

## Background

Overlook Medical Center (OMC), an acute care hospital with 504 licensed beds and a dedicated 28-bed oncology unit, faces a heightened risk of central line-associated bloodstream infections (CLABSIs) within its oncology population. The increased costs and mortality associated with a CLABSI have been well documented. There are many ways to mitigate this risk, including strict adherence to infection control protocols, continuous education and training for healthcare staff, regular catheter site inspections, proper dressing changes, patient and family education on infection signs, robust surveillance and monitoring systems, quality improvement initiatives based on data analysis, a multidisciplinary approach involving various healthcare teams, and the implementation of evidence-based practices.

Scrub the Hub is a Centers for Disease Control and Prevention and The Joint Commission's recommendation for CLABSI reduction. Decontamination of vascular access devices (VAD) reduces biofilm formation and risk of VAD contamination. The oncology population is at increased risk of CLABSI due to their limited immune response and need for VAD.

The inpatient oncology unit was experiencing increased CLABSI rates and identified the need for an intervention. How can the implementation of a visual aide enhance healthcare worker's (HCW) adherence to proper VAD scrubbing protocols and ultimately reduce the incidence of CLABSI?

## Methods

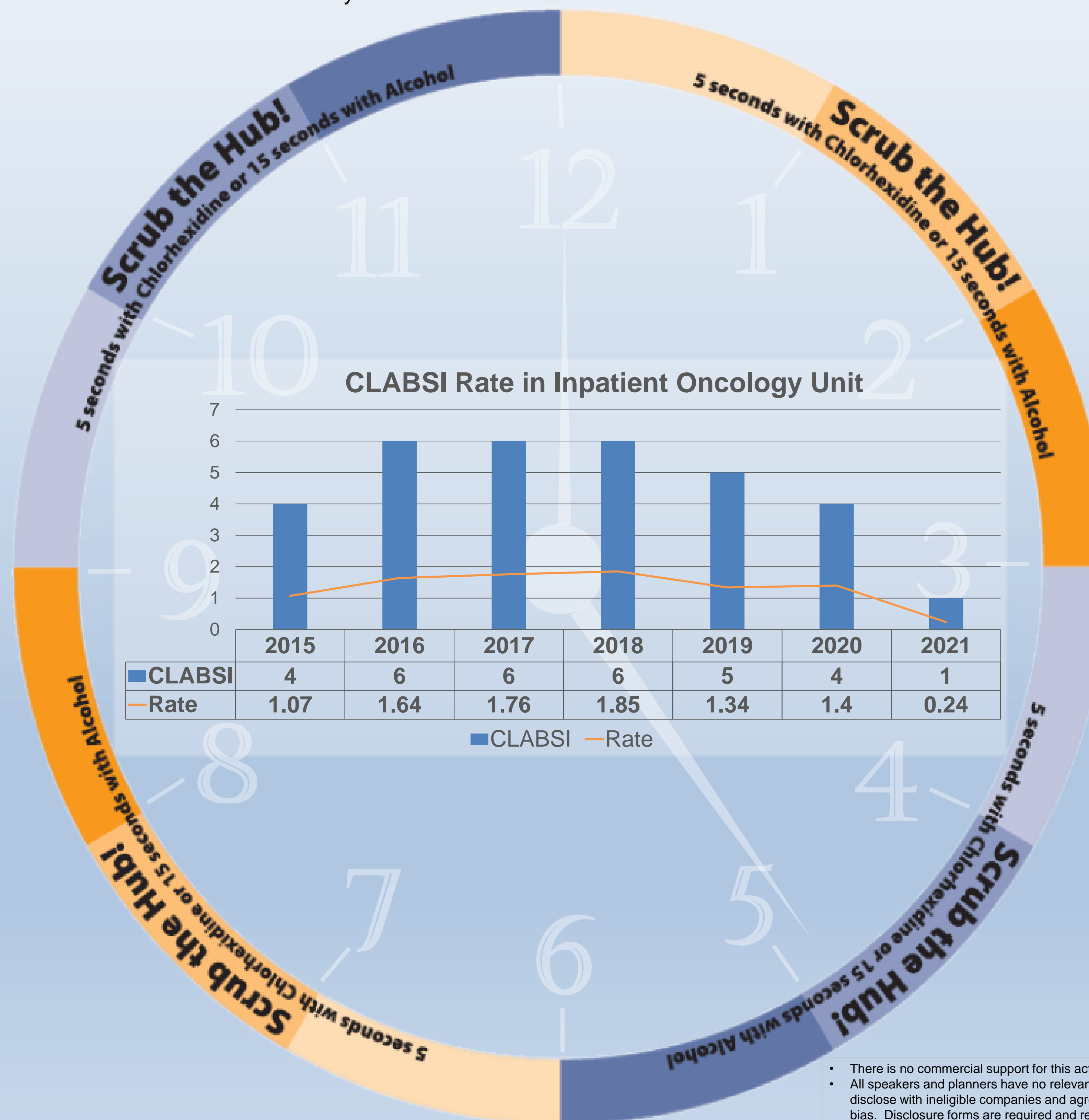
The scrub the hub clock was developed as a pilot program in the fall of 2020. A colored clock border was created with demarcations that correspond to the disinfection times of the two prep pads available in the facility. The border shows increments of five seconds –manufacturer recommended scrub and dry time for chlorhexidine prep, and the larger sections are fifteen seconds-recommended scrub and dry for alcohol prep. The border was created as a sticker that was applied to all the wall clocks in the patient's rooms.

HCWs were assessed on their baseline knowledge of scrub the hub technique via a pre-survey test in late November 2020, and education followed on correct scrub and dry times for both alcohol and chlorhexidine prep pads available in the facility in early December 2020. HCWs were provided instructions on how to implement the clock into the daily workflow and were encouraged to educate patients and visitors on the colored clock. The clock provides patients and families another way to participate in their care by helping to hold care givers accountable and advocating to "speak up for safety". Post intervention surveillance started January 1, 2021.

CLABSI surveillance was performed pre- and post- intervention using National Healthcare Safety Network (NHSN) definitions and incidence density rates (IDR) were calculated with the NHSN statistics calculator.

## Results

The oncology unit had not gone more than six months without an identified CLABSI infection from 2015-2020 and had five total CLABSI identified in 2019. The pre-intervention IDR was 10 infections in 9185 central line (CL) days. The post-intervention IDR was 1 infection in 3410 CL days; a decrease from 1.09 infections per 1000 CL days to 0.29 infections per 1000 CL days, a 73.4% decrease (IDR p-value of 0.1887). Control chart plots of pre and post IDR showed special cause in the post-intervention period with zero infections in the post intervention 10-month run. Ultimately the unit was able to achieve over 350 days without an identified CLABSI and only one CLABSI identified in 2021.



## Conclusions

The successful outcome of this project found that providing HCWs with a visual reminder of the best practice of scrubbing the hub can decrease CLABSI in a vulnerable population.

This innovation reflects a proactive approach to patient safety and engagement, as well as a commitment to continuous improvement within the healthcare system. By involving both healthcare workers and patients in the process of maintaining cleanliness and preventing infections related to VADs, this project demonstrates a resourceful approach to quality and patient care.

## Future Implications

This initiative has been presented at the Shared Governance Quality & Performance Improvement Council with plans to implement hospital-wide and across the five-hospital Atlantic Health system (AHS). The performance improvement project has gained recognition on OMC's social media platform, specifically on the AHS 'Innovation' group site. A group dedicated to acknowledging and celebrating new innovations within AHS.

Multiple factors such as heightened patient acuity, a surge in hospital census, and staff turnover drove up CLABSI rates in 2022 and 2023. To address this, the project was revitalized, involving all team members in educational sessions and integrating new graduate nurse residency program members to focus on diligent central line maintenance and care. Since the team underwent re-education, CLABSI rates for YTD 2024 have dropped to zero.

## References

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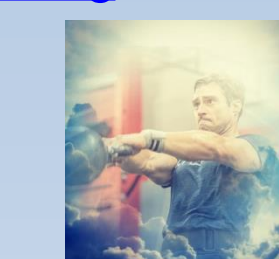
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In Memoriam  
Michael J. Duggar  
Sept 7, 1980 - April 17, 2020

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