

ABM University Health Board	
Date of Meeting: 1st February 2018 Name of Meeting: Quality & Safety Committee Agenda item: 4.4	
Subject	<i>Infection Prevention & Control Exceptions</i>
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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, and

The report will provide also a breakdown of progress in relation to the Delivery Service 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.

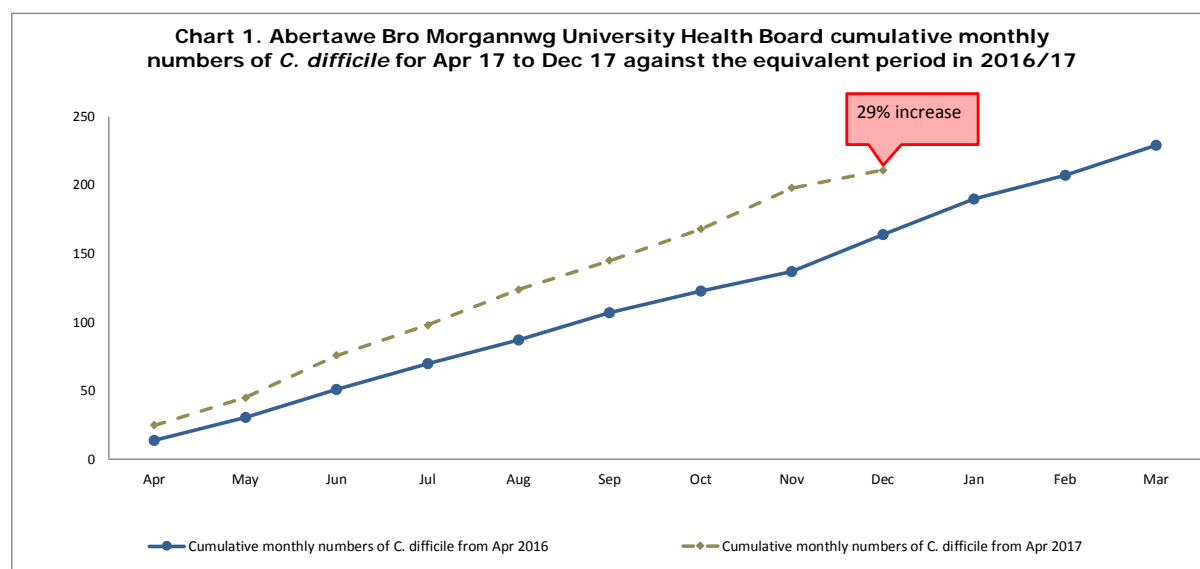
This report is formatted to reflect the standards established by Welsh Government in the *Code of Practice for the Prevention and Control of Healthcare Associated Infections* (2014), and follows the Infection Prevention & Control elements (Standard 2.4) of the Health and Care Standards (2015), with the 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 31st December 2017, the Health Board had exceeded this maximum by 80 cases.

This has been a significant challenge for the Health Board. From April to the end of December 2017, the number of cases within the Health Board was 216 cases; this was a 29% increase in the number of cases compared with the same period of 2016 (see Chart 1). Using the monthly average (April – December 2017), the projected position to the end of March 2018 is that there will have been 290 cases of *Clostridium difficile* infection seen in the population of ABMU.



The incidence of infection per 100,000 population in Quarter 3, 2017, was improved compared with the Quarter 2 position, and is shown below:

Month	No. Cases	Monthly Incidence/ 100,000 population	Apr- Dec 2017 Cumulative Incidence (cumulative cases)
Oct-17	24	53.78	54.56/100,000 population (216)
Nov-17	28	64.83	
Dec-17	14	31.37	

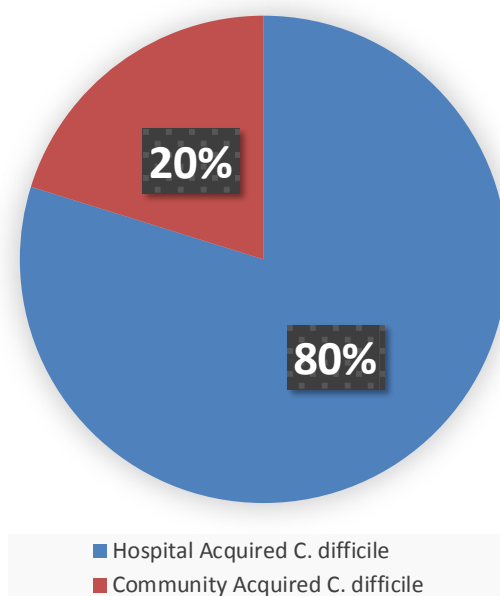
The Data published by Public Health Wales provides information based on the location from which the specimen was sent, and uses the date on which the specimen was received by the laboratory. Localised surveillance uses the date on which the specimens were collected, as this accurately reflects the date on which the patients were symptomatic with infection. The different dates used will result in minor discrepancies in monthly cases when comparing results of Public Health Wales published data with localised surveillance, which is more accurate and provides real time data.

Additionally, Public Health Wales does not have access to individual Health Board Patient Administration Systems; this is a limitation of the published data as there is no analysis on whether these are community acquired infections or hospital acquired infections. 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.

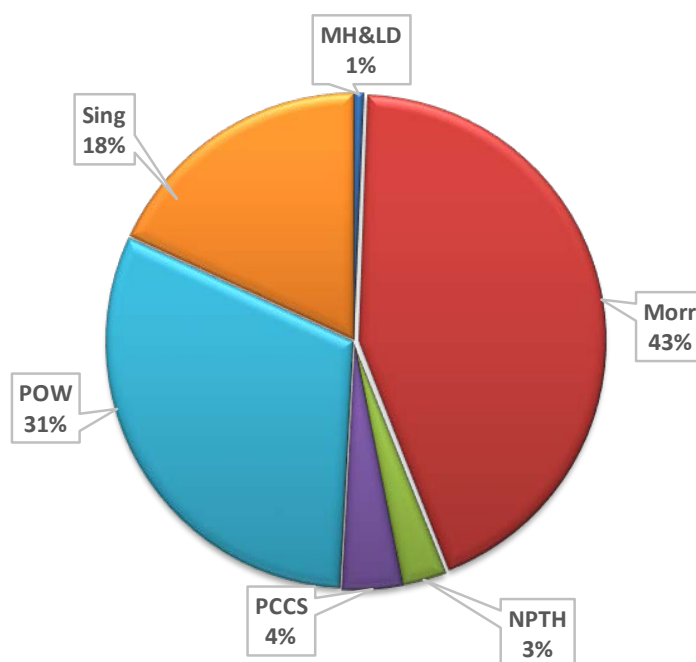
Using this definition, the proportions of *Clostridium difficile* that were hospital- or community-acquired, between April and December 2017 were:

Clostridium difficile cases in ABMU Health Board
2017/18 FY (to 31.12.17)



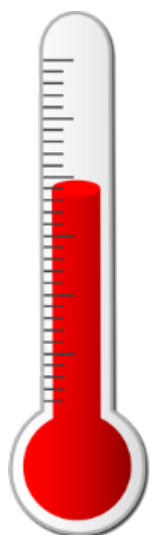
From April and December 2017, the proportion of hospital acquired *Clostridium difficile* infection by Service Delivery Unit is shown below.

Hospital acquired *C. difficile*,
distribution by Service Delivery Unit, 2017_18 (to 31/12/17)



Hotspot Wards

Princess of Wales Hospital and Morriston Hospital account for approximately 74% of all hospital acquired *C. difficile* infections. In each of these hospitals there are 6 hotspot wards that account for 69% and 50% respectively of the hospital acquired cases in each; there are 4 wards in Singleton Hospital that account for 69% 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 19
- Ward 4
- Ward 18

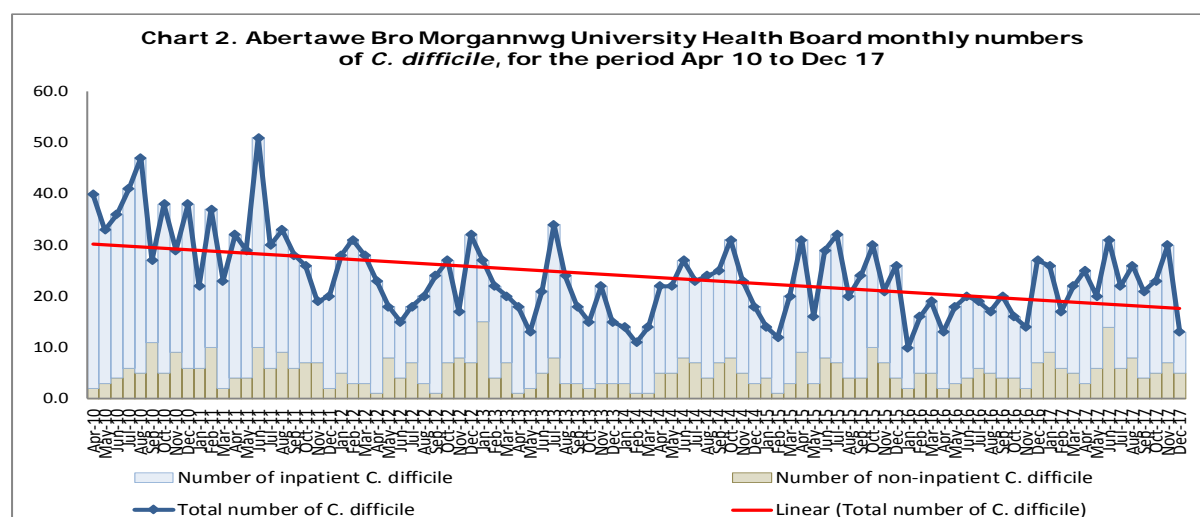
Morriston (in descending order)

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

Singleton Hospital (indescending order)

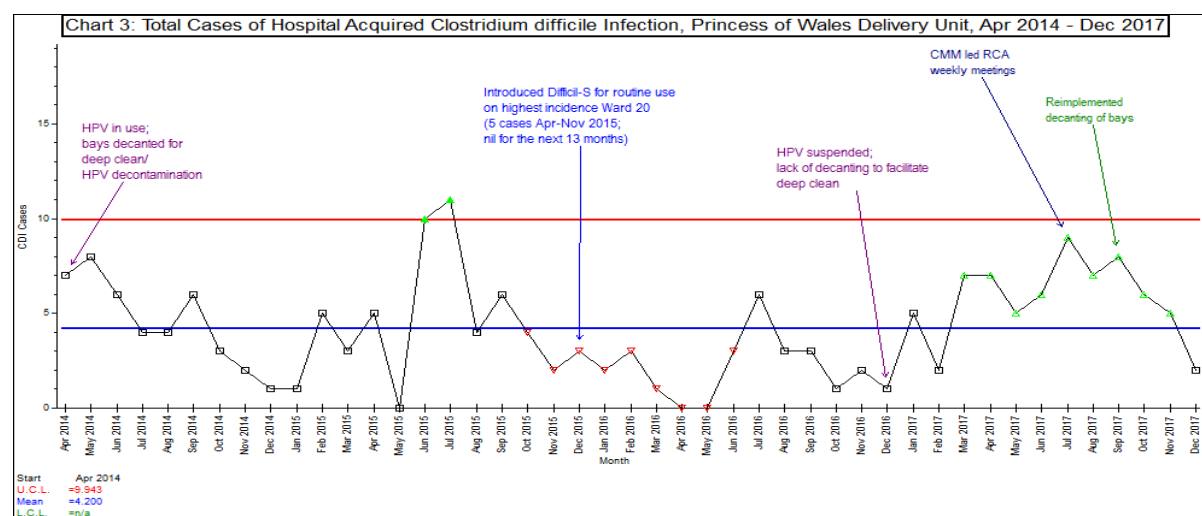
- Ward 8
- Ward 12
- Ward 3
- Ward 6

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 focus to drive reduction in cases of this infection must continue. In December 2017, the number of cases within the Health Board reduced significantly. Although the causative factors, and therefore the reduction measures, are multifactorial, the reduction of infection seen in three consecutive months in Princess of Wales Hospital (see Chart 3) has contributed to the Health Board's improved position.

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, has aided reduction activities (see the statistical process control chart for Princess of Wales below).



Continuing this strategy of decanting source bays will be challenging to sustain during the periods of high service demands that are being seen currently within the Health Board.

Key focussed improvement priorities:

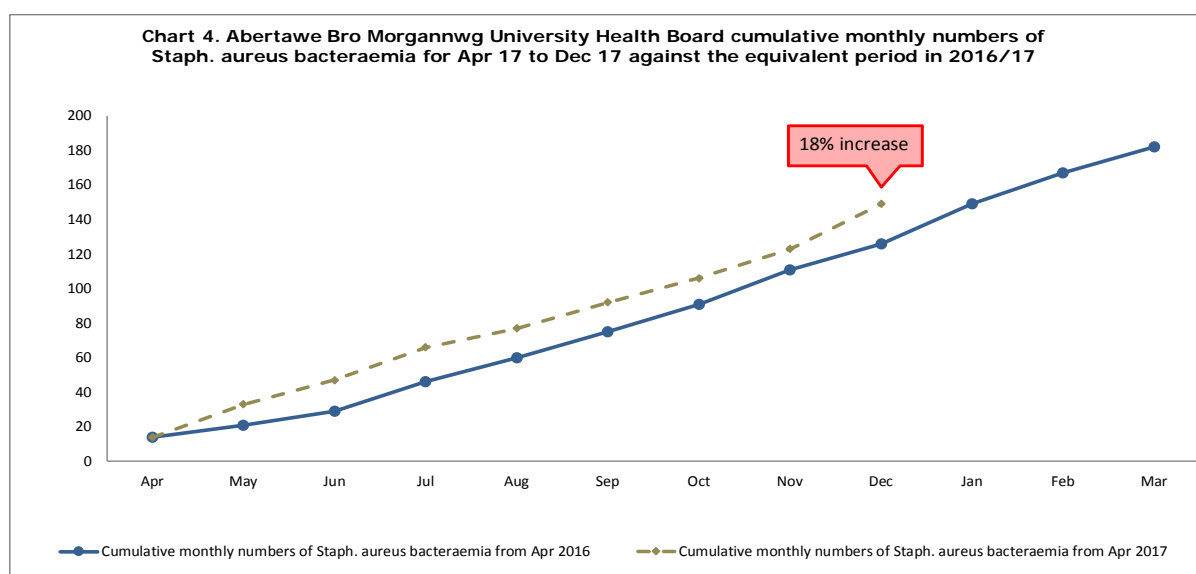
1. Restrict the use of Co-amoxiclav, supported by the revision of the Health Board's antimicrobial guidelines and App – **by 31st March 2018**.
2. Reduction in the overall volume of antimicrobial use, through clinical improvement programmes led by clinicians within each Delivery Unit, with the focus on prudent prescribing and timely review of prescription (*Start Smart, Then Focus*) – programmes to be confirmed by Delivery Units **by 31st March 2018**.
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. This can be augmented by cleaning technologies, such as Ultraviolet-C room decontamination, when this is reintroduced in **February 2018**. It will be a challenge to sustain this programme of reactionary decanting and decontamination during times of exceptional service pressures and demand for beds. However, studies have demonstrated that each episode of *Clostridium difficile* infection was associated with approximately 14 days of additional hospital stay; it could be hypothesized that reducing cases of *Clostridium difficile* will improve bed availability and improve patient flow.

6. Funding has been identified by the Medical Director to establish designated clinical leads for Infection Prevention & Control in each of the Delivery Units, who will work closely with the Executive Lead for Infection Prevention & Control and the Clinical Lead for Microbiology, and will promote improvement programmes amongst clinical colleagues. **By 31st January, 2018**, in invitation to clinicians will be advertised to submit expression of interest for these leadership roles, for which there will be dedicated sessions and clear objectives.

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 31st December 2017, the Health Board had exceeded this maximum by 44 cases.

From April to the end of December 2017, the number of cases within the Health Board was 149 cases; this was a 68% increase in the number of cases compared with the same period of 2016 (see Chart 4). Using the monthly average (April – December 2017), the projected position to the end of March 2018 is that there will have been 200 cases of *Staph. aureus* bacteraemia cases seen in the population of ABMU.



The incidence of infection per 100,000 population in Quarter 3, 2017, had deteriorated compared with the Quarter 2 position, and is shown below:

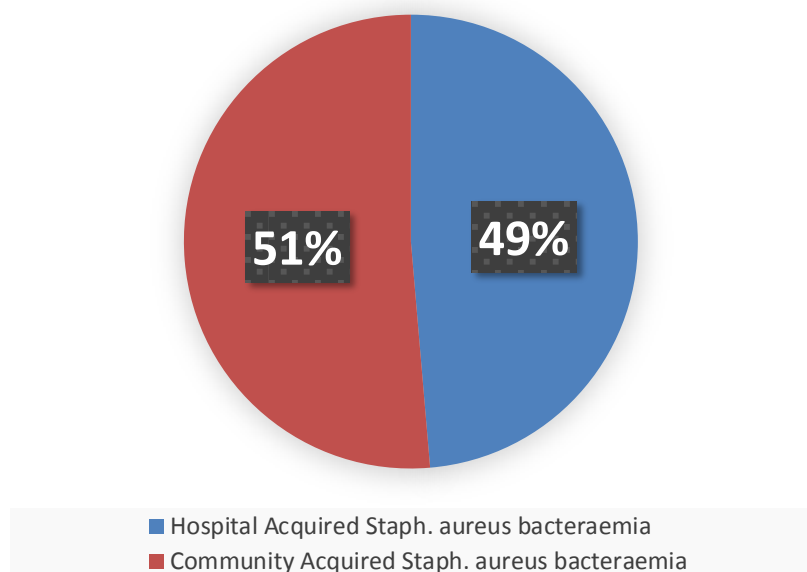
Month	No. Cases	Monthly Incidence/ 100,000 population	Apr- Dec 2017 Cumulative Incidence (cumulative cases)
Oct-17	15	33.61	37.36/100,000 population (149)
Nov-17	17	39.08	
Dec-17	25	56.02	

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.

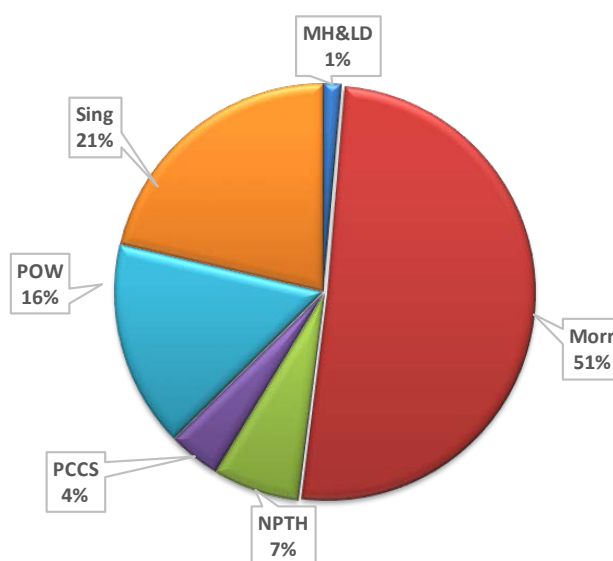
Using this definition, the proportions of *Staph. aureus* bacteraemia that were hospital- or community-acquired, between April and December 2017 were:

***Staph. aureus* bacteraemia in ABMU Health Board
2017/18 FY (to 31.12.17)**



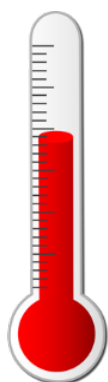
From April and December 2017 (up to 22/09/17), the proportion of hospital acquired *Staph. aureus* bacteraemia by Service Delivery Unit is shown below.

**Hospital acquired *Staph. aureus* bacteraemia,
distribution by Service Delivery Unit, 2017_18 (to 31/12/17)**



Hotspot Wards

Morrison Hospital and Singleton Hospital account for approximately 72% of all hospital acquired *Staph. aureus* bacteraemia cases. In Morrison, there are 3 wards that account for almost a third 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 3 wards that account for almost 60% of that site's hospital acquired cases. These wards will be the focus for improvement initiatives.



Morrison (in descending order)

- RDU
- Cyril Evans
- ITU

Singleton (in descending order)

- Neonatal Unit
- Haematology Day Unit

Princess of Wales (in descending order)

- Ward 20
- Ward 10
- Ward 6

There was a sharp increase in monthly cases of *Staph. aureus* bacteraemia in December. Observations of the practices were undertaken for all staff (clinical and non-clinical) present on inpatient areas with an increase in cases. No areas of concern were identified, although it is acknowledged that there would have been a Hawthorne effect caused by the Infection Prevention & Control Nurses being present in the clinical areas, and that these observations represented a snapshot of one moment in time only. During the first two weeks of January, the numbers of cases appear to have reduced. This situation will continue to be monitored.

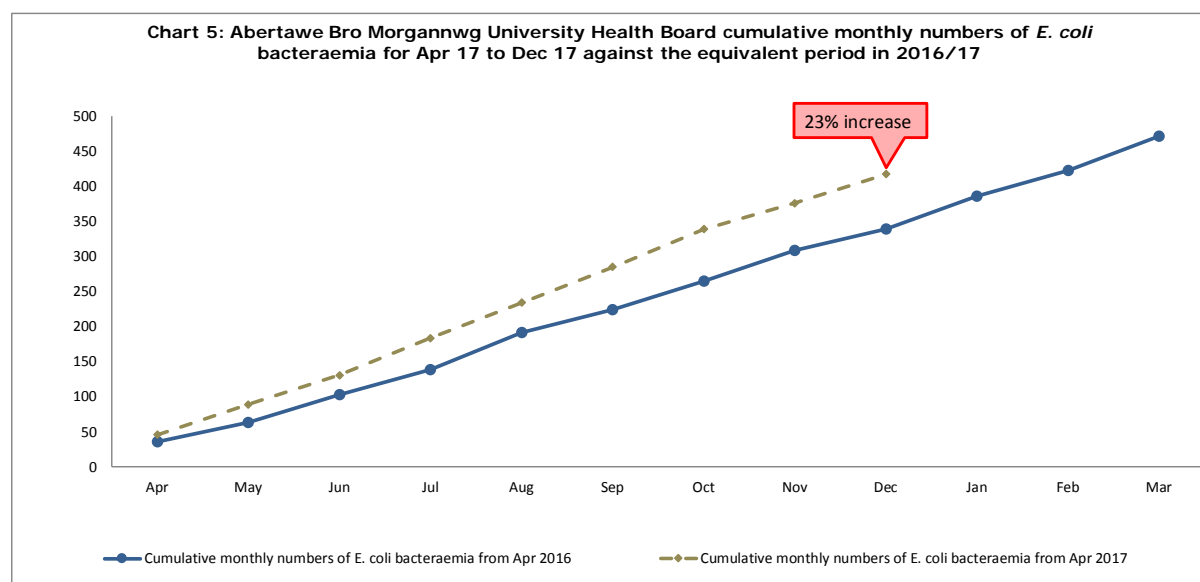
Key focussed improvement priorities:

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).
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 31st December 2017, the Health Board had exceeded this maximum by 69 cases.

From April to the end of December 2017, the number of cases within the Health Board was 421 cases; this was a 23% increase in the number of cases compared with the same period of 2016 (see Chart 5). Using the monthly average (April – December 2017), the projected position to the end of March 2018 is that there will have been 557 cases of *E. coli* bacteraemia cases seen in the population of ABMU.



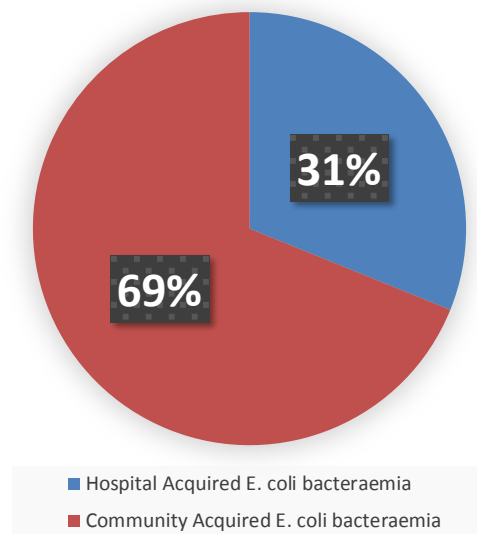
The incidence of infection per 100,000 population in Quarter 3, 2017, was improved compared with the Quarter 2 position, and is shown below:

Month	No. Cases	Monthly Incidence/ 100,000 population	Apr- Aug Cumulative Incidence (cumulative cases)
Oct-17	54	121.00	106.34/100,000 population (421)
Nov-17	39	90.30	
Dec-17	43	96.35	

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:

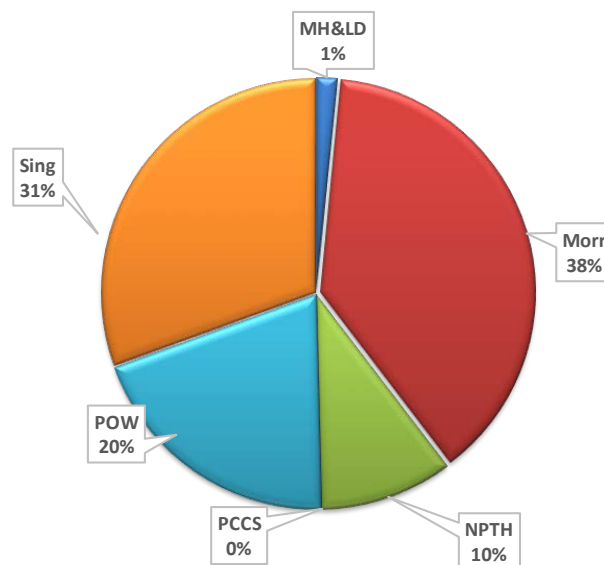
Using this definition, the proportions of *E. coli* bacteraemia that were hospital- or community-acquired, between April and December 2017 were:

***E. coli* bacteraemia in ABMU Health Board
2017/18 FY (to 31.12.17)**



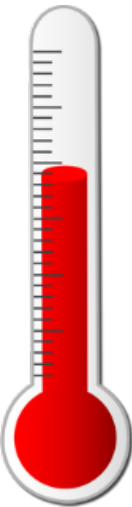
From April and December 2017, the proportion of hospital acquired *E. coli* bacteraemia by Service Delivery Unit is shown below.

**Hospital acquired *E. coli* bacteraemia,
distribution by Service Delivery Unit, 2017_18 (to 31/12/17)**



Hotspot Wards

Morrison Hospital, Singleton Hospital, and Princess of Wales Hospital account for approximately 89% of all hospital acquired *E. coli* bacteraemia cases. In Morrison, there are 6 wards that account for 53% of all the hospital acquired cases; in Singleton, there are 3 wards/units that account for 36% of the hospital acquired cases; in Princess of Wales Hospital, there are 4 wards that account for 58% of that site's hospital acquired cases; there is one ward in Neath Port Talbot that accounts for more than half that site's hospital acquired cases. These wards will be the focus for improvement initiatives.

	Morriston (in descending order)
	<ul style="list-style-type: none"> • Ward G • Ward H • Ward V • Ward A • Ward R • AMAU (East)
	Singleton (in descending order)
	<ul style="list-style-type: none"> • Ward 4 • Ward 12 • Haematology Day Unit
	Princess of Wales (in descending order)
	<ul style="list-style-type: none"> • Ward 8 • Ward 7 • Ward 19 • Ward 20
	Neath Port Talbot
	<ul style="list-style-type: none"> • Ward D

Key focussed improvement priorities:

1. Improved compliance with best practice guidance for insertion, maintenance and removal of invasive devices, such as urethral catheters.
2. Clinical improvement programmes to ensure prudent use of urethral catheters (inserted only when necessary, and removed as soon as no longer required).
3. 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

- The Executive Lead for Infection Prevention & Control (IP&C) transferred to the Director of Public Health on 1st October 2017; on **8th January, 2018**, the Executive Lead for IP&C reverted to following the Director of Nursing and Patient Experience following the appointment of an Interim Director.
- 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 significant risk in senior expertise and experience in IP&C within the corporate IP&C team. It has been agreed that both the Head and Assistant Head IP&C will return on a part-time basis. In this way, it will be possible to retain the experience, whilst providing stability and continuity for the team and the Health Board. This will facilitate the upskilling of more junior members of staff and support the Health Board's continued improvement journey.

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. Service Delivery Units will be expected to continue their focus on improvement initiatives in these areas during **Quarter 4**.

Staff engagement

- Following participation in the Public Health Wales / NHS Quality Improvement Healthcare Associated Infection & Antimicrobial Resistance Collaborative Launch event, a local collaborative was established on **5th December 2017**. The next meeting of this Collaborative will be held on **14th February 2018**.

Adequate isolation facilities

- Work has commenced 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 IPC policies are on track to be reviewed and updated by the end of **Quarter 4**.

Staff health

- The updated position by 14th December 2017 was as shown below:

Total Vaccinations Given	Front Line Staff	Non-Front Line Staff
Update to 14/12/17	6348	2383
Staff Number excluded	344	44
	6004	2339
Updated Totals	54%	48%
	8343	

- Due to influenza activity during the first two weeks of 2018, the Occupational Health Team have run additional vaccination clinics, and Delivery Unit Flu

Vaccine Champions have been active in clinical areas to encourage staff to have flu vaccine.

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).**

4.0 Recommendations

- The Quality & Safety Committee is asked to note the contents of this report.
- The Quality & Safety Committee is asked also to support that the Delivery Units adopt the key focused improvement priorities identified within this report.