
3M
Science.
Applied to Life.™
Reduce risk
at all access points.

A critical issue for every health care facility.

The Bad News

Catheter-related bloodstream infections are a critical issue around the world. In developing countries, there are 12.2 cases per 1,000 catheter days. And in developed markets, there are 3.5 cases per 1,000 catheter days.[1]

The Good News

There are ways to prevent these complications and expenses.

Understanding the terminology

CRBSI – Catheter-Related Bloodstream Infection (CRBSI requires laboratory confirmation that identifies the catheter as the source of the infection.)

CLABSI – Central Line-Associated Bloodstream Infection (Surveillance methods track the possibility of a central venous catheter infection and record it as a CLABSI. And while CLABSI may also include secondary bloodstream infection, almost all of these patients will be recognised as having an infection specifically due to the presence of the catheter.)

Reduction in vascular-associated infections of central lines will be reflected in reduced rates of CLABSI, CRBSI or both.

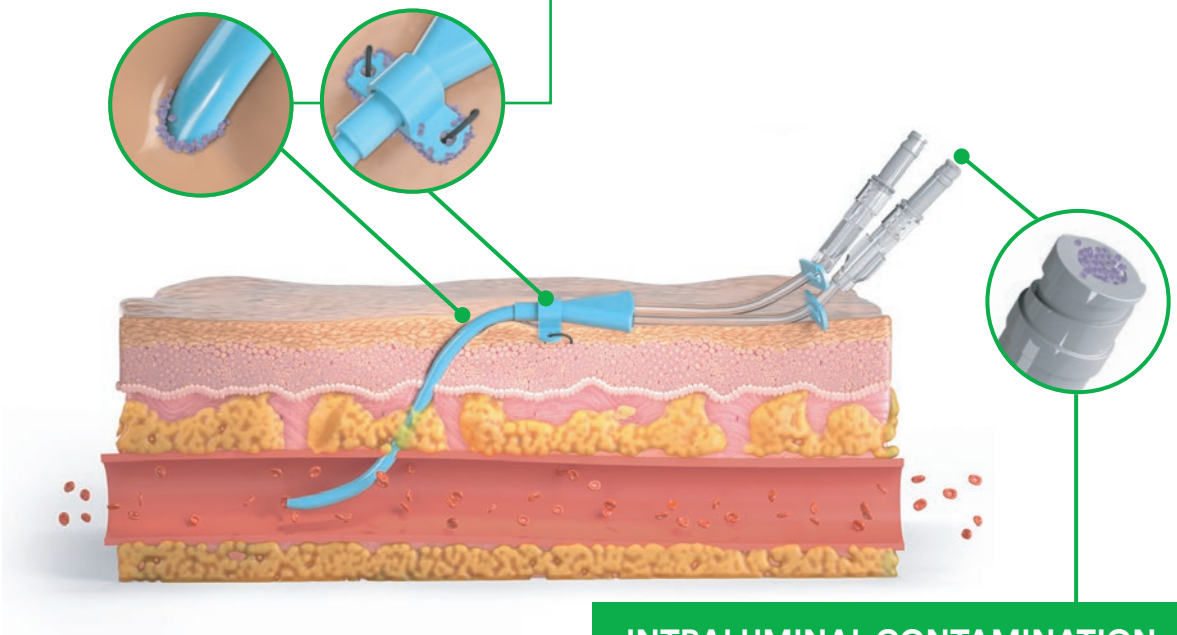
Please note: For purposes of this brochure, the term bloodstream infections (BSI) includes, but is not limited to, CRBSI and CLABSI.

Sources of infection

While vascular catheters provide the advantage of prolonged venous access, they present a risk of infectious complications. In fact, 60% of all hospital-acquired bloodstream infections originate from some form of vascular access.[2] These infections can be acquired at the time of the initial insertion or anytime throughout the duration of the venous access. Microbes can enter the bloodstream through multiple access points including:

EXTRALUMINAL CONTAMINATION

Results when bacteria originating on the surface of the skin diffuses along the outside of the catheter and enters through the insertion point.



INTRALUMINAL CONTAMINATION

Results when bacteria diffuses through the catheter post insertion, typically via contamination of the lumen through the catheter port.

1. In adult ICUs. World Health Organization: Report on the Burden of Endemic Health Care-Associated Infection Worldwide: A systematic review of the literature 2011.
2. Scheithauer S, Lewalter K, Schröder J, Koch A, Häfner H, Krizanovic V, Nowicki K, Hilgers RD, Lemmen SW. Reduction of central venous line-associated bloodstream infection rates by using a chlorhexidine-containing dressing. Infection. 2014 Feb 1;42(1):155-9.

MRSAs cause ⅓ BSIs

All MRSAs are responsible for up to ⅓ of healthcare associated BSI.[3]

50%

Mortality rate from MRSA that's related to BSI is up to 50%.[3]

Hospitalisation

The average length of stay is 16.8 days longer for a patient with CLABSI.[4]

Intravascular devices are a potential source for hospital-acquired infection (HAI) and the most severe is BSI.

Approximately

$34,843 AUD

is the extra cost to treat a patient with CLABSI due to their increased length of stay.[4]

Australian public hospitals reported

1,573

SAB infections in 2018/19.[5]

New Zealand reported

18 HAIs

in 2018/19.[6]

Approximately

$20,000-54,000 NZD

is the cost of a CLABSI in New Zealand.[7]

3. Australian Guidelines for the Prevention and Control of Infection in Healthcare, 2019. Canberra: National Health and Medical Research Council. pp 136.
4. Australian Commission for Safety and Quality in Healthcare, 2018. Healthcare Associated Infections Facts Sheet, pp12.
5. Australian Institute for Health and Welfare, 2019. Healthcare Associated Infections. https://www.aihw.gov.au/reports-data/myhospitals/intersection/quality/apc
6. Health Quality and Safety Commission New Zealand, 2019. Learning from Adverse Events, 1 July 2018 – 30 June 2019, pp6. https://www.hqsc.govt.nz/assets/Reportable-Events/Publications/Learning-from-adverse-events2019-web-final.pdf
7. Health Quality and Safety Commission New Zealand, 2020. Prevention of Central Line Associated Bacteraemia. https://www.hqsc.govt.nz/our-programmes/infection-prevention-and-control/projects/prevention-of-central-line-associated-bacteraemia/

The three keys to reducing infection risk.

Eliminating bloodstream infections cannot be achieved with a single initiative, process or technology. All avenues of infection protection must be explored and implemented. Whether it is the antimicrobial technology found in 3M products or the strict adherence by everyone involved in patient care to consensus recommendations, there are many facets to reducing vascular access infections.

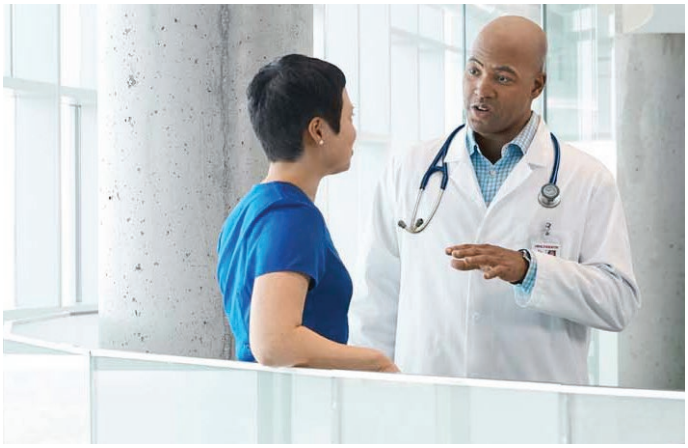
Trained & committed
People
Proper training and personal accountability in following protocols for every patient, every time.

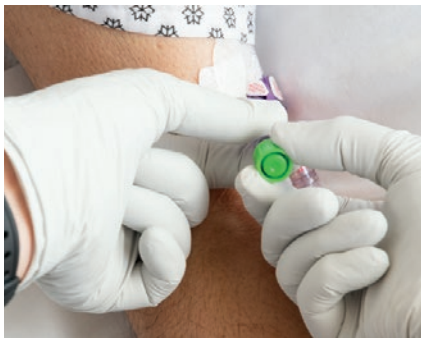
Current best practice
Standards
Following evidence-based standards and best practice guidelines for preventing bloodstream infections.

Effective & proven
Technology
Using the right technology can be associated with decreased risk of bloodstream infections

3M solutions align with current best practice standards.

Many well-regarded organisations have studied how to best prevent BSI. While each group comes at the problem from a different perspective, there is a consensus around the best practices as they relate to technology. **Specifically, there is agreement on the efficacy of disinfecting port protectors and chlorhexidine gluconate (CHG) dressings.**





Australian Guidelines for the Prevention and Control of Infection in Healthcare with the National Health and Medical Research Council (NHMRC 2019)

- There is risk of infection when the device is inserted and while it remains in-situ. All types of intravascular access devices should be used only when clinically indicated and deemed necessary.[8]
- Prepare the skin prior to insertion of device by decontaminating skin with a single use application of alcohol-based chlorhexidine gluconate solution (chlorhexidine 2% in isopropyl alcohol 70%).[8]
- Use of chlorhexidine gluconate impregnated dressings has been shown to reduce intravascular device related bloodstream infection and device colonisation rates.[9]
- Safe maintenance of intravascular device includes good practice in caring for the patient's catheter hub and connection port to avoid contamination. Use hand antisepsis and aseptic technique when providing catheter site care and when assessing the system.[9]

8. Australian Guidelines for the Prevention and Control of Infection in Healthcare, 2019. Canberra: National Health and Medical Research Council. pp 167.
9. Australian Guidelines for the Prevention and Control of Infection in Healthcare, 2019. Canberra: National Health and Medical Research Council. pp 170.

Infusion Nurses Society (INS) Infusion Therapy Standards of Practice (2016)

Standard 41: Vascular Access Device (VAD) Care & Dressing Change

Practice Criteria C

- Assess the vascular access device/skin junction site and surrounding area for redness, tenderness, swelling and drainage by visual inspection and palpation through the intact dressing.

Practice Criteria J

- Use CHG impregnated dressings over CVADs to reduce infection risk when extraluminal route is primary source of infection.

Standard 34: Needleless Connectors

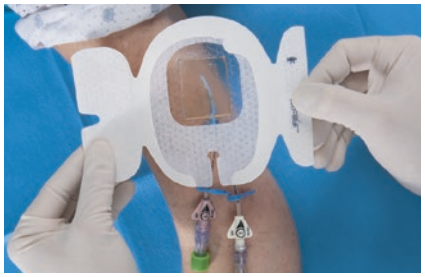
Practice Criteria G

- Use of passive disinfecting caps containing disinfecting agent (IPA) shown to reduce intraluminal microbial contamination and reduce rates of CLABSIs. Use of disinfection caps on peripheral catheters has limited evidence but should be considered.

Practice Criterion I

- Ensure that disinfecting supplies are readily available at the bedside to facilitate staff compliance with needleless connector disinfection.

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.



Centers for Disease Control and Prevention (CDC) Checklist for prevention of CLABSI (2014)

- Handle and maintain central lines appropriately: For patients 18 years of age or older, use a chlorhexidine impregnated dressing with an FDA cleared label that specifies a clinical indication for reducing CLABSI for short-term non-tunneled catheters unless the facility is demonstrating success at preventing CLABSI with baseline prevention practices.
- Supplemental strategies for consideration: Antiseptic impregnated caps for access ports.

Centers for Disease Control and Prevention. Checklist for prevention of central line-associated bloodstream infections. https://www.cdc.gov/hai/bsi/bsi.html Accessed August 11, 2017

Effective & proven
Technology

Using 3M antimicrobial technology can help prevent bloodstream infections.

The right technology plays an integral role as part of an overall infection protection plan. Even when strictly following best practices for hygiene, aseptic technique and insertion practices, there still remains a risk for infection. Properly deployed antimicrobial solutions offer another line of defense against bloodstream infections. 3M offers products that protect against both extraluminal and intraluminal contamination.

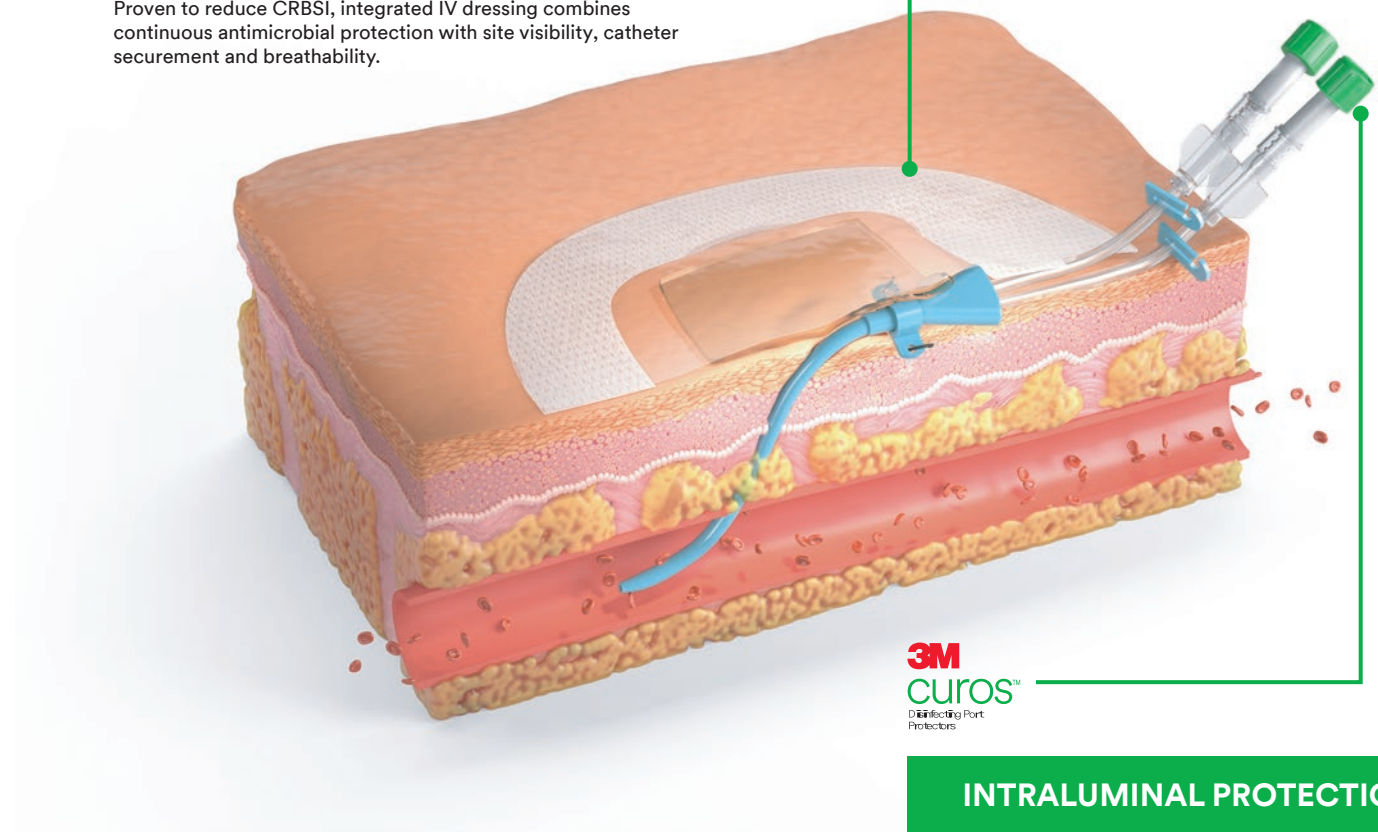
Reducing risk at all access points

3M Tegaderm™
Chlorhexidine Gluconate (CHG) I.V. Securement Dressing

EXTRALUMINAL PROTECTION

3M™ Tegaderm™ CHG Chlorhexidine Gluconate I.V. Securement Dressing

Proven to reduce CRBSI, integrated IV dressing combines continuous antimicrobial protection with site visibility, catheter securement and breathability.



3M curos™
Disinfecting Port Protectors

INTRALUMINAL PROTECTION

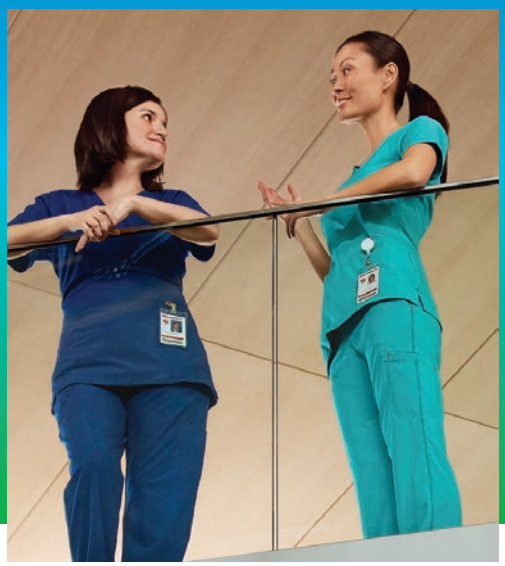
3M™ Curos™ Disinfecting Port Protectors

Consistent use of Curos Disinfecting Caps on IV needleless connectors is associated with decreased CLABSI. Disinfect and protect needleless connectors, open female luers and male luer devices to help reduce the risk of contaminants from entering the catheter post-insertion.

Trained & committed
People

Preventing bloodstream infections takes training and commitment.

Technology alone cannot improve the quality of care. Achieving the intended benefits of 3M products relies on the informed and consistent use of innovations as well as adherence to consensus best practices — all of which requires ongoing training and support.



3M℠ Health Care Academy

3M Health Care Academy offers online continuing education for healthcare professionals and contains over 50 free courses. This professional training and education resource is dedicated to helping you focus on deepening your expertise and improving patient care.

For more information visit: www.3m.com.au/healthcareacademy

3M Clinical Specialists

The 3M Clinical Specialists can help facilities implement the use of 3M products to achieve and sustain high compliance. Our team consists of nurses dedicated to supporting your efforts. Areas we can assist with include:

- Planning resources and guidance
- Sharing proprietary processes and tools to accelerate adoption and measure your success
- Implementation and large trial support
- Compliance tools for motivating and auditing
- Ongoing training and support
- Point prevalence reviews to help you reduce risk at all access points
- Clinical expertise regarding standards, guidelines and how 3M products can help you achieve successful outcomes

Tegaderm™ CHG Dressings reduce risk of extraluminal contaminants.

In use for over 50 years, CHG has proven to be an effective antimicrobial. CHG skin preps are often used to minimise contamination of the insertion site, but microbes penetrate the skin deeper than the skin preps and regrowth can occur within 24 hours.[12] Tegaderm CHG I.V. Securement Dressings are clinically proven to reduce CRBSIs in patients with central and arterial catheters by 60% and to reduce skin and catheter colonisation by 61%.[13] The use of CHG-impregnated dressings are a recommended clinical best practice by NHMRC, CDC and INS.

Tegaderm CHG I.V. Securement Dressings go beyond chlorhexidine gluconate by also offering transparency for site visibility, reliable securement and a design that supports standardised application.

Proven efficacy against 37 strains of microorganisms.

Tegaderm CHG I.V. Securement Dressings have demonstrated in vitro antimicrobial efficacy against a broad range of microorganisms. Many of the 37 strains tested were resistant organisms, including MRSA, MRSE, VRE and MDR. Tegaderm CHG I.V. Securement Dressings maintain their antimicrobial properties throughout the shelf-life of the product.[14]

Enterococcus (5 strains)

Pseudomonas aeruginosa (5 strains)

Candida (2 strains)

Staphylococcus aureus (8 strains)

Escherichia coli (1 strain)

Coag Neg Staph (7 strains)

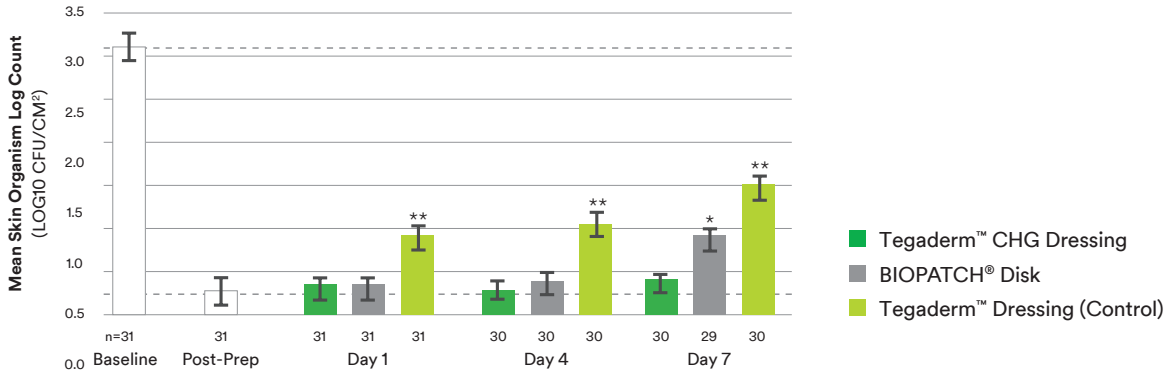
Klebsiella (2 strains)

Enterobacter (1 strain)

Other (6 strains)

Tegaderm™ CHG Dressings suppress skin flora regrowth on prepped skin better than BIOPATCH® Disks with CHG

Mean skin organism log count over time[12]



All pairwise testing done against Tegaderm CHG Dressing using a paired t-test with Holm stopwise adjustment for multiple comparisons.
* p-values <0.01 ** represents p-value <0.001

All you need, all in one.

Tegaderm™ CHG I.V. Securement Dressings provide four essential elements you need to protect your patients' IV sites in one, easy-to-use product.

Infection Reduction
Built-in CHG gel pad provides reliable antimicrobial protection for patients.

Site Visibility
Transparent film and gel pad allow continuous visualisation of the insertion site.

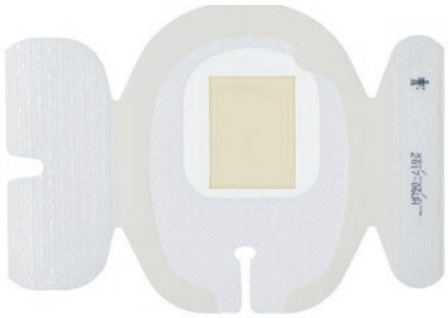
Consistent Application
Integrated CHG gel pad design helps to ensure dressings are applied correctly and consistently.

Catheter Securement
Stabilisation border, keyhole notch and reinforcing tape strips designed to work together to minimise catheter movement or dislodgement.

12. Bashir MH, Olson LK, Walters SA. Suppression of regrowth of normal skin flora under chlorhexidine gluconate dressings applied to chlorhexidine gluconate-prepped skin. Am J Infect Control. 2012; 40(4): 344-8.
13. Timsit JF, Mimoz O, Mourvillier B, Souweine B, Garrouste-Orgeas M, Alfandari S, Plantefeve G, Bronchard R, Troche G, Gauzit R, Antona M. Randomised controlled trial of chlorhexidine dressing and highly adhesive dressing for preventing catheter-related infections in critically ill adults. American journal of respiratory and critical care medicine. 2012 Dec 15;186(12):1272-8.
14. J.P. Hensler, 3M Health Care, et al. Published: European Society of Clinical Microbiology and Infectious Diseases (ECCMID), May 2009.

Clinically proven to reduce CRBSI.

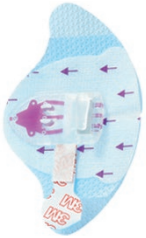
Tegaderm™ CHG I.V. Securement Dressing is the only transparent dressing indicated and proven to reduce CRBSI and vascular catheter colonisation that aligns with evidence-based guidelines and practice standards.



Tegaderm™ Chlorhexidine Gluconate (CHG) I.V. Securement Dressings

The only transparent dressing proven to reduce CRBSI and vascular catheter colonisation. The gel pad provides 2% CHG to the skin surface immediately, without requiring moisture to activate. The integrated design helps ensure consistent application, aligning with evidence-based guidelines and practice standards.

Antimicrobial
I.V. securement dressing



Sutureless
securement device
with silicone adhesive

3M™ PICC/CVC Securement Device + Tegaderm™ CHG I.V. Securement Dressings

An engineered stabilisation device (ESD) plus antimicrobial (CHG) dressings designed to provide continuous antimicrobial protection for up to 7 days.

* in vitro studies show the CHG gel pad is a microbial barrier and protects the insertion site against a variety of gram-positive and gram-negative bacteria and yeast, including organisms most commonly associated with catheter-related bloodstream infections (CRBSI). 3M data on file (010659).

Curos™ Disinfecting Port Protectors reduce risk across all intraluminal access points.

3M Curos Disinfecting Port Protectors are alcohol-containing caps that twist onto IV access points for disinfection and protection. Consistent use of Curos disinfecting caps on IV needleless connectors is associated with decreased CLABSIs.[15]

Each Curos disinfecting port protector contains 70% isopropyl alcohol (IPA). The IPA bathes the surfaces of the port and disinfects it in 1 minute and protects it for up to 7 days if not removed.

3M Curos disinfecting port protectors is the only brand on the market that has offerings to help reduce risks across all intraluminal access points – providing protection for all patients, all access points, all the time.

Curos™ disinfecting port protectors achieved a >99.99% reduction in 6 microbes commonly associated with CLABSI.[16, 17]

The effectiveness of Curos disinfecting port protectors was tested *in vitro* against[17]:


Staphylococcus aureus

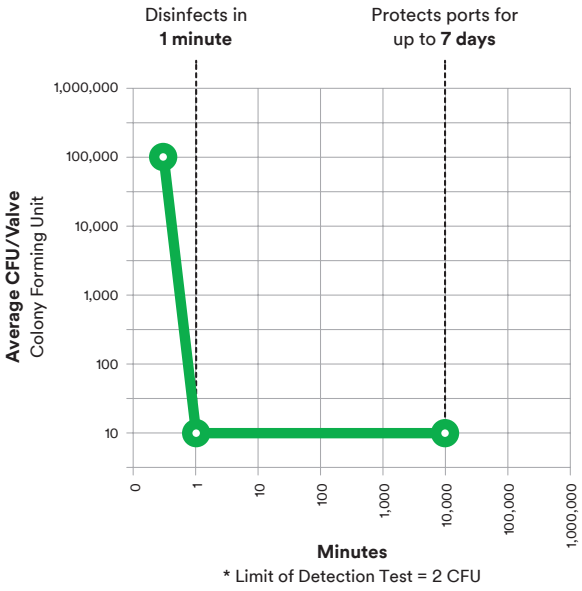

Staphylococcus epidermidis


Escherichia coli


Candida albicans


Pseudomonas aeruginosa


Candida glabrata



* Limit of Detection Test = 2 CFU

The entire family of Curos™ disinfecting port protectors.

- Disinfects in 1 minute
- Protects ports for up to 7 days if not removed
- Saves time
- Provides a physical barrier
- Removes technique variation
- Provides visual confirmation

15. See various studies listed in 3M™ Curos™ Clinical Evidence Summary (70-2011-5695-0), available at 3m.com/Curos
16. For more information regarding organisms associated with central line–associated bloodstream infections, refer to: Weiner et al. (2016). 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. Infection Control & Hospital Epidemiology, 1-14. doi: 10.1017/ ice.2016.174
17. Data reflects in vitro findings on Curos™ Disinfecting Port Protectors

Protect ports and ensure peace of mind.

Consistent use of Curos™ disinfecting caps on IV needleless connectors is associated with decreased CLABSIs.[16]

3M™ Curos™ Disinfecting Cap for Needleless Connectors

Provides quick and verifiable disinfection whilst fitting the most commonly used needleless connectors.

3M™ Curos Tips™ Disinfecting Cap for Male Luers

Disinfects and protects the distal end of IV tubing and other male luer devices.

3M™ Curos™ Stopper Disinfecting Cap for Open Female Luers

Designed to fit on a wide range of stopcocks and catheter hubs. Their unique design maintains pressure and disinfects the critical areas with 70% isopropyl alcohol.

CIRCLE OF DISINFECTION AND PROTECTION

3M™ Curos™ Disinfecting Cap for Tego® Haemodialysis Connectors

This specially designed Curos disinfecting cap is compatible* with Tego® Needlefree Haemodialysis Connectors.

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

Standards. People. Technology. The protection trifecta.

Reducing the risk of bloodstream infection is not a one-time event. It is an ongoing effort that requires exacting standards of care, a commitment from the care team to methodically adhere to those standards, and technology that adds an additional layer of antimicrobial protection. Together, we can help defeat bloodstream infections.

Product	Product Code	Suggested Devices	CHG Gel Pad Size	Overall Dressing Size	Units Per Box	Boxes Per Case
3M™ Tegaderm™ (CHG) Chlorhexidine Gluconate I.V. Securement Dressing	1657R	All CVCs, Arterial, Dialysis, Midline and other percutaneous devices	3 cm x 4 cm	8.5 cm x 11.5 cm	25	4
	1658R	Universal, other percutaneous devices	3 cm x 4 cm	10 cm x 12 cm	25	4
	1659R	All CVCs and PICCs	3 cm x 7 cm	10 cm x 15.5 cm	25	4
	1660R	PIVs, Midline, Arterial, CVCs and other percutaneous devices	2 cm x 2 cm	7 cm x 8.5 cm	25	4
PICC/CVC Securement Device + Tegaderm™ CHG I.V. Securement Dressing	1877R-2100	PICCs, CVCs and other vascular access devices	3 cm x 4 cm	8.5 cm x 11.5 cm	20	4
	1879R-2100	PICCs, CVCs and other vascular access devices	3 cm x 7 cm	10 cm x 15.5 cm	20	4

Product	Product Code	Dispenser	Units Per Box	Boxes Per Case	Total Caps or Tips Per Case
3M™ Curos™ Disinfecting Caps for Needleless Connectors	CFF1-270R	Individuals	270	10	2,700
	CFF10-250R	Strips (10 count)	25 strips	10	2,500
3M™ Curos Tips™ Disinfecting Caps for Male Luers	CM5-200R	Strips (5 count)	40 strips	10	2,000
3M™ Curos™ Disinfecting Caps for Tego® Hemodialysis Connectors	CTG1-270R	Individuals	270	8	2,160
3M™ Curos™ Stopper Disinfecting Caps for Open Female Luers – Red	CSA1-270R	Individuals	270	8	2,160
	CSA5-250R	Strips (5 count)	50 strips	8	2,000

3M Australia Pty Limited
ABN 90 000 100 096
Building A, 1 Rivett Road
North Ryde NSW 2113
Phone: 1300 363 878
www.3M.com.au/medical

3M New Zealand Limited
94 Apollo Drive
Rosedale
Auckland 0632
Phone: 0800 80 81 82
www.3M.co.nz/medical