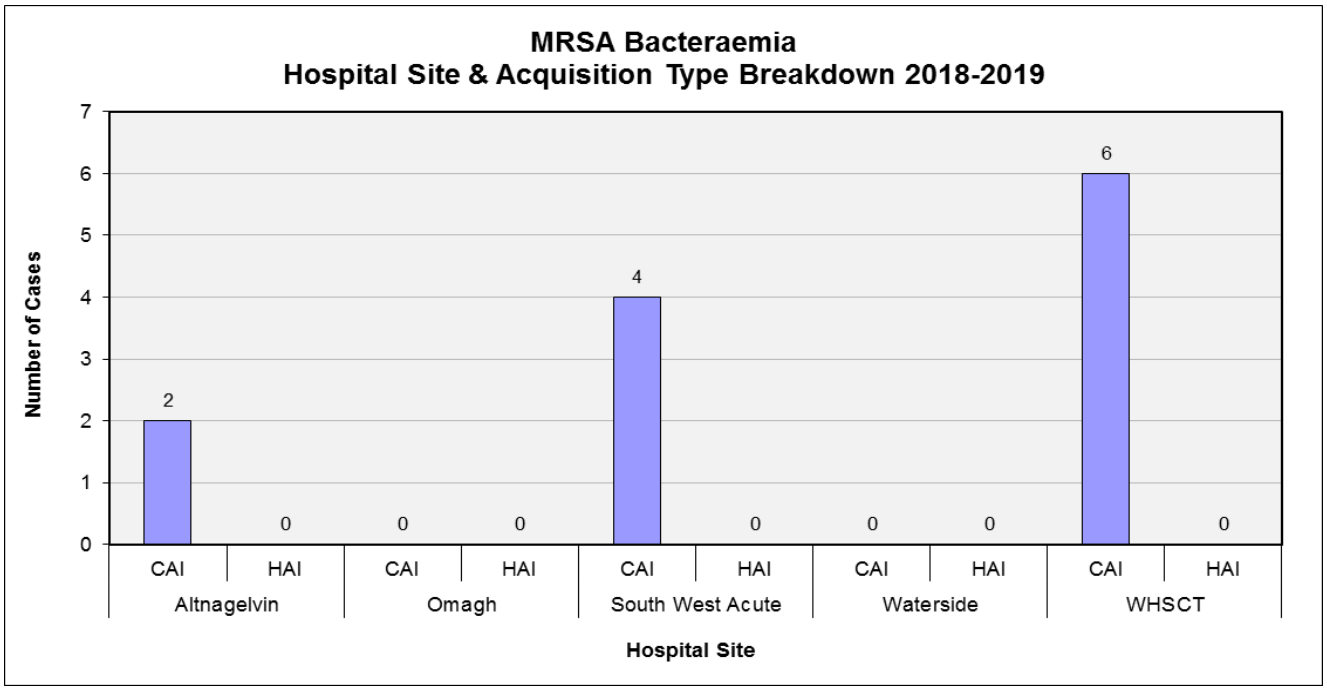
***** *The value for Oct 18 is subject to change as the report was compiled prior to the end of the month.*

As of 25th October 2018, the total number of days since the last Trust hospital-associated MRSA bacteraemia is:

Altnagelvin Hospital – 1149 days (Last recorded case was in Ward 4)
SWAH – 985 days (Last recorded case was in Ward 8)
Tyrone County Hospital/ Omagh Hospital &
Primary Care Complex (OHPCC) – 1374 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.

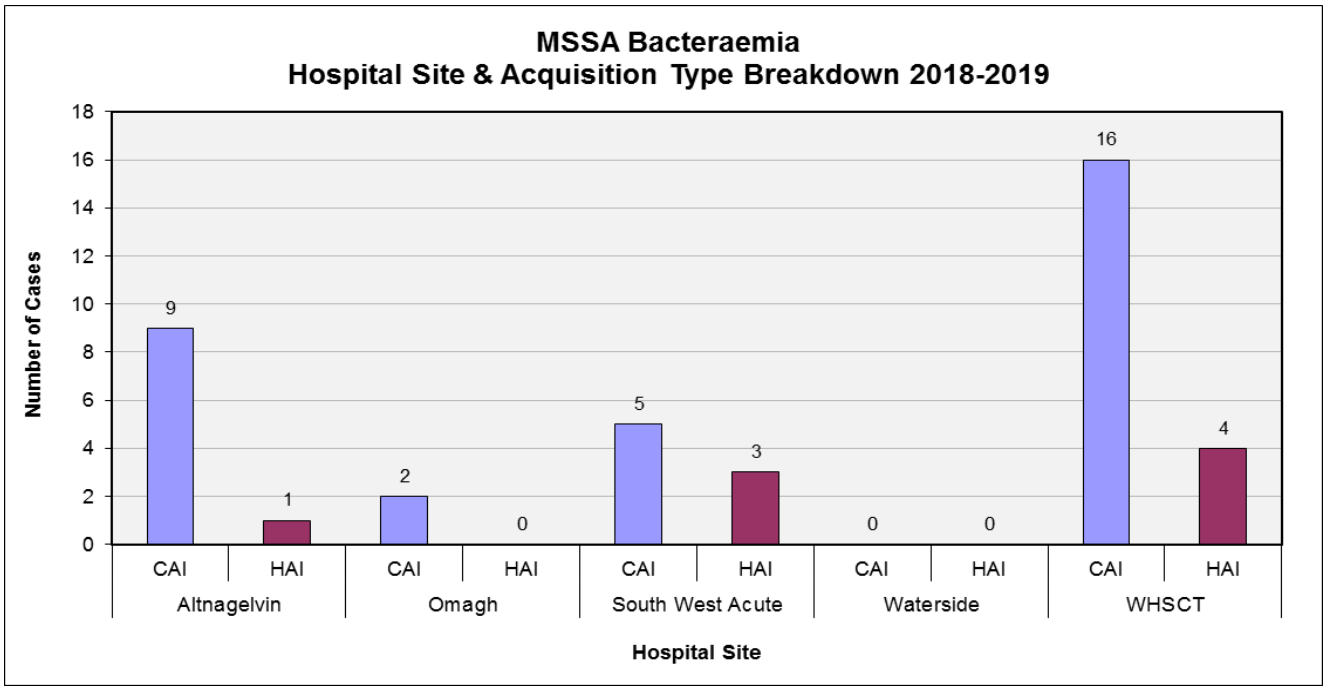
So far this year the Trust has reported 20 cases.

Since the beginning of April 2018 four cases have been categorised as Trust hospital-associated. As of 25th October 2018, the total number of days since the last Trust hospital-associated MSSA bacteraemia is as follows:

Altnagelvin – 106 days (Last recorded case was in Ward 5 EOU)
SWAH – 57 days (Last recorded case was in ICU)
OHPCC – 374 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.

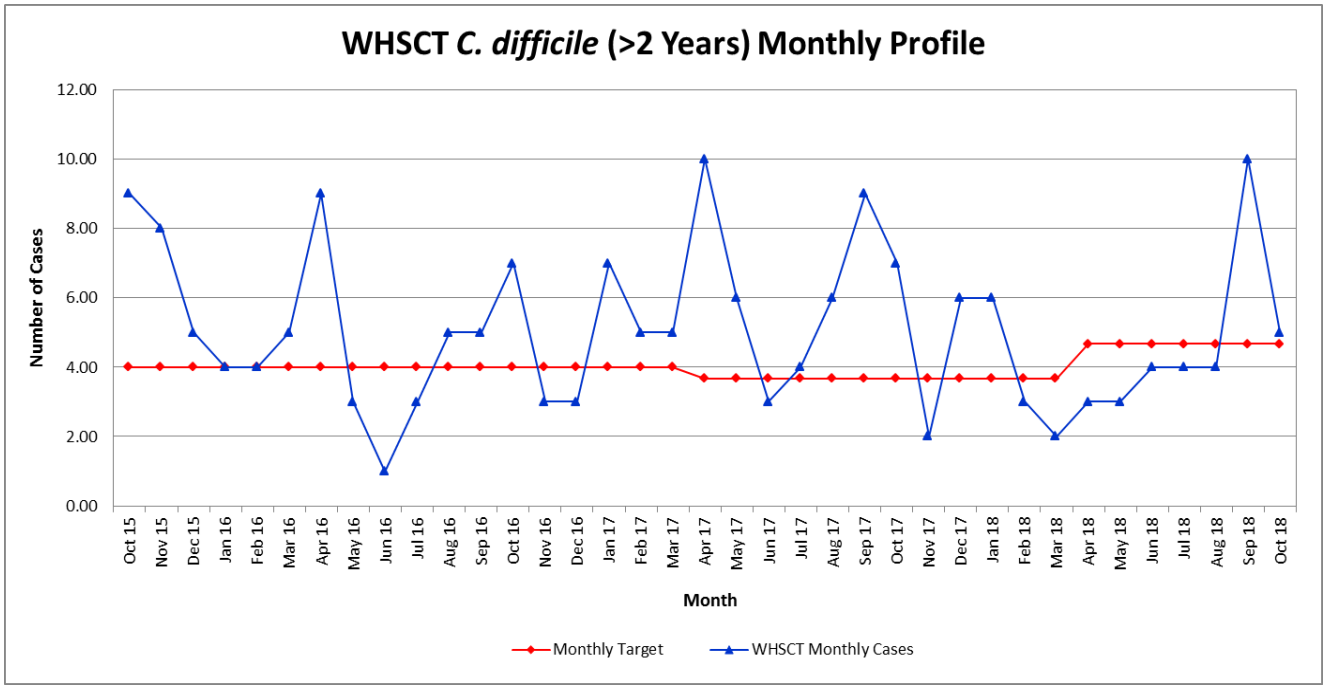
Key:
CAI Community-associated infection
HAI Hospital-associated infection



3. *C. difficile* Performance

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

As of 25th October 2018, 33 cases have been reported, with 16 of those being categorised as community-associated. Therefore, the Trust is currently off profile, with a cumulative decrease of just 11.61% compared to 2017/18. This comprises a decrease in healthcare-associated infection cases of 19.05% versus a decrease in community-acquired infection cases of 2.02%.

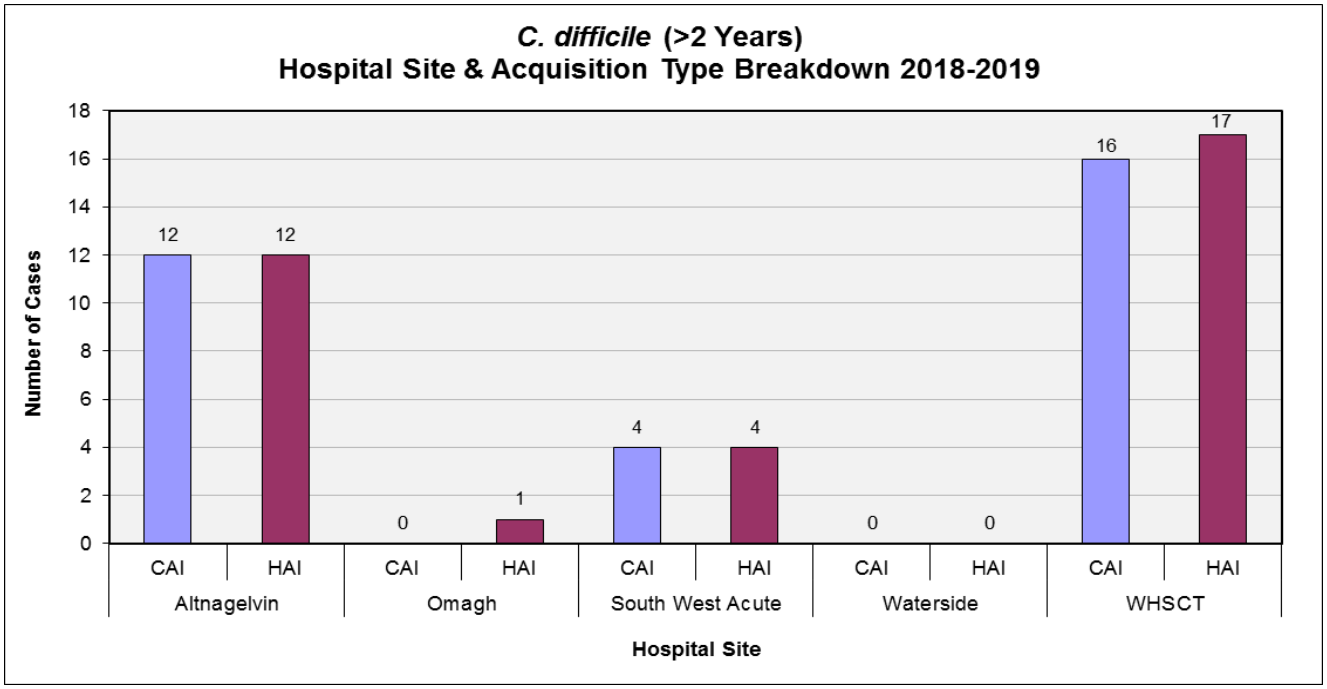


* *The value for Oct 18 is subject to change as the report was compiled prior to the end of the month.*

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 last Report to Trust Board, which contained figures as at 25th September 2018, there have been seven new cases of *C. difficile* (breakdown below).

7 *C. difficile* cases → 5 CAI
7 *C. difficile* cases → 2 HAI

RCAs are pending for three of these cases.

C. difficile Care Bundle and Care Pathway Audits

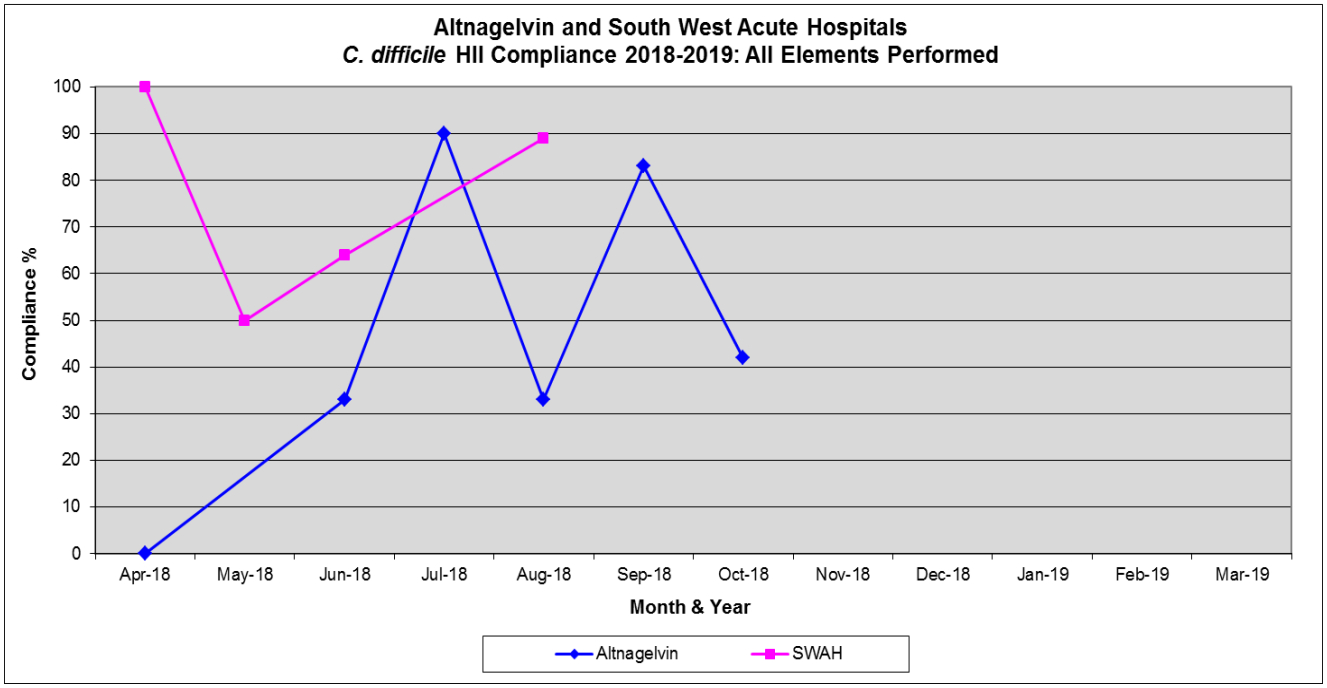
Evidence based care bundles are effective when all elements of care are performed consistently. Therefore, scores are represented as either Pass (100%) or Fail (anything less than 100%). There is no differentiation between those achieving a very low score and those achieving 95%. This is done deliberately to highlight the importance of 100% compliance with the bundle as a whole.

The dashboard below summarises the performance of wards/ departments audited by the IP&C Team since April 2018. On occasion more than one audit may be completed during the month for a particular ward/ department. In such instances an average score is shown on the dashboards. These scores are marked (A).

Consistent compliance with the *C. difficile* care bundle remains a challenge. The findings indicate issues around environmental decontamination, use of personal protective equipment and isolation/ cohort nursing.

		Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18
Ward 1, Alt	Care Bundle			50%	50%		50%	100%
	Care Pathway						Pass	Pass
Ward 3, Alt	Care Bundle			50%				
	Care Pathway							
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%		
	Care Pathway					Pass		
Ward 31, Alt	Care Bundle			0%		100%		50%
	Care Pathway					Pass		Fail
Ward 32 ESU, Alt	Care Bundle	0%				33%		0%
	Care Pathway	Pass			Fail			Pass
Ward 41 AMU, Alt	Care Bundle				100%		100%	
	Care Pathway							
Ward 42, Alt	Care Bundle					0%		
	Care Pathway							
ICU/ HDU, Alt	Care Bundle				100% (A)		100%	0%
	Care Pathway						Pass	Pass
Ward 1 MSAU, SWAH	Care Bundle			0%				
	Care Pathway			Pass				
Ward 2, SWAH	Care Bundle	100%		80%				
	Care Pathway	Pass		Pass				
Ward 5, SWAH	Care Bundle			100%				
	Care Pathway			Pass				
Ward 6, SWAH	Care Bundle			75%		67%		
	Care Pathway			Fail		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)					
	Care Pathway		Pass x 2					
Rehabilitation Unit, OHPCC	Care Bundle						75%	
	Care Pathway						Pass	
Ward 3, Waterside	Care Bundle	50%						
	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 two 2018 (April-June) follow.

C. difficile

Eight out of 12 *C. difficile* cases met the criteria for RCA investigation within this period. Five RCAs have been completed and three remain outstanding. Two patients had a previous history of Glutamate Dehydrogenase (GDH). Three cases were deemed to have been avoidable.

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

- Carrier of GDH since 2014 with oesophagitis caused by alcohol abuse that led to hematemesis and melena.
- Intravenous antibiotics was commenced in the Emergency Department and continued over a two-day public holiday weekend for a total of 3.5 days. No indication for this and not reviewed until after the public holiday.
- Large doses of proton pump inhibitor and H_2 antagonist.
- Extended use of antibiotics in the community prescribed by the General Practitioner (GP), which the Consultant Microbiologist considered inappropriate.
- Appropriate use of antibiotics.
- GP prescribing antibiotics in the community which were not clearly indicated or on-guideline that would have contributed to the onset of *C. difficile* associated diarrhoea.

MRSA Bacteraemia

One out of five MRSA bacteraemia cases met the criteria for RCA investigation within this period. The RCA has been completed and the case was deemed to be preventable.

The main root cause findings were:

- MRSA from ankle wound led to antecedent colonisation in epidural abscess and subsequently took hold of patient's system. In another trust the patient developed congestive cardiac failure and an echo showed mitral valve vegetation, possibly as a result of the MRSA bacteraemia.

MSSA Bacteraemia

Five out of nine MSSA bacteraemia cases met the criteria for RCA investigation within this period. Four RCAs have been completed and one remains outstanding. One case was deemed to be preventable.

The main root cause findings were:

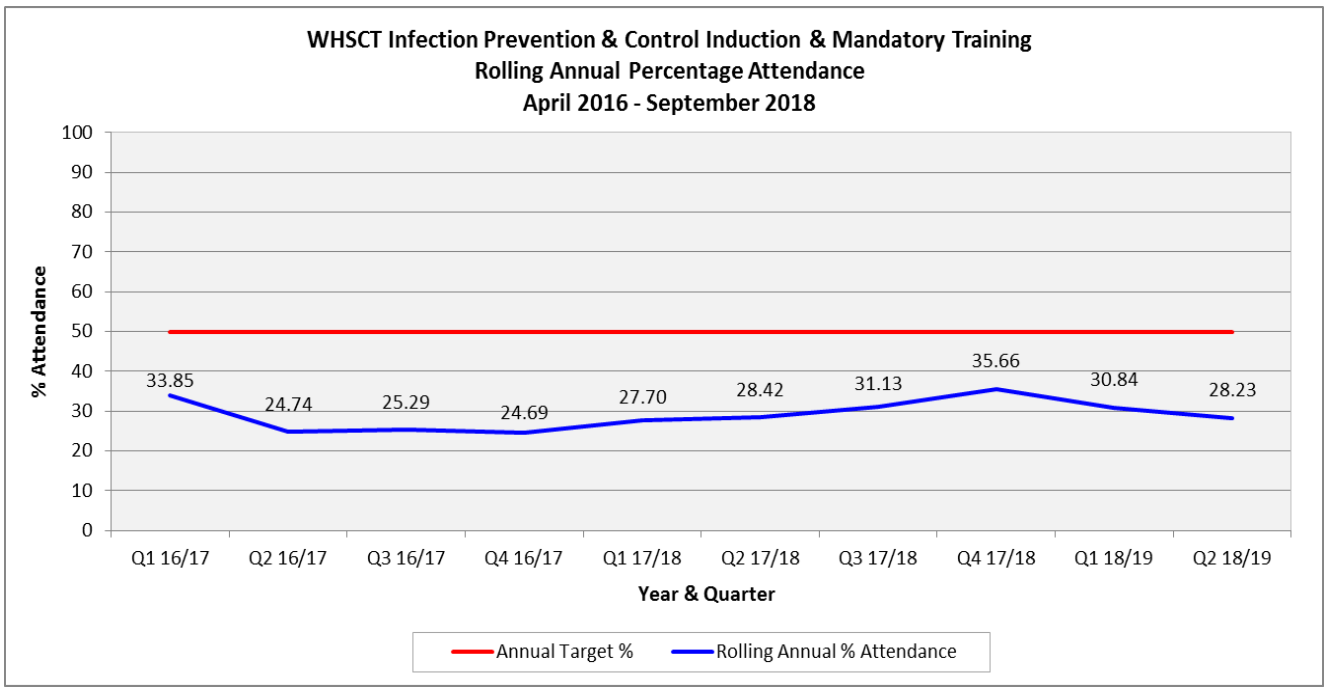
- Increased risk of bacteraemia as a result of renal disease and haemodialysis (no more specific source for infection could be ascertained).

5. Attendance at Infection Prevention & Control Training

Induction/ Mandatory Training

40 Induction and Mandatory Training sessions were delivered by the IP&C Team during the period April to September 2018. That is an average of 1.67 sessions per week across the Trust. As of the end of September, 1453 staff have attended the training (840 in the Northern Sector and 613 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 28.23% for the 12 months ending September 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.

6. IP&C Nurse Independent Audits

During August 2018, the IP&C Team have focused on improvement work and independent validation audits regarding aseptic non-touch technique (ANTT) in the Emergency Departments and Admission Wards in Altnagelvin and the SWAH.

Improvement and audit work has also been undertaken in areas with periods of increased incidence of HCAI focusing on hand hygiene, isolation precautions, the delivery of care, patient equipment and the care environment. The tables below indicate compliance on these indicators for a number of wards. Some scores are marked with (A), indicating that a number of audits took place and an average score has been recorded. The tables exclude *C. difficile* compliance as that has been referred to earlier in the report.

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WARD 3, ALTNAGELVIN

Audit Type	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	
Hand Hygiene	63%	91% (P)	72% (A)										
QIT: Isolation Precautions		100%	60% (A)										
Commode	100%	100%	100% (A)										
Organism Type													**Total**
MRSA Colonisation (HCAI only)						1	1						2
MRSA Bacteraemia (HCAI only)													0
***C. difficile* (HCAI only)**			1										1

WARD 5 EOU, ALTNAGELVIN

Audit Type	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	
Hand Hygiene		85%											
C. difficile							67%						
***C. difficile* Care Pathway**							Fail						
QIT: Isolation Precautions		75%											
Cleaning & Decontamination		33%											
Commode		0%											
Organism Type													**Total**
MRSA Colonisation (HCAI only)													0
MRSA Bacteraemia (HCAI only)													0
***C. difficile* (HCAI only)**						1							1

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WARD 7, ALTNAGELVIN

Audit Type	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	
Hand Hygiene	90% (P)												
QIT: Isolation Precautions	100%												
Cleaning & Decontamination	100%												
Commode	67%												
Organism Type													**Total**
MRSA Colonisation (HCAI only)				1		2	1						4
MRSA Bacteraemia (HCAI only)													0
***C. difficile* (HCAI only)**				1									1

WARD 20, ALTNAGELVIN

Audit Type	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	
Hand Hygiene					75%								
C. difficile					0%								
***C. difficile* Care Pathway**					Pass								
Cleaning & Decontamination					56%								
Commode													
Mattress					100%								
Organism Type													**Total**
MRSA Colonisation (HCAI only)													0
MRSA Bacteraemia (HCAI only)													0
***C. difficile* (HCAI only)**				2									2

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WARD 41 AMU, ALTNAGELVIN

Audit Type	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	
Hand Hygiene			86% (A)	55% (A)	100%								
Peripheral Line Ongoing Care			71%	37% (A)	67%								
ANTT: Peripheral Venepuncture				66% (A)									
ANTT: Peripheral & Central IV Therapy			85% (A)	96% (A)	82%								
QIT: Isolation Precautions			95% (A)		100%								
Commode			83% (A)										
Organism Type													**Total**
MRSA Colonisation (HCAI only)							1						1
MRSA Bacteraemia (HCAI only)													0
C. difficile (HCAI only)													0

WARD 42, ALTNAGELVIN

Audit Type	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	
Hand Hygiene			100%										
QIT: Isolation Precautions			100%										
Commode			100%										
Organism Type													**Total**
MRSA Colonisation (HCAI only)		1											1
MRSA Bacteraemia (HCAI only)													0
C. difficile (HCAI only)						1							1

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AMBULATORY CARE UNIT, ALTNAGELVIN

Audit Type	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	
Hand Hygiene			100%	88% (A)									
Peripheral Line Ongoing Care			100%										
ANTT: Peripheral Cannulation			61%	92% (A)									
ANTT: Peripheral Venepuncture			85%	86% (A)									
Organism Type													**Total**
MRSA Colonisation (HCAI only)													0
MRSA Bacteraemia (HCAI only)													0
***C. difficile* (HCAI only)**													0

EMERGENCY DEPARTMENT, ALTNAGELVIN

Audit Type	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
Hand Hygiene			100%	94% (A)(P)								
Peripheral Line Ongoing Care				40%								
ANTT: Peripheral Cannulation				96% (A)								
ANTT: Peripheral Venepuncture				81% (A)								
ANTT: Peripheral & Central IV Therapy				85% (A)								

ICU/ HDU, ALTNAGELVIN

Audit Type	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	
Hand Hygiene	100% (A)				100% (A)	100%	82% (A)						
C. difficile				100% (A)		100%	0%						
***C. difficile* Care Pathway**						Pass	Pass						
QIT: Isolation Precautions	100% (A)				100%		100%						
Cleaning & Decontamination	94%				89% (A)								
Commode	100%				100%		100%						
MRSA (New Format)													
Organism Type													**Total**
MRSA Colonisation (HCAI only)						1							1
MRSA Bacteraemia (HCAI only)													0
***C. difficile* (HCAI only)**													0

MAIN THEATRES, ALTNAGELVIN

Audit Type	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19
Hand Hygiene					14%	25%						
Peripheral Line Ongoing Care					0%	0%						
Peripheral Line Insertion					0%	0%						
ANTT: Peripheral Cannulation					28%	39%						
ANTT: Peripheral & Central IV Therapy					8%	25%						