

Reducing Healthcare Associated Central Line Associated Blood Stream Infection Rate by Implementing Central Line Maintenance Bundle Compliance Strategies: A Quality Improvement Project

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BACKGROUND

Healthcare associated central line associated blood stream infection (HACLABSI) is a common and serious healthcare associated infection that increased length of hospital stay, morbidity, mortality and healthcare costs. The central line maintenance bundle (CLMB) provides guidelines on handling of central lines to reduce HACLABSI. However, the compliance rate to CLMB is generally low. In an effort to increase compliance to CLMB and further reduce incidence of HACLABSI at our hospital, implemented CLMB compliance strategies and audit in all clinical wards as part of quality improvement. Here, we report the outcome of our quality improvement project.

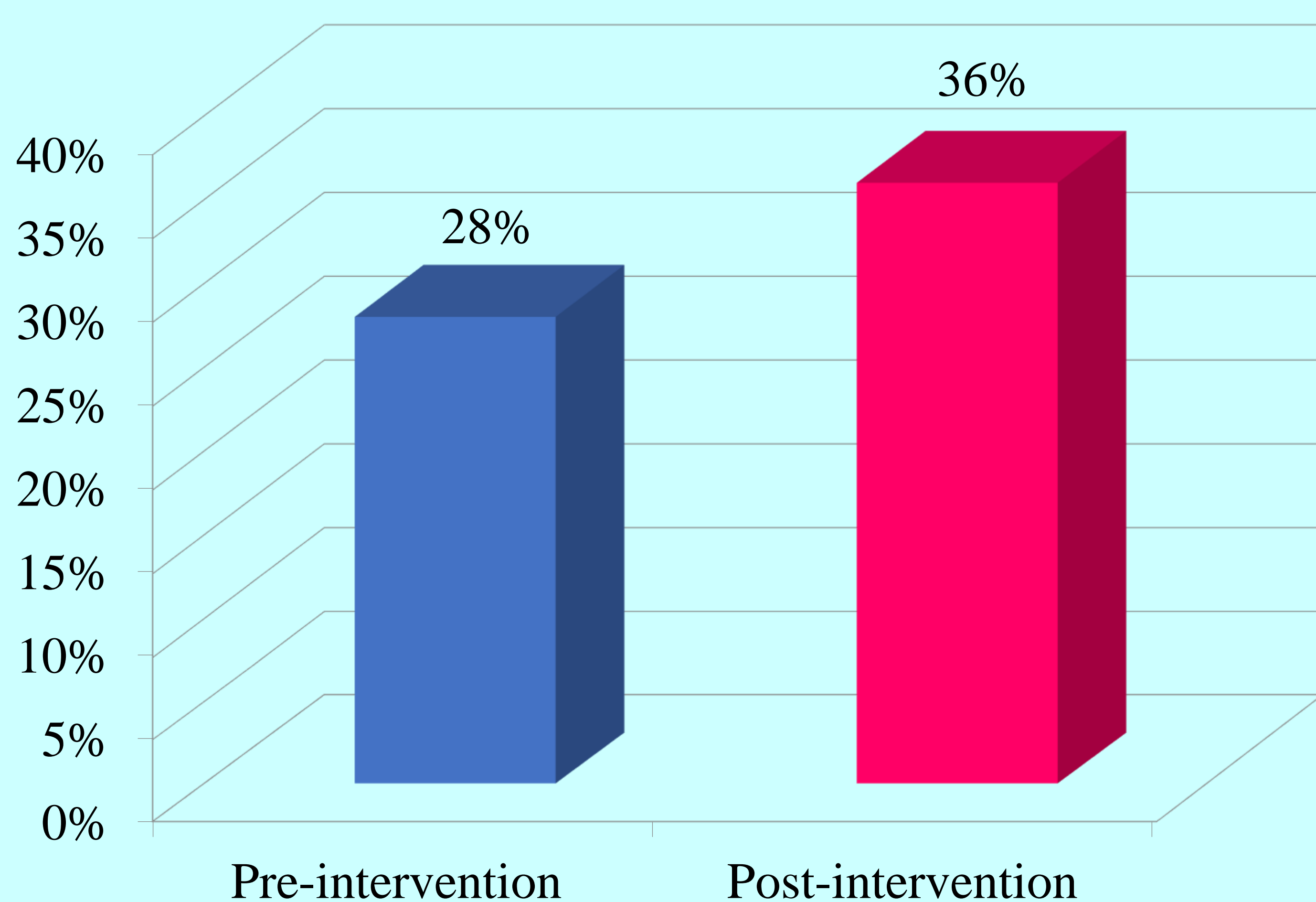
METHOD

Hospital Infection Control Team (HICT) conducted a one-month CLMB compliance audit before the implementation of the intervention in October 2023 (pre-intervention). The intervention is a direct bedside education on CLMB by members of HICT to all healthcare workers who handle central line, over a period of two months. During this period, the HICT provided one-to-one guidance about the components of CLMB including daily review of central line, proper hand hygiene, sterile gloving during central line care, scrubbing hub with appropriate antiseptic for 15 seconds before accessing central line, dressing at central line insertion site and administration set for continuous infusion changed according to guidelines and removal of unnecessary central line promptly. After the intervention period, HICT conducted another one-month CLMB compliance audit to assess the outcome. The outcome of interest is CLMB compliance and HACLABSI incidence.

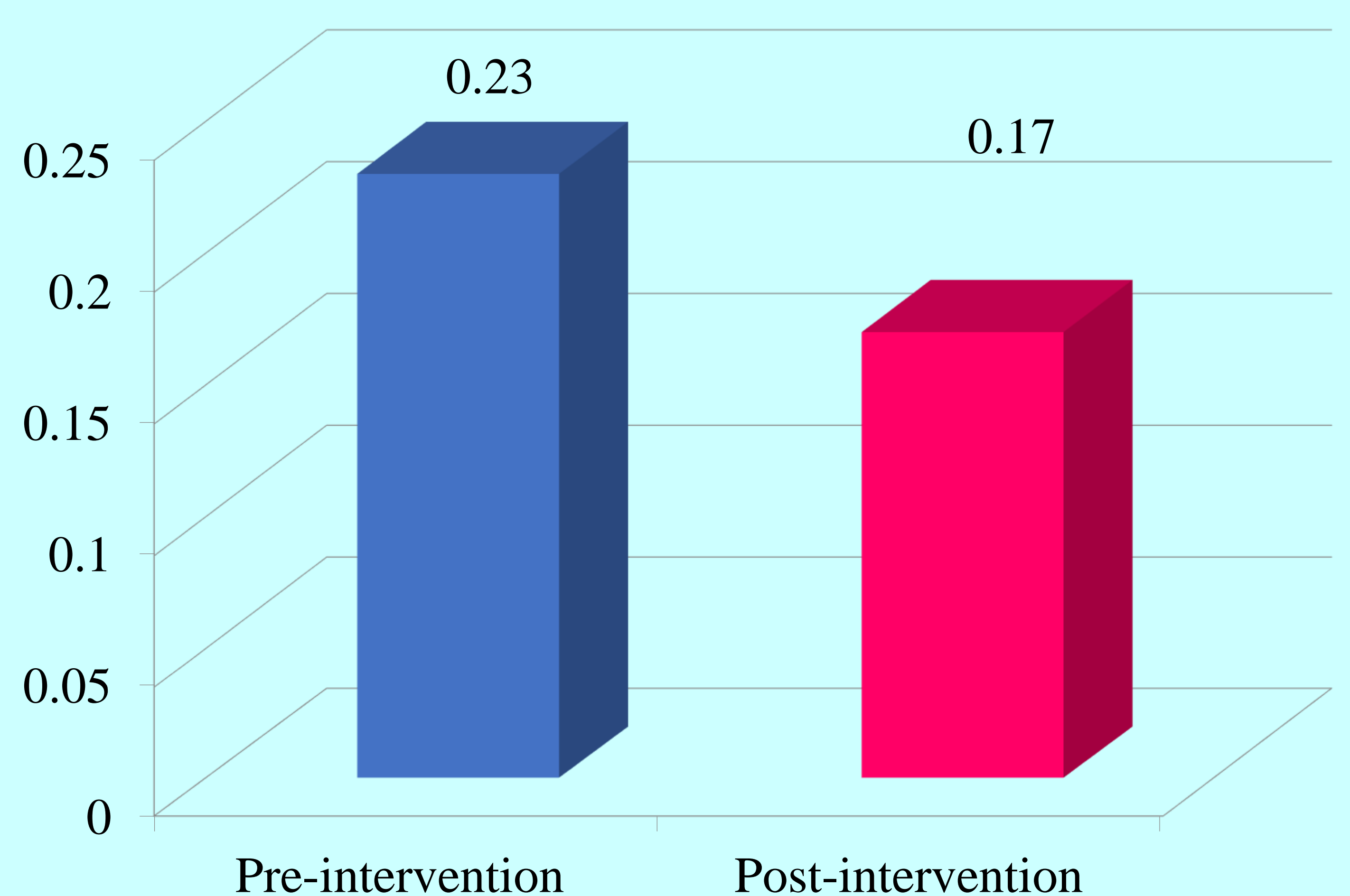
RESULTS

A total of 76 (pre-intervention) and 113 (post-intervention) central lines were audited.

CLMB Compliance Rate



HACLABSI Rate (per 100 admissions)



DISCUSSION AND CONCLUSION

The results showed that our new CLMB compliance strategies could reduce HACLABSI by increasing CLMB compliance. Although the post-intervention compliance rate is still below the target 75% set by Ministry of Health Malaysia, still showed a promising reduction of HACLABSI incidence. This emphasizes that greater efforts to provide continuous education to healthcare workers about the CLMB is a crucial measure to achieve the target CLMB compliance rate of more than 75%, which could further reduce HACLABSI.