

An Evaluation of Parenteral Nutrition Catheter-Related Bloodstream Infections: Trends from February 2023 to September 2024



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Introduction

Parenteral nutrition (PN) is an essential therapeutic intervention for patients unable to meet nutritional requirements via oral or enteral routes. PN catheter-related bloodstream infections (CRBSIs) remain a critical concern due to their association with increased patient morbidity, prolonged hospitalisation, and higher healthcare costs.

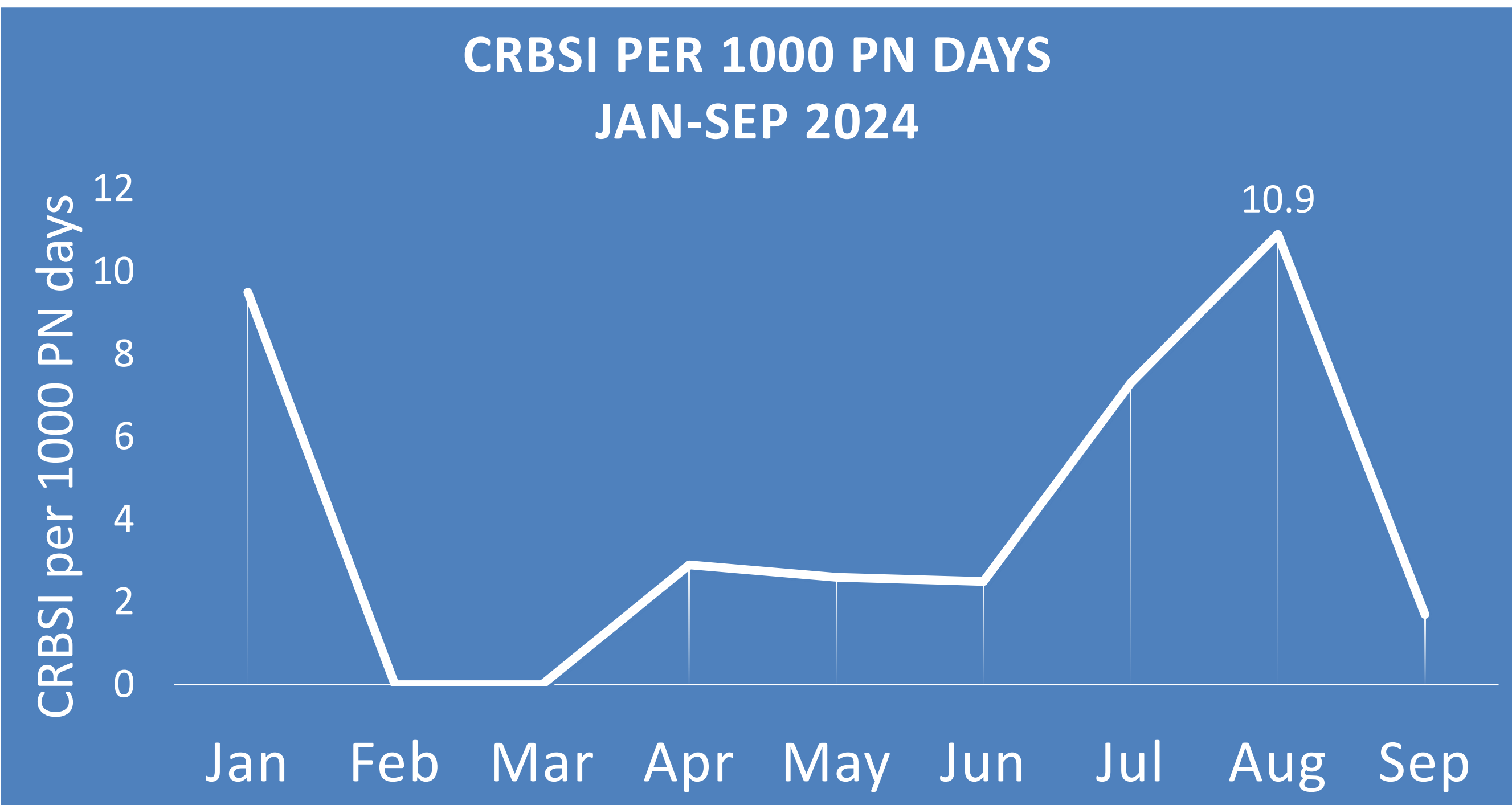
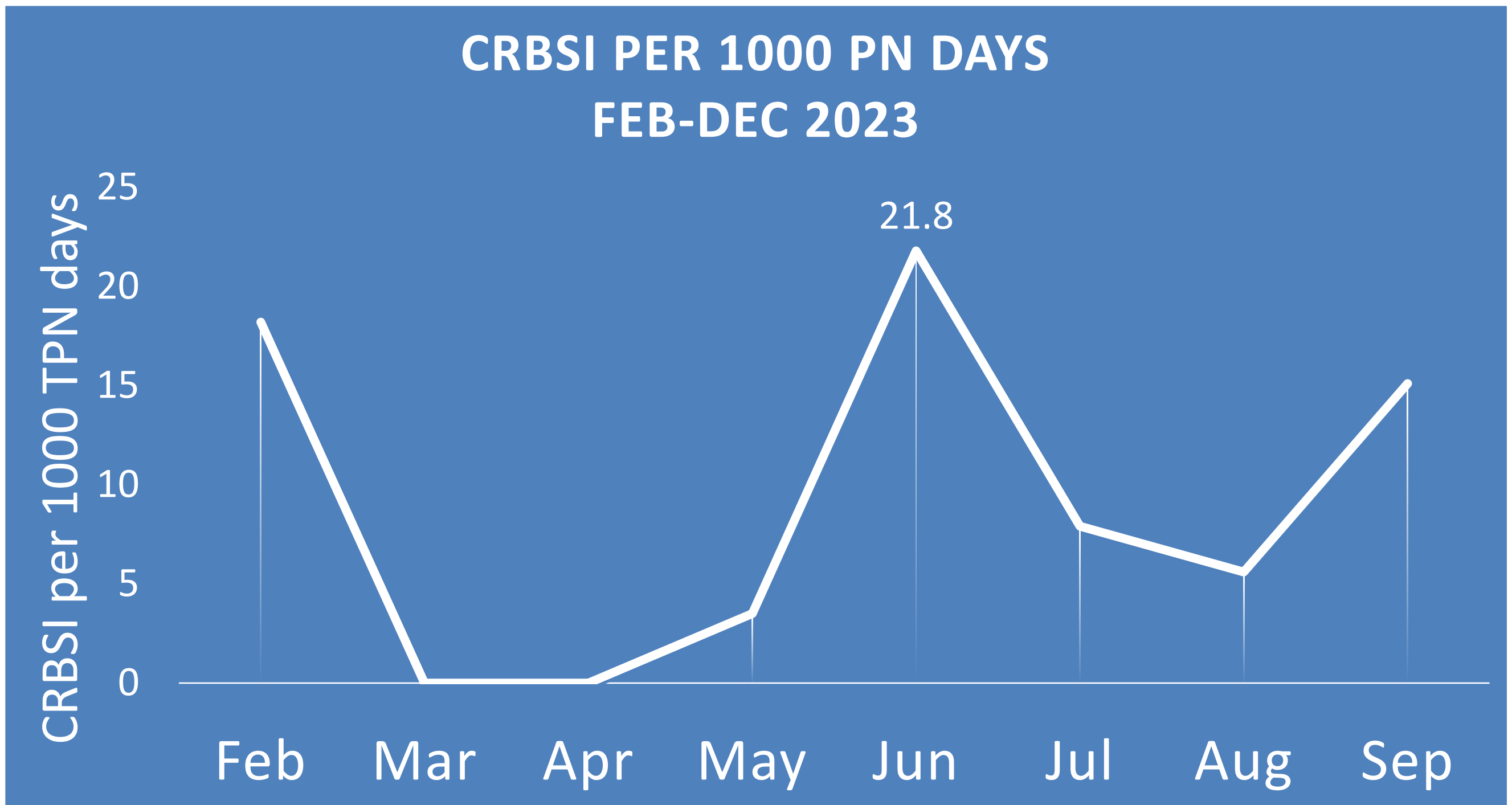
The aim of this audit was to establish a database of CRBSI rates and identify a baseline infection rate at St. Vincent's University Hospital (SVUH).

Methods

- All patients receiving PN in SVUH from February 2023 to September 2024 were included in the study.
- Details of bloodstream infections including causative organisms and susceptibility testing were extracted from the laboratory information system.
- The number of patients receiving PN, the total PN days, and the rate of CRBSI (number of CRBSI per 1,000 PN days) were calculated.

Results

- A total of 540 patients received PN across 6,807 PN days during the study period.
- There were 42 CRBSI, with a baseline infection rate of 6.2 per 1,000 PN days.
- The highest infection rates were seen in June 2023 and August 2024; 21.8 and 10.9 per 1,000 PN days, respectively.
- The infection rate decreased from 7.9 per 1,000 PN days in 2023 to 4.5 per 1,000 PN days in 2024.
- The most common causative organisms identified were coagulase-negative staphylococci (CNS) (55%), Candida spp. (14%), Enterococcus spp. (12%), and Klebsiella spp. (10%).



Conclusion

- This study established baseline CRBSI infection rates in our PN patient population, which can be used to track the impact of quality improvement measures.
- Cross-departmental collaboration between dietetics and microbiology has been identified as a key opportunity for enhanced data collection and future research to improve patient outcomes.