Meeting Date	**22 November 2022**	**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 paper provides the Committee with an update on the Health Board's progress against Tier 1 infections and against the Infection Improvement Plan.		
Key Issues	• Year-on-year reductions in the following infections: *C. difficile* (6%), *E. coli* bacteraemia (15%), and *Klebsiella spp*. bacteraemia (5%) (Appendix 1). • *Staph. aureus* bacteraemia rates continue to be a challenge, although the rate of increase has slowed. The rate of *Pseudomonas aeruginosa* bacteraemia continues to increase; however, no common themes or sources of infection have been identified to date that could explain why the increase has occurred. • An update on the progress of the Rapid Improvement Programme in Morriston Hospital Service Group, particularly in relation to *C. difficile* and *Staph. aureus* bacteraemia. Days between cases are shown in Appendix 2. • A number of the rapid improvement wards have been highlighted as having improved training compliance. • All Service Groups provide at least monthly scrutiny updates to the Executive Nurse and Medical Directors. • The HCAI (healthcare acquired infections) Digital Dashboard work is progressing and examples of the development pages are shown in Appendix 3.		
Specific Action Required	**Information**	**Discussion**	**Assurance**	**Approval**
	☐	☐	☒	☐
Recommendations	Members are asked to note: • the progress against the tier 1 infections to 31/10/2022; • Service Group progress in relation the Infection Improvement Plan, including Morriston's Rapid Improvement Programme to 31/10/22; • the progress on the development of the HCAI Digital Dashboard to 31/10/22.			

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 2022	**Report prepared on**	07/11/2022

Summary of Current Position

This paper will present a summary of the overarching position in relation to the number of cases of infection within the Health Board, and by Service Group, to the end of October 2022.

Health Board and Service Group progress against the Tier 1 infection reduction goals to the end of October 2022 is shown in Appendix 1.

A summary position for the Health Board is shown in the table below, identifying the cumulative position for the financial year 2022/23, the monthly case numbers, and the average monthly goal.

Table 1: Health Board Summary Position for October 2022

Infection	Cumulative Cases to end of October 2022	Monthly total: October 2022	Average monthly reduction goal (max.)
C. difficile (CDI)	**112**	**20**	<8 (annual maximum: <95 cases)
***Staph. aureus* bacteraemia (SABSI)**	**95**	**17**	<6 (annual maximum: <71 cases)
***E. coli* bacteraemia (EcBSI)**	**159**	**22**	<21 (annual maximum: <251 cases)
***Klebsiella spp.* bacteraemia (Kl BSI)**	**58**	**7**	<6 (annual maximum: <71 cases)
Ps. aeruginosa bacteraemia (PAERBSI)	**26**	**6**	<2 (annual maximum: <21 cases)

A summary position for Service Groups is shown in the table below, identifying the number of cases in the reporting month, with cumulative totals for the financial year to date shown in brackets.

Table 2: Service Group Summary Position for October 2022 (cumulative)

	CDI	SABSI	EcBSI	KlBSI	PAERBSI
PCTSG - CAI	5 (35)	4 (40)	10 (100)	4 (29)	3 (9)
PCTSG - HAI	1 (2)	0 (0)	0 (2)	0 (0)	0 (0)
MH&LD – HAI	0 (0)	0 (0)	0 (1)	0 (0)	0 (0)
MORR – HAI	12 (52)	10 (39)	6 (30)	2 (18)	1 (11)
NPTH - HAI	0 (2)	1 (3)	0 (2)	1 (2)	0 (0)
SH - HAI	2 (21)	2 (13)	6 (24)	0 (9)	2 (6)

Progress against Infection Prevention Improvement Plan to 31.10.22

- To the end of October 2022, the Health Board had not achieved the reduction in infection in line with the proposed trajectories. However, to the end of October 2022, there had been year-on-year reduction in the number of cases of *C. difficile*, *E. col*i bacteraemia and *Klebsiella spp.* bacteraemia. The rate of increase in *Staph. aureu*s bacteraemia has continued to slow. The incidence of *Pseudomonas aeruginosa* bacteraemia continues to increase; the numbers are relatively small and there are no common themes or sources identified. The year-on-year comparison (April – October) for the Health Board and by Service Group for each of the Tier 1 infections is shown in the table below (Neath Port Talbot Hospital and Singleton Hospital are shown separately):

	CDI	SABSI	EcBSI	KlBSI	PAERBSI
SBUHB	6%↓	2%↑	15%↓	5%↓	136%↑
Morriston Hospital	6%↑	30%↑	9%↓	25%↓	6 cases ↑
Singleton Hospital	30%↓	41%↓	60%↑	Equal to	5 cases ↑
Neath Port Talbot Hospital	50%↓	2 cases ↑	86%↓	1 case ↑	0 cases
MH & LD	0 cases	0 cases	1 case	0 cases	0 cases
PCTG Gorseinon Hospital	1 case ↑	0 cases	Equal to	0 cases	0 cases
PCTG Community acquired	Equal to	Equal to	19%↓	7%↑	4 cases ↑

- Cases of *C. difficile* infection and *Staph. aureus* bacteraemia are significantly higher in Morriston than in the other acute hospitals, accounting for 66%, 71%, 51%, 62% and 65% respectively of all hospital attributed *cases of C. difficile*, *Staph. aureus* bacteraemia, *E. coli* bacteraemia, *Klebsiella* bacteraemia, and *Pseudomonas* bacteraemia. This will reflect the patient mix, complexity and acuity of patients cared for in Morriston in particular.

Update on Infection Prevention Improvement Plan

Service Group Improvement Progress

Acute Care Service Groups

Morriston Hospital Rapid Improvement Programme

- As it has not been possible to release the candidate appointed by the Service Group to Programme Lead for the Rapid Improvements from their substantive position, an interim arrangement has been agreed between the Service Group and the Infection Prevention & Control (IP&C) team. Joanne Walters, IP&C Matron, will be seconded into the Programme Lead post from 22 November 2022, for a period of 3 months, or until such time that the appointed candidate is available to take up the post.
- In addition to wards identified in the previous report, the following wards/areas are commended for achieving improvement in training compliance over the last month:
  - Anglesey Ward.
  - Ward V, for improvement in Level 2 IPC training compliance.
  - Rapid Assessment Unit, for improvement in Level 1 IPC training and ANTT training compliance.
- At present, the Infection Prevention & Control Team continues to deliver the face-to-face Level 2 IP&C mandatory training to medical staff at Morriston. From 22 November, this will be delivered by the Morriston Improvement Programme Lead, with support from the IP&C Team.

- The roll-out of the implementation of 2% chlorhexidine daily skin decolonisation patient wash cloths is progressing across the rapid improvement wards in Morriston
- Days between cases of *C. diffic*ile infection and *Staph. aureus* bacteraemia on the rapid improvement wards, to 31st October 2022, are shown in Appendix 2.
- The Service Group continues to hold infection scrutiny panels and to update fortnightly the Executive Nurse and Medical Directors.

Neath Port Talbot and Singleton Hospitals (NPTH&SH) Service Group

- The number of *C. difficile* cases in Singleton Hospital reduced from 6 in August, 5 in September, to 2 in October.
- The Service Group continues to hold infection scrutiny panels and to update monthly the Executive Nurse and Medical Directors.

Primary Care, Community & Therapies Group

- Monthly scrutiny meetings continue in Primary Care and the Service Group provides monthly updates to the Executive Nurse and Medical Directors.

Management Board 16 November 2022

The Management Board meeting scheduled for 16th November has been stood down. The time will be used instead for IPC-related site visits, with time provided for feedback.

Challenges, Risks and Mitigation

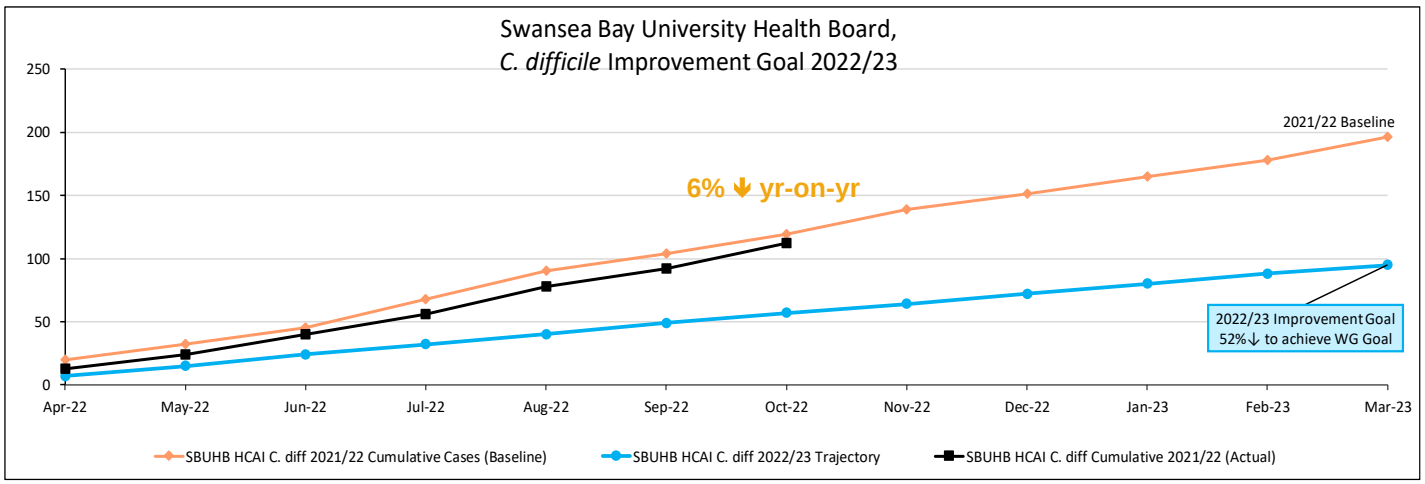
- Current pressures on Health Board services, both in the community and in hospitals, continues to be extreme, as are the pressures on providing social care packages. The results of these pressures are that numbers of medically fit for discharge patients have increased, which results in increased length 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, leading to additional patients being on wards (over-occupancy) for periods of time. The increasing inpatient population occurs at a time of increased staff shortages, which an increasing patient-to-staff ratio.
- Redirecting a proportion of the secondary care IP&C nursing resource to Primary Care and Community will impact on the resource available to support secondary care. The review of value this redirected resource into primary care and community will be reviewed at least quarterly to inform future service reviews. At times of high secondary care demand, and to cover any staff absences, it may be necessary to pull this resource back into acute services, which could impact on the pace of improvements within primary care and community.
- The age and condition of the estate is a challenge, and planned preventive maintenance is not possible without the provision of dedicated decant facilities.

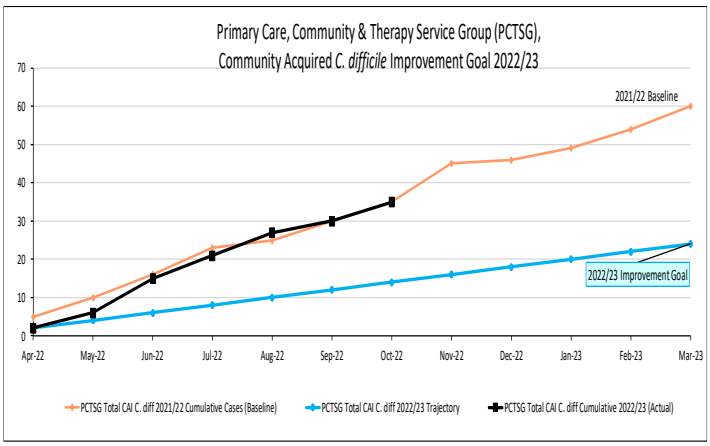
Actions in progressing Infection Prevention Improvement Plan (what, by when, and by whom)

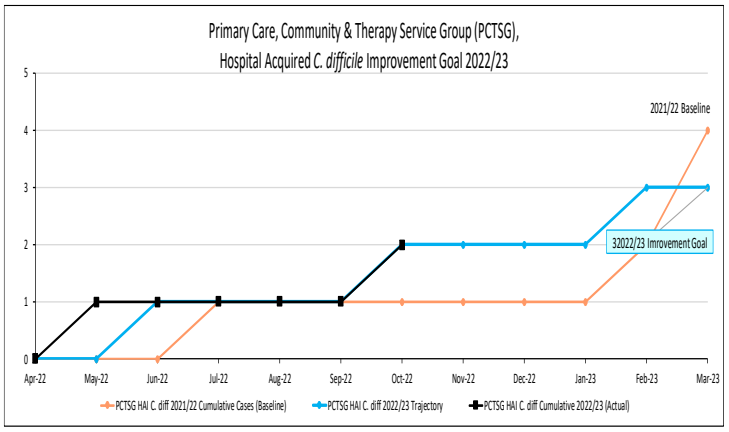
Action: Work on the Digital Dashboard continues to progress well (see Appendix 3 for first iteration development testing pages). Work on bacteraemia laboratory data validation has commenced. Plan to have a first phase 'live' dashboard by 31.12.22. **Target completion date**: 31.12.22. **Lead:** Head of Nursing IP&C and Corporate Digital Intelligence Partner.

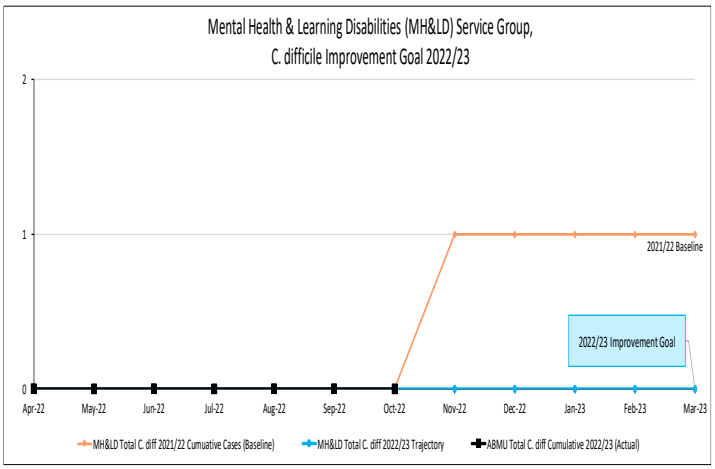
Financial Implications
A Department of Health impact assessment report (IA No. 5014, 20/12/2010) stated that the best estimate of costs to the NHS associated with a case of *Clostridioides difficile* infection is approximately **£10,000**. The estimated cost to the NHS of treating an individual cost 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 2022 to the end of October 2022 is as follows: *C. difficile* - £1,120,000; *Staph. aureus* bacteraemia - £665,000; *E. coli* bacteraemia - £181,500; therefore, a total cost of **£1,966,500**.
Recommendations
Members are asked to note: - the progress against the tier 1 infections to 31/10/2022; - Service Group progress in relation the Infection Improvement Plan, including Morriston's Rapid Improvement Programme to 31/10/22; - the progress on the development of the HCAI Digital Dashboard to 31/10/22.

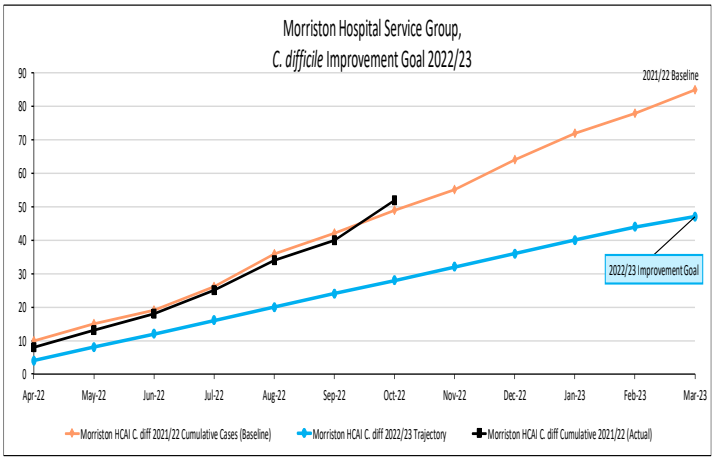
C. difficile

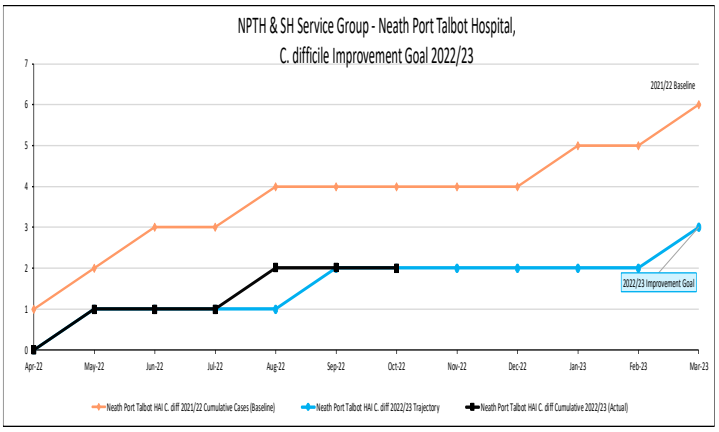

Swansea Bay University Health Board,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
6% ↓ yr-on-yr
2022/23 Improvement Goal
52%↓ to achieve WG Goal
SBUHB HCAI C. diff 2021/22 Cumulative Cases (Baseline)
SBUHB HCAI C. diff 2022/23 Trajectory
SBUHB HCAI C. diff Cumulative 2021/22 (Actual)

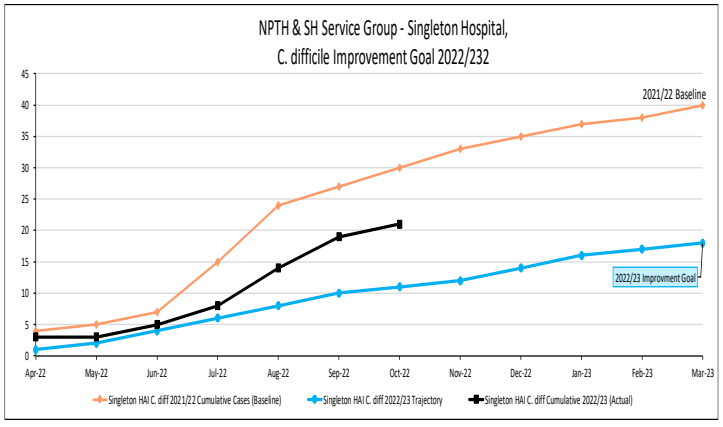

Primary Care, Community & Therapy Service Group (PCTSG),
Community Acquired C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal


Primary Care, Community & Therapy Service Group (PCTSG),
Hospital Acquired C. difficile Improvement Goal 2022/23
2021/22 Baseline
32022/23 Imrovement Goal

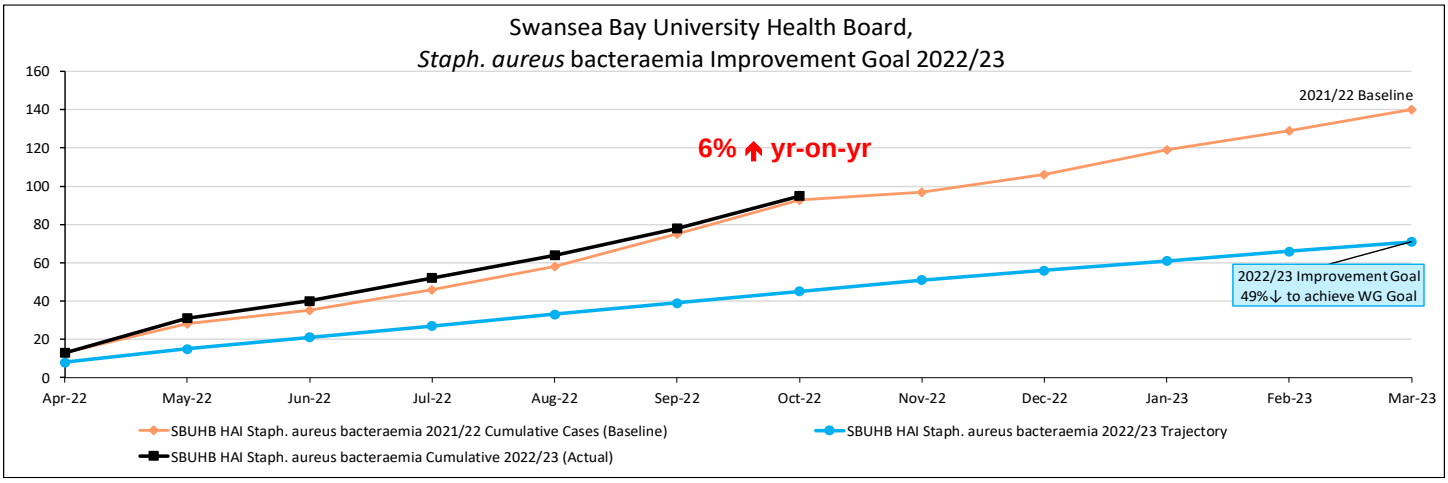

Mental Health & Learning Disabilities (MH&LD) Service Group,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal

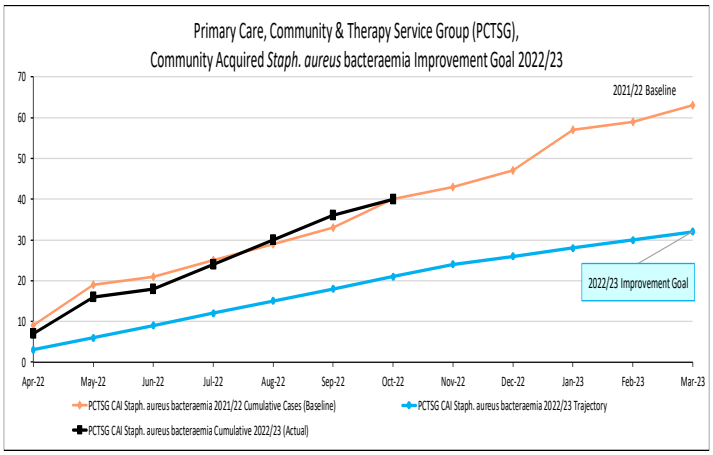

Morriston Hospital Service Group,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal

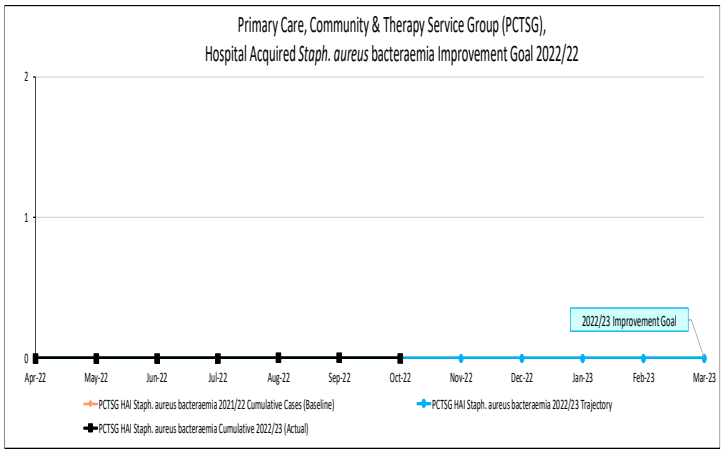

NPTH & SH Service Group - Neath Port Talbot Hospital,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal

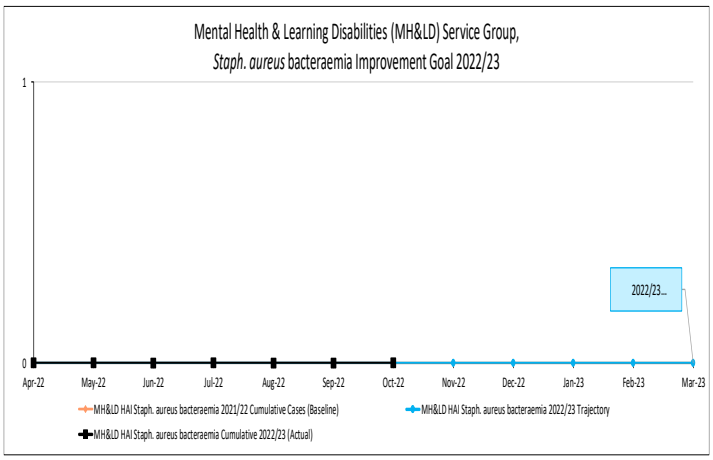

NPTH & SH Service Group - Singleton Hospital,
C. difficile Improvement Goal 2022/232
2021/22 Baseline
2022/23 Improvement Goal

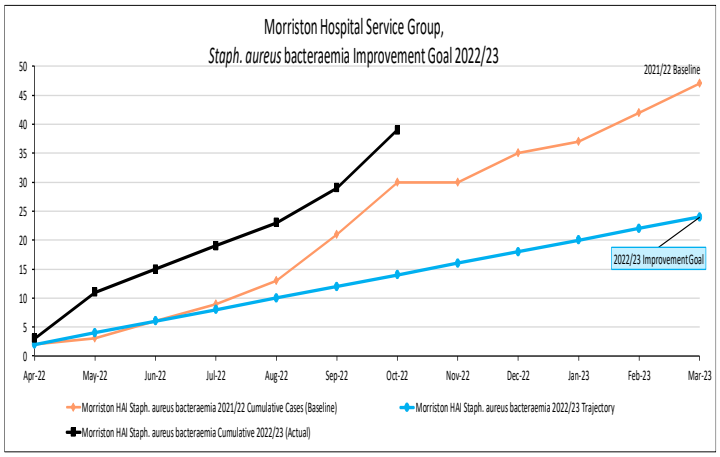
***Staph. aureus* bacteraemia**

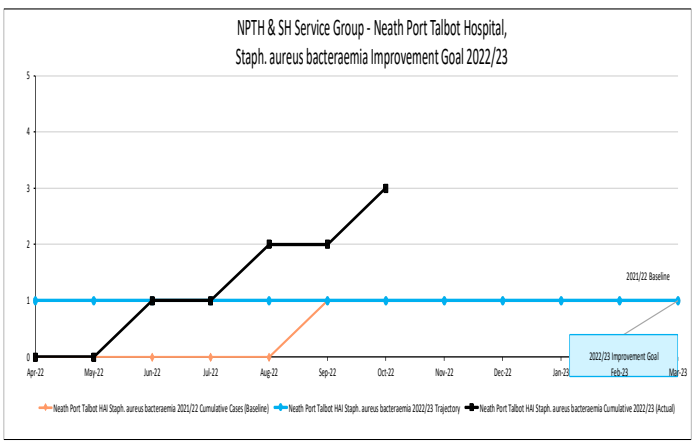


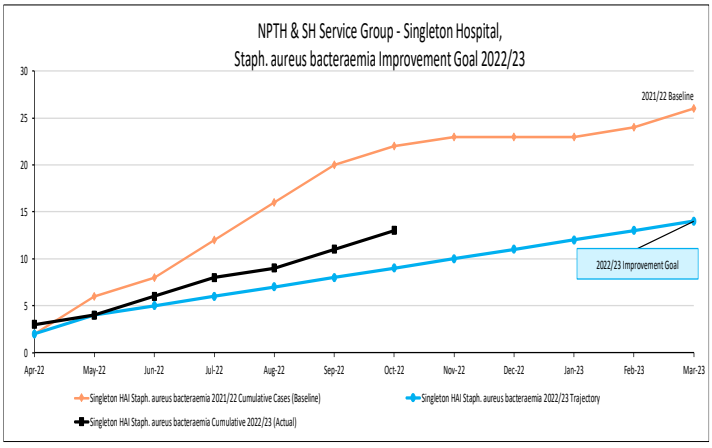




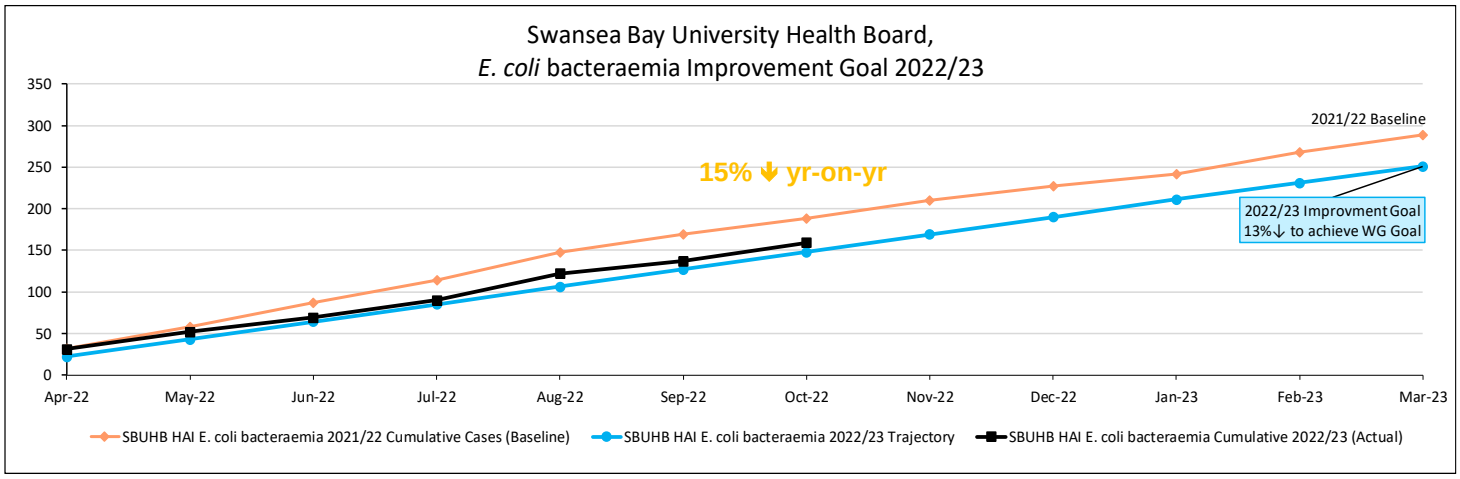


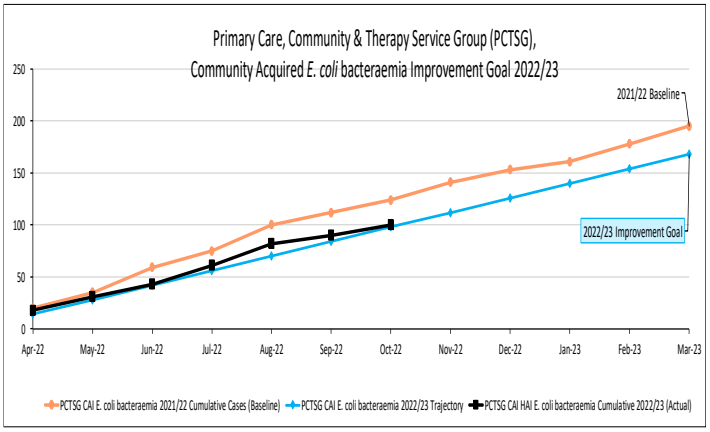


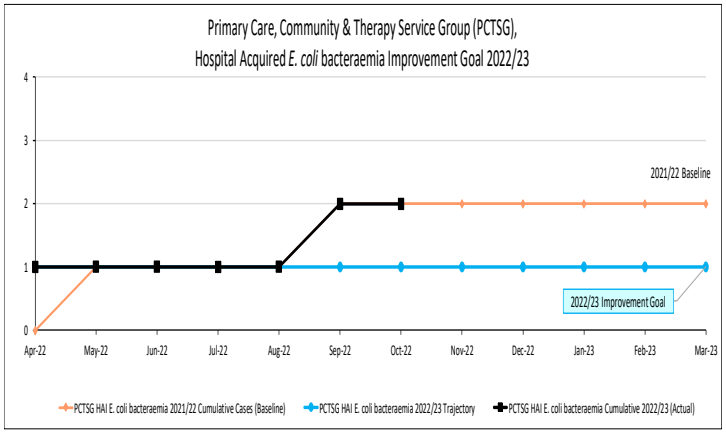


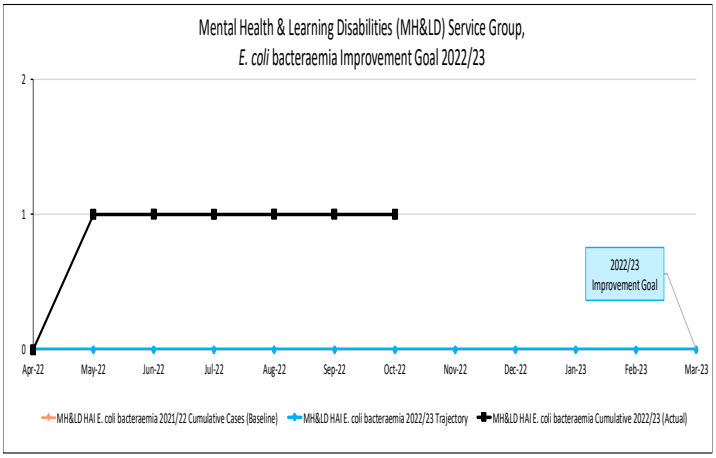


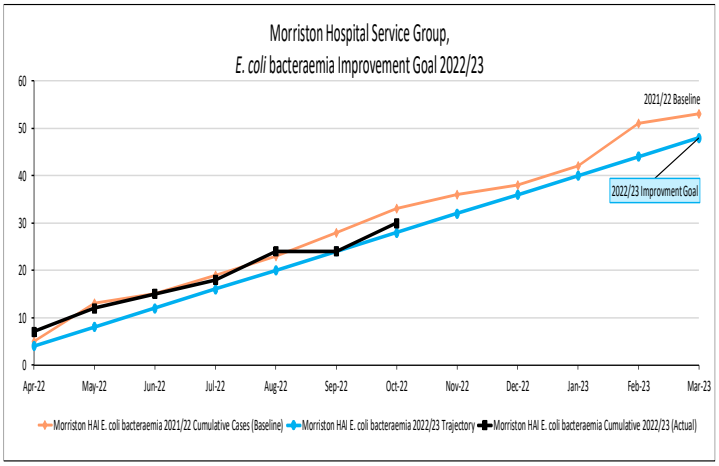
***E. coli* bacteraemia**

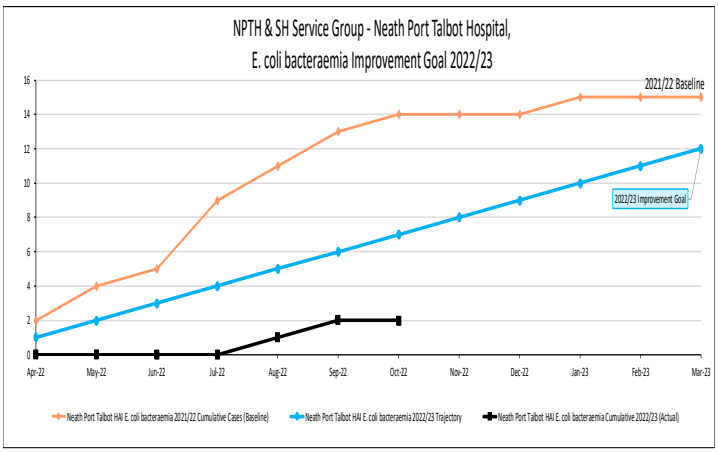


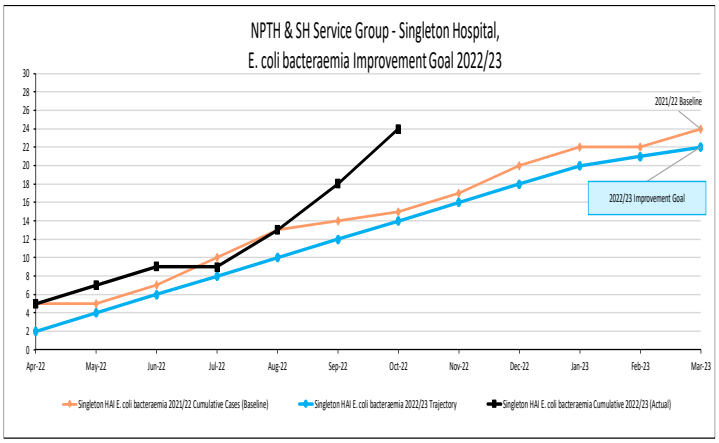




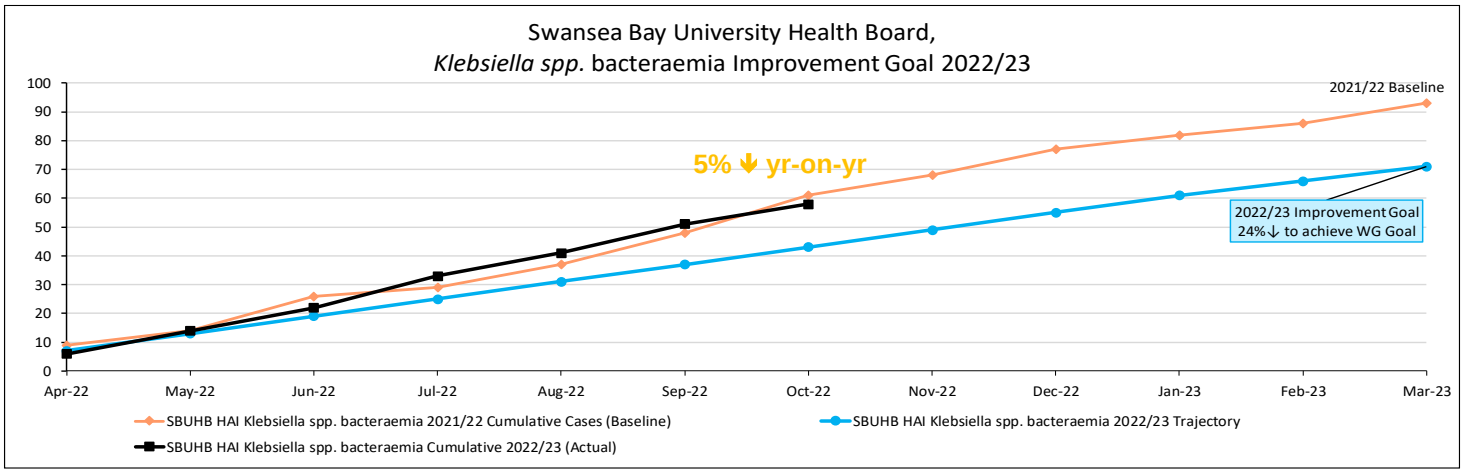


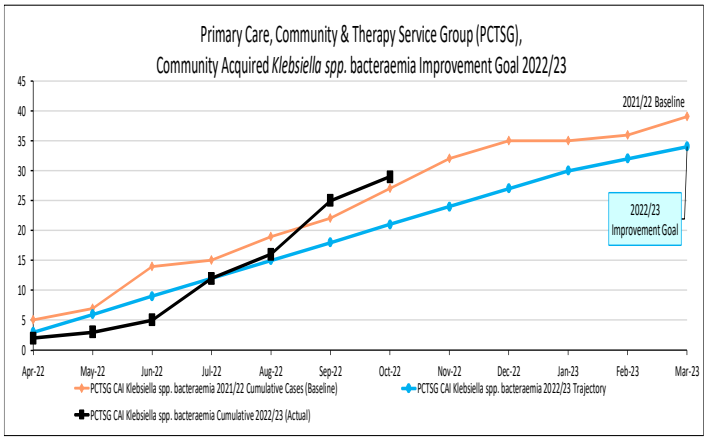


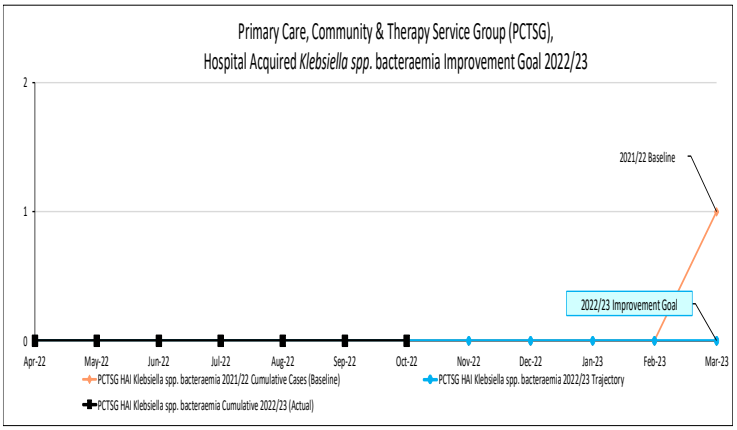


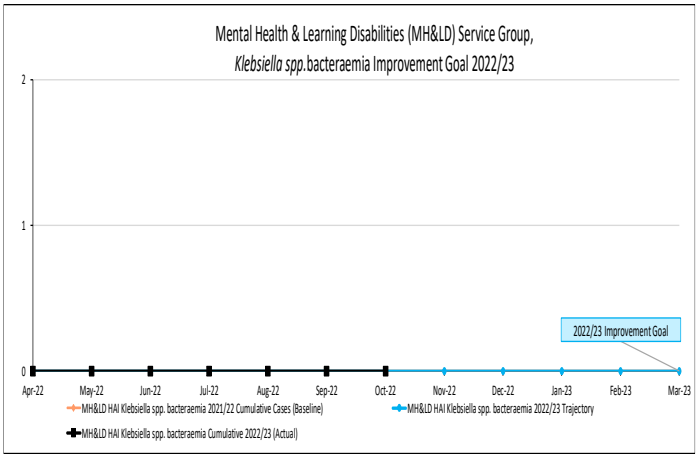


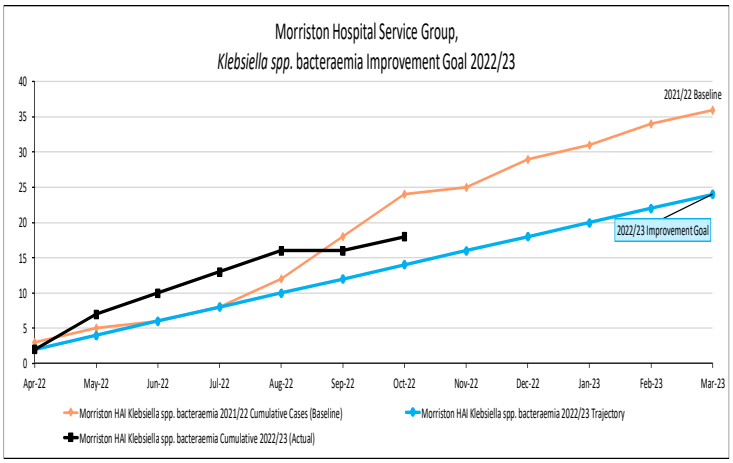
***Klebsiella spp.* bacteraemia**

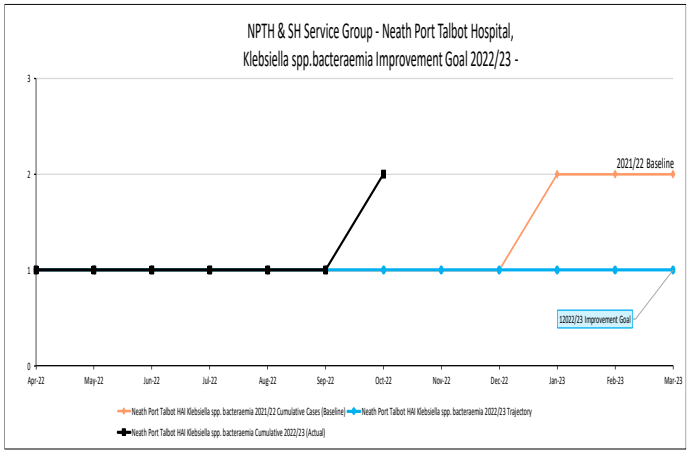


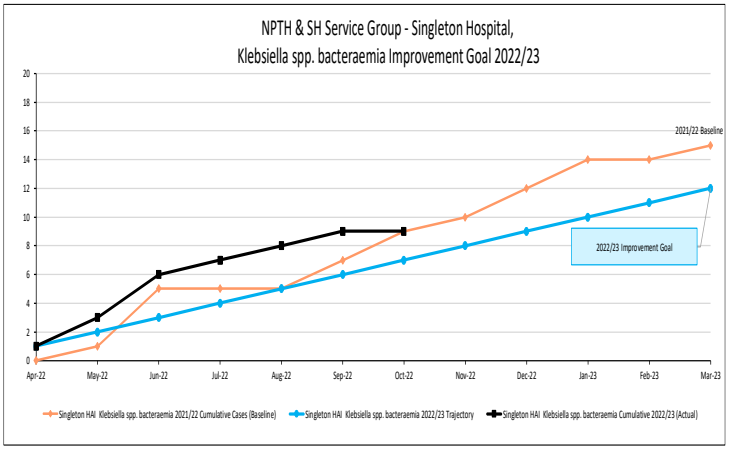




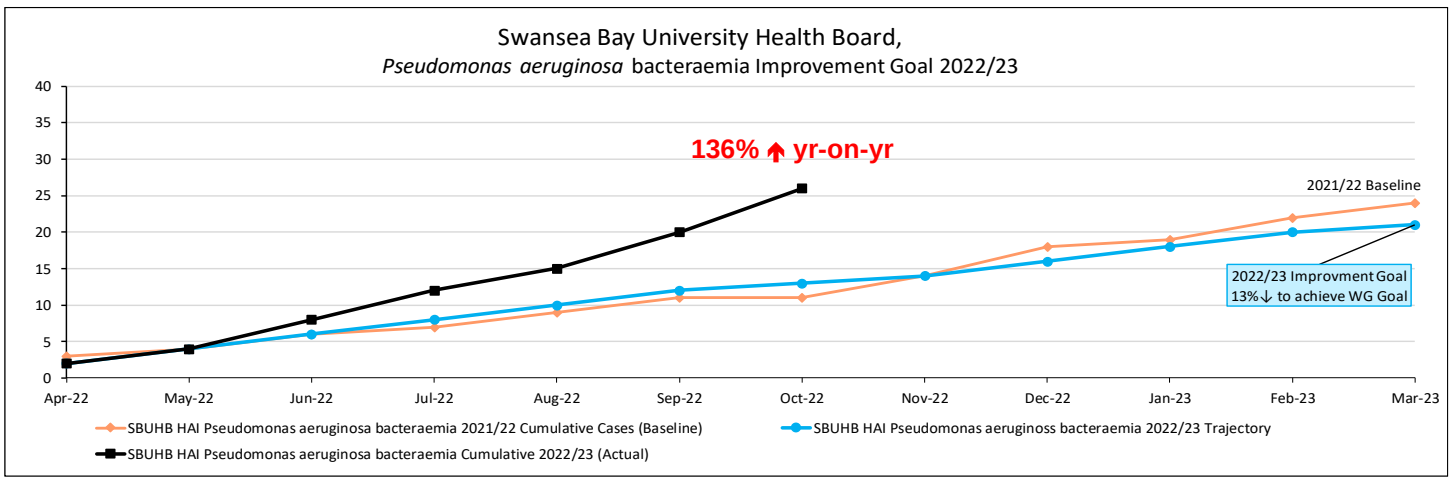


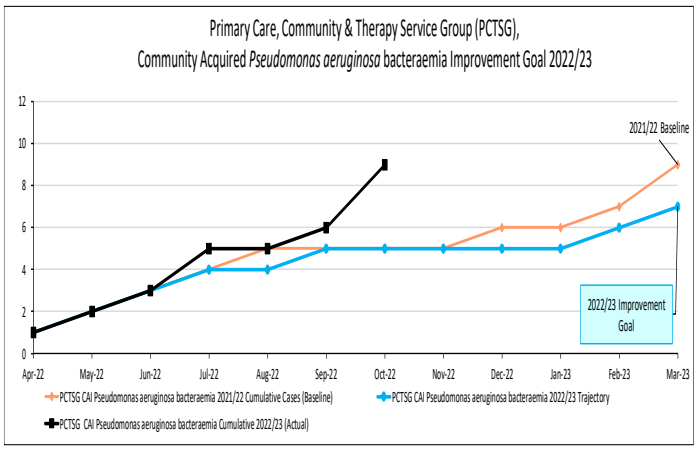


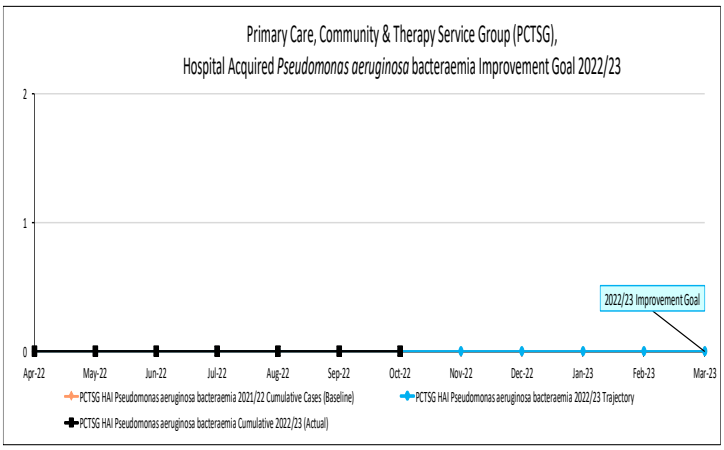


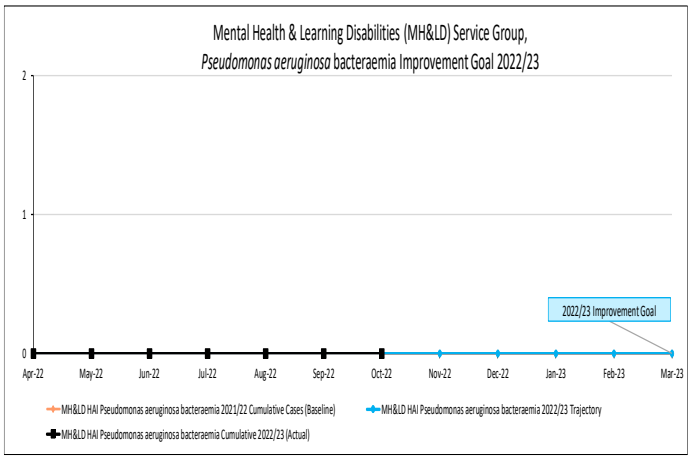


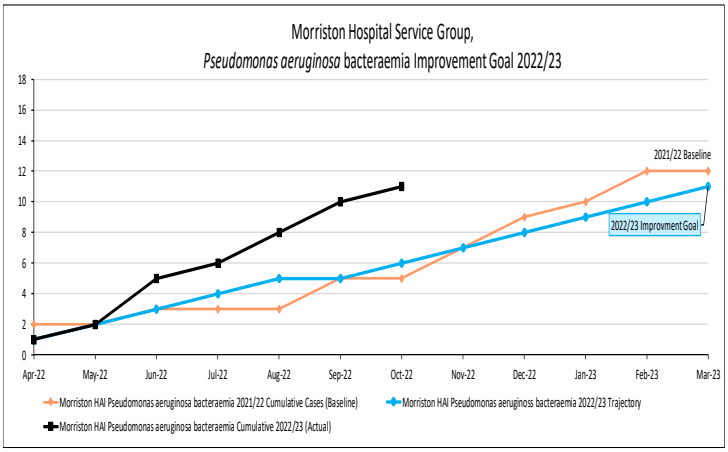
***Pseudomonas aeruginosa* bacteraemia**

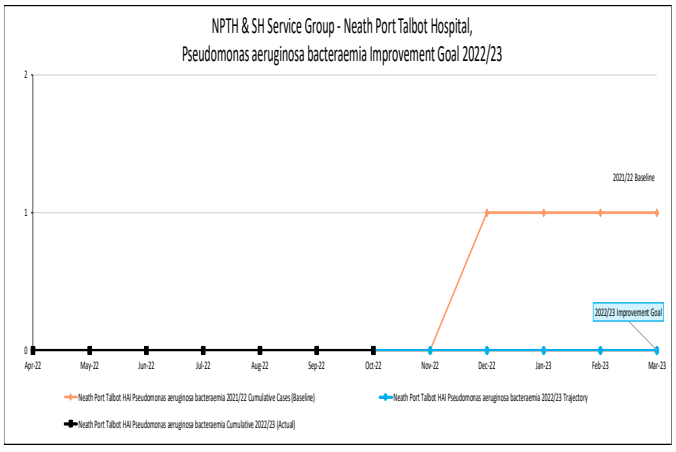


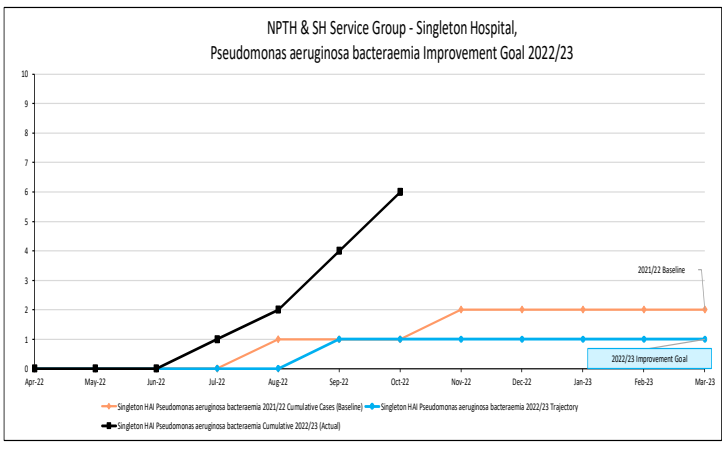






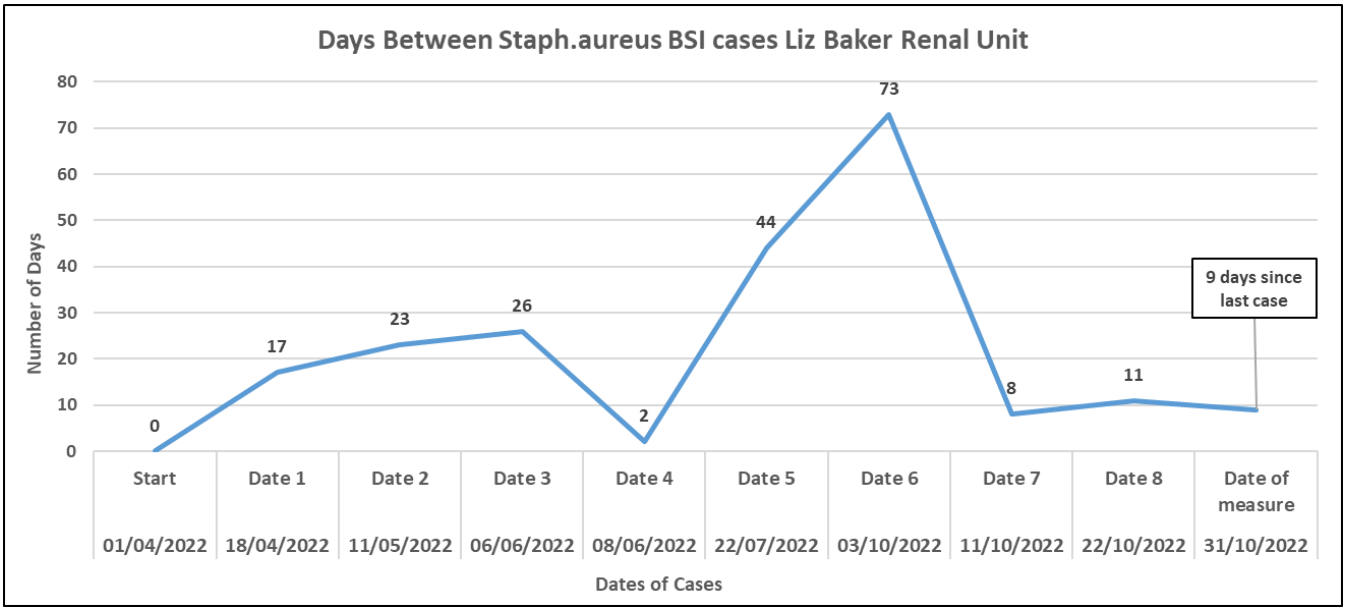




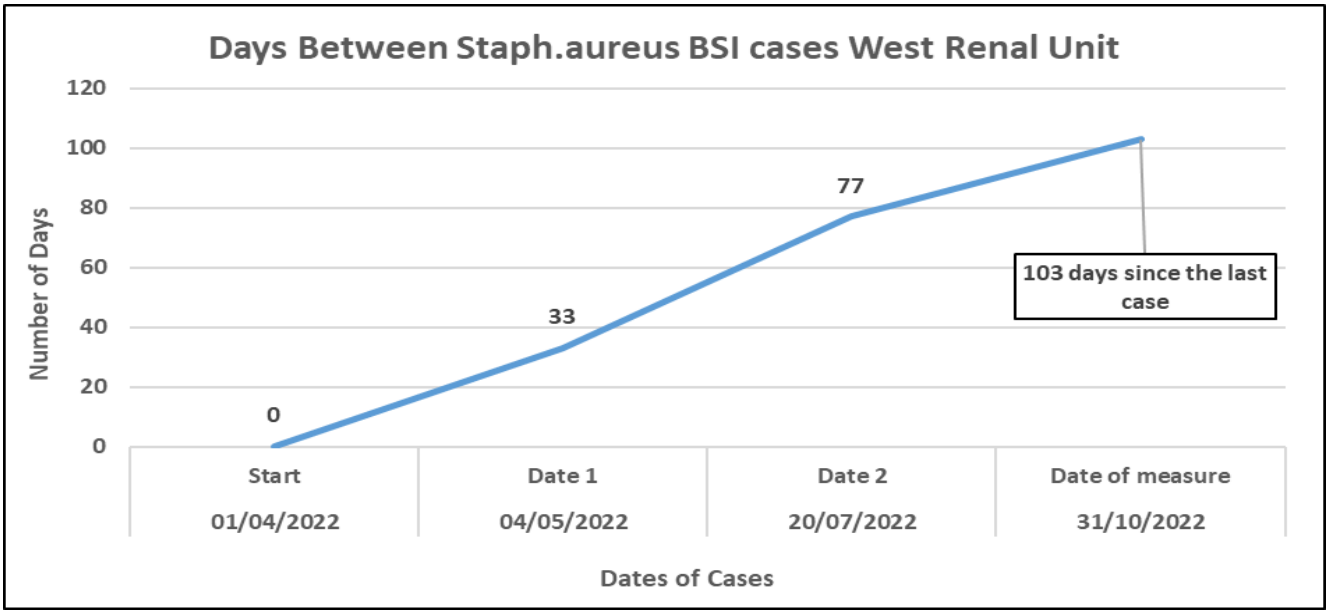


Staph. aureus bacteraemia

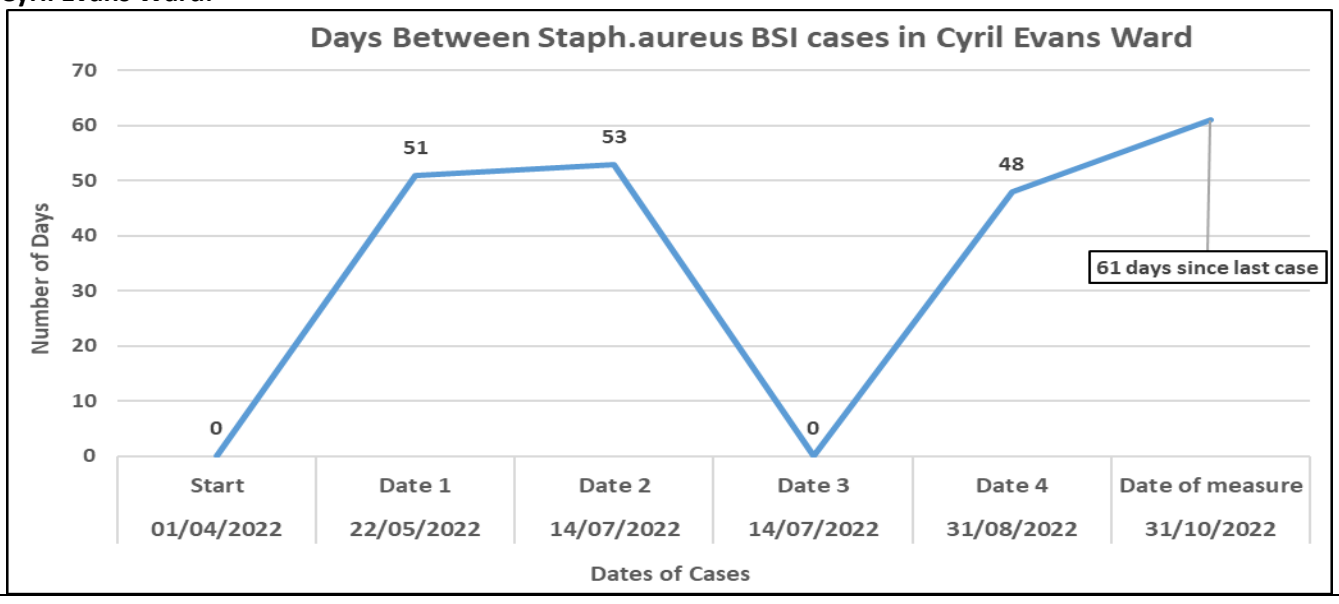
Liz Baker Renal Unit:



West Renal Unit:

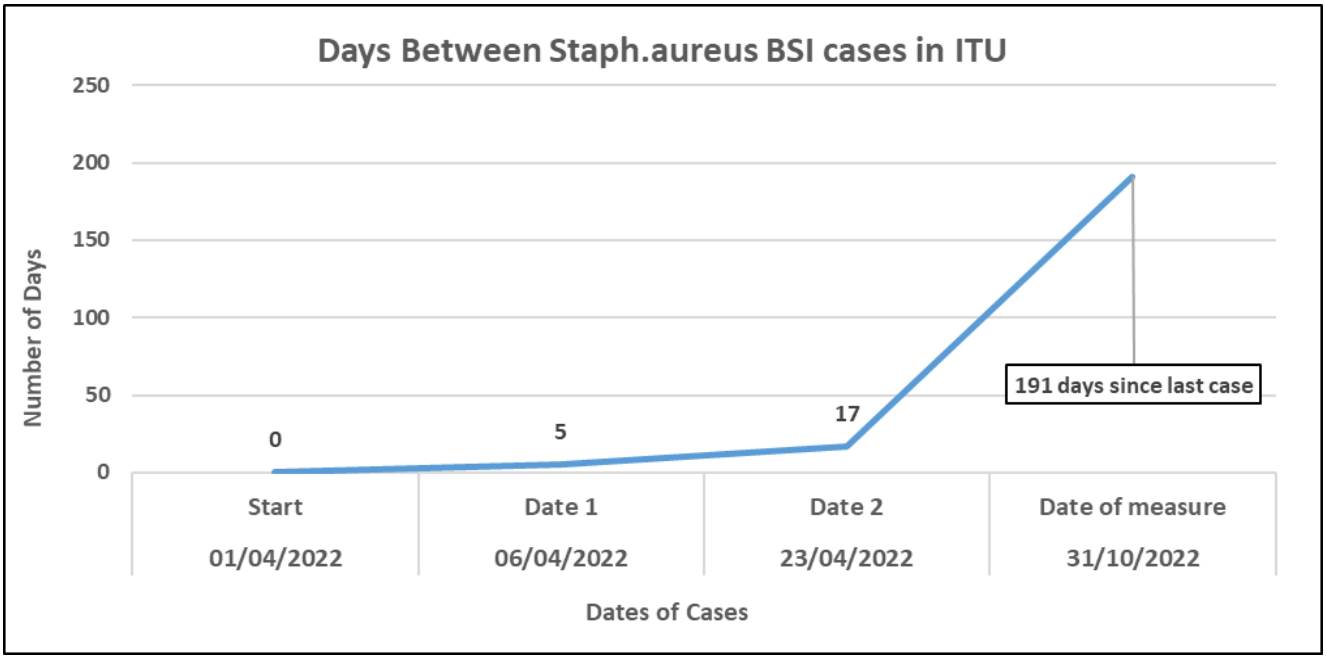


Cyril Evans Ward:

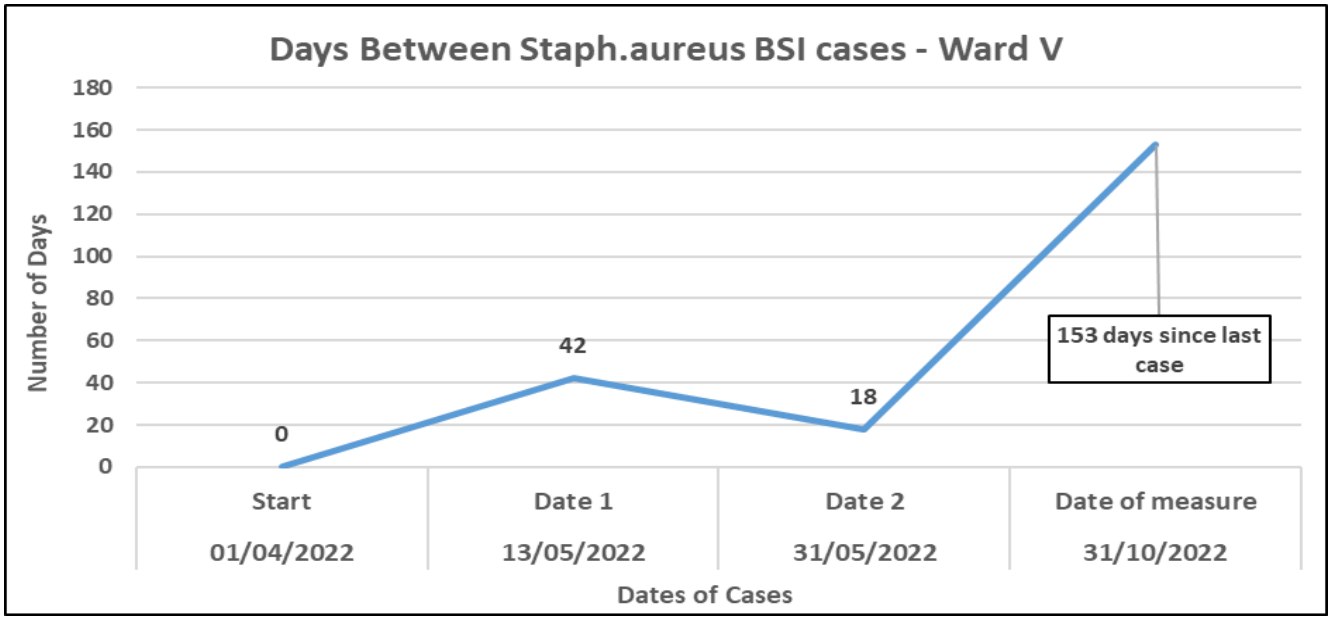


Staph. aureus bacteraemia

ITU:

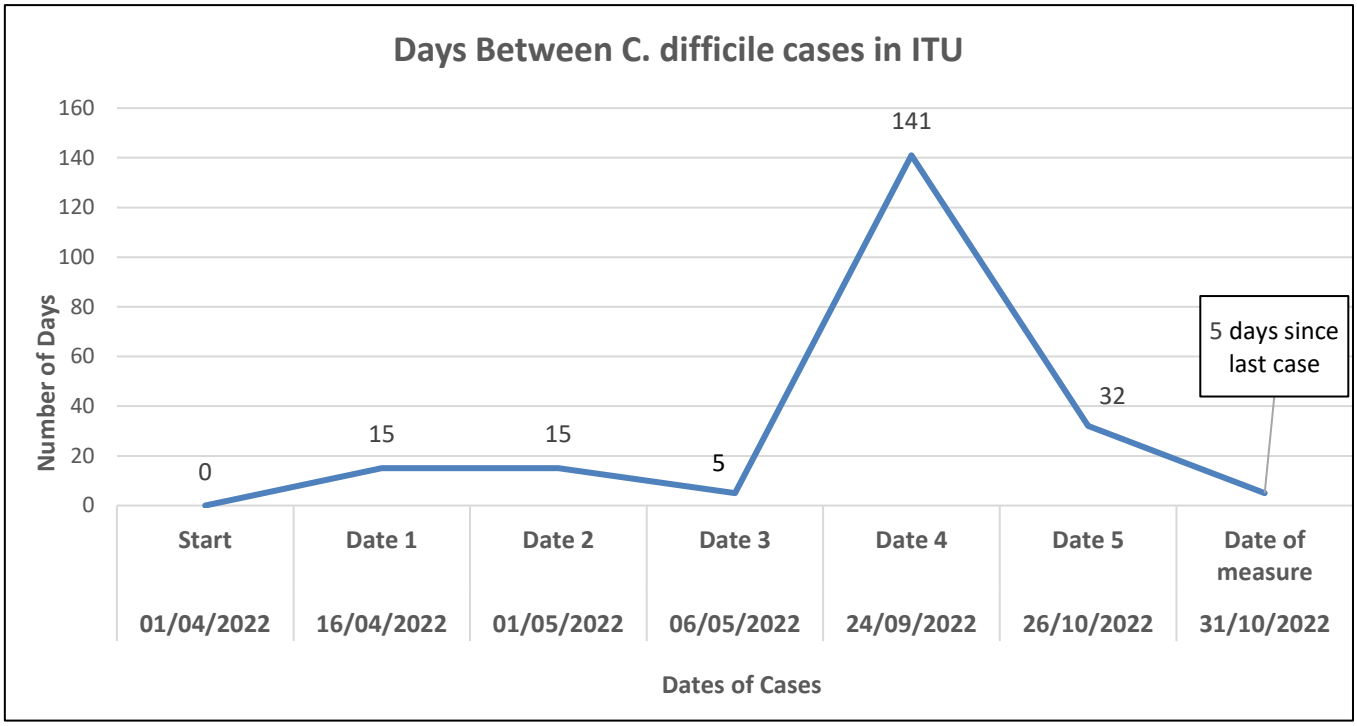


Ward V:

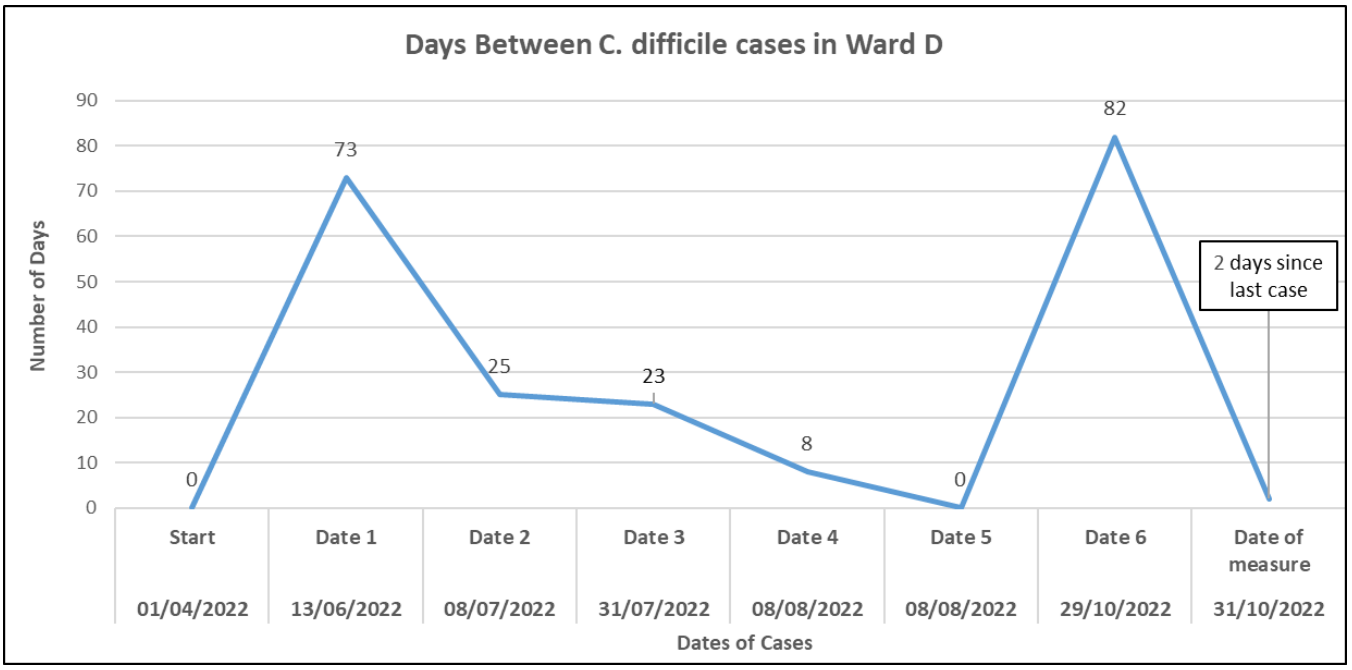


C. difficile Infection

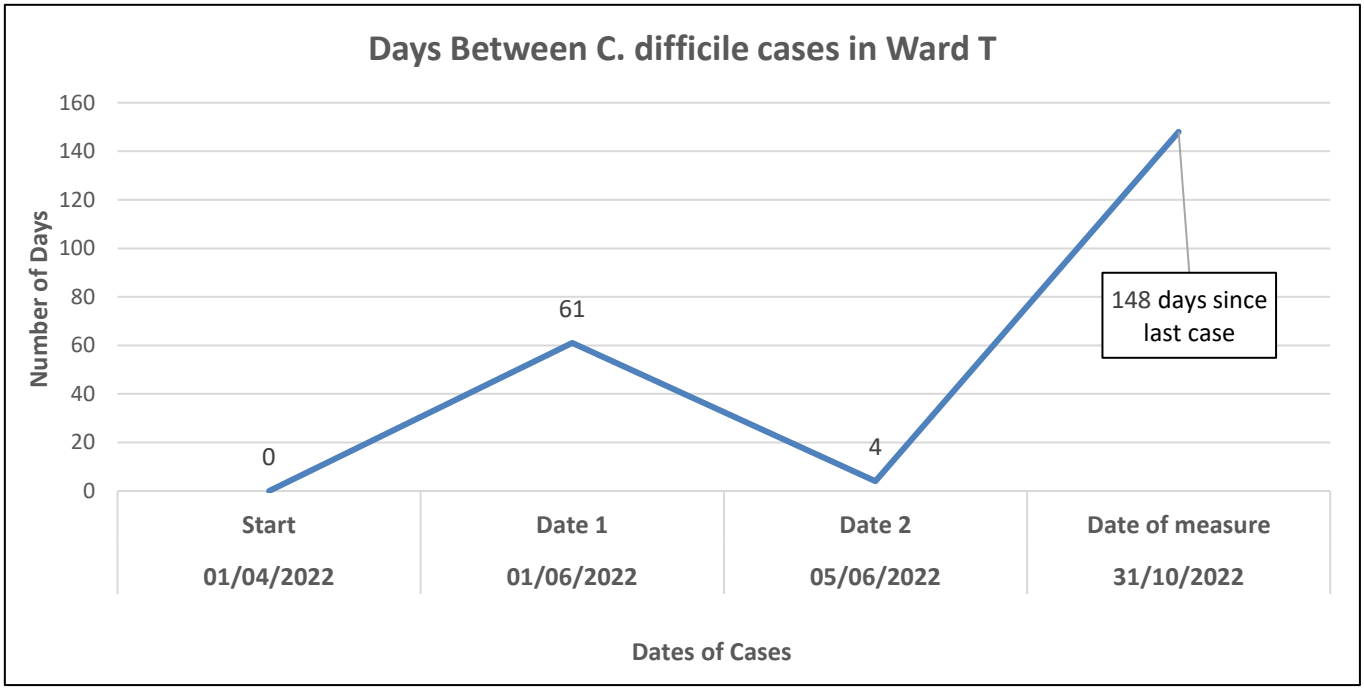
ITU:



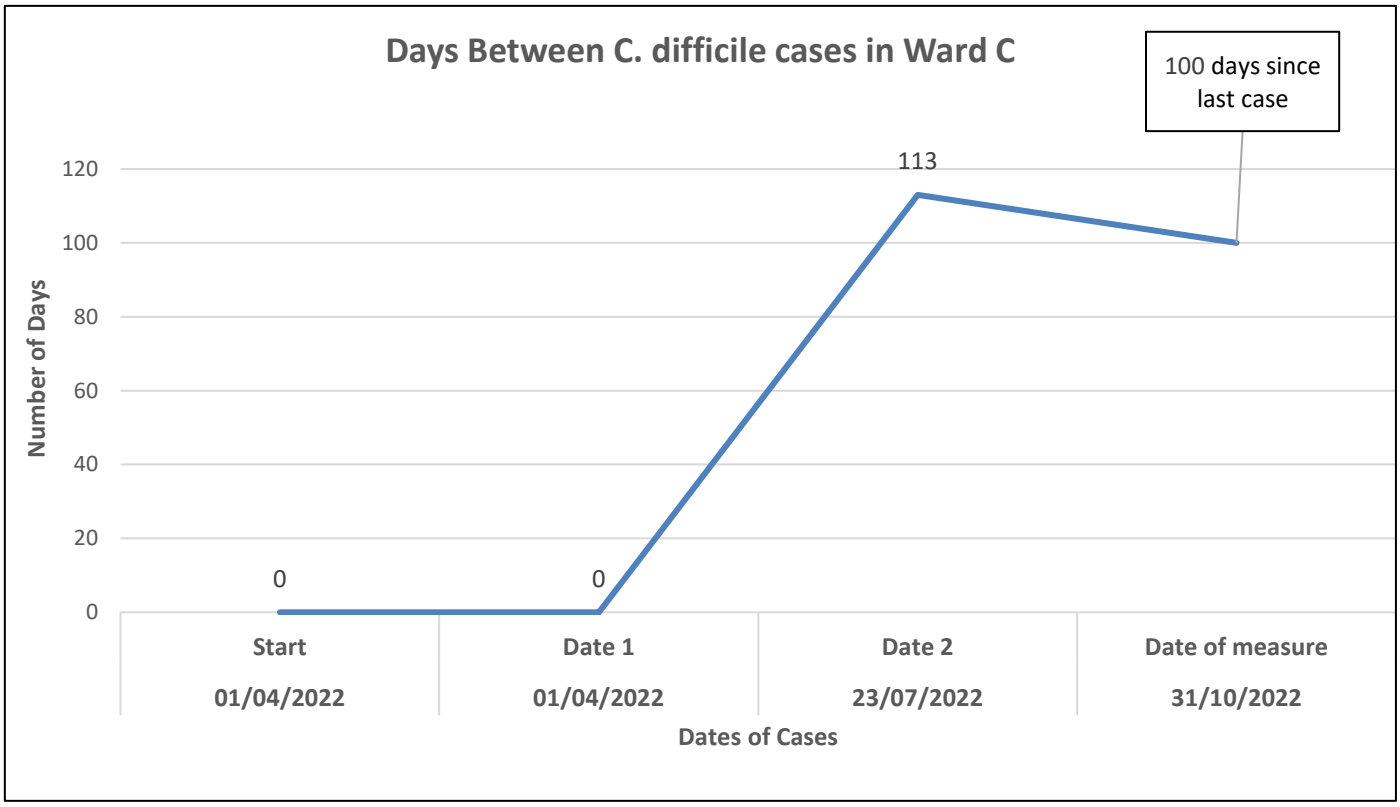
Ward D:



Ward T:

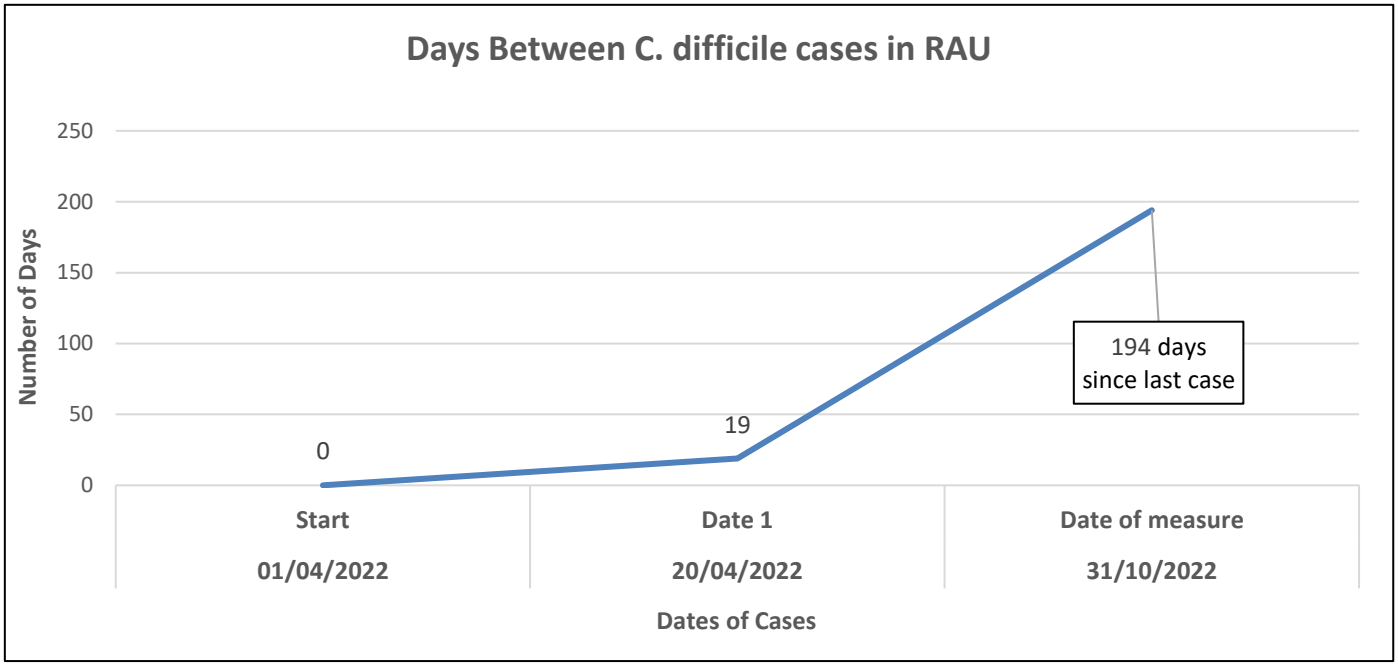

Days Between C. difficile cases in Ward T
Number of Days
160
140
120
100
80
60
40
20
0
0
61
4
148 days since last case
Start
01/04/2022
Date 1
01/06/2022
Date 2
05/06/2022
Date of measure
31/10/2022
Dates of Cases

Ward C:

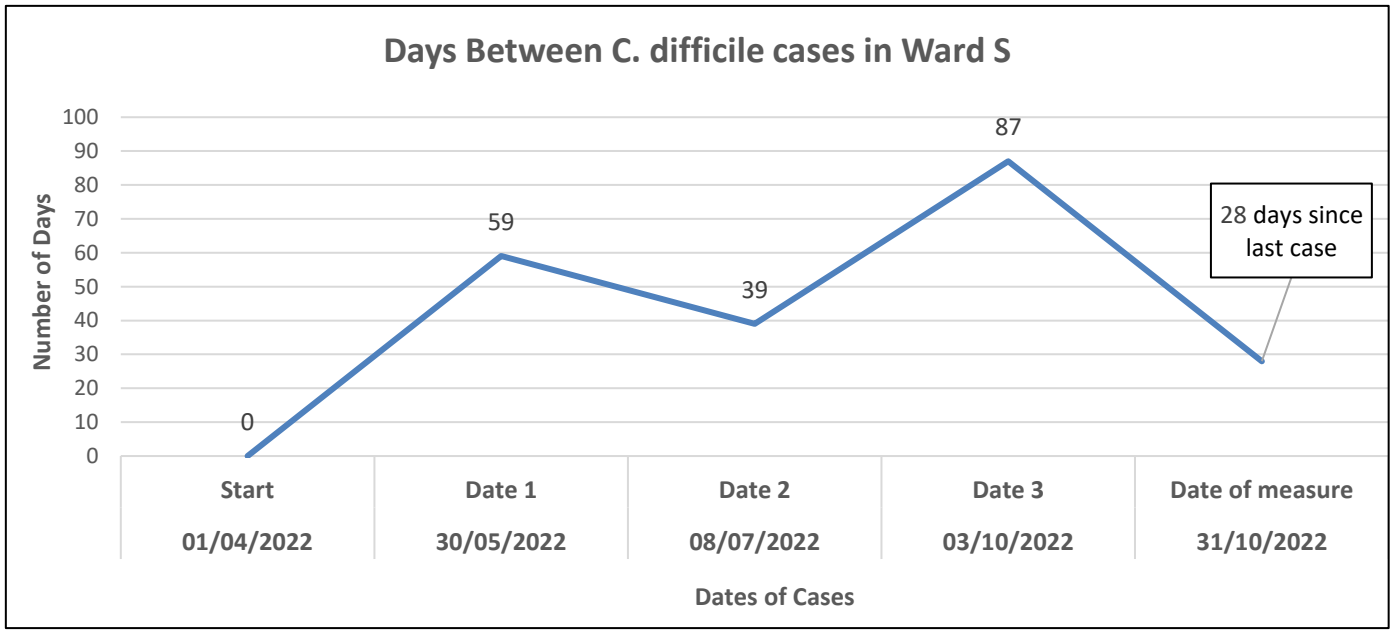

Days Between C. difficile cases in Ward C
100 days since last case
Number of Days
120
100
80
60
40
20
0
0
0
113
Start
01/04/2022
Date 1
01/04/2022
Date 2
23/07/2022
Date of measure
31/10/2022
Dates of Cases

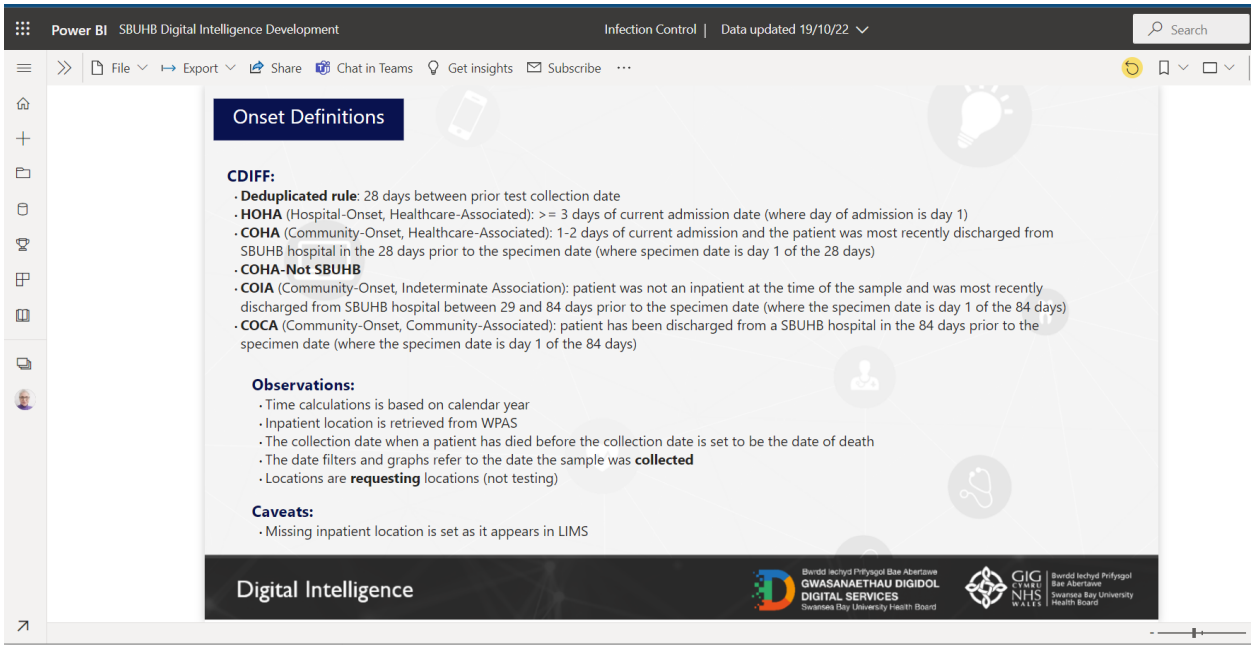
Appendix 2 – Days between cases of infection (C. difficile and Staph. aureus bacteraemia) to 31/10/22

RAU:



Ward S:

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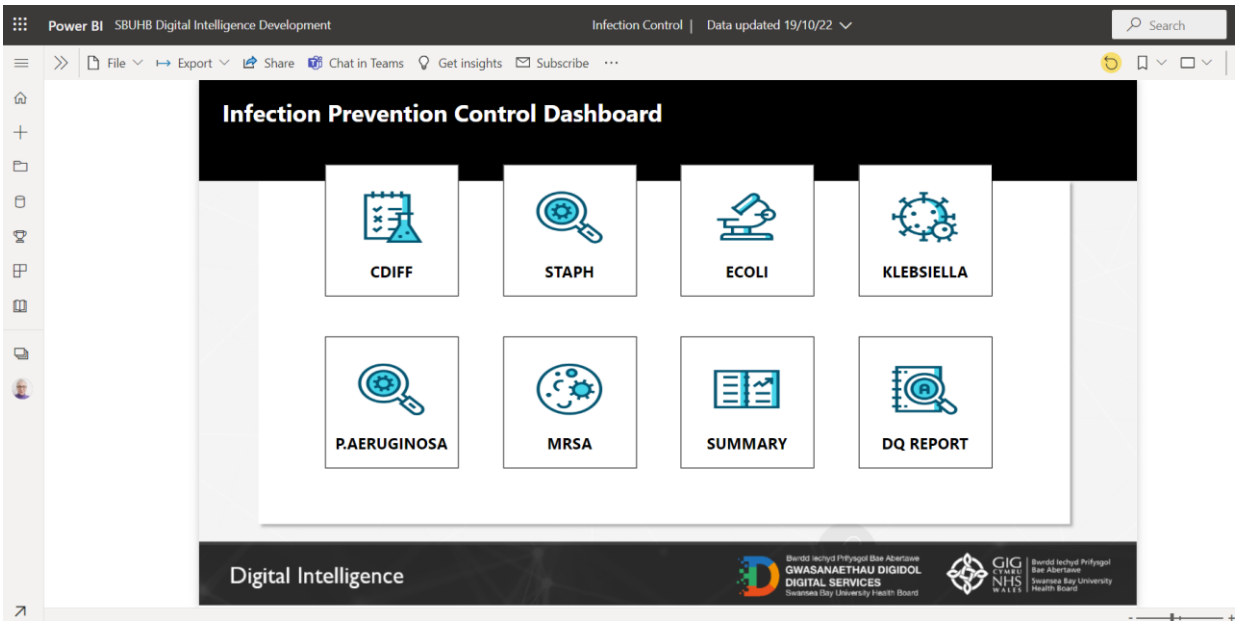
Onset Definitions
CDIFF:
· Deduplicated rule: 28 days between prior test collection date
· HOHA (Hospital-Onset, Healthcare-Associated): >= 3 days of current admission date (where day of admission is day 1)
· COHA (Community-Onset, Healthcare-Associated): 1-2 days of current admission and the patient was most recently discharged from SBUHB hospital in the 28 days prior to the specimen date (where specimen date is day 1 of the 28 days)
· COHA-Not SBUHB
· COIA (Community-Onset, Indeterminate Association): patient was not an inpatient at the time of the sample and was most recently discharged from SBUHB hospital between 29 and 84 days prior to the specimen date (where the specimen date is day 1 of the 84 days)
· COCA (Community-Onset, Community-Associated): patient has been discharged from a SBUHB hospital in the 84 days prior to the specimen date (where the specimen date is day 1 of the 84 days)
Observations:
· Time calculations is based on calendar year
· Inpatient location is retrieved from WPAS
· The collection date when a patient has died before the collection date is set to be the date of death
· The date filters and graphs refer to the date the sample was collected
· Locations are requesting locations (not testing)
Caveats:
· Missing inpatient location is set as it appears in LIMS
Digital Intelligence
GWASANAETHAU DIGIDOL DIGITAL SERVICES
GIG CYMRU NHS WALES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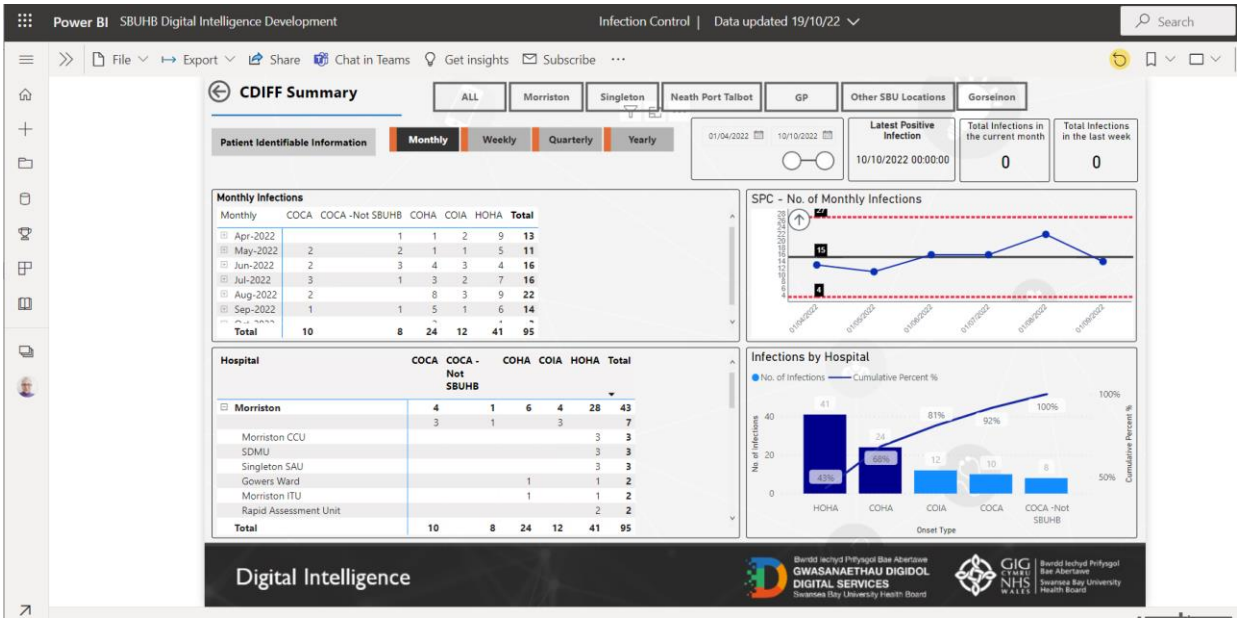
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Singleton
Neath Port Talbot
GP
Other SBU Locations
Gorseinon
Patient Identifiable Information
Monthly
Weekly
Quarterly
Yearly
Latest Positive Infection
10/10/2022 00:00:00
Total Infections in the current month
0
Total Infections in the last week
0
Monthly Infections
SPC - No. of Monthly Infections
Infections by Hospital
Digital Intelligence
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