

Promoting Ultrasound-Guided Peripheral Insertion (UGPIV) to Reduce Midline Utilization, Lower Costs, Safeguard Vasculature, and Enhance Patient Outcomes.



Jona Caparas, MSN, RN, VA-BC, Chris Dotoratos, MSN, RNC, NEA-BC, Cynthia Valcorza, BSN, RN, VA-BC

Background

- The Vascular Access Team (VAT) of a 288 hospital bed hospital places Midlines for peripheral infusions and poor venous access.
- Ultrasound-guided intravenous catheters (UGPIVs) were not used as an alternative access. Patients were getting standard peripheral intravenous catheters (PIVCs) from unit nurses.
- This puts patients at risk for potential infections and unnecessary additional sticks.
- Midline utilization is more costly than placement of a UGPIV; the cost of a midline catheter is \$190 and the 20g 1.88 inches peripheral intravenous catheter used costs \$1.53.
- Infusion Therapy Standards of Practice states: Use of ultrasound for PIVC and Midline insertion. Adult-related studies report fewer venipuncture attempts and decreased escalation to central venous access.

Methods

- The VAT diligently assessed all midline placement orders.
- Ensured clinical justification based on factors like medication type, therapy duration, and potential future midline needs.
- Data-driven approach helped optimize catheter selection and minimize unnecessary Midline placement.

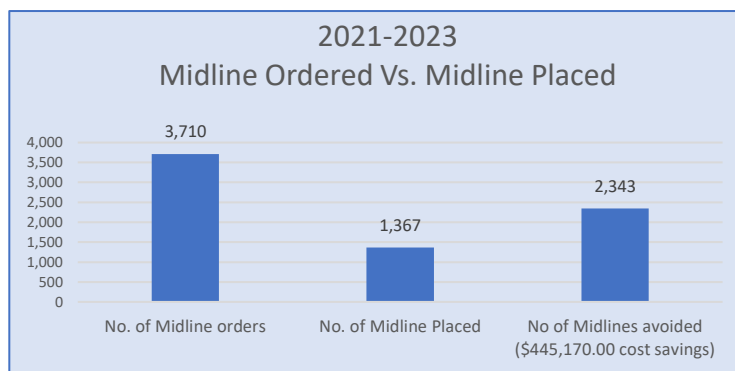
2021-2023	Cost	# of lines	total amount
Midline Avoided	\$190	2,343	\$ 445,170.00
UGPIV placed	\$1.53	4,439	\$ 6,791.67
Cost Savings	\$188.47		\$438,378.33

Results

2021-2023	Cost	# of lines	total amount
Midline Avoided	\$190	2,343	\$ 445,170.00
Replaced with UGPIV	\$1.53	2,343	\$ 3,584.80
Savings	\$188.47		\$441,585.20

Year	2021	2022	2023	Total
# of Midlines orders	1854	913	943	3710
# of Midline placed	420	491	456	1367
# of Midlines avoided	1434	422	487	2343
# of UGPIV placed	1056	1414	1969	4439
Cost Savings	\$272,460	\$80,180	\$92,530	\$445,170

Midline Placement 55.5% ↓
UGPIV Placement ↑86.73%



Results

- Midline orders were cut by 55.5% from 2021 to 2023, with a corresponding decrease in placements.
- UGPIV placements steadily rose by 86.73%, indicating successful adoption of the alternative.
- This shift in practice led to estimated cost savings of \$445,170 over three years.
- Fewer sticks and faster placements with UGPIVs improved the overall patient experience.
- UGPIVs preserved valuable upper arm veins for future access, reducing complications.

Conclusions

- **UGPIVs Improve Patient Outcomes:** Promoting UGPIVs leads to fewer needle sticks and faster placements, enhancing patient comfort.
- **UGPIVs Optimize Resource Utilization:** By reducing unnecessary midline placements, UGPIVs help healthcare institutions utilize resources more effectively.
- **UGPIVs Deliver Cost-Effective Care:** The estimated cost savings demonstrate the financial benefits of adopting UGPIVs over midlines.

References



For more information, please contact: Jona Caparas, RN at: joc9126@nyp.org, Chris Dotoratos, RN at: cjd9008@nyp.org, or Cynthia Valcorza, RN at: cyv9007@nyp.org