Western Health and Social Care Trust

Infection Prevention & Control Report to Trust Board

Meeting Date – 2nd August 2018

1. Executive Summary

The Department of Health for Northern Ireland (NI) has not yet issued new *Clostridium difficile* (*C. difficile*) associated disease and Meticillin-Resistant *Staphylococcus aureus* (MRSA) bacteraemia reduction targets for 2018/19.

So far this year 12 cases of *C. difficile* have been reported. Eight 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 Public Health Agency). However, this is not always an accurate predictor of being healthcare-associated. The remainder (four) are classified as community-acquired as the patients presented with symptoms within a 72 hour period after admission.

Since the beginning of April 2018 two MRSA bacteraemia cases have been reported. Both are categorised as community-associated.

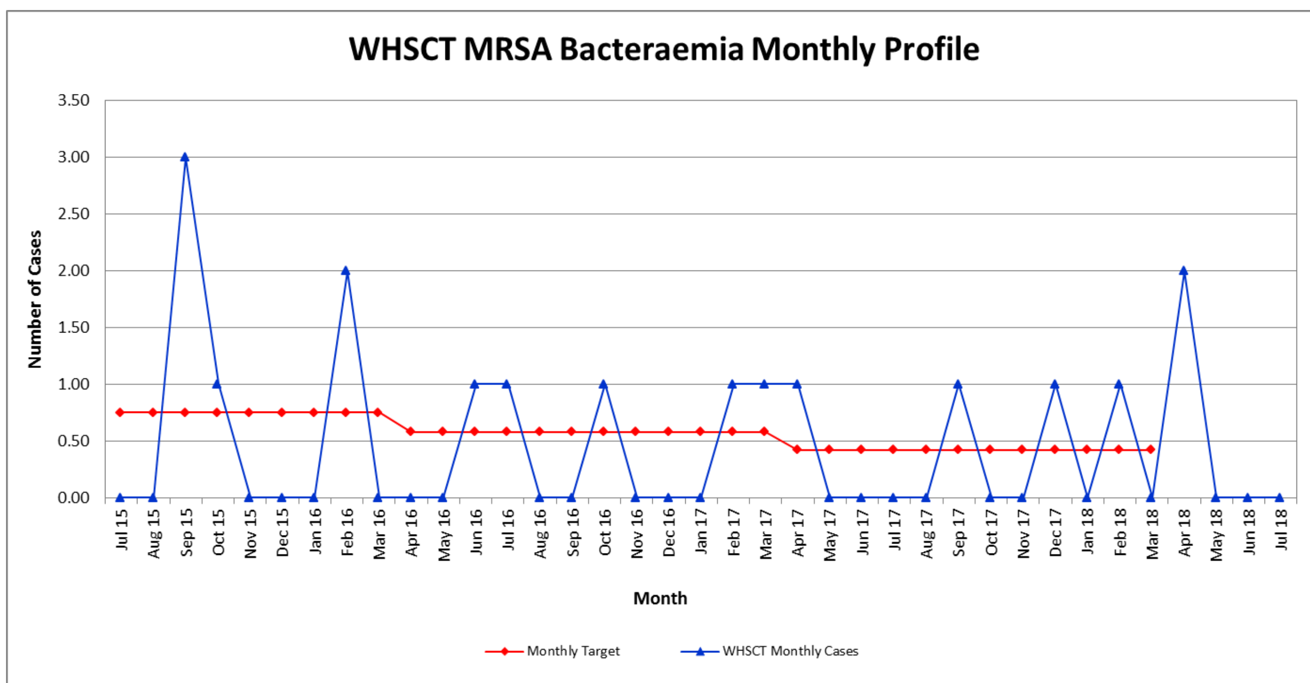
2. *S. aureus* Bacteraemia Performance

MRSA Bacteraemia

The new 2018/19 reduction target for MRSA bacteraemia has not yet been issued. Since the beginning of April 2018 the Trust has reported two cases, both of which are categorised as community-associated.

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

Altnagelvin Hospital – 1057 days (Last recorded case was in Ward 4)
South West Acute Hospital (SWAH) – 893 days (Last recorded case was in Ward 8)
Tyrone County Hospital/ Omagh Hospital & Primary Care Complex (OHPCC) – 1282 days (Last recorded case was in the Rehab Unit)

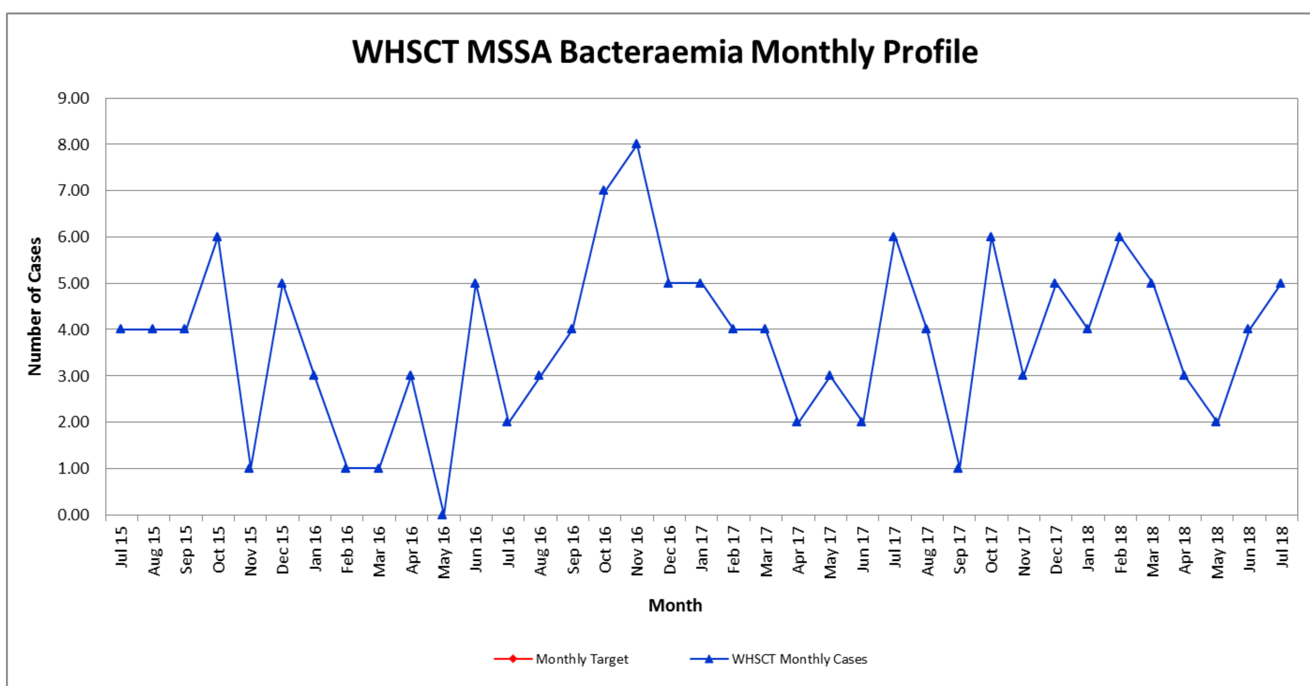


* *The value for Jul 18 is subject to change as the report was compiled prior to the end of the month.*

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 14 cases.



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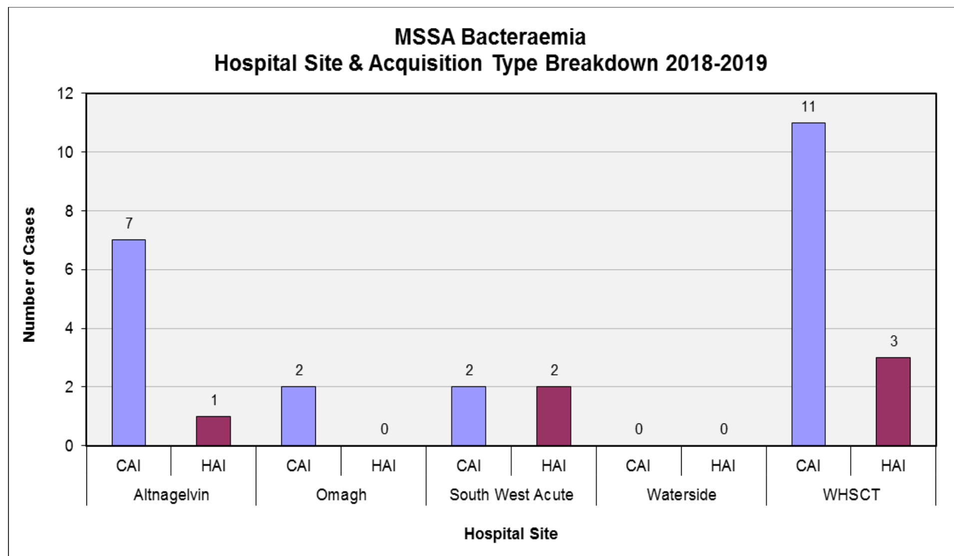
Since the beginning of April 2018 three cases have been categorised as Trust hospital-associated. As of 25th July 2018, the total number of days since the last Trust hospital-associated MSSA bacteraemia is as follows:

Altnagelvin – 14 days	(Last recorded case was in Ward 5 EOU)
SWAH – 90 days	(Last recorded case was in Ward 3)
OHPCC – 282 days	(Last recorded case was in the Rehab Unit)

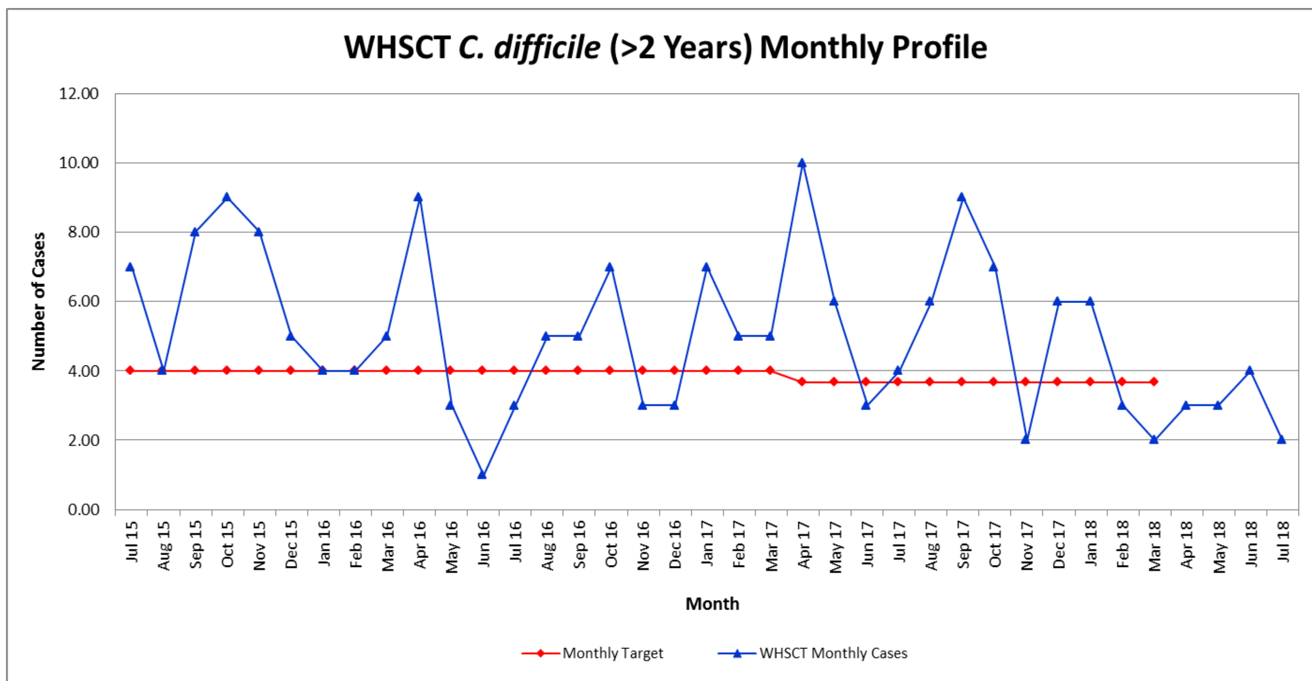
A breakdown of the cases by hospital site and acquisition type is given in the chart below.

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



3. *C. difficile* Performance

The new 2018/19 reduction target for *C. difficile* (≥ 2 years) has not yet been issued. To date the Trust has reported 12 cases.



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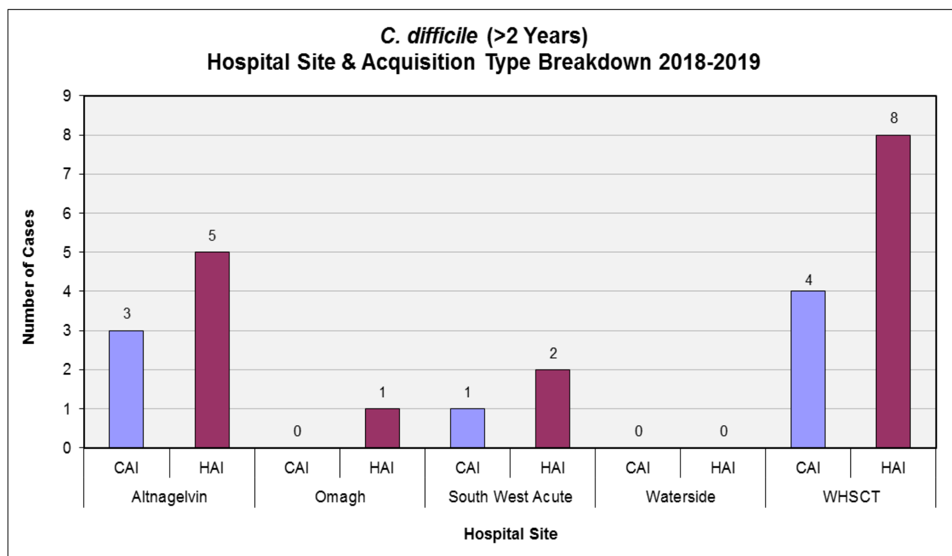
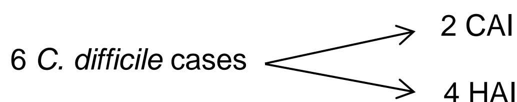


Since the last Report to Trust Board, which contained figures as at 6th June 2018, there have been six new cases of *C. difficile* (breakdown below).



Following a root cause analysis (RCA) of one of the HAI cases, it was found that acquisition of *C. difficile* in the ward could not be ruled out. This was due to the absence of assurance regarding compliance with infection prevention and control (IP&C) practice during a Norovirus outbreak as not all patients with symptoms were tested for *C. difficile*. The onset of

C. difficile associated diarrhoea was due to the use of multiple courses of antibiotics over several admissions during the three months prior to diagnosis. All antibiotics prescribed in hospital were assessed to be appropriate and on-guideline. However, three antibiotics prescribed by the GP were not clearly indicated or on-guideline. Other risk factors included the patient being over 65 years of age and on proton pump inhibitors for gastritis.

As part of the RCA a number of other practice issues were also identified, as follows:

- There was a two-day delay in sampling and isolating a patient with diarrhoea during a Norovirus outbreak. This led to the exposure of two other patients.
- IP&C practice audits showed low compliance on two occasions, particularly hand hygiene.
- Incorrect labelling of the sample. The label showed a different date to that on which specimen collection actually took place. This initially caused IP&C staff to believe there had been a three-day delay in the specimen reaching the laboratory. The label has been scanned and PID'd by laboratory staff with the incorrect date and this cannot be changed.
- The GP prescribed a seven-day course of an antibiotic in March on request of the patient – no indication for this. Also prescribed a course of another antibiotic in May for possible urinary tract infection/ urinary hesitancy – urine not tested and not first line treatment, plus a further antibiotic for abdominal pain/ infection.

RCAs are pending for the other HAI 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.

Five main elements of care have been identified as being necessary to reduce the incidence of *C. difficile* infection (CDI). They are prudent antibiotic prescribing, hand hygiene, environmental decontamination, use of personal protective equipment (PPE) and isolation/ cohort nursing. The risk of infection reduces when all of the elements within the clinical process are performed every time for every patient. The risk of infection increases when one or more elements of a procedure are excluded or not performed appropriately. Monitoring of the elements outlined in the care bundle ensures that all necessary aspects of the clinical process are appropriately performed (as required by the particular situation). The care bundle should be used when cases of CDI are either suspected or proven.

The *C. difficile* care pathway has been revised and is now a more concise, user friendly document. It was piloted on a number of wards and the feedback was very positive. It has also been reviewed by the Trust Nursing Record Keeping Group and it was approved by the Chief Executive HCAI Accountability Forum in May 2018. It has now been disseminated to staff for use.

The dashboard below summarises the performance of wards/ departments audited by the IP&C Team since August 2017. 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 antibiotic prescribing, environmental decontamination and use of PPE.

		Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18
Ward 1, Alt	Care Bundle		100%		100%				50%			50%	50%
	Care Pathway		Pass		Pass				Pass				
Ward 2 TOU, Alt	Care Bundle				100%								
	Care Pathway				Pass								
Ward 3, Alt	Care Bundle		100%	50%								50%	
	Care Pathway		Pass	Pass									
Ward 8 AHAN, Alt	Care Bundle		100%										
	Care Pathway		Pass										
Ward 20, Alt	Care Bundle	80%	100%										
	Care Pathway	Pass	Pass										
Ward 31, Alt	Care Bundle		50%			67%		33%				0%	
	Care Pathway		Pass			Fail		Fail					
Ward 32 ESU, Alt	Care Bundle		100%		100% (A)					0%			
	Care Pathway		Fail		Fail x 2					Pass			
Ward 40, Alt	Care Bundle						75%						
	Care Pathway						Fail						
Ward 41 AMU, Alt	Care Bundle					0%		67%	100%				
	Care Pathway					Pass		Fail	Pass				
Ward 42, Alt	Care Bundle				100%								
	Care Pathway				Pass								
Ward 43 Gynae, Alt	Care Bundle						33%						
	Care Pathway						Fail						
Ward 50 Sperrin, Alt	Care Bundle			84% (A)			100%						
	Care Pathway			Pass x 2			Pass						
CCU, Alt	Care Bundle							100%					
	Care Pathway							Fail					
ICU, Alt	Care Bundle												100%
	Care Pathway												
Ward 1 MSAU, SWAH	Care Bundle	100%		100%		100%							
	Care Pathway	Pass		Pass		Pass							
Ward 2, SWAH	Care Bundle									100%		80%	

	Care Pathway									Pass		Pass	
Ward 3, SWAH	Care Bundle			100%		100%							
	Care Pathway			Pass		Pass							
Ward 5, SWAH	Care Bundle						67%						
	Care Pathway						Fail						
Ward 6, SWAH	Care Bundle	100%											
	Care Pathway	Pass											
Ward 7, SWAH	Care Bundle		100% (A)										
	Care Pathway		Pass x 2										
Ward 8, SWAH	Care Bundle	100% (A)		100%									
	Care Pathway	Pass x 2		Pass									
Ward 9, SWAH	Care Bundle										50% (A)		
	Care Pathway										Pass x 2		
Children's Ward, SWAH	Care Bundle						33%						
	Care Pathway						Fail						
Critical Care, SWAH	Care Bundle					0%							
	Care Pathway					Pass							
Ward 3, Waterside	Care Bundle	100%						34% (A)		50%			
	Care Pathway	Pass						Pass x 2		Pass			
Ward 4, Waterside	Care Bundle								50%				
	Care Pathway								Pass				

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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 one 2018 (January-March) follow.

C. difficile

7 out of 13 *C. difficile* cases met the criteria for RCA investigation within this period. 6 RCAs have been completed and one remains outstanding. Two patients had a previous history of Glutamate Dehydrogenase (GDH). One case was deemed to have been avoidable.

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

- Antibiotics required for neutropenic sepsis due to chemotherapy treatment – all on-guideline
- Appropriate antibiotics for intra-abdominal sepsis due to the patient having a ruptured cyst
- Multiple courses of antibiotics used for the complicated treatment of orthopaedic infection in line with guidelines
- Exposure to a *C. difficile* positive patient with the same ribotype and *C. difficile* spores in the environment, accompanied by the loss of protective flora as a result of broad spectrum antibiotics in line with guidelines
- Probable cause due to the patient being immunocompromised and having decompensated liver failure due to excess alcohol consumption

What Went Wrong	Actions/ Learning to Prevent Recurrence
Ward 50, Altnagelvin Patient was diagnosed during an outbreak of glycopeptide-resistant enterococci (GRE) and there were failures with decontamination of patient care equipment. IP&C Team worked with Ward Manager and Lead Nurse to improve standards at the time.	None
Ward 4, Altnagelvin Bristol Stool Chart was not commenced in a timely manner. The importance of this to be reiterated to ward staff. Failures in audits including hand hygiene, contaminated commode, member of medical staff with wrist watch, diamond ring, door to isolation room open on a few occasions and no stop date on antibiotics.	Medical and nursing representatives at RCA to raise awareness with staff.
Ward 41 AMU, Altnagelvin Overall audit score 67% as a result of a staff member in AMU not complying with 5 moments for hand hygiene. Bed space only decontaminated in Ward 3, Waterside, instead of full room. Antibiotic prescription in Ward 2 TOU had no stop date or indication for use. Medical documentation for the RCA not completed prior to RCA meeting. Ward managers need to know percentage	S/N, AMU, to feedback audit failures to Ward Sister, who is to discuss standard precautions with staff, in particular hand hygiene. S/N, AMU, to feedback to Orthopaedics re importance of complete antibiotic prescriptions on the drug kardex, i.e. start and stop dates and their indication for use. Manager, Ward 3, Waterside, to ensure all staff are up to date with Mandatory Training. Manager, Ward 3, Waterside, to discuss

attendance for IP&C Mandatory Training.	cleaning and decontamination of equipment and environments with all staff. Manager, Ward 3, Waterside, to highlight the importance of complete RCA documentation prior to the RCA with medical and pharmacy staff.
Ward 3, Waterside Patient had exposure to a *C. difficile* positive patient and *C. difficile* spores in the environment. Overall audit score 67% as staff member failed to comply with 5 moments for hand hygiene and 7 step technique. Two bags of soiled linen on the floor and room door remained open. Daily blood tests not recorded. 10 commodes audited and failed due to rusted areas and contamination with debris and hair. Antibiotics commenced in this case following a positive urinalysis but no laboratory confirmation as specimens were not sent.	Manager, Ward 3, Waterside, to inform staff that patients who are *C. difficile* positive should have daily blood tests. Manager, Ward 3, Waterside, to ensure all staff are up to date with Mandatory Training. Manager, Ward 3, Waterside, to discuss standard and additional precautions with staff, plus cleaning and decontamination of environment and equipment, and refer them to relevant policies. Clinical specimens should support antibiotic use and should be taken prior to commencing the antibiotic where possible. Ward to continue with hand hygiene and cleaning and decontamination audits.
Ward 1, Altnagelvin No stop date on antibiotics.	The need for stop dates/ review dates on antibiotics to be reiterated to medical staff.

MRSA Bacteraemia

One case was recorded during the quarter, but as it was community-associated it did not require RCA.

MSSA Bacteraemia

5 out of 15 MSSA bacteraemia cases met the criteria for RCA investigation within this period. 3 RCAs have been completed and 2 remain outstanding. Three cases were deemed to be preventable.

The main root cause findings were:

- The insertion and management of a cannula was not compliant with Trust protocol.
- Isolate was a contaminant. This is based on the fact that the patient had only 7 full days of teicoplanin and also had multiple negative blood cultures taken after the positive result.
- Accidental trauma to a urinary catheter. Patient had haematuria for 2-3 days following trauma.

What Went Wrong	**Actions/ Learning to Prevent Recurrence**
Emergency Department, SWAH Cannula insertion and management non-compliant with Trust guideline. No insertion details for cannula inserted in ED, poor compliance with ongoing care, no removal details. No evaluation in nursing notes. Ward 9, SWAH Ward 9 had staffing issues using bank and agency staff and escalated beds from 16 to 24.	Immediate action to address non-compliance with Trust guideline for peripheral cannula. RCA findings to be tabled at next Mortality & Morbidity meeting. Link Nurse to have time allocated to attend IP&C Link meetings.

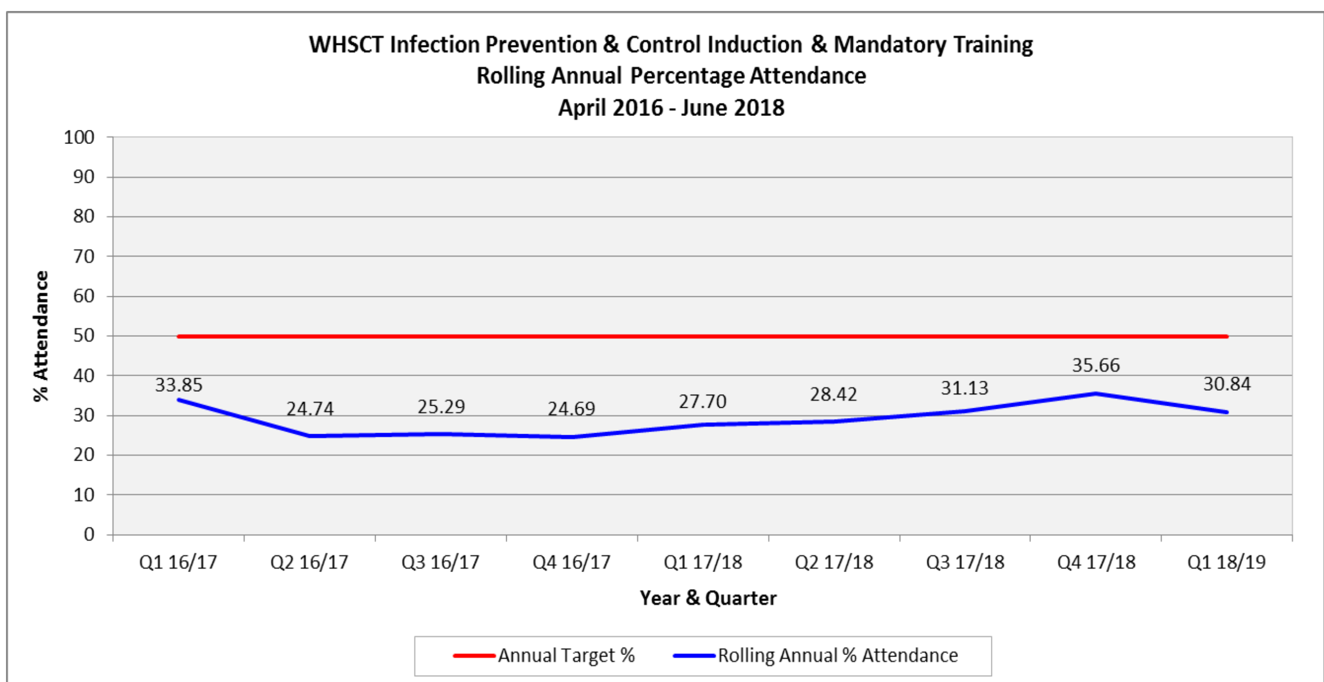
Wards 31 & 50, Altnagelvin Query blood culture contaminant and the blood cultures did not need to be taken on line insertion due to the fact that the patient was showing no signs of increased temperature.	Manager, Ward 50, to email Theatres regarding the blood culture results and the collection of unnecessary specimen. The importance of completing VIP charts at ward level for all invasive devices to be reiterated.
Ward 1 MSAU, SWAH Accidental trauma to urinary catheter; haematuria for 2-3 days following trauma. Patient had a nasal screen taken on admission; full body screen was required as has a long term urinary catheter. Date of insertion not recorded on Urinary Catheter Care Pathway. Urine specimen leaked and was not repeated until eight days later. Non-compliance with protocol for insertion and management of cannula.	Ward 1 staff to follow up on results for microbiology specimens taken and appropriate action. Ward Manager, Ward 1, to ensure staff are compliant with protocol for insertion and management of peripheral cannula. Ward Manager, Ward 1, to ensure staff adhere to MRSA screening and treatment guidelines.

5. Attendance at Infection Prevention & Control Training

Induction/ Mandatory Training

32 Induction and Mandatory Training sessions were delivered by the IP&C Team during the period April-June 2018. That is an average of 2.67 sessions per week within primary and secondary care settings across the Trust. As of the end of June, 1087 staff have attended the training (637 in the Northern Sector and 450 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 30.84% for the 12 months ending June 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 Infection Prevention Society's NI Branch Education Sub-Group has reviewed and standardised the existing IP&C training content and learning outcomes for different staff groups.The revised indicative content and learning outcomes were based on the level of contact the healthcare worker would have with patients or clients in the healthcare setting, i.e. direct or non-direct, and if they were also responsible for management of invasive devices. The Sub-Group also explored models and modes of delivery that would improve accessibility to training for all healthcare workers regionally, thus making best use of the most current learning resources available. The following recommendations were made:

- A tiered system approach tailored to specific staff groups according to their role and level of patient/ client contact
- Regional standardisation of indicative IP&C training content and learning outcomes
- Training delivery methods such as e-learning programmes, together with face-to-face training and DVDs, should be shared across the region
- The use of written materials for staff less familiar with information technology (IT) or who have limited IT access should be developed and made available

The tiered system involves the development of three distinct training programmes.

- Tier 1 Level A – Intended participants: non-clinical staff working in a healthcare setting
- Tier 1 Level B – Intended participants: healthcare staff with minimal contact with patients/ clients, the patient environment and/ or patient equipment
- Tier 2 – Intended participants: all healthcare staff with frequent direct patient contact, close physical contact with the patient, patient's environment and equipment and have responsibility for the insertion and management of invasive devices

The IP&C Nurses are currently working to implement the recommendations of this review. E-learning training programmes linked to the HRPTS system are being developed to improve accessibility for all staff. The participation of Management Organisation & Development and IT staff is central to advancing this change in training delivery. It was originally hoped that the new training processes would be ready to launch in September 2018. However, delays with respect to the e-learning programme mean they will now be launched in January 2019.

6. Hand Hygiene Compliance

The Trust's overall self-reported hand hygiene scores are 92% when non-submission areas are included. These areas score an automatic 0%. 12 areas out of 193 applicable areas failed to submit scores for June 2018. They are as follows:

Altnagelvin – Ward 42, Ward 50, Emergency Department, Oncology Outpatients, Breast Screening Unit and GUM Clinic
SWAH – Outpatients
OHPCC – Cardiac Assessment Unit and Outpatients
Tyrone & Fermanagh Hospital – Elm
Waterside – Ward 2
Residential Homes – Thackeray Place Residential Home

Ward 50, Emergency Department, Oncology Outpatients, GUM Clinic, SWAH Outpatients, OHPCC Outpatients, Ward 2 and Thackeray Place Residential Home also did not submit scores for the previous month.

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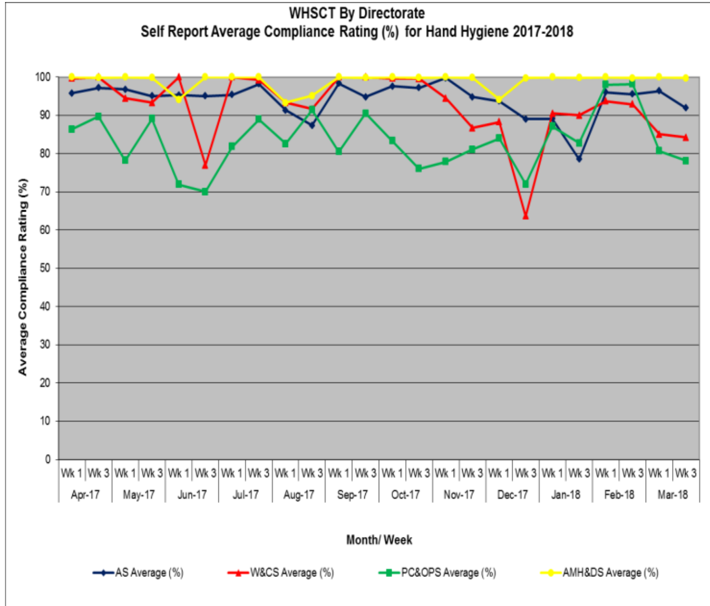
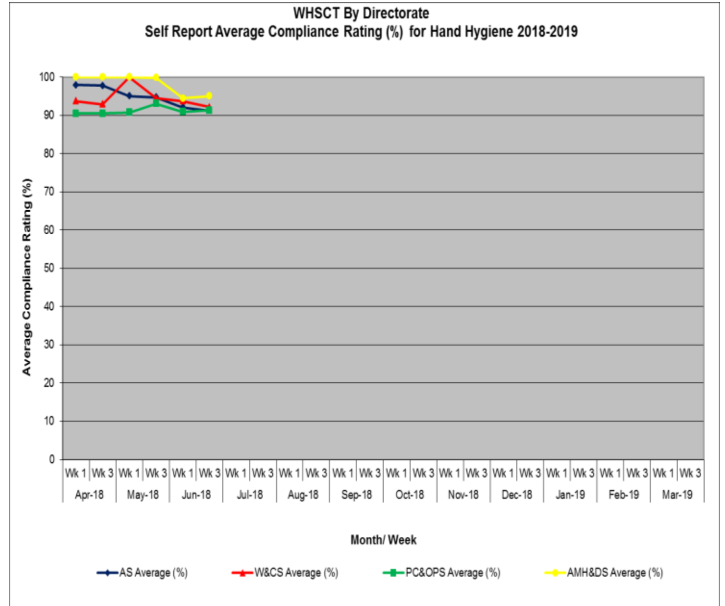
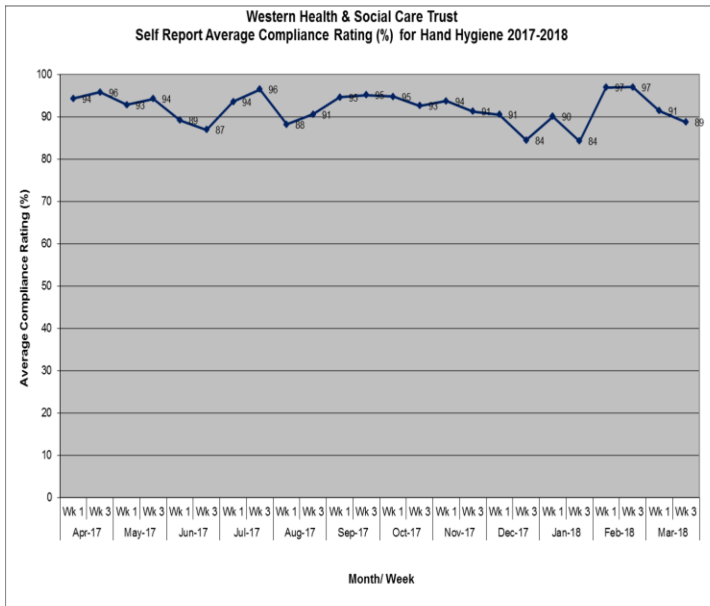
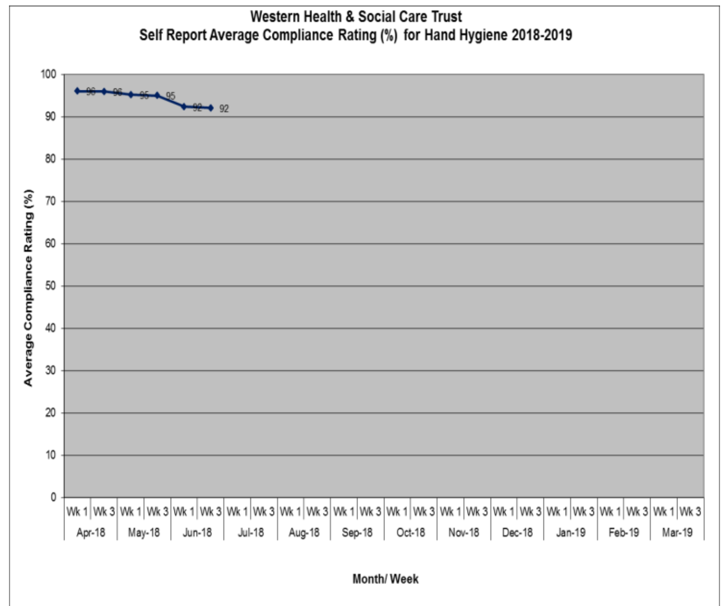
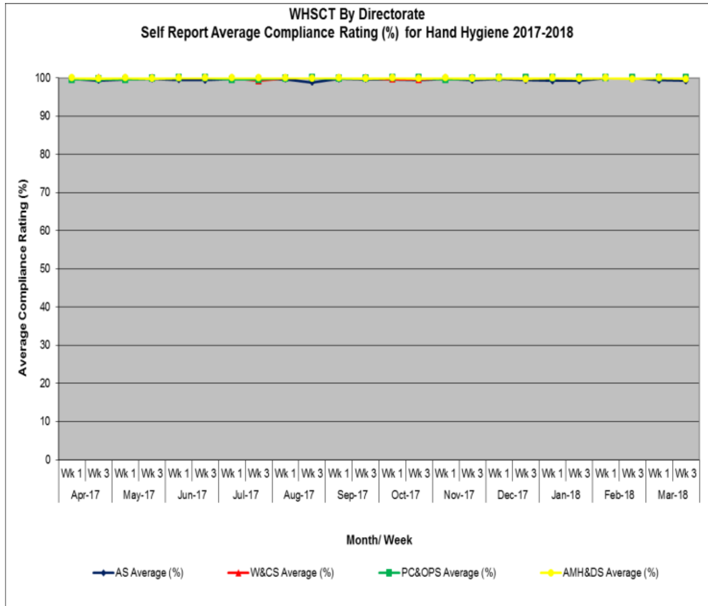


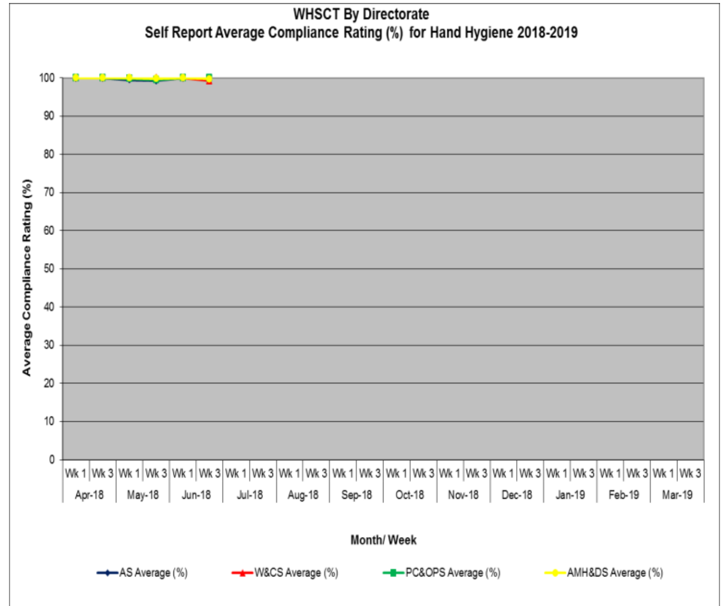


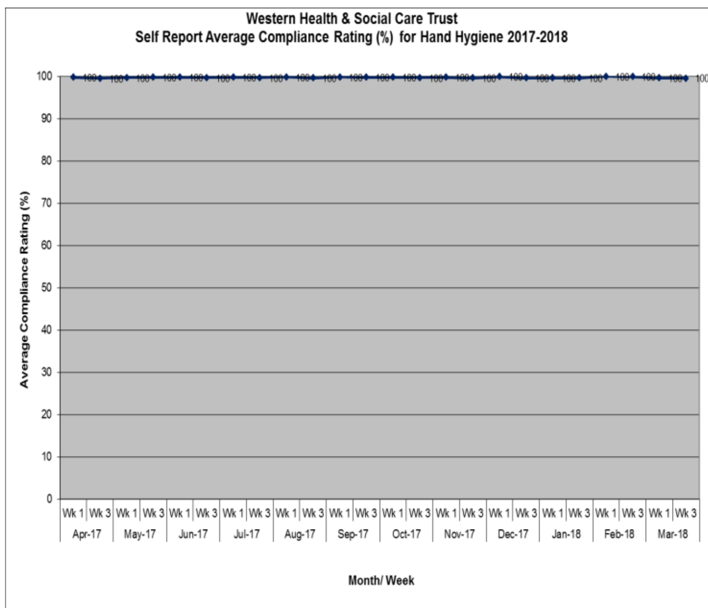


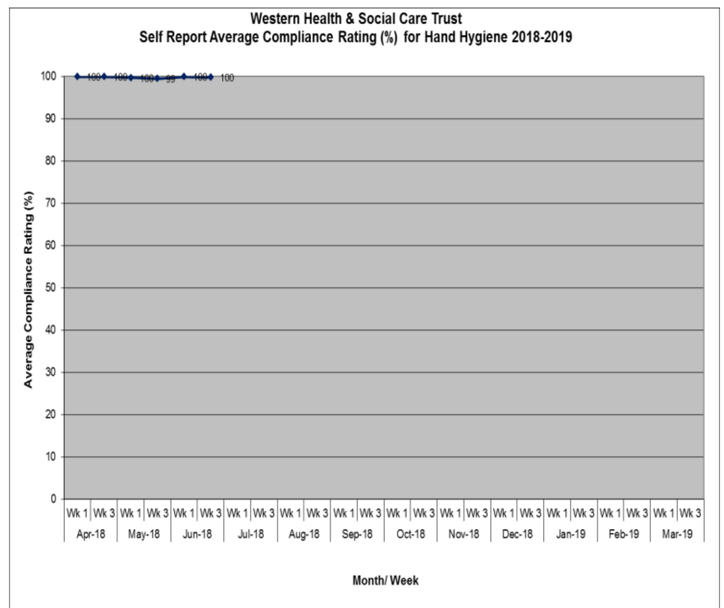


However, when adjusted for non-submission areas, the Trust's overall self-reported hand hygiene scores improve to 100%.









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.

7. Antimicrobial Management Team

The Antimicrobial Management Team (AMT) met on 6th June 2018. The following items were discussed:

- **Antimicrobial Stewardship Champions –** Staff grade doctors willing to take on the role are to be identified and approached across the Trust.
- **Quality Improvement Projects/ Audits –** The AMT was updated with regard to audits in antimicrobial prescribing within Ear, Nose & Throat and treatment of early onset sepsis in neonates. Results were noted.

8. New and Updated Infection Prevention & Control Guidance

The following guidance was approved by the Chief Executive HCAI Accountability Forum in July 2018. It was an update of an existing document.

- Aseptic Non-Touch Technique (ANTT) Guidelines