



Clave™

Clinically-differentiated needlefree IV connector technology proven to minimise bacterial transfer and colonisation

icumedical
human connections

Help enhance the safety and efficiency of infusion therapy by choosing

Clinically-Differentiated Infection Control Technology

When you choose ICU Medical needlefree IV sets and connectors with proprietary Clave technology, you get an effective barrier against bacterial transfer and colonisation designed to help reduce the risk of bloodstream infections.

And since the same clinical protocol can be used throughout the hospital, you can standardise on a single connector technology wherever care is given, allowing you to minimise clinical training and in-servicing and provide enhanced patient safety throughout your facilities while optimising your supply chain.



Help Reduce Infection Risks



Standardise Clinical Protocols



Optimise Supply of IV Consumables

Use the needlefree IV connector technology with a clinically-differentiated design and infection control performance you can trust

When you choose any one of ICU Medical's needlefree IV connectors featuring Clave infection control technology, you will get an effective barrier against bacterial transfer and colonisation, helping enhance patient safety.

Minimise bacterial transfer and colonisation with proven Clave needlefree connector technology^{1,2,3,4}

Intravenous therapy is essential to patient care, but accessing your patient's bloodstream may increase the risk of infection. Clave needlefree IV connector technology can be an important element in your efforts to help minimise the risk of bloodstream infections.

Standardise on a single connector technology wherever care is given

Clave technology can be used on standard central venous catheters throughout the hospital for blood draws or administration of IV medications, allowing you to minimise clinical training while enhancing patient safety by using a single, clinically-differentiated connector technology wherever care is given.

Help reduce the risk of CRBSIs by standardising on connector technology that's proven to minimise bacterial contamination

1. Ryder M, deLancey-Pulcini E, Parker AE, James GA. Bacterial transfer and biofilm formation in needleless connectors in a clinically simulated in vitro catheter model. *Infection Control & Hospital Epidemiology*. 2023;44(11):1760-1768. doi:10.1017/ice.2023.60.
2. JD Brown, HA Moss, TSJ Elliott. The potential for catheter microbial contamination from a needleless connector. *J Hosp Infect*. 1997; 36:181-189.
3. Yebenes J, Delgado M, Sauca G, Serra-Prat M, Solsona M, Almirall J, et al. Efficacy of three different valve systems of needleless closed connectors in avoiding access of microorganisms to endovascular catheters after incorrect handling. *Crit Care Med* 2008;36: 2558-2561.
4. Bouza E, Munoz P, Lopez-Rodriguez J, et al. A needleless closed system device (Clave™) protects from intravascular catheter tip and hub colonization: a prospective randomized study. *J Hosp Infect*. 2003; 54:279-287.



Enhance patient safety with one innovative technology in the DNA of every connector

Designed to enhance patient safety, each of ICU Medical's needlefree connectors utilises the same Clave infection control technology. Clave connector's straight fluid path and minimal residual volume help maximise the effectiveness of every flush.



MicroClave™ Clear Connector

- › Clear housing to visualise connector flushing
- › Use on standard vascular catheters



Clave Neutral Connector

- › Also available with blue tint for enhanced line identification
- › Use on standard (most common) vascular catheters



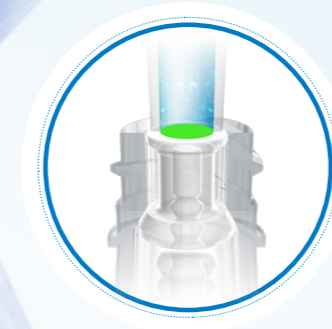
Clave Neutron™ Connector

- › Helps reduce multiple causes of catheter reflux
- › Helps reduce catheter occlusions by as much as 50%¹¹



NanoClave™ Connector

- › Minimises flush volumes
- › Multiple applications, including multiport manifolds and stopcocks



Silicone Seal and Internal Cannula Minimise Point of Entry for Bacteria

Specifically designed to minimise contact between the connector's external surface and the internal fluid path upon luer activation, Clave needlefree IV connectors minimise entry points for bacteria. Several studies have attributed this feature to a reduction in bacterial contaminants passed through the connector.^{1,2,3,4}

Split Septum

Clave connector's normally closed, swabbable split septum design is a preferred feature for needlefree connectors.⁵

Straight Fluid Path

Clave connector's straight fluid path allows for efficient clearing of medications, blood, and blood residual with low flush volumes.^{6,7}

Minimal Residual Volume

Clave connector's minimal residual volume allows for lower flush volumes.

Clear Housing

A clear housing lets you see whether you have completely flushed the connector after blood draws or administration.

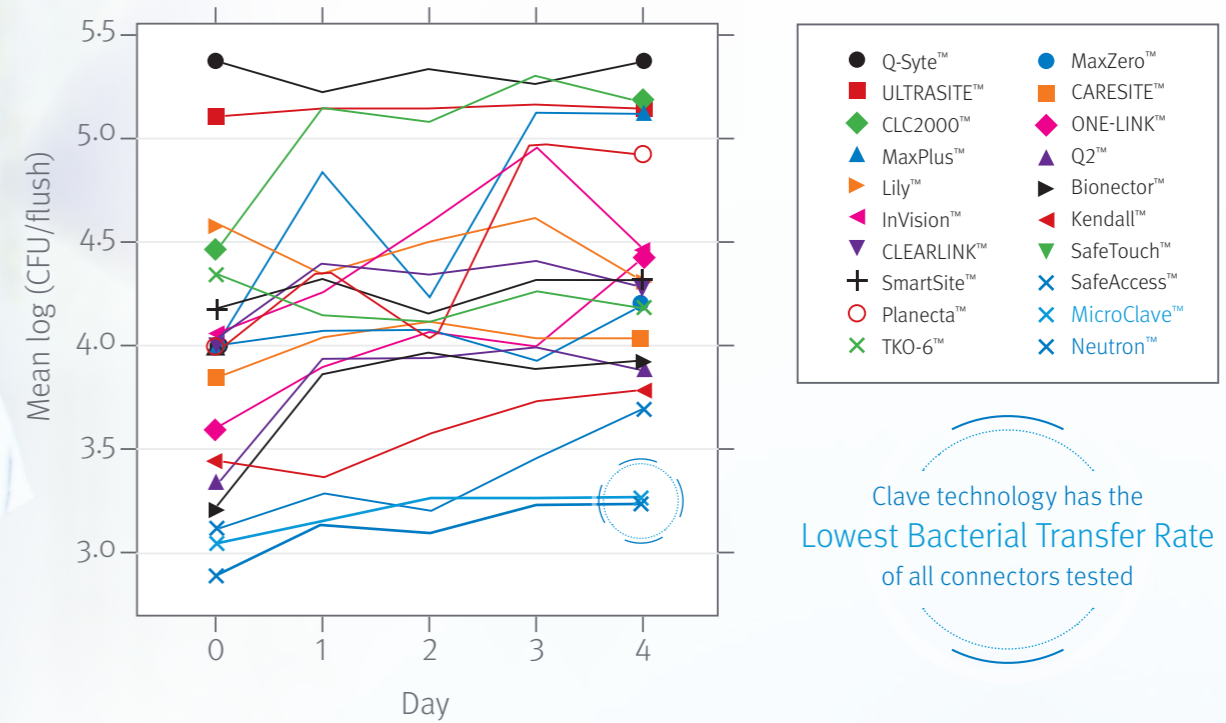
5. Guideline for the Prevention of Intravascular Catheter-Related Bloodstream Infections, Final Issue Review, 2011.
6. Data on file at ICU Medical. Low Volume Flush Characteristics of Unique Needlefree Connectors M1-1223 Rev. 1.
7. Breznock EM, DVM, PhD, Diplomate ACVS, Sylvia CJ, DVM, MS, BioSurg, Inc. The in vivo evaluation of the flushing efficiency of different designs of clear needlefree connectors, March 2011.



Clave connectors help minimise entry points for bacteria and maximise the effectiveness of each flush

In a peer reviewed study comparing 20 different needlefree IV connectors, researchers reported ICU Medical's connectors featuring Clave technology shown to have a significantly lower bacterial transfer rate than any of the other connectors tested.¹

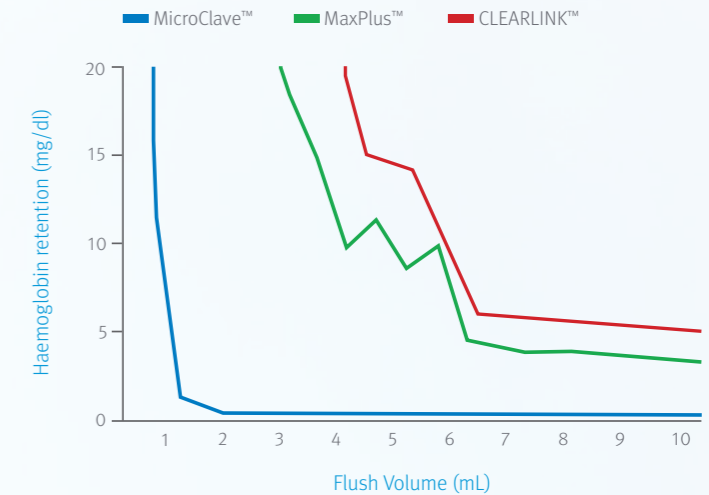
Bacterial transfer rate comparison of needlefree connectors



Clave technology has the Lowest Bacterial Transfer Rate of all connectors tested

Efficiently clear the connector with low flush volumes

- ICU Medical's Clave technology outperforms the BD MaxPlus™ and Baxter Clearlink™ connectors as determined by the total flush volume needed to clear the connectors of residual blood elements.⁷





Use a single connector technology to standardise IV therapy wherever care is given

Clave technology helps enhance patient and clinician safety by using a single, clinically-differentiated connector technology throughout the hospital, so you can minimise clinical training and in-servicing while optimising your supply chain.

General Infusions

- › Clinically-differentiated connectors and extension sets
- › Primary gravity and secondary sets featuring Clave technology

NICU & PICU

- › Closed medication sets for syringe pump delivery
- › Stopcocks and manifolds with low residual volumes

Anesthesia

- › Multiport manifolds and stopcocks for simultaneous fluid delivery
- › Procedure-ready administration, extension, and blood sets for adult and paediatric patients

Oncology

- › Connector technology that helps minimise catheter reflux in immunocompromised patients⁸



8. Dayna Holt, MSN, RN, CRNI, CPN, VA-BC, Stephanie Lawrence, RN, BSN. The Influence of a Novel Needleless Valve on Central Venous Catheter Occlusions in Pediatric Patients. Journal of the Association For Vascular Access, Dec. 2015.



MicroClave Connector: the clear choice to visualise flushing and help reduce bloodstream infection risk

MicroClave connector's combine clinically-differentiated Clave technology with a clear housing to help you visualise connector flushing after blood draws or administration while providing an effective microbial barrier against bacteria transfer and contamination. Ideal for a wide range of clinical applications and patient populations, MicroClave connectors are the optimal facility-wide needlefree IV connector.



Help Reduce Risk of CRBSIs

Creates a mechanically closed system prohibiting microbial ingress to help minimise infection risks.



Visualise Connector Flushing

The clear housing of the MicroClave connector allows for visualisation of the internal fluid path upon flushing the connector.



Use on Standard Catheters

MicroClave connector's can be used on standard peripheral, arterial, and central venous catheters for blood draws or administration of IV medications.



No Change in Technique

By allowing a single protocol to be used throughout the hospital, MicroClave connector's minimise clinical training and in-servicing while enhancing patient safety.

Clave Neutral Connector comes with a blue-tinted housing for enhanced line identification

- > Blue-tinted clear housing lets you easily spot the Clave Neutral connectors on even your most complex IV sets.

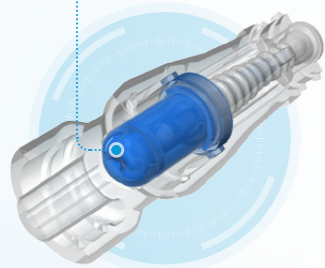




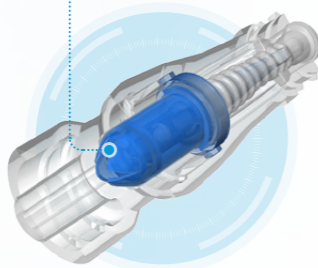
Clave Neutron Connector: unique technology that helps reduce reflux to maintain catheter patency

Maintaining catheter patency and minimising occlusions can be important steps in your efforts to enhance patient safety and reduce costs. Clave Neutron connector combines clinically differentiated Clave infection control technologies with a proprietary, bi-directional silicone valve and bellows feature to help reduce reflux. Clave Neutron connectors help maintain catheter patency during the times traditional connectors have been shown to occlude most often.

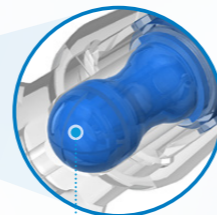
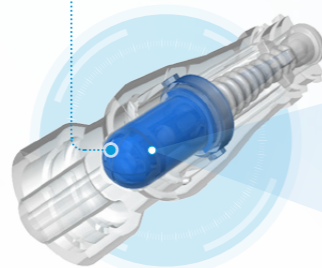
Valve during aspiration



Valve during infusion



Valve with no fluid flow



Valve during reflux challenge

Unlike other anti-reflux valves, Clave Neutron connector's patented technology provides the unique ability to absorb and physically compensate for pressure variations that typically result in blood reflux into a catheter.

Clave Neutron may help you reduce catheter occlusions by

50%⁹

9. Observational In-Vivo Evaluation of the Neutron™ Needlefree Catheter Patency Device and its Effects on Catheter Occlusions in a Home Care Setting, 2011.



NanoClave Manifolds and Stopcocks: optimise fluid delivery while helping protect against CRBSIs

Help reduce the risk of bloodstream infections and visualise connector flushing with NanoClave connectors. A mechanically closed system prohibits microbial ingress and provides a safe and effective microbial barrier, while a clear housing lets you visual the internal fluid path when flushing.



Maximise Patient Comfort

The small size and weight of the NanoClave connector make it the perfect solution for your NICU and PICU patients.



Minimise Flush Volumes

Minimal residual volume of only 0.02 mL allows for lower flush volumes which may help your efforts to maintain appropriate patient fluid balance.

Incorporating clinically-differentiated Clave technology at every connection point

Stopcock and manifold ports integrate Clave infection control technology to maintain a closed system and enhance patient safety



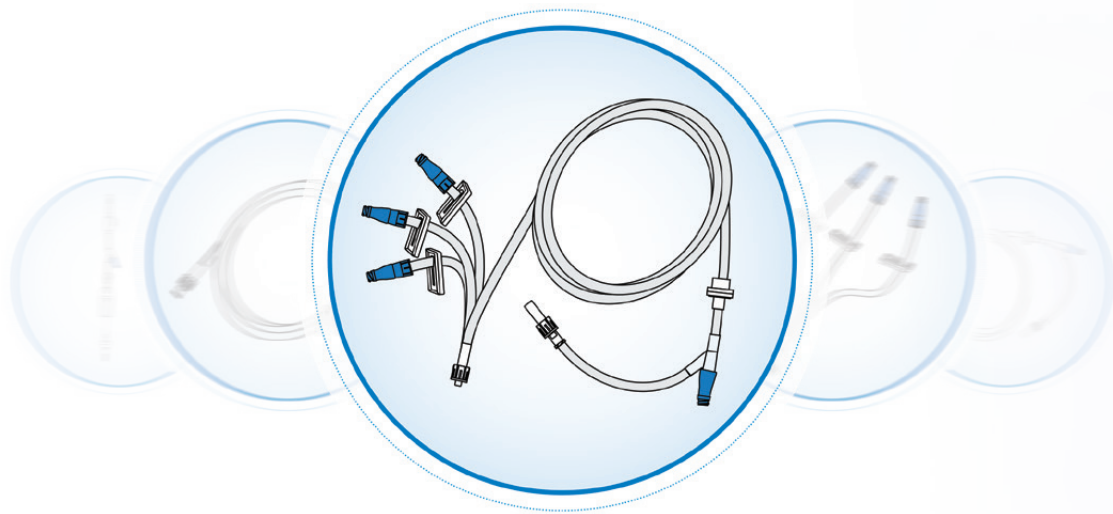


Optimise the supply of your essential IV consumables

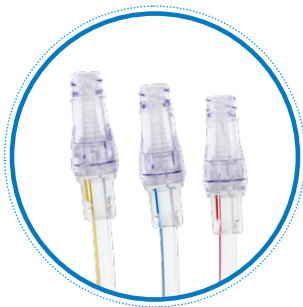
Standardising on ICU Medical IV consumables gives you clinically-differentiated Clave technology and access to our full portfolio of components to optimise your supply chain across dedicated and non-dedicated sets as well as the broadest offering of off-the-shelf IV sets tailored to a range of clinical needs.

Reduce SKUs with procedure-ready sets designed to meet your specific needs

Choose from our broad portfolio to meet your specific clinical need, letting you avoid ordering multiple components while maximising shelf space and reducing packaging waste.



Tubing Options



Choose from multiple colors, large and small bore, and specified set lengths for distinct clinical applications.

Multiple Configurations



In addition to Clave connectors, choose rotating, fixed, or slip luer connections, clamp type and placement, drip chambers, 0.2 and 1.2 micron integrated filters, and more.

Color-Coded Components



Choose from multiple color-coded component options like connector rings, IV tubing, and clamps to help reinforce your facilities' line-identification initiatives.

To learn more about ICU Medical's full line of Clave needlefree IV sets and components, please visit www.icumed.com/clave

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ALWAYS READ THE LABEL AND FOLLOW THE DIRECTIONS FOR USE

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