

# Standardized Venous Access Assessment and Safe Chemotherapy Administration to Reduce Adverse Venous Events

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Staff of the ambulatory infusion clinic at a Magnet-designated academic medical center observed the rates of adverse venous events, including infiltration and extravasation. An evidence-based quality improvement project was developed to standardize venous access assessment using the Modified Adult Difficult IV Access Scale in conjunction with competency validation for safe administration of vesicant chemotherapy agents according to practice standards. Postimplementation data revealed a 79% reduction in adverse venous events.

## AT A GLANCE

- To preserve patient safety, nurses can follow national guidelines and best-practice recommendations for peripheral vascular assessment and vesicant administration.
- Infusion centers can decrease venous events by implementing evidence-based practices for safe peripheral IV administration of chemotherapy.
- Using a standardized, objective assessment tool can assist with identifying patients at high risk for venous events from vesicant agents.

## KEYWORDS

extravasation; evidence-based practice; chemotherapy; venous access

## DIGITAL OBJECT IDENTIFIER

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Extravasation, the inadvertent leakage of vesicant chemotherapy agents outside of the vein and into surrounding tissue, can cause significant risk to patient safety (Jackson-Rose et al., 2017; Olsen et al., 2019). Extravasation is also associated with substantial financial, physical, and emotional burdens on the patient and their caregiver (Hadaway, 2007; Helm et al., 2019). Administration of vesicant chemotherapies requires special training, and oncology nurses play a critical role in minimizing the risk of extravasation (Dalton, 2022; Olsen et al., 2019). Oncology nurses must be familiar with chemotherapy agents that have the potential to cause injury, and they must remain up to date on best practices for safe administration. The Oncology Nursing Society (ONS, 2020) recommends initial and annual training to maintain competency and ensure safe administration of chemotherapy. In addition, the Infusion Nurses Society’s (INS’s) standards for practice instruct nurses to select an appropriate venous administration site and ensure patency before and during infusion of vesicant agents (Gorski et al., 2021). This includes appropriate assessment for peripheral IV (PIV) catheter insertion and recognizing when a central venous catheter (CVC) may be warranted.

Magnet-designated University of Chicago Medicine is an academic medical center. The infusion therapy (IVTH) department has 54 infusion bays and serves patients diagnosed with hematologic or solid tumor malignancies who are scheduled to receive treatment with a variety of cancer therapies, including irritants, vesicants, and immunotherapies. Because patients who receive chemotherapy agents in the ambulatory setting can often present with poor venous status, which increases the risk of extravasation, the infusion nurses in this department met to discuss opportunities for improving the administration of vesicants and irritants via PIV. Nurses at this institution began to wonder if their administration practices were in alignment with ONS and INS standards after patients reported discomfort during PIV infusions. In addition, one nurse who attended a national conference explained that they learned their IVTH department’s administration practices needed improvement to align with standard guidelines. Further inquiry also revealed practice