Meeting Date	**23 February 2021**	**Agenda Item**	**3.1**
Report Title	Healthcare Acquired Infections Update Report		
Report Author	Lisa Hinton, Assistant Director of Nursing IPC		
Report Sponsor	Christine Williams, Interim Director of Nursing & Patient Experience		
Presented by	Lisa Hinton, Assistant Director of Nursing IPC		
Freedom of Information	Open		
Purpose of the Report	This is an assurance report provides an update on prevalence, progress and actions for healthcare associated infections (HCAIs) within Swansea Bay University Health Board for the reporting period.		
Key Issues	• Challenging to attain improvements in reduction of targeted infections. However, there has been year-on-year improvement in the following key infections: *Staph. aureus*, *E. coli*, and *Pseudomonas aeruginosa* bacteraemia cases. Of concern, there has been a 19% year-on-year increase in *C. difficile* cases, and a 19% increase in bacteraemia caused by *Klebsiella spp*. • Adherence to best practice in infection prevention and control precautions is critical. Delivery Groups must focus on achieving compliance with staff training in this area and on auditing compliance. This is critical in relation to all nosocomial infections and key during the COVID-19 second wave. It is acknowledged that staffing shortages can present a challenge for staff accessing IPC training. • Significant workforce issues as a result of the second wave of COVID-19. This has left staffing very stretched, with reliance on bank and agency staff, or existing staff working additional shifts. This may influence adherence to best practice in relation to infection prevention & control. • Lack of decant facilities compromises effectiveness of the '4D' cleaning/decontamination programme. • COVID-19 may have an impact on *C. difficile* infections, which may relate to antimicrobial treatment for respiratory tract infections. • The second wave of COVID-19 began in mid-September and has increased sharply between October and December. Delivery Groups have established Delivery Group Operational Outbreak Control Groups, which report to the Health Board Outbreak Control Group. Daily Situation Updates are sent to Welsh Government. • COVID-19 and Influenza vaccination programmes are progressing well.		
Specific Action Required	**Information** ☐	**Discussion** ☐	**Assurance** ☒	**Approval** ☐
Recommendations	Members are asked to: • Note reported progress against HCAI priorities up to 31st January 2021 and agree actions.			

Infection Prevention and Control Report

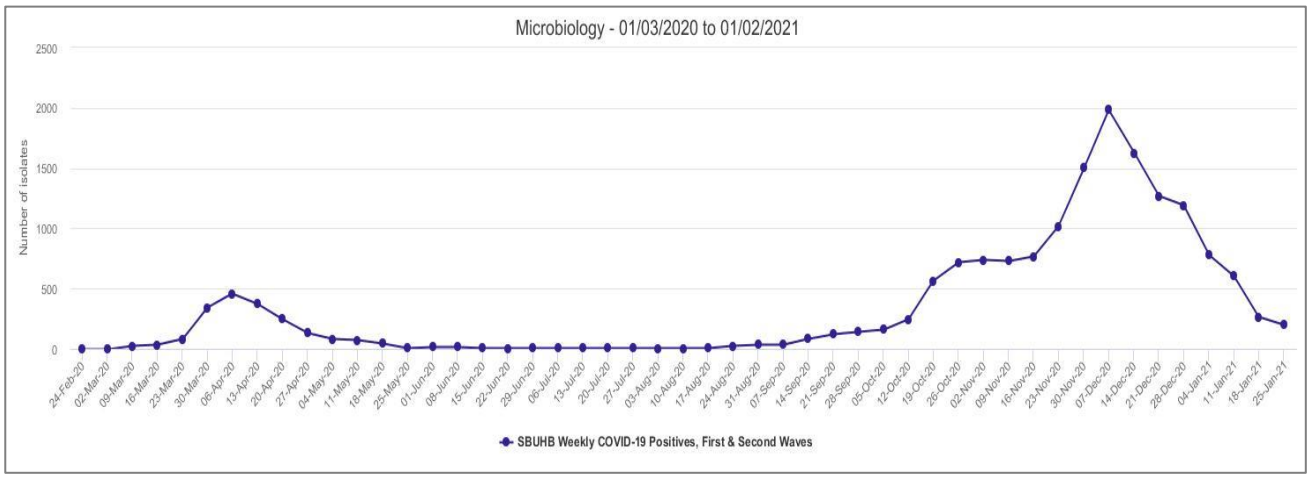
		Agenda Item	3.1
Freedom of Information Status		Open	
Performance Area	Healthcare Acquired Infections Update Report		
Author	Lisa Hinton, Assistant Director of Nursing, Infection Prevention & Control		
Lead Executive Director	**Christine Williams, Interim Director of Nursing & Patient Experience**		
Reporting Period	31 January 2021		

Summary of Current Position

The Health Board is currently under pressure as a result of the second wave of the COVID-19 (SARS 2) pandemic. This is having an impact on the health of the Health Board's population and its staff. Maintaining inpatient services for non-COVID-19 patients is becoming increasingly challenging.

COVID-19 (SARS 2):

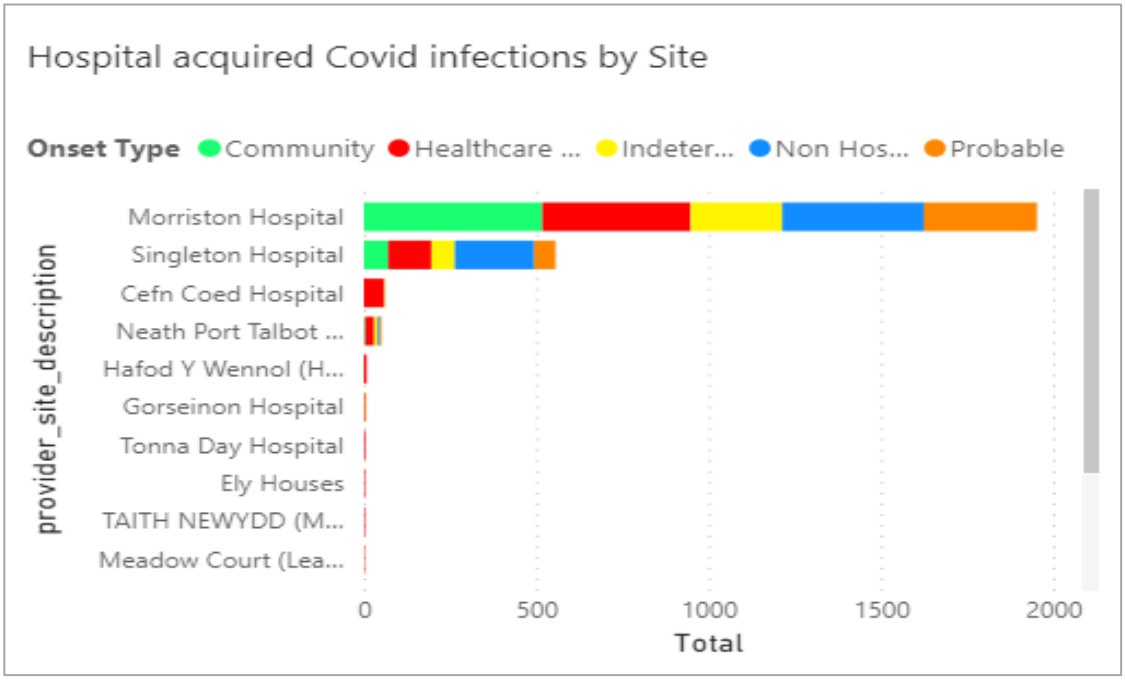
- The Health Board is currently under significant pressure as a result of the second wave of the COVID-19 (SARS 2) pandemic. This is having an impact on the health of the Health Board's population and its staff. Maintaining inpatient services for non-COVID-19 patients has been challenging.
- From 1st March 2020 to 31st January 2021: there have been over 27,000 positive cases of COVID-19 (SARS 2) from more than 178,400 testing episodes.
- The number of cases shown in the graph are laboratory confirmed cases only. There have been cases of COVID-19, clinically confirmed by X-Ray, that have tested negative. The graph demonstrates the impact of the second wave of COVID-19.



- The national criteria for onset types are:

- **Community Onset** – these will include patients seen in Emergency or non-inpatient settings, where swabs are obtained but the patients are not admitted. Although these patients may not require admission, their impact on services and resources is significant;
- **Non-hospital infection** – these include those patients for whom a positive test occurs between Days 0 and 2 of admission to hospital.
- **Indeterminate infection** – these include those for whom a positive test occurs between Days 3 and 7 of admission to hospital.
- **Probable hospital acquired infection** - these include those for whom a positive test occurs between Days 8 and 14 of admission to hospital.
- **Definite hospital acquired infection** - these include those for whom a positive test occurs on Day 15 or more of admission to hospital.

- The impact on hospital services has been significant. The various infection onset types are shown in the following chart.



- Hospital transmission incidents have been managed in accordance with the Health Board's Outbreak Protocol. Locally, these have been managed by Delivery Group Operational Outbreak Control Groups, which report to the over-arching Health Board Outbreak Control Group, chaired by the Executive Nurse Director of Nursing & Patient Experience. The Public Health Wales Consultant for Communicable Disease Control is a member of this Health Board group also. A Situation Update Report is sent daily to the Health Board Outbreak Control Group, Executive Directors, Delivery Group Directors, COVID IMT, and other relevant parties. An outbreak summary report is sent to Welsh Government daily.
- Of the cases found in hospital, many were found as a result of contact screening, with positive results identified from a significant number of asymptomatic patients and staff. This has been an important lesson learned during the second wave; individuals may have no symptoms but will be infectious, and this will have influenced nosocomial and community transmission. This has been reflected in the ease of transmission in community, inpatient, long-term care and social care settings.

- Compounding these issues has been the need to maintain a level of inpatient service provision for non-COVID patients across the Health Board, which has reduced capacity for effective segregation of patients.
- Additionally, there have been significant workforce challenges as a result of infection acquired as a consequence of social contact, occupational exposure, staff outbreaks, and staff required to self-isolate as a consequence of Track and Trace contact identification.
- The following are lessons learned during the second wave:
  - All patients and staff should be treated as if they could have COVID, as such, inpatient movement should be kept to an absolute minimum.
  - Some patients with COVID will be asymptomatic or minimally symptomatic and so all admissions need to be screened.
  - Even if a patient tests negative on admission they should be retested if they have any signs of COVID. The PCR test has a false negative rate in the region of 20%. The Nosocomial Group currently is consulting on a proposed patient-testing framework.
  - All patients with a new fever should be swabbed, as the prevalence of COVID is so high.
  - COVID symptoms can be very mild; staff with symptoms should report to the Occupational Health Department and follow their advice.
  - Introduction of a staff symptom checker prior to the start of a shift has been helpful in early identification of potential infection, and staff with mild, non-classic symptoms (e.g. mild headache) have been referred to Occupational Health for testing and a number subsequently found to be positive.
  - Individuals with mental illness or learning disabilities may not be able to communicate symptoms; also recognition of symptoms in these individuals can be non-classical and may be recognised only through behavioural or capacity changes
  - Strict compliance with PPE, with masks to be worn at all times. In addition, staff advised to wear visor, mask, apron and gloves for all patient contact (non-aerosol generating procedures).
  - Staff breaks to be taken in spacious, well-ventilated areas, with social distancing to be maintained.
  - Staff commuting to work should not share cars.
  - Social distancing to be maintained in offices and masks worn when that is not possible.
- These lessons continue to be shared across the organisation and wider. New learning is added and shared.

Influenza

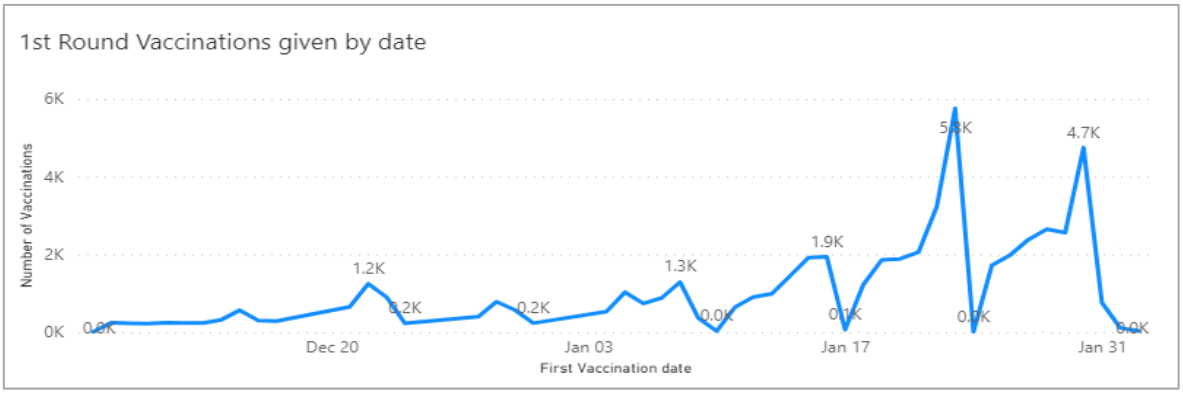
- Across SBU Health Board, from September 2020 to the end of January, there have been two cases of influenza detected from more than 13,000 tests (one in the paediatric ward and one in the Community Testing Unit). This compares with 204 cases identified from 1,054 tests in the same period in 2019.

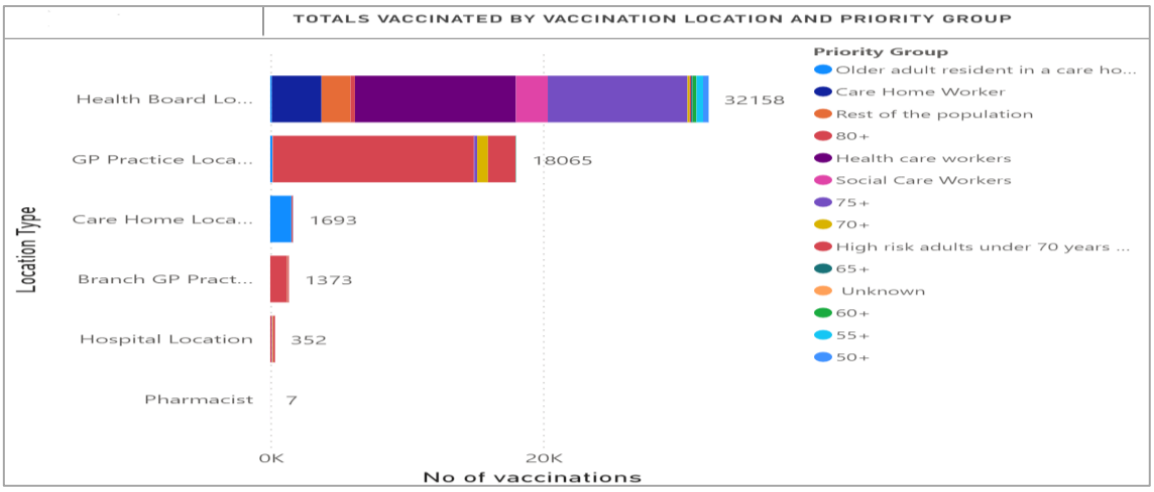
Norovirus

Across SBU Health Board, from September 2020 to the end of January, there have been 4 cases of Norovirus detected from more than 2,500 tests. This compares with 250 cases identified from more than 2,800 tests in the same period in 2019

COVID-19 Vaccination update

- COVID vaccination training continues to be undertaken. To date over 360 individuals have been trained, which includes new staff who will be working at the Mass Vaccination Centres.
- In-patient vaccination with the AstraZeneca vaccine began at the end of January, firstly at Gorseinon Hospital, then at Singleton Hospital. During the first week of February, the AstraZeneca vaccination programme moves to Neath Port Talbot Hospital and Morriston Hospital. Vaccination with the AstraZeneca vaccine by General Practitioners has started well.
- Renovation of a mobile vaccination vehicle, the 'Immbulance', is due for completion early February. This will be used to support the in-reach model initially.
- The Vaccination Team has supported two Military Personnel to vaccinate under the guidance of the National Protocol.
- To 31st January 2021, 53,648 vaccines had been delivered.





Influenza Vaccination update

- The most recent Occupational Health update (5th January 2021) on the influenza vaccination campaign in staff reported that 8,190 staff (61.6%) staff have been vaccinated; this includes 5,770 (63%) frontline staff.

Targeted Intervention Infections

- **2020/21**

The Tier 1 infection reduction goals for 2020/21 have yet to be published. Until their publication, Health Board progress will be shown in comparison with the 2019/20 monthly targets.

Infection	Cumulative cases Apr-20 – Jan-21	Dec-20 Cases	Jan-21 cases	WG Monthly Expectation
C. difficile	137	9	3	<8 cases
Staph aureus BSI	102	9	9	< 6 cases
E. coli BSI	176	12	18	< 21 cases
Klebsiella BSI	86	12	13	< 8 cases
Ps. aeruginosa BSI	17	1	1	< 2 cases

Infection	2019/20 total to 31.01.20	Comparison 2020/21 Total to 28/01/21
C. difficile	115	137 (19% ↑)
Staph aureus BSI	116	102 (12% ↓)
E. coli BSI	263	196 (25% ↓)
Klebsiella BSI	72	86 (19% ↑)
Ps. aeruginosa BSI	26	17 (35% ↓)

Achievements

- Health Board performance against all Tier 1 infection reduction goals for 2020/21 remains a challenge, although there has been improvement in relation to year-on-year comparisons (against April 2019 – January 2020 cases):
  - *Staph. aureus* bacteraemia – 12% decrease
  - *E. coli* bacteraemia – 25% decrease
  - *Pseudomonas aeruginosa* bacteraemia – 35% decrease.
- The four weekly *C. difficile* scrutiny panel continues to meet to review local action plans from each Delivery Unit, which provide a focus on improvement.
- IPC resource – currently, the term is working with a degree of fluidity to enable an appropriate response to COVID-19 in relation to provision of support and advice to clinical areas dealing with clusters and outbreaks of infection.
- IPC support to Primary Care and Community Services, mental health and learning disabilities, continues, and there has been senior IPC support to Care Home and Domiciliary Care Incident Management Teams.
- The IPC Team has delivered an IPC masterclass for Environmental Health and other agencies in relation to IPC precautions to ensure resident/patient, staff and visitor safety, and a Checklist for the management of COVID-19 in care homes. The first session was delivered via Teams on 29th January. A further two dates are planned for February. The aim of these sessions is to provide the Environmental Health staff and other visiting staff to care homes with the basics of

what to look for from an IPC perspective when visiting a care home, and to be able to identify good practice or any issues that might give them cause for concern

- The IPC service continues to provide support, advice and training to clinical and non-clinical staff across all Health Board services in all issues relating to COVID-19 and other infections. The IPCT are visiting all inpatient areas that have cases of COVID-19 and are working closely with Delivery Group teams in undertaking regular assessments of risk.
- The education planner is on the SharePoint training link, and details the IPCT training programme available to specific staff groups and sessions accessible to all staff across SBU for the period up to December 2021. Additional PPE Donning & Doffing sessions have been made available to increase PPE Donning & Doffing training capacity across all Delivery Groups. The dates of these sessions have been shared with, and opened to, long-term care facilities across the Health Board.
- ClearScreen PVC curtains have been installed across the Health Board to mitigate physical distancing risks.
- The Nosocomial Transmission Silver Group continues to meet during this second wave of COVID-19, and continues to review risks and mitigation.
- Delivery Groups have been holding frequent Incident/Outbreak Control Group meetings as relevant to their local pressures, and these groups report into a Health Board Outbreak Control Group. The Assistant Director of Nursing, IPC, or senior representative, has attended Outbreak Control meetings in each of the Delivery Groups, providing a consistent corporate presence and ensuring wider lessons are shared.
- The IP&C team has worked with Digital Intelligence to develop a more timely process for monitoring potential nosocomial transmission of COVID-19. There is administration support provided corporately to assist with the process of reporting these to Welsh Government.

Challenges, Risks and Mitigation

- The Health Board is not achieving all infection reduction goals expected by Welsh Government. The position in relation to *C. difficile* has improved, with a decrease in monthly cases for the fifth successive month. The impact of the second wave of COVID may affect sustained improvement.
- The Health Board has seen a 19% increase in *Klebsiella spp*. bacteraemia cases compared with the position April 2019 – January 2020. A number of these have had concurrent COVID-19, and it is uncertain whether this has contributed to the bacteraemia. The cases of *Klebsiella spp.* bacteraemia require further clinical review to understand the causes and contributory factors.
- Results of whole genome sequencing (WGS) of *C. difficile* isolates has enabled greater discrimination between isolates, including the ability to distinguish between strains of the same ribotype. From this information, PHW has identified that the majority of cases within the Health Board have not been because of transmission events.
- Increased incidence of *C. difficile* may be linked with COVID-19 in relation to antimicrobial prescribing practices in primary care (with an increase in telephone consultations with GPs as a consequence of the first wave of COVID-19). A recent publication from Public Health Wales, *Changes in Antibacterial Usage in General Practice in Wales during the First Wave of COVID Pandemic April-June 2020* identified:
    - overall usage decreased during decreased during the first wave when the standard denominator of GP practice size was used. However, contacts to General Practice fell during the first wave and so this decrease in activity may mask any changes in prescribing practices around antibiotics.

- When antibiotic prescribing was analysed in relation to this decrease in activity, an increase in antibiotic prescribing per appointment is seen across all the Welsh Health Boards. The highest increase has been seen in Swansea Bay, with a 63% increase in antibiotic per recorded appointment. An increase in broad-spectrum antibiotics (4C) was also observed across all HBs. This suggests that during this period significantly more patients than before were being prescribed antibiotics following an appointment with a GP practice. This is consistent with findings from England recently published in the Lancet, which also showed a higher rate of prescribing associated with remote consultations.
- It is important to emphasise that this is an experimental denominator, with data taken from non-standardised GP systems. As outlined in the report, it is unclear how consistently all patient contacts are recorded and how the rapid move to video consultations in Swansea Bay has affected the data. There is a need to understand the accuracy of this data before any firm conclusions can be drawn from the data provided in this report. The "GP contacts" data has now been withdrawn from the NWIS Hub due to these concerns. Further discussion with the SBUHB Primary care group is necessary to better understand the local picture and agree any required actions.

- There has been a small number of related *C. difficile* incidents since September 2020, identified through whole genome sequencing. These have occurred in Morriston, Neath Port Talbot and Singleton. These incidents are being investigated and are reviewed by the Health Board *C. difficile* Scrutiny Panel. The investigation has identified four separate confirmed clusters that could be linked in time and place, indicating the possibility that a transmission event may have occurred. However, there are also a number of clusters groups where investigation has not been able to identify a link in relation to a common location or time.
- Historically, reduction initiatives have been compromised by over-crowding of wards because of increased activity, the use of pre-emptive beds, and staffing vacancies, with reliance on temporary staff, and where activity levels are such that it is not possible to decant bays to clean effectively patient areas where there have been infections. The Health Board must continue to be mindful of these risks during the second wave of COVID-19, whilst it tries also to maintain services for non-COVID patients requiring hospital admission. With high incidence of COVID-19 inpatients, there is additional challenge on availability of single rooms for patient segregation. The IP&C team continue to monitor trends and provide alerts to Delivery Group management teams of there appears to be an increasing trend.
- The air exchange rates in clinical and non-clinical areas may have an effect on infections that have airborne transmission, including Coronavirus, Influenza, Norovirus, etc. Maintaining air changes, and increasing natural ventilation by opening windows, will be important during this second wave. However, improving natural ventilation by opening windows may not be possible in all inpatient areas as temperatures fall during winter.
- The increasing pressures and challenges of the second wave of COVID-19, in addition to the normally anticipated winter pressures, will impact on decant opportunities. The lack of decant facilities, when occupancy is at acceptable levels on acute sites, compromises effectiveness of the '4D' cleaning/decontamination programme will continue to be a challenge.
- Cleaning staff recruitment continues in order to meet the agreed increase staffing to meet the agreed uplift to meet the National Minimum Standards of Cleanliness. Ongoing recruitment into domestic vacancies and additional funded hours continues. This is an ongoing process as there continues to be turnover in this staff group.

Action Being Taken (what, by when, by who and expected impact)

Maintain infection Prevention & Control Support for COVID-19

- **Action:** Continue to provide support and advice in relation to COVID-19 for clinical and non-clinical staff across the Health Board, and Procurement. **This will be ongoing throughout this second wave**. **Lead:** Assistant Director of Nursing IPC. **Impact:** Safe practices to protect the health of patients, staff and wider public.

Development of ward dashboards key infections

- **Action:** Collaboration with Digital Intelligence Team and Infection Prevention & Control Team Surveillance of healthcare associated infections will resume, with update reports prepared for Senior Leadership Team and Quality & Safety. Work has commenced on obtaining data feeds from the Laboratory Information System. **Target completion date:** The HCAI dashboard work stream is still progressing, but at a slower rate than previously due to COVID-19 pressures and the requirements to provide COVID-19 dashboards. The new date has been set back to *March 2021*. **Lead:** ADN, IPC, Head of Nursing IPC, and Business Intelligence Information Manager. **Impact:** Provide timely information on infections at Ward, Specialty, Delivery Unit and Board level to facilitate early detection and early intervention to improve patient safety.

***Clostridioides difficile* infection**

- **Action:** Continued investigation into the increasing trend in *C. difficile* to identify possible contributory factors, with a specific focus on antimicrobial stewardship. **Target completion date:** Set back to March 2021, *with possible slippage due to COVID-19 second wave*. **Lead:** Matron IPC, Delivery Unit Directors, and Consultant Antimicrobial Pharmacist. **Impact:** reduction in *C. difficile* cases.
- **Action:** Investigation of genetically linked cases of *C. difficile* by Morriston and Singleton Service Groups, with support from the IPC team. **Target completion date:** Delivery Groups will be expected to present findings at the Infection Prevention & Control Committee in February 2021. **Lead:** Delivery Unit Infection IPC Leads, with support from the site based IPC team. **Impact:** Improved understanding of contributory factors that resulted in these incidents and share learning wider to reduce incidence of *C. difficile*.
- **Action:** Investigate further restriction of broad-spectrum antibiotics in the antimicrobial guidelines, with a focus on piperacillin/tazobactam. Consider alternative agents for use in severe hospital-acquired pneumonia and lowering the renal threshold for use of gentamicin in septic patients. **Target completion date:** March 2021, however, there may be slippage due to COVID-19. **Lead:** Antimicrobial Advisory Group. **Impact:** Restrictions in use of broad-spectrum antibiotics resulting in less disruption of gut microbiome.

***Klebsiella spp.* bacteraemia**

- **Action:** Identify feasibility of a study, to be undertaken by medical students, reviewing these bacteraemia cases to identify sources and contributory factors, and propose actions for quality improvement. Discussion with Medical Director to agree a process. **Target completion date:** March 2021. **Lead:** Assistant Director of Nursing IPC and Medical Director. **Impact:** reduction in *Klebsiella spp.* bacteraemia.

Domestic staff recruitment

- **Action:** Recruitment process for additional cleaning staff progressing. **Target completion date:** Recruitment is ongoing process to meet possible shortfalls that occur through vacancies caused by retirement or staff leaving for alternative job opportunities. **Lead:** Support services manager. **Impact:** Increased domestic staffing to provide cleaning hours required.

Decant

- **Action:** Solutions for dedicated decant to be identified for Morriston and Singleton. **Target completion date:** *set back as a result of COVID-19* to March 2021. **Lead:** Assistant Director of Nursing IPC, unit nurse directors and Service improvement capital planning. **Impact:** Solution for decant to be identified and proposals for a solution to be presented to SLT.

Procurement of Hydrogen Peroxide Vapour (HPV) Contracted Service

- **Action:** Undertake a procurement exercise to identify a safe and appropriate managed service for when ongoing transmission of an organism has occurred, despite implementation of existing control measures, and the environment and/or equipment is considered a persistent source of pathogens. Also, an annual programme of environmental decontamination, dependent on the ability to decant. **Target completion date:** *set back as a result of COVID-19* to March 2021. **Lead:** Assistant Director of Nursing IPC, Support Services, and Procurement. **Impact:** Environmental decontamination in line with the '**4D**' programme: **D**eclutter, **D**ecant, **D**eep-clean and **D**isinfect, and the Outbreak Management Protocol, and an annual Deep Clean Programme.
- **Action:** Review the pilot of Support Service Assistants undertaking the whole deep clean of patient care areas, to include items historically cleaned by nurses, and determine efficacy and propose a long-term solution. **Target completion date:** *set back as a result of COVID-19* to March 2021. **Lead:** Head of Support Services and Head of Nursing IPC. **Impact:** Cost- and time-effective service of deep clean and decontamination.

Financial Implications
A Department of Health impact assessment report (IA No. 5014, 20/12/2010) stated that the best estimate of costs to the NHS associated with a case of *Clostridioides difficile* infection is approximately **£10,000**. The estimated cost to the NHS of treating an individual cost of MRSA bacteraemia is **£7,000** (the cost of MSSA bacteraemia could be less due to the availability of a wider choice of antibiotics). In an NHS Improvement indicative tool, the estimated cost of an *E. coli* bacteraemia is between **£1,100** and **£1,400**, depending on whether the *E. coli* is antimicrobial resistant. (*Trust and CCG level impact of E.coli BSIs* accessed online at: https://improvement.nhs.uk/resources/preventing-gram-negative-bloodstream-infections/). Estimated costs related to healthcare associated infections, from 01 April 2020 – 31 January 2021 is as follows: *C. difficile* - £1,370,000; *Staph. aureus* bacteraemia - £714,000; *E. coli* bacteraemia - £231,200; therefore a total cost of **£2,315,200**.
Recommendations
Members are asked to: • Note reported progress against HCAI priorities up to 31st January 2021 and agree actions.