

## **Infection Prevention & Control Report to Trust Board**

**Meeting Date – 5<sup>th</sup> April 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 64 cases have been reported and, therefore, the reduction target set has been exceeded. 36 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 four 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 20% compared to 2016/17.

As of 27<sup>th</sup> March 2018, the total number of days since the last Trust hospital-associated MRSA bacteraemia is:

Altnagelvin Hospital – 937 days	(Last recorded case was in Ward 4)
South West Acute Hospital (SWAH) – 773 days	(Last recorded case was in Ward 8)
Tyrone County Hospital/ Omagh Hospital & Primary Care Complex – 1162 days	(Last recorded case was in the Rehab Unit)

Three wards in Altnagelvin are experiencing an increase in Glycopeptide-Resistant Enterococci (GRE). This bacterium resides in the human bowel. It is a relatively low level pathogen compared to *C. difficile* and tends to colonise rather than infect patients. It is an increasingly common cause of healthcare-associated infection, particularly in surgical wards. The wards affected are Ward 2 TOU, ICU/ HDU and Ward 32 ESU. All samples have been sent for typing to a reference laboratory in England. Incident meetings have taken place and infection prevention and control (IP&C) practice audits are being undertaken.

Two patients and a number of staff in Wards 1 and 2, Waterside Hospital, have been diagnosed with scabies since the beginning of March. All IP&C measures are in place and patients and staff have received treatment. Both wards will re-open to admissions on 26<sup>th</sup> March 2018.

### **2. C. difficile Performance**

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

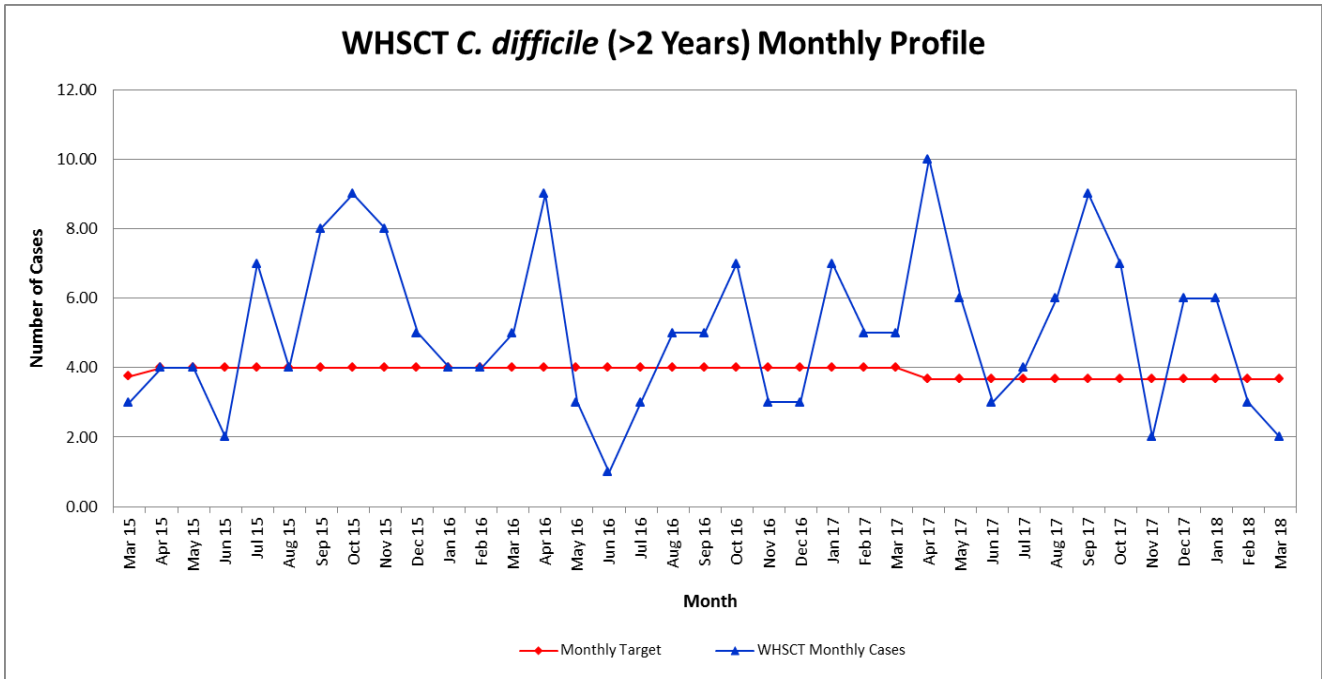
So far this year the Trust has reported 64 cases, with 28 of those being categorised as community-associated. Therefore, the target has been exceeded, with an overall increase of 14.29% compared to last year. This comprises an increase in healthcare-associated infection cases of 12.5% versus an increase in community-acquired infection cases of 16.67%.

Since the last Report to Trust Board, which contained figures as at 20<sup>th</sup> February 2018, there have been four new cases of *C. difficile* (breakdown below).

4 *C. difficile* cases  $\begin{cases} \rightarrow 2 \text{ CAI} \\ \rightarrow 2 \text{ HAI} \end{cases}$  ----- 1 of these was a previously positive HAI case\*

\* 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.

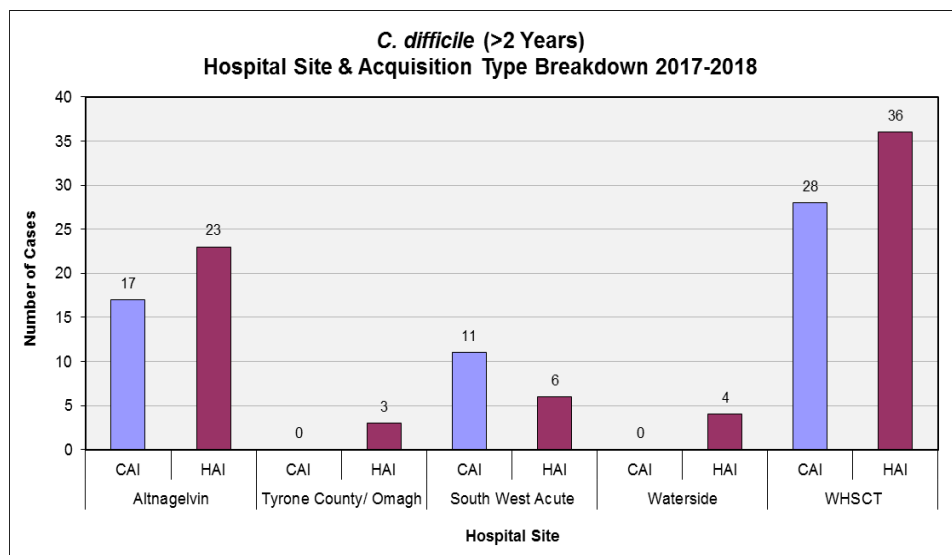
Root cause analyses (RCA) are pending for all four cases.



\* The value for Mar 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 27<sup>th</sup> March 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 antibiotic prescribing, hand hygiene 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	Mar-18
Ward 1, Alt	Care Bundle			100%	100%		100%		100%				50%
	Care Pathway			Pass	Fail		Pass		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%									100%	
	Care Pathway		Pass									Fail	
ICU/ HDU, Alt	Care Bundle	34% (A)											
	Care Pathway	Fail x 1 Pass x 1											
Ward 1 MSAU,	Care Bundle		100%			100%		100%		100%			

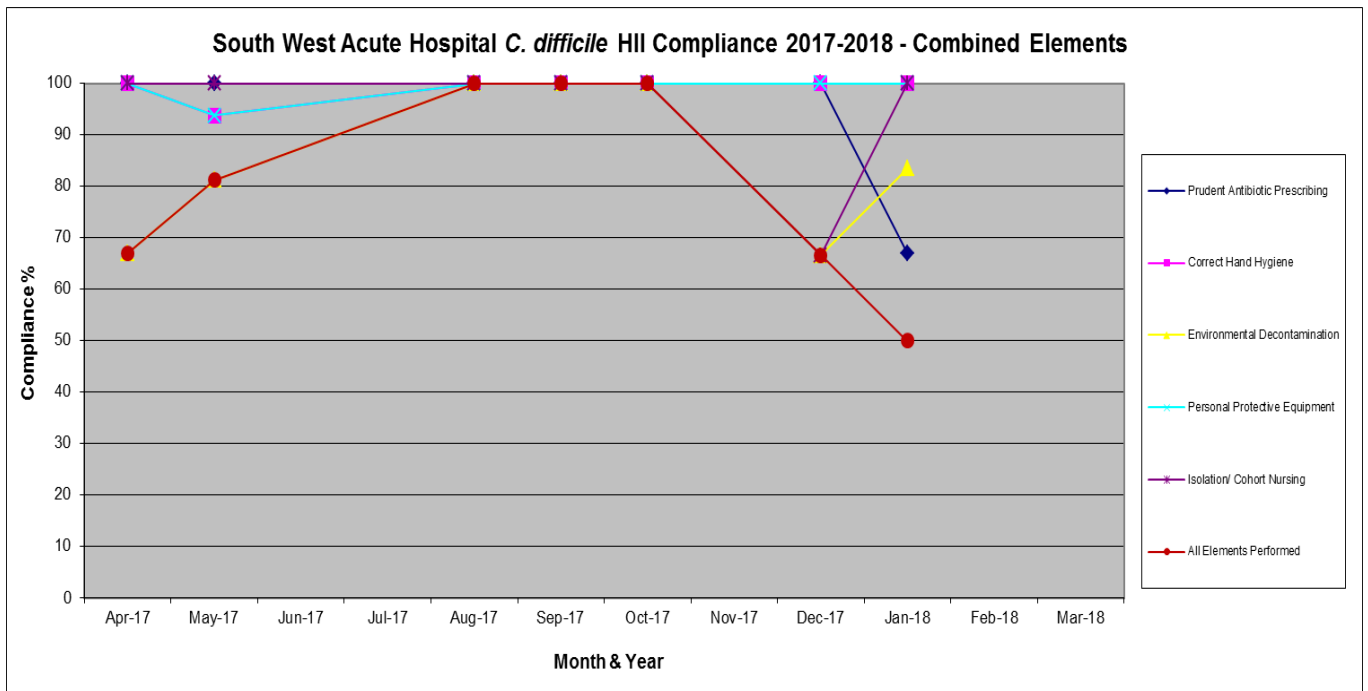
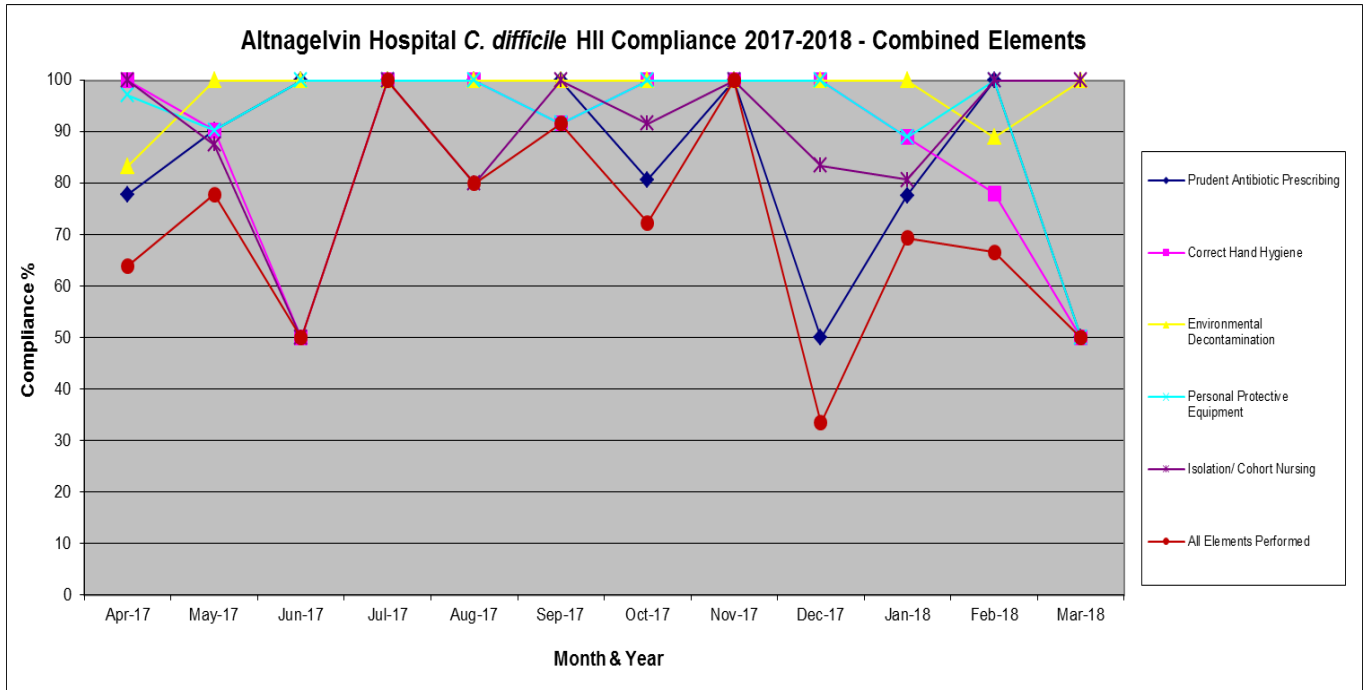
SWAH	Care Pathway		Pass			Pass		Pass		Pass			
Ward 2, SWAH	Care Bundle	67%											
	Care Pathway	Pass											
Ward 3, SWAH	Care Bundle		75%					100%		100%			
	Care Pathway		Pass					Pass		Pass			
Ward 5, SWAH	Care Bundle											67%	
	Care Pathway											Fail	
Ward 6, SWAH	Care Bundle					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%							34% (A)
	Care Pathway					Pass							Pass x 2

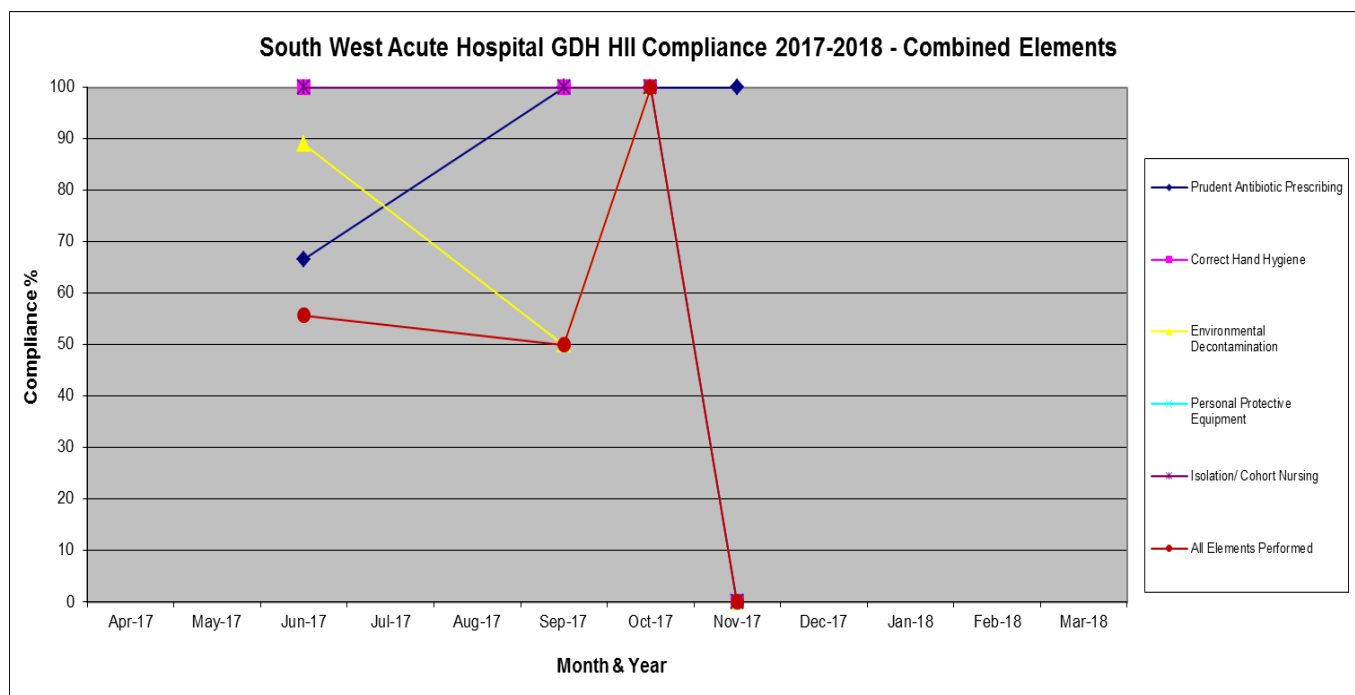
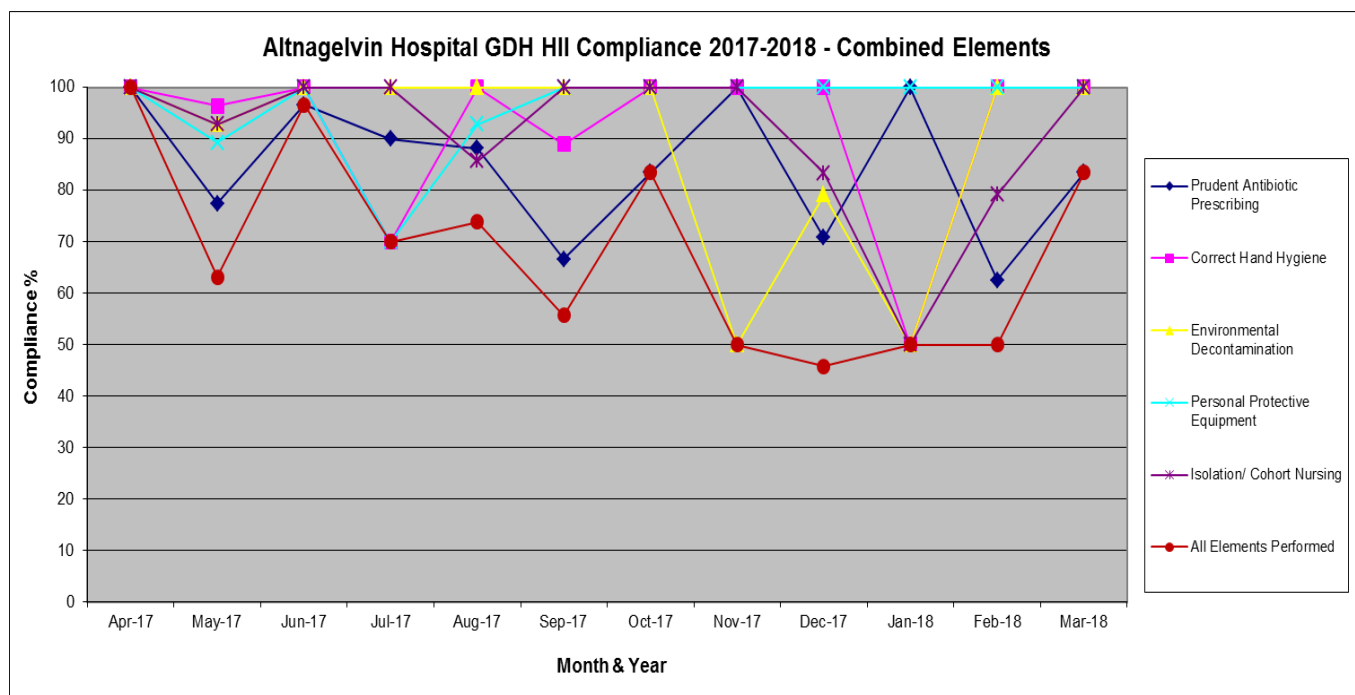
### GDH Audits

		Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18
Ward 1, Alt	Care Bundle		100%					100%		0%		50% (A)	
	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%							67% (A)	
	Care Pathway												
Ward 20, Alt	Care Bundle					100%				50% (A)			

	Care Pathway					Pass							
Ward 31, Alt	Care Bundle		0%		100%							0%	
	Care Pathway											Fail	
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 42, Alt	Care Bundle												67%
	Care Pathway												
Ward 43 Gynae, Alt	Care Bundle										50%		
	Care Pathway												
Ward 50 Sperrin, Alt	Care Bundle			100%	100%	100%						0%	100%
	Care Pathway												Pass
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.





### 3. Pseudomonas

*Pseudomonas aeruginosa* is an opportunistic pathogen or coloniser, well known in the hospital environment. *Pseudomonas* is predominantly an environmental organism and is highly attracted to water sources. *Pseudomonas* is ubiquitous in the alimentary tract of humans and, therefore, carriage is normal and its presence is not indicative of infection. The term 'colonisation' is used to describe the identification of any organism without signs of infection. Specific groups of patients who are immunocompromised are at a higher risk of colonisation or infection than the normal population. The Trust has stringent measures in place regarding the surveillance and management of *Pseudomonas* in augmented care areas and participates in the PHA surveillance as detailed below.



**Pseudomonas Surveillance (Augmented Care\* Areas Only)**

	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
2014/15	0	1	0	0	0	1	3	0	1	0	0	0	6
2015/16	0	0	0	0	0	0	0	0	0	1	0	0	1
2016/17	0	0	0	0	0	0	0	1	1	1	0	0	3
2017/18	0	1	0	0	1	0	0	1	0	0	0	0 <sup>†</sup>	3 <sup>†</sup>

\* The PHA defines augmented care as NNICU, Adult ICU/ HDU, Renal, Oncology/ Haematology.

<sup>†</sup> These values are subject to change as the report was compiled prior to the end of the month/ year.

Since the beginning of April 2017 three cases have been reported. All are categorised as healthcare-associated.

The most recent healthcare-associated positive blood culture in an augmented care area pertained to an inpatient admission in Ward 50, Altnagelvin, in November 2017. All IP&C measures and assurance audits were carried out. Environmental screening and water sampling were performed and all tested negative for *Pseudomonas aeruginosa*.

**The Human Milk Bank, SWAH**

The Human Milk Bank receives, pasteurises and distributes donated expressed breast milk to neonatal and specialist baby units, with premature babies and low birth weight babies, across Northern Ireland and the Republic of Ireland.

During January 2018 the Human Milk Bank relocated from a site in Irvinestown to the SWAH. On 31<sup>st</sup> January the milk pasteurisation machines tested positive for *Pseudomonas aeruginosa*.

Following water testing and positive confirmation of the bacteria, the Trust immediately took steps to cease distribution and to provide advice and updates to all the baby units. The Trust has commenced intense decontamination, cleaning, maintenance and testing of the machines and a full system review of processes is underway, including the purchase of new pasteurisers.

At present no premature baby has tested positive for *Pseudomonas aeruginosa* as a result of this incident.

The Trust is working in liaison with the Food Standards Agency and the Environmental Health Agency and the expectation is that pasteurisation and distribution of expressed breast milk will resume in the near future.

**4. Antimicrobial Management Team**

The Antimicrobial Management Team (AMT) met on 28<sup>th</sup> February 2018. The following items were discussed:

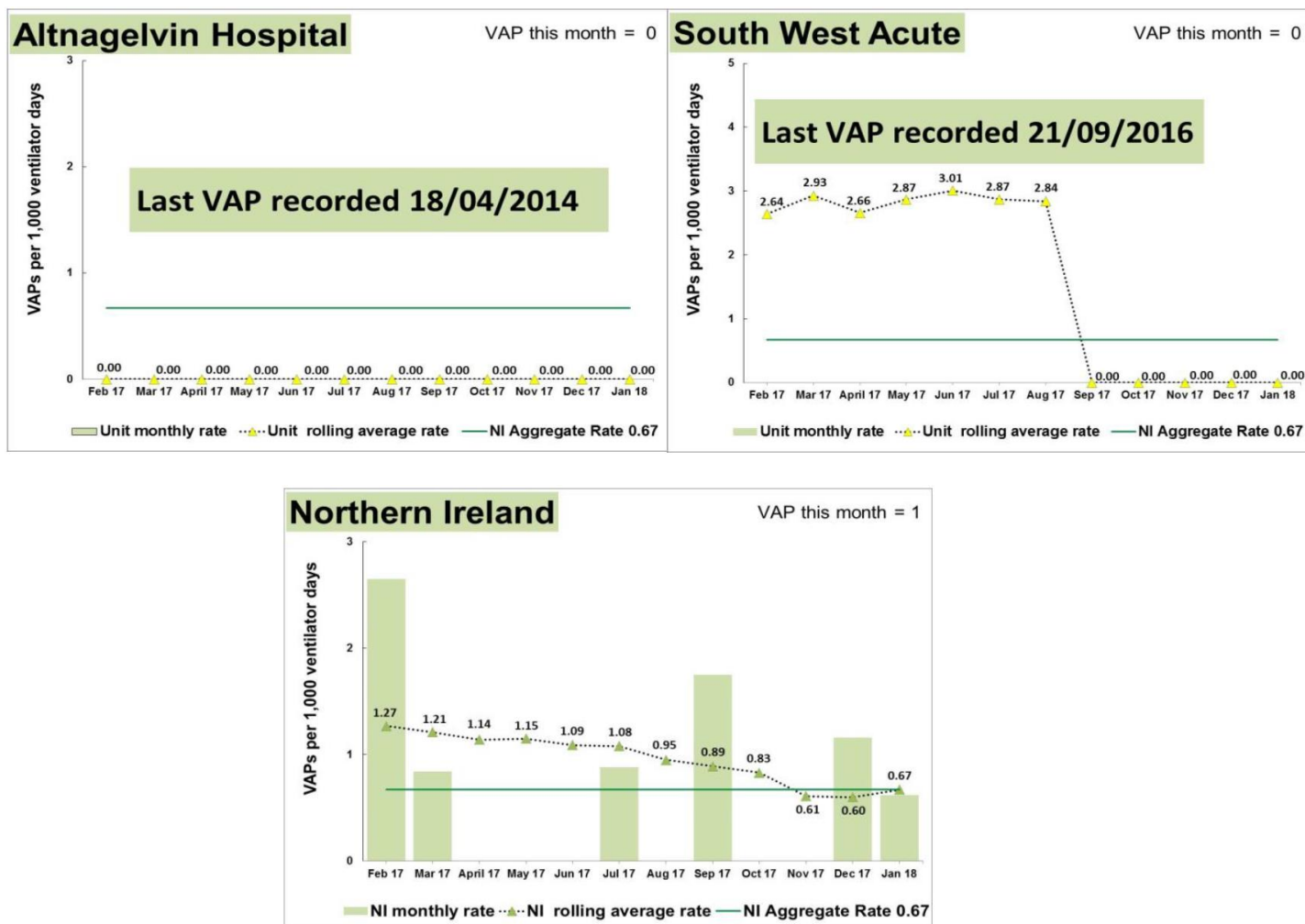
- **Antimicrobial Stewardship Policy** – A draft has now been finalised and will be tabled at the next Chief Executive HCAI Accountability Forum.
- **NICE Guideline 15 Antimicrobial stewardship: systems and processes for effective antimicrobial medicine use** – 20 of 47 recommendations are outstanding. An update is to be tabled at the next Chief Executive HCAI Accountability Forum.

- **NICE Guideline 63 Antimicrobial stewardship: changing risk-related behaviours in the general population** – The only place this would be applicable in the hospital would be the Emergency Departments.
- **Northern Ireland Antimicrobial Usage Defined Daily Dose Report** – The WHSCT remains the highest user per 100 occupied bed-days of piperacillin-tazobactam, carbapenems and co-amoxiclav. A report for highest users of piperacillin-tazobactam, carbapenems and co-amoxiclav is to be generated for the next AMT meeting to determine target areas.

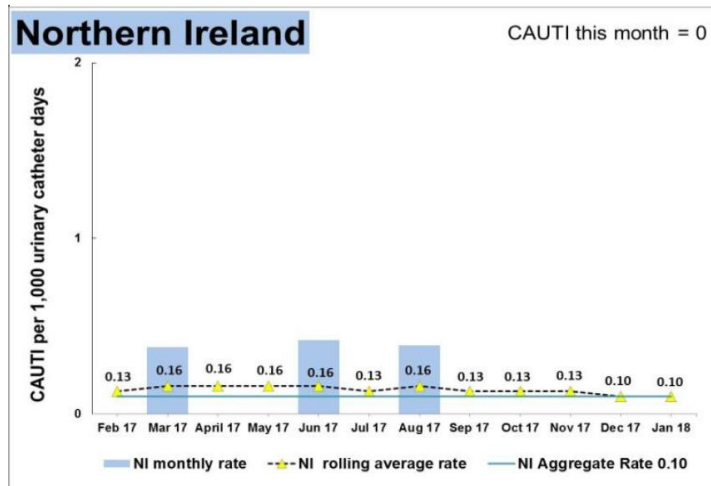
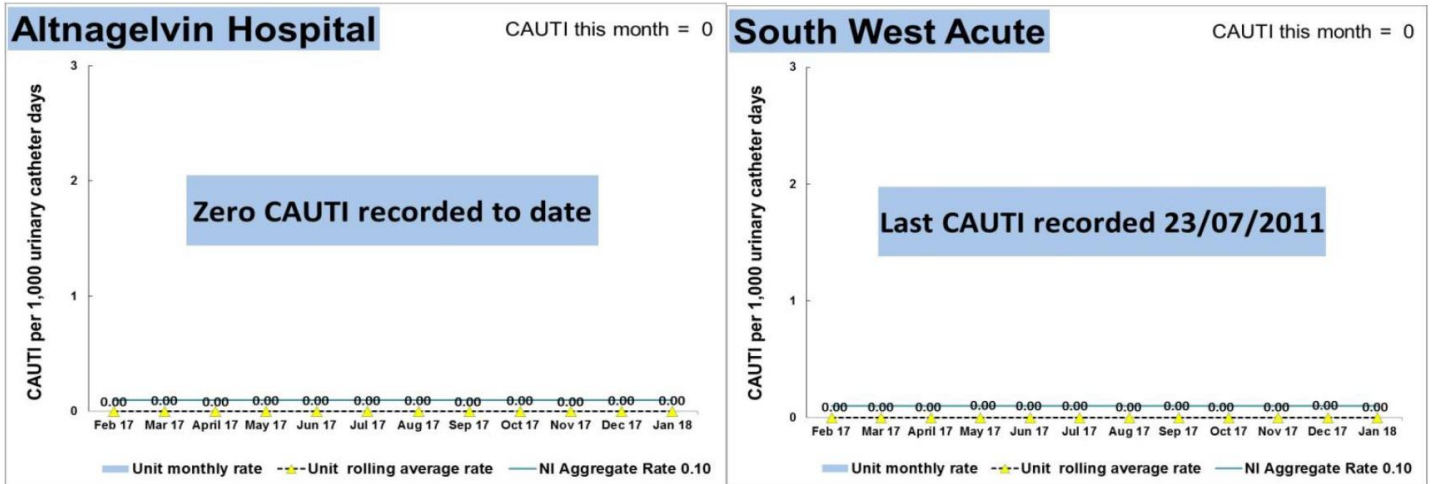
## 5. Critical Care Device-Associated Infection Surveillance

Critical care device-associated infection surveillance commenced in June 2011. The most recent infection recorded was a ventilator-associated pneumonia, diagnosed in ICU, SWAH, in September 2016. This was the first device-related infection to have occurred in the Trust since April 2014.

### Ventilator-Associated Pneumonia (VAP)



**Catheter-Associated Urinary Tract Infection (CAUTI)**



**Central Line Associated Blood Stream Infection (CLABSI)**

