



**Reduces
complications^{1*}**

**Dwells
longer^{1*}**

**Preserves
sites¹⁻³**

Preserving sites and protecting veins

The BD Nexiva™ closed peripheral IV catheter system, shown to preserve sites for longer and designed to protect patients by reducing the risk of complications and restarts^{1-3*}

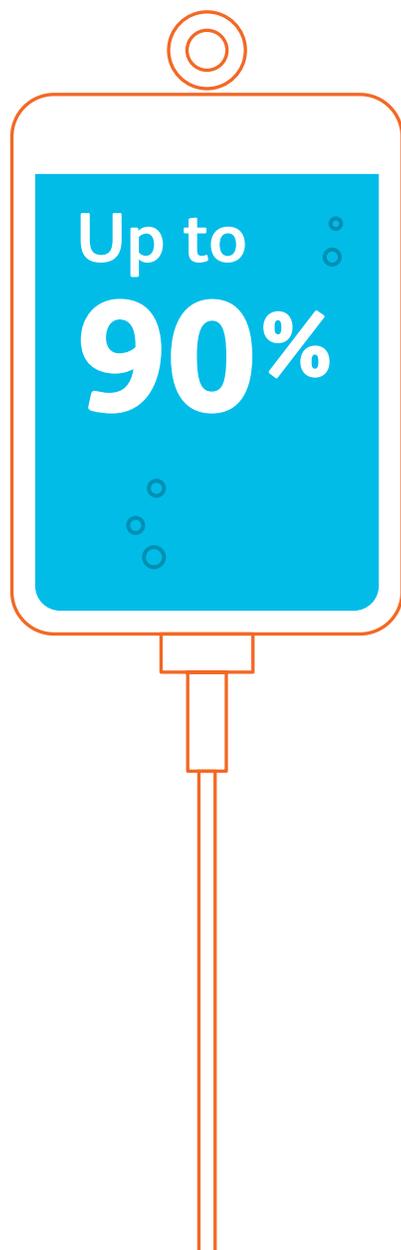


*Compared to an open system.



Complications of peripheral intravenous catheters are not only common in the hospital setting—they're costly^{8,9}

Did you know that intravenous (IV) catheter placement is the most common invasive hospital procedure performed worldwide?⁸



of hospitalized patients in the United States require an IV catheter during their hospital stay, and 98% of those procedures are peripheral intravenous catheter (PIVC) placements.⁸

— HOWEVER —

Up to 35-50%

of PIVCs experience a **PIVC-related complication** during dwell time⁸



PIVC-related complications lead to catheter removal and have an economic impact on a hospital system^{8,9}

Potential complications consist of **phlebitis**, **extravasation**, **occlusion**, **dislodgement**, and **infection**. Any of these complications, either alone or in combination, lead to catheter removal before the end of the intended dwell time.⁸



Cost of an IV start

ranges from **\$28-\$35⁽⁸⁾**

Assuming insertion success on first attempt



Extravasation^{9,11}

\$16,342[†]

Average potential liability of a moderate extravasation

\$108,874[†]

Liability of a severe extravasation



Bloodstream infections¹²

\$33,000 to \$75,000 for a patient in ICU

A 2011 study showed bloodstream infections are costly to healthcare facilities



Blood exposure

39% blood leakage incidence

Without the use of a blood control device¹³

\$0.30 per insertion

Average cost per cleanup for blood exposure based on a 2011 study¹⁴

Selecting the right PIVC the first time can help minimize costs associated with resticks and restarts and preserve sites^{1-7,16,17}

[†]In 2016 dollars, adjusted for inflation from original 2007 amounts of \$14,118 and \$94,056, respectively.

Compliance with best practices around PIVC use may help reduce costs, limit resource utilization, and increase patient satisfaction^{2-4,17,18}

Centers for Disease Control and Prevention (CDC)

- Catheter stabilization is recognized as an intervention to decrease the risk for phlebitis, catheter migration and dislodgement, and may be advantageous in preventing catheter-related bloodstream infections (CRBSIs)⁴
- Recognizes that there is no need to replace peripheral catheters more frequently than every 72 to 96 hours to reduce risk of infection and phlebitis in adults⁴

International Nosocomial Infection Control Consortium

- Recommends the use of vascular access devices that minimize manipulations and reduce components (PIVCs with integrated extension and needle-free access ports) to achieve longer dwelling time and reduce the need for replacement of PIVCs more frequently, with minimum complications¹⁹

Infusion Therapy Standards of Practice

- Recommend **limiting the use of add-on devices** to reduce the potential for contamination, additional manipulation, and disconnection²
 - Limiting add-on devices reduces the incidence of contamination and accidental disconnection, minimizes the manipulation of the sterile fluid pathway, maintains a closed system, and reduces the costs associated with their use³
- Add-on devices should only be used when clinically indicated for a specific purpose. When indicated, preferentially use systems that minimize manipulation and reduce multiple components, such as integrated extension sets²
- Recommend removal of PIVCs in patients only when clinically indicated²
- Studies support Infusion Therapy Standards of Practice recommendation on PIVC removal
 - Routine replacement of PIVCs did not reduce the rate of catheter-related complications compared with clinically indicated replacement (e.g., because of catheter failure)¹⁷
 - Clinically indicated replacement strategy has been shown to **reduce total IV equipment costs by 11%**¹⁷
 - Clinically indicated replacement of PIVC results in:
 - Significant reduction in healthcare resource use such as equipment and staff time¹⁷
 - **Minimized number of restarts and costs**¹⁸
 - **Increased patient satisfaction**¹⁸

The BD Nexiva closed peripheral IV catheter system

The only all-in-one PIVC shown to preserve sites for longer^{1-7*}



BD Nexiva IV catheter reduces complications*



Reduces manipulations

Integrated extension tubing and stabilization platform[†] reduce manipulations and movement at the site that may lead to dislodgement[‡] and phlebitis^{1,20}



Reduces accidental dislodgement

Clinically demonstrated to reduce accidental dislodgement^{20†} and **complies with the Infusion Therapy Standards of Practice and CDC guidelines** for catheter stabilization^{2,4}



Lessens blood exposure

98% reduced blood exposure during insertion due to the BD Nexiva IV catheter preassembled systems^{20*}



Lowers chance of mechanical phlebitis

Proprietary BD Vialon™ biomaterial softens up to 70% in the vein, enabling longer dwell times and reducing the chance of mechanical phlebitis by up to 50%^{6§}

Closed system=Fully-integrated system that consists of a pre-attached extension tube, stabilization platform, and needle-free connectors.

*Compared to an open system.

†When used with an IV site securement dressing.

‡Compared with B. Braun Introcan Safety® catheter with Bard Statlock® IV Ultra stabilization device.

§Compared with an FEP catheter.



BD Nexiva IV catheter dwells longer

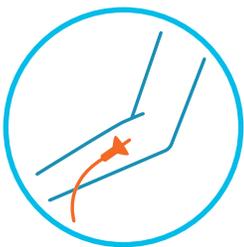


**BD Nexiva closed
IV catheters**



**Open-system
catheters**

Median dwell time for BD Nexiva IV catheters versus the open-system catheters studied in a randomized trial of PIVCs in place for more than 24 hours¹



BD Nexiva IV catheter preserves sites

By preserving sites for longer, the BD Nexiva IV catheter helps patients get the medication they need as scheduled, potentially decreasing their length of stay^{1,7,20}

Using the BD Nexiva IV catheter may reduce costs and delays in treatment^{1,7,20}

Cost reduction of

~\$1,000,000

per year per 1,000 beds

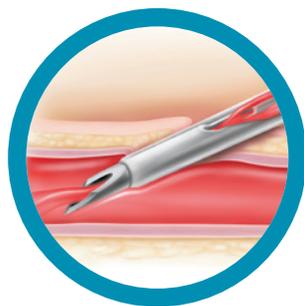
In a 2014 clinical study, the longer dwell time (6 days*) of the BD Nexiva IV catheter led to cost reductions compared with an open system¹

BD Nexiva IV catheter technologies may help lower overall costs



BD Vialon biomaterial

Longer time to thrombus formation in a porcine study^{7†} for BD Vialon biomaterial catheters led to **fewer restarts and enabled longer dwell times, which may reduce overall costs**



BD Instaflash™ needle technology

Incorporates a notched needle that may **improve first-stick success and reduce painful hit-and-miss insertions**



Stabilization platform[‡]

Helps minimize movement that can lead to peripheral IV catheter complications, restarts, and associated costs^{20§}

*Compared with 96 hours in an open system.

†Compared with PU and FEP catheters tested in reference study.

‡When used with an IV site securement dressing.

§Compared with B. Braun Introcath Safety[®] catheter with Bard Statlock[®] IV Ultra stabilization device.

Count on technology that makes treating patients safer while remaining compliant with industry guidelines^{1-3,5,21}



Increased clinician safety

98% reduced blood exposure during insertion due to the BD Nexiva IV catheter preassembled system.*



Increased catheter stabilization

Clinically demonstrated to reduce accidental dislodgement,²⁰ meeting Infusion Nursing Society standards and CDC guidelines for catheter stabilization.^{2,4}



Reduced rate of complications

In a clinical study, results demonstrated a significant reduction in the rate of phlebitis (grade 2 or higher), PIVC-related complications, and infiltration in the closed-system group compared with the open system group.¹



Preserves sites

In compliance with industry best practices, BD Nexiva IV catheter is the only all-in-one PIVC system shown to dwell longer and preserve sites vs open system PIVCs.¹⁻⁷

By choosing the BD Nexiva IV catheter you can reduce the risk of complications and make treating patients safer^{3,5}

The BD Nexiva closed IV catheter system has features that help provide significantly better care¹

1

BD Vialon biomaterial

- Proprietary BD Vialon biomaterial softens up to 70% in the vein,⁵ enabling longer dwell times and reducing the chance of mechanical phlebitis by up to 50%^{6*}
- Catheters made with BD Vialon biomaterial remained free of thrombus longer than any of the other catheters tested in a porcine study^{7†}

2

BD Instaflash™ needle technology

- Incorporates a notched needle (20- to 24-gauge), which may improve first-stick success
- Notched needle may reduce painful hit-and-miss insertions
- Provides quick blood visualization that may help improve insertion success and therefore reduce insertion attempts

3

Longer lengths

- Accommodate a variety of clinical needs from premature newborns to ultrasound guidance
 - 18 gauge available in 1.25" and 1.75"
 - 20 gauge available in 1", 1.25", and 1.75"
 - 22 gauge available in 1" and 1.75"
 - 24 gauge available in 0.56" and 0.75"

4

Built-in stabilization platform[‡]

- Reduces dislodgement by 84%^{20§} and complies with the Infusion Therapy Standards of Practice and CDC guidelines for catheter stabilization^{2,4}

5

Pre-attached extension set

- Shown to significantly reduce blood exposure during insertion compared to an open system²⁰ and aligns with INS guidelines²
- Recommend limiting the use of add-on devices to reduce the potential of contamination, additional manipulation, and disconnection²

6

Passive safety mechanism

- Needle is automatically shielded after insertion

*Compared with an FEP catheter.

†Compared with PU and FEP catheters tested in a reference study.

‡When used with an IV site securement dressing.

§Compared with B. Braun Introcan Safety® catheter with Bard Statlock® IV Ultra stabilization device.



The BD Nexiva closed IV catheter system

The only all-in-one PIVC system shown to preserve sites for longer¹⁻³

- ✓ **6 days versus 4 days** median dwell time versus an open system studied in a randomized trial of PIVCs in place for more than 24 hours¹
- ✓ **May reduce delays in treatment and costs**^{1,7,20}
- ✓ **Makes treating patients safer**, compliant with standards and guidelines^{1,2,4,20}
- ✓ **The BD portfolio of IV technologies** has solutions that help provide significantly better care¹
- ✓ **BD Nexiva catheters are part of BD Vascular Access Management**, an integrated approach to vascular access care

References

1. González López J, Arribi Vilela A, Fernández Del Palacio E, et al. Indwell times, complications and costs of open vs closed safety peripheral intravenous catheters: a randomized study. *J Hosp Infect.* 2014;86(2):117-126. 2. Infusion Nurses Society. Infusion therapy standards of practice. *J Infus Nurs.* 2016;39(1S). 3. Alexander M, Corrigan A, Gorski L, et al. *Infusion Nursing: An Evidence-Based Approach.* 3rd ed. St. Louis, MO: Saunders Elsevier; 2010:213, 410. 4. O'Grady NP, Alexander, M, Burns LA, et al. Guidelines for the prevention of intravascular catheter-related infections. CDC. 2011:16. 5. Data on file at BD. 6. Maki DG, Ringer M. Risk factors for infusion-related phlebitis with small peripheral venous catheters. *Ann Intern Med.* 1991;114(10):845-854. 7. Woodley WD, Ferriter MS, Sullivan VJ, Harvey AJ. Evaluation of PU and FEP peripheral IV catheters utilizing a sensitive, accelerated in vivo thrombus-occlusion model. Association for Vascular Access. Twenty-sixth annual meeting for the Association for Vascular Access. 2012. 8. Helm RE, Klausner JD, Klemperer JD, et al. Accepted but unacceptable: peripheral IV catheter failure. *Infus Nurs Society.* 2015;38(3):189-203. 9. Paice T. Economic impact of an extravasation: an analysis. *Imaging Economics.* 2007;20(3):14. 10. Roszell S, Jones C. Intravenous administration issues. *J Infus Nurs.* 2010;33(2):112-118. 11. Bureau of Labor Statistics website. https://www.bls.gov/data/inflation_calculator.htm. Accessed April 4, 2017. 12. Hollenbeak CS. The cost of catheter-related bloodstream infections. *J Infus Nurs.* 2011;34(5):309-313. 13. Onia R, Eshun-Wilson I, Arce C, et al. Evaluation of a new safety peripheral IV catheter designed to reduce mucocutaneous blood exposure. *Curr Med Res Opin.* 2011;27(7):1339-1346. 14. Richardson D, Kaufman L. Reducing blood exposure risks and costs associated with SPIVC insertion. *Nurs Manage.* 2011;42(12):31-34. 15. Rosenthal K. Get a hold on costs and safety with securement devices. *Nurs Manage.* 2005;36(5):52-53. 16. Schears GJ. Summar of product trials for 10,164 patients: comparing an intravenous stabilizing device to tape. *J Infus Nurs.* 2006;29(4):225-331. 17. Tuffaha H, Rickard C, Scuffham P, et al. Cost-effectiveness analysis of clinically indicated versus routine replacement of peripheral intravenous catheters. *Appl Health Econ Health Policy.* 2014;12(1):51-58. 18. Rickard CM, Webster J, Wallis MC, et al. Routine versus clinically indicated replacement of peripheral intravenous catheters: a randomised controlled equivalence trial. *Lancet.* 2012;380(9847):1066-1074. 19. International Nosocomial Infection Control Consortium (INICC). Bundle of the International Nosocomial Infection Control Consortium (INICC) to prevent central and peripheral line-related bloodstream infections. January 1, 2017. <http://www.inicc.org/media/docs/2017-INICCBSIPreventionGuidelines.pdf>. Accessed April 11, 2017. 20. Bausone-Gazda D, Lefaiver CA, Walters SA. A randomized controlled trial to compare the complications of 2 peripheral intravenous catheter-stabilization systems. *J Infus Nurs.* 2010;33(6):371-384. 21. The Joint Commission. Preventing central line-associated bloodstream infections: A global challenge, a global perspective. Oak Brook, IL: Joint Commission Resources, May 2012. http://www.jointcommission.org/assets/1/18/CLABSI_Monograph.pdf. Accessed April 10, 2017.

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