Using Ultrasound Guided PIV Insertion in the Pediatric Population to Decrease Insertion Attempts

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Background

• Intravenous (IV) therapy using a peripheral IV (PIV) in children is a medical intervention frequently used in hospitals.

• Current evidence supports ultrasound guided PIV placement in the adult patient population (Constantino, 2005; Crowley, 2012; Gregg, 2009).

• Growing evidence has begun to support the use of ultrasound guided PIV in pediatric patients.

• Ultrasound guided PIV can improve successful IV placement and decrease time to successful cannulation.

Purpose

The purpose of this study is to implement a quality improvement approach to determine if ultrasound guided IV insertion:

• decreases the number of attempts for successful cannulation.

• improves staff and patient satisfaction with the treatment in the pediatric inpatient population.

Evaluation Methods

• Data collection (May 2018-December 2018) on the UTMB pediatric medical surgical unit and pediatric intensive care unit (PICU).

• Parents and staff completed anonymous surveys regarding their experience of the treatment.

• Following implementation of the standard of care (ultrasound guided PIV insertion after two failed blind attempts) data was extracted from EPIC from December 2018 to May 2019.

Results

• After the implementation of ultrasound guided IV insertion, the average number of attempts decreased from 2 to 1.37.

• 13 IVs were inserted using the ultrasound guided technique during the study/project period.

• Staff verbalized challenges with learning to insert IVs utilizing a new technique.

• Parents were unsatisfied with the total number of IV insertions, but a limitation of the project was this was their overall satisfaction with IV insertion, not solely with ultrasound use.

Conclusion

• Findings support integration of ultrasound guided IV insertion into the standard of care.

• UTMB Health System policies updated to reflect the need for using ultrasound guided IV insertion once two cannulation attempts have failed.