Western Health and Social Care Trust

Infection Prevention & Control Report to Trust Board

Meeting Date – 1st March 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 61 cases have been reported and, therefore, the reduction target set has been exceeded. 33 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 (28) are classified as community-associated 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. As such, the Trust is currently on track to achieve the target, with a cumulative decrease of 34.5% compared to 2016/17.

As of 20th February 2018, the total number of days since the last Trust hospital-associated MRSA bacteraemia is:

Altnagelvin Hospital – 902 days (Last recorded case was in Ward 4)
South West Acute Hospital (SWAH) – 738 days (Last recorded case was in Ward 8)
Tyrone County Hospital/ Omagh Hospital & Primary Care Complex (OHPCC) – 1132 days (Last recorded case was in the Rehab Unit)

Ward 50, Altnagelvin
Since August 2017, 6 patients have tested positive for Glycopeptide-Resistant Enterococci (GRE) in non-sterile samples. Typing has returned as EC-17 x 1, EC-14 x 5 and Unique x 1. On 2nd February 2018 another patient tested positive for GRE in a blood culture. Typing has been requested and, although there are links in time and place to previous patients, this is not an ongoing incident and is now closed. Infection prevention and control (IP&C) audits also evidence significant improvements in the standards of practice.

Ward 2 TOU, Altnagelvin
2 new clinical samples have tested positive for GRE. The patients are linked in time and place and both specimens have been sent for typing. Contact screens for 3 patients and environmental screens have been requested. IP&C practice regarding the cleaning and decontamination of patient equipment has been found to be suboptimal. The ward team are addressing the deficits noted and all IP&C measures are in place,

Ward 3, Waterside Hospital
During January 2018 there were 2 positive cases of *C. difficile* in Ward 3, Waterside, within a week. Both patients shared the same bay until one was transferred to Altnagelvin and tested positive shortly after admission. All IP&C measures were in place and the *C. difficile* Infection Trigger Tool was instigated. The Trigger Tool was stood down after 5 days with no evidence of any further patients developing symptoms. Some issues were identified regarding the appropriate decontamination of commodes. This included the need to replace some commodes due to difficulties in cleaning because of rust and poor design. Both samples have returned the same ribotype indicating a probable transmission event. Root cause analyses (RCAs) for both patients are to be carried out on 20th February 2018.

Elm, Tyrone & Fermanagh Hospital
4 patients reported symptoms of vomiting in Elm, an acute mental health ward at the Tyrone & Fermanagh Hospital. The cause was unknown and one sample tested negative for Norovirus. The ward did not need to be closed and all IP&C measures were in place, with no further patients developing any symptoms.

2. Attendance at Infection Prevention & Control Training

Induction/ Mandatory Training

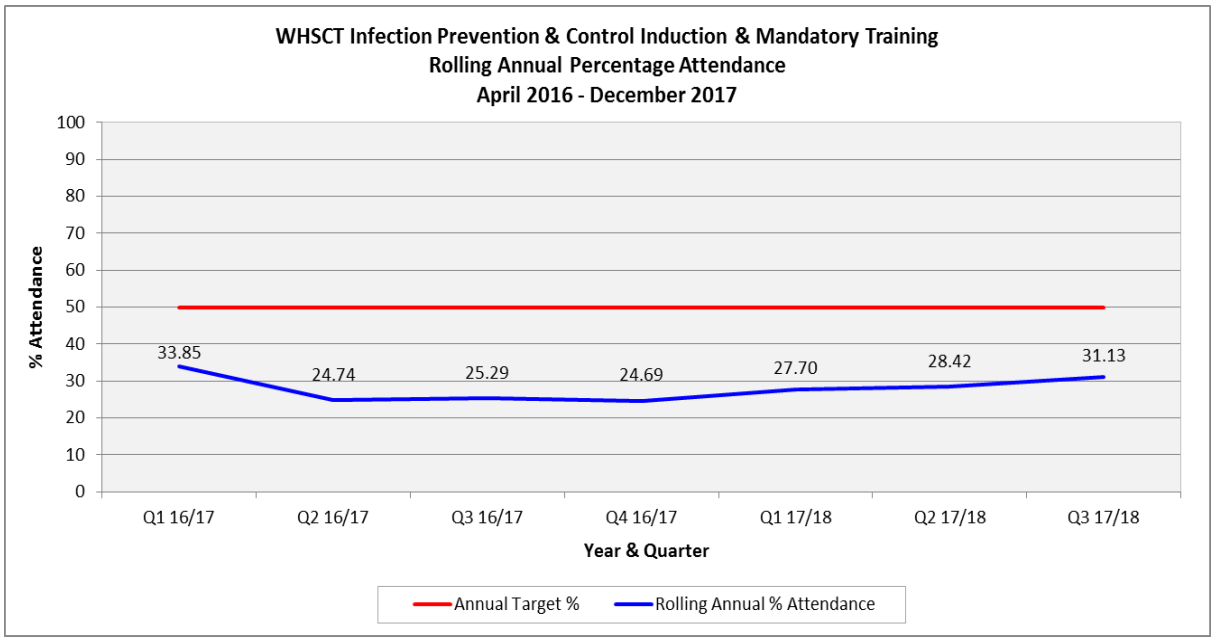
52 Induction and Mandatory Training sessions were delivered by the IP&C Team during the period April-December 2017. That is an average of 1.44 two-hour sessions per week within primary and secondary care settings across the Trust. As of the end of December, 2489 staff have attended the training (1575 in the Northern Sector and 914 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 31.13% for the 12 months ending December 2017 – 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 Northern Ireland Branch's 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. Recommendations are currently being devloped by the IP&C Team and hopefully will be implemented in Septmeber 2018. This will include:

- A tiered system approach tailored to specific staff groups relevant to their 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.



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 61 cases, with 28 of those being categorised as community-associated. Therefore, the target has been exceeded, with an overall increase of 18.84% compared to last year. This comprises an increase in healthcare-associated infection cases of 12.51% versus an increase in community-acquired infection cases of 27.27%.

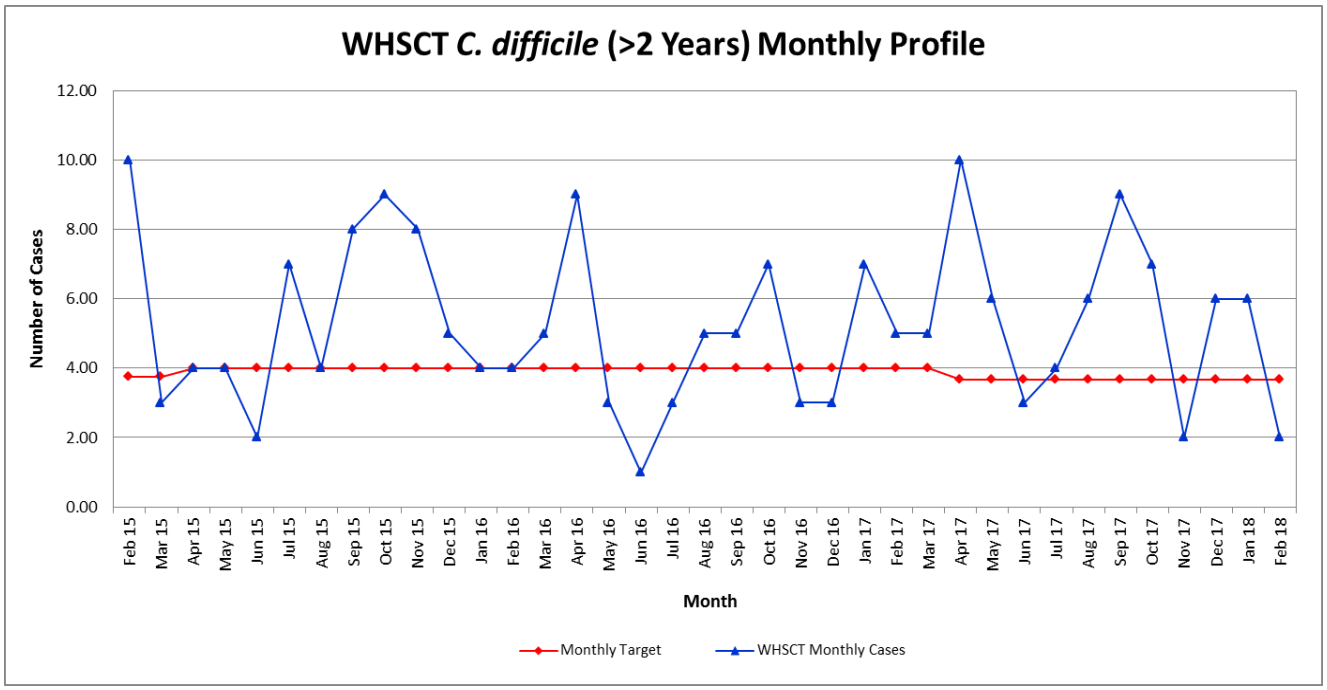
Since the last Report to Trust Board, which contained figures as at 24th January 2018, there have been three new cases of *C. difficile* (breakdown below).

3 *C. difficile* cases → 2 HAI ----- 1 of these was a previously positive CAI case*

3 *C. difficile* cases → 1 CAI

* 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 three cases.

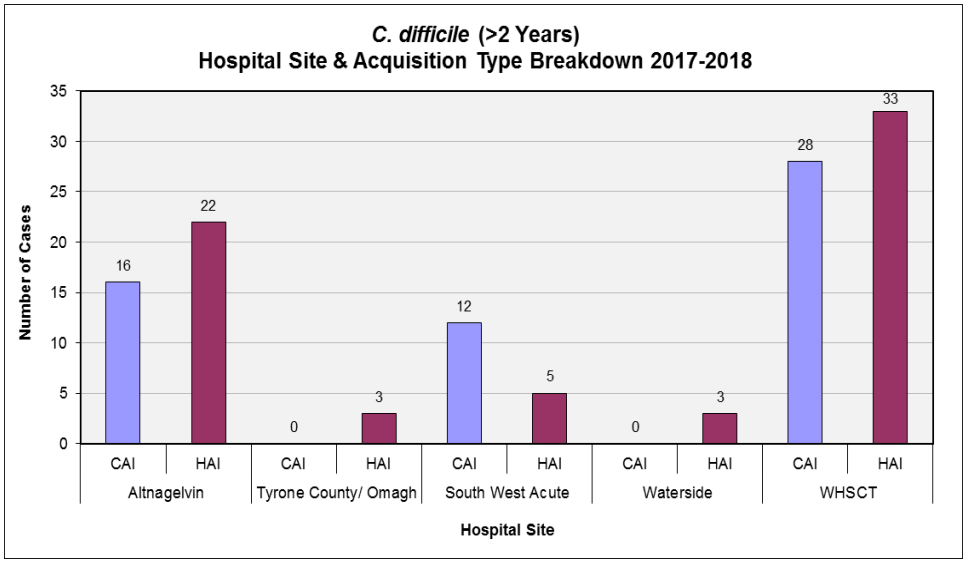


* *The value for Feb 18 is subject to change as the report was compiled prior to the end of the month.*

A breakdown of the cases by hospital site and acquisition type (as of 20th February 2018) is given in the chart below.

Key:

CAI	Community-associated infection
HAI	Hospital-associated infection



C. difficilel 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 antibiotic prescribing, 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	Feb-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%			67%		33%
	Care Pathway	Fail					Pass			Fail		Fail
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%		67%
	Care Pathway									Pass		Fail
Ward 42, Alt	Care Bundle		67%		100%				100%			
	Care Pathway		Pass		Pass				Pass			
Ward 43 Gynae, Alt	Care Bundle										33%	
	Care Pathway										Fail	
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,	Care Bundle		100%			100%		100%		100%		

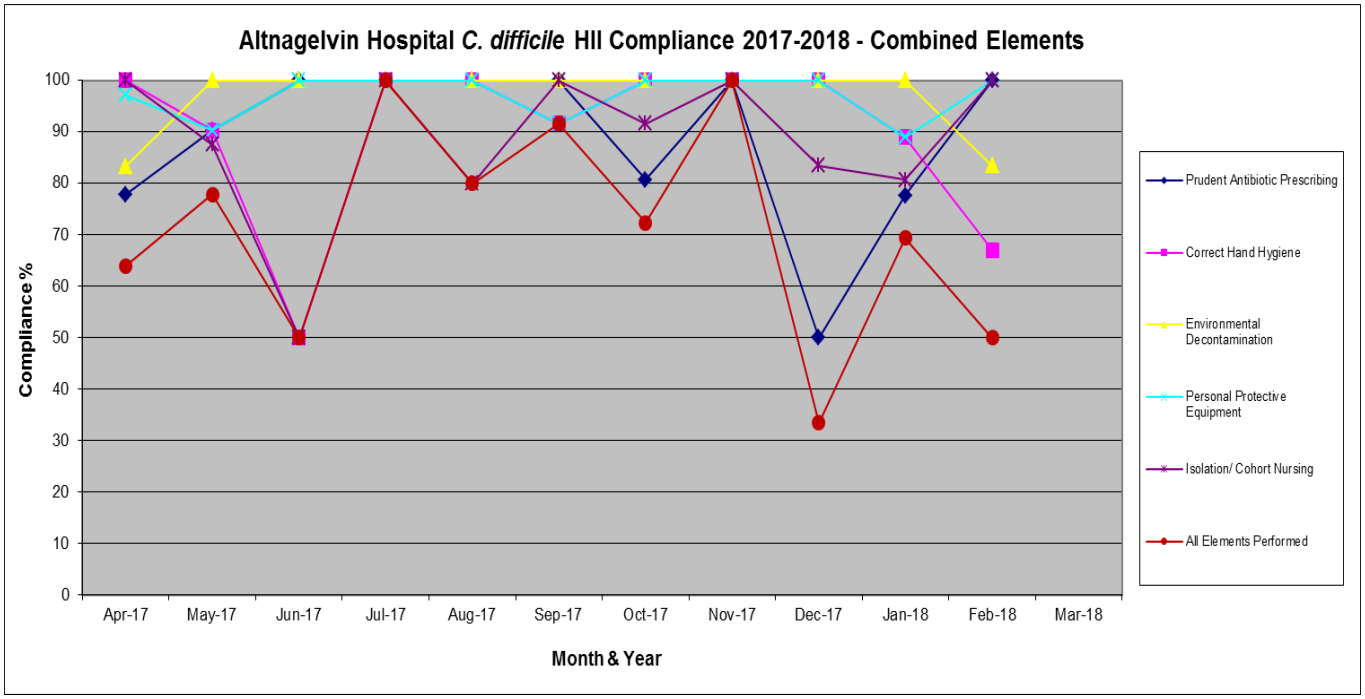
SWAH	Care Pathway		Pass			Pass		Pass		Pass		
Ward 2, SWAH	Care Bundle	67%										
	Care Pathway	Pass										
Ward 3, SWAH	Care Bundle		75%					100%		100%		
	Care Pathway		Pass					Pass		Pass		
Ward 5, SWAH	Care Bundle										67%	
	Care Pathway										Fail	
Ward 6, SWAH	Care Bundle					100%						
	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									
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%						67%
	Care Pathway					Pass						Pass

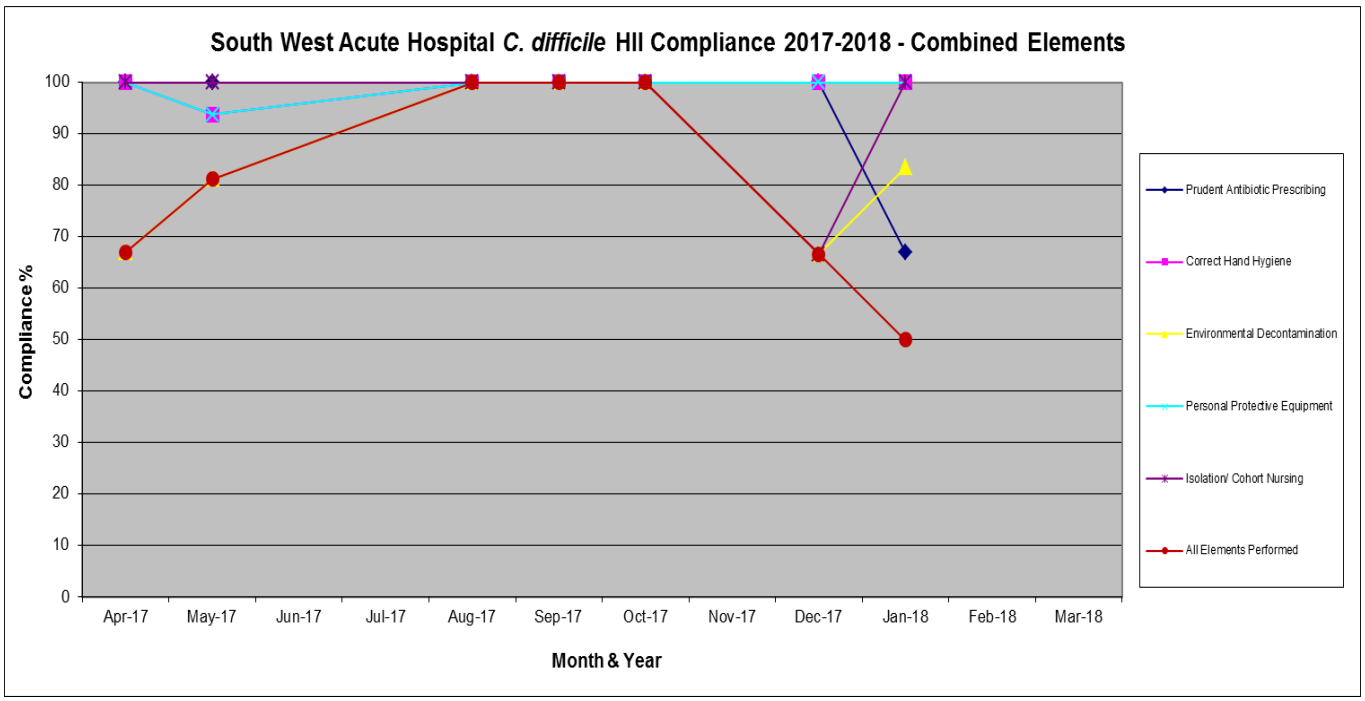
GDH Audits

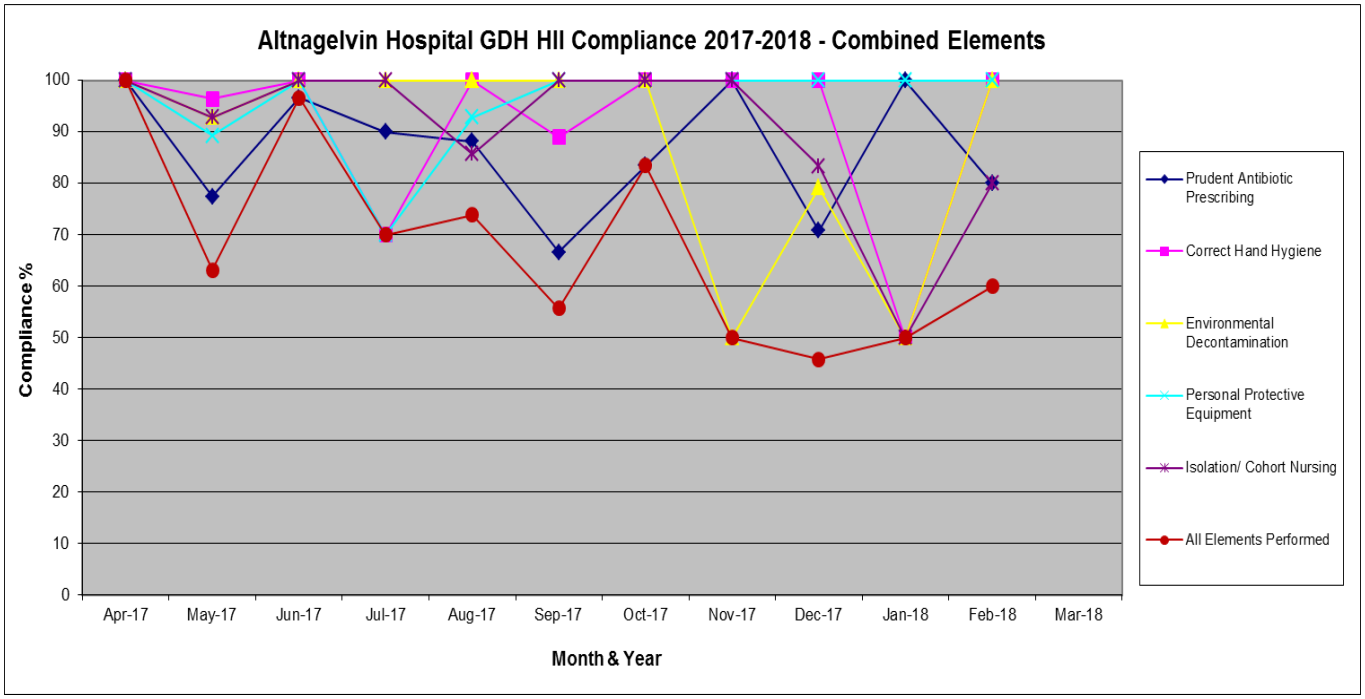
		Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18
Ward 1, Alt	Care Bundle		100%					100%		0%		0%
	Care Pathway							Fail				
Ward 2 TOU, Alt	Care Bundle		84% (A)	100%		100%			100%	38% (A)		100%
	Care Pathway									Fail		
Ward 3, Alt	Care Bundle					100%						
	Care Pathway											
Ward 7, Alt	Care Bundle	100% (A)			100%							100% (A)
	Care Pathway											
Ward 20, Alt	Care Bundle					100%				50% (A)		

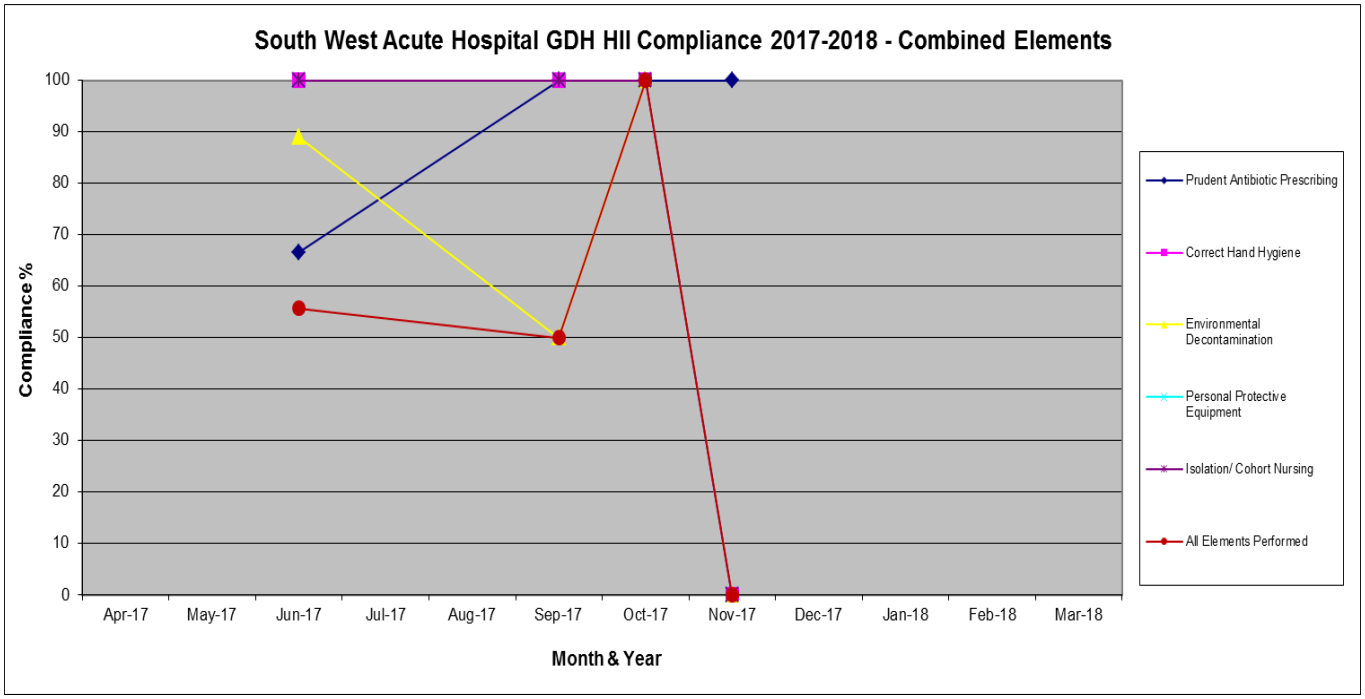
	Care Pathway					Pass						
Ward 31, Alt	Care Bundle		0%		100%							
	Care Pathway											
Ward 32 ESU, Alt	Care Bundle		75%	80%	50%	25% (A)	0%	67%				
	Care Pathway		Fail					Fail				
Ward 40, Alt	Care Bundle			100%					0%			
	Care Pathway											
Ward 41 AMU, Alt	Care Bundle			100%			100%					
	Care Pathway			Fail			Pass					
Ward 43 Gynae, Alt	Care Bundle										50%	
	Care Pathway											
Ward 50 Sperrin, Alt	Care Bundle			100%	100%	100%						0%
	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			Pass		
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 four graphs below indicate the overall compliance of all of the elements of the *C. difficile*/ GDH HII care bundles for Altnagelvin and the SWAH.






Altnagelvin Hospital GDH HII Compliance 2017-2018 - Combined Elements
Compliance %
100
90
80
70
60
50
40
30
20
10
0
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan-18
Feb-18
Mar-18
Month & Year
Prudent Antibiotic Prescribing
Correct Hand Hygiene
Environmental Decontamination
Personal Protective Equipment
Isolation/ Cohort Nursing
All Elements Performed


South West Acute Hospital GDH HII Compliance 2017-2018 - Combined Elements
Compliance %
100
90
80
70
60
50
40
30
20
10
0
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan-18
Feb-18
Mar-18
Month & Year
Prudent Antibiotic Prescribing
Correct Hand Hygiene
Environmental Decontamination
Personal Protective Equipment
Isolation/ Cohort Nursing
All Elements Performed

4. Learning from Root Cause Analysis (RCA) 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 2017 (July-September) follow.

C. difficile

A total of 20 *C. difficile* cases were reported within this period and 13 were either hospital or healthcare-associated. 12 of these were investigated using an RCA approach (one remained outstanding at the end of the quarter). Most cases were due to the use of proton pump inhibitors and antibiotics, mainly for treating repeated catheter-associated urinary tract infections (3 patients) and hospital-acquired pneumonias (HAP) (4 patients). Three patients had a previous history of *C. difficile* or GDH. Of the 12 cases examined, one was deemed to have been avoidable*.

Examples of What Went Wrong
Patient was not prescribed the correct antibiotic as per guidelines for relapse of *C. difficile* infection.
Patient received an additional five days of antibiotics that were not required for HAP. * *This is the avoidable case.*
Patient continued to receive antibiotics when transferred from another hospital despite written guidance that they were no longer required.
Patient who was known to be positive was tested again within 28 days without clinical need.
There was a delay in sampling faeces by ward staff.

Methicillin-Resistant Staphylococcus Aureus (MRSA) Bacteraemia

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

Methicillin-Sensitive Staphylococcus Aureus (MSSA) Bacteraemia

There were 11 MSSA bacteraemia cases in total, but only three met the healthcare-associated definition and were investigated via RCA. One root cause was poor compliance with the care of a peripheral cannula and a second could not be identified. The third case was thought to be a contaminant and not a true bacteraemia. One of the MSSA cases was deemed to be preventable*.

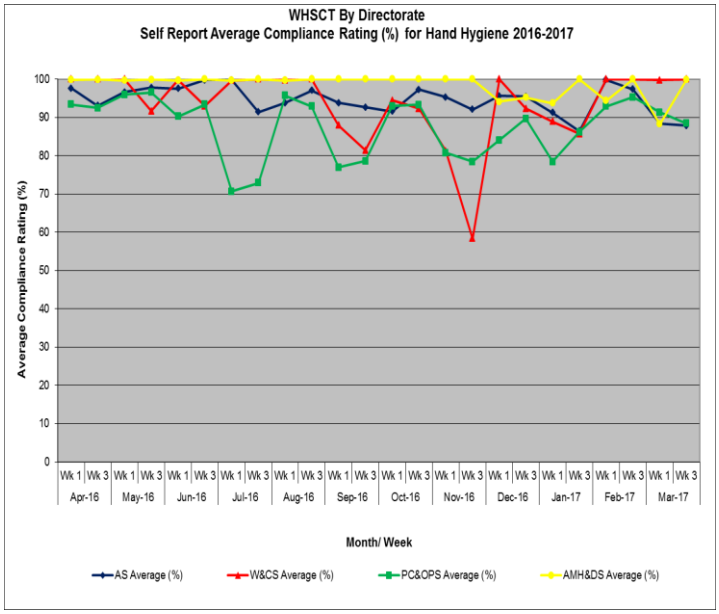
Examples of What Went Wrong
A peripheral intravenous catheter was left in place for longer than 96 hours and there was very little documented evidence of checking in both wards in Altnagelvin and SWAH. * *This is the preventable case.*
Patient was not placed on the Sepsis pathway in OHPCC.

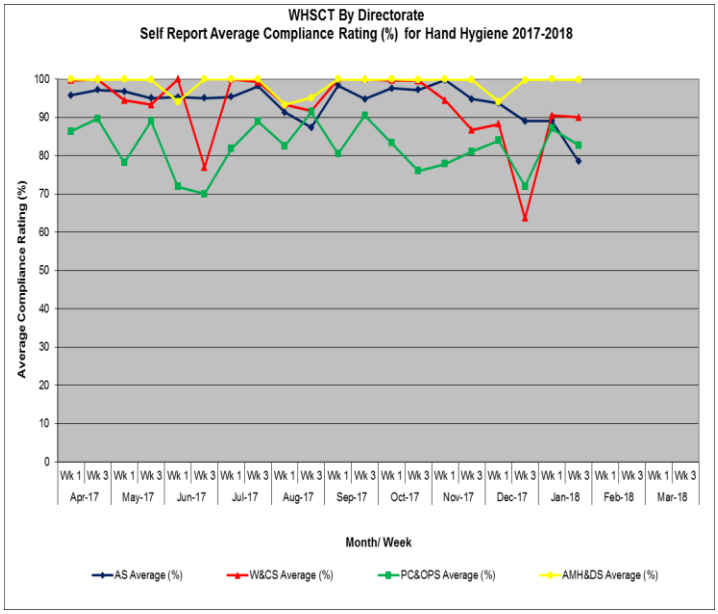
5. Hand Hygiene Compliance

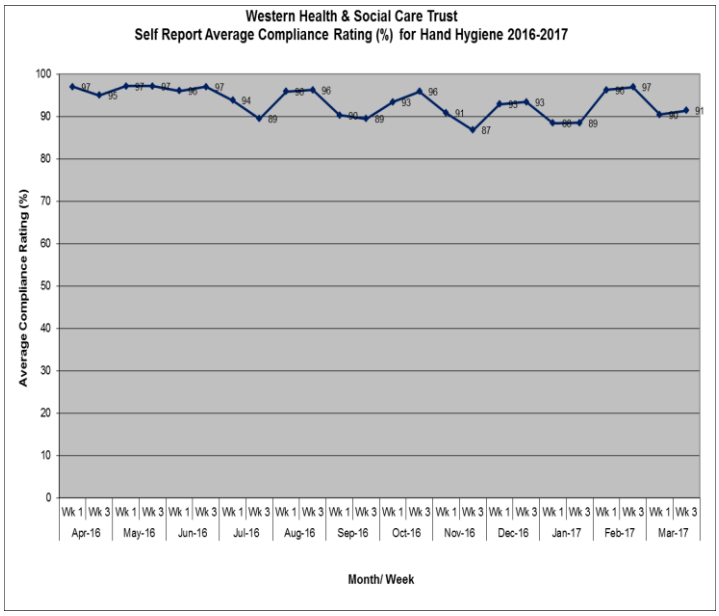
The Trust's overall self-reported hand hygiene scores are 87% when non-submission areas are included. These areas score an automatic 0%. 25 areas out of 194 applicable areas failed to submit scores for January 2018. They are as follows:

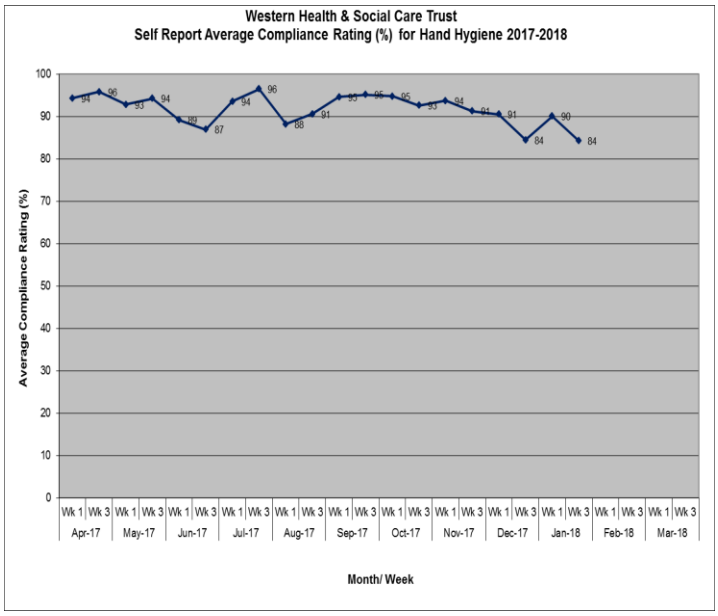
Altnagelvin – Ward 20, Ward 40, Emergency Department, Cardiac Investigations, Oncology Outpatients, Main Theatres 4 and 6, DESU Recovery, DESU Theatres 1, 3 and 4, Fracture Clinic and GUM Clinic
SWAH – Ward 2, Outpatients and Emergency Department
OHPCC – Cardiac Investigations, Theatres and Outpatients
Waterside – Ward 2 and Ward 3
Residential Homes – Thackeray Place Residential Home
Day Care – Creggan Day Centre and Tempo Road Day Centre
Other Community – The Cottages Children's Respite

Fracture Clinic, SWAH Outpatients, Thackeray Place Residential Home and The Cottages Children's Respite also did not submit scores for the previous month.

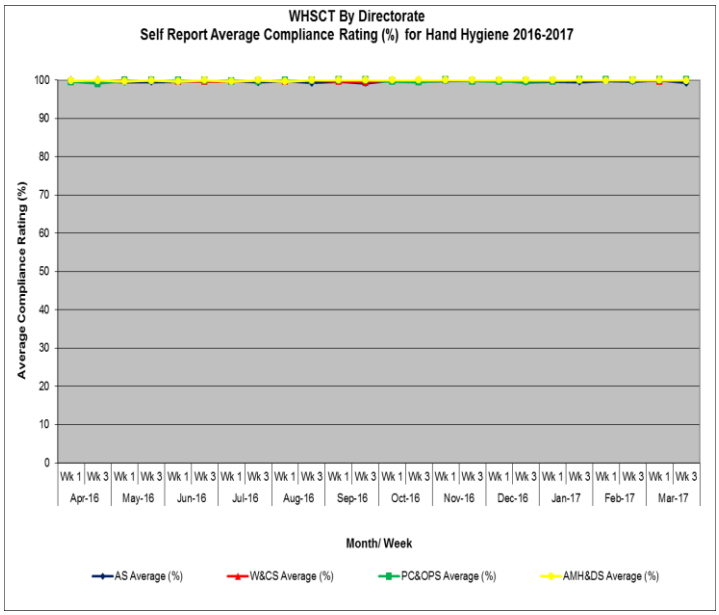


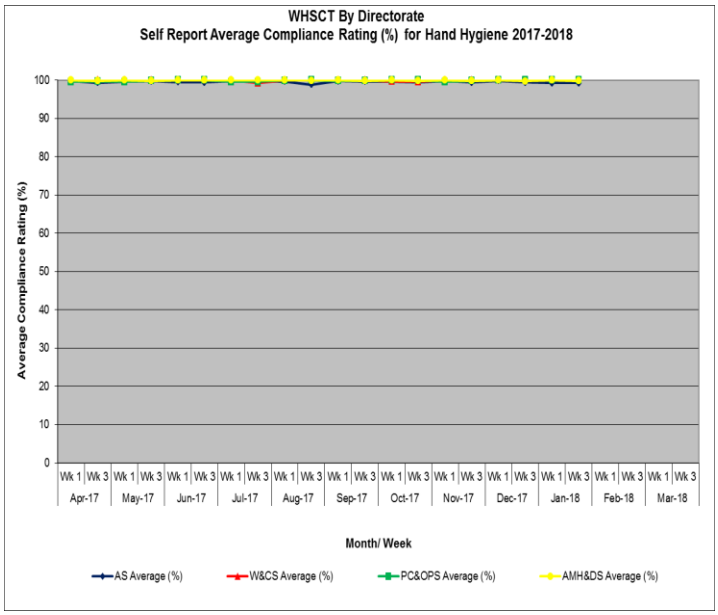


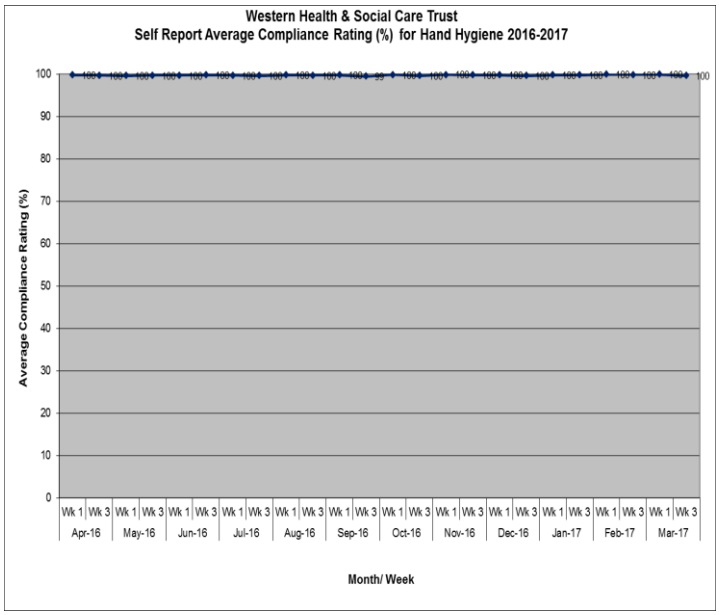


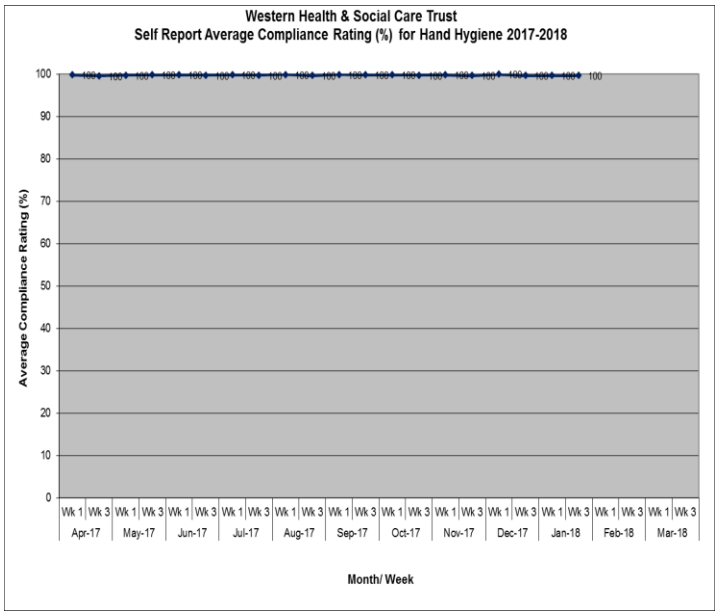


However, when adjusted for non-submission areas, the Trust's overall self-reported hand hygiene scores improve to 100%.









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.