

BACKGROUND

Painful venipunctures can impact postnatal growth and have been correlated with unfavorable developmental outcomes in neonates. The high demand for vascular access in our complex NICU population placed heavy demand on our sole PICC RN scheduled each shift. We recognized the need to expand our unit-based team to support expert placement, surveillance, and maintenance of the right line, right patient at the right time for the safe delivery of essential therapies and to reduce vascular access related harm. We highlight one of the positive outcomes the expansion of our team provided: increased availability of ultrasound providers.

INTERVENTIONS

- Added ten RNs to the second VAS RN role in January 2023 to support needs and target harm prevention
- Created a model whereby the previously scheduled PICC trained RN was supported by a second VAS trained RN each shift
- Chose and oriented ten VAS RNs to the role which included training in USGPIV placement utilizing 1”-1.75” length catheters
- Tracked competency, number of catheters placed, catheter dwell time, and PIV injury



Dwell time r/t catheter and method		
Catheter Length	Placement Method	Dwell Time
.56"-.75"	No Device Transillumination	63 hours
1"-1.75"	Ultrasound	94.3 hours



IV catheters utilized

RESULTS

- In an eleven-month period:
- All ten VAS RNs achieved competency in USGPIV placement
 - 973 USGPIVs placed by our NICU team
 - Mean dwell time of 94.3 hours with long catheters placed with ultrasound compared to a mean dwell time of 63 hours with short catheters placed with traditional methods
 - Our overall PIV rate of serious injury was .03 per 1000 catheter days

IMPACT

Our NICU increased the number of available ultrasound providers to place USGPIVs while supporting the timely placement of bedside PICCs by the PICC RN. While we did not directly assess the fiscal impacts, a reduction in the cost of care can be associated with a reduced number of PIVs and decreased injury from infiltration and extravasation.

CONCLUSION

This illustrates just one of the benefits of unit-based VAS teams; expert placement, of the right line, right patient, at the right time to keep our patients safe. Similar NICUs should consider unit-based VAS teams to enhance quality of care and reduce harm.