Meeting Date	**25 October 2022**	**Agenda Item**	**3.1**
Report Title	Healthcare Acquired Infections Update Report		
Report Author	Joanne Walters, Quality Improvement Matron, 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 progress against the Health Board's upcoming priorities and actions to prevent infection and avoid harm.		
Key Issues	• Year-on-year reductions in the following infections: *C. difficile* (12%) and *E. coli* bacteraemia (19%). • *Staph. aureus* bacteraemia rates continue to be a challenge. • 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 rapidly improved training compliance. • Primary Care, Community and Therapies Service Group has commenced their monthly infection scrutiny panel meetings. • The overarching Improvement Plan has been updated to the end of Quarter 2, with RAG-rating applied (Appendix 3).		
Specific Action Required	**Information**	**Discussion**	**Assurance**	**Approval**
	☐	☐	☒	☐
Recommendations	Members are asked to note: • the progress against the tier 1 infections to 30/09/2022; • the progress in relation to Morriston's rapid improvement programme; • the progress in relation to the Health Board Infection Prevention Improvement Plan to 30/09/2022.			

Infection Prevention and Control Report

		Agenda Item	3.1
Freedom of Information Status		Open	
Performance Area	Healthcare Acquired Infections Update Report		
Author	Joanne Walters, Quality Improvement Matron, Infection Prevention & Control		
Lead Executive Director	**Gareth Howells** **Executive Director of Nursing & Patient Experience**		
Reporting Period	30 September 2022	**Report prepared on**	12/10/2022

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 September 2022.

Health Board and Service Group progress against the Tier 1 infection reduction goals to the end of September 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 September 2022

Infection	Cumulative Cases to end of September 2022	Monthly total: September 2022	Average monthly reduction goal (max.)
C. difficile (CDI)	**92**	**14**	<8 (annual maximum: <95 cases)
***Staph. aureus* bacteraemia (SABSI)**	**78**	**14**	<6 (annual maximum: <71 cases)
***E. coli* bacteraemia (EcBSI)**	**137**	**15**	<21 (annual maximum: <251 cases)
***Klebsiella spp.* bacteraemia (KlBSI)**	**51**	**10**	<6 (annual maximum: <71 cases)
Ps. aeruginosa bacteraemia (PAERBSI)	**20**	**5**	<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 September 2022 (cumulative)

	CDI	SABSI	EcBSI	KlBSI	PAERBSI
PCTSG - CAI	3 (30)	6 (36)	8 (90)	9 (25)	1 (6)
PCTSG - HAI	0 (1)	0 (0)	1 (2)	0 (0)	0 (0)
MH&LD – HAI	0 (0)	0 (0)	0 (1)	0 (0)	0 (0)
MORR – HAI	6 (40)	6 (29)	0 (24)	0 (16)	2 (10)
NPTH - HAI	0 (2)	0 (2)	1 (2)	0 (1)	0 (0)
SH - HAI	5 (19)	2 (11)	5 (18)	1 (9)	2 (4)

Progress against Infection Prevention Improvement Plan to 30.09.22

- To the end of September 2022, the Health Board had not achieved the reduction in infection in line with the proposed trajectories. However, to the end of September 2022, there had been year-on-year 12% reduction in the number of cases of *C. difficile*, and a 19% reduction in the number of *E. coli* bacteraemia cases. Of concern is the continued increase of *Staph. aureus* bacteraemia cases (4% increase year-on-year) and the increase in *Pseudomonas aeruginosa* bacteraemia (8 cases more year-on-year). The year-on-year comparison (April – September) 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	12%↓	4%↑	19%↓	6%↑	82%↑
Morriston Hospital	5%↓	38%↑	14%↑	11%↓	5 cases ↑
Singleton Hospital	30%↓	45%↓	29%↑	29%↑	3 cases ↑
Neath Port Talbot Hospital	50%↓	2 cases ↑	85%↓	Equal to	0 cases
MH & LD	0 cases	0 cases	1 case	0 cases	0 cases
PCTG Gorseinon Hospital	Equal to	0 cases	Equal to	0 cases	0 cases
PCTG Community acquired	Equal to	9%↑	20%↓	14%↑	1 case ↑

- Cases of *C. difficile* infection and *Staph. aureus* bacteraemia are significantly higher in Morriston than in the other acute hospitals, accounting for 65%, 69%, 51%, 62% and 71% 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.
- To facilitate the rapid review process for Service Groups reviewing cases of infection, the Senior IPCT members are sending timely notifications of new healthcare associated Tier One Target infections directly to Service Group Directors and the responsible clinician.

Service Group Improvement Progress

Acute Care Service Groups

Morriston Hospital Rapid Improvement Programme

- The candidate appointed by the Service Group to Programme Lead for the Rapid Improvements has not been released from their substantive position in order to focus on this work. The IPC senior team continue to support the Service Group to maintain momentum for the Rapid Improvement programme.
- Staff from the Rapid Improvement focus wards are participating in twice weekly surveys of prevalence of unnecessary invasive devices. Since the beginning of the programme, there has been a general reduction in the prevalence of unnecessary devices. However, there have been a small number of anomalous results, which have been the result of incorrectly completed surveys. This should be picked up by the Programme Lead once in post.
- Staff across the Service Group are expected to be in compliance with IPC-related mandatory training. ESR is an unreliable tool to report relevant compliance, and staff on the improvement wards have been asked to maintain, and report on, individual ward training spreadsheets. The following wards/areas are commended for achieving rapid and significant improvement in the training compliance:

- Renal: Liz Baker Renal Unit, West Renal Unit, Home Therapies, and Cardigan Ward;
- Cardiac: Cyril Evans Ward
- Surgery: Ward T

- A "HCAI Improvement Plan" Page has been created on the IPC SharePoint site to support the initiative, provide the appropriate tools, and to make available the results of the prevalence surveys and training compliance.
- Staff on the improvement wards demonstrate a will to improve. The realities of day-to-day pressures and activity will undoubtedly impact on momentum. There is a clear need for the Programme Lead to take up post as this will bring an improved oversight and day-to-day support for the participating clinical areas.
- Days between cases of *C. diffic*ile infection and *Staph. aureus* bacteraemia on the rapid improvement wards, to 30th September, are shown in Appendix 2.
- The Infection Prevention & Control Team is providing training support for Medical staff within the Service Group, to help improve compliance with Level 2 IP&C mandatory training. Attendance at these sessions is improving. However, this may impact on ESR-reported Level 1 training compliance. Discussions are taking place between IPC and Learning Development & Workforce teams to resolve.

- **Neath Port Talbot and Singleton Hospitals (NPTH&SH) Service Group**
- Consultant Orthopaedic Surgeon, Claire Topliss, has taken on the Quality Improvement Medical Lead for IPC for the Service Group.
- The Service Group is reviewing the increased incidence of *C. difficile.* This will continue with additional cases identified in September.
- The Service Group continues to update the Executive Nurse and Medical Directors on lessons learned from scrutiny of cases and actions to progress infection reduction.

Primary Care, Community & Therapies Group

- The monthly cases of community-acquired *C. difficile* decreased from six cases in both July and August, to three cases in September.
- Cases of *C. difficile* in Care Homes are having timely review visits by the Infection Prevention Nurse and the Care Home Nurse Assessor. In one of these cases, the review did not identify any practice or prescribing issues that had resulted in the case. In the second case, this was a relapse of symptoms that had commenced during a recent secondary care stay.
- Monthly scrutiny meetings have commenced in Primary Care to review community acquired cases of infection.
- **Expectation for PCTG Service Group**: The Service Group Directors are asked to identify themes from the revised scrutiny process and discuss with Executive colleagues the findings of the case reviews undertaken, including learning and relevant actions identified.

Update on Infection Prevention Improvement Plan

The overarching Improvement Plan has been updated to the end of Quarter 2, with RAG-rating applied. The updated plan is attached in Appendix 3. Key points of note include:

- Rapid improvement wards are participating in undertaking point prevalence of peripheral vascular devices and urinary catheters. Many of the areas are reporting consistent low prevalence of unnecessary devices, with many at zero. Using the Plan Do Study Act

improvement methodology, the survey tool has been amended to incorporate reporting on compliance with insertion and maintenance bundles.

- ANTT training and competence assessment compliance has not shown improvement on ESR and does not appear to reflect the improvement that has occurred on the rapid improvement wards in Morriston. Issues with ESR are being escalated for discussion at the next Workforce & OD Committee in October.
- The roll-out of the implementation of 2% chlorhexidine daily skin decolonisation patient wash cloths has been set back due to NHS Supply Chain procurement issues, which have been outside of Health Board control. This has been escalated to NWSSP Procurement by the Head of Nursing IP&C and an interim solution implemented, whilst more permanent contract arrangements are confirmed. Details on how to order the wash cloths have been provided to the Service Group, however, the wash cloths were not available on all areas on site in Morriston during a visit by the Chief Executive on 11th October. The Service Group has agreed to a swifter implementation across site. Training to roll out this initiative is underway.
- The interviews for the Director of Infection Prevention & Control were due to be held on 30th September, but there were no suitable applicants. Discussions are progressing on reviewing and refreshing the advertisement to encourage more suitable applications.
- The Digital Dashboard for improving information on infections is now progressing at pace. There is a first trial iteration available for *C. difficile* infections and this data is available for validation during the second half of October. Once validated, there will be additional refinement required and following this, Digital Intelligence colleagues will progress to working on bacteraemia data.
- The Digital Dashboard work has been more complex than anticipated, and this has been prioritised. As such, finding a digital solution to surveillance of other hospital acquired infections (such as pneumonia and surgical site infections) has not progressed.
- An evaluation of an air purification system is to commence on two trauma and orthopaedic wards in Morriston. Installation work has been completed, with minimal disruption. It is likely that an extensive evaluation period is required to determine whether the system has resulted in any improvement.

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.
- Healthcare associated infections extend length of stay, which adds to current service pressures.
- Historically, infection reduction initiatives have been compromised by the following: staffing vacancies, or shortages caused by sickness absence, with reliance on temporary staff; lack of isolation facilities; 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.
- 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. The first iteration of a Digital Dashboard for C. difficile was ready for testing by the end of September. The information on this dashboard will required a period of validation, which should be completed by end of October. There is likely to be further refinement required before the Digital Intelligence Team commences work on the bacteraemia dashboard. **Target completion date**: 31.10.22 and updated monthly thereafter. **Lead:** Head of Nursing IP&C and Corporate Digital Intelligence Partner.

Financial Implications

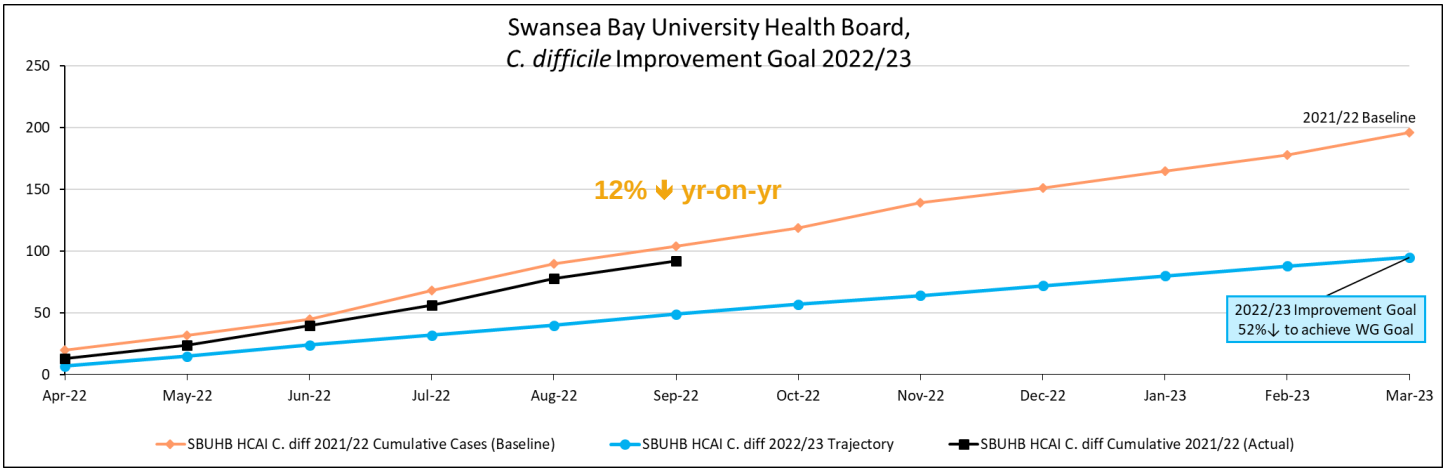
A Department of Health impact assessment report (IA No. 5014, 20/12/2010) stated that the best estimate of costs to the NHS associated with a case of *Clostridioides difficile* infection is approximately **£10,000**. The estimated cost to the NHS of treating an individual cost of MRSA bacteraemia is **£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 September 2022 is as follows: *C. difficile* - £920,000; *Staph. aureus* bacteraemia - £546,000; *E. coli* bacteraemia - £156,100; therefore, a total cost of **£1,622,100**.

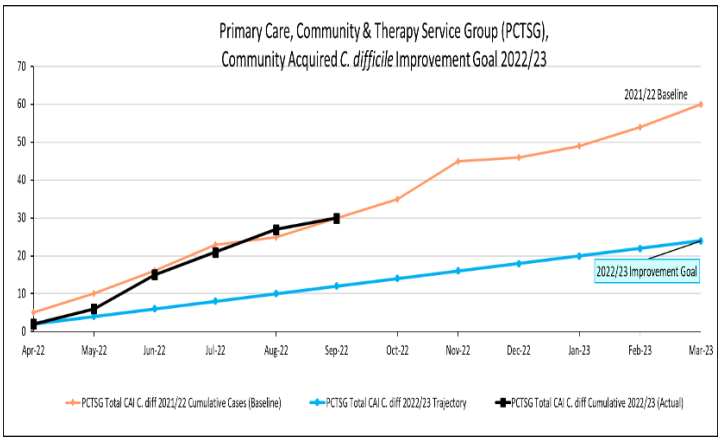
Recommendations

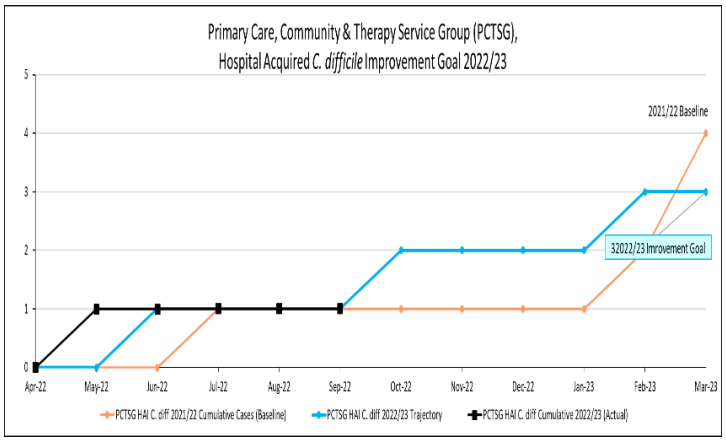
Members are asked to note:

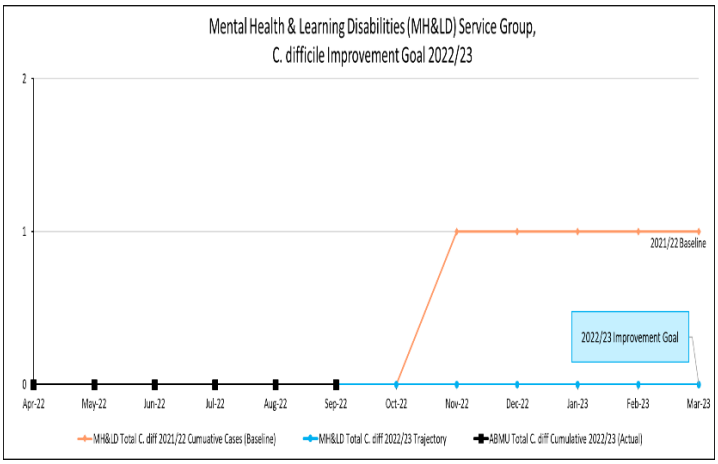
- the progress against the tier 1 infections to 30/09/2022;
- the progress in relation to Morriston's rapid improvement programme;
- the progress in relation to the Health Board Infection Prevention Improvement Plan to 30/09/2022.

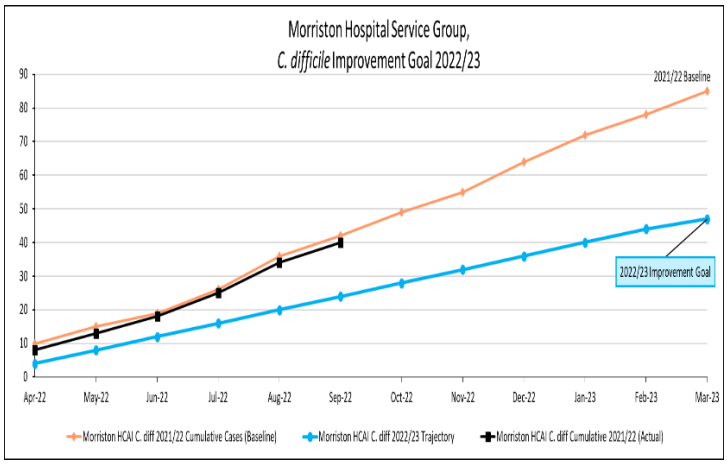
C. difficile

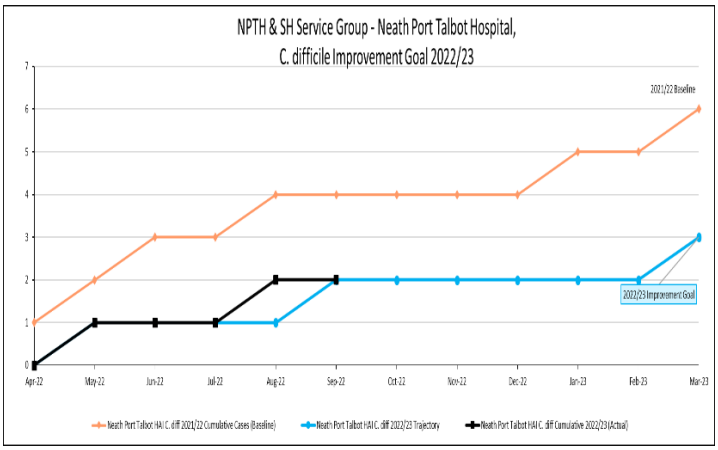

Swansea Bay University Health Board,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
12% ↓ yr-on-yr
2022/23 Improvement Goal
52%↓ to achieve WG Goal
SBUHB HCAI C. diff 2021/22 Cumulative Cases (Baseline)
SBUHB HCAI C. diff 2022/23 Trajectory
SBUHB HCAI C. diff Cumulative 2021/22 (Actual)

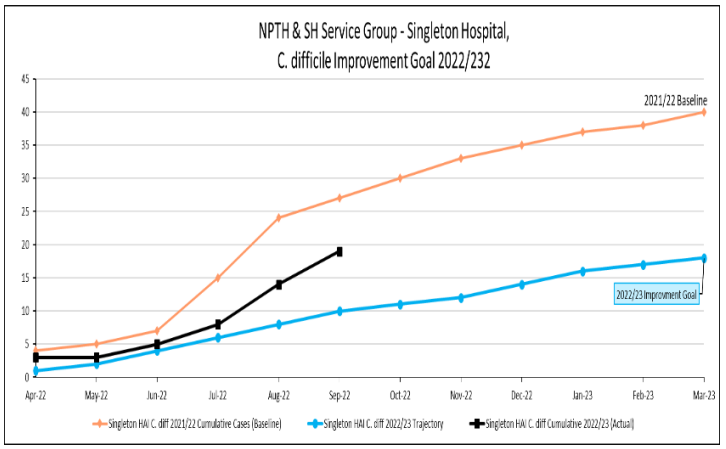

Primary Care, Community & Therapy Service Group (PCTSG),
Community Acquired C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal


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

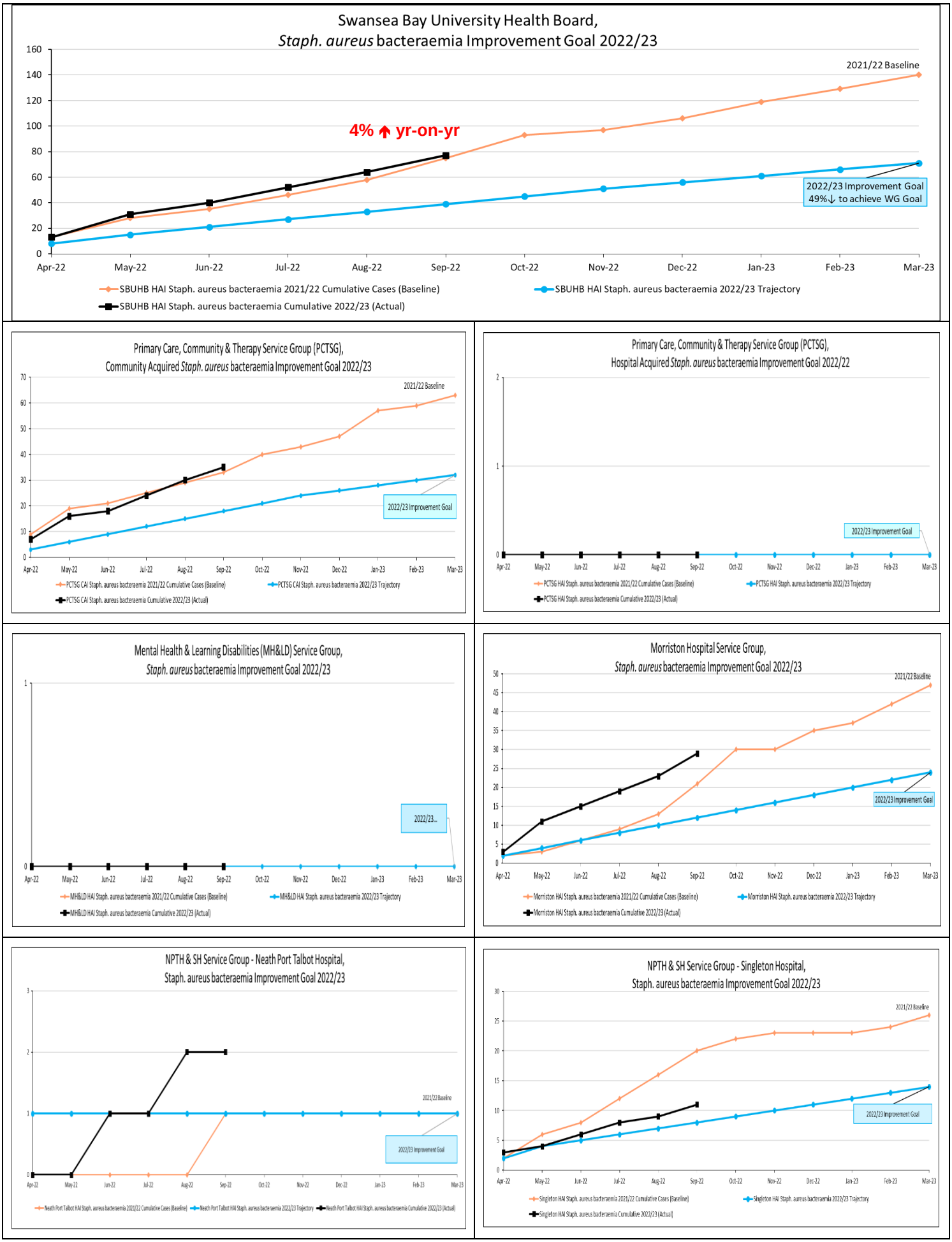

Mental Health & Learning Disabilities (MH&LD) Service Group,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal


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

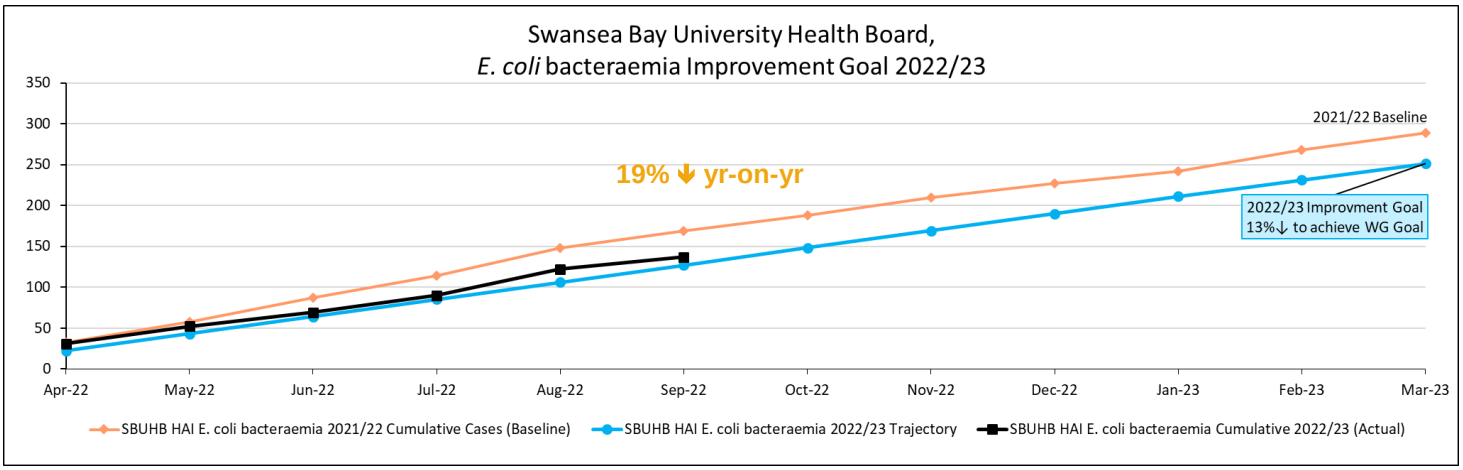

NPTH & SH Service Group - Neath Port Talbot Hospital,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal

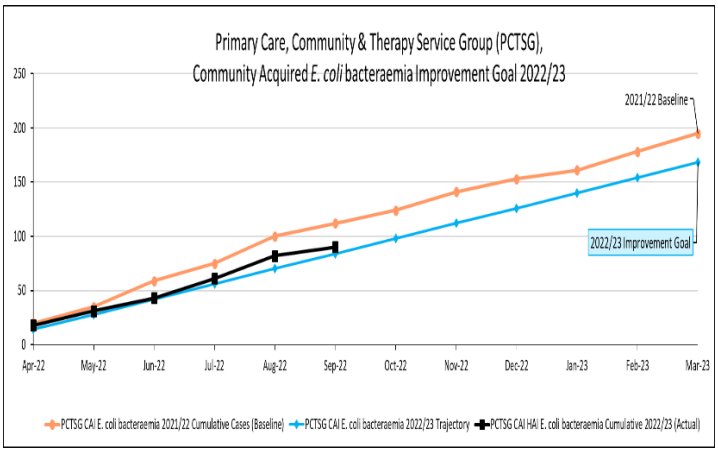

NPTH & SH Service Group - Singleton Hospital,
C. difficile Improvement Goal 2022/232
2021/22 Baseline
2022/23 Improvement Goal

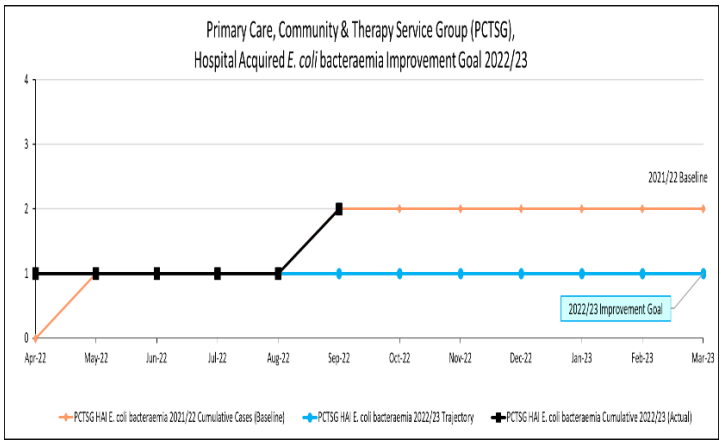
***Staph. aureus* bacteraemia**

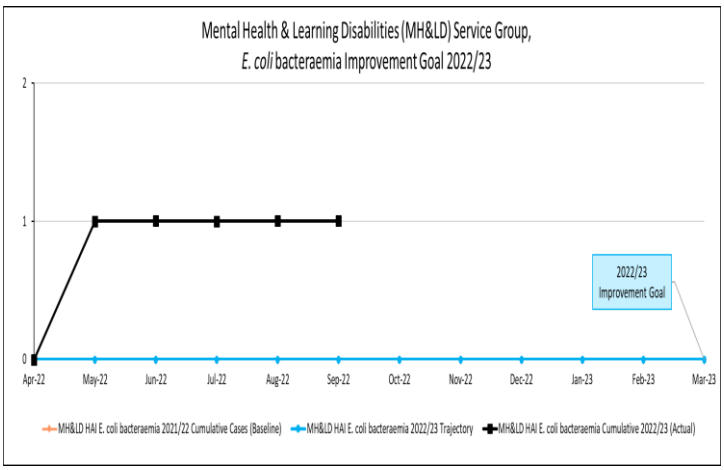


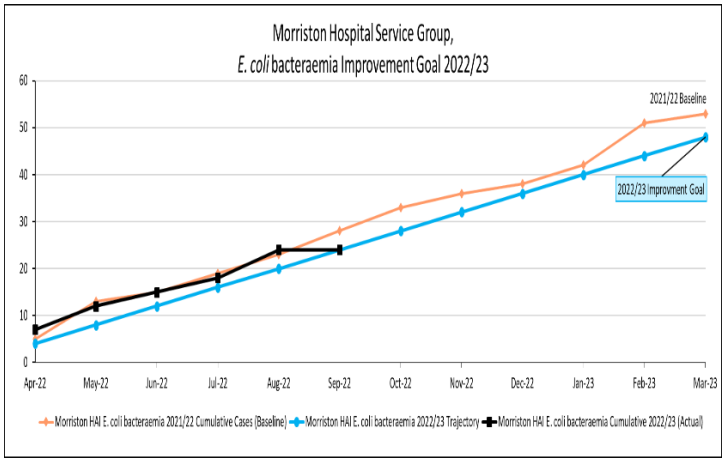
E. coli bacteraemia

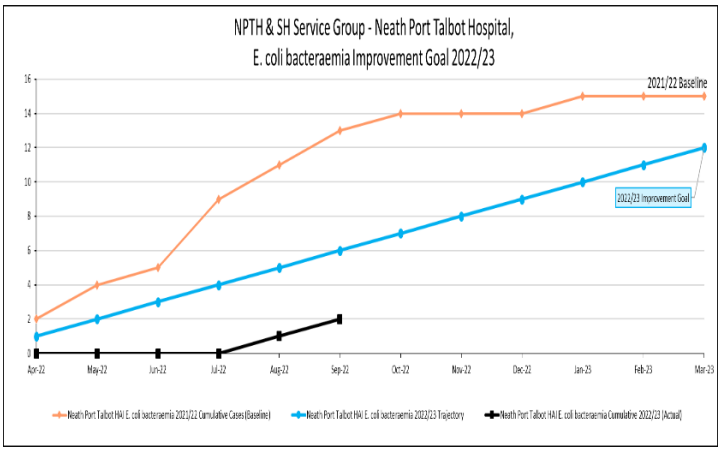


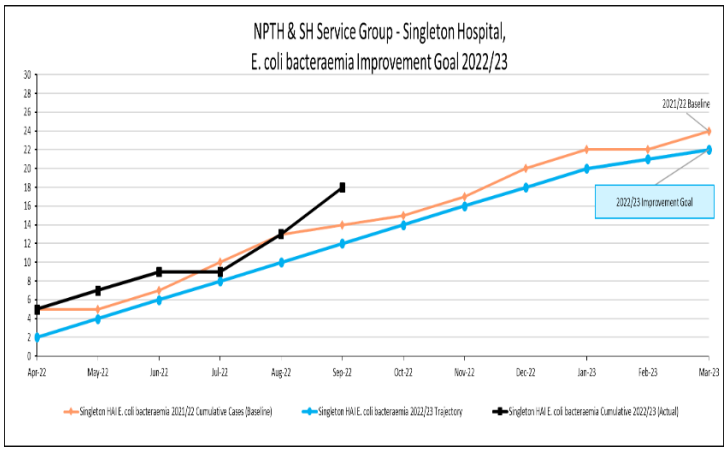




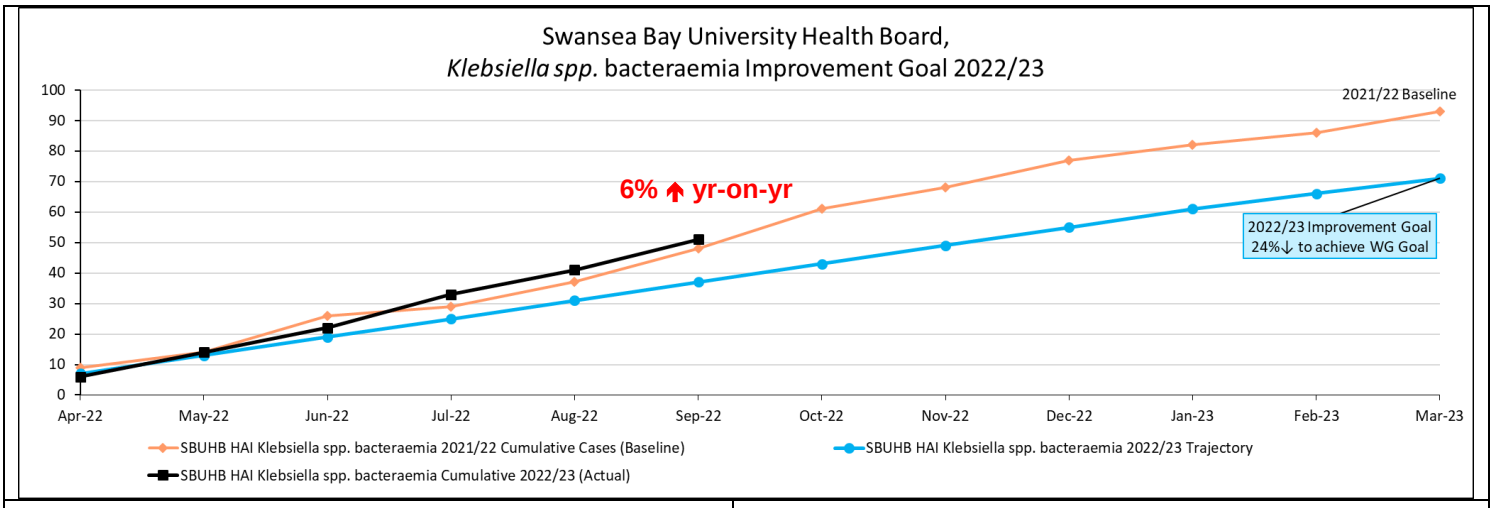


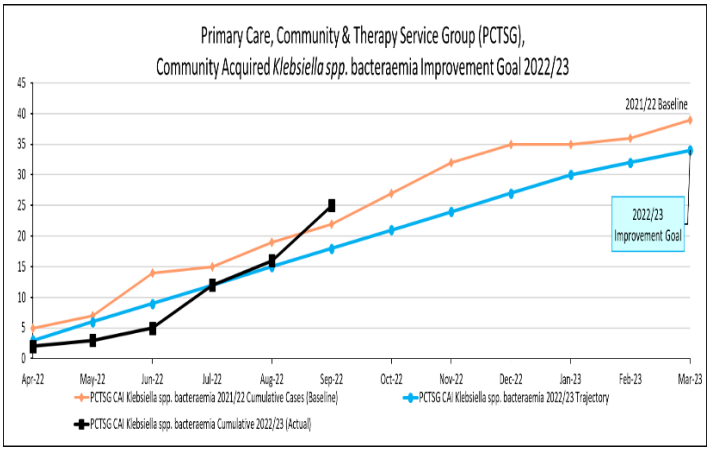


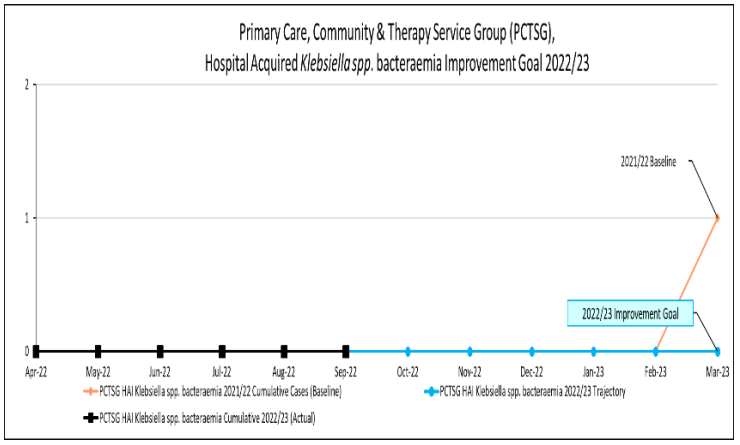


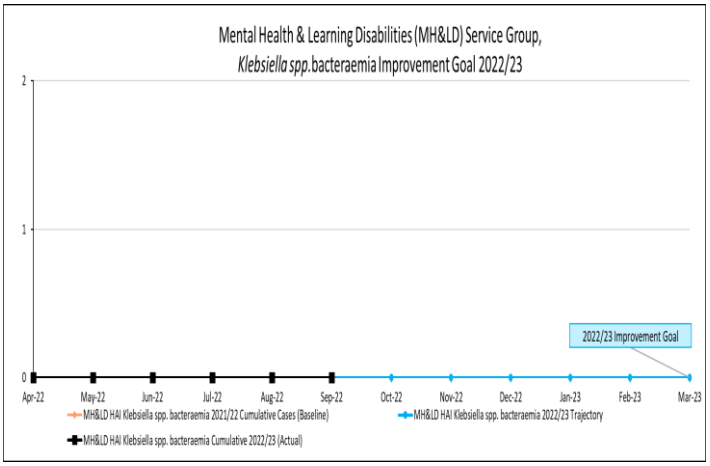


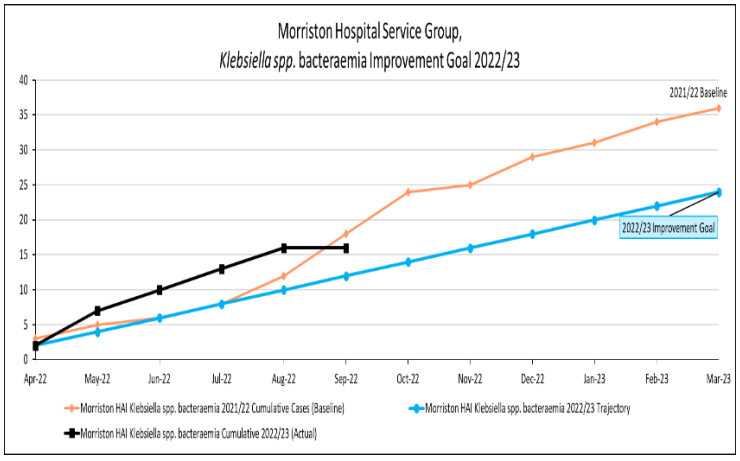
***Klebsiella spp.* bacteraemia**

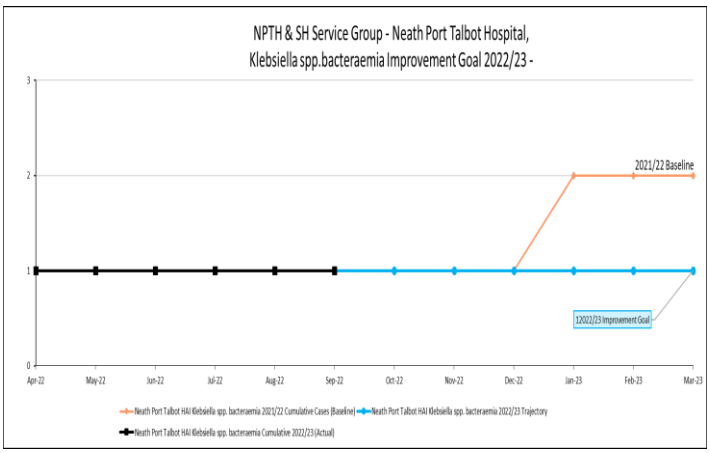


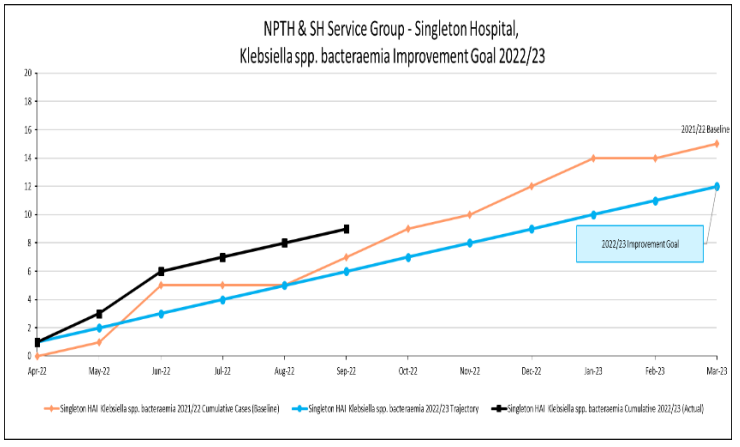




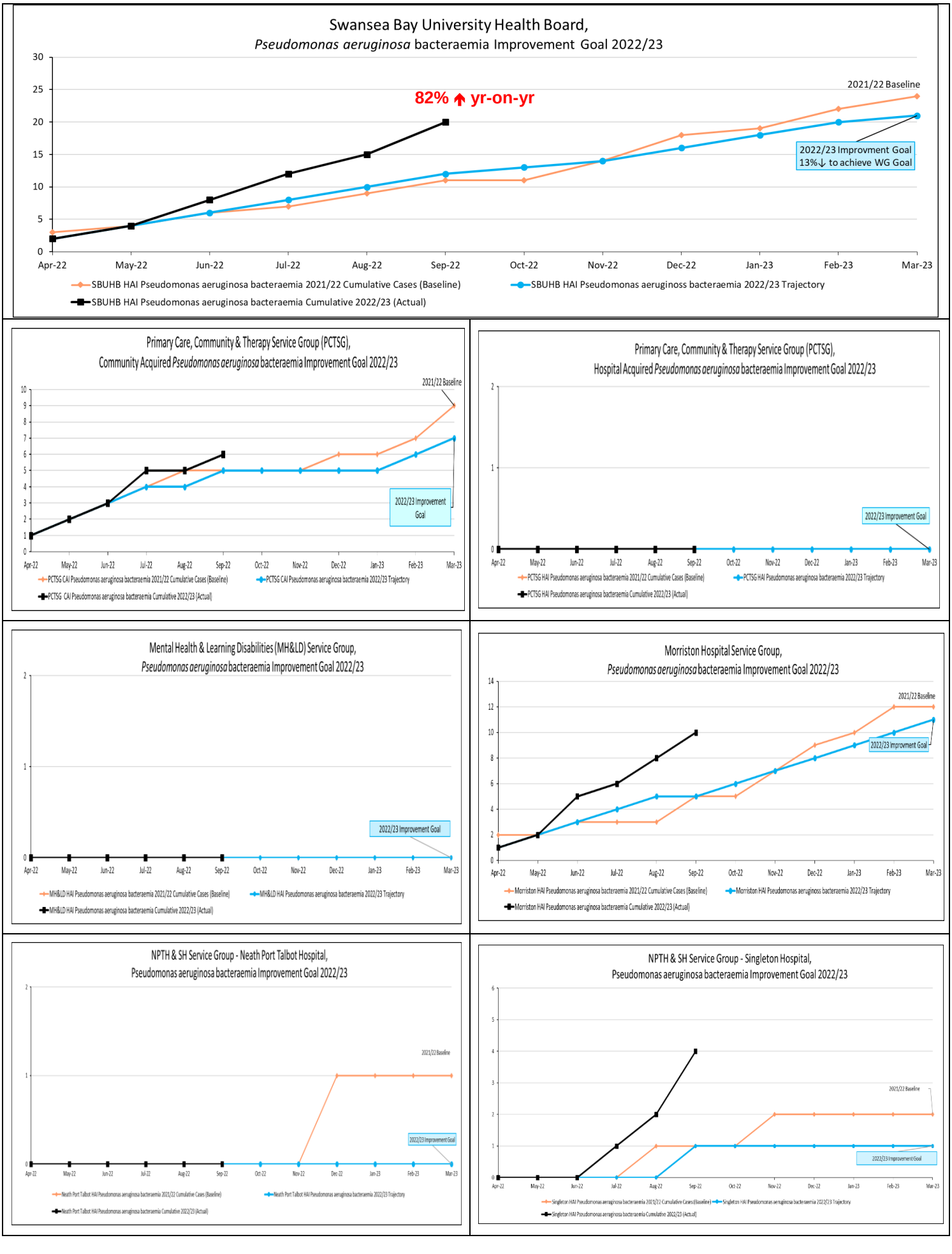








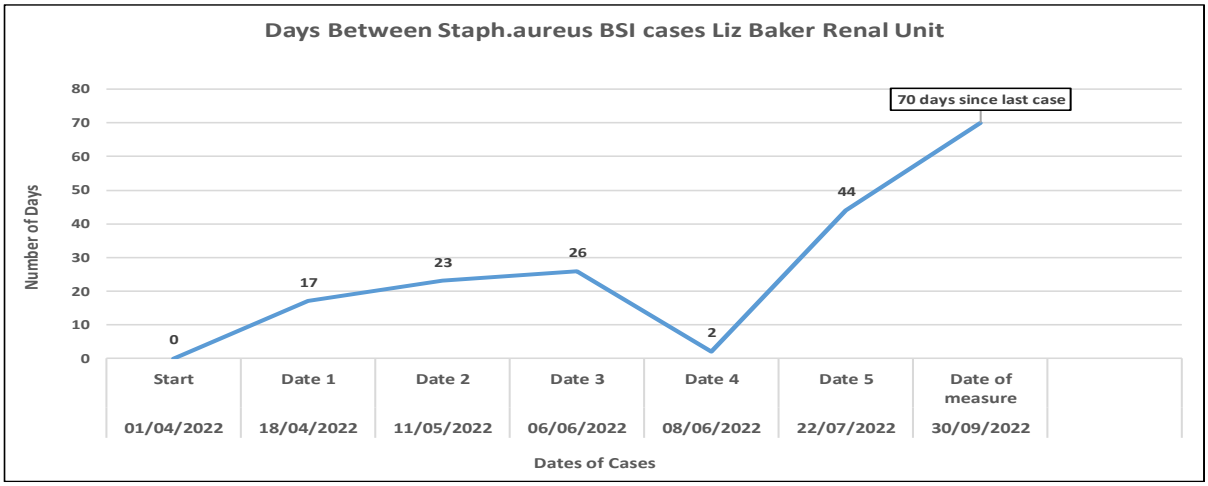
***Pseudomonas aeruginosa* bacteraemia**



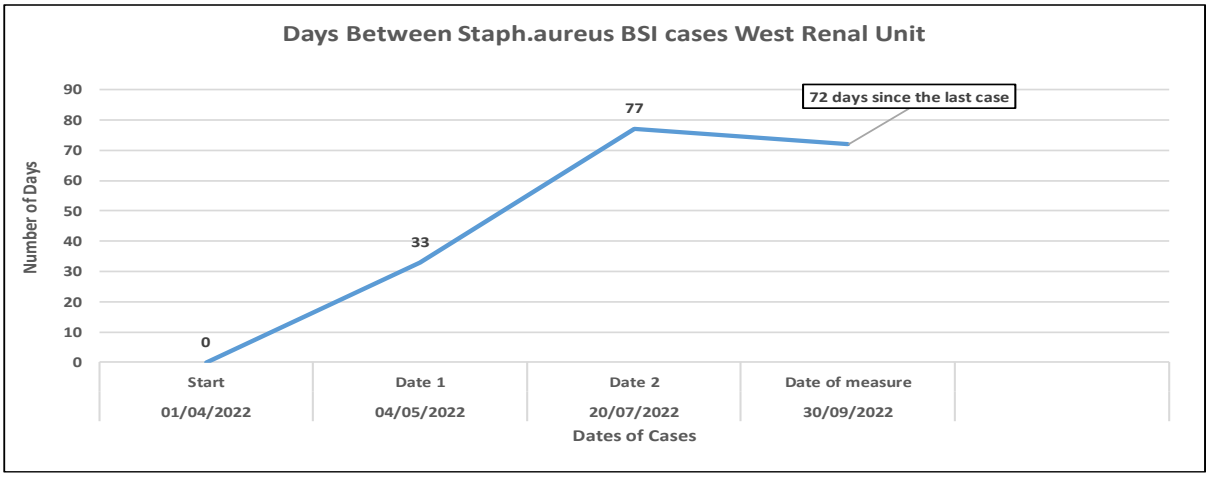
Appendix 2 – Days between cases of infection (C. difficile and Staph. aureus bacteraemia) to 30/09/22

Staph. aureus bacteraemia

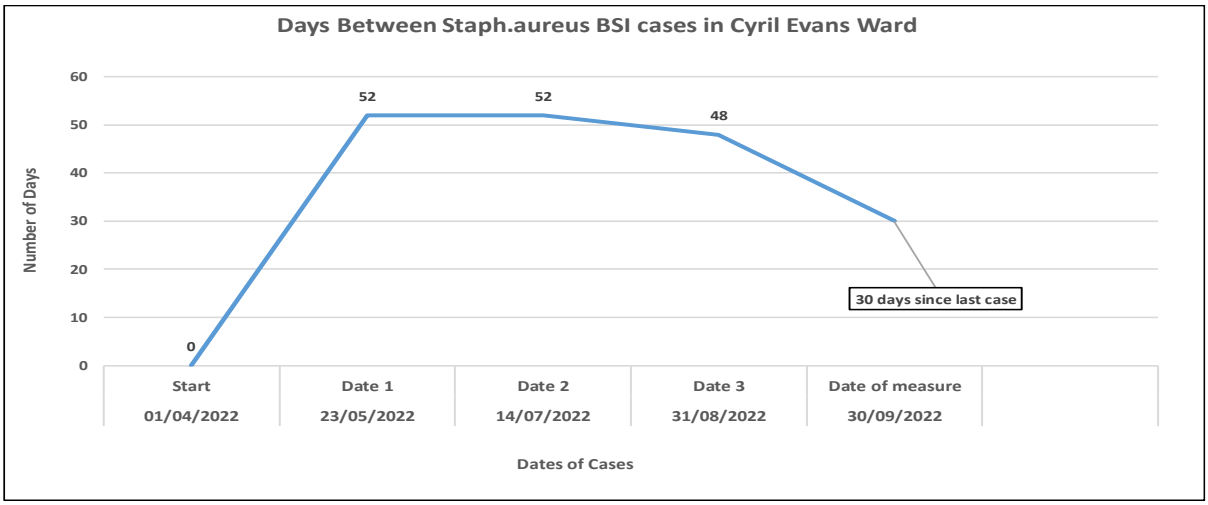
Liz Baker Renal Unit:



West Renal Unit:



Cyril Evans Ward:



Staph. aureus bacteraemia

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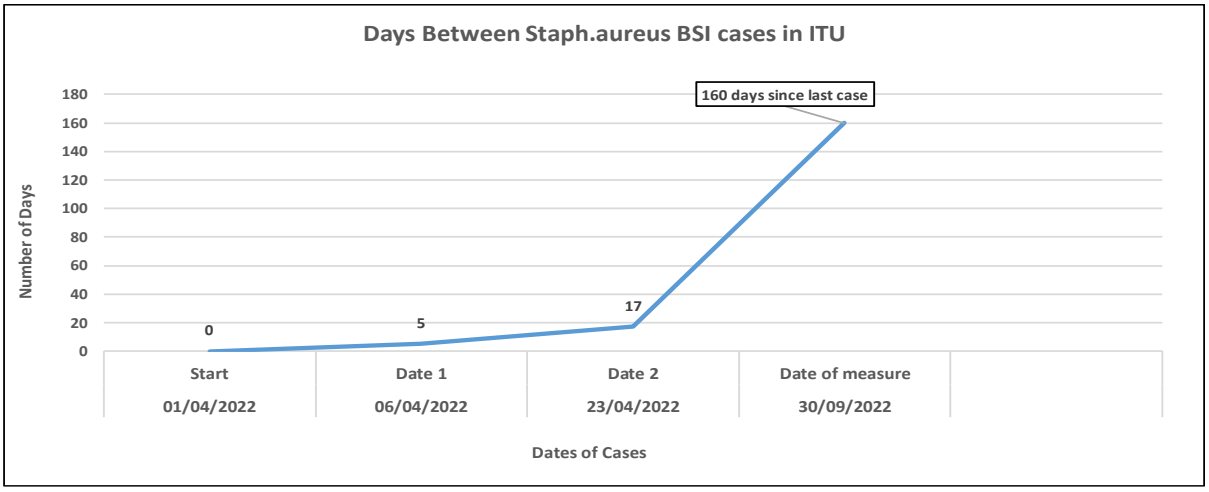
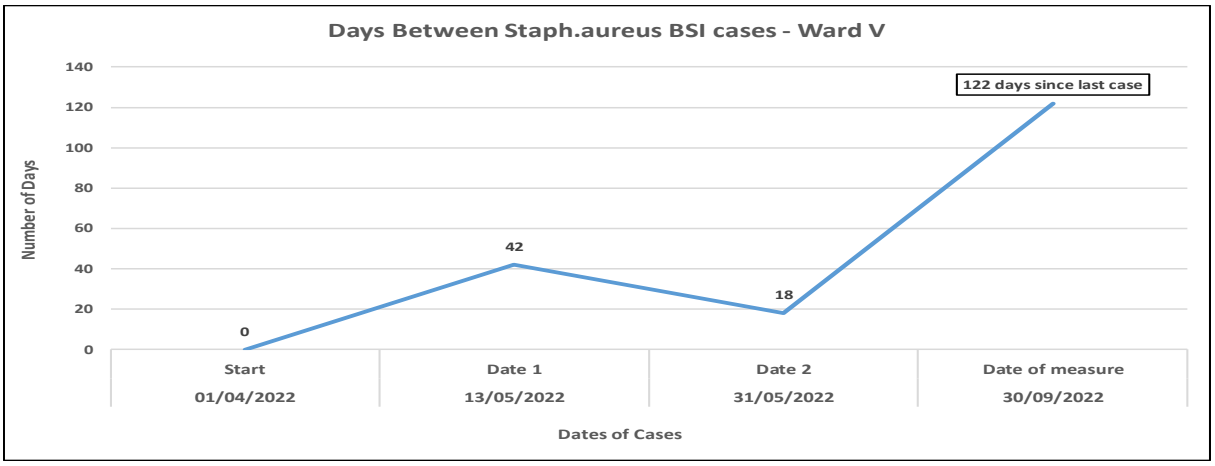
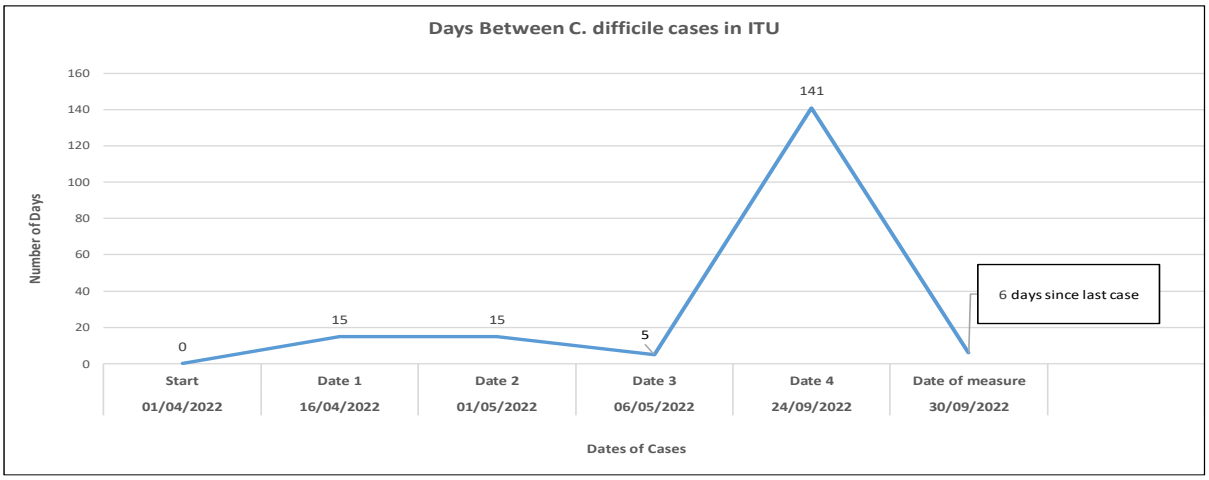


Ward V:

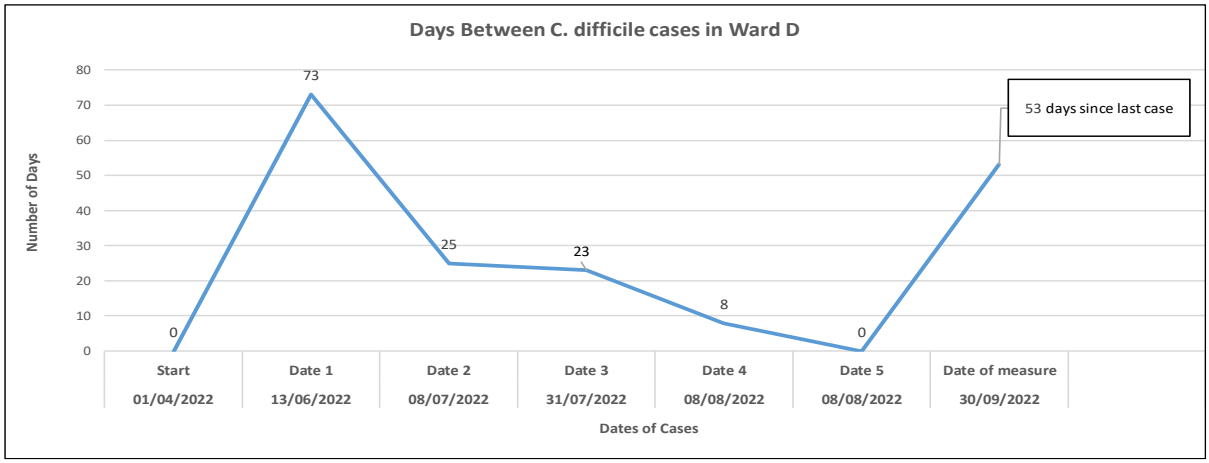


C. difficile Infection

ITU:



Ward D:



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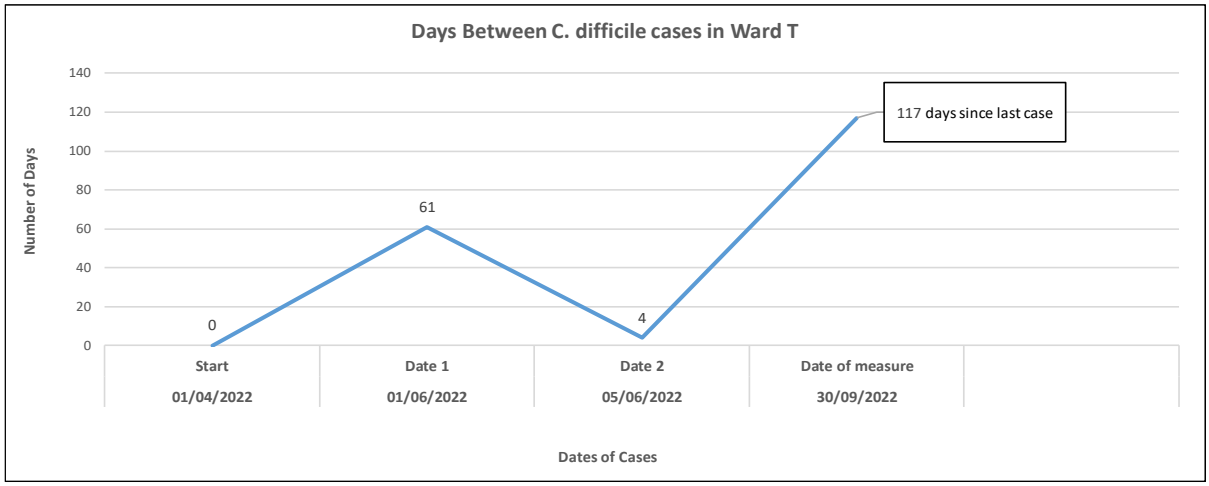

C. difficile Infection

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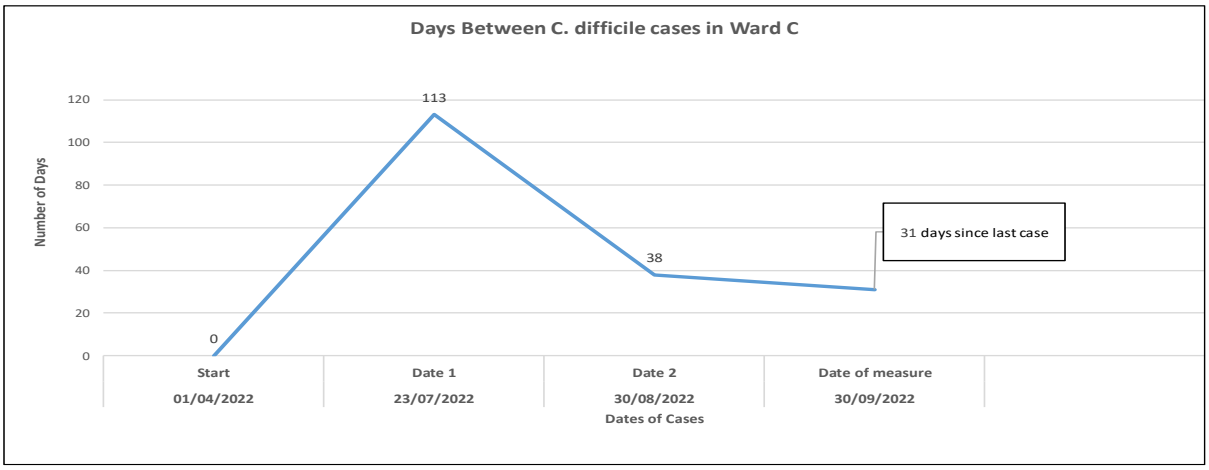
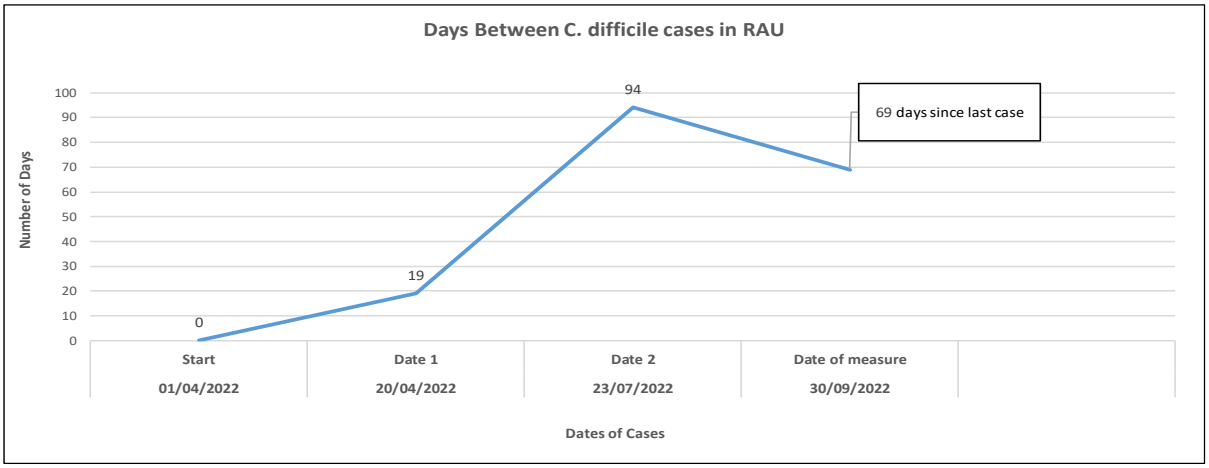


RAU:



Ward S: