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## The Lifecycle of a K-card: Improving Data Collection While Improving Bundle Reliability

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## Background

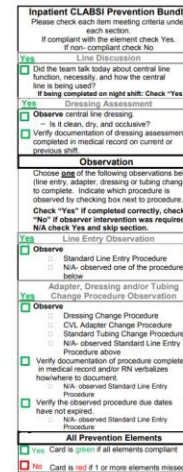
- Central line associated blood stream infections (CLABSIs) are frequent in our institution and contribute to morbidity and cost for patients.
- Despite significant work, CLABSI rates remained high. Central line maintenance requires a complex bundle that relies heavily on human performance.
- Initial data collection using the electronic medical record was inaccurate and resulted in falsely elevated bundle reliability.
- Kamishibai cards (K-cards) are a tool utilized for bedside auditing of bundle reliability and allow for peer-to-peer coaching.
- Our aim was to utilize K-cards as a tool to improve measurement of bundle reliability among units to better identify opportunities for improvement.

## Methods

- The multidisciplinary All Access Clinical Team (AACT) adopted and adapted a K-card from Solutions for Patient Safety (SPS).
- Auditors utilized the primarily question-based K-card by asking bedside staff about the central line maintenance bundle for their patient.
- This K-card initially provided important information about knowledge gaps of the maintenance bundle.
- After utilizing the K-card for nearly two years, staff became familiar with the answers to questions and the accuracy of the data was questioned.
- Despite a high CLABSI rate, reliability to the prevention bundle also appeared to be high.

## Methods

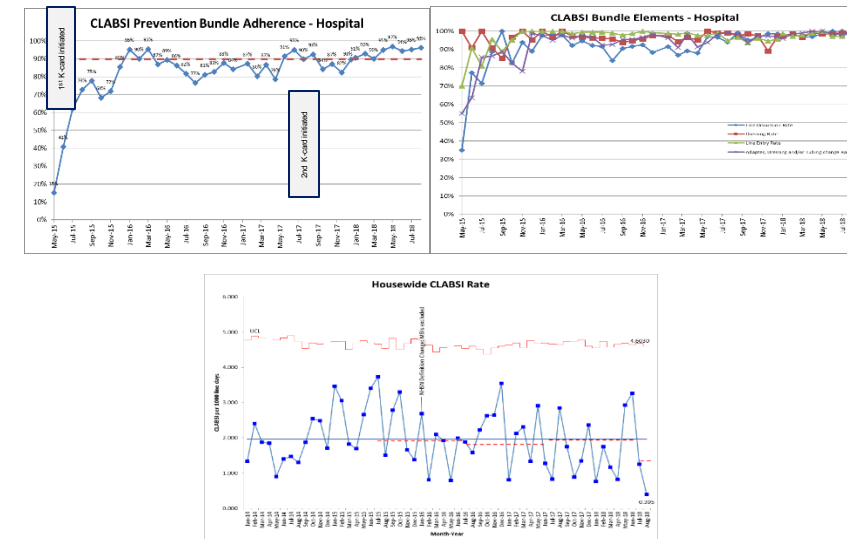
- A new K-card iteration was available from SPS, focusing on observing bedside maintenance procedures.
- The AACT adapted the observation-based K-card for use, trialing it over 2 months on several units prior to widespread implementation in August 2017.
- The new K-card required more time and increased knowledge of the procedures.
- Most units limited the number of observers to insure reliability of the data.
- The new observation-based K-card remains in use.



## Results

- Utilization of the original K-card improved bundle reliability initially
- After initiation of the second K-card (July 2017), maintenance bundle reliability decreased, demonstrating more accurate bundle reliability assessments and identifying new improvement opportunities.
- Individual units focused on their lowest bundle element.
- Bundle reliability has increased since implementation from 80% to greater than 90% since December 2017.
- The individual bundle elements have increased to greater than 95%.
- Unit-based CLABSI leaders have noticed much greater adherence to the bundle as well.
- The institutional CLABSI rate also decreased from 2.13 (events per 1000 central line days) in fiscal year 2017 to 1.72 for fiscal year 2018. There were 15 fewer CLABSI events in FY18 than FY17.

## Results



## Conclusion

Changing measurement tools from electronic data to K-card bedside audits, increased the accuracy of bundle reliability data. Utilizing bedside observations with peer-to-peer feedback more accurately assessed bundle reliability and likely improved central line management. Assessing and adjusting the measurement tool improved data collection and general understanding of central line maintenance processes.

## Acknowledgments

The members of the All Access Clinical Team as well as bedside staff across the organization are the reason this project is a success. Their tireless efforts continue to keep our patients safe.