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Implementation and Evaluation of a Central Line Associated Bloodstream Infection Bundle in the Pediatric Emergency Room: An Evidence-Based Quality Improvement Project

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BACKGROUND

- Central line-associated bloodstream infections (CLABSI) pose a significant risk to pediatric patients in acute care settings.
- They are associated with longer lengths of stay, increased hospital dollars spent, and increased mortality and morbidity.
- Implementing CLABSI bundles has correlated with a decrease in patients diagnosed with an infection.

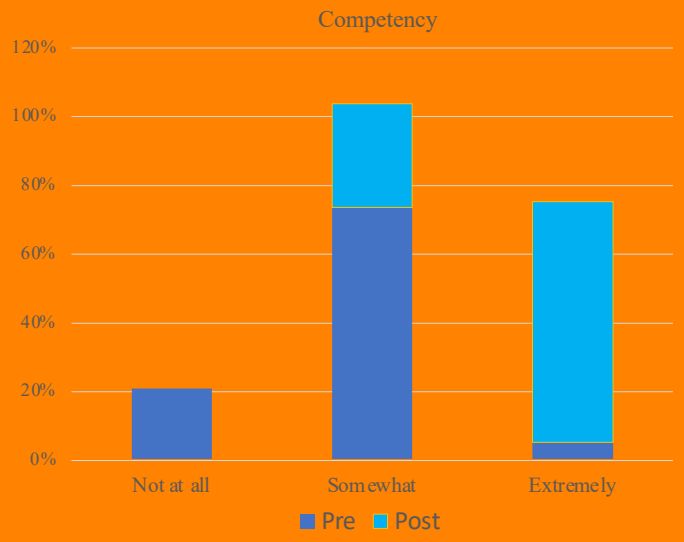
LOCAL PROBLEM

- CLABSI bundle protocols were unknown and not implemented in the pediatric ER.
- There have been increasing diagnoses of CLABSIs.
- Implementing this DNP project will help decrease pediatric patients diagnosed with CLABSIs during their hospital stay.
- 7% of CLABSI in the children's hospital were from the ER in the months leading up to project implementation.

METHODS

- The Evidence-Based Practice Improvement (EBPI) model was used as the framework used to guide the project.
- A thorough literature search and critical appraisal was performed to determine education methods and benefits of CLABSI education. Evidence was good and consistent or reasonably consistent to support implementing a CLABSI bundle in the pediatric ER.
- The purpose of this initiative was to implement the CLABSI bundle in the ER with the aim of increasing nurse competency by 80% and an outcome measure of decreasing ER related CLABSI infections.

Implementation of a CLABSI bundle led to increase in nurse competence and better patient outcomes.



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INTERVENTIONS

- 75% of nurses in the ER received CLABSI education.
- Pre and post tests were used to evaluate nurse competency.
- All nurses were expected to adhere to the CLABSI bundle protocols.
- Audit tools were performed to monitor adherence to CLABSI bundle protocols and ensure infection prevention strategies were followed.

RESULTS

- Nine months leading up to project implementation, there were 7% CLABSIs from ER. In the three months of project implementation, there were 0% CLABSIs from ER.
- After education and during the post-implementation phase, 0% of nurses indicated they were not competent, 30% indicated they were somewhat competent, and 70% indicated they were extremely competent. The change from extremely competent pre and post-test was 64.7%, compared to the 80% goal but was statistically significant at $p<0.001$

CONCLUSIONS

- Nurses increased their knowledge and competency in implementing the CLABSI bundle in the pediatric ER.
- This project improved patient care and decreased CLABSIs in patients from the pediatric ER.
- For sustainability, project results will be provided to hospital leadership for the use of the CLABSI bundle in all hospital departments and provider use in ER trauma situations.

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