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

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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
UGPIVplaced	$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

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