

BACKGROUND

Blood Culture Contamination (BCC) is the contamination of blood cultures by non-pathogenic microbes leading to false positives and subsequent unnecessary interventions. While guidelines suggest a contamination rate of 2-3%, some studies report rates as high as 12%. Various methods, such as education, different skin cleansing agents, and specialized blood culture collection kits, have been proposed to lower contamination rates in acute care settings.

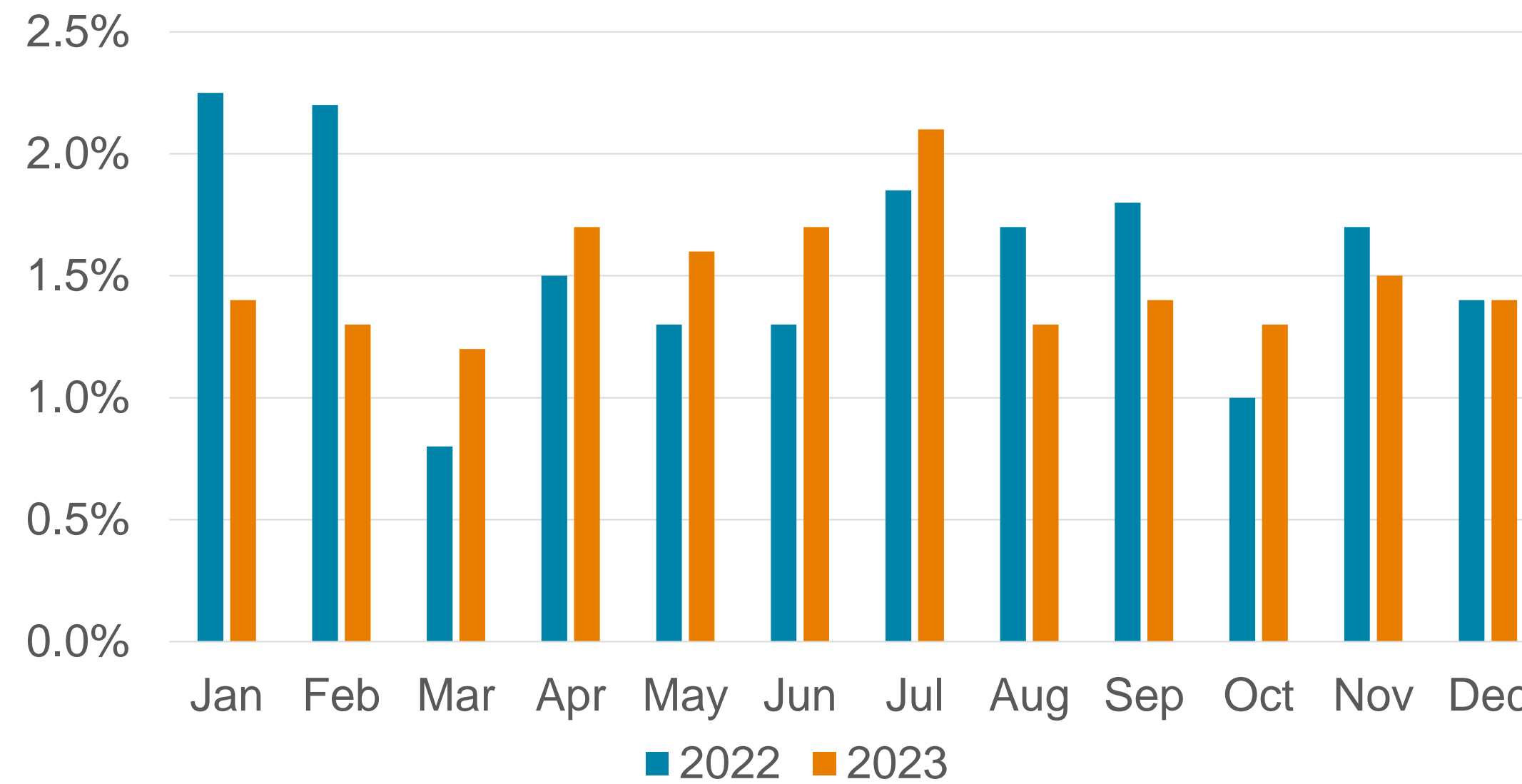
OBJECTIVE

To reduce the rate of BCC in the in-hospital setting of our tertiary care center by doing a simple educational intervention for the healthcare providers based on a 10 stepwise process to collect blood cultures.

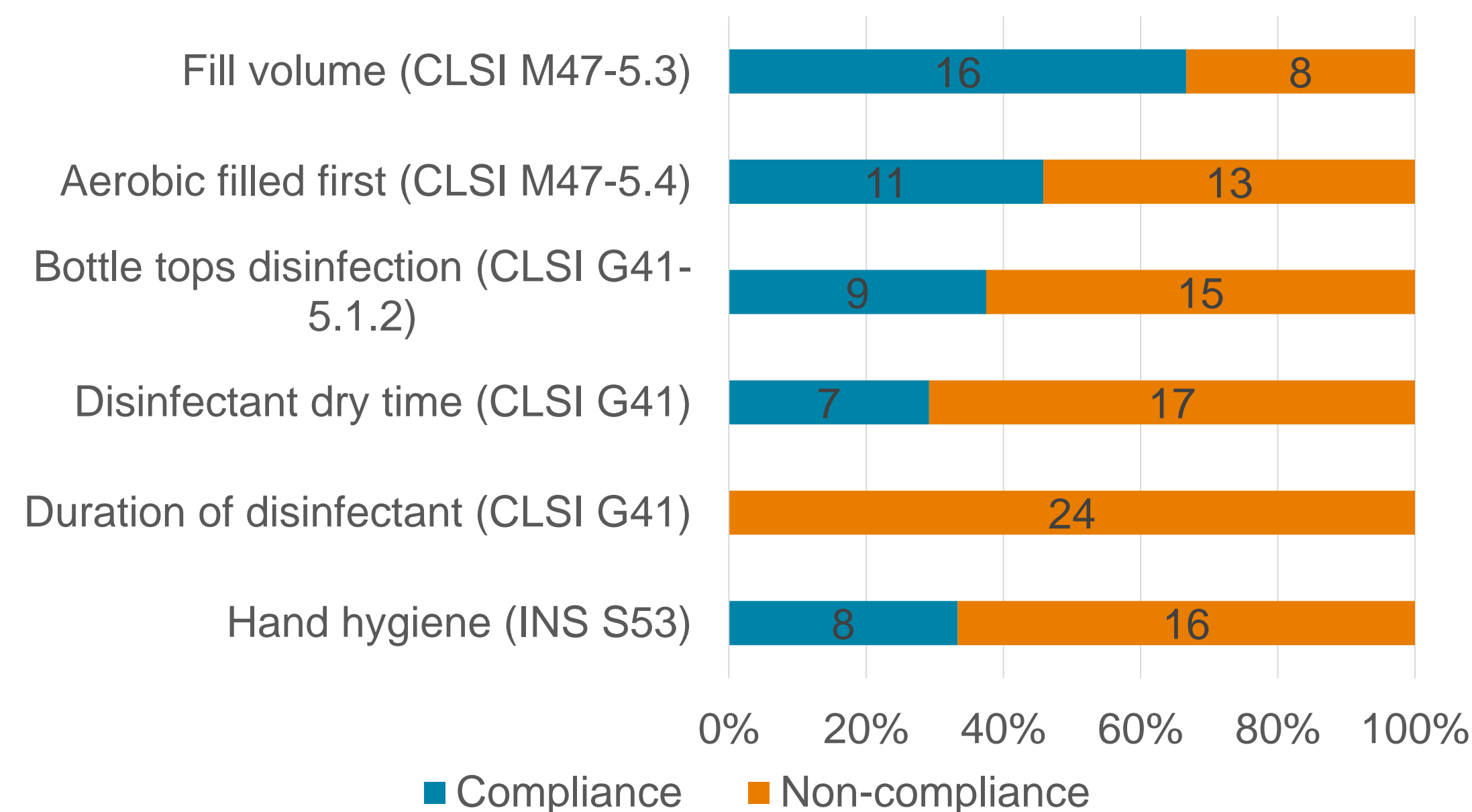
METHODS

Plan, Do, Study, Act (PDSA) was used in this study at a tertiary care center of Staten Island University Hospital during the month of October 2022. Initial double-blind observational assessment for compliance with Clinical and Laboratory Standards Institute (CLSI) guidelines was done on 24 patients' blood culture sample collection. We observed 16 healthcare providers, including phlebotomists, nursing, and physician staff across different departments of the hospital (Critical Care units, Medical/Surgical units, Emergency Department) involved in the collection process. After analyzing results of combined observations, we developed a 10 stepwise process to collect blood cultures. Educational intervention, described in Figure 1, was implemented on the healthcare provider staff involved in drawing blood cultures during the month of January 2023.

SIUH-N Blood Culture Contamination Rate



October 2022 Blood Culture Collection Compliance



RESULTS

Initial observation showed that compliance rate is significantly low in hand hygiene (INS S53) (0.33%), duration of disinfectant application (CLSI G41) (0.00%), disinfectant application dry time (CLSI G41) (0.29%), blood culture tops disinfection (CLSI G41-5.1.2) (0.37%), adequate fill volume (CLSI M47-5.3) (0.67%), aerobic bottle filled first (CLSI G41-5.4) (0.46%). BCC rate after the intervention decreased significantly from an average of 1.80% in 2022 to 1.49% in 2023. Repeat PDSA cycle to observe compliance rate improvement to be performed in January



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Steps for Blood Culture Collection



CONCLUSION

BCC reduction strategies aiming at educating blood culture vial collectors are significant in reducing overall hospital contamination rate. Concise and straight to the point education must be promoted to the healthcare.

DISCLOSURE

The authors have nothing to disclose