Meeting Date	**26 January 2021**	**Agenda Item**	**2.1**
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 29% year-on-year increase in *C. difficle* cases, and a 14% 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. 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 impact of adherence to best practice in relation to infection prevention & control. • Lack of decant facilities, when occupancy is at acceptable levels on acute sites, 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 during October and November. Incidents are closely monitored, Delivery Groups are holding 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 December 2020 and agree actions.			

Infection Prevention and Control Report

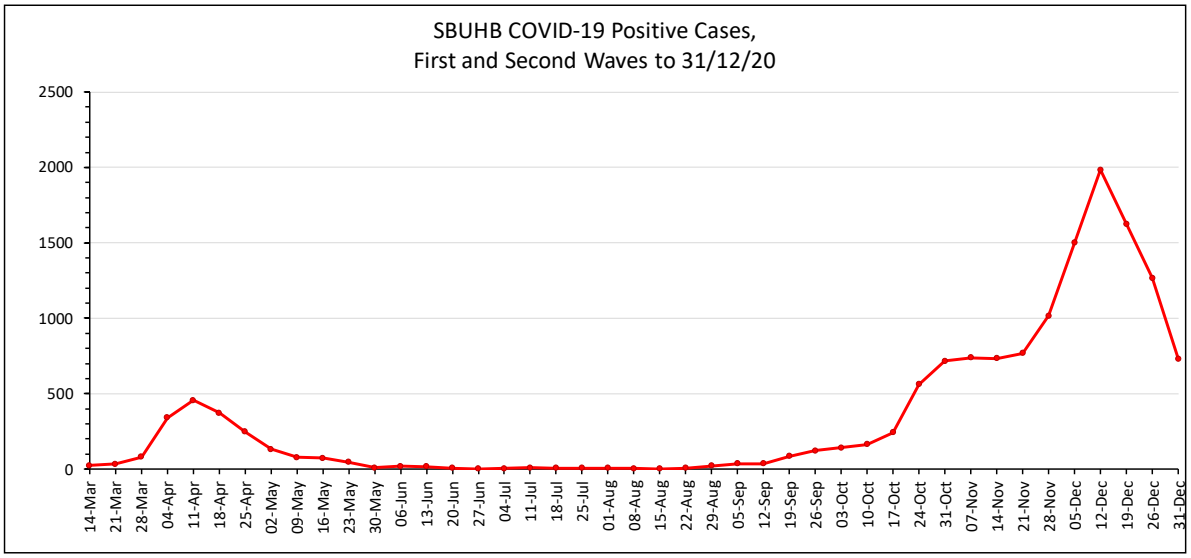
		Agenda Item	2.1
Freedom of Information Status		Open	
Performance Area	Healthcare Acquired Infections Update Report		
Author	Lisa Hinton, Assistant Director of Nursing, Infection Prevention & Control		
Lead Executive Director	**Christine Williams, Interim Director of Nursing & Patient Experience**		
Reporting Period	31 December 2020		

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):

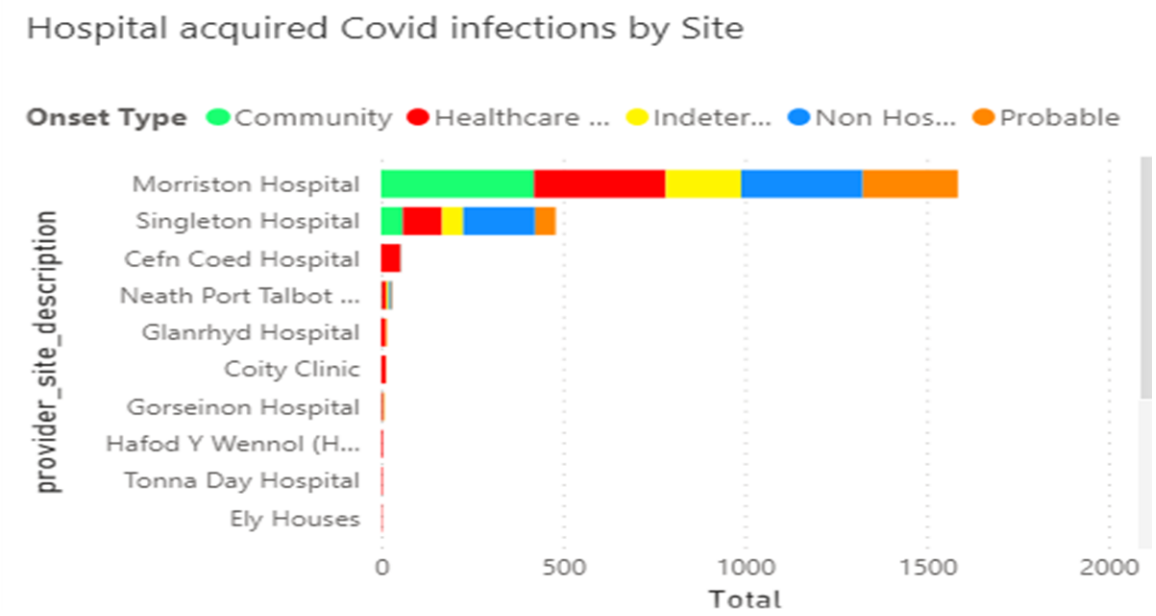
- The graph below shows the weekly number of laboratory confirmed cases of COVID-19 between 01 March and 31 December 2020. This clearly demonstrates the impact of the second wave in Swansea Bay University Health Board.



- In general, the number of tests that are positive has increased dramatically, showing the start of the second wave of this pandemic. The average daily positive results in August, September, October, November and December were 1, 11, 52, 121, and 222 respectively.
- 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 impacted on nosocomial and community transmission. Additionally, it has been recognised that a new variant of COVID-19 has been circulating in the community of South Wales, and that this variant is highly transmissible. 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, and these continue to be shared across the organisation and wider and include the following (not exhaustive):

A. All patients and staff should be treated as if they could have COVID, as such, inpatient movement should be kept to an absolute minimum.

B. Some patients with COVID will be asymptomatic or minimally symptomatic and so all admissions need to be screened.

C. 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%. All patients with a new fever should be swabbed at the moment as the prevalence of COVID is so high.

D. COVID symptoms can be very mild, as such, staff with symptoms should report to the Occupational Health Department and follow their advice.

E. 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

F. Strict compliance with PPE, with masks to be worn at all times. Also, staff advised to wear visor, mask, apron and gloves for all patient contact (non-aerosol generating procedures).

G. Staff breaks to be taken in spacious, well-ventilated areas, with social distancing to be maintained.

H. Social distancing to be maintained in offices and masks worn when that is not possible.

COVID-19 Vaccination update

- Immunisation training is ongoing. Three models of training are provided, including: face-to-face, Teams training and via e-learning, all of which have received excellent feedback.
- All staff, regardless of previous immunisation experience are being competency assessed. This is in collaboration with Pharmacy colleagues.
- Both COVID vaccines Patient Group Directives (PGD) have been updated.
- The AstraZeneca vaccine programme commenced on 4th January 2021. Care Homes are to receive vaccinations by a cluster delivery model, led by General Practitioners in Afan and Cwmtawe initially. More clusters will join the programme.
- Work is progressing on rolling out the vaccination of over 80 year olds and priority groups.
- The Joint Committee on Vaccination and Immunisation (JCVI) decided to postpone the second dose of both vaccines to allow for greater numbers to receive first dose vaccination.
- The Mass Vaccination Centre is operational. Health Board and Primary Care colleagues have been attending to receive their first dose of the Pfizer vaccine.
- To 31st December, 7,900 first doses of the Pfizer vaccine had been administered. That had increased to over 10,600 doses by 7th January; also, there had been almost 200 doses of Astrazeneca vaccine administered by 7th January.
- There has been minimal vaccine wastage to date, as a consequence of the organisation of the vaccination programme.

Influenza

- Across SBU Health Board during the last quarter, to 31st December 2020, there have been 2 cases of influenza detected from over 6,300 tests (one in the paediatric ward and one in the Community Testing Unit). This compares with 183 cases identified from 914 tests in the same quarter in 2019.

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-Dec 2020	Nov 2020 Cases	Dec Cases to 31/12/20	WG Monthly Expectation
C. difficile	134	11	9	<8 cases
Staph aureus BSI	93	13	9	< 6 cases
E. coli BSI	178	16	12	< 21 cases
Klebsiella BSI	73	11	12	< 8 cases
Ps. aeruginosa BSI	16	2	1	< 2 cases

Infection	2019/20 total to 31.12.19	Comparison 2020/21 Total to 31/12/20
C. difficile	104	134 (29% ↑)
Staph aureus BSI	103	93 (10% ↓)
E. coli BSI	230	178 (23% ↓)
Klebsiella BSI	64	73 (14% ↑)
Ps. aeruginosa BSI	23	16 (30% ↓)

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 - December 2019 cases):
  - *Staph. aureus* bacteraemia – 10% decrease
  - *E. coli* bacteraemia – 23% decrease
  - *Pseudomonas aeruginosa* bacteraemia – 30% decrease.
- The 4 weekly *C. difficile* scrutiny panel continues to meet to review local action plans from each Delivery Unit, which provide a focus on improvement.
- Progression towards an HPV decontamination contract has been delayed by COVID-19, and employment of such a technology is restricted by a lack of decant facilities as a result of COVID and other service pressures.

- 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 nurses, who will work with Primary Care and Community Services, mental health and learning disabilities, are prioritising support in relation to the COVID response, and support for staff to maintain their own and patient safety. These staff also have participated in multi-agency Incident Management Teams for COVID-19 outbreaks in Care Homes.
- 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 time 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 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 the infection reduction goals expected by Welsh Government. The position in relation to *C. difficile* has slightly improved to date in December, with the rate of increase slowed during the month. Consequently, the percentage increase had reduced from 34% to a 29% year-on-year increase in *C. difficile* cases (against April-December 2019 cases). It may be challenging to hold or improve on this position with the impact of the second wave of COVID-19.
- The Health Board has seen a 14% increase in Klebsiella spp. bacteraemia cases compared with the position April – December 2019. A number of these have had concurrent COVID-19, and it is uncertain whether this has contributed to the bacteraemia.
- PHW Epidemiologists have undertaken whole genetic sequencing of *C. difficile* isolates, which enables greater discrimination between isolates, including the ability to distinguish between strains of the same ribotype. From this information, PHW have identified that the majority of cases within the Health Board have not been as a result 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). During the first wave, inpatients from various specialities were outliers in several different wards, increasing the challenges of timely antimicrobial review. Usage of certain broad spectrum antibiotics have increased in Morriston & Neath Port Talbot (Tazocin) and Singleton (Cefuroxime) during this year; this may have an impact of cases of *C. difficile*.

- Swansea Bay has seen one of the largest reductions in prescribing rates in Wales over the last quarter. Despite this reduction, the Health Board remains the second highest prescriber of antibiotic in Wales. A sustained focus is required to further build on the progress to date and achieve an impact on the number of *C. difficile* cases seen within the community settings.
- There has been a small number of related *C. difficile* incidents in the last quarter, identified through whole genome sequencing. These have occurred in Morriston and Singleton. These incidents are being investigated and will be reviewed by the Health Board *C. difficile* Scrutiny Panel. Delivery Groups will be asked to present findings and lessons learned at an Infection Prevention & Control Committee in December.
- Historically, reduction initiatives have been compromised by over-crowding of wards as a result of increased activity and the use of pre-emptive beds, and where there are staffing vacancies, and reliance on temporary staff, and where activity levels are such that it is not possible to decant bays to effectively clean 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 are likely to 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. A large advertising campaign has taken place to realign existing temporary and permanent staff and simultaneously a large external campaign is in place. The external campaign will look also for Support Service Assistant (SSA) staff and as many domestic staff that can be recruited for the Bank. 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.

***Clostridium 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:** February 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:** Review of aetiology of *C. difficile* colitis, with input from gastroenterology and general surgery, to identify improvement actions. Medical representatives from both specialities to be invited as members of *C. difficile* Scrutiny Panel. **Target completion date:** March 2021, *due to medical focus on existing COVID-19 inpatients*. **Lead:** Matron, Quality Improvement Infection Control, with QI Medical Lead for IPC in Morriston. **Impact:** Improved understanding of medical factors that may reduce incidence of *C. difficile*.
- **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.

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 to be 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 *Clostridium 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 December 2020 is as follows: *C. difficile* - £1,340,000; *Staph. aureus* bacteraemia - £651,000; *E. coli* bacteraemia - £210,200; therefore a total cost of **£2,201,200**.
Recommendations
Members are asked to: • Note reported progress against HCAI priorities up to 31st December 2020 and agree actions.