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| **Meeting Date** | **23 August 2022** | **Agenda Item** | **4.1** |
| **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* (18%) and *E. coli* bacteraemia (21%).<br>• Continued increase in *Staph. aureus* bacteraemia is concerning, with Morriston Service Group cases accounting for much of the increase.<br>• Primary Care, Community and Therapies (PCTG) and the Infection Prevention & Control team have agreed a collaborative process to improve scrutiny of cases of infection.<br>• Analysis of hospital attributed cases has been undertaken to direct rapid improvement efforts where they can have the biggest impact.<br>• Expectations have been clarified for **Morriston Hospital Service Group** to undertake an eight-week IPC rapid improvement programme. | | |
| **Specific Action Required** | **Information** | **Discussion** | **Assurance** | **Approval** |
| | ☐ | ☐ | ☒ | ☐ |
| **Recommendations** | Members are asked to note:<br>• the progress against the tier 1 infections;<br>• the collaborative process between the PCT service group and IP&C team to review care homes cases;<br>• the rapid improvement expectations for Morriston Hospital over an eight week period. | | | |

# Infection Prevention and Control Report

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| | | **Agenda Item** | 4.1 |
| **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**<br>**Executive Director of Nursing & Patient Experience** | | |
| **Reporting Period** | 31 July 2022 | **Report prepared on** | 8 August 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 July 2022.

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

| Infection | Cumulative Cases to end of July 2022 | Monthly total: July 2022 | Average monthly reduction goal (max.) |
|---|---|---|---|
| ***C. difficile (CDI)*** | **56** | **16** | <8 (annual maximum: <95 cases) |
| ***Staph. aureus* bacteraemia (SABSI)** | **52** | **12** | <6 (annual maximum: <71 cases) |
| ***E. coli* bacteraemia (EcBSI)** | **90** | **21** | <21 (annual maximum: <251 cases) |
| ***Klebsiella spp.* bacteraemia (KlBSI)** | **33** | **11** | <6 (annual maximum: <71 cases) |
| **Ps. aeruginosa bacteraemia (PAERBSI)** | **12** | **4** | <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 July 2022**

| | CDI | SABSI | EcBSI | KlBSI | PAERBSI |
|---|---|---|---|---|---|
| **PCTSG - CAI** | 6 (21) | 6 (24) | 18 (61) | 7 (12) | 2 (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** | 7 (25) | 4 (19) | 3 (18) | 3 (13) | 1 (6) |
| **NPTH - HAI** | 0 (1) | 0 (1) | 0 (0) | 0 (1) | 0 (0) |
| **SH - HAI** | 3 (8) | 2 (8) | 0 (9) | 1 (7) | 1 (1) |

**Progress against Infection Prevention Improvement Plan to 31.07.22**

- To the end of July 2022, the Health Board had not achieved the reduction in infection in line with the proposed trajectories. However, to the end of July 2022, there had been year-on-year 18% 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 *Staph. aureus* bacteraemia cases (13% 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 71% and 68% respectively of all hospital attributed *cases of C. difficile* and *Staph. aureus* bacteraemia.

Service Group Targeted Rapid Improvement

- **Primary Care, Community and Therapies Service Group** have reviewed processes of scrutiny of cases.
- Analysis of community acquired cases of *C. difficile* have been broken down by GP Practice. Processes for Significant Event Analysis are being refreshed. Additional IP&C resource will be re-directed from the secondary care resource and will provide support to PCTG in the scrutiny process.
- PCTG has agreed a collaborative process with the IP&C Team for review of cases identified in care home settings. Resource will be re-directed from the secondary care IP&C team to facilitate shared visits (IP&C Nurse and Care Home Nurse Assessor) when a cases of *C. difficile* is identified in a care home. The focus of these visits will be to provide support and training to improve management of cases.
- **Acute Care Service Groups**
- Analysis has been undertaken of Tier 1 infection cases, in particular those infections associated with inpatient episodes over the last 12 months. Using Pareto charts, it has been possible to show the frequency of cases by ward/unit. The Pareto charts have been circulated to acute Service Groups to direct rapid improvement efforts where they can have the biggest impact.
- The table below shows the summary of wards in Morriston Hospital Service Group and Neath Port Talbot and Singleton Hospitals Service Group to direct the focus of rapid improvement.

| | • **Tier 1 Infections – high frequency wards/units** |
|---|---|
| • *C. difficile* | • **Morriston**: ITU, Ward C, Ward S, Ward D, RAU, Ward T<br>• **NPTH&SH**: Ward 12 |
| • *Staph. aureus* BSI | • **Morriston**: Liz Baker RDU, Cyril Evans, West RDU, Powys, ITU, Ward V, Cardigan Ward<br>• **NPTH&SH**: SCBU, Ward 6 |
| • *E. coli* BSI | • **Morriston**: SDMU, Ward V, Ward A, Ward W<br>• **NPTH&SH**: SAU |
| • *Klebsiella spp.* BSI | • **Morriston**: Cardigan Ward, Ward J<br>• **NPTH&SH**: SCBU, Ward 3 |
| • *Ps. aeruginosa* BSI | • **Morriston**: ITU, Dyfed Ward, Ward S |

- Executive IP&C visits are scheduled for acute hospitals, and will include the wards identified for rapid improvement. The first of these visits took place on 05 August at Morriston Hospital, and included Morriston's Interim Director of Nursing, Executive Nurse and Medical Directors, and Head of Nursing IP&C. These visits will continue and will provide opportunities to discuss challenges, local plans for improvement, and identify where further support is required.
- In addition, expectations have been clarified for **Morriston Hospital Service Group** to undertake an eight-week IPC rapid improvement programme to focus specifically on:
  - A review of governance arrangements to ensure that between service unit level, divisional level and director level, the scheme of delegation operates practically and the arrangements for the planning, identification and management of actions associated with infection prevention and control are robust.
  - Explicit identification and confirmation of the roles and responsibilities of staff in the delivery of their responsibilities at each level, from ward to service group, and that these are understood and acted on.
  - SDG to concentrate rapid improvement initiatives on the wards/units of highest incidence, identified in the table above, and ensure rapid clinical review establishes the root causes of infection, and confirms the actions to be taken by local clinical teams to address these.
  - Development of local multi-disciplinary improvement plans, which include the utilisation of PDSA cycles that would run rapidly over the next 1 to 8 weeks. These PDSA cycles must implement evidence-based practice.
  - Implement (with support from the IPC Team) the immediate introduction of decolonisation on all patients within the areas of highest incidence.
  - Ensure a conversation occurs across therapy, nursing and medical leads around the culture expected on this agenda. This needs to be based on robust implementation of the evidence-based practice, rigorous oversight/monitoring and rapid learning. Change is dependent on leaders at all levels ensuring that we all exercise our responsibilities to ensure the safe, appropriate and evidenced based care is delivered.
- Neath Port Talbot and Singleton Hospitals Service Group also will focus on the higher frequency wards, whilst recognising that there has been initial progress in relation to *C. difficile* infection and *Staph. aureus* bacteraemia.

**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:** Pareto chart analysis of frequency of Tier 1 infection cases by ward/unit. **Target completion date**: 29.07.22 and updated monthly thereafter. **Lead:** Head of Nursing IP&C.

**Action:** IP&C and Primary Care, Community and Therapies to undertake collaborative visits to care & residential homes with new cases of *C. difficile*. **Target commencement date**: 08.08.22. **Lead:** Head of Nursing, IP&C and Head of Nursing for Primary Care.

**Financial Implications**

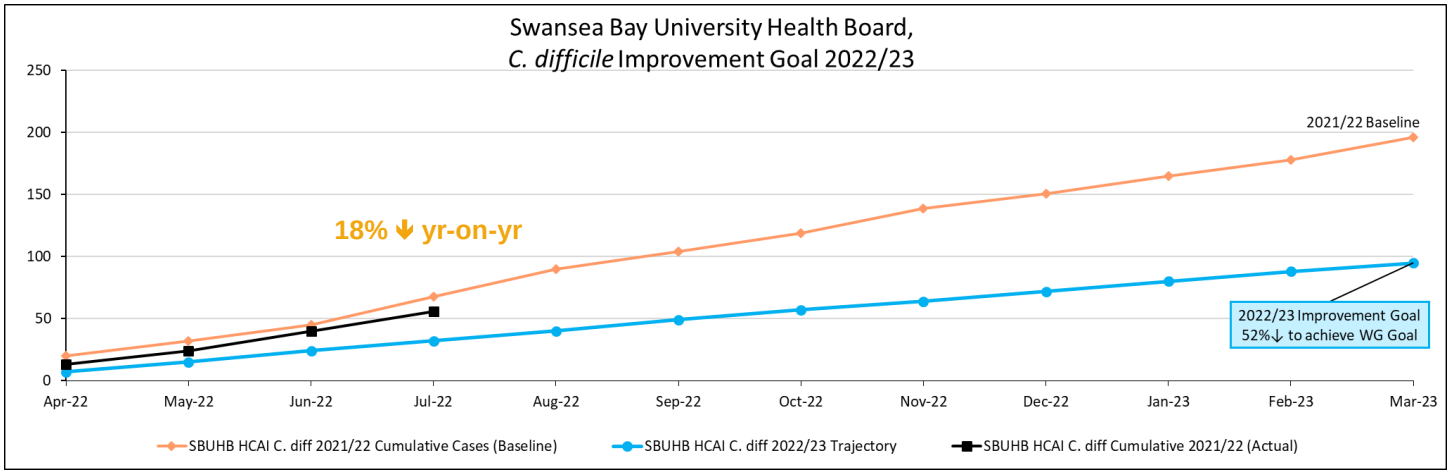
A Department of Health impact assessment report (IA No. 5014, 20/12/2010) stated that the best estimate of costs to the NHS associated with a case of *Clostridioides difficile* infection is approximately **£10,000**. The estimated cost to the NHS of treating an individual cost of MRSA bacteraemia is **£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 July 2022 is as follows: *C. difficile* - £560,000; *Staph. aureus* bacteraemia - £364,000; *E. coli* bacteraemia - £102,900; therefore, a total cost of **£1,026,900**.

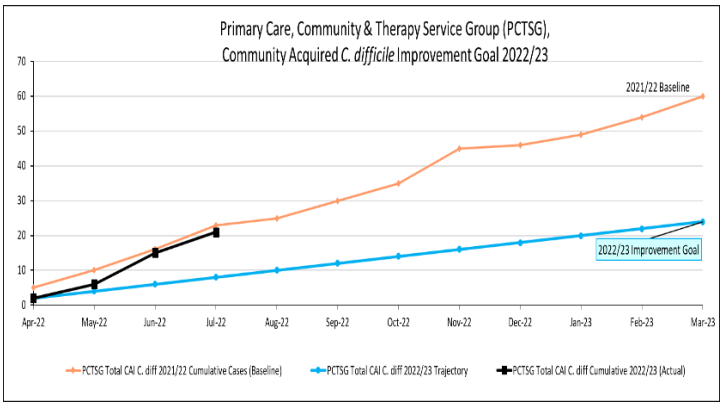
**Recommendations**

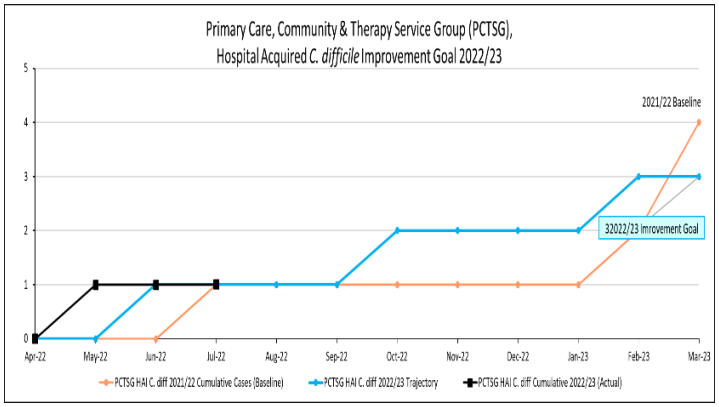
Members are asked to note:

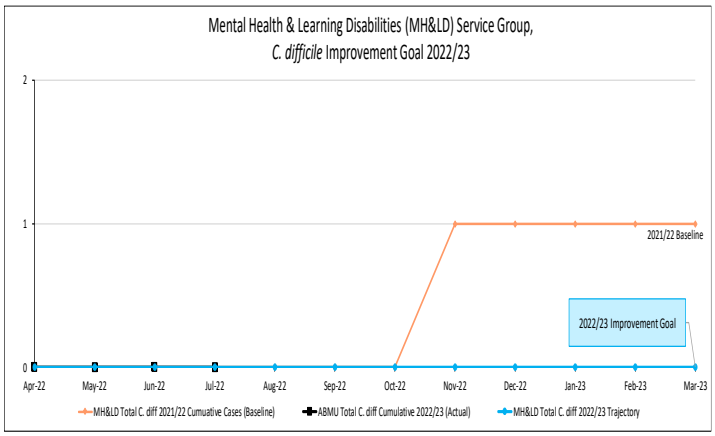
- the progress against the tier 1 infections;
- the collaborative process between the PCT service group and IP&C team to review care homes cases;
- the rapid improvement expectations for Morriston Hospital over an eight week period.

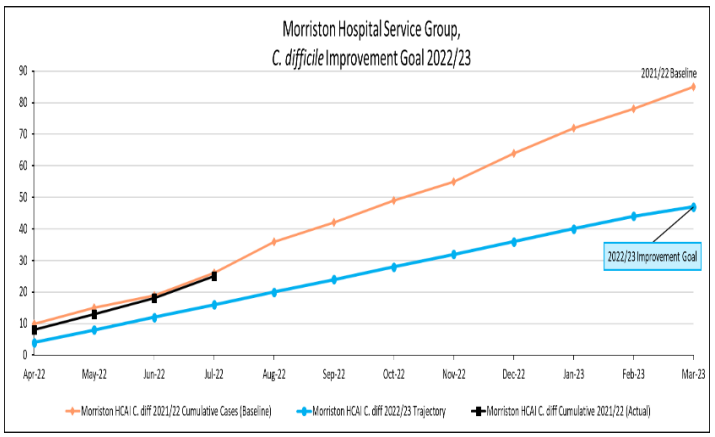
## *C. difficile*

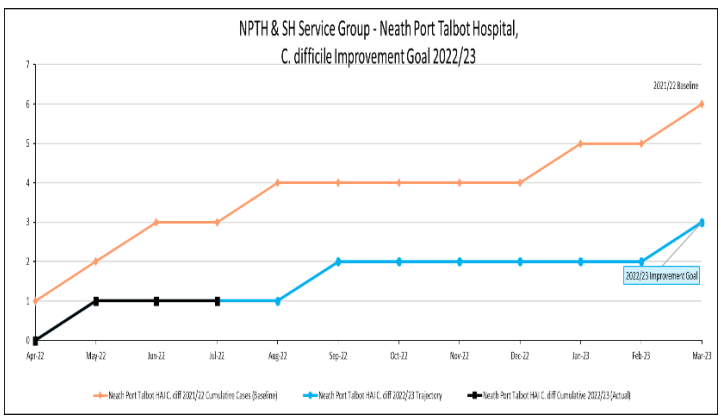

Swansea Bay University Health Board,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
18% ↓ yr-on-yr
2022/23 Improvement Goal
52%↓ to achieve WG Goal
SBUHB HCAI C. diff 2021/22 Cumulative Cases (Baseline)
SBUHB HCAI C. diff 2022/23 Trajectory
SBUHB HCAI C. diff Cumulative 2021/22 (Actual)

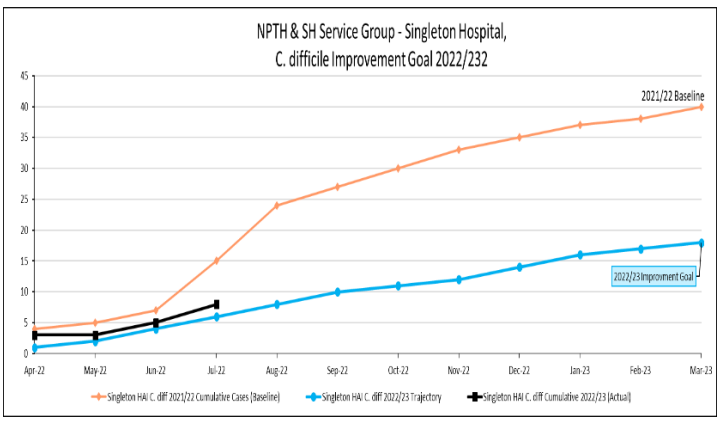

Primary Care, Community & Therapy Service Group (PCTSG),
Community Acquired C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal
PCTSG Total CAI C. diff 2021/22 Cumulative Cases (Baseline)
PCTSG Total CAI C. diff 2022/23 Trajectory
PCTSG Total CAI C. diff Cumulative 2022/23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

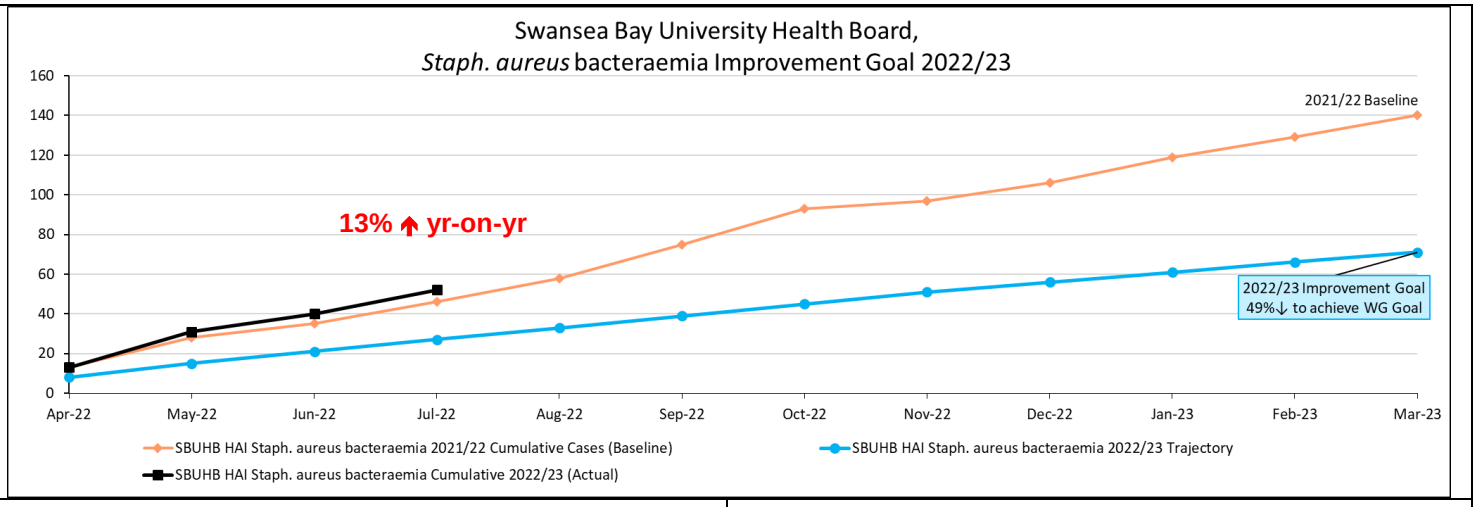

Mental Health & Learning Disabilities (MH&LD) Service Group,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal
MH&LD Total C. diff 2021/22 Cumuative Cases (Baseline)
ABMU Total C. diff Cumulative 2022/23 (Actual)
MH&LD Total C. diff 2022/23 Trajectory

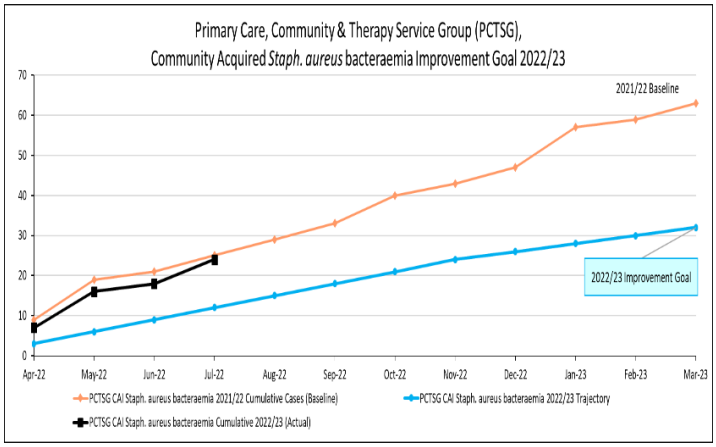

Morriston Hospital Service Group,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal
Morriston HCAI C. diff 2021/22 Cumulative Cases (Baseline)
Morriston HCAI C. diff 2022/23 Trajectory
Morriston HCAI C. diff Cumulative 2021/22 (Actual)

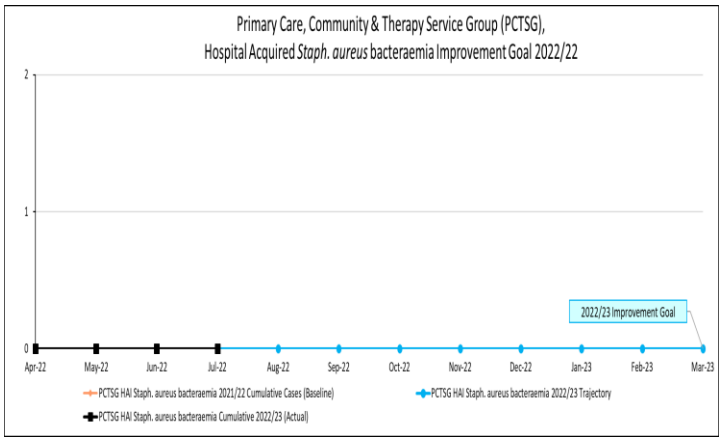

NPTH & SH Service Group - Neath Port Talbot Hospital,
C. difficile Improvement Goal 2022/23
2021/22 Baseline
2022/23 Improvement Goal

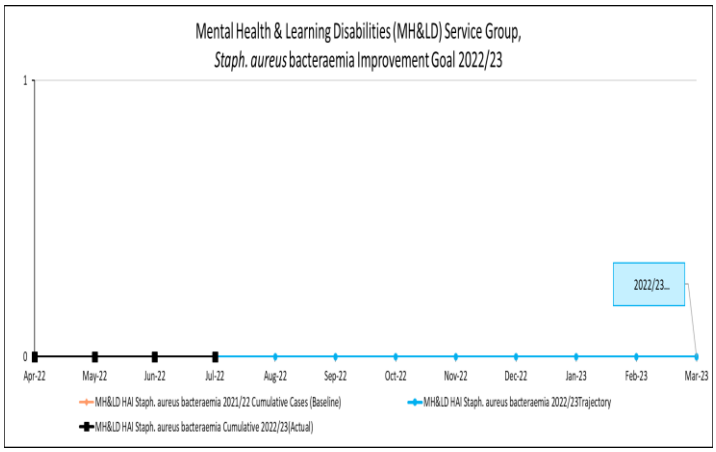

NPTH & SH Service Group - Singleton Hospital,
C. difficile Improvement Goal 2022/232
2021/22 Baseline
2022/23 Improvement Goal
Singleton HAI C. diff 2021/22 Cumulative Cases (Baseline)
Singleton HAI C. diff 2022/23 Trajectory
Singleton HAI C. diff Cumulative 2022/23 (Actual)

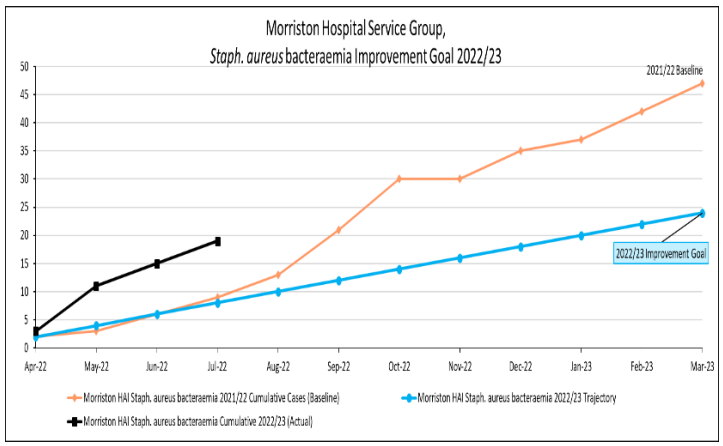
## ***Staph. aureus* bacteraemia**

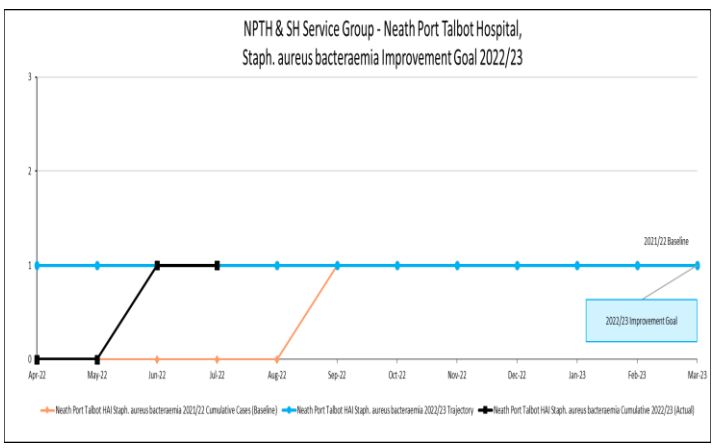


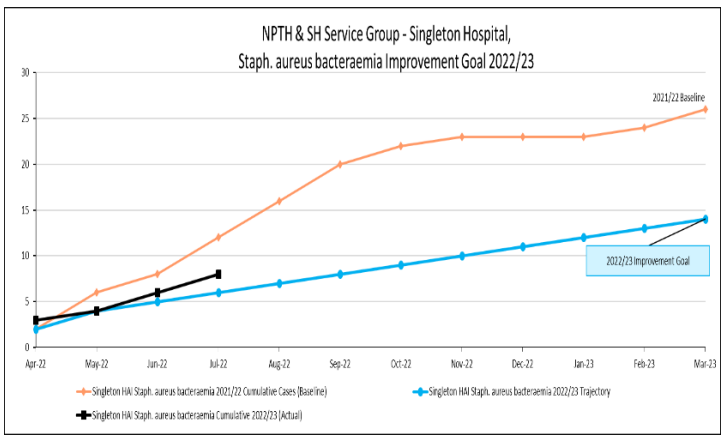



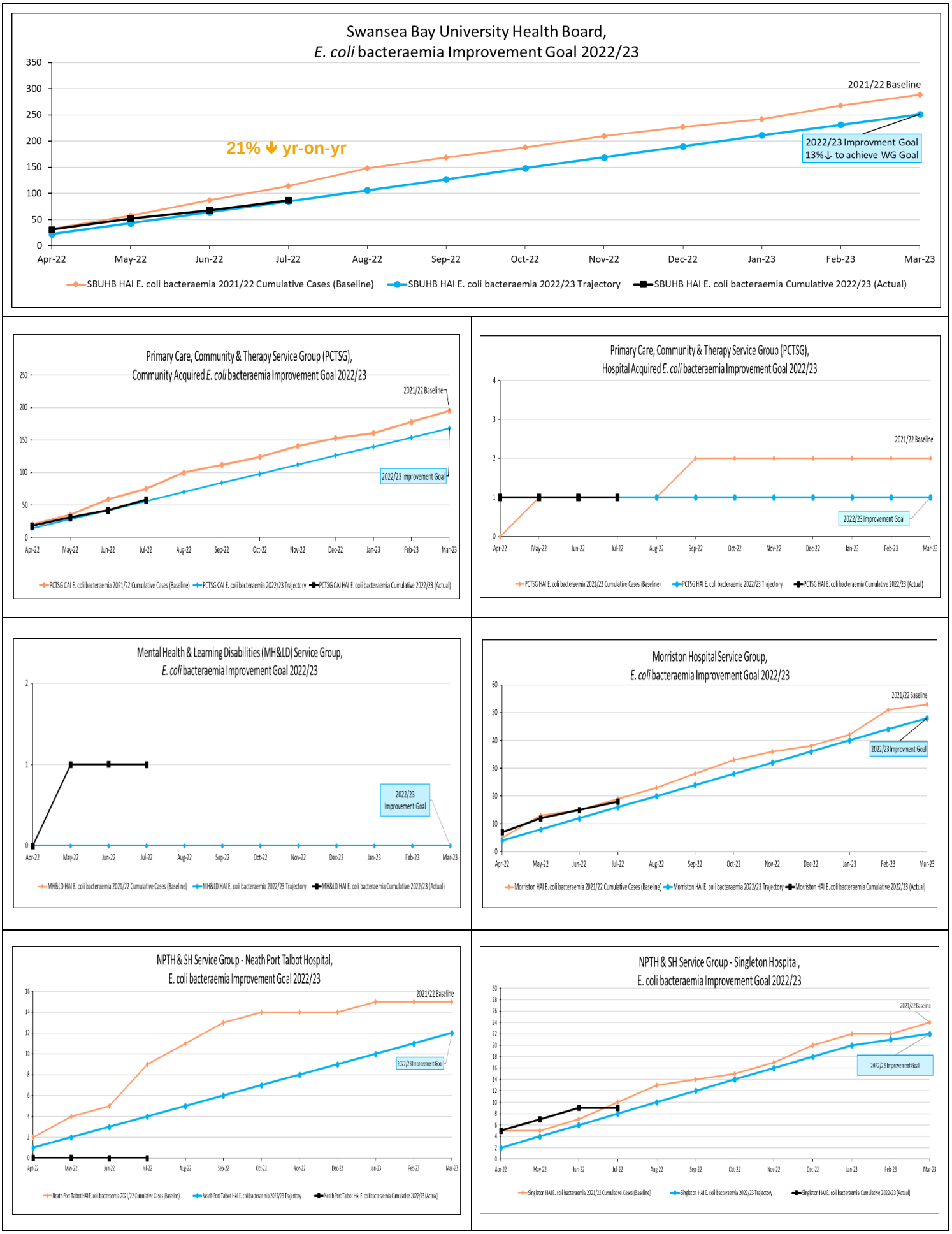



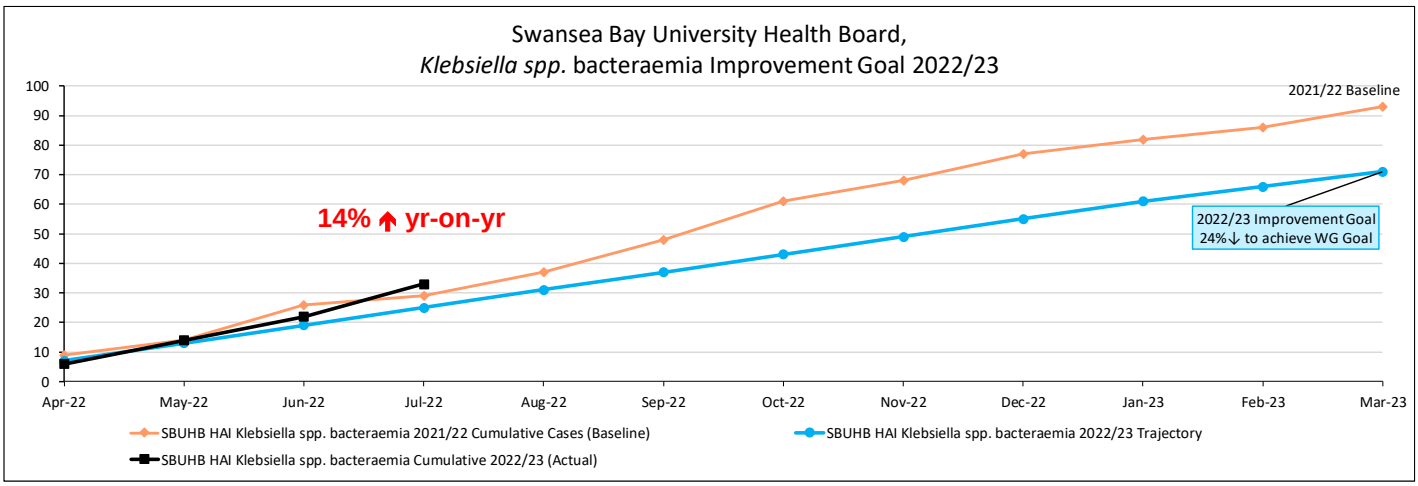



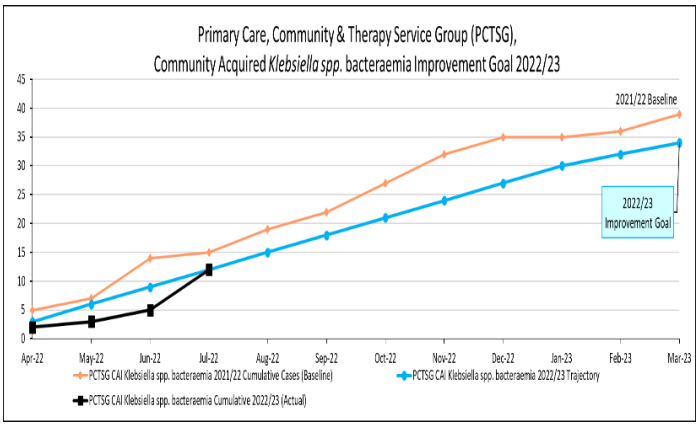



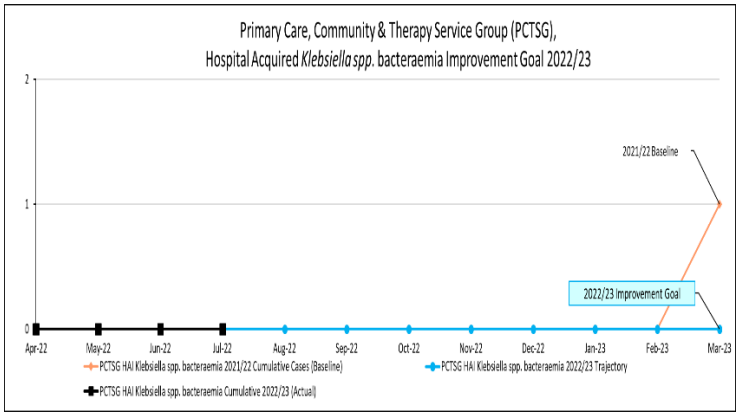
## *E. coli* bacteraemia

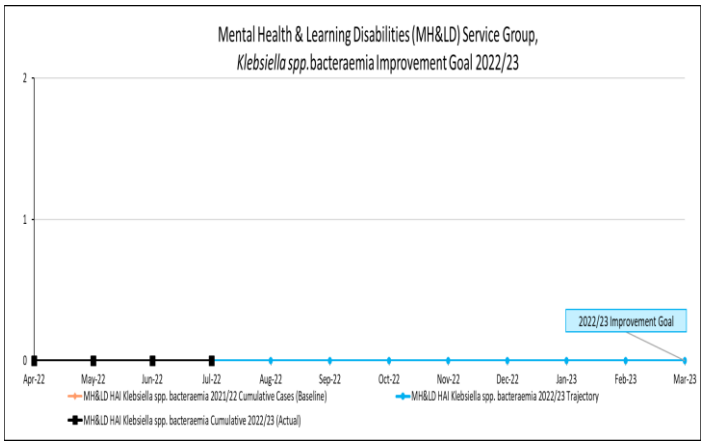


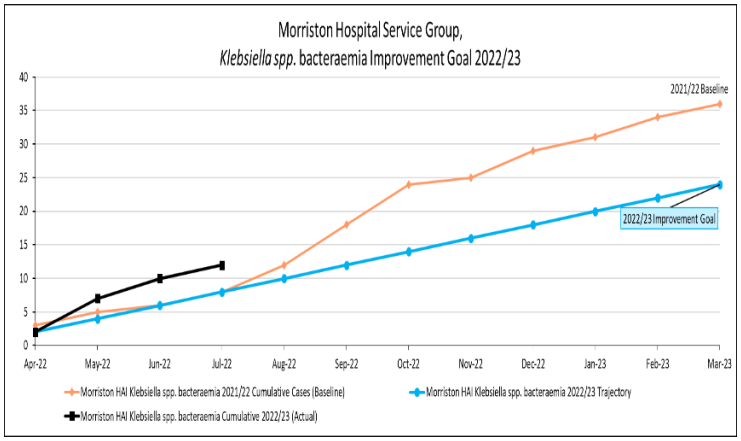
## ***Klebsiella spp.* bacteraemia**

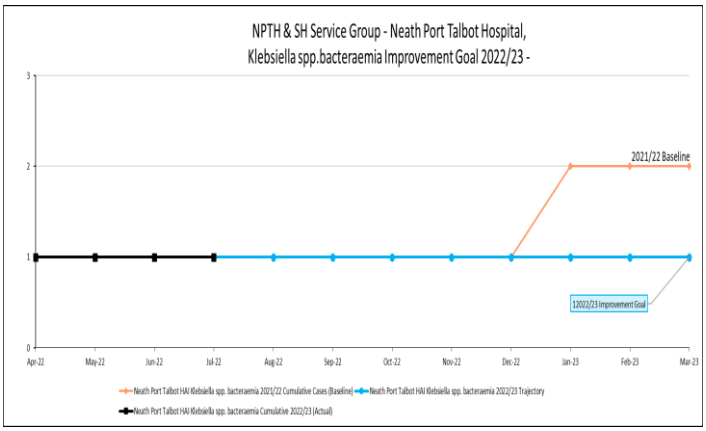


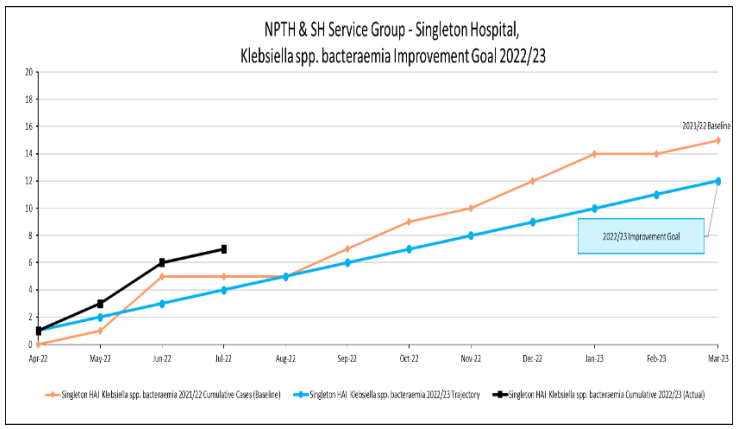



## ***Pseudomonas aeruginosa* bacteraemia**