

When their IV access  
points are protected,  
so is your peace of mind

3M<sup>™</sup> Curo<sup>™</sup> Disinfecting Port Protectors





# CLABSI is a serious threat

Every IV catheter presents potential for central line-associated bloodstream infections (CLABSI).



Up to

**1 in 4 patients**

who contract CLABSI die.<sup>1</sup>



→ Even when not fatal, CLABSIs can progress to other serious conditions, which can lead to extended hospital stays.<sup>2</sup>



**71,900**

preventable central line infections annually.<sup>3</sup>



Nationwide, the annual cost to treat CLABSI exceeds

**\$2.3 Billion**<sup>4</sup>

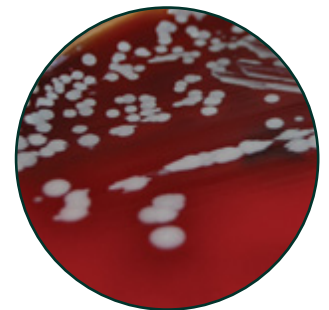


**\$45,000**

average cost to treat CLABSI per infection<sup>5</sup>

## Are all of your IV access points protected?

This is a picture of a culture taken from an unprotected IV access point.



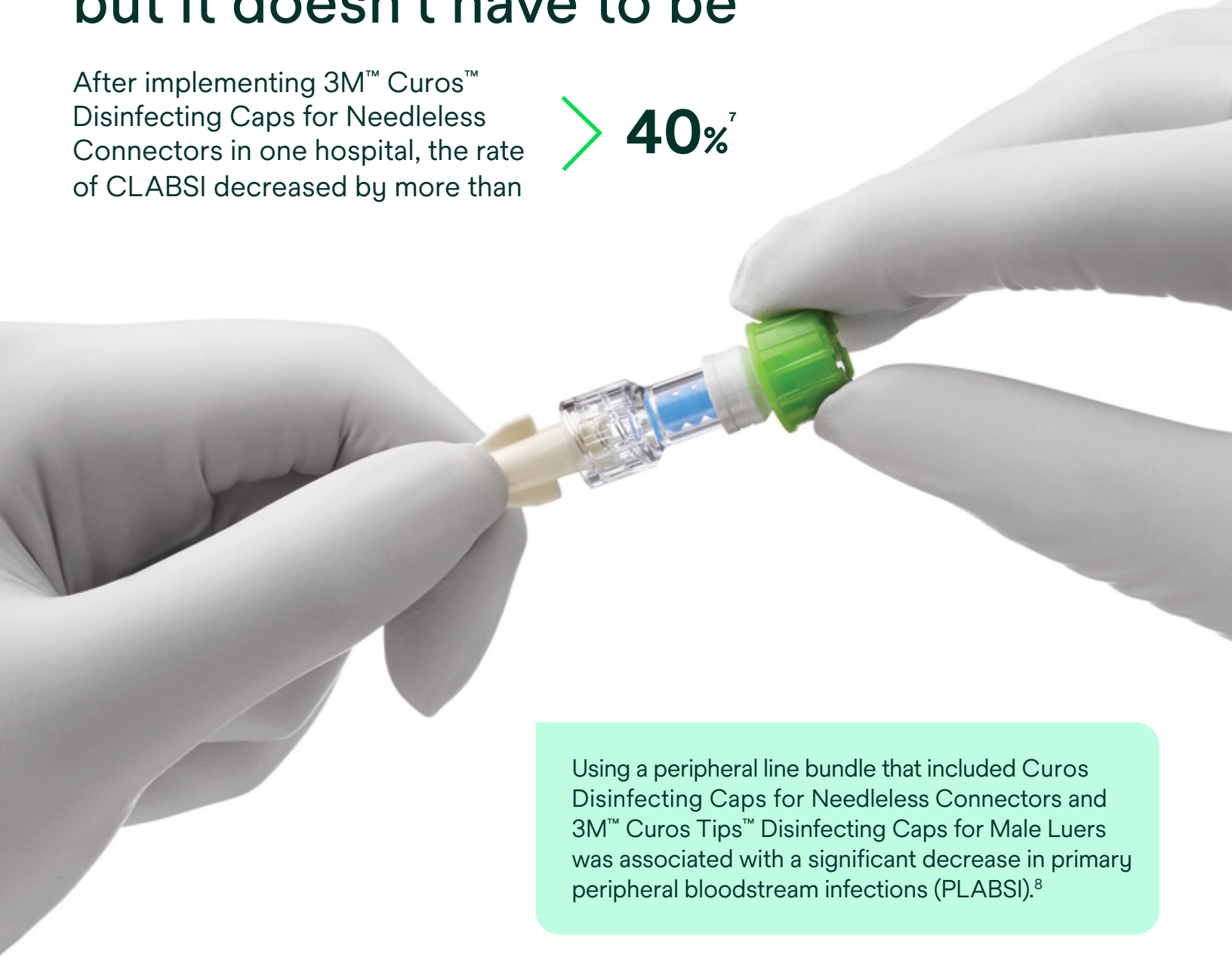
Unprotected IV access points can touch floors, armpits, bed linens and other unsterile surfaces, adding to their bioburden.<sup>6</sup>

1. [www.vdh.virginia.gov/epidemiology/surveillance/hai/documents/pdf/CDC\\_VitalSignsReportMarch2011.pdf](http://www.vdh.virginia.gov/epidemiology/surveillance/hai/documents/pdf/CDC_VitalSignsReportMarch2011.pdf)
2. Maki DG, Kluger DM, Crnich CJ. The risk of bloodstream infection in adults with different intravascular devices: a systematic review of 200 published prospective studies. *Mayo Clin Proc.* 2006;81(9):1159-1171
3. Mermel LA. Prevention of Intravascular Catheter-Related Infections. *Ann Intern Med.* 2000; 132:391-402.
4. Provonost P, Needham D, Berenholtz S, et al. An intervention to decrease catheter-related bloodstream infections in the ICU. *N Engl J Med.* 2006; 355(26): 2725.
5. Zimlichman, E; Henderson, D et al. Health Care-Associated Infections: A Meta-analysis of Costs and Financial Impact on the US Health Care System. *JAMA Intern Med.* Published online September 02, 2013.
6. Kaler, W. Making it easy for nurses to reduce the risk of CLABSI. *Patient Safety & Quality Healthcare.* 2014; 11(6), 46-49.

# CLABSI is common, but it doesn't have to be

After implementing 3M™ Curoso™ Disinfecting Caps for Needleless Connectors in one hospital, the rate of CLABSI decreased by more than

> **40%**<sup>7</sup>



Using a peripheral line bundle that included Curoso Disinfecting Caps for Needleless Connectors and 3M™ Curoso Tips™ Disinfecting Caps for Male Luers was associated with a significant decrease in primary peripheral bloodstream infections (PLABSI).<sup>8</sup>


Curoso Disinfecting Port Protectors contain 70% isopropyl alcohol (IPA). The IPA bathes the surface of the IV access point and disinfects it in 1 minute. Consistent use of Curoso Disinfecting Caps for Needleless Connectors is associated with decreased CLABSI.\* Curoso disinfecting port protectors are alcohol-impregnated caps that twist onto IV access points for disinfection and protection. They disinfect prior to line access and act as a physical barrier to contamination between accesses.

7. Merrill KC, Sumner S, Linford L, Taylor C, and Macintosh C. Impact of universal disinfectant cap implementation on central line-associated bloodstream infections. *American Journal of Infection Control* 42 (2014) 1274-7.  
\*See clinical evidence on pages 8-9.

8. Duncan M, Warden P, Bernatchez B, and Morse D. A Bundled Approach to Decrease Primary Bloodstream Infections Related to Peripheral Intravenous Catheters. 2018, *Journal of the Association of Vascular Access*, 23(1), 15-22.

# Curo™ Disinfecting Port Protectors achieved a 99.99% reduction in 6 microbes commonly associated with CLABSI<sup>9,10</sup>

The effectiveness of Curo disinfecting port protectors was tested *in vitro* against:<sup>10</sup>

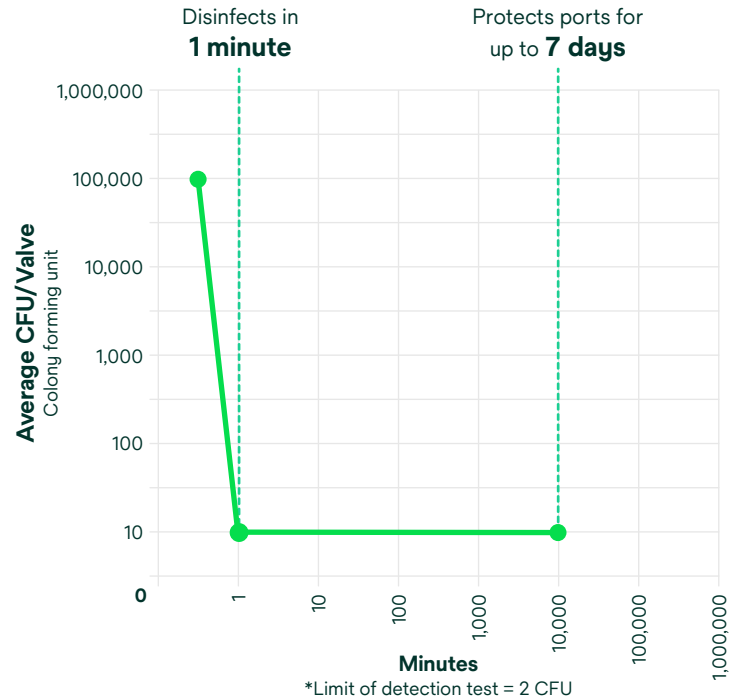


*Staphylococcus aureus*      *Staphylococcus epidermidis*      *Escherichia coli*

*Candida albicans*      *Pseudomonas aeruginosa*      *Candida glabrata*

**Study conclusion:**  
All test samples exceeded the minimum 4-log reduction after one minute.

*Data on file*



## How do Curo disinfecting port protectors compare with the “scrub the hub” method?

A U.S. hospital observational study showed less than 10% compliance with the disinfection protocol for catheter hubs.<sup>11</sup>

For more than a decade, the standard of care in IV access point disinfection has been a thorough 15–30 second (plus drying time) manual scrub of the IV access point with an alcohol pad, often referred to as scrubbing the hub. Curo disinfecting port protectors provide several advantages over the scrub the hub protocol.

### 1 Save time

Curo disinfecting port protectors are alcohol-impregnated, providing fast passive disinfection, saving nurses valuable time compared to most scrub the hub protocols. In addition, no drying time is required to achieve disinfection.

### 2 Provide a physical barrier

They provide a physical barrier to contamination between accesses, for up to 7 days.

### 3 Remove user technique variation

They remove the user technique variation found in manual scrubbing the hub procedures.

### 4 Provide visual compliance confirmation

Their bright color also provides quick visual confirmation that an IV access point is clean, giving nurses peace of mind and empowering facilities to audit and improve disinfection compliance.

9. Weiner et al, Antimicrobial-Resistant Pathogens Associated With Healthcare-Associated Infections: Summary of Data Reported to the National Healthcare Safety Network at the Centers for Disease Control and Prevention, 2011–2014, *Infect Control Hosp Epidemiol* 2016;1–14.  
 10. Data reflects *in vitro* findings on Curo™ Disinfecting Port Protectors.  
 11. J. Lee, “Disinfection cap makes critical difference in central line bundle for reducing CLABSIs,” in Proceedings of the APIC Annual Conference, vol. 39, p. E64, Fort Lauderdale, Fla, USA, 2013.

# All patients, all access points, all the time

Use the entire family of Curos Disinfecting Port Protectors to help reduce risks across all intraluminal access points.

According to the 2016 Infusion Nurses Society Standards of Practice, “Use of passive disinfecting caps containing disinfecting agent (IPA) have been shown to reduce intraluminal microbial contamination and reduce rates of CLABSIs.”<sup>12</sup> (Level II)



12 Gorski L, Hadaway L, Hagle ME, McGoldrick M, Orr M, Doellman D. Infusion Therapy Standards of Practice. Journal of Infusion Nursing. 2016; 39(suppl 1):S1-S159.

# Where you need them, when you need them

Curoso Disinfecting Port Protectors can be dispensed as individual caps or on strips.\* Strips can be hung from IV poles for easy access, greater compliance and reduced waste.

## Powerful 1 minute disinfection

Curoso disinfecting port protectors contain 70% isopropyl alcohol (IPA). The IPA disinfects the surface of the IV access point in 1 minute. They're proven effective disinfecting against *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Candida glabrata*, and *Candida albicans*.<sup>9,10</sup>

## Protects for up to 7 days

Curoso disinfecting port protectors protect the IV access points for up to 7 days if not removed. Passive disinfection removes human technique variance, providing consistent disinfection every time.

## Colored bright to disinfect right

Brightly colored Curoso disinfecting port protectors verify that IV access points are clean at a glance and disinfection compliance can be easily and reliably measured.

## Protection that stays put

Curoso disinfecting port protectors twist on easily and stay securely in place on commonly used IV access points — meeting INS standards for add-on devices.



**Strips are consistent with the INS standards:**

*“Ensure disinfecting supplies are readily available at bedside to facilitate staff compliance with port disinfection.”<sup>12</sup>*

\*Varies by product.

# Clinical studies back us up

3M™ Curot™ Disinfecting Port Protectors™ have been included in several clinical studies by leading researchers in infection prevention and infusion therapy.

The use of antiseptic barrier cap to disinfect and protect was associated with a

**41% reduction in CLABSI** (P < 0.001)

## *International Journal of Nursing Studies: Volume 69; January 2017*

### • Antiseptic barrier cap effective in reducing central line-associated bloodstream infections: A systematic review and meta-analysis

*Anne F. Voor in 't holt, Onno K. Helder, Margreet C. Vos, Laura Schafthuizen, Sandra Sülz, Agnes van den Hoogen, Erwin Ista*

- A total of 1,537 articles defined as potentially relevant; eventually, 9 studies were included in the systematic review, and 7 of the 9 in the random effect meta-analysis.
- Median compliance rate with antiseptic barrier caps was 82.5% (range 73–85%).
- Antiseptic barrier caps studied (Curot Disinfecting Cap for Needleless Connectors and SwabCap® Disinfecting Caps for Needle-free Connectors) were associated with a reduction in CLABSIs by 41% (IRR = 0.59, 95% CI = 0.45–0.77, P < 0.001).
- Net cost savings from the studies ranged from \$39,050 to \$3,268,990.

Unacceptable “looping” of IV tubing went from

**51% to 2%** during the study intervention

## *Journal of the Association of Vascular Access: Volume 23 Number 1; March 2018*

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

*Mary Duncan RN, MSN, CIC, Patricia Warden RN, MS, Stephanie F. Bernatchez PhD, Dan Morse*

- Implemented and monitored compliance to a PIV bundle that included using Curot Disinfecting Cap for Needleless Connectors, Curot Tips Disinfecting Cap for Male Luers, changing all IV tubing every 96 hours and prohibiting the disconnection of IV tubing for convenience.
- Compliance to the use of disinfecting caps and disinfecting tips was monitored, and a compliance rate near 90% was achieved.
- The PLABSI bundle successfully reduced primary bloodstream infections due to PIVs by 80%, from 0.57 infections per 1,000 patient-days (pre-intervention) to 0.11 infections per 1,000 patient-days (p<0.001).

**10% increase**

in nurse compliance resulted in a statistically significant

**7% decrease** in infection rates

## *American Journal of Infection Control: Volume 40 Number 12; December 2014*

### • Impact of universal disinfectant cap implementation on central line-associated bloodstream infections

*Katreena Collette Merrill RN, PhD, Sharon Sumner RN, BS, Lorraine Linford RN, BS, CNSC, Carrie Taylor RN, MS, CIC, Christopher Macintosh RN, BS.*

- The rate of CLABSI infections decreased by >40% following implementation of the Curot Disinfecting Cap for Needleless Connectors within an existing standard central-line bundle (IRR = 0.0557, P = 0.004).
- Curot cap use was associated with an estimated savings of almost \$282,840 per year in the hospital studied.
- Weekly audits of compliance demonstrated that a 10% increase in nurse compliance resulted in a statistically significant 7% drop in infection rate.

3M™ Curoso™  
Disinfecting Cap for  
Needless Connectors  
were estimated to  
provide a potential  
clinical time savings of  
**82.4 working  
days per year**

*British Journal of Nursing: (IV Therapy Supplement) Vol 25, No 8, 2016*

• **Port protectors in clinical practice: An audit**

*Corinne Cameron-Watson, Barking Havering and RedBridge NHS Trust*

- The study measured the effect on compliance and incidence of vascular access device (VAD)-related bacteremia following the introduction of a passive disinfection device (Curoso disinfecting cap) for six months.
- As compared to data collected in a benchmark scrub the hub with CHG/IPA wipe audit, data post Curoso disinfecting cap implementation showed VAD-related bacteremia rates reduced by 69% when staff compliance with Curoso disinfecting cap placement onto VADs was 80% or more.
- The use of Curoso disinfecting caps was estimated to provide a potential clinical-time saving of 659.4 hours per year, which equates to 82.4 working days per year (based on an 8-hour day).
- Of the 86 staff trained to use a port protector, 70% returned completed questionnaire, and of these 100% preferred the Curoso disinfecting caps to manual scrubbing.

*American Journal of Critical Care, Vol. 25, No. 2: 165–172, March 2016*

Estimated potential  
savings of  
approximately  
**\$3.7 million**  
for the LTACHs studied

• **Use of a central catheter maintenance bundle in long-term care hospitals**

*Anthony M. Grigonis, PhD, Amanda M. Dawson, PhD, Mary Burkett, DNP, CNS, Arthur Dylag, MA, MBA, Matthew Sears, BS, Betty Helber, RN, MS, ANE-BC, and Lisa K. Snyder, MN, MPH*

- A central catheter maintenance bundle was implemented in 30 LTACHs, and compliance with the bundle was tracked for six months. CLABSI rates were monitored for 14 months before and 14 months after the bundle was implemented.
- In addition to the CDC guidelines, the bundle protocol included education on the protocol, mandatory use of Curoso Disinfecting Caps on all needleless connectors, 3M™ Tegaderm™ CHG I.V. Securement Dressings, and a formation of a central catheter team of nurses.
- A mean reduction of 4.5 CLABSIs per LTACH occurred for the LTACHs studied for 14 months after the bundle was implemented. This infection reduction could translate to a savings of approximately \$3.7 million annually for the 30 LTACHs studied and could have potentially saved 20 patients' lives, assuming a 15% mortality rate from CLABSIs.

**Compliance  
increased from  
63% to 80%**  
from single caps to  
strips of caps hanging  
on IV pole for bedside  
access

*The Journal of the Association for Vascular Access: Volume 17 Number 4; December 2012*

• **Central venous catheter protective connector caps reduce intraluminal catheter-related infection**

*Chuck Ramirez, BA, RRT, VA-BC, Antonina M. Lee, MEd, MPH, RN, CIC, Ken Welch, MD, Banner Estrella Medical Center, Phoenix, AZ*

- During 2010, the CLABSI rate reduced from 1.9 in 2010 to 0.5 during the one-year trial period.
- The implementation of 3M™ Curoso™ Disinfecting Cap Strip for Needleless Connectors during month five of the trial increased compliance rates from 63% to 80%.

*American Journal of Infection Control: Volume 40 Number 10; December 2012*

32-bed study showed  
**annual  
savings of  
\$500,000**

• **Impact of alcohol impregnated port protectors and needleless neutral pressure connectors on central line-associated bloodstream infections and contamination of blood cultures in an inpatient oncology unit**

*Michael A. Sweet, PharmD; Aaron Cumpston, PharmD; Frank Briggs, PharmD; MPH, Michael Craig MD and Mehdi Hamadani, MD*

- A total of 6,851 central line-days and 16 CLABSIs (2.3 infections/1,000 central line days) were documented during the control period, compared with 3,005 central line days and one CLABSI (a rate of 0.3 infections/1,000 central line days) during the intervention period (relative risk, 0.14; 95% confidence interval [CI], 0.02-1.07; P = 0.03).
- This 32-bed study showed \$500,000 in annualized savings (Sweet MA, et al. SHEA Product Evaluation 2011).
- The rate of contaminated blood cultures from central lines was 2.5% (17 of 692) during the control period, but only 0.2% (1 of 470) during the intervention period (relative risk, 0.09; 95% CI, 0.01-0.65; P = 0.002).
- The rate of adherence to the intervention was 85.2% (228 of 269 patients with catheter protectors).

# The entire family of Curoso Disinfecting Port Protectors

- Disinfects in 1 minute
- Protects IV access points for up to 7 days
- Twists on, stays on
- Brightly colored for visual verification and auditing
- Single use only

Curoso disinfecting port protectors are the only brand on the market that has offerings to help reduce risks across all IV access points.



## 3M™ Curoso™ Disinfecting Cap for Needleless Connectors

### Disinfects

Use as a disinfecting device for needleless connectors.

### Protects

Acts as a barrier to contamination while in place.

### Where you need them, when you need them

Curoso cap strips can be hung from IV poles for easy access, greater compliance and reduced waste.

### Dispensing options

- Individual caps
- Strips (10 count)



### 3M™ Curoso Tips™ Disinfecting Cap For Male Luers

#### Protection where it's needed

Curoso Tips disinfecting caps disinfect critical surfaces and protect the distal end of IV tubing and other male luer devices.

#### Optimal alcohol placement

A unique design shields excess alcohol from entering the lumen while providing sufficient flow of alcohol precisely where it is needed – on the exposed exterior male luer.

#### Dispensing options

- Strips (5 count)



### 3M™ Curoso™ Stopper Disinfecting Cap for Open Female Luers

#### Thoughtful design

Curoso Stopper disinfecting caps are designed to luer lock onto a wide range of stopcocks and catheter hubs. They utilize 70% isopropyl alcohol (IPA) to disinfect the critical surfaces of open female luers, prior to line access.

The unique cap design will hold pressure to maintain a closed system.

#### Dispensing options

- Individual caps
- Strips (5 count)



### 3M™ Curoso™ Disinfecting Cap For Tego® Hemodialysis Connectors

#### Compatible

This specially designed Curoso disinfecting port protector is compatible\* with Tego® Needlefree Hemodialysis Connector.\*\*

\* *"Tego Swab Recommendations and Compatibility with Disinfecting Caps," October, 2012.*

\*\* *ICU Medical Tego® Hemodialysis Connector catalog code D1000.*

#### Custom colored

White Curoso caps for Tego hemodialysis connectors are easily distinguished from green caps for dedicated use on the Tego connectors.

#### Dispensing options

- Individual caps

# Need help incorporating 3M™ Curos™ Disinfecting Port Protectors into processes at your facility?



We want everyone who uses Curos disinfecting port protectors to be successful. We offer the services of a Clinical Outcomes Team that can help hospitals implement the use of Curos disinfecting port protectors to achieve and sustain high compliance. Our team consists of full-time nurses dedicated to supporting your efforts.

## Areas we can assist with:

- Planning resources and guidance.
- Sharing proprietary processes and tools that spur adoption and measure your success.
- Implementation and large trial support.
- Compliance tools for training, motivating and auditing.
- On-going consulting and support.
- Assistance in study creation and results reporting.
- Point prevalence reviews to help you reduce risk at all access points.
- Clinical expertise regarding standards, guidelines, and how Solventum products can help you achieve successful outcomes.



## Continuing education

Our Healthcare Academy is an online site that contains over 50 free CE credit courses.

For more information visit:  
[Go.Solventum.com/Education](https://Go.Solventum.com/Education)

## Try our other antimicrobial protection products

We offer a range of vascular care products to help you achieve better patient outcomes. For more information, visit [Go.Solventum.com/IVSM](https://Go.Solventum.com/IVSM)

To order call: 800-228-3957

Product	Dispenser	Solventum product order #	Boxes per case	Units per box	Total caps or tips per case
3M™ Curos™ Disinfecting Caps for Needleless Connectors	Individuals	CFF1-270R	10	270	2,700
	Strips (10 count)	CFF10-250R	10	25 Strips	2,500
3M™ Curos Tips™ Disinfecting Cap for Male Luers	Strips (5 count)	CM5-200R	10	40 Strips	2,000
3M™ Curos™ Disinfecting Caps for Tego® Hemodialysis Connectors	Individuals	CTG1-270R	8	270	2,160
3M™ Curos™ Stopper Disinfecting Caps for Open Female Luers	Individuals	CSV1-270R	8	270	2,160
	Strips (5 count)	CSV5-250R	8	50 Strips	2,000



Solventum Medical Surgical

Phone 800-228-3957  
Web [Go.Solventum.com/Curos](https://Go.Solventum.com/Curos)

To learn more about how Solventum can help you and your facility protect clinician and patient safety, prevent costly IV site complications, and improve patient satisfaction, contact your Solventum Medical Solutions Division representative or call the Solventum Health Care Customer Helpline at 1-800-228-3957. Outside of the United States, contact the local Solventum subsidiary.

For more information, go to [Go.Solventum.com/IVSM](https://Go.Solventum.com/IVSM)

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