

A PERIPHERAL ADVANTAGE® PROGRAM WHITE PAPER

SECURING PERIPHERAL IV CATHETERS: BENEFITS OF AN ALL-IN-ONE DEVICE

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More than 70% of hospitalized patients require a PIVC and 33–69% fail before the completion of treatment¹

INTRODUCTION

Peripheral IV catheters (PIVC) are the most common vascular access device for patients requiring antibiotics, fluids, and medications.² They are typically inserted in the upper extremity and in pediatrics, veins in the scalp and lower extremities may be used.³ Unfortunately, 33–69% of PIVCs fail before the completion of treatment.¹ This is concerning as many PIVCs are used during emergency care, anesthesia, or critical care.² One of the primary reasons for premature PIVC failure is catheter dislodgment.⁴

Protecting and securing PIVCs are important for maintaining access, preventing complications, catheter failure, and promoting patient safety.⁵ The standards of practice indicate that a securement device should be applied to PIVCs to protect the site from motion and unintentional removal.³ An all-in-one dressing and securement device, called Klik-FIX®, has been designed to secure the PIVC, protect the catheter, and surrounding skin.

THE CHALLENGES OF PIVC FAILURE

PIVC failure is common and includes dislodgment, occlusion, infection, infiltration, and phlebitis.^{6,7} More serious complications or adverse events such as infection, infiltration, or pressure injuries may require additional treatment and increased length of stay.⁸ If a patient experiences one of these complications, replacement of the PIVC may be necessary for continued treatment.^{8,9} Unplanned or repeated PIVC insertion procedures can be difficult due to procedural pain and anxiety, hematoma formation, or limited access.^{2,8,9,10}

Accidental Removal and Dislodgment

Accidental Removal: Unplanned PIVC removal due to patient movement, failed securement method or loose dressing.

Dislodgment: PIVC is pulled or displaced. This may lead to complications such as infiltration or extravasation.

Preventative Measures

Adequate securement of the PIVC can help reduce the risk of dislodgment and accidental removal.

PRESSURE INJURIES

Hospital acquired pressure injuries (HAPI) can be defined as a localized injury to the skin and underlying tissue.¹¹ Medical devices, which includes PIVCs, account for more than 30% of all HAPIs.¹² This type of injury is referred to as an adverse event and is often detected during a PIVC dressing change or removal.

Prevention measures for HAPIs include, placing a pad or cushion under the hub to protect the skin from pressure. Some securement devices have this cushion built in while others require an additional component.¹²

THE COST OF COMPLICATIONS

PIVC complications can have a serious impact on patient's length of stay and healthcare costs.⁴ In a recent modeled analysis of a sample 250-bed hospital, the incremental cost to treat PIVC patients with a bloodstream infection was \$1,954,628.¹³ Increased health care costs have a direct effect on the economic burden that patients may experience.⁴ As a means to improve outcomes, evidenced-based interventions such as PIVC catheter securement should be implemented.⁹

STANDARDS OF PRACTICE FOR PIVC SECUREMENT

The Infusion Nurses Society Standards of Practice recommend:

- PIVCs are secured to prevent complications associated with motion at the insertion site and unintentional loss.³
- Methods to secure the PIVC do not interfere with the ability to routinely assess and monitor the access site or impede vascular access circulation or delivery of the prescribed therapy.³

The role of catheter securement is to not only reduce movement of the catheter but also to protect the site from contamination.² The use of a catheter securement device has shown to increase catheter dwell time, decrease complications, and decrease costs.¹⁴

CLIK-FIX CATHETER SECUREMENT DEVICE

The Klik-FIX Peripheral Catheter Securement Device is all-in-one and includes a securement device, transparent dressing, foam base pad, and extra foam tape strip. The cushioned foam base pad helps to maintain the angle of insertion, protect the skin under the catheter, and reduce the risk of pressure injuries.

PULL FORCE TESTING

A method used to measure the force required to dislodge a catheter is called pull force testing. This type of testing helps determine the strength of a securement device. The higher the pull force, the stronger the securement device is with preventing PIVC dislodgment or accidental removal.

A pull force evaluation was completed on the Klik-FIX® Peripheral Catheter Securement Device with multiple brands of PIVCs to determine site visibility, catheter stabilization, and strength (pull force).

The assessment for the pull force of the Klik-FIX included horizontal, vertical, side-to-side movement, and general information of the product performance. The results of the pull force testing determined that the Klik-FIX Peripheral Catheter Securement Device effectively secures against a variety of market leading catheters. All the catheters could withstand over 5 pounds of pull force when secured with the Klik-FIX Peripheral Catheter Securement Device. Micro-movements of the catheter were also minimized. The results are listed below.¹⁵

PULL FORCE RESULTS

Catheter Brand	Klik-FIX Peripheral Device secured catheter easily	Securement strap was repositionable without leaving behind residue	Maintained full visibility of insertion site	Stabilized the catheter, minimizing micro-movement	Maximum pull force (lb.)
B. Braun Introcath Safety® 3 IV Catheter	✓	✓	✓	✓	6.28
Smiths Medical ViaValve Safety IV Catheter	✓	✓	✓	✓	5.23
BD Nexiva Closed IV Catheter Single Port	✓	✓	✓	✓	5.19

SUMMARY

With a commitment to excellence in vascular access care, the PIVC dressing and securement must be considered in the insertion and maintenance bundle. Reducing harm associated with PIVCs is critical. Understanding your PIVC-related clinical outcomes is key to focusing on the improvements that matter most. The Klik-FIX Peripheral Catheter Securement Device should be considered for PIVC dressing and securement.





To learn more about Clik-FIX® Catheter Securement Devices, visit [bbraun.com/clikfix](https://www.bbraun.com/clikfix)

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