Meeting Date	**27 September 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 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* (13%) and *E. coli* bacteraemia (18%). • Continued increase in *Staph. aureus* bacteraemia is concerning, with Morriston Service Group cases accounting for much of the increase. • The infection rapid improvement programme has commenced in Morriston and an update on initial progress is reported. Following the summer leave period, Morriston Hospital Service Group has commenced a *refocus and sharpen* period in the rapid improvement programme. • Singleton has seen a significant increase in *C. difficile* during August. The Service Group Directors will be required to review the cases and identify learning and actions. • Primary Care Community and Therapies will be expected to present initial findings of rapid clinical reviews of cases and identify learning and actions.		
Specific Action Required	**Information**	**Discussion**	**Assurance**	**Approval**
	☐	☐	☒	☐
Recommendations	Members are asked to note: • the progress against the tier 1 infections; • the collaborative process between the PCT service group and IP&C team to review care homes cases; • the rapid improvement expectations for Morriston Hospital over an eight week period.			

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 August 2022	**Report prepared on**	07/09/2022

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 August 2022.

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

Infection	Cumulative Cases to end of August 2022	Monthly total: August 2022	Average monthly reduction goal (max.)
C. difficile (CDI)	**78**	**22**	<8 (annual maximum: <95 cases)
***Staph. aureus* bacteraemia (SABSI)**	**64**	**12**	<6 (annual maximum: <71 cases)
***E. coli* bacteraemia (EcBSI)**	**122**	**32**	<21 (annual maximum: <251 cases)
***Klebsiella spp.* bacteraemia (Kl BSI)**	**41**	**8**	<6 (annual maximum: <71 cases)
Ps. aeruginosa bacteraemia (PAERBSI)	**15**	**3**	<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 August 2022

	CDI	SABSI	EcBSI	KlBSI	PAERBSI
PCTSG - CAI	6 (27)	6 (30)	21 (82)	4 (16)	0 (5)
PCTSG - HAI	0 (1)	0 (0)	0 (1)	0 (0)	0 (0)
MH&LD – HAI	0 (0)	0 (0)	0 (1)	0 (0)	0 (0)
MORR – HAI	9 (34)	4 (23)	6 (24)	3 (16)	2 (8)
NPTH - HAI	1 (2)	1 (2)	1 (1)	0 (1)	0 (0)
SH - HAI	6 (14)	1 (9)	4 (13)	1 (8)	1 (2)

Progress against Infection Prevention Improvement Plan to 31.08.22

- To the end of August 2022, the Health Board had not achieved the reduction in infection in line with the proposed trajectories. However, to the end of August 2022, there had been year-on-year 13% reduction in the number of cases of *C. difficile*, and a 21% reduction in the number of *E. coli* bacteraemia cases. Of concern is the continued increase of *Staph. aureus* bacteraemia cases (10% increase year-on-year).
- Cases of *C. difficile* infection and *Staph. aureus* bacteraemia are significantly higher in Morriston than in the other acute hospitals, accounting for 67%, 68% and 60% respectively of all hospital attributed *cases of C. difficile*, *Staph. aureus* bacteraemia and *E. coli* bacteraemia. This may reflect the patient mix and acuity in Morriston in particular.
- The year-on-year comparison (April – August) 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	13%↓	10%↑	18%↓	11%↑	67%↑
Morriston Hospital	6%↓	77%↑	4%↑	33%↑	5 cases ↑
Singleton Hospital	42%↓	44%↓	Equal to	60%↑	1 case ↑
Neath Port Talbot Hospital	50%↓	2 cases ↑	91%↓	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	8%↑	3%↑	18%↓	16%↓	Equal to

Service Group Improvement Progress

Acute Care Service Groups

- **Morriston Hospital Rapid Improvement Programme**
- Plan Do Study Act improvement methodologies include:
  - Collection of baseline data on invasive device prevalence, prevalence of redundant invasive devices, compliance with invasive device insertion and maintenance bundles, and compliance with IPC-related mandatory training.
  - A refresh of the previous 'Bug Stop' Invasive Device Point Prevalence reviews, with agreement on the measurement tool to be used, which would include the prevalence of redundant invasive devices (the devices to be reviewed included peripheral vascular devices and urinary catheters);
  - Improved compliance with insertion and maintenance bundles for peripheral vascular devices and urinary catheters (identified as having variable compliance by the Service Group Medical Director during rapid reviews of bacteraemia cases);
  - A drive by clinical staff to increase compliance with hand hygiene training, level 2 mandatory IP&C training, and mandatory ANTT training for all rostered clinical staff, with ANTT competence assessment for all rostered clinical staff (excluding from the denominator those on long-term and maternity leave);
- The rapid improvement programme at Morriston commenced at a time when a number of senior Service Group leads were on summer leave. This has impacted on the pace of the programme. This has been recognised and the Service Group is in a phase of *refocus and sharpen* of the improvement programme during September and into October.

- **Neath Port Talbot and Singleton Hospitals (NPTH&SH) Service Group**
- Results for *C. difficile* in August 2020 identified that there had been a significant increase in cases associated with three wards in Singleton Hospital.
- **Expectation for NPTH&SH Service Group**: These cases will be reviewed by the Service Group Clinical Directors who will provide an update to Executive colleagues on the rapid reviews undertaken, identifying what has been learned from those reviews and what actions are to being taken to prevent further infections.

Primary Care, Community & Therapies Group

- Cases of community-acquired *C. difficile* has an 8% increase year-on-year, whilst the number of *Staph. aureus* bacteraemia cases has remained unchanged compared with the same five-month period of 2021/22.
- IP&C and Primary Care, Community and Therapies have commenced collaborative visits to care & residential homes with new cases of *C. difficile***.**
- **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

With one further month until the end of Quarter 2, there has been progress in relation to the following areas:

- Peripheral Vascular Devices and Urinary Catheter prevalence – using a Plan Do Study Act improvement methodology on wards with higher frequency of bacteraemia cases, an improvement tool has been developed which records the prevalence of invasive devices. This tool has been used to undertake the baseline prevalence of devices, but more specifically the prevalence of redundant devices. The target outcome on these wards is for there to be an initial improvement to ≤5% prevalence of redundant devices, with further progress to a zero rate of redundant devices. Through prompt review and removal of unnecessary devices, the number of days a device is in situ is reduced, which then reduces associated infection risks.
- ANTT training and competence assessment – there is focussed activity on wards with higher frequency of bacteraemia cases to increase the proportion of clinical staff who are trained and competence assessed. This work is being driven by Ward Managers and Matrons for nursing staff and Clinical Directors will lead of this area of improvement for medical staff.
- The Digital Dashboard for improving information on infections is now progressing at pace. Weekly progress meetings are in place to ensure that a first stage draft iteration is available for review and testing by the end of Quarter 3.
- The secondment to an IPC Improvement Programme Lead for Morriston Hospital Service Group has been appointed into but a start date has not been confirmed at the time of preparing this paper.

Challenges, Risks and Mitigation

- 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, 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.

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

Action: Work on the Digital Dashboard is progressing, with current work focussed on the application of infection onset criteria, which should be ready to test by the end of September. **Target completion date**: 30.09.22 and updated monthly thereafter. **Lead:** Head of Nursing IP&C and Corporate Digital Intelligence Partner.

Financial Implications

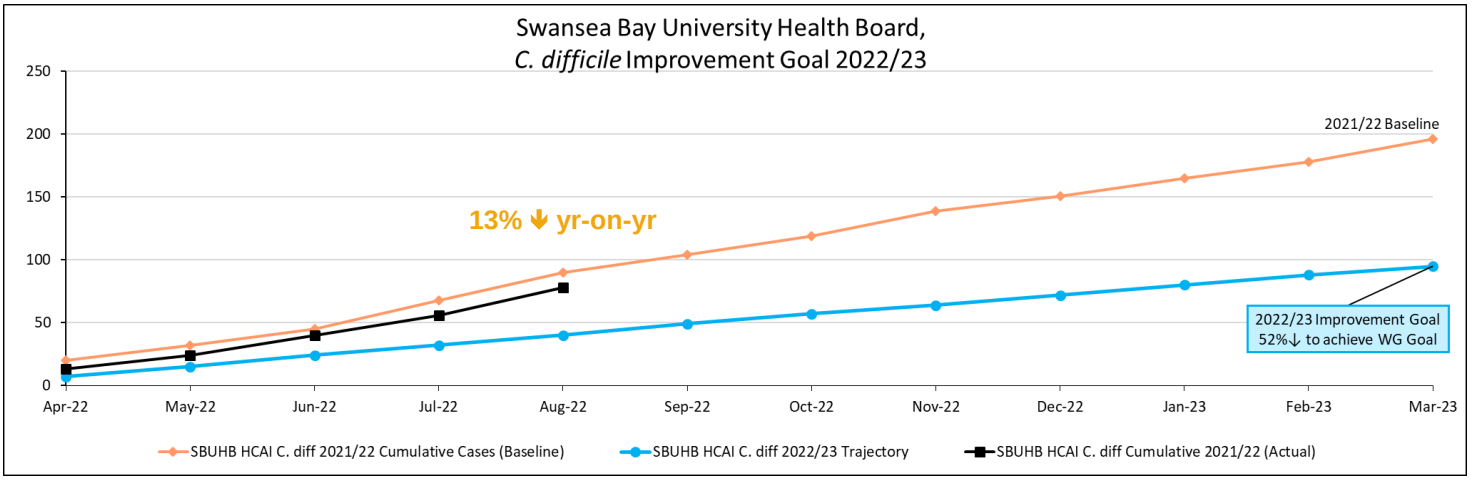
A Department of Health impact assessment report (IA No. 5014, 20/12/2010) stated that the best estimate of costs to the NHS associated with a case of *Clostridioides difficile* infection is approximately **£10,000**. The estimated cost to the NHS of treating an individual cost of MRSA bacteraemia is **£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 August 2022 is as follows: *C. difficile* - £780,000; *Staph. aureus* bacteraemia - £448,000; *E. coli* bacteraemia - £138,700; therefore, a total cost of **£1,366,700**.

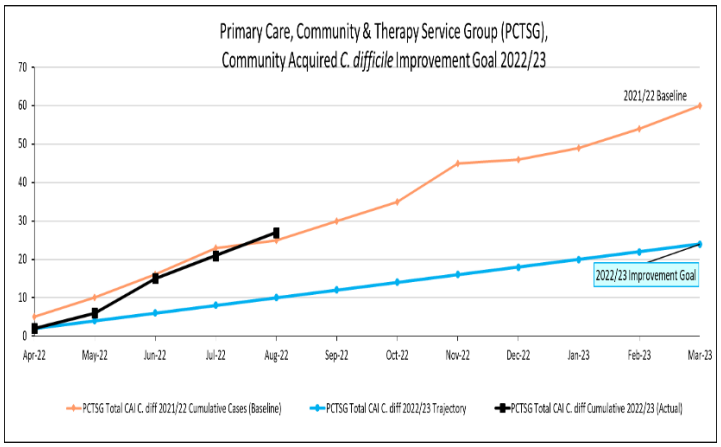
Recommendations

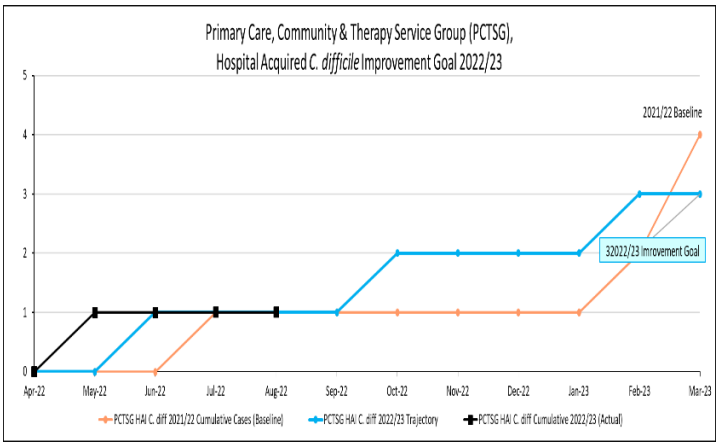
Members are asked to note:

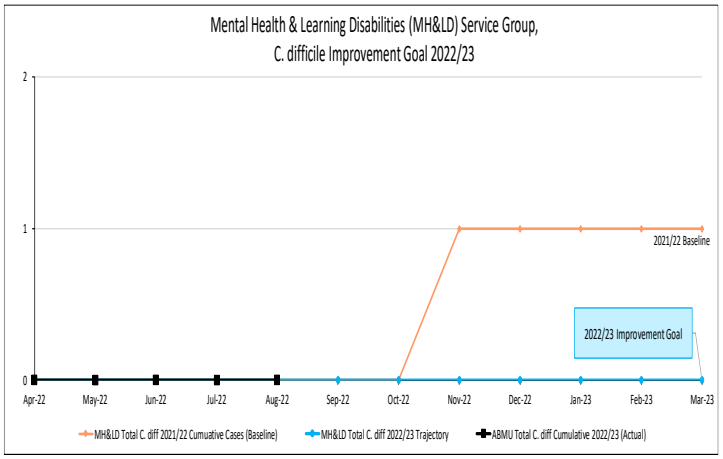
- the progress against the tier 1 infections;
- the initial progress in relation to Morriston's rapid improvement programme;
- the progress in relation to the Health Board Infection Prevention Improvement Plan to 30.08.22.

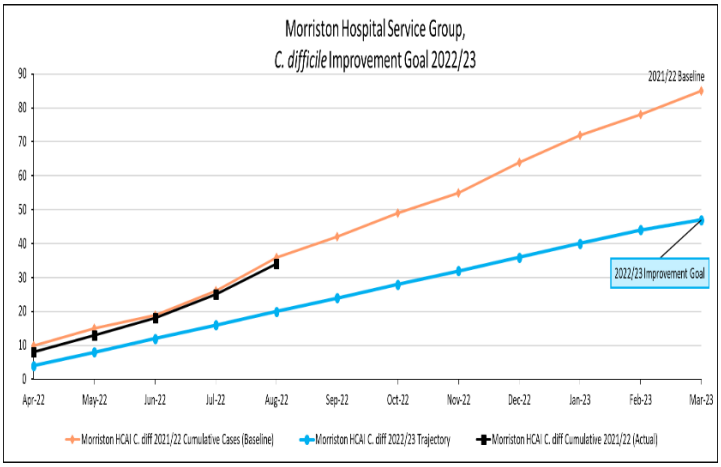
C. difficile

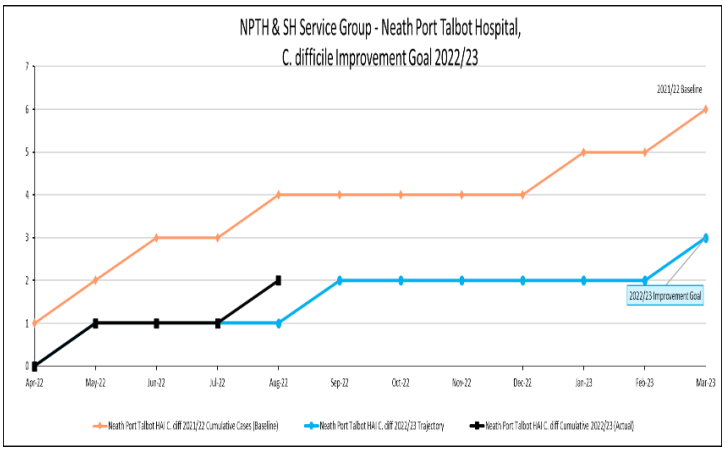

Swansea Bay University Health Board,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
13% ↓ yr-on-yr
2022/23 Improvement Goal
52%↓ to achieve WG Goal
SBUHB HCAI C. diff 2021/22 Cumulative Cases (Baseline)
SBUHB HCAI C. diff 2022/23 Trajectory
SBUHB HCAI C. diff Cumulative 2021/22 (Actual)

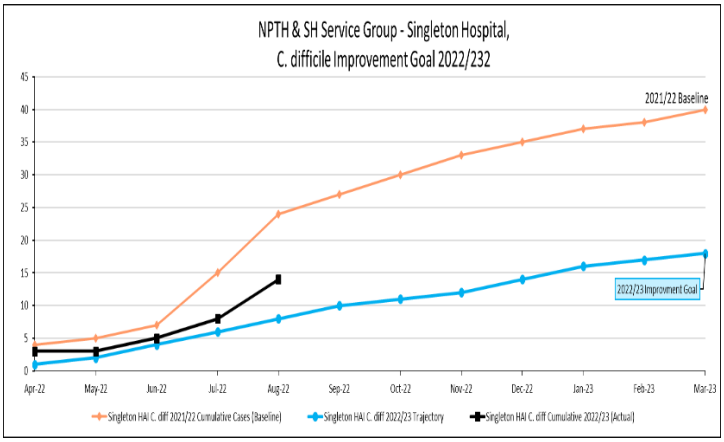

Primary Care, Community & Therapy Service Group (PCTSG),
Community Acquired C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal
PCTSG Total CAI C. diff 2021/22 Cumulative Cases (Baseline)
PCTSG Total CAI C. diff 2022/23 Trajectory
PCTSG Total CAI C. diff Cumulative 2022/23 (Actual)


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

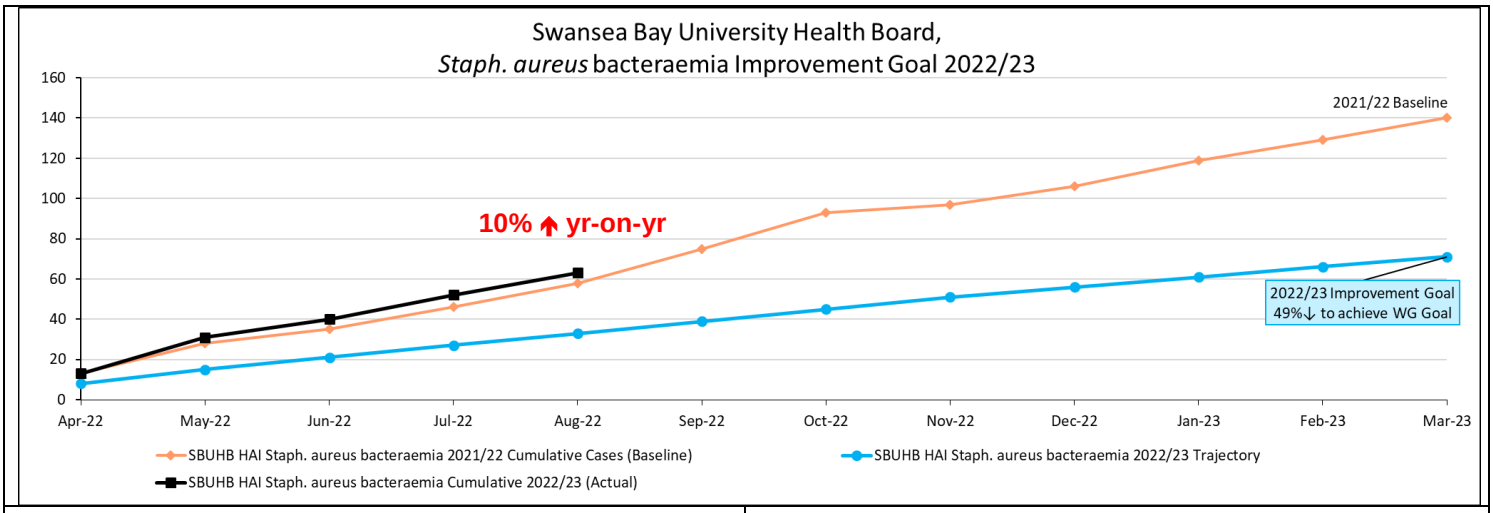

Mental Health & Learning Disabilities (MH&LD) Service Group,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal
MH&LD Total C. diff 2021/22 Cumulative Cases (Baseline)
MH&LD Total C. diff 2022/23 Trajectory
ABMU Total C. diff Cumulative 2022/23 (Actual)

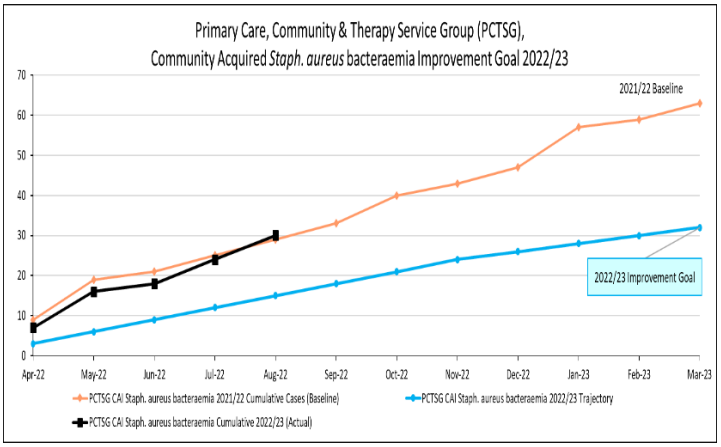

Morriston Hospital Service Group,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal
Morriston HCAI C. diff 2021/22 Cumulative Cases (Baseline)
Morriston HCAI C. diff 2022/23 Trajectory
Morriston HCAI C. diff Cumulative 2021/22 (Actual)

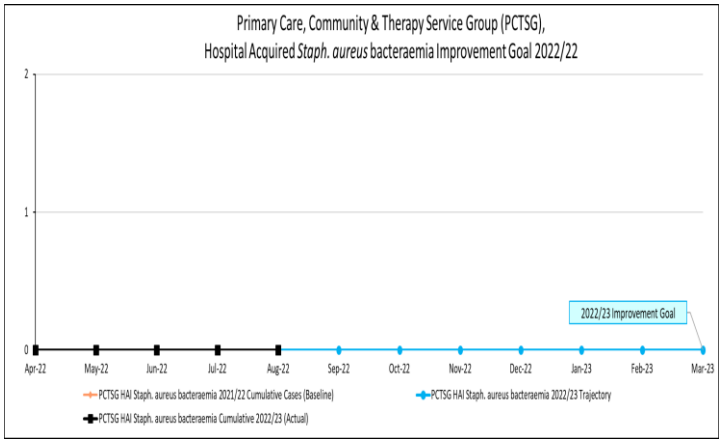

NPTH & SH Service Group - Neath Port Talbot Hospital,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal
Neath Port Talbot HAI C. diff 2021/22 Cumulative Cases (Baseline)
Neath Port Talbot HAI C. diff 2022/23 Trajectory
Neath Port Talbot HAI C. diff Cumulative 2022/23 (Actual)

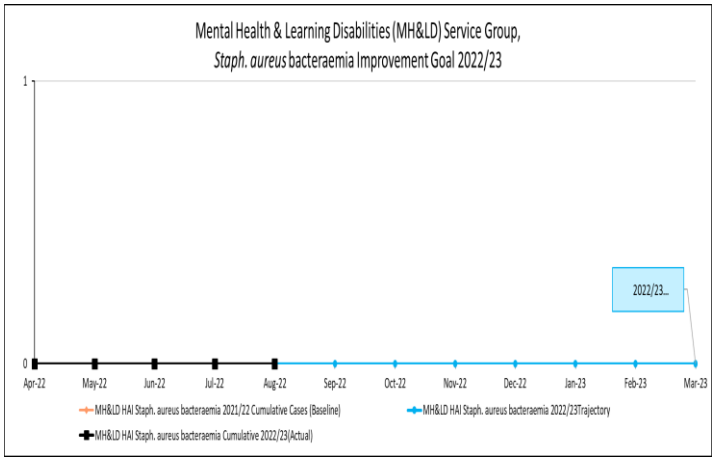

NPTH & SH Service Group - Singleton Hospital,
C. difficile Improvement Goal 2022/232
2021/22 Baseline
2022/23 Improvement Goal
Singleton HAI C. diff 2021/22 Cumulative Cases (Baseline)
Singleton HAI C. diff 2022/23 Trajectory
Singleton HAI C. diff Cumulative 2022/23 (Actual)

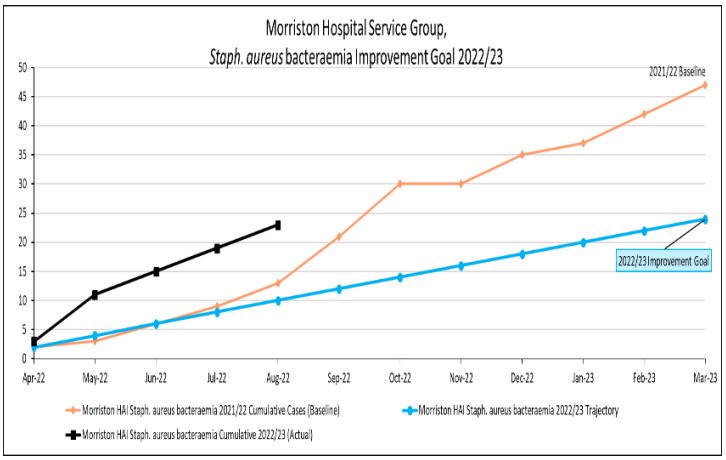
***Staph. aureus* bacteraemia**

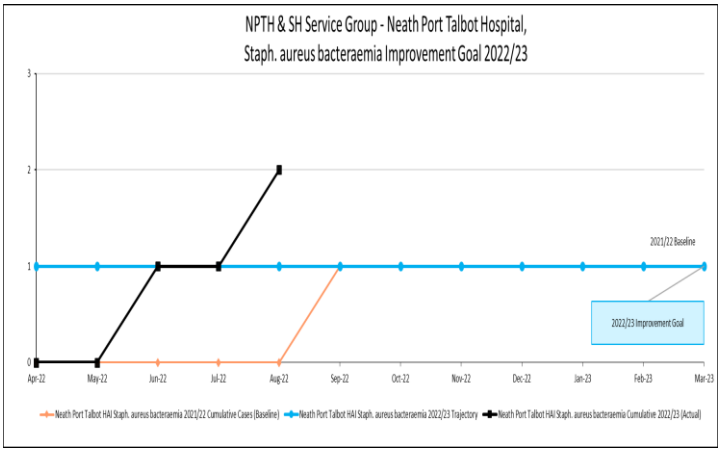


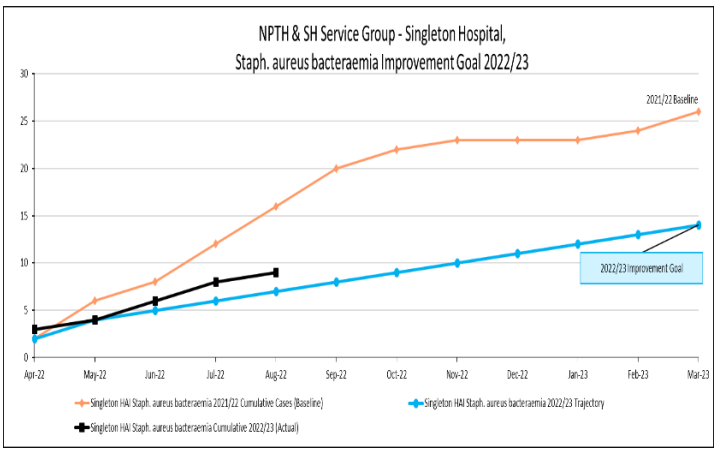




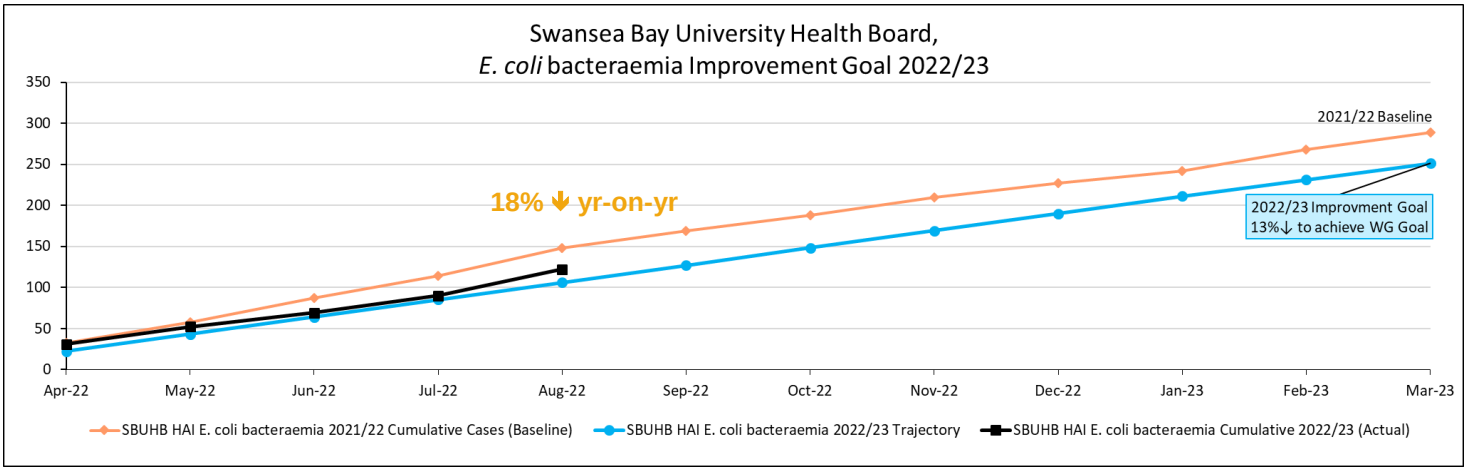


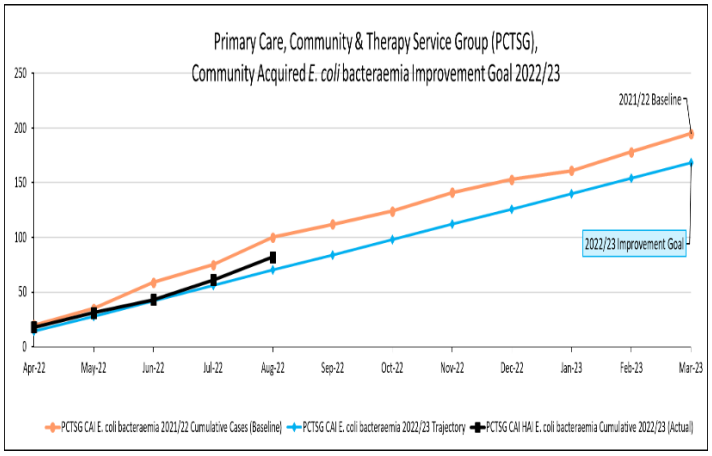


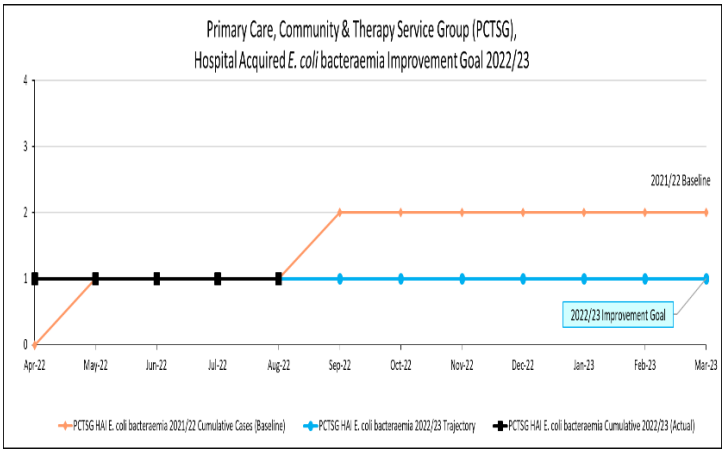


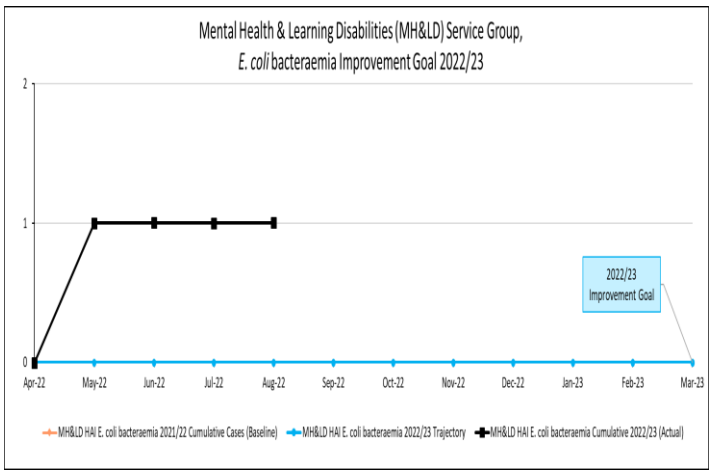


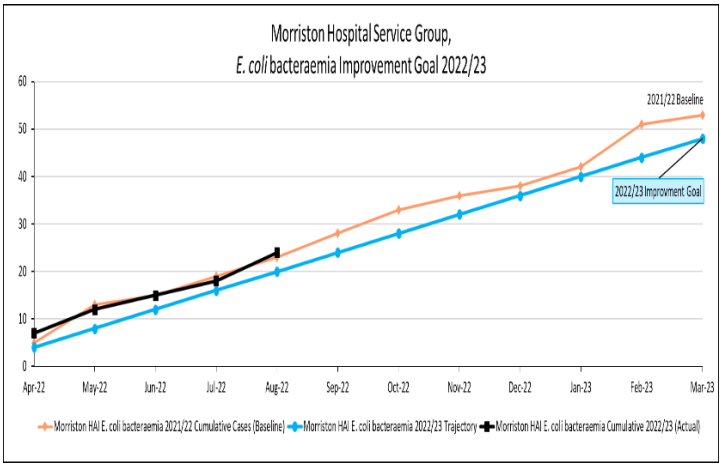
E. coli bacteraemia

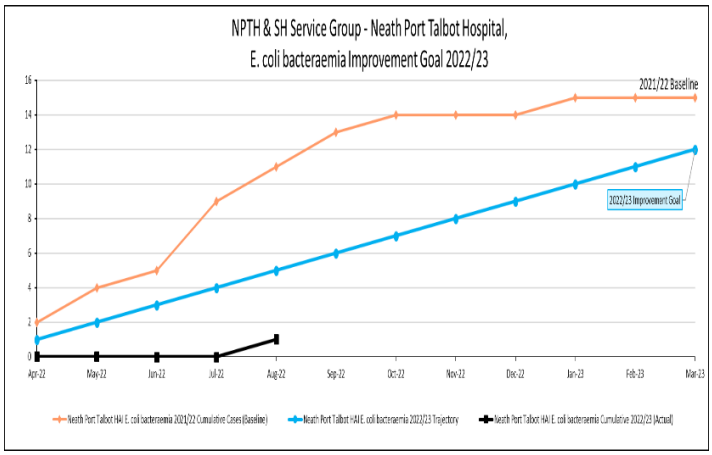


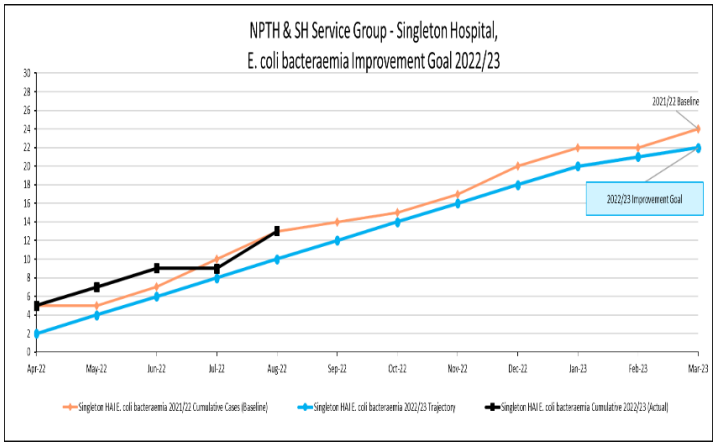




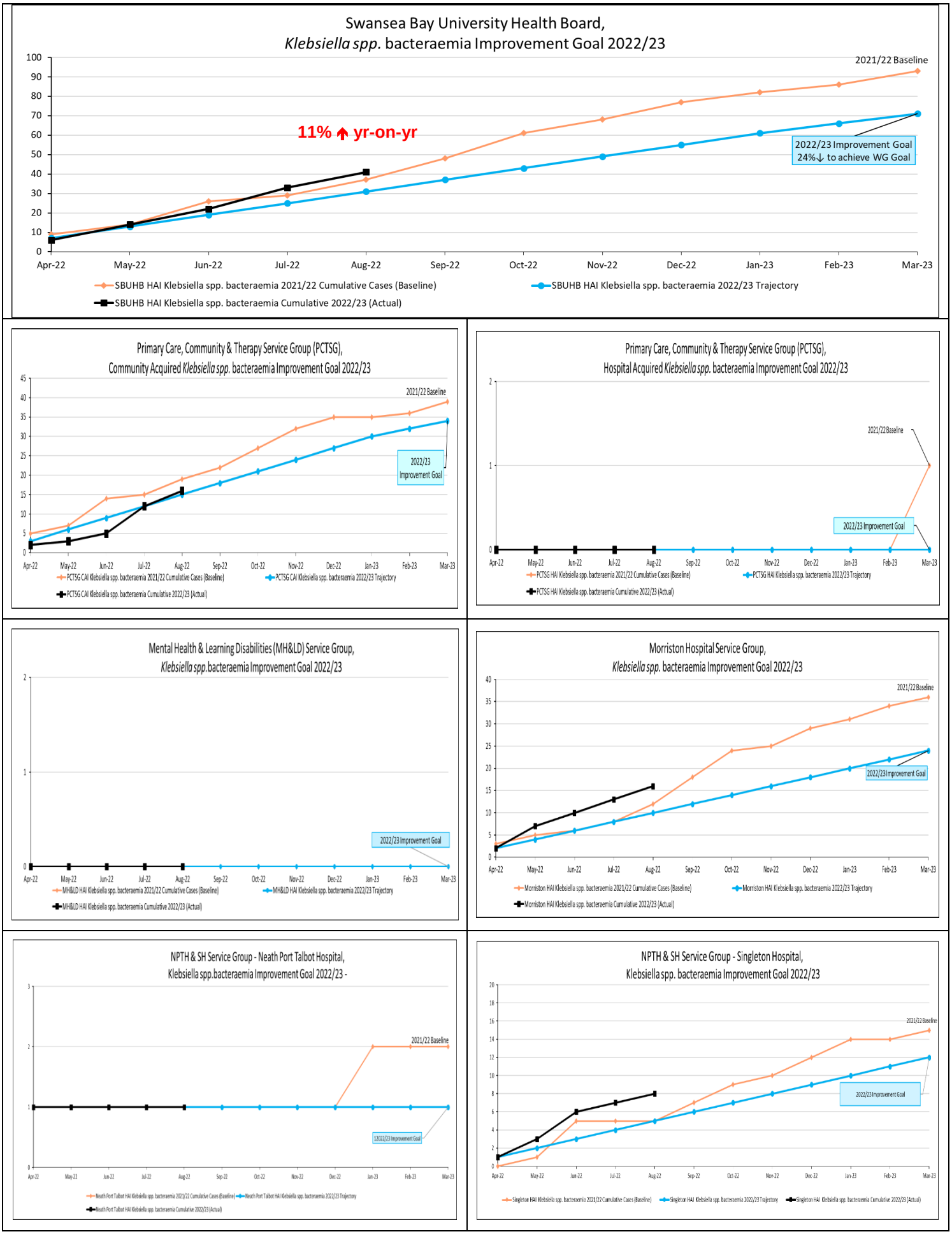








***Klebsiella spp.* bacteraemia**



***Pseudomonas aeruginosa* bacteraemia**