3M Science. Applied to Life.™

Make peripherals a central focus.

Reduce the risk of PIV complications.

Putting a focus on peripheral lines.

Peripheral intravenous (PIV) access is often considered a simple, low-risk procedure, when in fact:

Up to
80%
of patients receive a PIV catheter during their hospital stay[1]

Even in major clinical centers with dedicated IV teams performing careful prospective randomized studies, the mean PIV catheter failure rate is
46%[2]

The cost of treating catheter-related complications can add 7-20 days to hospital length of stay and up to
$56K
in additional cost per patient[2]

All IVs are at risk for microbial contamination.

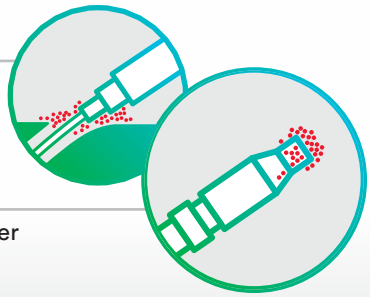
Bloodstream infections from vascular access devices may be related to insertion or maintenance practices, patient condition, technology and staff training level.

Extraluminal Contamination

Bacteria originates on the skin surface.

Intraluminal Contamination

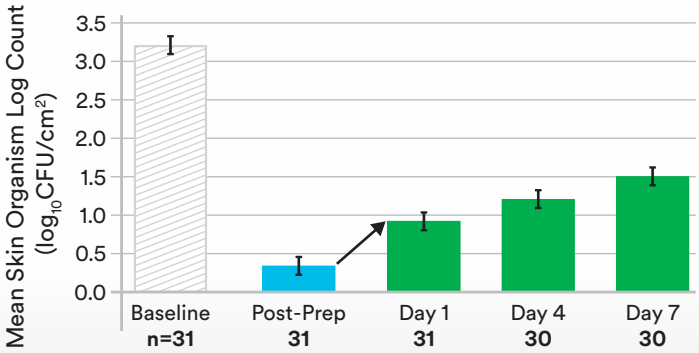
Bacteria enters via the catheter hub or IV access point.



There are multiple challenges to managing infection risks from PIVs.

Chlorhexidine gluconate (CHG) and isopropyl alcohol (IPA) skin preps can reduce skin microbes at the insertion site, but they cannot sterilize the skin. Following skin antisepsis, microbes remain and start to regrow within 24 hours.[3]

- Baseline
- Post 2% CHG in 70% IPA
- Control dressing, skin prepped with 2% CHG in 70% IPA



Prevention in practice: PIV care and maintenance guidelines.

We're proud to partner with you to help reduce the risk of PIV complications through evidence-based practice. We believe having the right standards of care, combined with the latest technology can help improve outcomes for every patient. Review these care and maintenance recommendations from the Infusion Nurses Society (INS) and the Centers for Disease Control and Prevention (CDC):

	Recommendation	INS 2016[4]	CDC 2011[5]
Prepare & Assess 	Choose upper extremity for insertion	Forearm preferred	●
	Avoid areas of flexion	●	
	Designate personnel with IV therapy education, training and competency	●	●
	Use smallest gauge indicated	●	
Insertion 	Prepare skin with antiseptic, allow site to dry	●	●
	Practice aseptic technique	Do not palpate insertion site after skin antisepsis	Do not palpate insertion site after skin antisepsis
Secure & Protect 	Consider a securement device	●	●
	Use a sterile, transparent, semi-permeable polyurethane dressing	●	●
	Change dressing at least every 7 days or sooner if compromised	●	●
	Visually inspect insertion site at regular intervals	●	
	Evaluate adverse events regularly	●	
	Disinfect injection port/access site	●	●
	Consider use of disinfecting caps on access sites	●	
Remove 	Remove PIV catheters when clinically indicated	●	
	Remove emergently placed catheters asap, within 24–48 hours	●	●

See the evidence for yourself.

An often-overlooked risk: With approximately 200 million peripheral venous catheters (PVCs) successfully inserted into adult patients each year in the United States, there may be numerous PVC-related BSIs occurring annually.[6]

165K
potential PIV-related bloodstream infections per year in the US

Short peripheral intravenous catheters and infections

Hadaway L. *Journal of Infusion Nursing.* 2012;35(4).

Results:
Approximately 330 million peripheral catheters are sold annually in the United States, but only about half are inserted successfully. An analysis of 45 studies showed a pooled mean rate of 0.5 infections per 1000 device-days.[7]

View abstract:
https://pubmed.ncbi.nlm.nih.gov/22759827/

Short-term PVCs accounted for
23%
of hospital-acquired catheter-related bloodstream infections (CRBSIs)

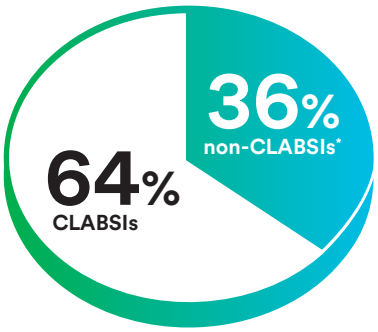
Short-term peripheral venous catheter-related bloodstream infections: A systematic review

Mermel L. *Clinical Infectious Diseases.* 2017;65(10).

Results:
A systematic review of 63 studies determined that the incidence of PVC-related BSIs was 0.18% among 85,063 PVCs. 38% of healthcare-associated *S. aureus* CRBSIs are due to PIVs.

View abstract:
https://www.ncbi.nlm.nih.gov/pubmed/29020252

A total of 122 episodes of primary SA HABSIs were identified:



*Presumed to originate from an external source, such as a PIV, midline or other source

Hospital-acquired *Staphylococcus aureus* primary bloodstream infection: A comparison of events that do and do not meet the central line-associated bloodstream infection definition

Kovacs CS, Fatica C, Butler R, Gordon SM, Fraser TG. *American Journal of Infection Control.* 2016;44(11).

Results:
A study of consecutive hospitalized patients during a 48-month period determined that 36% of primary *S. aureus* (SA) hospital-acquired bloodstream infections (HABSI) originated from the PIV or midline catheter. Overall, 30-day and 1-year mortality rates for the CLABSI and non-CLABSI patients did not significantly differ. However, the incidence of complications of bacteremia was significantly more common in the non-CLABSI group.*

View abstract:
https://www.ncbi.nlm.nih.gov/pubmed/27158091

Accepted but unacceptable: Peripheral I.V. catheter failure

Helm RE, Klausner JD, Klemperer JD, Flint LM, Huang E. *Journal of Infusion Nursing.* 2015;38(3).

Results:
A systematic review of at least 45 randomized controlled studies from 1990 to 2014 determined that PIV insertion is associated with a variety of complications.

View study:
https://www.hemocat.com.br/upload/Acesso_Venoso_Periferico_Falhas.pdf

Overall Mean:

Catheter-Related Phlebitis:	15.4%
Catheter Infiltration:	23.9%
Catheter Occlusion/ Mechanical Failure:	18.8%
Catheter Dislodgment:	6.9%
Catheter-Related BSI (up to):	0.2%
PIV Catheter Failure Rate:	**46%**

Clinically-indicated replacement versus routine replacement of peripheral venous catheters

Webster J, Osborne CM, Rickard JH, New K. *The Cochrane Database of Systematic Reviews.* 2015;CD007798.

Results:
A review of seven PIV trials (4,895 patients) found no evidence to support the routine changing of catheters every 72–96 hours.

View study:
https://www.ncbi.nlm.nih.gov/pubmed/26272489

Projected 5-year savings of clinically-indicated replacement:

$300 Million

and

1 Million

health care worker hours

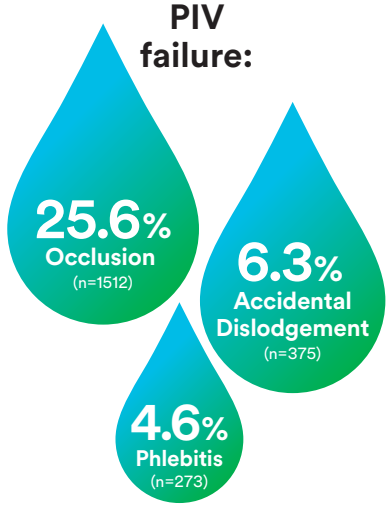
Risk factors for peripheral intravenous catheter failure: A multivariate analysis of data from a randomized controlled trial

Wallis M, McGrail MR, Webster J, Marsh NM, Gowardman JR, Playford EG, Rickard CM. *Infection Control and Hospital Epidemiology.* 2014.

Results:
A trial of 3,283 adult patients with expected use of a PIV for > 4 days found that PIV-complications were attributed to any or all of the following: anatomical location, gender, antibiotic infusions, gauge of PIV, and insertions by non-IV team staff.

View abstract:
https://pubmed.ncbi.nlm.nih.gov/24334800/

PIV failure:



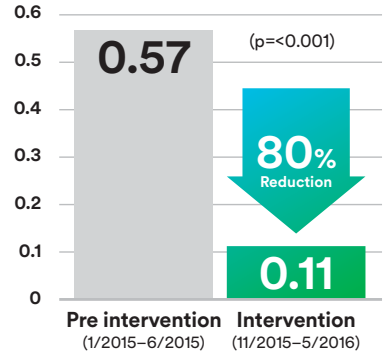
A bundled approach to decrease primary bloodstream infections related to peripheral intravenous catheters

Duncan M, Warden P, Bernatchez S, Morse D. *Journal of the Association for Vascular Access.* 2018; 23(1):15-22.

Results:
This quality improvement project in a 900-bed level 1 trauma center introduced a PIV maintenance bundle, including 3M™ Curos™ Disinfecting Cap for Needleless Connectors and 3M™ Curos Tips™ Disinfecting Cap for Male Luers, which significantly lowered the rate of primary bloodstream infections attributable to PIV lines.

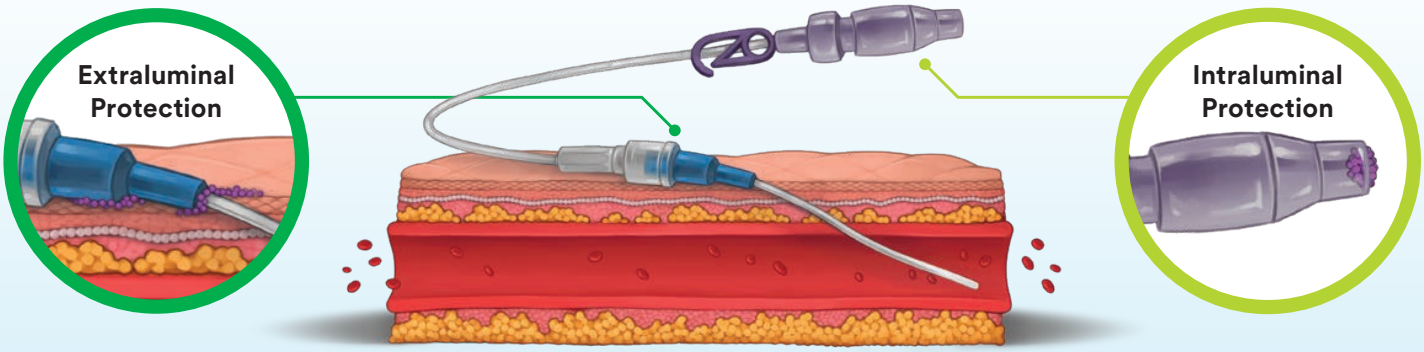
View study:
https://www.sciencedirect.com/science/article/pii/S1552885517300454

PLABSI infections per 1000 patient days:



Help reduce the risk of PIV complications at all access points.

3M solutions help to protect against both extraluminal and intraluminal contamination of PIVs.



Extraluminal Protection

Use peripheral IV dressings to protect against extraluminal contamination.

	3M™ Tegaderm™ CHG Chlorhexidine Gluconate I.V. Securement Dressing 1660	3M™ Tegaderm™ Antimicrobial I.V. Advanced Securement Dressing 9132*	3M™ Tegaderm™ I.V. Advanced Securement Dressing 1882
Antimicrobial Protection			
Only transparent dressing cleared and proven to reduce CRBSIs in patients with central venous and arterial lines	●		
Suppresses regrowth of skin flora on prepped skin for up to 7 days[3]	●	●	
Catheter Securement			
Meets Infusion Nurses Society definition of an engineered stabilization device	●	●	●
Site Visibility			
Transparent dressing enables early identification of complications at the insertion site	●	●	●
Bacterial and Viral Barrier**			
Provides a waterproof, sterile barrier to external contaminants	●	●	●

*Also available as a transparent dressing without securement border (3M™ Tegaderm™ Antimicrobial Transparent Dressing 9124)

***In vitro* testing shows that the film provides a barrier against viruses 27 nm in diameter or larger while the dressing remains intact without leakage

Intraluminal Protection

Disinfect and protect IV access points to help reduce the risk of contaminants from entering the catheter post-insertion. Consistent use of 3M™ Curos™ Disinfecting Caps for Needleless Connectors is associated with decreased CLABSI.[8]

Using a peripheral line bundle that includes Curos Disinfecting Caps and 3M™ Curos Tips™ Disinfecting Caps for Male Luers provides effective disinfection. Effective disinfection of needleless connectors and male luers on peripheral lines has been associated with a significant decrease in primary peripheral line-associated bloodstream infections (PLABSI).[9]

Skin Protection

Skin is the body's first line of defense against infection. Medical Adhesive-Related Skin Injury (MARSI) at vascular access sites can be a prevalent and serious complication, but it doesn't need to be an inevitable part of the patient experience.

Preparation of the skin and selection of proper adhesives are the first steps to help minimize the risks of skin damage.[10]

3M™ Cavilon™ No Sting Barrier Film

Forms a breathable, transparent and protective coating between the skin and the adhesive of the securement dressing, device or tape.

3M™ Micropore™ S Surgical Tape

Offers reliable adhesion and removes cleanly with minimal disruption of skin layers and without causing patients undue discomfort.[11] Individually packaged, single-patient-use rolls help reduce cross-contamination risk.*

*Individually packaged, single-patient-use rolls help prevent tape from being exposed to environmental contaminates, minimize contact with hospital surfaces and equipment, and exposure to healthcare worker hands.

Preventing bloodstream infections takes training and commitment.

At 3M, we're here to help deepen your expertise through professional training and educational resources designed just for you. 3M™ Health Care Academy offers online continuing education for health care professionals, including interactive courses on PIV care.

Earn FREE CE credit.

Please visit **3M.com/medicaleducation** to view upcoming live and archived educational webinars to learn more about how to reduce the risk of PIV complications.

The path toward zero bloodstream infections.

3M | Peak™
Clinical Outcomes Program

Every IV site presents the potential for infection, dislodgment, and skin damage. That's why we offer the **3M™ Peak™ Clinical Outcomes Program**, a collaborative approach to successfully implementing and sustaining your clinical outcomes.

How the Peak Program works:

Identify

Identify the areas where you have the biggest opportunity to drive impact at your facility.

Improve

Improve or implement new work processes and protocols through a variety of tools and approaches.

Learn

Learn about industry best practices, clinical evidence, and new ways to improve outcomes.

Maintain

Maintain the progress you've made and continue to keep staff educated and engaged.

Get started today at **3M.com/Peak**

Partner with 3M to make peripherals a central focus of your IV maintenance program.

Extraluminal Protection

	Product #	Size	Dressings/Box	Boxes/Case	HCPCS Code*
3M™ Tegaderm™ CHG Chlorhexidine Gluconate I.V. Securement Dressing	1660	2 ¾ in x 3 ⅜ in (7 cm x 8.5 cm)	25	4	A4221
3M™ Tegaderm™ Antimicrobial I.V. Advanced Securement Dressing	9132	2 ¾ in x 3 ⅜ in (7 cm x 8.5 cm)	25	4	A4221
3M™ Tegaderm™ I.V. Advanced Securement Dressing	1882	2 ¾ in x 3 ⅜ in (7 cm x 8.5 cm)	50	4	A4221

Intraluminal Protection

	Product #	Description	Each/Box	Boxes/Case	Total Caps/Case
3M™ Curos™ Disinfecting Caps for Needleless Connectors 	CFF1-270	Individuals	270	20	5,400
	CFF10-250	Strips (5 count)	50 Strips	20	5,000
3M™ Curos Jet™ Disinfecting Caps for Needleless Connectors 	CFJ1-270	Individuals	270	20	5,400
	CFJ5-250	Strips (5 count)	50 Strips	20	5,000
3M™ Curos™ Stopper Disinfecting Caps for Open Female Luers 	CSA1-270	Individuals	270	8	2,160
	CSA5-250	Strips (5 count)	50 Strips	8	2,000
3M™ Curos Tips™ Disinfecting Caps for Male Luers 	CM5-200	Strips (5 count)	40 Strips	10	2,000

Skin Protection

	Product #	Size	Items/Box	Boxes/Case	HCPCS Code*
3M™ Cavilon™ No Sting Barrier Film** 	3343	1 mL wand	25	4	A6250
3M™ Micropore™ S Surgical Tape (individually packaged, single-patient-use roll) 	2770S-1	1 in x 1.5 yd (2.5 cm x 1.3 m)	100	5	A4452

*HCPCS codes have been provided to assist you in the preparation of insurance claims. Please note, however, that the reimbursement information provided by 3M Health Care and its representatives is intended to provide general information relevant to coverage and coding for 3M products. Insurers' reimbursement policies can vary and the use of the codes discussed here does not guarantee that an insurer will cover or pay at any particular level. Health care providers should exercise independent clinical judgement in choosing the codes which most accurately describe the products provided.

** *Consult IFU for further application instructions and safety considerations.*

Important Safety Information for 3M™ Tegaderm™ CHG dressings
Do not use Tegaderm™ CHG dressings on premature infants or infants younger than two months of age. Use of this product on premature infants may result in hypersensitivity reactions or necrosis of the skin. The safety and effectiveness of Tegaderm™ CHG I.V. Securement Dressings has not been established in children under 18 years of age. For full prescribing information, see the Instructions for Use (IFU). Rx Only.

To learn more or to schedule a product evaluation, visit us at **3M.com/PIVcare**

Visit **3M.com/IFUfinder** to view all the Instructions for Use for products included in this brochure.

1. Zingg W, Pittet D. Peripheral venous catheters: an under-evaluated problem. *Int J Antimicrob Agents*. 2009;34(S4):S38-S42.
2. Helm RE, Klausner JD, Klemperer JD, Flint LM, Huang E. Accepted but unacceptable: Peripheral IV catheter failure. *J Infus Nurs*. 2015;38(3):189-203.
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4. Infusion Nurses Society (INS): Gorski L, Hadaway L, Hagle ME, McGoldrick M, Orr M, Doellman D. Infusion Therapy Standards of Practice. *J Infus Nurs*. 2016;39(suppl 1):S1-S59.
5. Centers for Disease Control and Prevention (CDC): O'Grady NP, Alexander M, Burns LA, et al. Guidelines for the prevention of intravascular catheter-related infections. *Clin Infect Dis*. 2011;52(9):e162-e193.
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