

ABM University Health Board	
5 th April 2018 Quality & Safety Committee Agenda item: 4.1	
Subject	<i>Infection Prevention & Control Exceptions</i>
Prepared by	Delyth Davies, Head of Nursing, Infection Prevention & Control
Approved by	Cathy Dowling, Interim Deputy Director of Nursing & Patient Experience
Presented by	Angela Hopkins, Interim Director of Nursing & Patient Experience

1.0 Situation

This report provides the Quality & Safety Committee with an exception report on the Health Board's performance in relation to Healthcare Associated Infections since September 2017, particularly in relation to:

- i. *Clostridium difficile* infection,
- ii. *Staphylococcus aureus* bacteraemia,
- iii. *Escherichia coli* (*E. coli*) bacteraemia.

The report will provide also a breakdown of progress in relation to the Service Delivery Units. The paper will outline actions implemented and monitored to achieve a reduction in preventable healthcare associated infections.

2.0 Background

Healthcare Associated Infections (HCAs) impact on the Health Board's performance and reputation in relation to the provision of safe, quality healthcare. Eliminating avoidable infections and reducing harm and variation are of key quality measures to the Health Board, its staff and the population it serves.

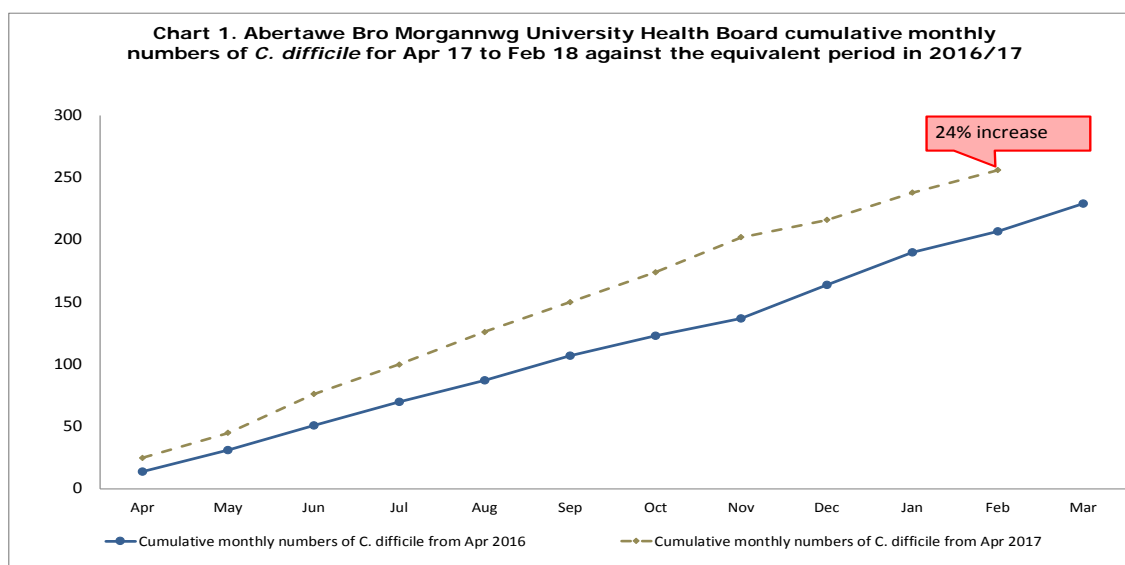
This report is formatted to reflect the standards established by Welsh Government in the *Code of Practice for the Prevention and Control of Healthcare Associated Infections* (2014), and follows the Infection Prevention & Control elements (Standard 2.4) of the Health and Care Standards (2015), with the initial elements focussing on outcome measures in relation to key healthcare associated infections.

3.0 Assessment

i. *Clostridium difficile* infection

The Health Board will not achieve the *Clostridium difficile* infection reduction expectation of 26/100,000 population. The maximum total number of cases within the Health Board was not to have exceeded 136 cases. By the end of February 2018, the total number of cases within the Health Board exceeded the maximum cases by **120 cases**.

This has been a significant challenge for the Health Board. From 01 April 2017 to 28 February 2018, the number of cases within the Health Board was 256 cases; this was a 24% increase in the number of cases compared with the same period of 2016/17 (see Chart 1). Using the monthly average (April 2017 – February 2018), the projected position to the end of March 2018 is that there will have been 281 cases of *Clostridium difficile* infection seen in the population of ABMU.



The position within the Health Board was improved in February 2018. The rate of increase (Apr-17 to Feb-18) was 24% compared with the equivalent period in 2016/17. The rate of increase Apr-17 to Nov-17 had been 47% compared with the equivalent period in 2016/17.

The incidence of infection per 100,000 population to the end of February 2018 in Quarter 4, 2017/18, is shown below:

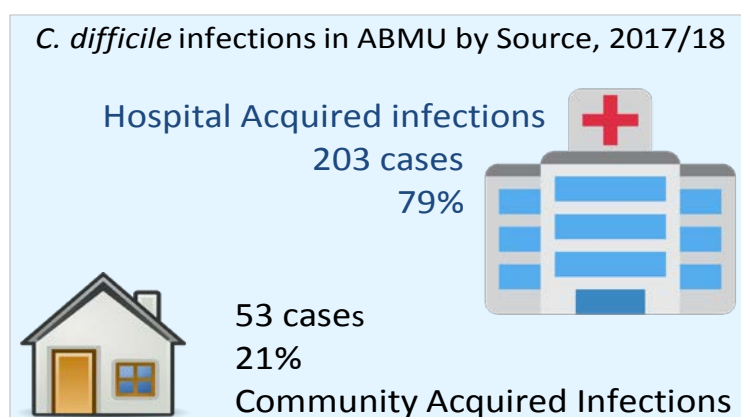
Month	No. Cases	Monthly Incidence/ 100,000 population	Apr-17 to Feb-18 Cumulative Incidence (cumulative cases)
Jan-18	22	48.94	52.86/100,000 population (256)
Feb-18	18	44.33	
Mar-18	15*	incomplete	

* Incomplete data

Localised surveillance uses the date on which the specimens were collected, as this accurately reflects the date on which the patients were symptomatic with infection. Localised infection surveillance undertaken within the Health Board utilises patient administration information, allowing for analysis of acquisition of infection. In the case of *Clostridium difficile*, the following definition (based on European Centre for Disease Prevention & Control) is used to identify a hospital acquired infection:

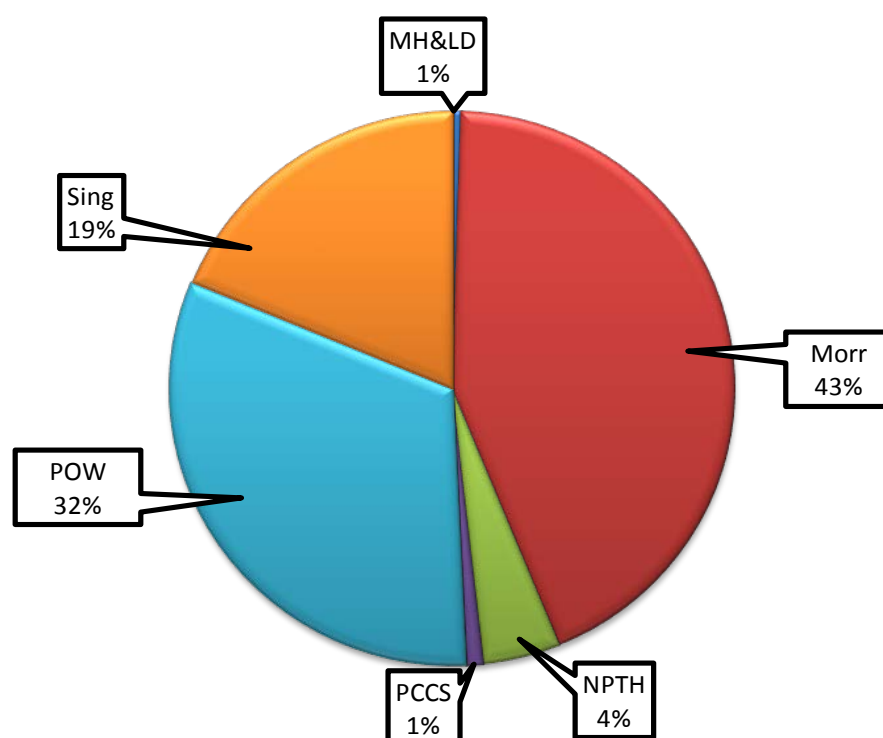
Onset of infection on Day 3 following admission, and if clinical signs of *Clostridium difficile* infection appear in 28 days after hospital discharge period.

Using this definition, the proportions of *Clostridium difficile* that were hospital- or community-acquired, between April 2017 and February 2018 were:



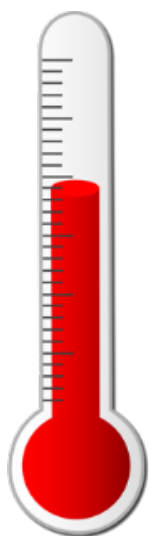
From April 2017 and February 2018, the proportion of hospital acquired *Clostridium difficile* infection by Service Delivery Unit is shown below.

**Hospital acquired *C. difficile*,
distribution by Service Delivery Unit, 2017_18 (to 28/02/18)**



Hotspot Wards

Princess of Wales Hospital and Morriston Hospital account for approximately 75% of all hospital acquired *C. difficile* infections. In each of these hospitals there are 7 hotspot wards that account for 54% and 66% respectively of the hospital acquired cases in each; there are 4 wards in Singleton Hospital that account for 71% of that site's hospital acquired infections. These wards will be the focus for improvement initiatives.



Princess of Wales (in descending order)

- Ward 7
- Ward 8
- Ward 20
- Ward 4
- Ward 10
- Ward 19
- Ward 18

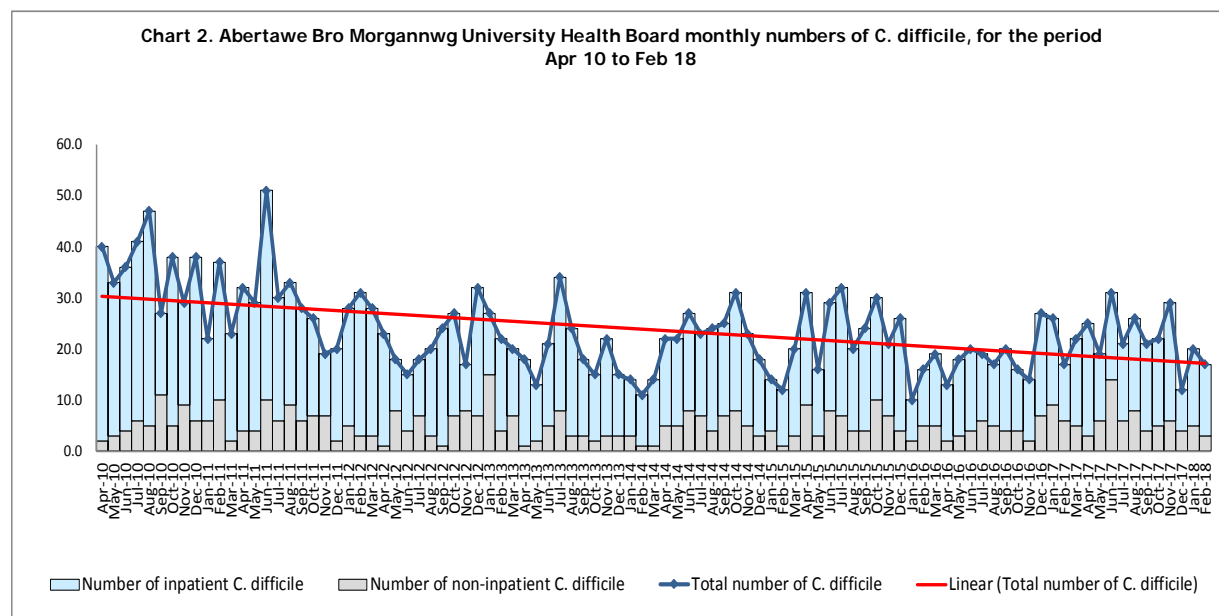
Morriston (in descending order)

- AMAU West
- Ward D
- Cardigan Ward
- Dan Danino Ward
- Ward G
- Ward J
- Gowers Ward

Singleton Hospital (indescending order)

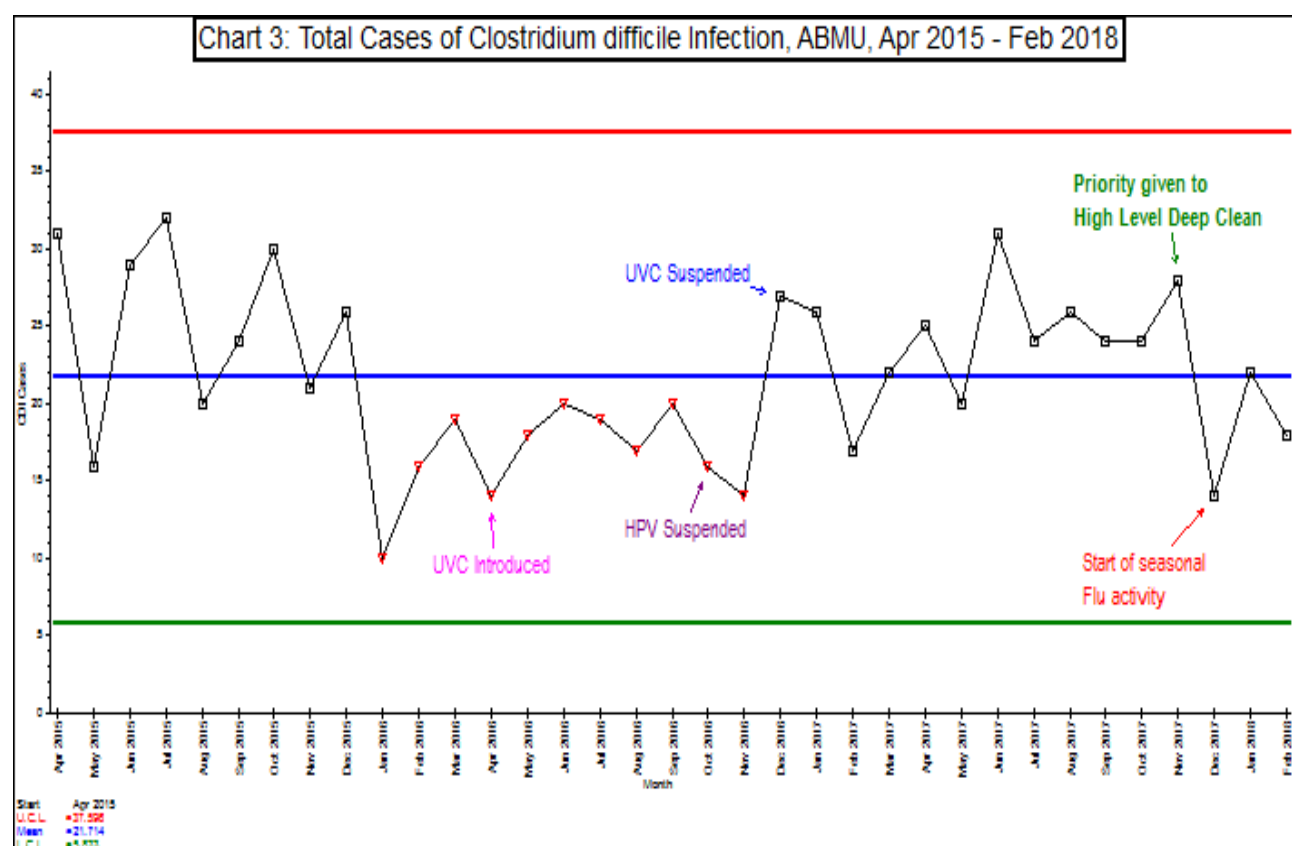
- Ward 3
- Ward 8
- Ward 12
- Ward 6

The Health Board has achieved reductions in *C. difficile* previously, as shown in Chart 2, and must strive to do so again.



Whilst the Health Board will not achieve the infection reduction expectation for *Clostridium difficile* infection in this financial year, the Delivery Units must be resolute in their focus to drive reduction in cases of this infection. Medical staff within the Delivery Units require greater focus on key HCAI improvement priorities, including antimicrobial stewardship and strengthen mentorship of junior doctors on this key priority.

The increased focus on emptying bays of a source patient, once that patient has been isolated, ensuring that a thorough, deep clean and decontamination of the source area can be undertaken, aided reduction activities (see the statistical process control Chart 3 below).



Sustaining this strategy of decanting source bays to facilitate the High Level Deep Cleans required has been challenging during January and February. In addition to the usual increased service demands seen over the winter, these pressures have been exacerbated by High Intensity levels of Influenza activity on each acute site.

Key focussed improvement priorities:

1. Restrict the use of Co-amoxiclav, supported by the revision of the Health Board's antimicrobial guidelines and App, which have been revised. Clinical debate continues regarding the potential clinical consequences of this restrictive policy. However, the priority on implementing this initiative continues, as there will be advantages from the perspective of reducing antimicrobial resistance to Co-amoxiclav within the Health Board. **Implementation expected during Quarter 1, 2018/19.**

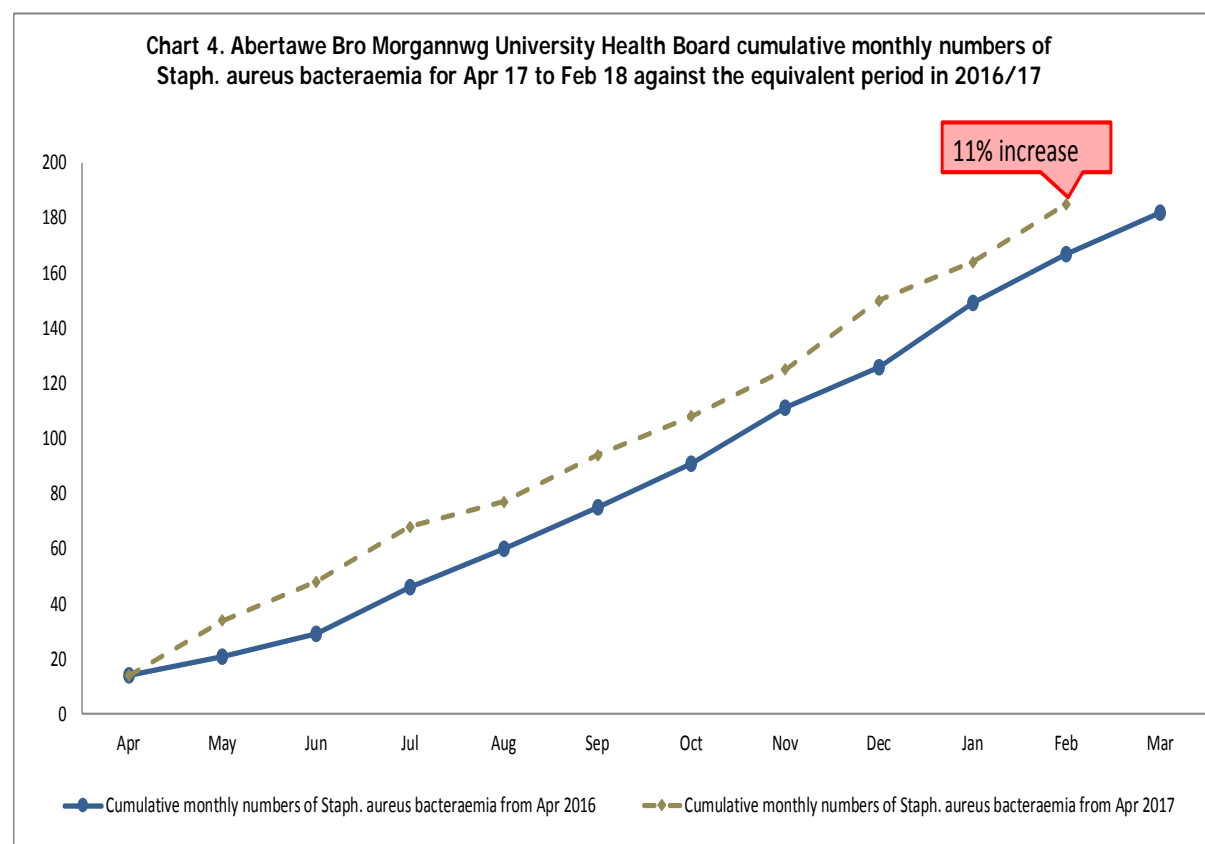
2. Reduction in the overall volume of antimicrobial use, through clinical improvement programmes led by clinicians within each Delivery Unit, with the focus on prudent prescribing and timely review of prescription (*Start Smart, Then Focus*). At the end of February 2018, the Medical Director wrote to all Delivery Unit Medical Directors and Clinical Leads to require greater focus on antimicrobial stewardship through reviewing practice, sharing team performance at clinical governance days, and improving junior doctor education and mentorship on this key priority.
3. Reduction in overall use of acid suppression therapy across the Health Board (**year-on-year reduction by March 2019**).
4. Improved compliance with *C. difficile* infection case management, including early isolation (within 2 hours of onset of unexplained diarrhoea), early testing (on first reporting of unexplained diarrhoea) and timely and appropriate treatment – **compliance monitored through the root cause analysis process**.
5. Delivery Units to prioritise the **high level cleaning** and decontamination of **source** rooms (room in which a patient with *Clostridium. difficile* infection has been identified) as a patient safety and quality imperative. *Source* rooms must be decanted to allow for thorough, effective deep cleaning/decontamination of patient bed, furniture, equipment and environment. In-house decontamination with Hydrogen Peroxide Vapour (HPV) and Ultraviolet-C (UV-C) room decontamination remains suspended, with no revised date for re-introduction. Where suitable, particularly at times of potential outbreaks of *C. difficile* infection, Service Delivery Units must consider the utilization of a contracted HPV decontamination service (with contracted operators undertaking the HPV process in place of ABMU staff). Each case of *C. difficile* in a hospital (irrespective of whether the infection is community or hospital acquired) is associated with poorer quality outcomes, increased morbidity and mortality, increased treatment costs, and an associated additional length of hospital stay. Taking a prudent healthcare approach, Service Delivery Units must consider the overall benefits of contracting in HPV, both to patients and to services.
6. Funding has been identified by the Medical Director to establish designated Clinical HCAI Quality Improvement Leads in each of the Delivery Units, who will work closely with the Executive Lead for Infection Prevention & Control, the Clinical Lead for Microbiology, and Unit Medical Directors, and will promote improvement programmes amongst clinical colleagues. Clinicians within the Delivery Units will be invited to submit an expression of interest in the posts by **mid-April 2018**. Unit Medical Directors will interview interested candidates, with the aim of the successful candidates commencing in these roles in before the **end of Quarter 1, 2018/19**.

ii. *Staphylococcus aureus* bacteraemia

The Health Board will not achieve the *Staph. aureus* bacteraemia infection reduction expectation of 20/100,000 population. The maximum total number of cases within the Health Board was not to have exceeded 105 cases. By 28th February 2018, the Health Board had exceeded this maximum by 80 cases.

From April 2017 to the end of February 2018, the number of cases within the Health Board was 185 cases; this was a 11% increase in the number of cases compared with the same period of 2016/17 (see Chart 4). Using the monthly average (April

2017 – February 2018), the projected position to the end of March 2018 is that there will have been 202 cases of *Staph. aureus* bacteraemia cases seen in the population of ABMU.



The rate of increase (Apr-17 to Feb-18) was 11% compared with the equivalent period in 2016/17. The rate of increase Apr-17 to Sep-17 had been 25% compared with the equivalent period in 2016/17.

The incidence of infection per 100,000 population to the end of February 2018 in Quarter 4, 2017/18, is shown below:

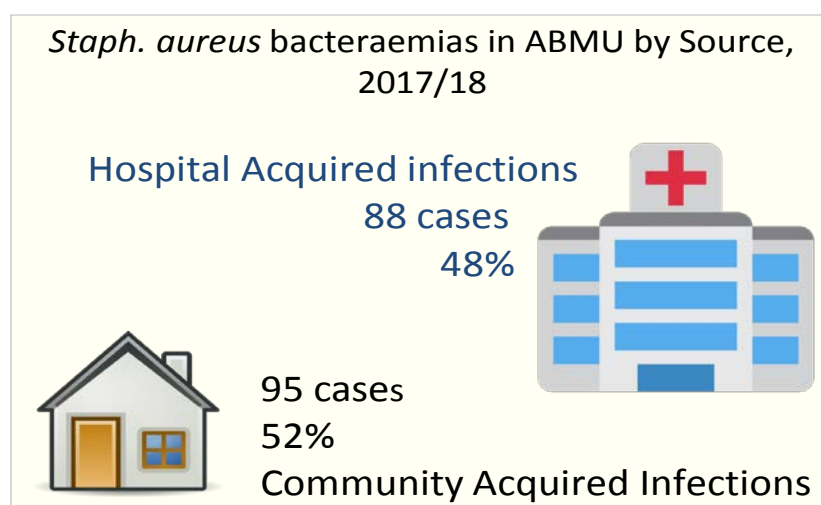
Month	No. Cases	Monthly Incidence/ 100,000 population	Apr-17 to Feb-18 Cumulative Incidence (cumulative cases)
Jan-18	14	31.14	38.20/100,000 population (185)
Feb-18	21	51.72	
Mar-18	7*	incomplete	

* Incomplete data

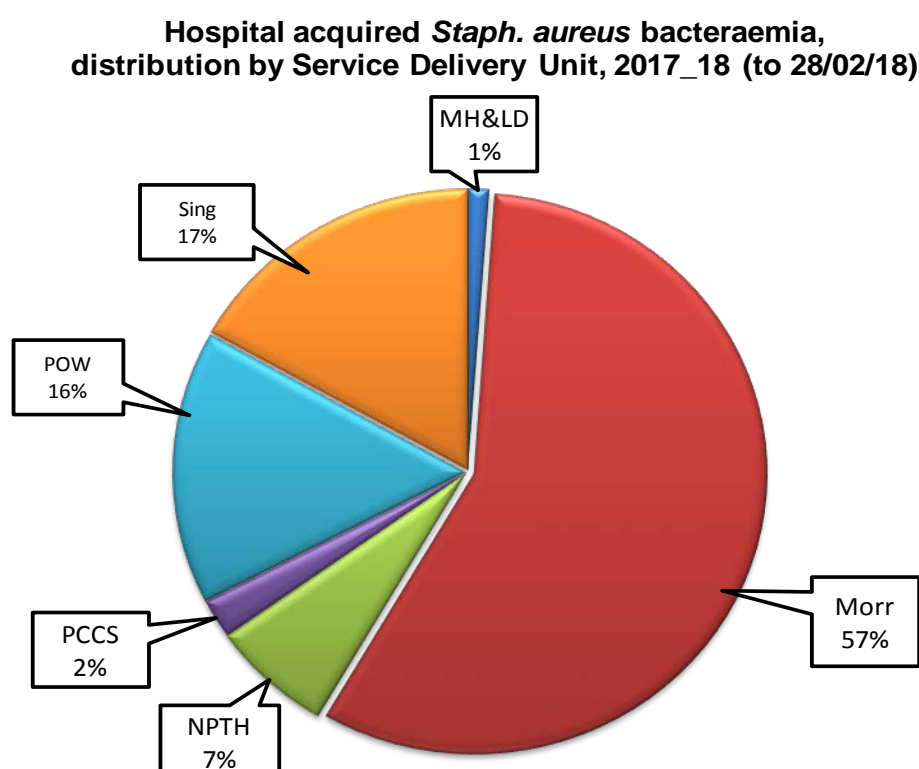
Localised infection surveillance undertaken within the Health Board utilises patient administration information, allowing for analysis of acquisition of infection. In the case of *Staph. aureus* bacteraemia, the following definition (based on European Centre for Disease Prevention & Control) is used to identify a hospital acquired infection:

Onset of infection on Day 3 following admission, OR onset on Day 1 or Day 2 AND patient discharged from acute care hospital in preceding 48 hours, OR onset on Day 1 or Day 2 AND patient has relevant device inserted on this admission prior to onset.

Using this definition, the proportions of *Staph. aureus* bacteraemia that were hospital- or community-acquired, between April 2017 and February 2018 were:

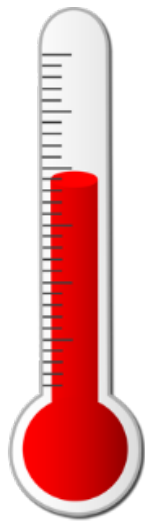


From April 2017 and February 2018, the proportion of hospital acquired *Staph. aureus* bacteraemia by Service Delivery Unit is shown in the following pie chart.



Hotspot Wards

Morrison Hospital, Singleton Hospital and Princess of Wales Hospital account for approximately 90% of all hospital acquired *Staph. aureus* bacteraemia cases. In Morrison, there are 4 wards that account for approximately 40% of all the hospital acquired cases; in Singleton, there are 2 wards/units that account for half of the hospital acquired cases; in Princess of Wales Hospital, there are 5 wards that account for approximately 80% of that site's hospital acquired cases. IN Neath Port Talbot Hospital, one ward accounts for 75% of hospital acquired cases. These wards will be the focus for improvement initiatives.



Morrison (in descending order)

- RDU
- ITU
- Ward H
- Cyril Evans

Singleton (in descending order)

- Neonatal Unit
- Haematology Day Unit

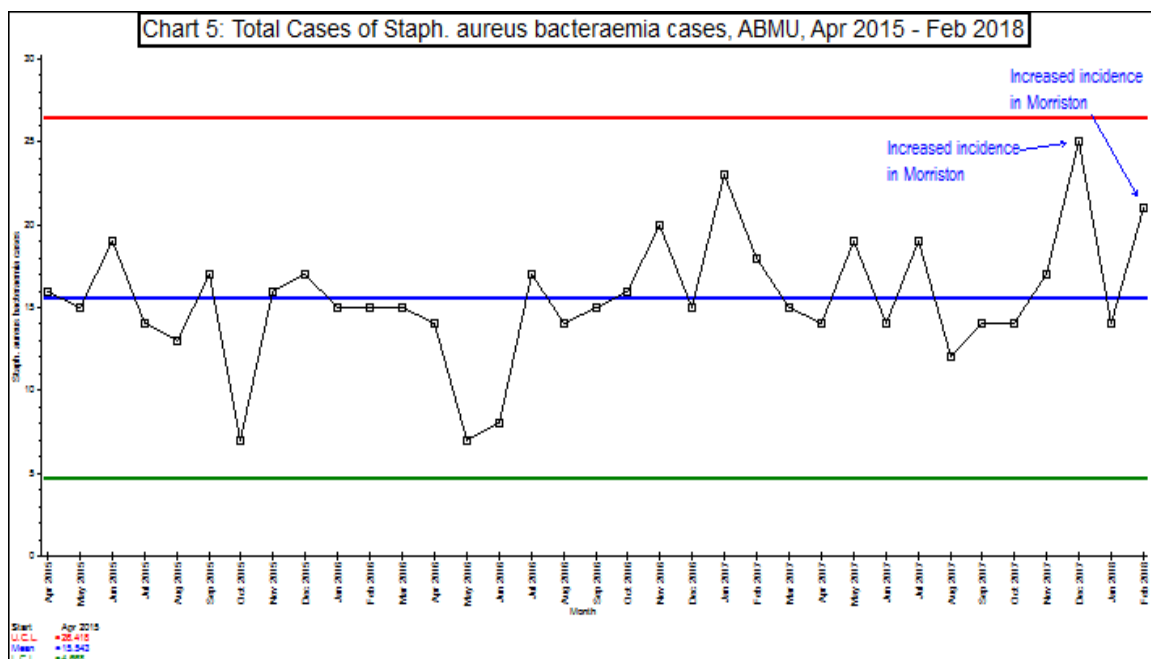
Princess of Wales (in descending order)

- Ward 20
- Ward 4
- Ward 6
- Ward 9
- Ward 10

Neath Port Talbot Hospital

- Ward E

The incidence of *Staph. aureus* bacteraemia was elevated in December 2017 and again in February 2018. In the statistical process control Chart 5 below, it is identified that the Health Board position increased in these months due to higher numbers of cases in Morrison Hospital.



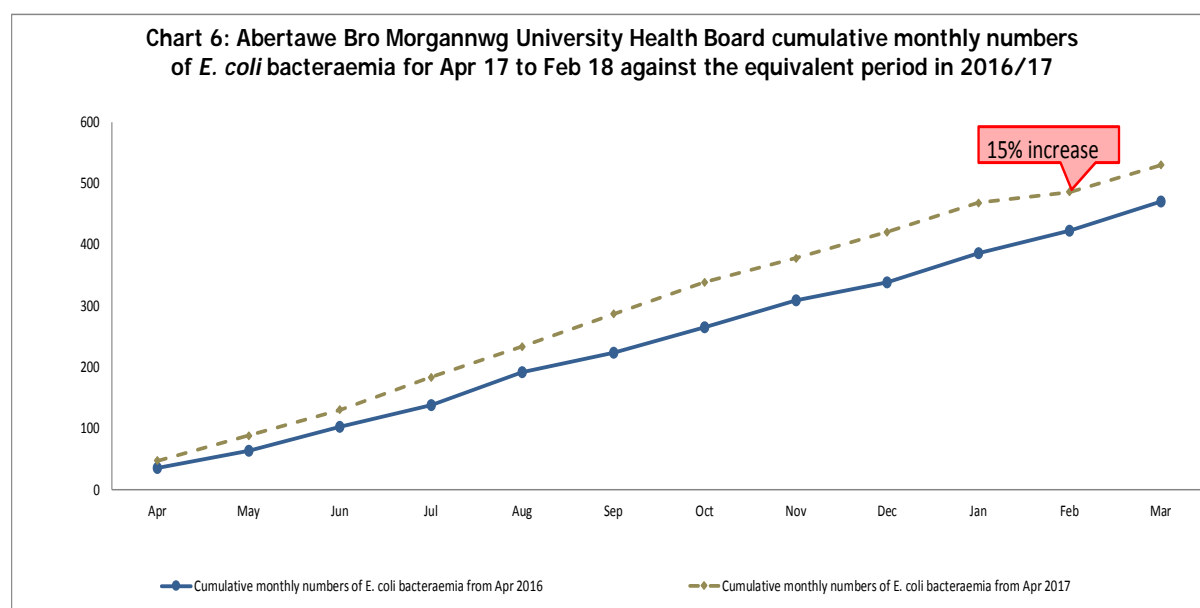
Key focussed improvement priorities:

1. Improved compliance with best practice guidance for insertion, maintenance and removal of invasive devices, such as peripheral vascular catheters (PVCs).
2. Clinical improvement programmes to ensure prudent use of invasive devices (inserted only when necessary, and removed as soon as no longer required).
 - Morriston has introduced a small-scale pilot, using PDSA improvement methodology, to review the use of invasive devices on key wards. A baseline prevalence survey has been undertaken on these wards. The initial change being introduced and evaluated is to include the presence and continuing need for invasive devices within daily board round reviews.
3. Delivery Units to monitor the numbers of clinical staff who have been trained and competency assessed in relation to Aseptic Non-Touch Technique (ANTT).
4. Delivery Units to undertake a review of potential healthcare gain relating to the use of topical skin antiseptics for those patients that have repeated vascular access (e.g. haemodialysis, haematology, and chemotherapy patients).
5. Delivery Units to establish programmes of peer review in relation to best practice for hand hygiene, utilising existing audit tools and monitored through the Care Metrics.

iii. *Escherichia coli* (*E. coli*) bacteraemia.

The Health Board will not achieve the *E. coli* bacteraemia infection reduction expectation of 67/100,000 population. The maximum total number of cases within the Health Board was not to have exceeded 352 cases. By 28th February 2018, the Health Board had exceeded this maximum by 133 cases.

From April 2017 to the end of February 2018, the number of cases within the Health Board was 486 cases; this was a 15% increase in the number of cases compared with the same period of 2016/17 (see Chart 5). Using the monthly average (April 2017 – February 2018), the projected position to the end of March 2018 is that there will have been 530 cases of *E. coli* bacteraemia cases seen in the population of ABMU.



The rate of increase (Apr-17 to Feb-18) was 15% compared with the equivalent period in 2016/17. The rate of increase Apr-17 to Sep-17 had been 28% compared with the equivalent period in 2016/17.

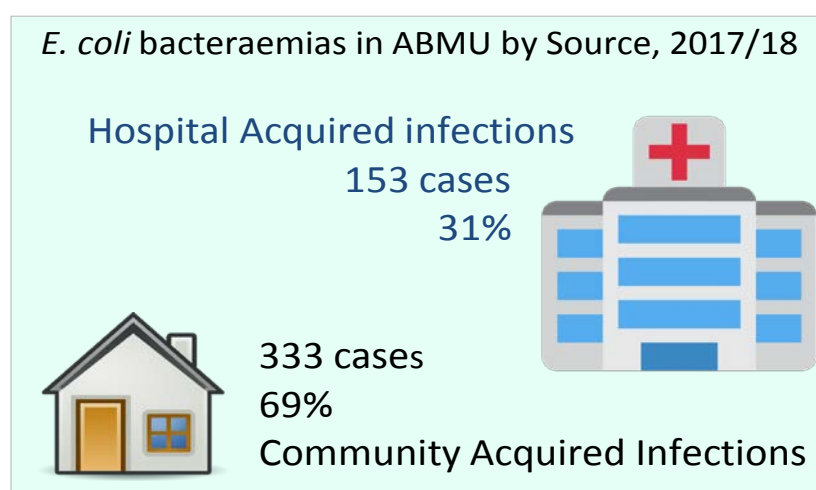
The incidence of infection per 100,000 population to the end of February 2018 in Quarter 4, 2017/18, is shown below:

Month	No. Cases	Monthly Incidence/ 100,000 population	Apr-17 to Feb-18 Cumulative Incidence (cumulative cases)
Jan-18	47	104.56	100.35/100,000 population (486)
Feb-18	18	44.33	
Mar-18	22*	incomplete	

* Incomplete data

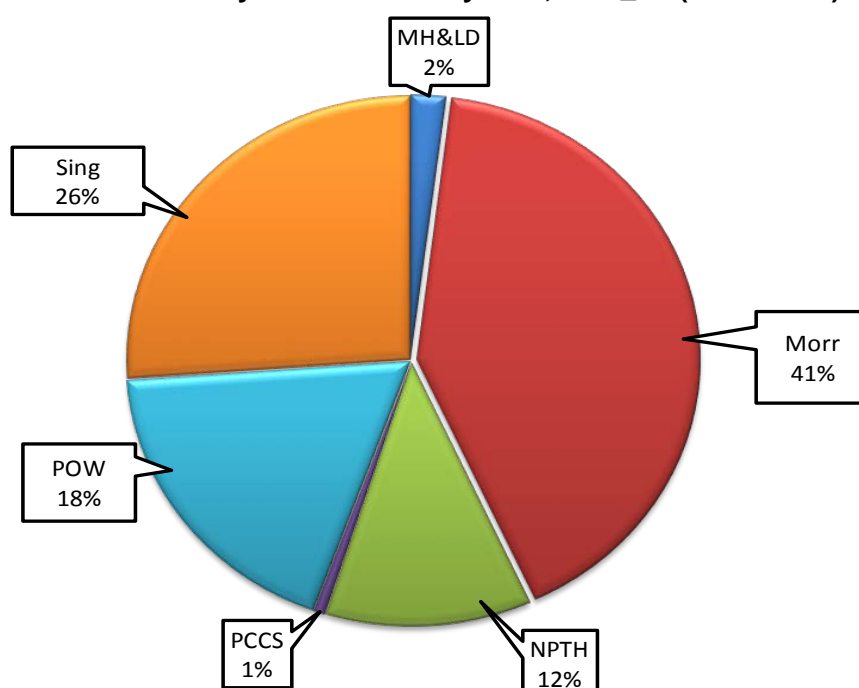
Localised infection surveillance of *E. coli* bacteraemia has not been undertaken within the Health Board prior to April 2017. The same definition as *Staph. aureus* bacteraemia (see previous section) is used to identify a hospital acquired *E. coli* bacteraemia.

Using this definition, the proportions of *E. coli* bacteraemia that were hospital- or community-acquired, between April 2017 and February 2018, were:



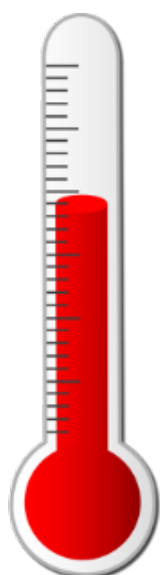
From April 2017 and February 2018, the proportion of hospital acquired *E. coli* bacteraemia by Service Delivery Unit is shown below.

**Hospital acquired *E. coli* bacteraemia,
distribution by Service Delivery Unit, 2017_18 (to 28/02/18)**



Hotspot Wards

Morrison Hospital, Singleton Hospital, and Princess of Wales Hospital account for approximately 85% of all hospital acquired *E. coli* bacteraemia cases. In Morrison, there are 5 wards that account for 42% of all the hospital acquired cases; in Singleton, there are 4 wards/units that account for 45% of the hospital acquired cases; in Princess of Wales Hospital, there are 4 wards that account for 59% of that site's hospital acquired cases; there is one ward in Neath Port Talbot that accounts for half that site's hospital acquired cases; two wards account for approximately 72% of all hospital acquired cases. These wards will be the focus for improvement initiatives.



Morrison (in descending order)

- Ward G
- RDU
- Ward H
- Ward V
- Anglesey

Singleton (in descending order)

- Ward 4
- Ward 12
- Ward 6
- Haematology Day Unit

Princess of Wales (in descending order)

- Ward 8
- Ward 7
- Ward 19
- Ward 20

Neath Port Talbot

- Ward D
- Ward E

Key focussed improvement priorities:

1. Improved compliance with best practice guidance for insertion, maintenance and removal of invasive devices, such as urethral catheters.
2. Reduction in the prevalence of indwelling urinary catheters. Clinical improvement programmes to ensure prudent use of urethral catheters (inserted only when necessary, and removed as soon as no longer required).
 - The small-scale pilot being undertaken in Morriston will include urinary catheters.
 - Princess of Wales Hospital Continence Advisor is leading a small-scale change pilot of catheter labels to identify continuing need and documenting rational for continuing need.
3. Service Delivery Units to promote hydration programmes, such as the Public Health Wales *Water Keeps You Well* campaign, or other similar campaigns such as *Drink a Drop* or *iHydrate*, to reduce the likelihood of urinary tract infection.

CODE OF PRACTICE REQUIREMENTS

In consideration of the localised surveillance, the following existing improvement actions will be strengthened and additional focussed actions will be implemented (these actions are grouped to reflect the Code of Practice for the Prevention & Control of HCAI, and Health and Care Standard 2.4)

Organisational and management systems for infection prevention and control

- In addition to the vacancy for the Assistant Director of Nursing Infection Prevention & Control, the Assistant Head of Nursing IP&C will retire on 31st March 2018, and the Head of Nursing IP&C will retire on 30th June 2018. This will lead to a 66% reduction in senior expertise and experience in IP&C within the corporate IP&C team. However, during July 2018, there will be only 17% availability of the senior strategic team establishment. Whilst it has been agreed that both the Head and Assistant Head IP&C will return on a part-time basis, it is proposed that a temporary arrangement for an additional Band 8a post is established to supplement the strategic element of the service at this critical time where improvement in infection reduction is imperative.

Clean Physical Environment

- Sustain the increased scrutiny of cleaning compliance, including the environmental hygiene services provided by Hotel Services, the maintenance of the estate, and the cleanliness of patient care equipment by nursing staff. These will be monitored through Credits for Cleaning and by validation audits undertaken by Delivery Unit staff and the Infection Prevention & Control Team.
- Cost benefit review of the structure and roles of the Rapid Response service, to ensure that it is appropriately funded to meet the requirements of cleaning and decontamination, from a patient safety perspective, as well as maintaining patient flow on acute sites.

Suitable and accurate information

- Monthly data on the healthcare associated infections included in the reduction expectations is available to the Executive Team and Service Delivery Units as statistical process control charts.
- Localised surveillance is used to identify those wards in Morriston, Princess of Wales, Singleton and Neath Port Talbot with the highest incidence of hospital acquired *C. difficile*, *Staph. aureus* bacteraemia, and *E. coli* bacteraemia
- Localised surveillance data for 2017/18 will be used to calculate infection improvement profiles and trajectories for each Service Delivery Unit for 2018/19. These will be shared with Delivery Units **by 30th March 2018**.

Staff engagement

- Following participation in the Public Health Wales / NHS Quality Improvement Healthcare Associated Infection & Antimicrobial Resistance Collaborative Launch event, a local collaborative has been established. The future appointments to the Clinical HCAI Quality Improvement Leads will be critical to establishing the Expert Group of the ABU Collaborative.

Adequate isolation facilities

- Work is progressing on the provision of a negative pressure isolation room in Morriston Hospital in December 2017. This work should be completed during March 2018. Following this, validation tests will be undertaken by the Specialist engineering systems and services of NHS Wales Shared Services Partnership. Once these validation checks are approved, the room will be available for use in **Quarter 1, 2018**.

IPC Policies

- All outstanding IPC policies are on track to be reviewed and updated by the end of **Quarter 4**.

Staff health

- The updated position by 21st February 2018 was as shown below:

Total Vaccinations Given	Front Line Staff	Non-Front Line Staff
Update to 21/02/2018	6,921	2,601
Staff Number excluded	429	57
	6,492	2,544
Updated Totals	58.34%	51.90%
	9507 (Total vaccinated)	

- A number of neighbouring Health Boards have included nurse bank and new starters in their immunization reports. If ABMU reported using the same criteria, the total staff vaccinated, with percentages, is shown below. If ABMU had used the same reporting criteria, ABMU could have reported achieving the immunization target set by Welsh Government. The different reporting criteria used by various Health Boards has been highlighted to the National Immunisation Advisory Group.

	Front Line Staff	Non-Front Line Staff
	6921	2601
Updated Totals	62.20%	53%
	9507 (Total Vaccinated)	

Staff training

- The Standard Infection Control Precautions training has been refreshed. Training with the new presentation commenced in **October 2017**, and continues to be delivered in addition to the availability of the e-learning programme.
- The Hand Hygiene Coach training has been refreshed. This new training package was introduced in **October 2017**. This has been suspended on a temporary basis due to the increased incidence of influenza across the Health Board. **Training will resume when flu activity has reduced (provisionally by the end of March 2018).**
- Training on the Management of Seasonal Influenza will be reviewed following the Health Board's Influenza Debrief Meeting due to be held on 9th April. This will then be implemented and rolled out during September 2018 in preparation for the 2018/19 Influenza season.

4.0 Recommendation

The Quality & Safety Committee is asked to:

- Note the contents of this report and support the need for Delivery Units to adopt the key focused improvement priorities identified within this report.
- Note the proposal for the establishment of a temporary, additional Band 8a Infection Prevention & Control post to support the strategic leadership for IPC during the critical period of implementing HCAI quality improvement initiatives. The creation of this temporary post will support the development and upskilling of the existing IPC workforce.