

[Arrow® VPS Rhythm® DLX Device Overview](#)[Arrow® VPS Rhythm® DLX Device Ultrasound](#)[Arrow® PICC preloaded with NaviCurve™ Stylet](#)[Arrowg+ard Blue Advance® Protection](#)[Arrow® PICCs and Max Barrier PICC Kits](#)[Partnership, Education, & Resources](#)[Comparison of Arrow® VPS Rhythm® DLX Device with NaviCurve™ Stylet vs BD Sherlock 3CG®](#)[Comparison of Arrowg+ard Blue Advance® PICC vs BD PowerPICC™ Provena™ PICC](#)

Arrow® VPS Rhythm® DLX Device

PICC placement for those who don't like surprises



Arrow® VPS Rhythm®
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Arrow® VPS Rhythm®
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Arrow® PICC preloaded
with NaviCurve™ Stylet

Arrowg+ard Blue Advance®
Protection

Arrow® PICCs and
Max Barrier PICC Kits

Partnership, Education,
& Resources

Comparison of Arrow®
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with NaviCurve™ Stylet
vs BD Sherlock 3CG®

Comparison of Arrowg+ard
Blue Advance® PICC vs BD
PowerPICC™ Provena™ PICC

Arrow® VPS Rhythm® DLX Device

Ultrasound, tip navigation, and confirmation

Successful PICC placement requires a range of technologies that allow you to seamlessly progress from one step to the next for maximum efficiency. That's why the VPS Rhythm® DLX Device provides **all-in-one convenience with ultrasound, navigation, and tip confirmation**. This device works in concert with the Arrow® PICC preloaded with NaviCurve™ Stylet, giving vascular access specialists the technology they need to insert PICCs efficiently and consistently.



The VPS Rhythm® DLX Device delivers precision tracking and locating with a full breadth of features that help enhance user experience, including:

- **Vascular access ultrasound** that is easy to use, intuitive to navigate, and includes a catheter-to-vessel ratio (CVR) tool
- **Electromagnetic navigation** that facilitates visualization of the PICC tip as it advances through the vasculature
- **Electrocardiogram (ECG) tip location technology** indicated as an alternative to a confirmatory chest x-ray
- **Versatile, portable, and easy to use;** designed for bedside placement of vascular access catheters



[Visit Arrow® VPS Rhythm® DLX Device landing page](#)



[Watch Product Overview video](#)



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Reliable PICC insertion and dropping

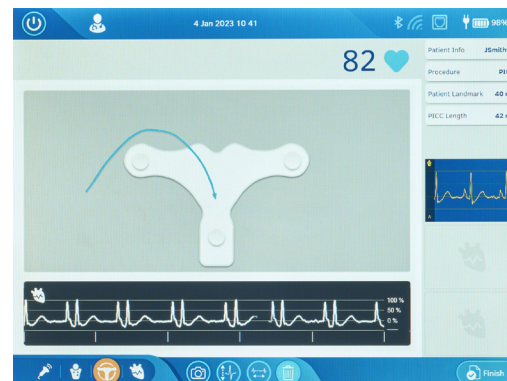
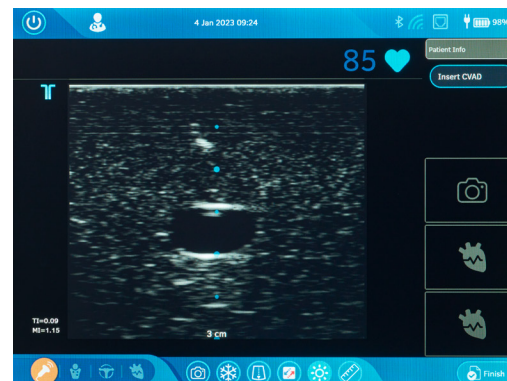
- The user experience on the VPS Rhythm® DLX Device allows the inserter to perform the procedure with fewer clicks*
- The inserter can move seamlessly from ultrasound vessel assessment, through PICC navigation, to final PICC tip placement confirmation
- The TipTracker™ software demonstrates catheter pathway and orientation, allowing for immediate adjustments if necessary
- The ECG display is automatically enlarged based on where the user is in the procedure for easy viewing of the ECG waveform, negative deflection, and highlighting of max P-Wave region
- Real-time alert icons assist with clinical troubleshooting during a case, like notifying of a disconnected lead or remote throughout the procedure



Tip Navigation with an Arrowg+ard Blue Advance® PICC preloaded with the NaviCurve™ Stylet helps to give vascular access specialists confidence by reducing sources of catheter-related complications and workflow inefficiencies across the continuum of care.¹⁻³

The VPS Rhythm® DLX Device is available in 5 configurations

- ✓ Ultrasound with TipTracker™ Technology and ECG
- ✓ Ultrasound with ECG
- ✓ TipTracker™ Technology with ECG
- ✓ ECG only
- ✓ Ultrasound only



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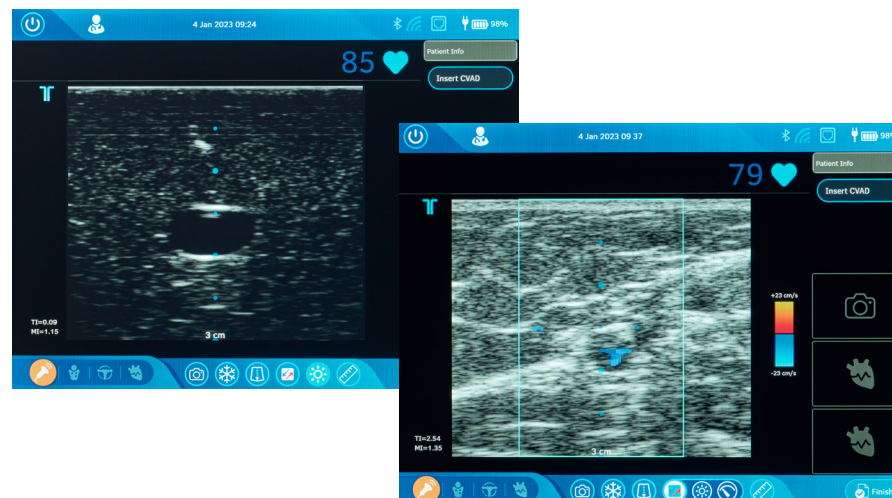
Arrow® VPS Rhythm® DLX Device Ultrasound

Visualization for targeted placement

Good vessel assessment is essential to ensuring PICC insertion success, as well as patient comfort and safety. To achieve this, you need a clear ultrasound for insertion planning and needle guidance. The VPS Rhythm® DLX Device with integrated ultrasound is designed to be a clear and easy-to-use vessel assessment tool.

The VPS Rhythm® DLX Device Ultrasound mode allows the user to⁴:

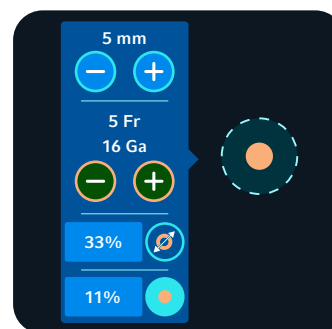
- Freeze or unfreeze image
- Take a snapshot
- Get both diameter and area measurements with the catheter-to-vessel ratio (CVR) tool
- Visualize qualitative indicators of fluid flow and direction with the Color Flow Mapping Mode
- Use an optional needle guide bracket
- Use freeze and snapshot buttons directly on the probe



Catheter-to-Vessel Ratio Tool⁵

The CVR tool assists the clinician in choosing the appropriate French sized catheter. The INS guidelines state that a catheter less than or equal to 45% diameter ensures patient safety by protecting the vasculature from over-occlusion.⁶

- Easily position the measurement circle over the vessel and adjust to match the size of the vessel in 0.5 mm increments
- Use blue +/- to input the vessel inner diameter
- Use orange +/- to input the catheter French size
- Ratio is automatically calculated in diameter and area



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Improved placement into the lower 1/3 of the SVC⁴

Due to the variability of patient vasculature, all PICCs occasionally have difficulty advancing to the superior vena cava (SVC) on the first attempt, which can result in frustrating delays during your PICC placement procedures. The Arrow® NaviCurve™ Stylet not only enables electromagnetic navigation with intracavity electrocardiogram (ECG) tip confirmation, but also has proprietary design features that assist PICC advancement into the SVC on the first attempt.¹

Pushable body

provides electromagnetic tip tracking
in real time for easy visualization

Angled tip

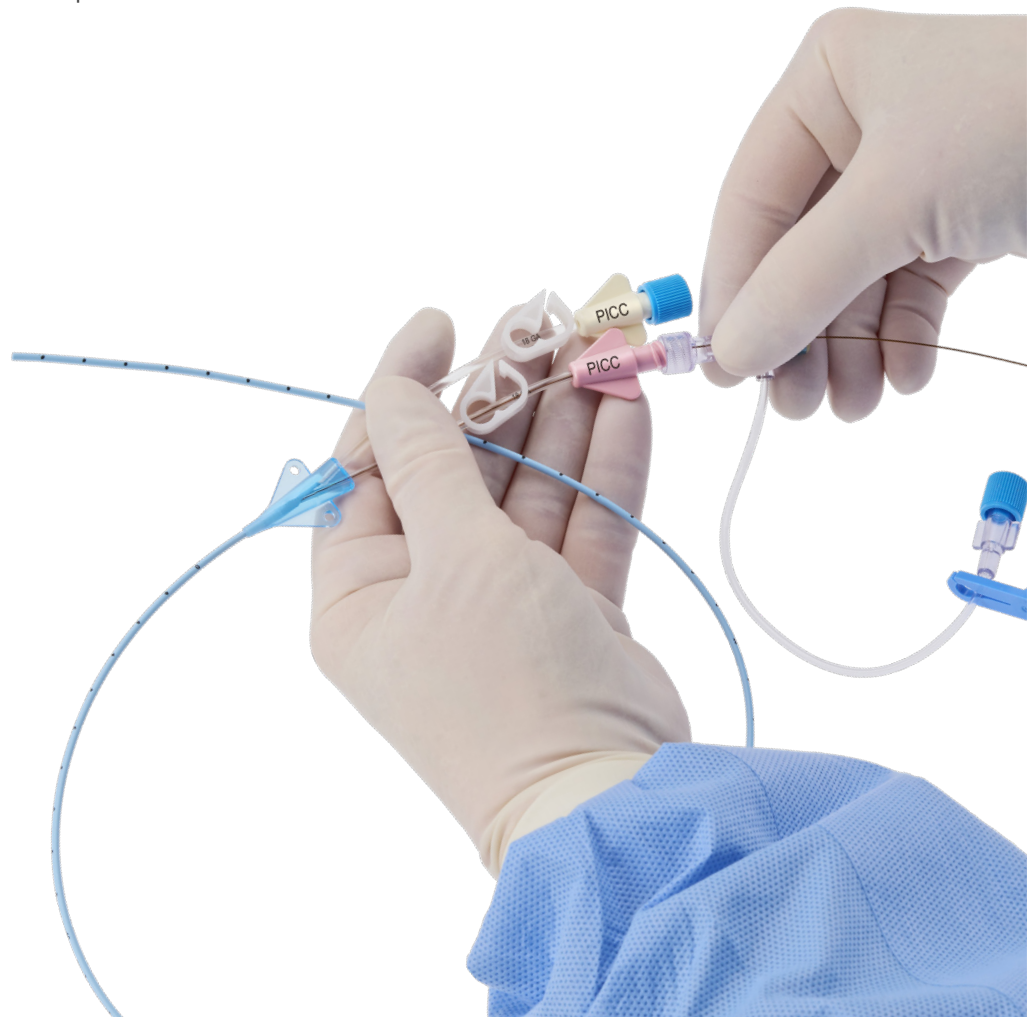
designed to direct the PICC
tip downward into the SVC

Short flexible section

designed to reduce the risk
of catheter looping

Anatomical curve

allows the stylet to self-orient to
the human anatomy and direct
the PICC toward the SVC



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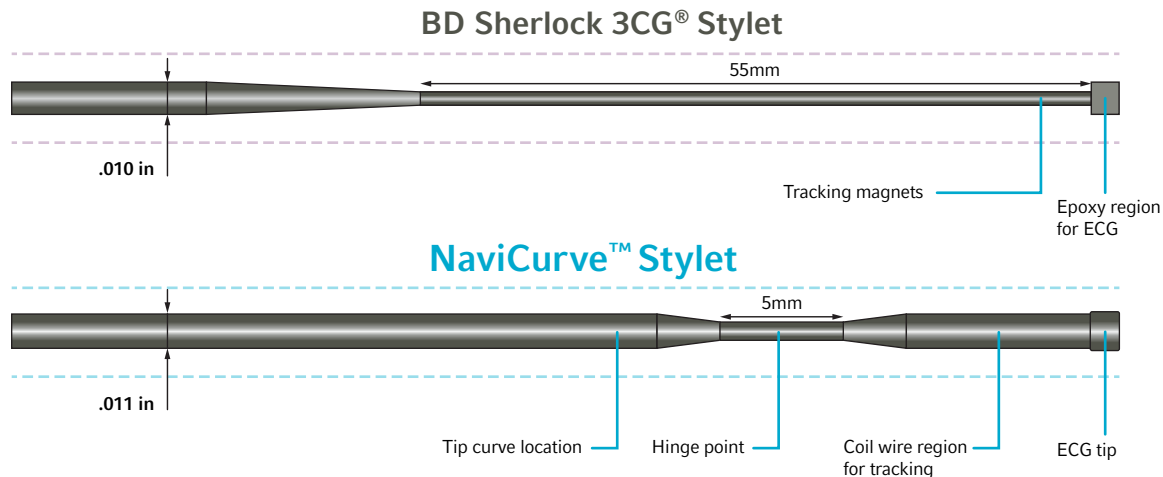
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Inner stylet design profile comparison



[Watch digital demo](#)

[View online catalog](#)

First-attempt success¹

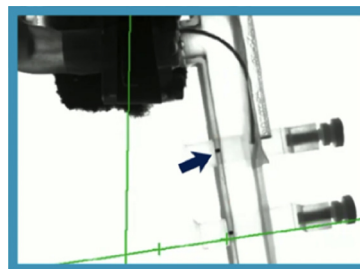
In a Benchtop model, Arrow® PICCs preloaded with NaviCurve™ Stylet were shown to:

- Ease advancement of the PICC into the SVC on the first attempt without the need to reposition the catheter¹
- Reduce the risk of PICC looping and save procedural time¹
- Designed to efficiently and consistently assist in PICC insertion

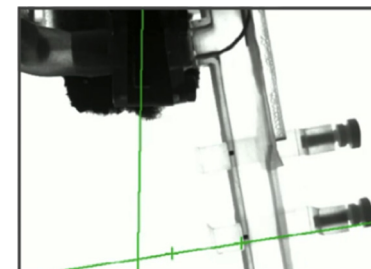
90%
drop rate¹

vs 0% drop rate for
BD Sherlock 3CG® Stylet
in a simulated model¹

NaviCurve™ Stylet¹



BD Sherlock 3CG® Stylet¹



[Watch NaviCurve™ Stylet vs BD Sherlock 3CG® Stylet video](#)



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Arrowg+ard Blue Advance® Protection

Protecting your patients in areas clinically out of reach



[View online catalog of Arrowg+ard
Blue Advance® PICCs](#)

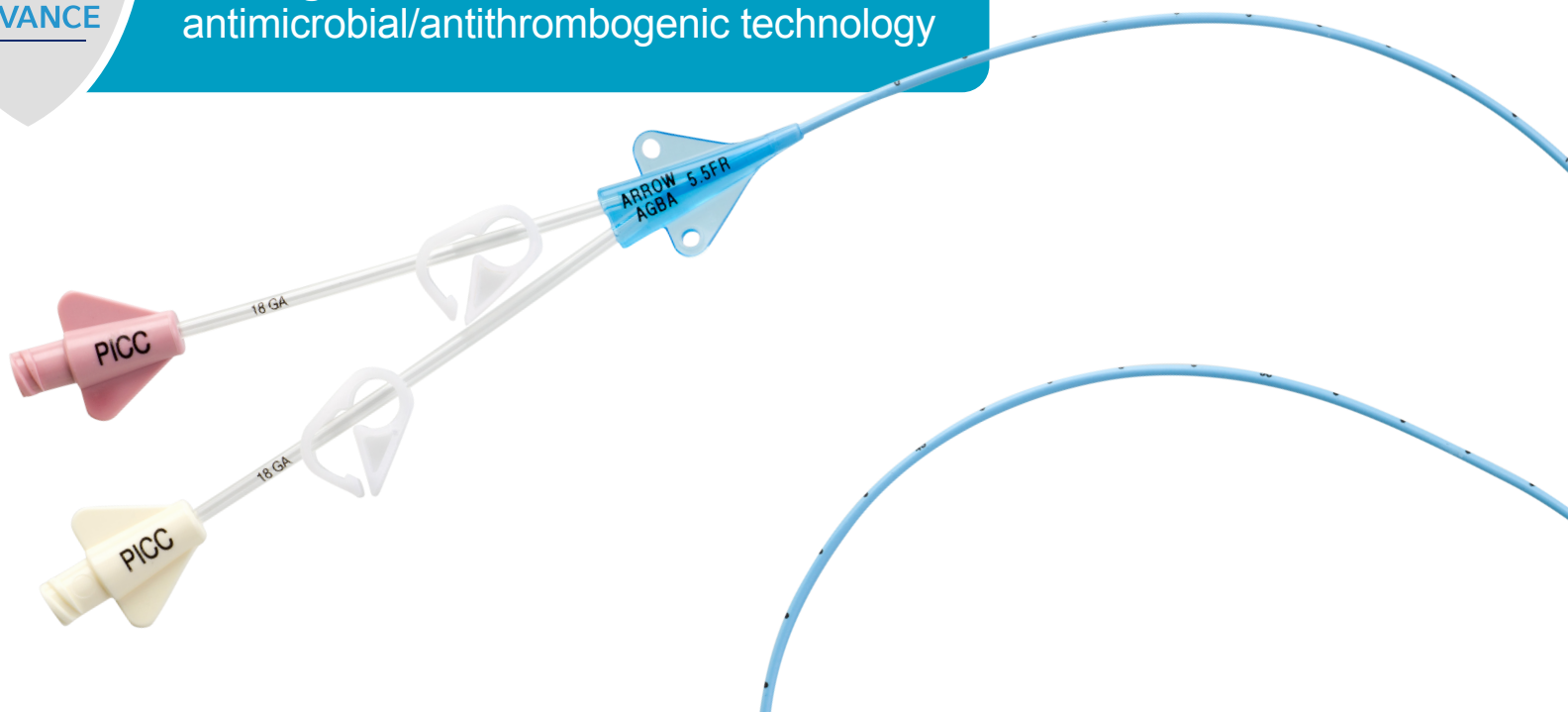
Two—that's the number of the most common PICC-related complications: infection and thrombosis.^{7,8}

Central line-associated bloodstream infections (CLABSI) are highly prevalent. Seventy percent of these infections are preventable, yet they are associated with **28,000 deaths each year and cost over \$2 billion.**⁹

Using Arrowg+ard Blue Advance® PICCs will help guard against CLABSI-causing pathogens in areas that are clinically out of reach.⁴ This protection lasts while the line is in the patient for at least 30 days.^{3,10}

AGB
ADVANCE

**Arrowg+ard Blue Advance® PICCs with
antimicrobial/antithrombogenic technology**



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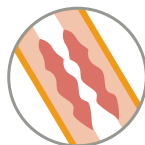
Comparison of Arrowg+ard
Blue Advance® PICC vs BD
PowerPICC™ Provena™ PICC

Teleflex is committed to supporting vascular access specialists in their efforts to reduce vascular-related complications. We offer the world's only antimicrobial and antithrombogenic PICC^{3,10}



Protects against thrombotic occlusion¹¹

Chlorhexidine works continuously to prevent catheter buildup of fibrin sheath, reducing the risk of intraluminal thrombotic occlusion



Antithrombogenic protection³

Reduces thrombus accumulation on catheter surfaces



Antimicrobial protection¹⁰

Extra- and intraluminal protection helps reduce the colonization from pathogens responsible for most healthcare-associated infections



Intimal hyperplasia protection³

In vivo intravascular studies have shown an average of 72% less intimal hyperplasia after 29 days and a reduction in phlebitis

99%
colonization
reduction

for at least
30 days¹⁰



[View Arrowg+ard Blue Advance®
Protection: Technology
Overview Brochure](#)



[View Arrow® PICC
Overview Brochure](#)

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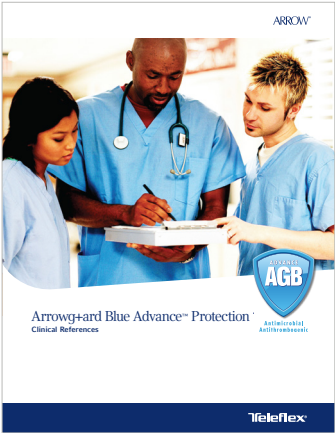
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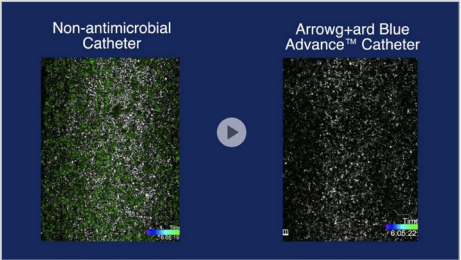
Clinical evidence & economics



Antimicrobial Arrowg+ard Blue
Advance® Catheters—Protection
against pathogens on the CDC's
Antibiotic Resistant Threats Report



Arrowg+ard Blue Advance®
Clinical References



Arrowg+ard Blue Advance® vs
Non-Antimicrobial Catheter Biofilm
Formation Video



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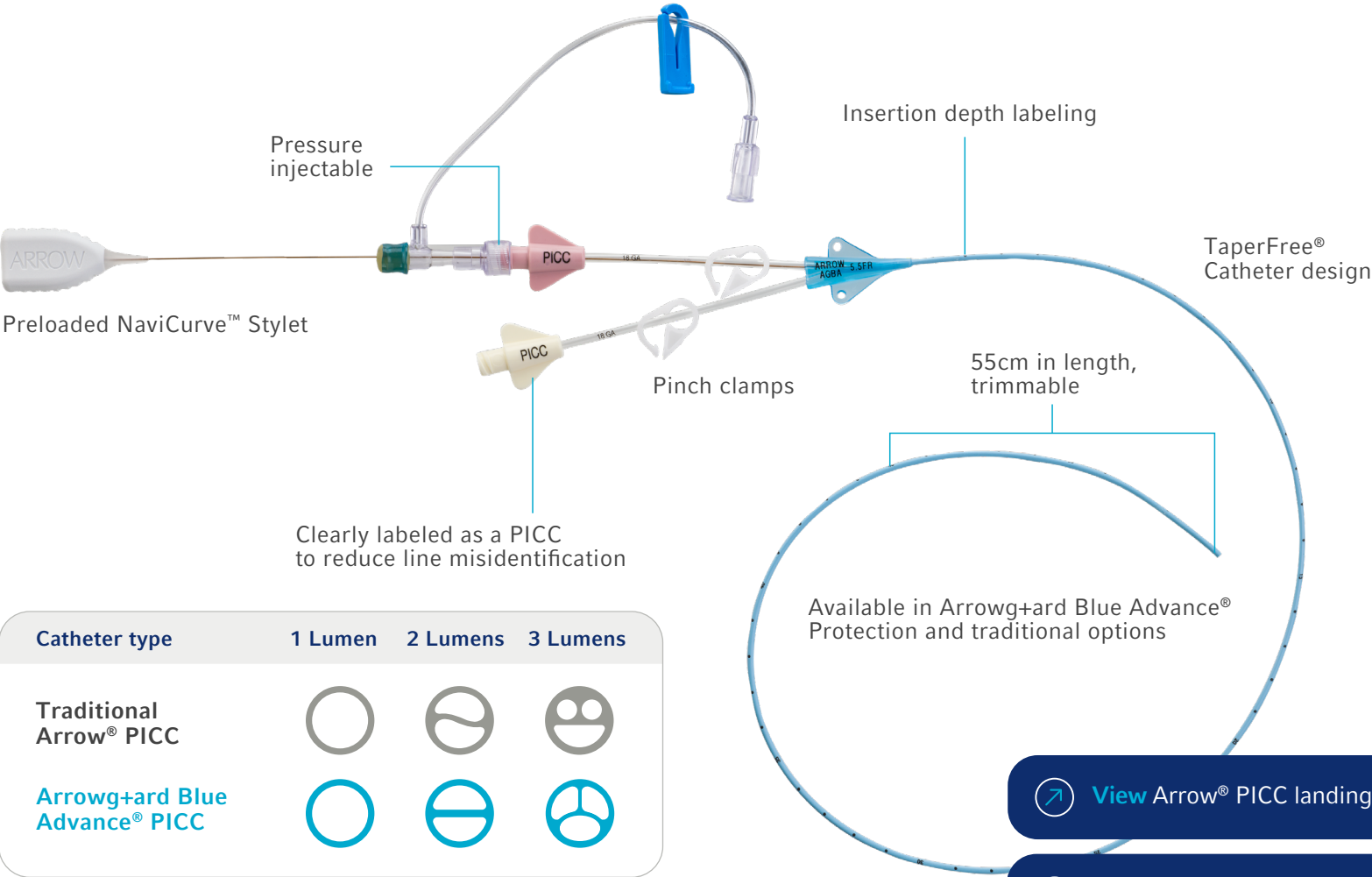
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Arrow® PICCs

The Arrow® TaperFree® PICC is designed to reduce the risk of venous stasis from vessel trauma by complying with INS standards that state to select a catheter with a 45% or less catheter to vein ratio from distal tip to hub.^{6,12-14}



One, two, or three lumens. Choose the most appropriate number of lumens based on patient's needs.

[View Arrow® PICC landing page](#)

[View Arrow® PICC online catalog](#)

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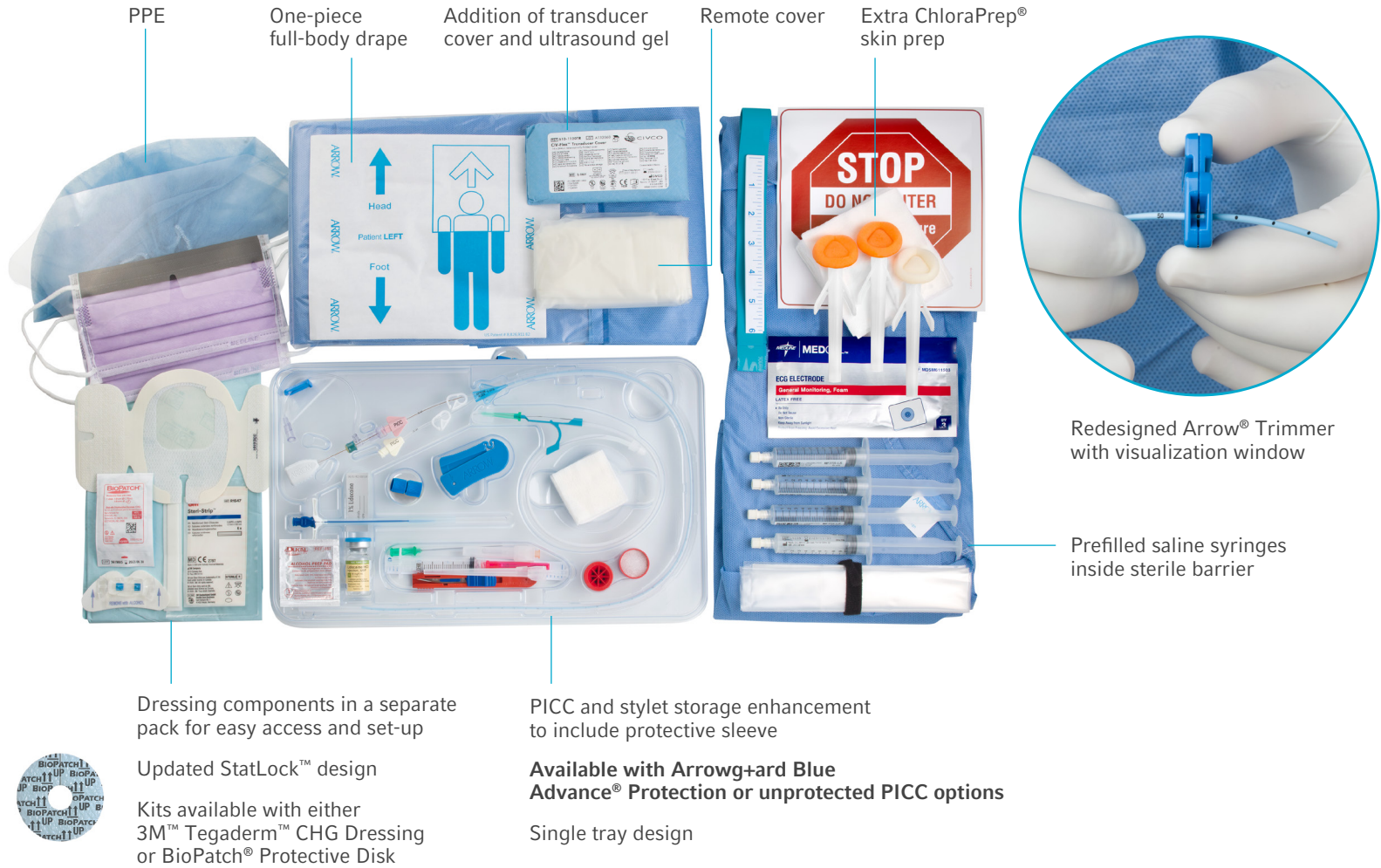
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Arrow® Max Barrier PICC Kits

Designed to simplify setup and insertion

We understand that efficient PICC placement requires focus and minimal disruptions. Arrow® PICC kits provide **components laid out in procedural order** to help vascular access specialists like you streamline the PICC insertion procedure.¹² Components include ultrasound transducer cover and gel, dressing component pack, PICC/stylet storage enhancement, extra ChloraPrep® skin prep, updated catheter trimmer, and more!



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Efficient single tray design

Outer Softshell Packaging

Outer pouch holding non-sterile
procedure components



Layer 1 PPE and Skin Prep Layer

Layer 1A

Mask with shield, bouffant hat,
hand towel, and 2 Chloraprep®
skin applicators



Layer 1B

Gown



Layer 2 Sterile Procedure Components

Layer 2A

Pre-filled saline
syringes in foil
pouches x 4



Layer 2B

One-piece drape



Layer 2C

Dressing packet,
extra Chloraprep®
skin applicator,
remote cover,
ultrasound probe
cover, 2x gauze



Layer 2D

Catheter insertion tray



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Partnership, Education, & Resources

Your teammate beyond products

Industry partnership

Customized support for evaluation or conversion to Arrow® Products

Teleflex provides a customized approach to transitioning your hospital to a new product. We work with your teams to provide hands-on training, bedside coaching, and metrics for success. You will be fully supported by our team of clinical specialists and sales representatives to ensure confidence and success.

To plan your product evaluation, [click here](#) to contact your local Teleflex representative.



Parameters and recommendations



Define evaluation/conversion milestones

- PICC evaluation/conversion
- Metrics for success
- Observation day
- Roundtable
- Product evaluation form
- Product requirements/site
- Trial wrap-up meetings



Number of clinicians
Varies based on need



Insertor training timeline
1-2 weeks



Insertion data capture
2-3 weeks



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Teleflex Academy: providing best-in-class education

We recognize the pivotal role vascular access specialists play in patient care. These clinicians continuously strive to elevate the standard of patient comfort and safety in their hospitals.

That's why we're proud to support vascular access specialists with a comprehensive, no-charge, hands-on educational platform. **The Teleflex Academy is an on-demand, one-stop information hub** that enables a collaborative approach to education. It allows you to **easily access resources when and where you need them** for a seamless learning experience. Teleflex offers a suite of **both in-person and digital educational opportunities**, leveraging technology and industry experts to help your hospital navigate the opportunities and challenges of hybrid work environments.

Your one-stop education center

Through Teleflex Academy, you will have access to e-learning modules, hands-on training, and webinars. Receive valuable continuing education (CE) credits for healthcare providers, or simply gain a better understanding of how to efficiently use your Arrow® Catheters and other Teleflex products. Our resources are at your fingertips to help you and your teammates do your job more effectively.

Teleflex Academy can be accessed by computer or mobile app

Participation in Teleflex Academy can give you the confidence of knowing you are reducing catheter-related infections and complications by using techniques based on best practices and the latest guidelines. Each clinician can choose from licensed courses, so everyone can maintain certification.



THE TELEFLEX
ACADEMY



[Learn more
about Teleflex Academy](#)



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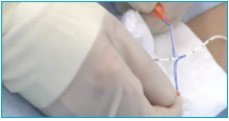
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PICC-related courses



[Arrow® VPS Rhythm®
DLX Device Training](#)



[Peel Away Sheath
and Direct Puncture](#)



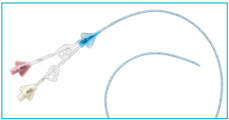
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[Ultrasound for
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[Catheter Technology: Evidence
Based Risk Reduction Strategies](#)



[Care and
Maintenance](#)



[Fundamentals of Vascular
Access Device Care](#)



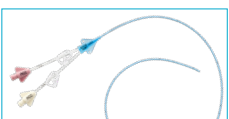
[Flushing
and Aspiration](#)



[Fundamentals of Extended
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[Prevention of Vascular Access
Complications: Infection & Thrombosis](#)

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Do you have a need for an in-person process evaluation and risk assessment related to the use of Arrow® Products?

Arrow® OPERA Program

- On-site assessment
- Interviews (1–2 clinicians per unit)
- Summary meeting
- Follow-up as needed



To learn more, [click here](#)
to connect with the Teleflex
Clinical and Medical Affairs team



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At-a-glance comparison



VS



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Competitive products at-a-glance

Capability	VPS Rhythm® DLX Device ⁴	BD Sherlock 3CG® ¹⁵
All-in-one device: ultrasound, tip navigation, tip confirmation	Yes	Yes (with tip-confirmation software add-on)
Electrocardiogram P-wave interpretation	Yes	Yes
Navigation technology illustrates catheter pathway	Yes	No
Visual range	22-cm radius from center of T-piece in all directions	11-cm radius from center of T-piece in all directions
Directional indicator	Arrow at tip of blue line provides stylet direction—helpful if catheter has looped	Center of lollipop on T-piece indicates tip location and direction
Calibration requirement	No calibration	May require calibration during procedure
Indicated to replace confirmatory chest x-ray	Yes	Yes
P-wave region highlight	Yes	No
Pacemaker requirement	Create 8-cm separation by placing pillow between patient’s chest and the T-piece. Confirmatory x-ray will be required	Momentary disruption of cardiac rhythm device may occur if stylet passes within 1 cm of the cardiac rhythm device. Use care if placing Sherlock stylet on the same side as the cardiac rhythm device. Confirmatory x-ray will be required
Location of tip confirmation	Confirms tip is in lower 1/3 of SVC near the cavoatrial junction	Confirms tip is in the SVC



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Comparison of VPS Rhythm® DLX Device Ultrasound vs BD Site-Rite™ 8 Ultrasound System¹⁵

In an independent ultrasound quality comparison study, VPS Rhythm® DLX Device ultrasound outperformed BD Site-Rite™ 8 in ease of finding vessel, resolution, contrast, artifacts, and overall quality.¹⁵

In an evaluation with multiple clinicians, the VPS Rhythm® DLX Device Ultrasound **outperformed** all ultrasound usability metrics versus the Site-Rite™ 8 Ultrasound System from BD.^{15,16}

VPS Rhythm® DLX Device Ultrasound



BD Site-Rite™ 8 Ultrasound System



Feedback from the Formative Evaluation for the VPS Rhythm® DLX Device^{15,17,18}



No lagging
in the display



Easy to position
probe on patient



Strong probe ergonomics
for vessel assessment and
freeze/snapshot function



Probe feels lighter
and smoother

Overall: Simple and intuitive with a lightweight probe



Arrow® VPS Rhythm®
DLX Device Overview

Arrow® VPS Rhythm®
DLX Device Ultrasound

Arrow® PICC preloaded
with NaviCurve™ Stylet

Arrowg+ard Blue Advance®
Protection

Arrow® PICCs and
Max Barrier PICC Kits

Partnership, Education,
& Resources

Comparison of Arrow®
VPS Rhythm® DLX Device
with NaviCurve™ Stylet
vs BD Sherlock 3CG®

Comparison of Arrowg+ard
Blue Advance® PICC vs BD
PowerPICC™ Provena™ PICC

Ultrasound usability metrics¹⁵

Ratings 1-5	Basilic Vein		Internal Jugular		Radial Artery		Sliding Lung	
	VPS Rhythm® DLX Device Ultrasound	BD Site-Rite™ 8 Ultrasound System	VPS Rhythm® DLX Device Ultrasound	BD Site-Rite™ 8 Ultrasound System	Ultrasound Probe for Exclusive Use with VPS Rhythm® DLX	BD Site-Rite™ 8 Ultrasound System	Ultrasound Probe for Exclusive Use with VPS Rhythm® DLX	BD Site-Rite™ 8 Ultrasound System
Ease of Finding Vessel/ Pleura	4.1	3.3	4.0	3.5	3.7	3.4	4.2	3.7
Resolution	3.4	3.0	3.3	3.0	3.0	2.9	3.4	3.0
Contrast	3.2	2.9	3.1	2.9	3.6	3.1	3.2	2.9
Artifacts	3.4	2.9	3.2	3.1	3.4	3.3	3.4	3.0
AVERAGE	3.5	3.0	3.4	3.1	3.4	3.2	3.6	3.2

Clinician quotes from Formative Evaluation on the VPS Rhythm® DLX Ultrasound Device

Like the weight of the probe; it is so light to hold.

Light, comfortable, and smooth.

No delay in refreshing the ultrasound. Rate is good with no lag.

Didn't expect the ultrasound to be that good for a small, all-in-one device. Very lightweight. Incredible.

I'm impressed with the lack of lag when scanning.

Very simple and intuitive.



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Protect the vasculature

The Arrow® TaperFree® PICC is designed to reduce the risk of venous stasis from vessel trauma by complying with INS standards that state to select a catheter with a 45% or less catheter to vein ratio from distal tip to hub.^{6,12-14}

Less than
45%
CVR⁶

The 2021 INS Infusion Therapy Standards of Practice states the catheter-to-vessel ratio (CVR) should be less than **45% vein consumption**.⁶

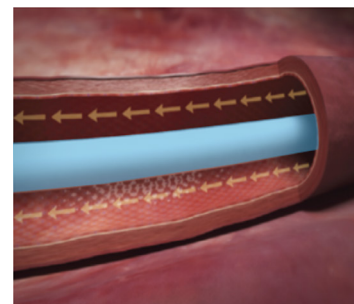
13x
more
likely²⁰

Participants with a CVR >45% were **13 times more likely** to suffer venous thromboembolism (VTE).²⁰

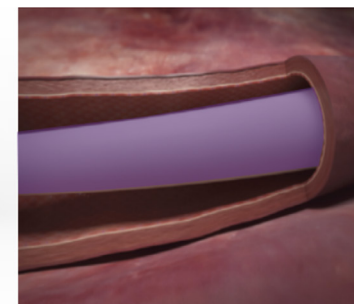
CVR% must use inserted taper diameter

Study used for INS CVR recommendation states: An allowance was made when trimmed length was calculated to ensure that the reverse taper part of the catheter lay outside of the vein.^{6,13}

Catheters that occupy less than 45% of the vessel have been shown to reduce the risk of venous stasis, which is one of the main causes of thrombosis^{6,13,19}



Arrowg+ard Blue
Advance® PICC



BD PowerPICC™
Provena™ PICC

BD has reverse tapered, purple PICCs. They can be 2 full French sizes larger near the hub than the labeled French size. This does not align to INS standards, nor CVR best practices.^{6,14,19,21} Studies have shown a negative impact of inappropriate CVR and thrombosis rates.^{19,21,22}

[Watch CVR video](#)



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Teleflex performed a PICC outer diameter measurement study with a laser measurement tool and found that BD PowerPICC™ Provena™ outer diameter specifications do not align with the labeled French size nor INS standards for CVR best practices.¹⁴ In contrast, the TaperFree® Arrowg+ard Blue Advance® PICCs and unprotected PICCs from Teleflex’s outer diameters align with labeling and the INS standards for CVR best practice.⁶

Position (Catheter Length Marking)	Diameter ²² (French Scale)								
	BD PowerPICC™ Provena™ PICCs						Teleflex Arrow® TaperFree® Arrowg+ard Blue Advance® PICCs		
	3 Fr 1-L	4 Fr 1-L	4 Fr 2-L	5 Fr 2-L	5 Fr 3-L	6 Fr 3-L	4.5 Fr 1-L	5.5 Fr 2-L	6 Fr 3-L
0 cm	4.92	6.11	5.85	6.70	6.91	7.57	4.57	5.44	5.99
1 cm	4.27	5.81	5.43	6.49	6.48	7.33			
2 cm	3.88	5.57	5.14	6.29	6.08	7.10			
3 cm	3.67	5.43	4.85	6.08	5.79	6.94			
4 cm	3.59	5.24	4.69	5.91	5.56	6.80			
5 cm	3.56	5.03	4.54	5.72	5.47	6.65			
6 cm	3.54	4.88	4.47	5.59	5.32	6.49			
7 cm	3.44	4.74	4.44	5.47	5.30	6.25			
8 cm	3.49	4.62	4.42	5.40	5.26	6.06			
9 cm	3.46	4.51	4.42	5.33	5.25	5.99			
10 cm	3.5	4.43	4.42	5.29	5.26	5.96			
11 cm	3.47	4.43	4.43	5.25	5.22	5.99			
12 cm	3.40	4.39	4.42	5.25	5.21	5.91			

 Larger than INS standard of
≤45% vessel occlusion

 Near INS standard of
≤45% vessel occlusion

 Below INS standard of
≤45% vessel occlusion



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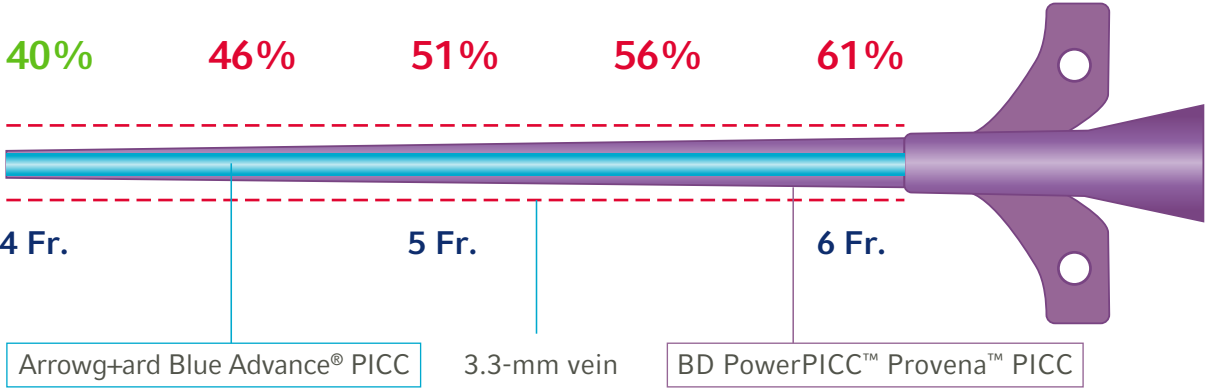
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Protect patients. Utilize a non-tapered PICC

Calculating the CVR for reverse tapered catheters from BD can be difficult since the catheter diameter increases up to 67% as it nears the hub. Inserting any of the taper of the BD PICC changes CVR calculations and may lead to a CVR of 45% or greater, violating the CVR recommendations of the INS standards and potentially increasing venous thromboembolism.⁶

Impact of variable diameter (reverse taper) on CVR

As shown in the diagram below, the Arrow® PICC has a consistent 40% CVR for the entire length of the PICC, while the tapered design of the BD Provena™ PICC results in parts of the catheter exceeding 45% CVR.



Quick reference

Minimum vessel size for given catheter per INS standards.⁶

Catheter French Size	2	3	4	4.5	5	5.5	6	7	8
Minimum Vessel Diameter (mm)	1.5	2.3	3.0	3.4	3.8	4.1	4.5	5.3	6.0
CVR %	<45%	<45%	<45%	<45%	<45%	<45%	<45%	<45%	<45%

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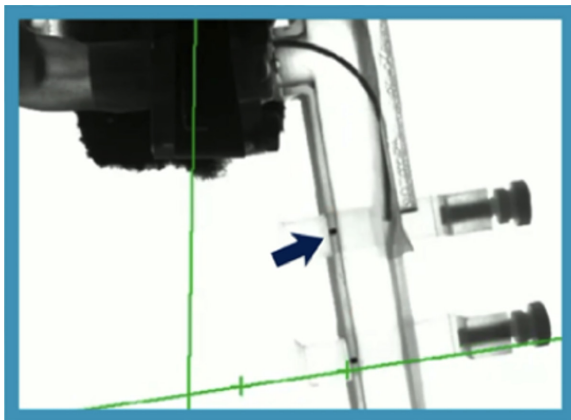
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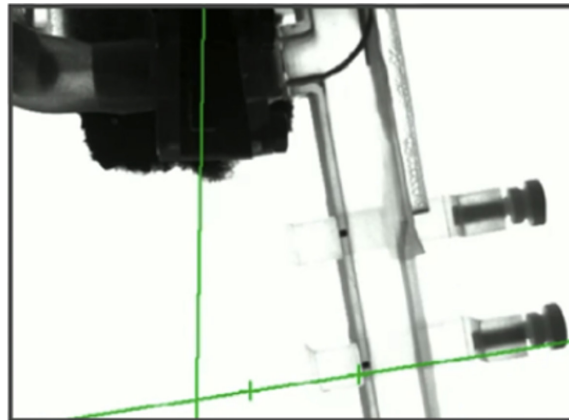
First-pass success¹

Due to the variability of patient vasculature, all PICCs from time to time have difficulty advancing into the superior vena cava (SVC) on the first attempt. That's why Teleflex designed the Arrow® NaviCurve™ Stylet with an anatomical curve that self-oriens to patient anatomy that is designed for easier first-pass PICC advancement into the SVC.

Arrow® PICC preloaded with NaviCurve™ Stylet¹



BD Sherlock 3CG® Stylet¹



[Watch NaviCurve™ Stylet vs
BD Sherlock 3CG® Stylet video](#)

Arrow® PICCs preloaded with NaviCurve™ Stylets have important advantages over BD PICCs preloaded with the Sherlock 3CG® Stylet, including:



No reverse taper vs BD; designed to not take up more than 45% of the vessel, per guidelines



A consistent French size along the entire catheter body; does not require a bigger sheath like BD and ensures more blood flow around the catheter^{12,13,18}



VPS Rhythm® DLX Device provides clinicians confidence with CVR tool



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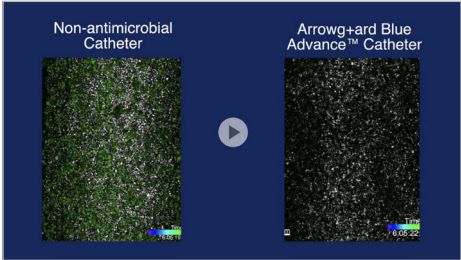
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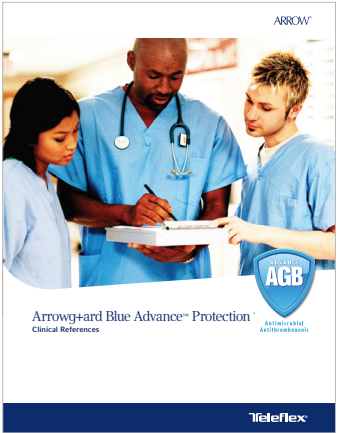
Clinical evidence & economics



Antimicrobial Arrowg+ard Blue
Advance® Catheters—Protection
against pathogens on the CDC's
Antibiotic Resistant Threats Report



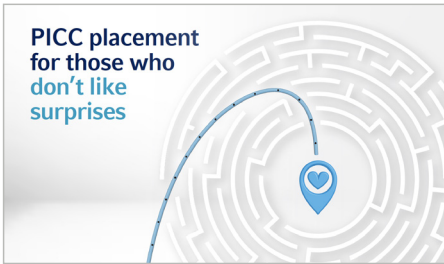
Arrowg+ard Blue Advance® Protection—
Biofilm Formation Time Lapse video



Arrowg+ard Blue Advance®
Protection—Clinical References



VPS Rhythm® DLX Device In-Service video



Product Overview video



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Request more information



For more information, [click here](#) to contact your local Teleflex representative

*When compared to VPS Rhythm® and BD Sherlock 3CG®

References: 1. D041679 Benchtop Stylet Advancement in a Simulated Use Anatomical Model of NaviCurve™. Product Stylet/PICC Assemblies. Bench testing may not be indicative of clinical performance. 2. *In vitro* data on file 2010: AVER-004371 and AVER-004483. No correlation between *in vitro/in vivo* testing methods and clinical outcomes have currently been ascertained. 3. As compared to uncoated PICCs, intravascular ovine model inoculated with Staph aureus: AVAR-000427. No correlation between *in vitro/in vivo* testing methods and clinical outcomes have currently been ascertained. 4. ADHX-001612: Design History File Index for VPS Rhythm™ DLX System. 5. RHY-200-OPM-US: VPS Rhythm™ DLX Operator's Manual. 6. Gorski LA, Hadaway L, Hagle ME, et al. Infusion Therapy Standards of Practice, 8th Edition. *J Infus Nurs*. 2021;44(1S Suppl 1):S1-S224. 7. Grau D, Clarivet B, Lotthé A, Bommart S, Parer S. Complications with peripherally inserted central catheters (PICCs) used in hospitalized patients and outpatients: a prospective cohort study. *Antimicrob Resist Infect Control*. 2017;6:18. doi:10.1186/s13756-016-0161-0 8. Moreau N. Preventing PICC complications: whose line is it? Patient Safety Network. December 1, 2012. Accessed January 9, 2023. <https://psnet.ahrq.gov/web-mm/preventing-picc-complications-whose-line-is-it> 9. Estimating the additional hospital inpatient cost and mortality associated with selected hospital-acquired conditions. Agency for Healthcare Research and Quality. November 2017. Accessed November 9, 2022. <https://www.ahrq.gov/hai/pfp/haccost2017-results.html> 10. *In vitro* data on file 2010: AVER-004371, AVER-004483 and AVAR-000427. No correlation between *in vitro/in vivo* testing methods and clinical outcomes has currently been ascertained. 11. As compared to uncoated PICCs, *in vitro* model measuring flush pressure post exposure to bovine blood: AVER-006376. No correlation between *in vitro/in vivo* testing methods and clinical outcomes has currently been ascertained. 12. D041903: Traceability Matrix for Project Ritz Kits Finished Goods (D&D Plan D019349). 13. Sharp R, Cummings M, Fielder A, Mikocka-Walus A, Grech C, Esterman A. The catheter to vein ratio and rates of symptomatic venous thromboembolism in patients with a peripherally inserted central catheter (PICC): a prospective cohort study. *Int J Nurs Stud*. 2015;52(3):677-685. doi:10.1016/j.ijnurstu.2014.12.002 14. 2022 Arrow® and BD PICC Dimensional Data Study. Available from Teleflex. 15. Formative evaluation for ultrasound imaging comparison and usability. D023327. July 11th, 2018. 16. D028857 Formative results for the Arrow® VPS Rhythm DLX Device Ultrasound Image Quality and Features. 17. Formative study results for the Arrow® VPS Rhythm® DLX Device. Ultrasound image quality and features. D019349. November 6th, 2019. 18. D024485 Formative Evaluation of the VPS Rhythm® DLX Device Ultrasound Image Quality & Features. 19. Trerotola SO, Stavropoulos SW, Mondschein JI, et al. Triple-lumen peripherally inserted central catheter in patients in the critical care unit: prospective evaluation. *Radiology*. 2010;256(1):312-320. doi:10.1148/radiol.10091860 20. Evans S, Sharp J, Linford LH, et al. Risk of symptomatic DVT associated with peripherally inserted central catheters. *Chest*. 2010;138(4):803-810. doi:10.1378/chest.10-0154 21. Bertoglio S. Reverse tapered versus non-tapered peripherally inserted central catheters: a narrative review. *J Vasc Access*. 2022;23(5):689-691. doi:10.1177/11297298211009998 22. Nifong TP, McDewitt TJ. The effect of catheter to vein ratio on blood flow rates in a simulated model of peripherally inserted central venous catheters. *Chest*. 2011;140(1):48-53. doi:10.1378/chest.10-2637 23. Grove JR, Pevec WC. Venous thrombosis related to peripherally inserted central catheters. *J Vasc Interv Radiol*. 2000;11(7):837-840. doi:10.1016/s1051-0443(07)61797-7

This brochure contains the results of benchtop insertions in a simulated use anatomical model. The purpose of the testing was to compare the success rate (ie, percent/proportion of parts that drop on the first attempt) of NaviCurve™ Stylet to both the TipTracker™ Stylet and the BD Sherlock Stylet, when all PICCs were assembled with their respective brand of two lumen PICCs.

Rx Only.

Contraindication

Clinical assessment of the patient must be completed to ensure no contraindications exist.

The Arrowg+ard Blue Advance® PICC is contraindicated in the following areas:

- Patients with known hypersensitivity to chlorhexidine
- In presence of device-related infections
- In presence of previous or current thrombosis in the intended vessel or along the catheterized vessel pathway.

No correlation between *in vitro/in vivo* testing methods and clinical outcomes have currently been ascertained

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