

Infection Prevention & Control Report to Trust Board

Meeting Date – 1st February 2018

1. Executive Summary

The Trust's reduction target for *Clostridium difficile* (*C. difficile*) associated disease in 2017/18 is 44; a reduction of 12 cases or 21.43% compared to last year. To date 58 cases have been reported and, therefore, the reduction target set has been exceeded. 31 of these cases are classified as healthcare-acquired or associated, as they occurred more than 48 hours after admission to hospital (definition used by the Public Health Agency [PHA]). However, this is not always an accurate predictor of being healthcare-associated. The remainder (27) are classified as community-acquired as the patients presented with symptoms within a 48 hour period after admission.

The MRSA bacteraemia reduction target for 2017/18 is five. Since the beginning of April three cases have been reported. They are all categorised as community-associated.

Ward 50, Altnagelvin Hospital, has had an increased incidence of patients with Glycopeptide-Resistant Enterococci (GRE) colonisations. Three of the four GRE clinical specimens have the same pulsed-field gel electrophoresis (PFGE) typing and links in time and place to Ward 50/ Sperrin Unit. A further two specimen typings are awaited, with a third returning a typing of EC 14 (the same typing as previously seen in Ward 50 and other previous outbreaks in the Trust). This increased incidence has now been defined as an outbreak, but there is currently no evidence of ongoing transmission and no further positive specimens. The Infection Prevention & Control (IP&C) Team has been providing support and reviewing practice on the Ward/ Unit since 2nd November 2017. All IP&C measures are in place and improvements regarding standards of practice are now being realised.

During January 2018 the Trust experienced an increase in the number of patients presenting at Emergency Departments and being admitted with suspected/ confirmed Influenza and Flu-like Illness. This increase in seasonal Influenza, in conjunction with other existing service and staffing pressures, manifested in challenges to appropriate isolation in single rooms and/ or capacity to cohort patients, also given the acuity of some of the patients concerned. The situation was managed by a daily incident meeting and continues to be monitored.

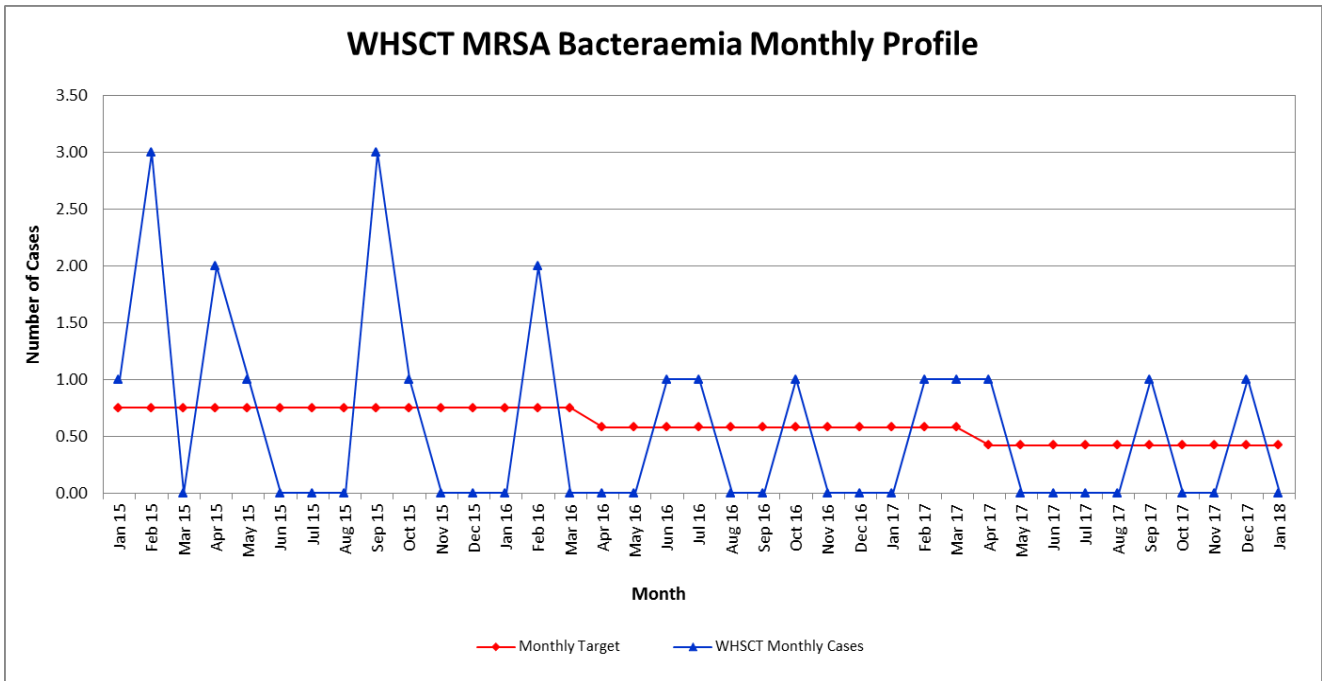
Ward 7, Altnagelvin, has experienced an increased incidence of unexplained/ explained diarrhoea; the cause is not yet known. The Ward was closed to admissions from 19th January 2018. All IP&C measures are in place and the situation is being monitored.

2. *S. aureus* Bacteraemia Performance

MRSA Bacteraemia

The 2017/18 target for MRSA bacteraemia is to maintain the reduction achieved in the previous year, i.e. a maximum of five cases.

So far this year the Trust has reported three cases, all of which have been categorised as community-associated. As such, the Trust is currently on track to achieve the target, with a cumulative decrease of 28.05% compared to 2016/17.



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

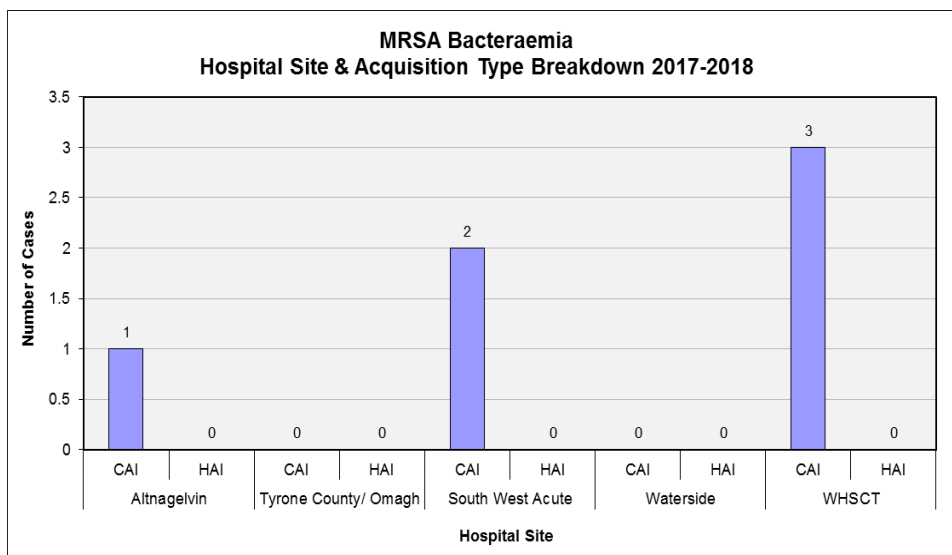
Since the beginning of April 2017 no cases have been categorised as Trust hospital-associated. As of 24th January 2018, the total number of days since the last Trust hospital-associated MRSA bacteraemia is:

- Altnagelvin Hospital – 875 days (Last recorded case was in Ward 4)
- South West Acute Hospital (SWAH) – 711 days (Last recorded case was in Ward 8)
- Tyrone County Hospital/ Omagh Hospital & Primary Care Complex (OHPCC) – 1105 days (Last recorded case was in the Rehab Unit)

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 two weeks. 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.

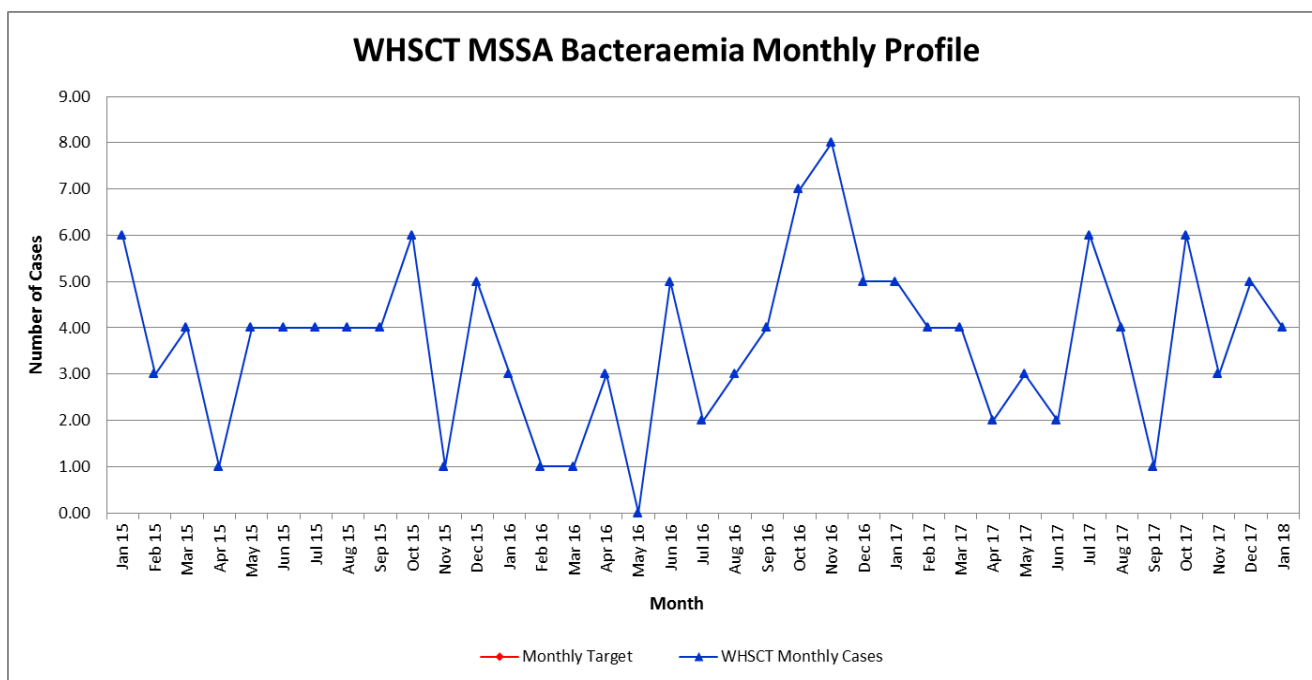
Key:
CAI Community-associated infection
HAI Hospital-associated infection



MSSA Bacteraemia

There is no target associated with MSSA bacteraemia for 2017/18, 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 36 cases.



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Since the beginning of April 2017 six cases have been categorised as Trust hospital-associated. As of 24th January 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 50 Sperrin)

SWAH – 165 days

(Last recorded case was in Ward 2)

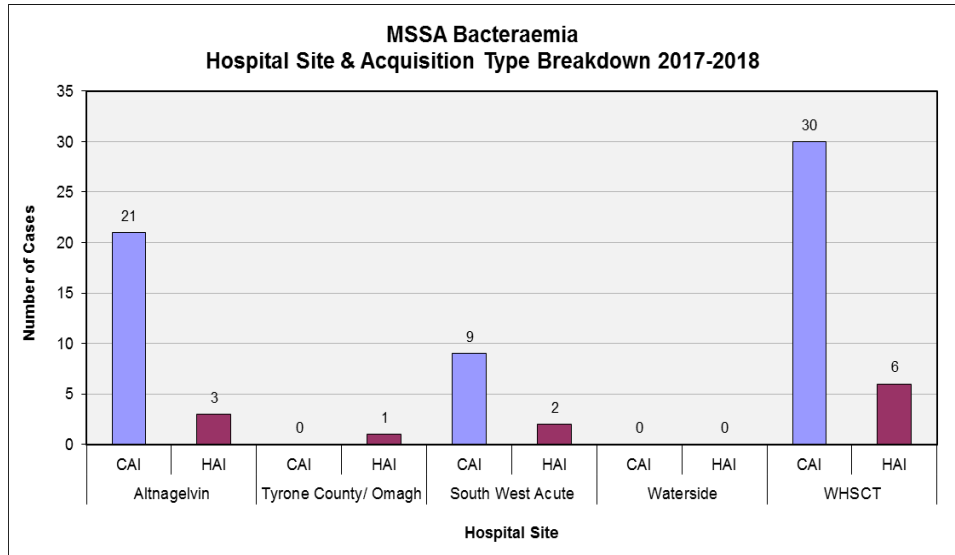
TCH/ OHPCC – 100 days

(Last recorded case was in the Renal Unit)

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

Key:

CAI Community-associated infection
HAI Hospital-associated infection

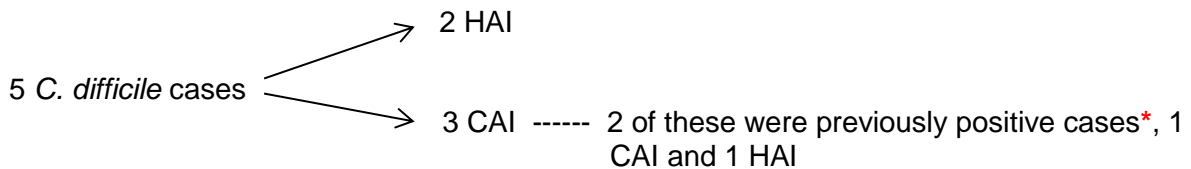


3. C. difficile Performance

The 2017/18 target for *C. difficile* (≥ 2 years) is 44 cases, which equates to a reduction of 21.43% on the baseline figure of 2016/17 (56 cases).

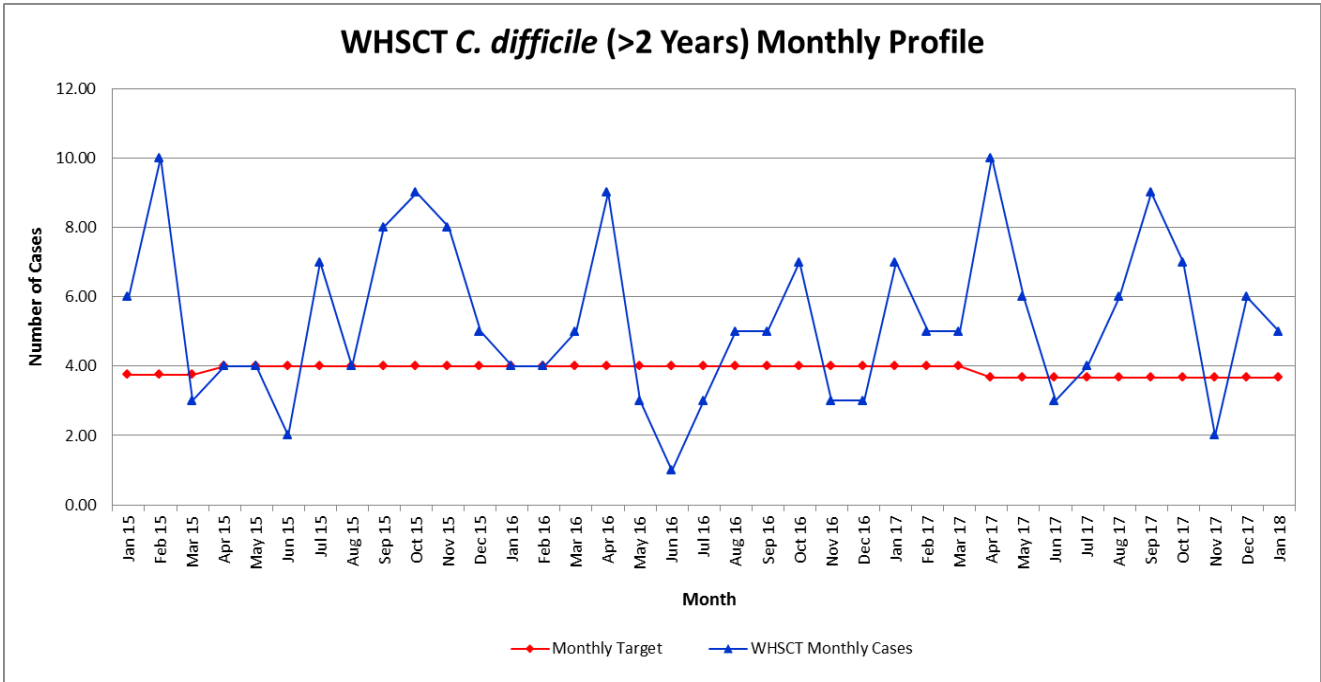
So far this year the Trust has reported 58 cases, with 27 of those being categorised as community-associated. Therefore, the target has been exceeded, with an overall increase of 24.28% compared to last year. This comprises an increase in healthcare-associated infection cases of 16.23% versus an increase in community-acquired infection cases of 35%.

Since the last Report to Trust Board, which contained figures as at 3rd January 2018, there have been five new cases of *C. difficile* (breakdown below).



* Previously positive *C. difficile* cases that are re-tested 28 or more days after the initial positive episode are classed as new cases by the PHA and must be reported as such.

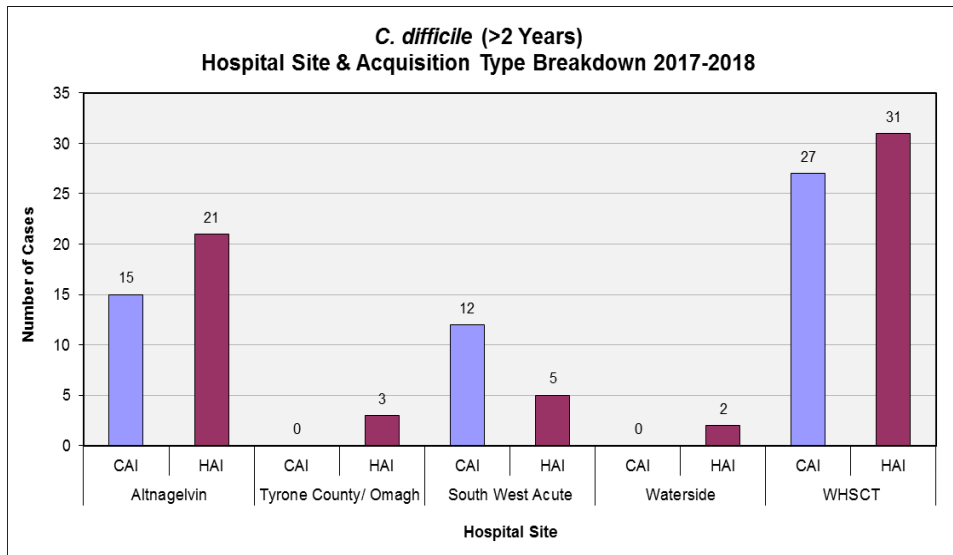
Root cause analyses (RCA) are pending for all five cases.



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A breakdown of the cases by hospital site and acquisition type (as of 24th January 2018) is given in the chart below.

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



C. difficile/ Glutamate Dehydrogenase (GDH) 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 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 bundle and the *C. difficile* care pathway audit are undertaken by an IP&C Nurse whilst the patient remains an inpatient. Support and advice on compliance issues are discussed with ward staff at the time of the audits. Daily ward self-audits should also be completed by the ward team to give assurance regarding level of compliance.

In January 2017 the IP&C Nurses commenced similar audits for GDH cases. This improvement work regarding GDH is to reduce the likelihood of *C. difficile* bacteria starting to produce toxins, leading to CDI.

The two dashboards below summarise the performance of wards/ departments audited by the IP&C Team since April 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*/ GDH care bundles remains a challenge. The findings indicate issues around hand hygiene practice, environmental decontamination and isolation/ cohort nursing.

C. difficile Audits

		Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18
Ward 1, Alt	Care Bundle			100%	100%		100%		100%		
	Care Pathway			Pass	Fail		Pass		Pass		
Ward 2 TOU, Alt	Care Bundle								100%		
	Care Pathway								Pass		
Ward 3, Alt	Care Bundle						100%	50%			
	Care Pathway						Pass	Pass			
Ward 8 AHAN, Alt	Care Bundle						100%				
	Care Pathway						Pass				
Ward 20, Alt	Care Bundle		100% (A)			80%	100%				
	Care Pathway		Pass x 2			Pass	Pass				
Ward 31, Alt	Care Bundle	100%					50%				
	Care Pathway	Fail					Pass				
Ward 32 ESU, Alt	Care Bundle	84% (A)	100%		100%		100%		100% (A)		
	Care Pathway	Pass x 1 Fail x 1	Pass		Pass		Fail		Fail x 2		
Ward 40, Alt	Care Bundle										75%
	Care Pathway										Fail
Ward 41 AMU, Alt	Care Bundle										0%
	Care Pathway										Pass
Ward 42, Alt	Care Bundle		67%		100%				100%		
	Care Pathway		Pass		Pass				Pass		
Ward 50 Sperrin, Alt	Care Bundle	50%	50%	0%				84% (A)			100%
	Care Pathway	Pass	Fail	Pass				Pass x 2			Pass
CCU, Alt	Care Bundle		50%								
	Care Pathway		Pass								
ICU/ HDU, Alt	Care Bundle	34% (A)									
	Care Pathway	Fail x 1 Pass x 1									
Ward 1 MSAU, SWAH	Care Bundle		100%			100%		100%		100%	
	Care Pathway		Pass			Pass		Pass		Pass	
Ward 2, SWAH	Care Bundle	67%									

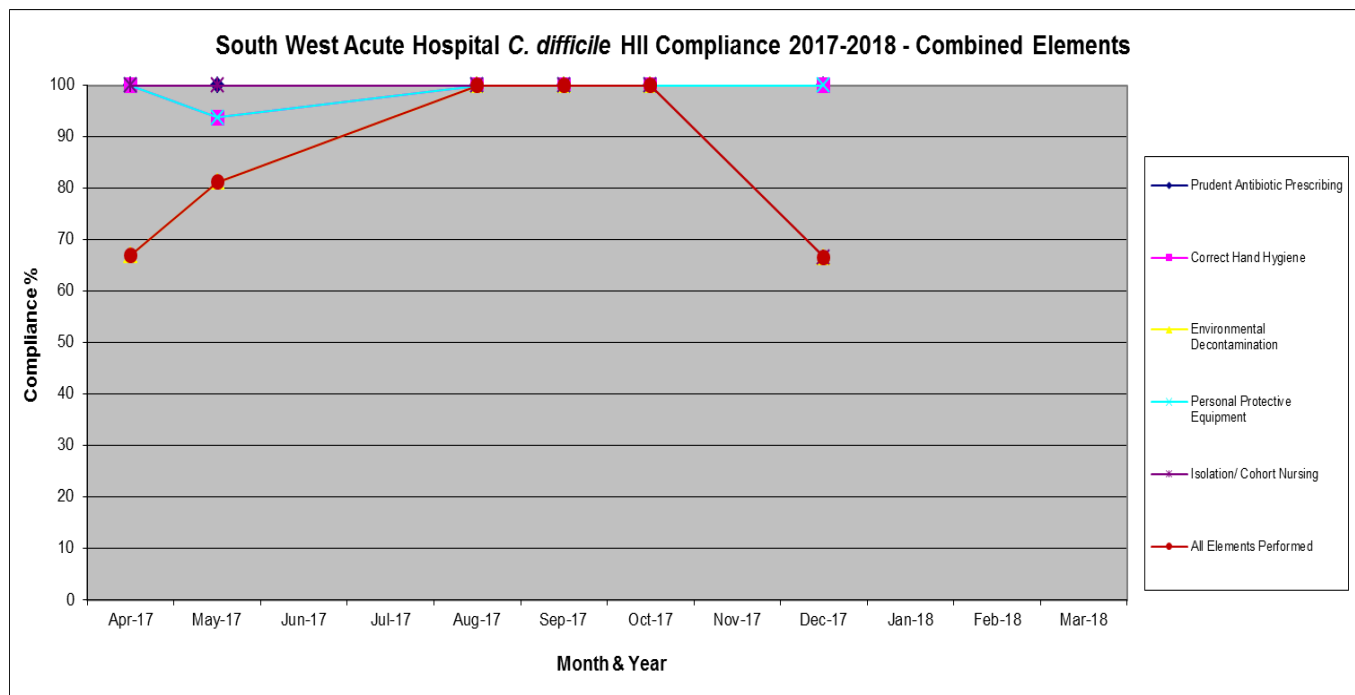
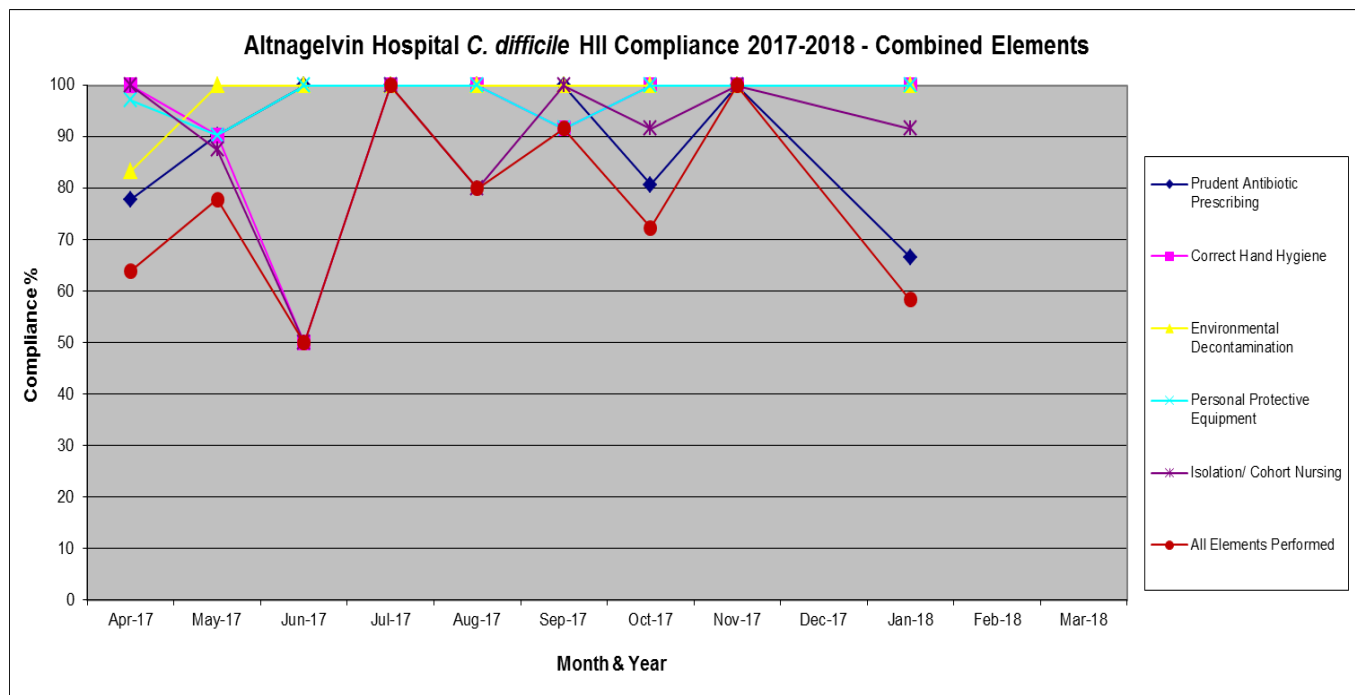
	Care Pathway	Pass									
Ward 3, SWAH	Care Bundle		75%					100%		100%	
	Care Pathway		Pass					Pass		Pass	
Ward 6, SWAH	Care Bundle					100%					
	Care Pathway					Pass					
Ward 7, SWAH	Care Bundle		100%				100% (A)				
	Care Pathway		Pass				Pass x 2				
Ward 8, SWAH	Care Bundle					100% (A)		100%			
	Care Pathway					Pass x 2		Pass			
Ward 9, SWAH	Care Bundle		50%								
	Care Pathway		Fail								
Critical Care, SWAH	Care Bundle									0%	
	Care Pathway									Pass	
Ward 3, Waterside	Care Bundle					100%					
	Care Pathway					Pass					

GDH Audits

		Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18
Ward 1, Alt	Care Bundle		100%					100%		0%	
	Care Pathway							Fail			
Ward 2 TOU, Alt	Care Bundle		84% (A)	100%		100%			100%	38% (A)	
	Care Pathway									Fail	
Ward 3, Alt	Care Bundle					100%					
	Care Pathway										
Ward 7, Alt	Care Bundle	100% (A)			100%						
	Care Pathway										
Ward 20, Alt	Care Bundle					100%				50% (A)	
	Care Pathway					Pass					
Ward 31, Alt	Care Bundle		0%		100%						
	Care Pathway										
Ward 32 ESU, Alt	Care Bundle		75%	80%	50%	25% (A)	0%	67%			
	Care Pathway		Fail					Fail			
Ward 40, Alt	Care Bundle			100%					0%		

	Care Pathway									
Ward 41 AMU, Alt	Care Bundle		100%			100%				
	Care Pathway		Fail			Pass				
Ward 50 Sperrin, Alt	Care Bundle		100%	100%	100%					
	Care Pathway									
CCU, Alt	Care Bundle			0%						
	Care Pathway									
ICU/ HDU, Alt	Care Bundle	50% (A)	100%		67%	67%			100%	
	Care Pathway	Pass	Fail		Fail	Pass			Fail	
Ward 1 MSAU, SWAH	Care Bundle						100%			
	Care Pathway									
Ward 2, SWAH	Care Bundle					0%		0%		
	Care Pathway					Fail				
Ward 3, SWAH	Care Bundle		34% (A)				100%			
	Care Pathway		Pass							
Ward 8, SWAH	Care Bundle		100%							
	Care Pathway		Fail							
Critical Care, SWAH	Care Bundle					100%				
	Care Pathway									
Ward 3, Waterside	Care Bundle							100%	100%	
	Care Pathway								Pass	

The two graphs below indicate the overall compliance of all of the elements of the *C. difficile* HII care bundle for Altnagelvin and the SWAH.



4. Legionella

Water testing continues throughout key Trust owned facilities. A range of mitigating actions are in place, ranging from increased flushing, chlorination and placement of PAL filters to the removal of dead legs and replacement of pipework.

A planned Legionella and Pseudomonas testing programme is also in place for PFI buildings, including the SWAH and the Labs & Pharmacy Building, Altnagelvin. The process is managed by Interserve FM and Integral FM respectively. All positive results and proposed

actions are reported to core members of the Trust's Water Safety Group (WSG) on an ongoing basis. Exceptions are discussed at the WSG meetings.

The Altnagelvin Tower Block improvement work has been completed. In the Tower Block Legionella positive results have been found between Floors 1 to 5. This is attributed to balancing issues and a specialist firm will carry out re-balancing work to address this.

Legionella continues to be a challenge to manage in the Treatment Wing of the Tower Block. Mechanical work has been ongoing for a month, installing both infrastructural pipework and the water supply to the new plant room. Work should be completed by March 2018.

Greenfield Residential Home, Strabane, had 5 positive samples for Legionella serogroup one (all low levels). Flushing regimes have increased to daily and all remedial actions have been carried out. It is hoped that the increased flushing regime has taken effect and that forthcoming results will be clear.

Significant work has been on going in Anderson House, Altnagelvin, and has included the following:

- a) Disconnecting the water supply from the Nurses' Home,
- b) Installing stand-alone gas boilers,
- c) Replacing 5 cold water storage tanks with 1 brand new tank,
- d) Replacing old, oversized pipework,
- e) Removing dead leg piping and 20 unused outlets,
- f) Full disinfection of the system.

It is hoped that water sampling will return clear results following completion of this work.

In ICU, SWAH, upgrade work is planned to commence in January 2018 and it is hoped this will be completed within 15-20 days.

Suspension of Chlorine Dioxide Dosing – Water sampling monitoring has indicated that previous chlorine dioxide dosing had been effective in the Nucleus Building, Altnagelvin, as there was an increase in Legionella positive samples during October and November 2017. The decision has been taken to recommence use of chlorine dioxide dosing and the company involved in the procedure has been contacted. A document has been completed and monitoring has been carried out in areas where chlorine dioxide suspension had been installed. Estate Services will now focus on remedial work in the Nucleus as it is suggested that problems are caused by dead legs and old piping.

Review of Water Sampling Procedures – The Western Trust has been producing a significant amount of information on water sampling and, as a result, is in a more informed position with regard to the efficacy of their water systems due to historical water sampling data. Following the recent review of Water Sampling Procedures, a risk matrix of all areas in the Trust has been completed, showing which areas were clear and the length of time since the facilities last tested positive. It was agreed that testing would cease in these areas.

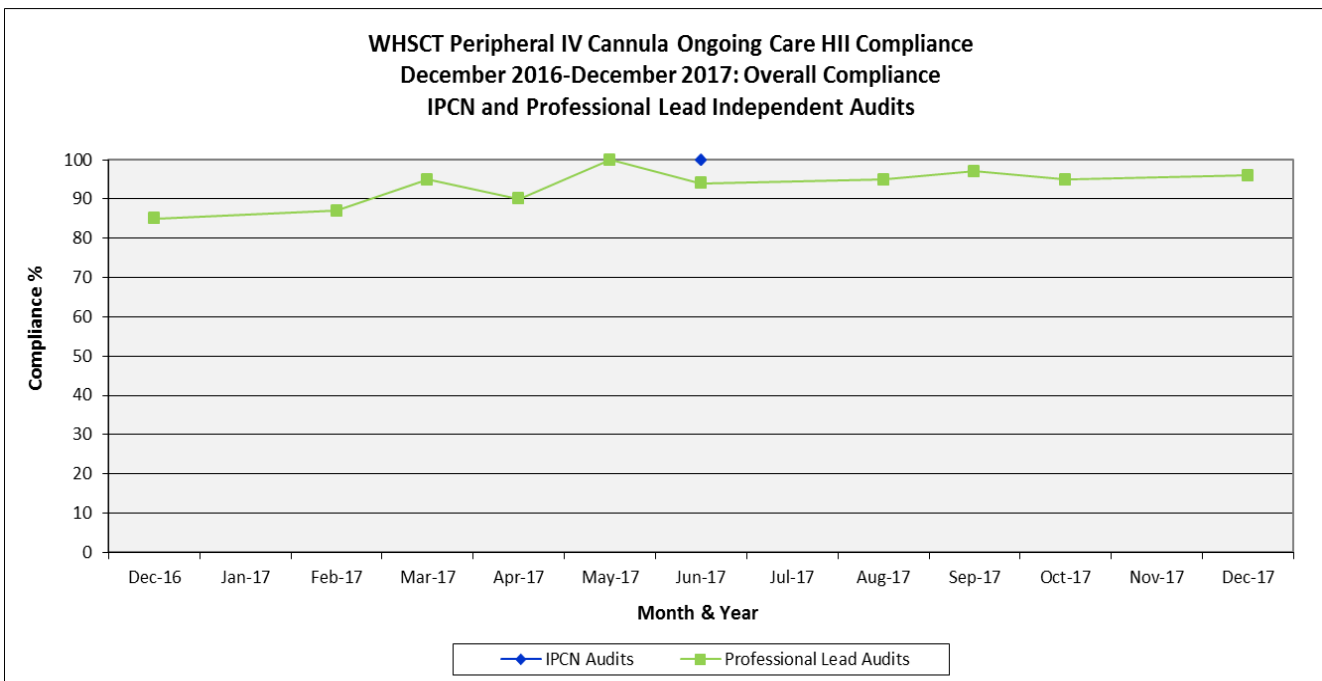
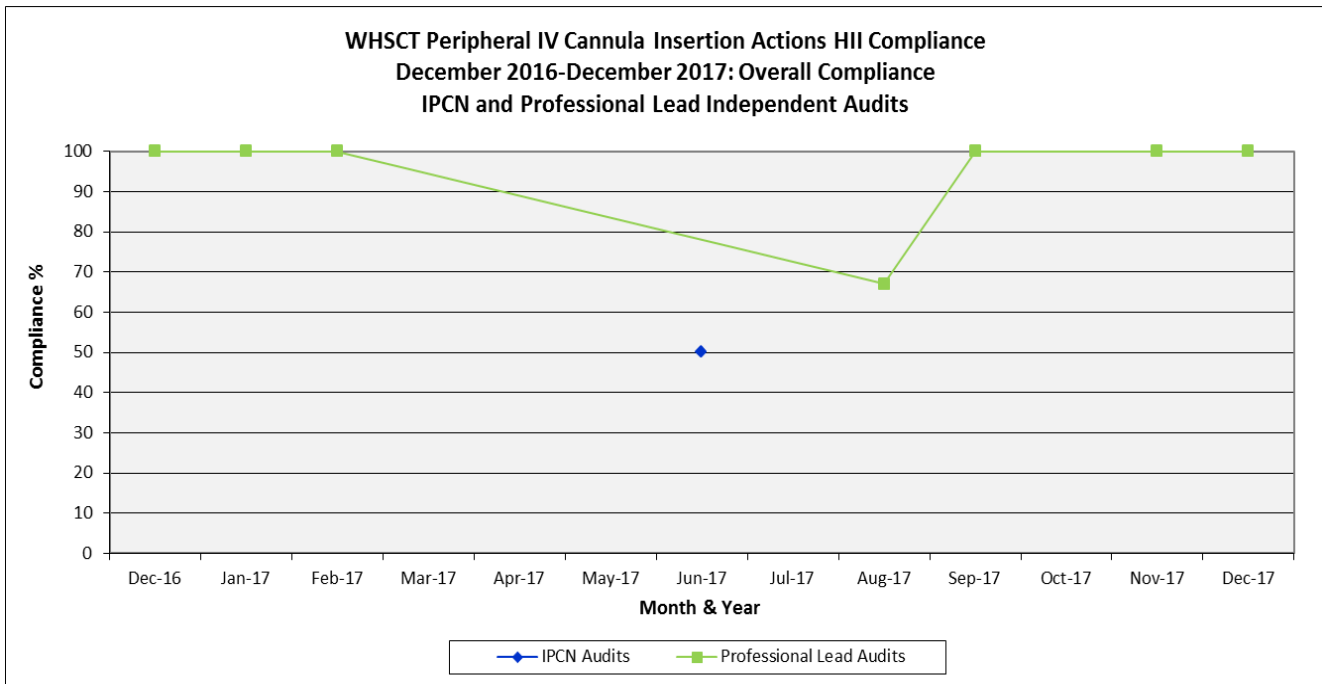
Legionella sampling will discontinue in Maternity, as this is a non-augmented care department.

5. Evidence Based Care Bundle Compliance – Peripheral Intravenous Cannula Insertion Actions/ Ongoing Care

The graphs below show average independent audit scores from December 2016 to December 2017 in both Altnagelvin and the SWAH for peripheral intravenous cannula

insertion and ongoing care. From May 2016 the IP&C Team have not undertaken routine independent audit of peripheral line insertion and ongoing care due to a range of other enhanced improvement work at ward level. The burden to oversee improvement and compliance with standards rests with the Ward Managers and Professional Leads in each area, as a wide range of education and enhanced support has been provided.

Assurance regarding practice of peripheral intravenous cannula insertion and ongoing care is carried out by the IP&C Team as part of the root cause analysis of healthcare-associated bacteraemias.



6. Aseptic Non-Touch Technique (ANTT)

The concept of ANTT for clinical procedures is now much more readily understood by staff and practice has improved, although audits carried out by the IP&C Team are not yet at the stage of showing consistent compliance.

Core Trainers for ANTT are in place across many areas of the Trust. It is the responsibility of these staff to cascade the training received to colleagues in their wards/ departments. Refresher sessions for this group of staff were held in May 2017. In order to build further capacity into the system, training sessions also took place for new Core Trainers at Altnagelvin and the SWAH in September 2017. An additional session, covering the Omagh area, is planned for 21st March 2018.

The training of medical staff remains a challenge. The IP&C Team currently input to the FY0 Assistantship Programme in March/ April each year and FY1 Workshadowing in July. Six such sessions took place during 2017.

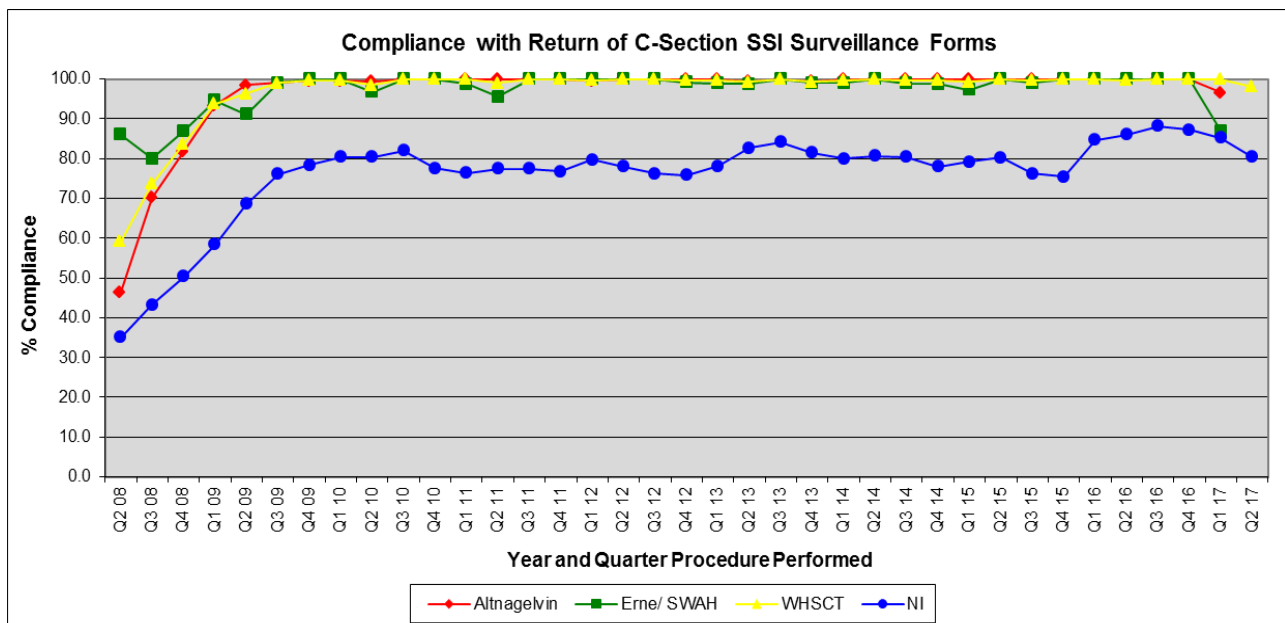
The number of staff who received ANTT training in 2017 is 128.

7. New and Updated Infection Prevention & Control Guidance

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

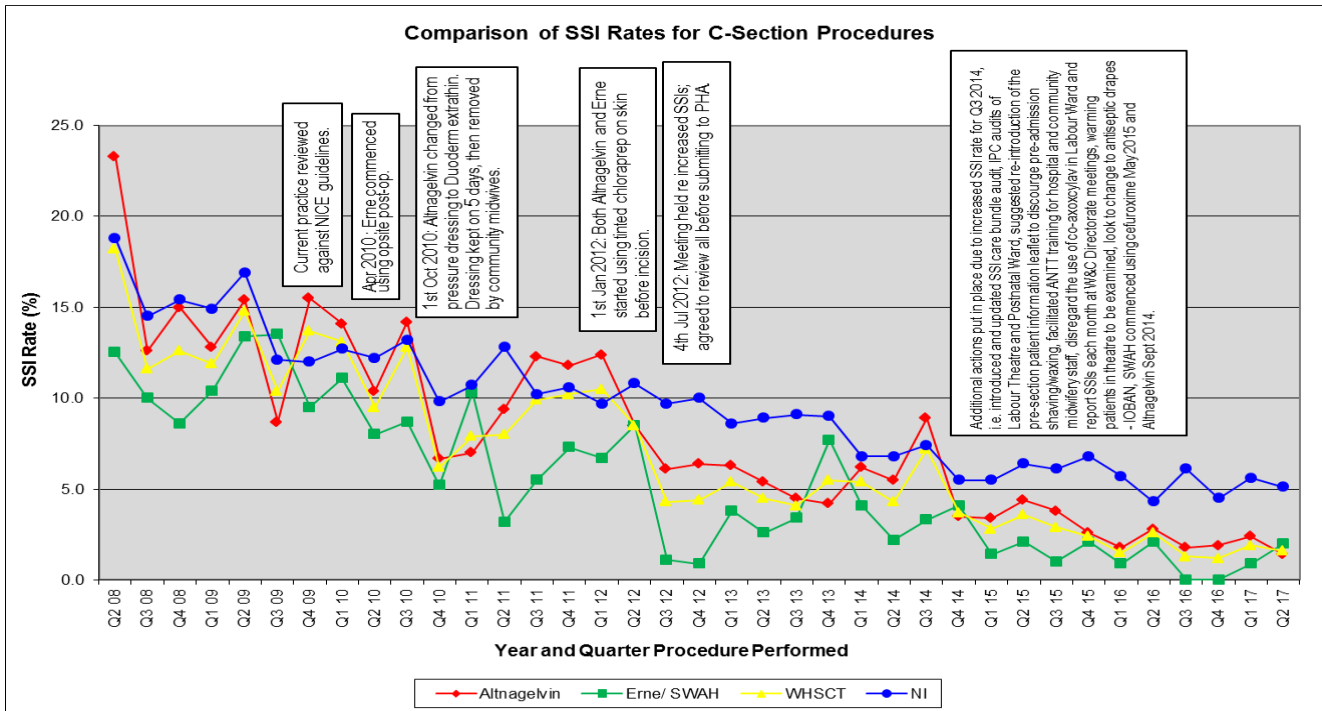
- Guidelines for the Management of Suspected/ Confirmed Beta Haemolytic Group A Streptococcal (GAS) Infection, Including Invasive Group A Streptococcal (iGAS) Infection

8. Caesarean Section Surgical Site Infection (SSI) Surveillance



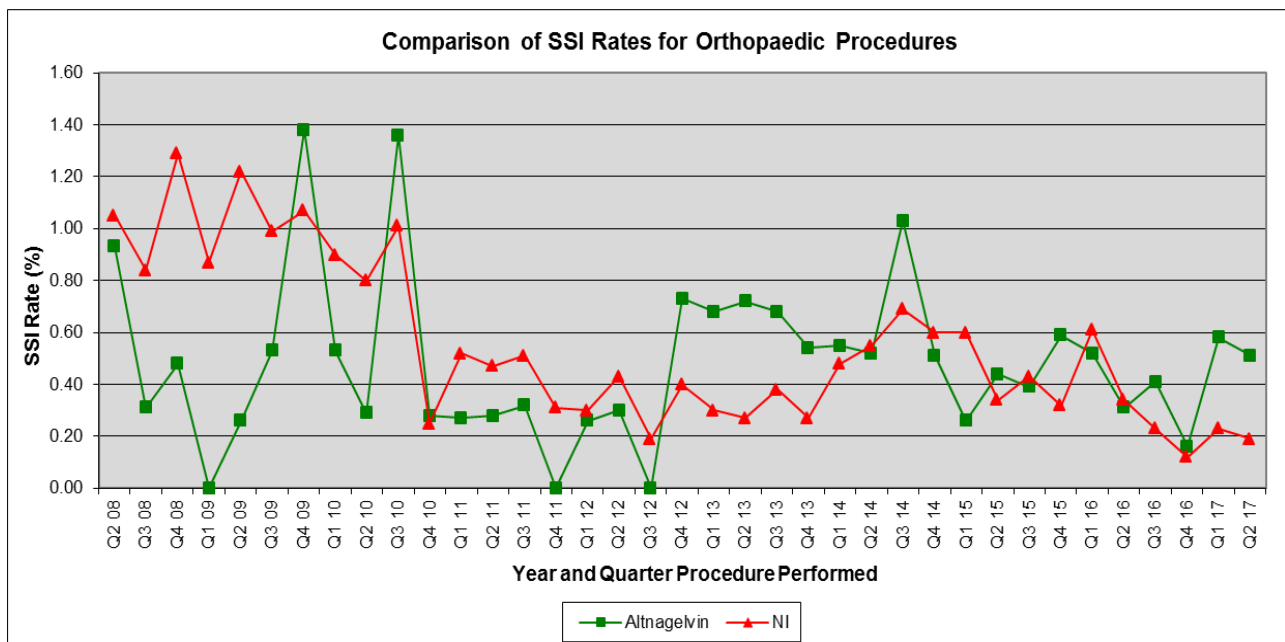
* % compliance for individual hospitals (Altnagelvin and SWAH) not available for Q2 17

The Trust continues to achieve the highest compliance in the region with surveillance related documentation (98.1%), compared to an 80.4% average compliance rate in Northern Ireland as a whole.



The surveillance demonstrates an ongoing reduction in infection rates over time and a lower rate for the Trust than the rest of the region; 1.6% and 5.1% respectively.

9. Orthopaedic Surgical Site Infection Surveillance



The SSI rate remains less than 1% of all surgery. Evidence based care bundles are in place for orthopaedic surgery.