

# ClearGuard™ HD

## Antimicrobial barrier caps for haemodialysis catheters

Clinically proven to reduce the rate of bloodstream infections in haemodialysis catheters and recommended in the United Kingdom's National Institute for Health and Care Excellence (NICE) Medical Technologies Guidance [MTG62]

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# Reduce haemodialysis catheter infections with clinically proven technology

## Catheter infections are frequent, costly and deadly



- Increased infection rates are associated with the use of invasive devices, in particular, central lines, urinary catheters and ventilators.[1]
- Prevalence of catheter use has been around 14%, i.e., 1 in 7 prevalent dialysis patients in Australia.[2]
- Per the George Institute: In an average Australian dialysis unit, dialysis catheters result in between 15 and 33 episodes of bacteraemia per year; 2 and 4 deaths per year and cost $330K–$770K per year.[3]

## Reduce haemodialysis catheter infections by up to 63%[3]

The ClearGuard HD antimicrobial barrier cap is the first and only device for sale designed to kill infection-causing bacteria inside a haemodialysis catheter hub.* ClearGuard HD features a rod that extends into the haemodialysis catheter hub. The rod and cap threads are coated with chlorhexidine, a well-known broad-spectrum antimicrobial agent.




- When the ClearGuard HD cap is inserted into a liquid-filled catheter, chlorhexidine elutes from the rod into the catheter lock solution.
- The chlorhexidine coating dissolves to kill microorganisms on the inside and outside of the catheter hub.
- The existing catheter clamp holds the antimicrobial agent inside the catheter hub between treatments.
- ClearGuard HD caps are used in place of a standard cap or connector.

*Designed to kill microorganisms, not intended to be used for treatment of existing infections.

# ClearGuard HD antimicrobial barrier caps have been clinically proven to reduce CLABSIs in haemodialysis catheter patients[3,4]

Multiple large, prospective, cluster-randomised, multicenter, open-label trials demonstrated a significant reduction in the rate of positive blood cultures (PBCs) and central line-associated bloodstream infections (CLABSIs) using ClearGuard HD caps versus control groups.

## JASN*

### Cluster-Randomized Trial of Devices to Prevent Catheter-Related Bloodstream Infections

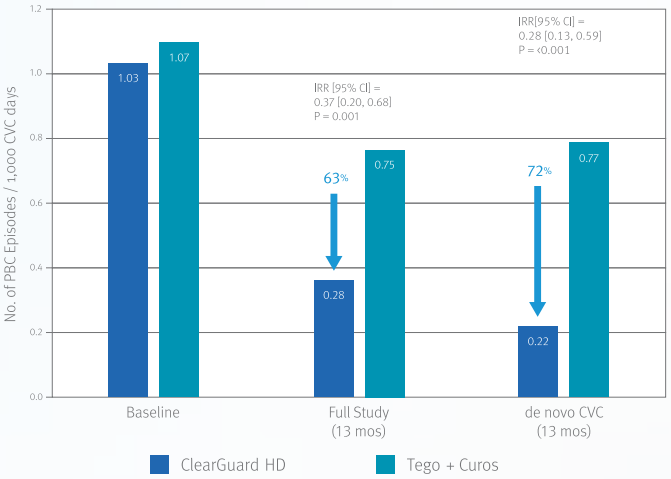


*Chart is based on data contained in the article.

### ClearGuard HD caps vs. Tego™+ Curos™

Brunelli, SM et al. Cluster-randomized trial of devices to prevent catheter-related bloodstream infection. J Am Soc Nephrol 2018 Apr; 29(4):1336-1343.

- 13-month prospective, cluster-randomised, multicenter, open-label trial
- 1,671 patients (826 treatment, 845 control) accruing ~183,000 CVC days
- 40 centers across the US
- Primary endpoint was PBC rate as an indicator of BSI rate.

Results: Use of the ClearGuard HD caps for 13 months was associated with a 63% lower BSI rate versus use of Tego + Curos.

*Curos is a registered trademark of Solventum Intellectual Property Company.

## AJKD*

### Dialysis Catheter-Related Bloodstream Infections: A Cluster-Randomized Trial of the ClearGuard HD Antimicrobial Barrier Cap

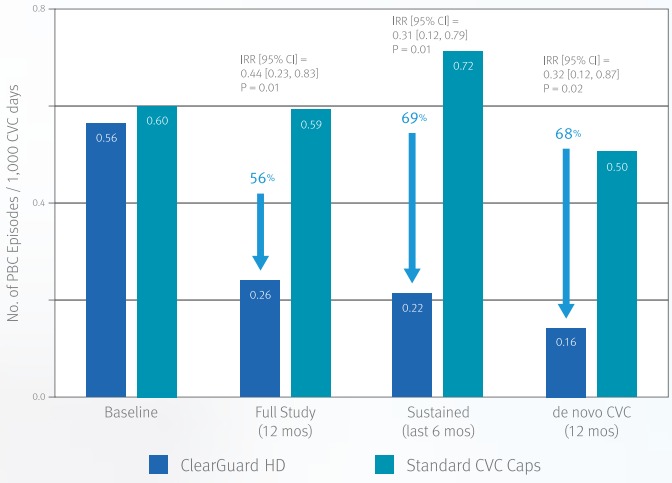


*Chart is based on data contained in the article.

### ClearGuard HD caps versus standard dialysis caps

Hymes, JL et al. Dialysis catheter-related bloodstream infections: A cluster-randomized trial of the ClearGuard HD antimicrobial barrier cap. Am J Kidney Dis. 2017; 69(2):220-227.

- 12-month prospective, cluster-randomised, multicenter, open-label comparative effectiveness trial in haemodialysis patients with central venous catheters
- 2,470 patients (1,245 treatment, 1,225 control) accruing ~350,000 CVC days
- 40 centers across the US
- Primary endpoint was PBC rate as an indicator of BSI rate.

Results: Use of the ClearGuard HD caps for 12 months was associated with a 56% lower BSI rate versus use of standard caps. When considering sustained use (defined as 6 months of the study), the intervention versus control was associated with a 69% lower BSI rate.

# ClearGuard HD antimicrobial barrier caps used by leading US hospitals and clinics

For years, dialysis staff at hospitals and clinics have focused on educational initiatives to reduce bloodstream infections in haemodialysis patients with limited impact. ClearGuard HD caps succeed in reducing infections by killing bacteria where bloodstream infections start inside the haemodialysis catheter hub. With over 50M treatments at outpatient dialysis clinics and hospitals in the US as customers, ClearGuard HD caps are becoming an increasingly important part of haemodialysis infection control best practices.

Recommended in the UK's NICE Medical Technologies Guidance [MTG62]

Recommended in the UK's NICE Medical Technologies Guidance for preventing haemodialysis catheter-related bloodstream infections: 2021[5]

https://www.nice.org.uk/guidance/mtg62/

ClearGuard HD antimicrobial barrier caps recommended by NICE for preventing catheter-related bloodstream infections in people with central venous catheters having haemodialysis

INS

Infusion Nurses Society

Recommended in Infusion Therapy Standards of Practice 9th edition: 2024[6]

www.ins1.org

Antimicrobial barrier caps recommended by INS as a strategy to reduce bloodstream infections for patients receiving haemodialysis through a central venous catheter

NKF

KDOQI

Recommended in NKF's KDOQI Clinical Practice Guideline for Vascular Access: 2019[7]

https://www.kidney.org/professionals/kdoqi/guidelines-and-commentaries/vascular-access

21.3 KDOQI considers it reasonable to use an antimicrobial barrier cap to help reduce CRBSI in high-risk patients or facilities; the choice of connector should be based on clinician's discretion and best clinical judgement. (Expert Opinion)



Special Report published by Global Business Media exclusively features ClearGuard HD

Titled: *Reducing Catheter Related Bloodstream Infections in Hemodialysis Patients*

https://www.icumed.com/media/y2bbty4c/reducing-catheter-related-bloodstream-infections-in-hemodialysis-patients-sm.pdf

## Product ordering information

| Product code | Case quantity | Product description |
|---|---|---|
| 011-CGHD-100 | 100 | ClearGuard HD Caps (1 Red, 1 Blue) |



Contact us today to find out how ClearGuard HD can play a large role in your infection control practices. Visit www.icumed.com/en-au/products/renal-care/clearguard-hd/


1. Report on the Burden of Endemic Health Care-Associated Infection Worldwide, World Health Organization. 2011.
2. Pisoni, RL et al. Trends in US Vascular Access Use, Patient Preferences, and Related Practices: An Update From the US DOPPS Practice Monitor With International Comparisons. Am J Kidney Dis. 2015 Jun;65(6):905-15.
3. Brunelli, SM et al. Cluster-Randomized Trial of Devices to Prevent Catheter-Related Bloodstream Infection. J Am Soc Nephrol. 2018 Apr,29(4):1336-1343.
4. Hymes, JL et al. Dialysis Catheter-Related Bloodstream Infections: A Cluster-Randomized Trial of the ClearGuard HD Antimicrobial Barrier Cap. Am J Kidney Dis. 2017 Feb;69(2)220-227.
5. © NICE 2021 ClearGuard HD antimicrobial barrier caps for preventing haemodialysis catheter-related bloodstream infections. Medical technologies guidance [MTG62]. Available from https://www.nice.org.uk/guidance/mtg62/chapter/1-Recommendations All rights reserved. Subject to Notice of rights NICE guidance is prepared for the National Health Service in England. All NICE guidance is subject to regular review and may be updated or withdrawn. NICE accepts no responsibility for the use of its content in this product/publication.
6. Nickel B, Gorski L, Kleidon TM. et al. Infusion Therapy Standards of Practice, 9th Edition. J Infus Nurs. 2024 Jan-Feb 01;47(1S Suppl 1):S1-S285.
7. Lok CE, Huber TS, Lee T, et al; KDOQI Vascular Access Guideline Work Group. KDOQI Clinical Practice Guideline for Vascular Access: 2019 Update. Am J Kidney Dis. 2020;75(4)(suppl 2):S1-S164.


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