# Quest Split Septum Needleless Connectors

**"When needleless systems are used, a split septum valve may be preferred over some mechanical valves due to increased risk of infection with the mechanical valves."**

*CDC Guidelines for the Prevention of Intravascular Catheter-Related Infections*; 2011:20, Department of Health & Human Services


## Controlling Infection Rates with Q2® Engineering

Q2® Split Septum Needleless Connectors assist in meeting the OSHA Bloodborne Pathogen Standard by providing engineering controls which isolate or remove the hazard of bloodborne pathogen exposure from the workplace. These engineering controls coupled with work practice controls aid in eliminating or minimizing exposure which conform with paragraph (d)(2)(i) in OSHA's Methods of Compliance. *29 CFR 1910.1030, December 1991*

www.questmedical.com
QUEST Medical, Inc.
custserv@questmedical.com | +800.627.0226 (option 1) | +1.972.390.9800 (v) | +1.972.390.7173 (f)

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## ■ Relevant Infection Control Articles

*"In general, the infection-related problems associated with these luer access mechanical valve NCs [Needleless Connectors] are related to their complicated design. They have complex internal surfaces – including in some instances, moving parts -- that are difficult to disinfect and flush properly."*

*"The general design principle that "simple is better" applies to NCs. Simpler NCs are less likely to be associated with increased HA-BSI [Hospital-Acquired Bloodstream Infections] risk because there are fewer opportunities for HCWs [Health Care Workers] to incorrectly use them and there are fewer parts or other design elements to function incorrectly or fail. In addition, the external and internal surfaces of simpler NCs are easier to completely and adequately disinfect and flush."*

William R. Jarvis, MD. *Choosing the Best Design for Intravenous Needleless Connectors to Prevent Bloodstream Infection. Infection Control Today*; July 2010:1.

*"We report a significant increase in catheter-related bloodstream infections after the introduction of a new needle-free positive-pressure mechanical valve intravenous access port at our institution."*

*"One theory is that the MV [Mechanical Valve] devices have intricate access surfaces that are more difficult to disinfect than the simpler split-septum models. The fluid path in the MV devices has moving parts, and at least 1 of the MV devices has internal corrugations that may serve as reservoirs and foster the growth of microbial contaminants. Our finding of increased rates of polymicrobial CR-BSIs [Catheter-Related Bloodstream Infections] during the time that the PPMV [Positive Pressure Mechanical Valve] was in use suggests that such a reservoir of microbial contamination exists in or on these devices. Some of the devices have been noted by healthcare personnel to have incomplete flushing of blood from the fluid channel, and some are opaque, so that this would not be readily apparent to the user."*

Lisa L. Maragakis, MD; Karen L. Bradley, RN, BSN; Xiaoyan Song, MD, MS, et al. Increased Catheter-Related Bloodstream Infection Rates After the Introduction of a New Mechanical Valve Intravenous Access Port. *Infection Control and Hospital Epidemiology*; January 2006; 27:1, 67-69.

*"In this study, we observed a significant increase in the incidence of catheter-associated BSI [Bloodstream Infection] coincident with the introduction of a MV [Mechanical Valve] intravenous connector. The increase in the incidence of catheter-associated BSI continued until use of the SS [Split Septum] device resumed."*

Kathryn Field, MBBS; Caroline McFarlane, MBBS; Allen C. Cheng, PhD, et al. Incidence of Catheter-Related Bloodstream Infection Among Patients With a Needleless, Mechanical Valve-Based Intravenous Connector in an Australian Hematology-Oncology Unit. *Infection Control and Hospital Epidemiology*; May 2007; 28:5, 612.

*"The infection control practices were more enhanced during the mechanical valve period and still the central venous catheter-associated bloodstream infection rate increased significantly."*

*"In hospitals that switched back to split septum connectors, the infection rate per 1000 central venous catheter days fell from 9.5 before the switch to 5.8 afterward, a rate similar to what was seen when needle free connectors were adopted."*

Mechanical Valve needle-free catheter connectors linked to bloodstream infections. *Reuters Health & #8226; The Doctors Channel Daily Newscast*; December 18, 2009.


*Simple Q2 Split Septum Design*

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custserv@questmedical.com | +800.627.0226 (option 1) | +1.972.390.9800 (v) | +1.972.390.7173 (f)