



YOU WORK IN NEVERLAND

NEVER ENOUGH TIME. NEVER A RISK-FREE MOMENT.
AND DEFINITELY NO ROOM FOR ERROR.

IN NEVERLAND

≈250,000 catheter-related bloodstream infections (CRBSIs) occur each year¹

- \$45,000 per infection in ICU¹
- 12% to 25% risk of mortality¹

CRBSIs are a national healthcare priority

- 27 states require disclosure of hospital-acquired infections (HAIs)²
- Zero reimbursement from Medicare and some private insurers^{3,4}

Engineered specifically for contamination control, needlestick prevention and heightened performance in IV drug delivery, LifeShield™ MicroCLAVE™ CLEAR helps hospitals take on IV risk with confidence.



NOW AVAILABLE
TRUSTED DESIGN.
NEW CLEAR HOUSING.

LIFESHIELD™
MICROCLAVE™ CLEAR

Hospira, Inc., 275 North Field Drive, Lake Forest, IL 60045 P10-2961 R_x only Printed in the USA.

CLAVE™

ANTIMICROBIAL CLAVE™

MICROCLAVE™

MICROCLAVE™ CLEAR

CHEMOCLAVE™

GENIE™

SPIROS™

YOU WORK IN NEVERLAND

WHERE POSITIVE DISPLACEMENT NEEDLELESS CONNECTORS PUT PATIENTS AT RISK.

The FDA has become aware of information that raises concerns about the safety of positive displacement needleless connectors.*⁵

POTENTIAL RISKS

SAFETY CONCERNS

- Rate of CRBSIs has been shown to increase when split-septum connectors were replaced with mechanical valve needleless connectors: 6.15 vs. 9.49 BSIs per 1000 CVC-days ($P < 0.001$)⁶
- To date, four CRBSI outbreaks have been associated with the introduction of positive-pressure valves⁷⁻¹⁰
- Three reports of deaths have been associated with CRBSIs and positive needleless connectors⁵

FDA REQUIRED ACTION

- Manufacturers of positive displacement needleless connectors should conduct a postmarket surveillance study on these connectors to assess⁵:
 - Whether they may be associated with a higher rate of device-associated BSIs than other types of needleless connectors
 - The factors that may contribute to a possible increased risk

AVOID THE RISK

- SHEA recommends that positive displacement needleless connectors with mechanical valves should not be considered a routine part of infection prevention and should not be used without a thorough assessment of risks and benefits¹¹
- CDC recommends split-septum valves over mechanical valves due to increased risk of infection¹²

*FDA. Letter to infection control practitioners regarding positive displacement needleless connectors. Referenced from the FDA Web site on November 2, 2010.⁵

LIFESHIELD™ MICROCLAVE™ CLEAR

MAKES IV RISKS MORE MANAGEABLE.



THE CLEAR CHOICE TO REDUCE THE RISK OF CRBSI

- **Neutral displacement** reduces blood reflux with less opportunity for occlusions and avoids FDA concerns about safety of positive displacement needleless connectors^{5,13}
- **Closed device with internal fluid pathway** and minimal residual volume offers significant protection from catheter tip and hub colonization to reduce risk of infection¹⁴
- **Split-septum design**, preferred by CDC over mechanical valves, maintains a microbiological barrier proven to reduce contamination of CVCs^{12,15,16}
- **Smooth, swabbable** intravenous connection system designed to eliminate intravenous-related needlesticks¹⁴

MORE THAN EVER


NEVERLAND

REQUIRES LIFESHIELD™ MICROCLAVE™ CLEAR

IT'S TIME TO INVEST IN IV SAFETY.

In needle-free IV drug delivery, MicroCLAVE CLEAR provides the premier needle-free connector for optimal comfort, convenience and safety.

A CLEAR DIFFERENCE FROM THE COMPETITION



TECHNICAL SPECIFICATIONS	MICROCLAVE CLEAR ¹⁷	MAXPLUS® CLEAR ¹⁸⁻²⁰
Displacement	Neutral	Positive
Split septum	Yes	No
Internal fluid path	Yes	No
Residual volume	0.04 mL	0.32 mL (average)
Flow rate at gravity	165 mL/min	183 mL/min

MicroCLAVE CLEAR is manufactured by ICU Medical, Inc. MaxPlus Clear is a registered trademark of Medegen, Inc.

CONTACT YOUR HOSPIRA REPRESENTATIVE OR CALL 1-877-946-7747.



References: 1. O'Grady NP, Alexander M, Dellinger EP, et al. Guidelines for the prevention of intravascular catheter-related infections. *MMWR Recomm Rep*. 2002;51(RR10):1-26. <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5110a1.htm>. August 9, 2002. Accessed September 28, 2010. 2. State legislation & initiatives on healthcare-associated infections. Committee to Reduce Infection Deaths Web site. <http://www.hospitalinfection.org/legislation.shtml>. Accessed October 4, 2010. 3. CMS proposes additions to list of hospital-acquired conditions for fiscal year of 2009. Centers for Medicare & Medicaid Services Web site. <http://www.cms.gov/apps/media/press/factsheet.asp?Counter=3042&intNumPerPage=10&checkDate=&checkKey=&srchType=1&numDays=3500&srchOpt=0&srchData=&keywordType=All&chkNewsType=6&intPage=&showAll=&Year=&year=&desc=false&cbOrder=date>. Accessed October 4, 2010. 4. Never events and avoidable hospital conditions: reimbursement policy number R05. Cigna Web site. <http://www.cigna.com>. Accessed October 6, 2010. 5. Letter to infection control practitioners regarding positive displacement needleless connectors. US Food and Drug Administration Web site. <http://www.fda.gov/MedicalDevices/Safety/AlertsandNotices/ucm220459.htm>. Accessed November 2, 2010. 6. Jarvis WR, Murphy C, Hall KK, et al. Health care-associated bloodstream infections associated with negative- or positive-pressure or displacement mechanical valve needleless connectors. *Clin Infect Dis*. 2009;49(12):1821-1827. 7. Field K, McFarlane C, Cheng AC, et al. Incidence of catheter-related bloodstream infection among patients with a needleless, mechanical valve-based intravenous connector in an Australian hematology-oncology unit. *Infect Control Hosp Epidemiol*. 2007;28(5):610-613. 8. Rupp ME, Sholtz LA, Jourdan DR, et al. Outbreak of bloodstream infection temporally associated with the use of an intravascular needleless valve. *Clin Infect Dis*. 2007;44(11):1408-1414. 9. Salgado CD, Chinnes L, Paczesny TH, Canteley R. Increased rate of catheter-related bloodstream infection associated with use of a needleless mechanical valve device at a long-term acute care hospital. *Infect Control Hosp Epidemiol*. 2007;28(6):684-688. 10. Maragakis LL, Bradley KL, Song X, et al. Increased catheter-related bloodstream infection rates after the introduction of a new mechanical valve intravenous access port. *Infect Control Hosp Epidemiol*. 2006;27(1):67-70. 11. Marshall J, Mermel LA, Classen D, et al. Strategies to prevent central line-associated bloodstream infections in acute care hospitals. *Infect Control Hosp Epidemiol*. 2008;29 (suppl 1):S22-S30. 12. Guideline for the prevention of intravascular catheter-related bloodstream infections: final issue review, May 17, 2010. Centers for Disease Control and Prevention Web site. www.cdc.gov/hicpac/pdf/BSI_guideline_IssuesMay17final.pdf. Accessed September 30, 2010. 13. Hadaway LC. Reopen the pipeline for I.V. therapy. *Nursing*. 2005;35(8):54-61. 14. Bouza E, Muñoz P, López-Rodríguez J, et al. A needleless closed system (CLAVE) protects from intravascular catheter tip and hub colonization: a prospective randomized study. *J Hosp Infect*. 2003;54(4):279-287. 15. Yébenes JC, Delgado M, Sauca G, et al. Efficacy of three different valve systems of needle-free closed connectors in avoiding access of microorganisms to endovascular catheters after incorrect handling. *Crit Care Med*. 2008;36(9):2558-2561. 16. Data on file. Extended use microbial challenge and disinfection study of the CLAVE connector. ICU Medical, Inc. 17. Data on file. M1-1113. ICU Medical, Inc. 18. ECRI Institute. Needleless connectors. *Health Devices*. 2008;37(9):261-283. 19. Data on file. Test report 02-04IT for Kipp NAC-Plus (now known as MaxPlus). ICU Medical, Inc. 20. MaxPlus home page. Medegen Web site. http://www.maximusmedical.com/maxplus_home.htm. Accessed January 14, 2011.