

Best Practice: Peripheral IV Flushing and Catheter Changes

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Introduction

- According to Sangtaeck et. al (2019), “Intravenous catheters of all types are ubiquitous in healthcare settings in the United States... nearly 200 million peripheral intravenous (PIV) catheters are used annually in the United States... use of intravascular devices has raised concerns about the risk of infection and other adverse outcomes.” (p. 2).
- Antibiotics are a frontline medication that saves countless lives yearly. The maintenance, manipulation, and care of these lines are essential to the effectiveness of the medication. Among these cares, flushing and changing the antibiotic catheters safely and effectively can prove to reduce the risks of infection and enhance overall medication efficacy.

Project

This research addressed best practice related to antibiotic flushing and catheter change for the purpose of improving patient outcomes.

Bolla, B., Buxani, Y., Wong, R., Jones, L., & Dube, M. (2020). Understanding IV antimicrobial drug losses: The importance of flushing infusion administration sets. *JAC-Antimicrobial Resistance*, 2(3), dlaa061. <https://doi.org/10.1093/jacamr/dlaa061>.

Percentage antimicrobial dose loss	Number of IV antimicrobials affected	
	180 cm infusion set	235 cm infusion set
0-5	11	4
6-10	14	9
11-15	9	15
16-20	4	6
21-25	1	1
>25	0	4

Table 1. Number of antimicrobials in each percentage drug loss band, following IV infusion via the 180 and 235 cm infusion sets, respectively



Methodology

- Literature review between 2018-2023
- Research extracted from PubMed, BioMed Central, ProQuest, and Jama Network
- 10 articles met criteria for selection
- Johns Hopkins appraisal system (Dang et al, 2022), use to appraise level and quality of evidence included in the review

Results

- **IV Line Flushing**
2 reports stress importance of flushing antibiotic line tubing to ensure full delivery of medication to prevent medication loss.
2 reports support flushing to reduce PIVC complications such as phlebitis, infiltration, and blockage.
1 report emphasized lack of knowledge among nurses and the need for education related to antibiotic resistance
- **Peripheral IV Catheter Changes**
2 reports support hospital policy of clinical versus indicated replacement of catheters. Clinically indicated replacement demonstrated lower rates of phlebitis, occlusion, and dislodgement.
2 reports found little difference between routine and clinically indicated replacement and argued replacement should be at the nurse's discretion
1 report argued hospitals adopt the routine replacement of catheters

Recommendations

- Flush IV lines after PIV antibiotic administration from the top of the tubing
- Change catheter tubing every 96 hours unless clinically indicated
- Continuing education for nurses on antibiotic resistance and IV maintenance

Conclusion

- Flushing from the top of the tubing after IV antibiotic administration is most effective and contributes to best patient outcomes
- Routine changes of IV lines every 96 hrs is effective and should remain the policy at OCAHS
- Ongoing education for nurses to understand why these policies are important
- By implementing these interventions, we believe patient outcomes can be improved and nurses can feel best prepared when caring for patients with peripheral IV lines.

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