**Background:**
Peripherally inserted central catheters (PICC) are placed in a variety of settings, such as in interventional radiology or in the pediatric acute care units, which impact cost and risks associated with travel. The current practice is for most PICC placements for Pediatric Intensive Care Unit (PICU) patients to be deferred to the vascular access team (VAST) or interventional radiology (IR). Often times, care may be delayed, as these services are time limited and require transportation off the unit. Practice remains inconsistent with limited access to skilled PICC line providers twenty-four hours per day. Evidence suggests a dedicated PICC line service will minimize costs, length of stay, and wait times for central access.

**Objective:**
To demonstrate the distribution and cost of current PICC placement practices in a Pediatric Intensive Care Unit. This project aims to lay foundation to develop a strategic plan to improve the current inconsistent practice by utilizing advanced practice registered nurse (APRN) in the PICU to provide access to cost-effective patient care.

**Method:**
A retrospective chart review was conducted of patients with peripherally inserted central catheters in PICU patients. Patients were identified from a hospital database for PICCs placed between July 2015 and June 2016. The medical records of 105 patients were reviewed for age of patient, time of day the PICC was placed, type of provider to place the PICC, and if anesthesia was billed for placement of the PICC.

**Results:**
- Of 105 total PICU patients receiving PICC lines, only 14% were placed by a PICU provider - usually a physician trainee. 1% of the 105 total patients was performed by a PICU ARPN. VAST placed 24% of the PICC lines, while IR placed 62%.
- PICC charges are based on patient age and provider. 90% of PICCs placed in interventional radiology required an anesthesia provider and costly anesthesia-associated charges. When all disciplines were compared, IR was the most costly, with charges totaling $176,447. VAST followed with $37,270 and finally PICU providers with a total of $28,969.
- Time of placement was evaluated, which highlighted that PICCs are mostly placed in daytime hours, with the 88% occurring between 0800-1900. Over the 12-month period, no PICCs were placed between midnight and 0400.

**Implications:**
These results demonstrate a majority of PICCs being placed under anesthesia in the IR suite. However, as literature demonstrates, PICCs may be safely placed by skilled-APRNs in the PICU. Mott PICU ARPNs recently expanded to nearly 24-hour coverage and should utilize their procedural skills. These APRNs would place lines as the needs arise. An APRN-led PICU PICC team would come to the bedside, alleviating the risk of road trips to IR for fragile patients. An APRN-led PICU PICC team would provide opportunities for prompt, safe, and cost-effective care.

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Study IRB Provided by: University of Michigan, approved as Not Regulated status
Evaluation of PICC Line Insertion Practices and Quality Improvement Initiative
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Background
Current practice is for most peripherally inserted central catheters (PICC) placements for Pediatric Intensive Care Unit (PICU) patients is to be deferred to the vascular access team (VAST) or interventional radiology (IR). Care may be delayed, as these services are time-limited and require transportation off the unit. Practice remains inconsistent with limited access to skilled PICC line providers 24 hours per day. Evidence suggests a dedicated PICC line service will minimize costs, length of stay, and wait times for central access.

Objective
To demonstrate the distribution and cost of current PICC placement practices in a PICU. This project aims to lay foundation to develop a strategic plan by utilizing APRNs in the PICU to provide access to cost-effective and consistent patient care.

Method
A retrospective chart review was conducted of PICU patients with PICCs. Patients were identified from a hospital database for PICCs placed between July 2015 and June 2016. The medical records of 105 patients were reviewed for age of patient, time of PICC placement, type of provider to place the PICC, and whether anesthesia services were billed.

Results
- 1% of PICCs were performed by a PICU APRN
- 13% of PICCs were placed by a PICU physician
- 24% of PICCs were placed by VAST
- 62% of PICCs were placed by IR
- 90% of PICCs placed in IR required anesthesia
- IR was the most costly, with charges totaling $176,447
- VAST followed with $37,270 and PICU providers with a total of $28,969
- 88% of PICCs were placed between 0800-1900. Over the 12-month period, no PICCs were placed between midnight and 0400

Implications
The majority of PICCs are placed under anesthesia in the IR suite. Literature demonstrates PICCs may be safely placed by skilled-APRNs. Mott PICU APRNs recently expanded to nearly 24-hour coverage and should utilize their procedural skills. APRNs would place lines as the needs arise. An APRN-led PICU PICC team would come to the bedside, alleviating the risk of road trips to IR for fragile patients. An APRN-led PICU PICC team would provide opportunities for prompt, safe, and cost-effective care.

References