Meeting Date	**23 November 2021**	**Agenda Item**	**3.1**
Report Title	Healthcare Acquired Infections Update Report		
Report Author	Delyth Davies, Head of Nursing, Infection Prevention & Control		
Report Sponsor	Gareth Howells, Executive Director of Nursing & Patient Experience		
Presented by	Delyth Davies, Head of Nursing, Infection Prevention & Control		
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	• The Health Board continues to have the highest incidence of infection for the majority of the Tier 1 key infections. • COVID-19 incidence in community and healthcare settings, and in social care, continues to impact significantly on service provision. • Adherence to best practice in infection prevention and control (IPC) precautions is critical. Service 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; COVID-19 has heightened awareness of the importance of IPC, and all staff must maintain vigilance going forward. • The Quality Priority programme for improving healthcare associated infection and antimicrobial stewardship continues and progress is detailed in the 100-Day Plan. • Scrutiny of periods of increased incidence of infection must be reviewed consistently, to ensure that lessons are learned, and mitigation measures implemented, driving improvements in infection reduction. • Lack of decant facilities compromises effectiveness of the '4D' cleaning/decontamination programme. Provision of decant facilities also would enable plans to upgrade mechanical ventilation and single room accommodation to standards set in national guidance. • The COVID-19 vaccination programmes are progressing well. • There has been continued progress in assurance relating to decontamination processes within the Health Board.		
Specific Action Required	**Information** ☐	**Discussion** ☐	**Assurance** ☒	**Approval** ☐
Recommendations	Members are asked to: • Note reported progress against HCAI priorities up to 31 October 2021 and agree actions.			

Infection Prevention and Control Report

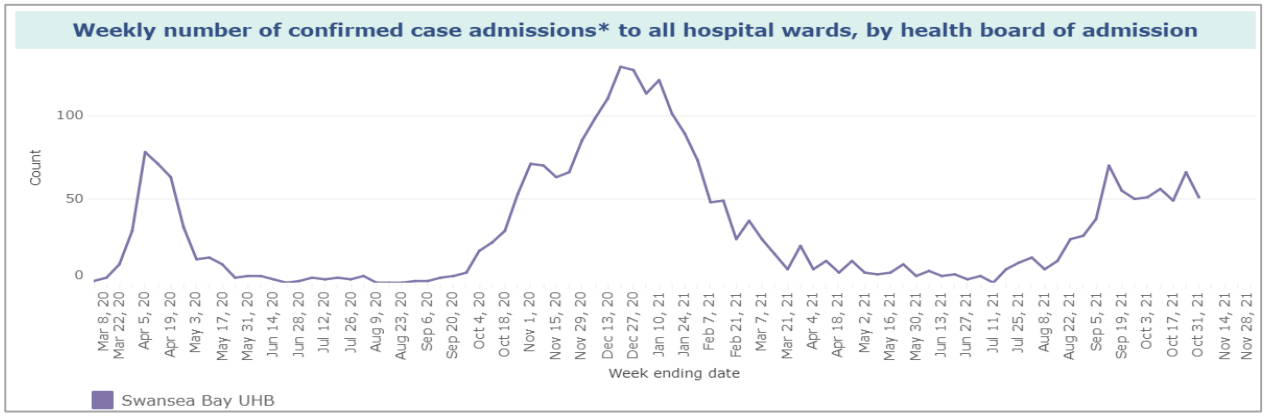
		Agenda Item	3.1
Freedom of Information Status		Open	
Performance Area	Healthcare Acquired Infections Update Report		
Author	Delyth Davies, Head of Nursing, Infection Prevention & Control		
Lead Executive Director	**Gareth Howells, Executive Director of Nursing & Patient Experience**		
Reporting Period	31 October 2021		

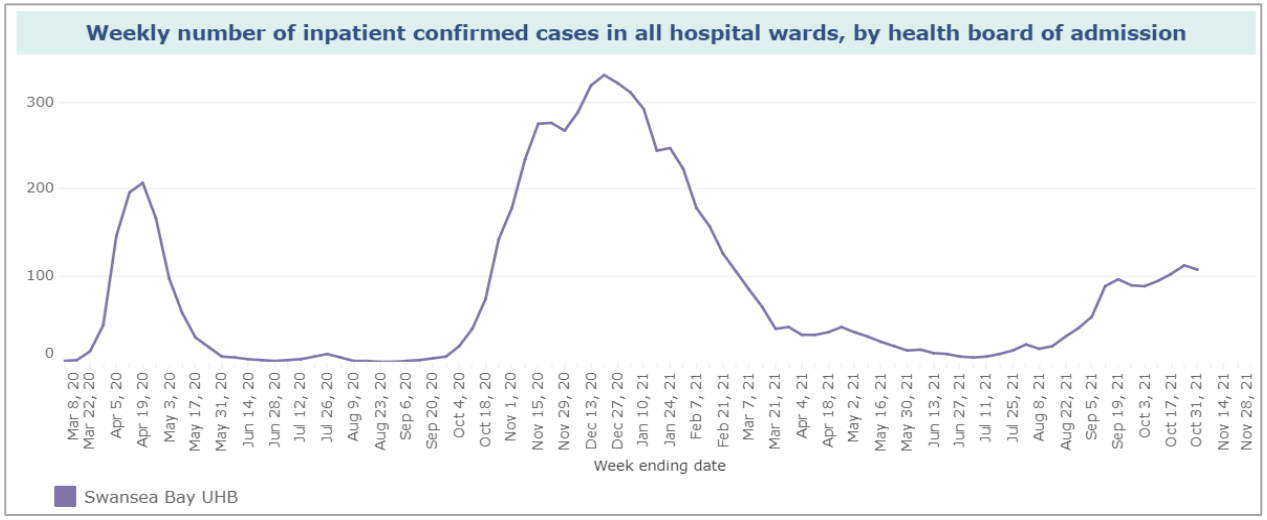
Summary of Current Position

The Health Board has continued with its response to COVID-19 (SARS 2) pandemic.

COVID-19 (SARS 2):

- From 01 March 2020 to 31 October 2021: there have been over 62,000 positive cases of COVID-19 (an increase of approximately 1,100 in one month) from over 442,000 testing episodes (an increase of approximately 52,500 tests in one month).
- The charts below show the weekly number of laboratory confirmed COVID-19 cases admitted to SBUHB hospitals, and the number of confirmed cases in our hospitals. These charts highlight the impact of the second wave of the pandemic.





Source: Public Health Wales, to 09/11/21

- In October, the outbreaks in Cardigan Ward, Rowan Ward and Ward E concluded.
- In October, there have been continuing and new localised outbreaks of COVID-19 in the following areas:
    - Morriston - SDMU (5 patients and 3 staff), Ward V (7 patients), Ward W (9 patients and 1 staff), and Ward D (2 patients and 1 staff);
    - Learning Disability - Dan Y Deri (3 staff);
    - Mental Health - Ward F (6 patients and 11 staff), Newton Ward (7 patients and 6 staff).

COVID-19 Vaccination update

- A total of 292,885 first dose vaccines, and 270,454 second dose vaccinations, have been administered within the priority groups to the end of October 2021.
- The mobile unit 'Immbulance' has continued to extend the reach of the vaccination programme.
- To 31 October 2021, 16,488 SBUHB staff had received the first dose, and 16,181 staff had received the second dose of either one of the available COVID-19 vaccines; the breakdown is shown in the following table.

Vaccinations by Job Role, Frontline Status and Priority Group

Job Role Category	Cohort total	Total First Vaccination	Total Second Vaccination	% Vaccinated (1st Dose)	% Vaccinated (2 Doses)
⊞ **Additional Clinical Services**	**147**	**147**	**142**	**100.00%**	**96.60%**
⊞ **Additional Prof Scientific and Technical**	**20**	**20**	**20**	**100.00%**	**100.00%**
⊞ **Administrative and Clerical**	**232**	**232**	**230**	**100.00%**	**99.14%**
⊞ **Allied Health Professionals**	**168**	**168**	**167**	**100.00%**	**99.40%**
⊞ **Estates and Ancillary**	**61**	**61**	**59**	**100.00%**	**96.72%**
⊞ **Healthcare Scientists**	**29**	**29**	**29**	**100.00%**	**100.00%**
⊞ **Medical and Dental**	**411**	**411**	**401**	**100.00%**	**97.57%**
⊟ **Nursing & Midwifery Registered**	**495**	**495**	**486**	**100.00%**	**98.18%**
⊞ N	26	26	26	100.00%	100.00%
⊞ Y	469	469	460	100.00%	98.08%
⊞ **Other**	**1003**	**1003**	**991**	**100.00%**	**98.80%**
⊞ **Student**	**369**	**369**	**361**	**100.00%**	**97.83%**
⊞ **Unknown**	**13553**	**13553**	**13295**	**100.00%**	**98.10%**
Total	**16488**	**16488**	**16181**	**100.00%**	**98.14%**

- Third dose and booster dose COVID vaccination programmes continue.
- The Immunisation team currently are training the third cohort of the non-registrant workforce to support administration of the COVID vaccinations.
- The Immunisation team remains heavily involved in the COVID vaccination programme, and continues to oversee the allergy clinic for those needing their COVID vaccination in hospital. Training for Practice Nurses, District Nurses, Prison, school nursing teams has taken place, in addition to staff flu peer vaccination training.

Flu Planning 2021/22

- Welsh Government target for influenza vaccination of staff is 85%. To the end of October, approximately 44% of staff had been vaccinated; approximately 45% of front-line staff had been vaccinated. The table of the following page shows the details by staff group.

Staff Group	Vaccinated %	Not Vaccinated %	Vaccinated	Not Vaccinated	Grand Total	Number of Doses to Target
Add Prof Scientific and Technic	58.44%	41.56%	232	165	397	66
Additional Clinical Services	42.84%	57.16%	1179	1573	2752	885
Administrative and Clerical	42.09%	57.91%	1104	1519	2623	863
Allied Health Professionals	49.63%	50.37%	475	482	957	243
Estates and Ancillary	43.10%	56.90%	537	709	1246	398
Healthcare Scientists	51.36%	48.64%	170	161	331	78
Medical and Dental	45.88%	54.12%	434	512	946	276
Nursing and Midwifery Registered	43.70%	56.30%	1748	2252	4000	1252
Grand Total	**44.36%**	**55.64%**	**5879**	**7373**	**13252**	**4060**
Front Line Staff Totals	**44.94%**	**55.06%**	**4068**	**4984**	**9052**	**2721**

- The school nursing team are utilising a 'drive-through' model to vaccinate children who may have missed flu vaccination in schools.

Decontamination Update

Progress continues to strengthen the governance of decontamination processes across the Health Board.

- All overarching Health Board policies and protocols have been reviewed and ratified.
- The review and update of local standard operating procedures throughout the Health Board continues. Progress is managed through the Decontamination Quality Priority Group.
- A framework for decontamination training has been approved through the Decontamination Quality Priority Group. This framework ensures a consistent standard of training provided to Health Board staff by equipment and device manufacturers. The framework sets and agrees the core training elements that the Health Board expects all manufacturers to include as a standard in all training provided to Health Board staff.
- The Health Board has appointed into the Band 6 Decontamination Co-ordinator post, funded through the Quality Priorities. This appointee will commence in post from 14th November 2021.

Tier 1 Infections 2020/21

The tables on the following page show Health Board progress against the Welsh Government HCAI Improvement Goals for 2021-22, published in WHC (2021)028 to the end of October 2021; the year-on-year cumulative comparison is shown also.

Infection	Cumulative cases	October 2021 Cases	Cases +/- Monthly WG Expectation	WG Monthly Expectation

	Apr 2021- Oct. 2021			
C. difficile	120	16	+8	< 8 cases
Staph aureus BSI	93	18	+121	< 6 cases
E. coli BSI	188	19	-2	< 21 cases
Klebsiella BSI	61	13	+7	< 6 cases
Ps. aeruginosa BSI	11	0	-2	< 2 cases

Infection	2020/21 total to 31/10/20	Comparison 2021/22 Total to 31/10/21
C. difficile	114	120 (5% ↑)
Staph aureus BSI	71	93 (31% ↑)
E. coli BSI	150	188 (25% ↑)
Klebsiella BSI	50	61 (22% ↑)
Ps. aeruginosa BSI	13	11 (15% ↓)

The incidence (per 100,000 population) of the majority of the key Tier 1 infections in Swansea Bay University Health Board is the highest in Wales for *C. difficile*, *Staph. aur*eus bacteraemia and *Klebsiella* bacteraemia. This is not an acceptable position. All major Health Boards in Wales appear to be facing similar challenges.

To provide context to the position in Wales, during the first seven months of the financial year, NHS Wales has seen an average increase in all Tier1 infections as shown below (with the range of increases across various Health Boards shown in brackets):

- *C. difficile*: +23% (range +6% to +120%);
- *Staph. aureus* bacteraemia: +14% (range -12% to +45%);
- *E.coli* bacteraemia: +17% (range +2% to +31%);
- *Klebsiella spp*. bacteraemia: +11% (range -18% to +41%); and
- *Pseudomonas aeruginosa* bacteraemia: +20% (range -15% to +64%).

The incidence of *C. difficile* is above the infection reduction monthly goals. The cumulative rate of increase, year-on-year, has slowed since July, when the increase was 17%. This has since reduced to a 5% increase by the end of October.

The incidence of *Staph. aureus* bacteraemia is above the infection reduction monthly goals. There has been a 31% increase in the cumulative total cases year-on-year. Hospital acquired infection (HAI) accounted for 57% of all cases; 43% were community acquired infections (CAI). In the majority of HAI cases, the source was line-associated; in the majority of CAI cases, the source was skin and soft tissue, although in an equivalent proportion of cases, the source of infection was not identified

October 2021, a 25% increase in *E. coli* bacteraemia has been reported compared with the same period in 2020. The incidence of *E. coli* bacteraemia has also continued to increase across NHS Wales. In SBUHB, approximately 66% of the cases in April to October 2021 were community-acquired infections; 34% were considered hospital acquired. Of these community-acquired cases, the urinary tract was considered the source of infection in approximately 48% of cases, and the hepato-biliary tract considered the source in approximately 22% of cases. Of the hospital-acquired cases, 36% were considered to have a urinary source; 22% a hepato-biliary tract source.

Fifty-five percent of *Klebsiella spp*. bacteraemia cases between April and October 2021 were hospital-acquired cases; 44% were community-acquired. Of the hospital-acquired cases, 26% were considered to have a respiratory source; 20% a urinary source; 15% a hepato-biliary tract source. Of the community-acquired cases, 56% were considered to have a urinary source; 30% a hepato-biliary tract source.

The attribution of cases of *Pseudomonas aeruginosa* bacteraemia between April and October 2021 were considered to be: 55% hospital-acquired and 45% community-acquired. Sources of infection, where identified, were urinary, skin & soft tissue, abdominal, and hepato-biliary tract.

The third wave of the COVID-19 pandemic has commenced. This, in addition to the escalation of service pressures, and the incidence of other respiratory viruses, and Norovirus, which are expected to increase during winter, is likely to lead to a challenge for the Health Board to achieve and sustain reductions in healthcare-associated infections.

Achievements

- 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 IPC team continues to emphasise to staff the need for sustained vigilance.
- Service Group management of COVID outbreaks has improved, with a reduction in the overall length of the outbreaks, and fewer patients involved in each outbreak than during the height of the second wave. This has been achieved by 'locking down' wards with outbreaks, with improved restriction of inter-ward movement. This will be challenging to sustain at times of extreme unscheduled care service pressures.
- The Nosocomial Transmission Silver Group continued to meet during the second wave of COVID-19, and continues to review risks and mitigation.
- The care home IPCN project aims to establish a programme of work for infection and prevention control (IPC) support to care homes within the Health Board boundaries, which will enable better sharing of issues, problem-solving, best practise and learning for all the various partners involved in infection prevention and control for care homes, including the care homes themselves.
- Digital Health and Care Wales barriers to accessing the required pathology data to inform the development of the HCAI Dashboard have been resolved. A small Digital Intelligence HCAI Dashboard development team has been established and work has commenced on testing data feeds from the Laboratory Information Management System (LIMS).

Challenges, Risks and Mitigation

- The Immunisation Team comprises one substantive Immunisation and Vaccination Lead for the Health Board, one full-time temporary secondment Band 7 Immunisation Coordinator, and one part-time fixed term contract Band 7. Funding has been agreed to extend the secondment and the fixed-term contract to the end of March 2022. However, the seconding department is not able to extend the secondment beyond 31st December 2021 for the current secondee. The business case to expand the Immunisation Team is under consideration currently.
- The Infection Prevention & Control Team is affected, and will be affected further, by vacancies within the team. There is a current 75-hour vacancy. There will be a further 37.5-hour vacancy in November, and 12-month maternity leave, which will come into effect in December. At the end of January 2022, there will be an additional 37.5-hour vacancy. In mitigation, the Head of Nursing has temporarily increased to full-time hours; one appointment has been made to a

junior vacancy (anticipated start date is likely to be in January 2022). Recruitment will take place for other vacancies. The Assistant Director of Nursing, Quality & Safety, is pursuing funding to cover maternity leave, with some additional short-term support for the team. However, these changes will result in a reduction in cover for the current 7-day service, whilst new and inexperienced staff gain experience, skills and competence. There will be also a significant loss of senior, experienced Infection Prevention & Control Nurses. There is not a large pool of qualified and experienced Infection Prevention & Control Nurses nationally, and experience is that it may be a challenge to recruit the level of experience required for this Health Board, its complexities and the challenges it faces.

- The Health Board is not achieving the infection reduction goals expected by Welsh Government.
- Service pressures on acute sites have precluded the decant of clinical areas affected by periods of increased incidence of *C. difficile*. Consequently, it has not been possible to undertake the level of 4D cleaning that is the standard within the Health Board.
- Current pressures on Health Board services, both in the community and in hospitals, is extreme, as are the pressures on providing social care packages. The results of these pressures are that numbers of medically fit for discharge patients have increased, which results in increased length of stay for many patients. The demand for unscheduled acute care remains, leading to increased demand for inpatient beds. Surge capacity is being utilised on all inpatient sites. The increasing inpatient population occurs at a time of increased staff shortages, which an increasing patient-to-staff ratio. In addition, the number of COVID-19 admissions has been increasing, leading to provision of increased COVID beds across sites, particularly in Morriston. When such pressures exist within a healthcare system, patient safety risks are likely to increase, and this includes infection risks.
- COVID-19 cases within acute inpatient settings remains a challenge, with continuing evidence of transmission events.
- Bed spacing and ventilation within the majority of wards in inpatient settings poses an ongoing risk in relation to transmission of COVID-19 and other seasonal viral infections, including influenza, Respiratory Syncytial Virus, parainfluenza, and Norovirus. The risk assessment in relation to bed spacing has been completed and measures to mitigate risk have been implemented. The risk assessment in relation to ventilation risks will be undertaken by Estates colleagues, with recommendations made on measures to mitigate risk in the short-, medium- and long-term.
- COVID-19 continues to circulate within the Community. Symptoms may be minimal or absent in the doubly vaccinated population, who may continue to be sources of infection to others, including within the hospital environment. The potential consequences to disruption of services is likely to be significant.
- Frequent movement of patients within the hospital settings Increases infection risks. Pressures on inpatient capacity historically has increased the movement of patients between wards in the attempt to maintain patient flow and service provision for unscheduled care.
- Historically, infection reduction initiatives have been compromised by the following: staffing vacancies, with reliance on temporary staff; over-occupancy because of increased activity; use of pre-emptive beds; and increased activity such that it is not possible to decant bays to clean effectively patient areas where there have been infections.

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. **This will be ongoing throughout the third wave, which has commenced. Lead:** Head of Nursing IP&C. **Impact:** Safe practices to protect the health of patients, staff and wider public. **Immunisation & vaccination.** • **Action**: Develop a business case for a sustainable Vaccination & Immunisation Service to improve the uptake of vaccinations against Influenza and other preventable communicable diseases. **Target completion date** set back to **31/11/21. Lead:** Matron Immunisation, Vaccination & Assistant Director of Nursing**. Impact:** reducing preventable communicable disease. ***Development of ward dashboards key infections (HCAI Quality Priority, 100 Day Plan)*** ***Working with Digital intelligence to identify specification for the infection dashboard.*** • **QP Action:** In collaboration with Digital Intelligence team, establish the data feed from LIMS, quality control and verify the accuracy of the data accessed. **Target completion date: 31/12/21. Lead:** Head of Nursing Infection Prevention & Control, and Business Intelligence Information Manager. **Impact:** enable oversight of key indicators at Ward, Specialty, and Delivery Unit and Board level to enable early intervention and improve patient safety. ***Achieve compliance with Infection Prevention-related training (HCAI Quality Priority, 100 Day Plan)*** • **Action:** Service Groups to develop improvement plans for IPC training compliance. **Target completion date:** This is dependent on ESR functionality. **Lead:** Learning & Development Team. **Impact:** Improve compliance with IPC training for all Service Group staff. ***Recruitment of key personnel to support delivery of Decontamination and AMR improvement programmes (HCAI Quality Priority, 100 Day Plan) – dependent on confirmation of resources and recruitment processes.*** • **Action:** Appointment to General Practitioner Clinical Lead sessions dedicated to antimicrobial stewardship and HCAI improvement. **Target completion date: 31/12/21**. **Lead:** Medical Director Primary Care and Community. **Impact:** Drive forward antimicrobial stewardship improvement programmes in Primary Care, and improve compliance with key antimicrobial stewardship indicators. **Drive Improvements in Prudent Antimicrobial prescribing *(HCAI Quality Priority, 100 Day Plan)*** **Antimicrobial initiatives – Primary Care** • **Action:** Series of cluster-based antibiotic-focused GP prescribing leads sessions underway. Antibiotic prescribing data will be discussed in detail with each practice and an action plan agreed by each practice. Educational content will focus on management of self-limiting infections this winter, promoting self-care and delayed prescriptions whenever clinically appropriate. **Target Completion Date**: Quarter 3 2021. **Lead:** Antimicrobial Pharmacy team. **Impact:** Decrease

overall volume of prescribing in primary care through increased education and awareness around management of self-limiting conditions amongst clinicians.

- **Action:** Baseline audits completed for cluster-based antibiotic quality improvement projects in Afan and City Health Clusters. Proposal and project plan for focus on urinary tract infection (UTI), and skin and soft tissue infections due to be agreed at next Primary Care, Community & Therapies Group HCAI/AMR meeting. **Target completion date:** Quarter 4, 2021/22. **Lead:** Antimicrobial Pharmacy team. **Impact:** Identify priority targets for QI interventions to improve compliance to guidelines and overall volumes of prescribing within the GP practice.

Antimicrobial initiatives – Health Board

- **Action:** The Clinical Outcome and Effectiveness Group has agreed a new Antimicrobial Stewardship Framework and governance structure. This includes recruitment of a new clinician chair for the health board antimicrobial stewardship group. An implementation plan will now be drafted and agreed in the next COEG meeting. **Target completion date:** Quarter 4 2021/22**. Impact:** Improve governance arrangements around antimicrobial stewardship with the health board and promote ownership and action at a service delivery group and cluster/speciality level.

***Clostridioides difficile* infection**

- **Action:** Digital Intelligence are developing an electronic investigation tool to allow MDT input and improve scrutiny and identification of themes by HB *C. difficile* Scrutiny Panel. **Target completion date:** draft of first stage developed. Additional development required, and date extended to Quarter 4, 2021/22. **Lead:** Quality Improvement Matron IPC, Public Health Wales Infectious Diseases/Microbiology Consultant. **Impact:** More robust system to collate themes and shared learning to improve the focus of prevention and management initiatives, leading to a reduction in *C. difficile* infection.

Bacteraemia improvement

- **Action:** Morriston Service Group's Medical Director has established a Consultant-led bacteraemia group, with multi-disciplinary representation, including a Public Health Wales Microbiologist, to review investigations of significant bloodstream infections and share lessons learned. **Target completion date:** group meeting dates set through 2021/22. **Lead:** Morriston Hospital Service Group Directors. **Impact:** reduction in significant bloodstream infections and share methodologies across the Health Board.

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 (Quality Priority - built environment for management and prevention of HCAI*)**

- **Action:** The feasibility including a decant facilities would enable work that is essential for reducing infection risks from respiratory infections, including COVID-19, improving mechanical ventilation in inpatient areas to standards set in national, and WHO, guidance documents. Decant facilities are essential for enabling upgrade inpatient areas to increase single room accommodation, to meet standards set in national Health Building Note guidance. **Target completion date:** *currently deferred due to COVID and service pressures.* **Lead:** Assistant Director of Strategy Capital, Assistant Director of Strategy Estates.

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. Estimated costs related to healthcare associated infections, from 01 April 2021 – 31 October 2021 is as follows: *C. difficile* - £1,200,000; *Staph. aureus* bacteraemia - £651,000; *E. coli* bacteraemia - £220,300; therefore a total cost of **£2,071,300**.
Recommendations
Members are asked to: • Note reported progress against HCAI priorities up to 31 October 2021 and agree actions.