



# NICU/PICU IV Consumables

Specialty infusion technology  
designed for your most delicate patients

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# Help minimize the risk of infection for your tiniest patients

When it comes to caring for your most precious patients, every detail matters. That's why we have developed a full line of IV therapy products designed to meet the special needs of your most delicate patients.



## Clave™ Connector Technology\*

Help minimize infection risks with manifolds and stopcocks that incorporate clinically differentiated Clave connector technology



## Specialized NICU/PICU IV Sets

Save time while helping reduce the risk of infection with closed IV medication sets for syringe pump delivery



## SuperCath™ 26G PIVC

Help deliver safe and effective care with the smallest gauge straight IV catheter, helping you access small, difficult vessels

\*Warning: Clave connectors may be incompatible with some male-luer connectors including prefilled glass syringes. To avoid damage to the Clave or syringes or male luers which may result in delays of medication administration and possible serious adverse events, users should confirm mating luers or syringes have an internal diameter range of 0.062" to 0.110". Check the internal diameter of the male-luer connector of the mating syringe prior to using it to access the Clave. Products outside of these dimensional tolerances should not be used.



## Help minimize infection risks with clinically differentiated Clave technology

Best-in-class Clave needlefree IV connector technology<sup>1</sup> has been proven to minimize bacterial contamination, helping reduce the risk of bloodstream infection.<sup>2,3,4,5</sup> Clave also lets you use a saline flush option, which can help minimize the risk of heparin-induced thrombocytopenia (HIT), and is approved for use with power injectors.



### Help Reduce Risk of CRBSIs

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



### Minimize Flush Volumes

Minimal residual of only 0.02 mL allows for lower flush volumes which may help you maintain appropriate patient fluid balance.<sup>6</sup>



### Visualize Connector Flushing

The clear housing of the NanoClave™ allows for visualization of the internal fluid path upon flushing the connector.



### Minimize Patient Discomfort

The small size and weight of the NanoClave make it the perfect solution for your most delicate patients.



Concerned about safety? Start with IV technology designed to meet the special needs of patients in the NICU and PICU.



### Silicone Seal and Internal Cannula Minimizes Point of Entry for Bacteria

Specifically designed to minimize contact between the connector's external surface and the internal fluid path upon luer activation, Clave needlefree IV connectors minimize entry points for bacteria. Several studies have attributed this feature to a reduction in bacterial contaminants passed through the connector.<sup>2,3,4,5</sup>

### Split Septum

Clave's normally closed swabbable split septum design is a preferred feature for needlefree connectors.<sup>7</sup>

### Straight Fluid Path

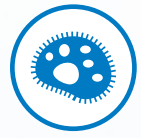
Clave's straight fluid path allows for efficient clearing of medications, blood, and blood residual with low flush volumes.<sup>6,8</sup>

### Minimal Residual Volume

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

### Clear Housing

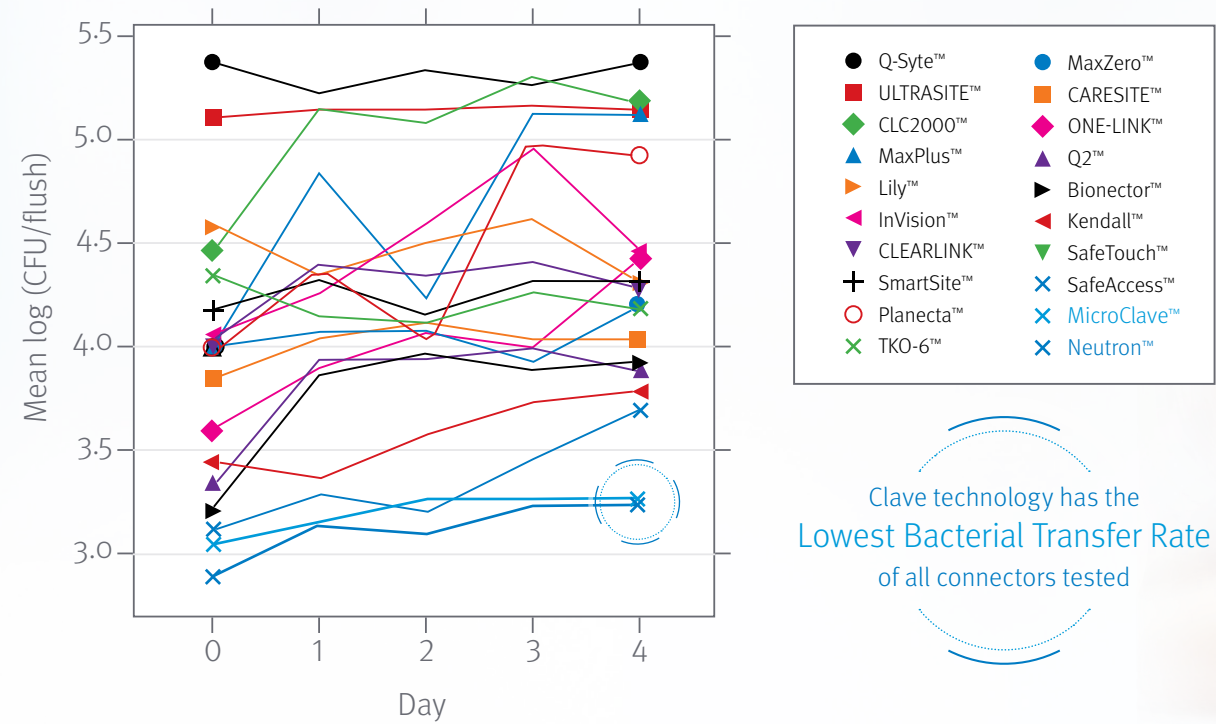
A clear housing lets you see whether you have completely flushed the connector after blood draws or administration.



## Clave helps minimize entry points for bacteria and maximize the effectiveness of each flush

In a comprehensive study comparing 20 different needlefree IV connectors researchers reported ICU Medical's connectors featuring Clave technology were shown to have a lower bacterial transfer rate than any of the other connectors tested. <sup>2</sup>

Bacterial transfer rate comparison of needlefree connectors



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

## Optimize fluid delivery with needlefree manifolds and stopcocks while helping protect against CRBSIs

Accessing your patient's IV line through the hub of an open stopcock or manifold may increase the risk of bacterial contamination.<sup>7</sup> Using manifolds and stopcocks with clinically-differentiated Clave needlefree IV connector technology can help your efforts to minimize infection risks by maintaining a closed system and minimizing the risk of contamination.<sup>5</sup>

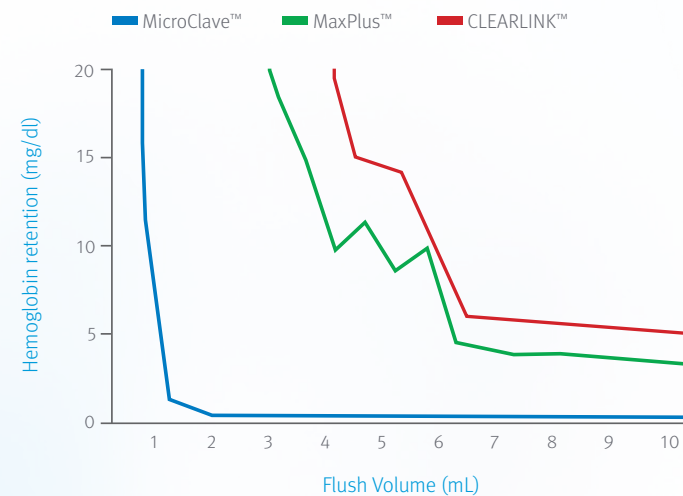
- › These access ports are ideal for anesthesiology, oncology, and critical care, where simultaneous fluid delivery is critical.

### Comply with CDC Guidelines

by incorporating clinically-differentiated Clave infection control technology into every connection.†

### 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.<sup>6</sup>



### NanoClave Manifolds

Optimize fluid delivery and eliminate retrograde fluid flow with gravity-activated back check valve security

### NanoClave Stopcocks

Maintain a needlefree closed system with automatic self-sealing connector technology

† The Centers for Disease Control and Prevention (CDC), Guidelines for the Prevention of Intravascular Catheter-Related Infections.



# Save Time and Money While Helping Minimize Infection Risk With Procedure-Ready Closed IV Medication Sets

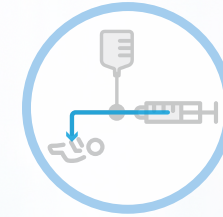
Manipulating traditional tubing may increase the risk of medication errors and bacterial contamination.

Traditional, open-ended administration sets require the manipulation of tubing, connectors, and flush devices, which adds to nursing setup time and may contribute to an increased risk of bloodstream infections and medication errors.<sup>9</sup>

Using ICU Medical's closed IV medication sets during administration can help your efforts to minimize infection risks and improve medication safety.<sup>9</sup>

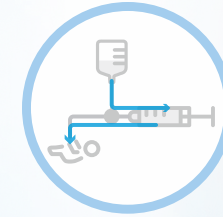
By incorporating Clave technology with dual one-way valve security, these procedure-ready sets eliminate the need to connect and disconnect flush devices after medication delivery and remain completely closed throughout the entire drug delivery process.

## Deliver medication and flush the line without ever opening the system



### Deliver Medication

Safely and easily deliver medication through a specialized one-way valve that prevents the backflow of medication into the flush line.



### Flush the Line

Using the same syringe, simply draw a volume of flush solution through the integrated one-way valve and continue to flush the line.



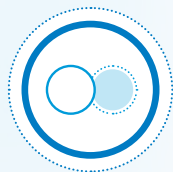
### Help Minimize Infection Risks

Integrated Clave needlefree connector technology helps provide a safe and effective microbial barrier to help minimize infection risks.



### Efficiently Flush the Line

Dual one-way valve technology allows you to deliver medication and flush the line without connecting and disconnecting flush devices.



### Reduce Drug Mixing

Each medication line connects directly to the catheter hub, eliminating the risk of medication mixing from multiple access ports.



### Safely Access the Closed System

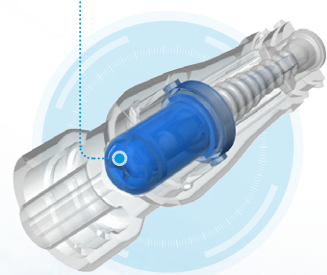
Available multi-lumen extension sets allow for safe and efficient access to your patients' IV lines without ever opening the system.



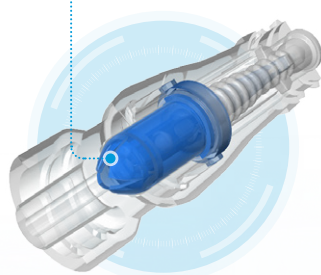
## Clave Neutron: Unique technology designed to reduce reflux to maintain catheter patency<sup>10,11,12,13</sup>

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

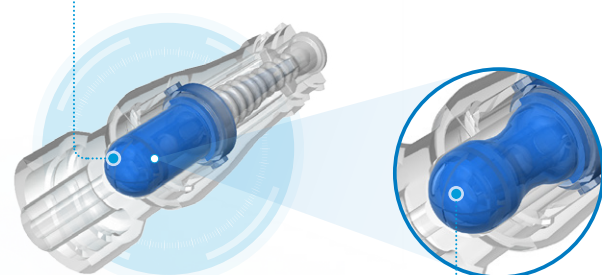
Valve during aspiration



Valve during infusion



Valve with no fluid flow



Valve during reflux challenge

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

One pediatric oncology unit maintained a **32.1% reduction** after a full implementation of Clave Neutron<sup>13</sup>

## Safety peripheral IV catheter technology designed to help access small, difficult vessels

Designed to optimize vessel entry in your most delicate patients, the SuperCath 5 is the first and only 26G straight safety catheter. This unique needle size and integrated needle notch helps you improve first-stick proficiency and avoid multiple insertion attempts by maximizing the speed and likelihood of flash visualization while accessing small, difficult vessels.



Helping deliver safe and effective care while complying with clinical recommendations

- > Infusion Therapy Standards of Practice recommendation: "Always select the smallest gauge peripheral catheter that will accommodate the prescribed therapy and patient need."<sup>14</sup>

The only 26G  
straight safety catheter

# Optimize the supply of your essential IV consumables

Standardizing on ICU Medical IV consumables gives you best-in-class Clave technology and access to our full portfolio of components to optimize your supply chain across dedicated and non-dedicated sets and 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 clinical needs

Choose from our broad portfolio of procedure-ready sets to meet your specific clinical need, letting you avoid ordering multiple components while maximizing 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 see how our specialized NICU/PICU IV consumables portfolio can help enhance the care of your most delicate patients, call 800.824.7890 or visit [www.icumed.com](http://www.icumed.com)

- <sup>1</sup> Global Healthcare Exchange (GHX) Market Intelligence data. Connectors, Needleless, Parenterals, [92-100]. 2017-2019. Includes stand-alone needlefree connectors and ancillary direct access devices (two-piece, hemodialysis, non-swabable, and non-patient contact connectors excluded).
- <sup>2</sup> Ryder M, RN, PhD. Comparison of Bacterial Transfer and Biofilm Formation on Intraluminal Catheter Surfaces Among Twenty Connectors in a Clinically Simulated In Vitro Model. Presented at World Congress Vascular Access (WoCoVA) 2018.
- <sup>3</sup> JD Brown, HA Moss, TSJ Elliott. The potential for catheter microbial contamination from a needleless connector. *J Hosp Infect.* 1997; 36:181-189.
- <sup>4</sup> Yebenes J, Delgado M, Sauca G, Serra-Prat M, Solsona M, Almirall J, et al. Efficacy of three different valve systems of needlefree closed connectors in avoiding access of microorganisms to endovascular catheters after incorrect handling. *Crit Care Med* 2008;36: 2558–2561.
- <sup>5</sup> 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.
- <sup>6</sup> 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.
- <sup>7</sup> Guidelines for the Prevention of Intravascular Catheter-Related Bloodstream Infections, 2011 (Updated Recommendations July 2017).
- <sup>8</sup> Data on file at ICU Medical. Low Volume Flush Characteristics of Unique Needlefree Connectors, M1-1223 Rev. 1.
- <sup>9</sup> Tanner J. Developing a Closed, Intravenous Medication System for a Neonatal Intensive Care Unit. *Neonatal Intensive Care Journal*, July 2012.
- <sup>10</sup> Neutron 2012 pilot study.
- <sup>11</sup> Star Watts BSN RN CRNI VA-BC, Clinical Effect of the Neutron Needlefree Catheter Patency Device in Reducing PICC Line Occlusions and CathFlo™ Usage in a Teaching Hospital.
- <sup>12</sup> Observational In-Vivo Evaluation of the Neutron Needlefree Catheter Patency Device and Its Effects on Catheter Occlusions in a Home Care Setting, 2011.
- <sup>13</sup> 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.
- <sup>14</sup> Infusion Therapy Standards of Practice, 2021

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