

The “A-DIVA” in You: Adult Difficult Intravenous Access Screening Scale to Reduce Venous Events

Melissa Arangoa Miller, MS, APRN, ACNS-BC, AOCNS®; Victoria Frazier-Warmack, DNP, MSN, RN, OCN®; Nicholas Kimble, RN, BSN; Kathrene Castelo, RN, MSN, OCN®; Shereea Seals, RN, MSN; Bianca Solorio, BSN, RN, OCN®

Problem

- Peripheral intravenous (PIV) access is used for various chemotherapy regimens in the ambulatory setting instead of central lines.
- Due to the nature of some chemotherapy agents, such as vesicant or irritant status, the patient is at risk for venous events of infiltration or extravasation when these agents are given via PIV instead of a central line.
- From February 2019 to July 2019 there was an average of 0.24 PIV chemo-related PIV venous events per 100 PIVs placed.
- During this time, 2 vesicant PIV venous events were reported.
- This aligns with the quality & safety pillar of the FY22 UCM Annual Operating Plan

Goal

- Frontline nurses aimed to decrease and measure outcomes of venous events per 100 PIVs placed after implementing a venous assessment scale paired with an educational program to improve patient safety by the end of 2021.

Intervention Design

- A team was formed and literature searches were performed to determine best peripheral venous assessment for the adult oncology population
- The additive Adult Difficult Venous Access (A-DIVA) scale was selected for venous assessment.
- Educational sessions were given to clinical nurses on:
 - Application of the additive A-DIVA scale
 - Anatomical sites to avoid when administering PIV chemotherapy
 - Safe administration of PIV vesicants using Oncology Nursing Society (ONS) and Infusion Nursing Society (INS) guidelines
- Success was measured by:
 - Monitoring event reports on extravasation or infiltration of chemotherapy to PIV sites (i.e. venous events).
 - Routine chart audits on modified A-DIVA scale documentation
- Key players of this project were IV Therapy nurses, providers, nurse navigators. This project took place in the UChicago Medicine Hyde Park IV Therapy department.
- The Iowa Model for Evidence Based Practice was used to develop and implement change, which includes a systematic approach of process improvement.

Factor	Score
Is there a known history of a difficult intravenous access?	1
Do you expect a failed first attempt or a difficult intravenous access?	1
Is there an inability to identify a dilated vein by palpating the upper extremity?	1
Is there an inability to identify a dilated vein by visualizing the upper extremity?	1
Has the largest dilated vein a diameter less than 3 millimeters?	1

The additive A-DIVA scale is represented as an additive scoring system to calculate the predicted risk for an individual patient; the scores for existing risk factors are added to give an approximate estimation of a difficult intravenous access. Scores are added after answering a question with "yes".

van Loon, et al., 2019. Table used with permission.

Additive A-DIVA Scale used from literature.

Intervention Design, continued

Additive A-DIVA Scale Documentation

Example of the additive A-DIVA scale in Epic. Nurses document on this before each PIV placement.

Follow-Up Documentation in Epic

If the score is 4 or greater, then follow-up documentation appears & encourages communication between nurses and providers.

Impact

- Our team was able to have central line placement for patients that had a higher risk for extravasation due to their venous status and treatment type.
- It also increased communication of nursing with providers to improve patient care and created a more collaborative environment.
- The usage of the A-DIVA tool became a routine workflow for assessment documentation related to PIV placement.
- This project has the potential for expansion in other departments.

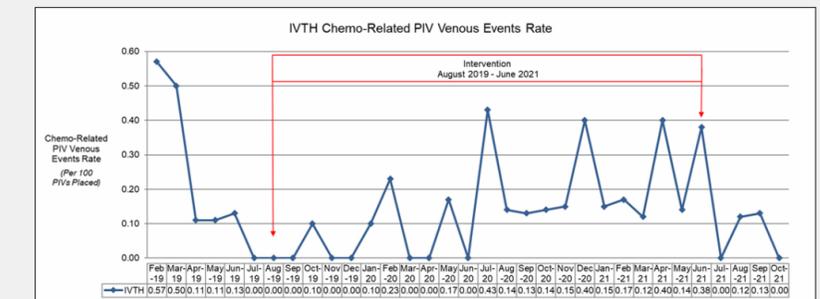
IVTH Chemo-Related PIV Venous Events Rate

Pre-Intervention Baseline Data: During the pre-intervention timeline, the IVTH chemo-related PIV venous events (e.g., infiltration or extravasation) rate averaged 0.24 per 100 PIVs placed.

Intervention Timeframe: August 2019 – June 2021

Post-Intervention Timeframe: July – October 2021

Post Intervention Data: During the post-intervention timeframe, the IVTH chemo-related PIV venous events (e.g., infiltration or extravasation) rate averaged 0.06 per 100 PIVs placed. This represents a **74%** reduction.



Next Steps

- Decrease of venous events occurred after implementation of this project.
- Next steps are to use the additive A-DIVA scale in the hematology oncology clinic prior to first treatment scheduling.
- This earlier assessment could provide an opportunity to place a central line before initial treatment and could further prevent venous events or delay of care.

References

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Acknowledgements

- Thank you to IV Therapy nurses, Hematology Oncology leadership, providers, Epic team members that built our documentation and reports, and our patients.
- This project received a formal Determination of Quality Improvement status according to University of Chicago Medicine institutional policy. As such, this initiative was deemed not human subjects research and was therefore not reviewed by the Institutional Review Board.