

VASCULAR ACCESS DEVICE THERAPEUTIC ROADMAP

“A Guide to Decide”

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Purpose

This Evidenced-based Practice (EBP) project aimed to proactively decrease multiple venipunctures in hospitalized adult medical patients through the use of a systematic vascular assessment and planning algorithm. Maximum patient outcomes are achieved along logical, evidence-based lines with the use of an algorithm.

Background

In C3 Acute Care Medicine at Stanford Hospital, patients have a constant need for a vascular access device (VAD) for their course of infusion therapy. Without early vascular assessment and planning, patients receive multiple venipunctures resulting in venous depletion, less satisfaction from the pain and failure of more venipunctures, increased nursing time spent on placing new peripheral IVs (PIVS), and outcomes were impacted when treatments were delayed. Evidence has shown that patients with planned VAD have fewer device placements, less difficulty with device insertions, fewer venipunctures, earlier assessment for placement of central VADs and shorter hospital stays.

Methods

This EBP project included adult Medicine patients on C3 unit excluding patients with Cystic Fibrosis and on the Pain Program. Data were collected from a retrospective electronic chart review of patients' days of stay and of nursing documentation on the type of IV access, the number of PIVs since admission and the number of attempts per PIV. A vascular access algorithm based on the Infusion Nursing Society's (INS) best practices was created and introduced to the unit. Additional in-services were provided and feedback surveys were conducted to the nursing staff focusing on the application of the algorithm and documentation in the sign-out notes. Observational validation data was also collected on the number of patients with PIVs, those with new PIVs and the number of attempts per PIV insertion.

Results

There was a difference of 1.23 fewer PIVs per patient from a baseline of 3.61 to post intervention of 2.38. A slight difference of 0.24 was noted on the average number of attempts per PIV from 1.37 to 1.13. A total of 100% of nurses received in-services on the algorithm use. 60% of nurses gave feedback on the survey about the algorithm. 85% RN compliance was achieved on the daily nursing documentation on noting the patients' day of stay, prescribed therapy, duration of therapy and IV access. Observational data showed an average of 79% of patients had PIVs and 100% of patients with new PIVs had 1 attempt each.

Implications/Conclusion

Education of the staff on the algorithm based on the best practices was effective in changing practice resulting in the decrease of multiple venipunctures. Continued follow-up through verbal feedback, surveys, audits, and observational data collection is needed. Increased advocacy through early assessment along with the appropriate device selection and collaboration with the physicians, pharmacists and PICC line nurses will optimize patient outcomes.

Keywords

Peripheral catheters, intravenous therapy, venipunctures, venous access device, vascular access plan, patient outcomes.

Key References

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