

# Patient Safety Advisory

Veterans Health Administration Warning System  
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- Item:** Positive displacement, needle-free intravascular connector valves
- Specific Incident:** A VAMC reports their blood stream infection (BSI) rates increased in 2005 and 2006 when compared to their BSI rates before 2005. The increase coincides with use of luer-activated mechanical valves and positive displacement, needle-free intravascular connector valves.
- General Information:** Recent published literature suggests the possibility of increased BSI rates associated with some positive displacement, needle-free intravascular connector valves. (See Addl. Information below.)
- Suggestions:**
- 1) If you are considering a switch to positive displacement, needle-free intravascular connector valves for central venous catheters or PICC (Peripherally Inserted Central Catheter) lines, please consider the published literature cited below in the Addl. Information section before making a decision.
  - 2) If you have already begun to use positive displacement, needle-free intravascular connector valves for central venous catheters or PICC lines, please review your BSI rates before and after the change.
- NOTE: If you have experienced a change in the BSI rate (either an increase or decrease) associated with positive displacement, needle-free intravascular connector valves, contact Dr. Judith Anderson at the VA National Center for Patient Safety (NCPS) by telephone at (734) 930-5890 or via email at [Judith.Anderson4@va.gov](mailto:Judith.Anderson4@va.gov).
- 3) Always follow manufacturer's latest instructions on the safe use of their devices; ensure that training has occurred, and there is demonstrated competency.
- Addl. Information:** Published literature suggesting the possibility of increased blood stream infection (BSI) rates associated with some positive displacement, needle-free intravascular connector valves:
- Maragakis LL, Bradley KI, 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: 67-70.
- 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; 44:1408-14.

Schilling S, Doellman D, Hutchinson N, et al. The Impact of Needleless Connector Device Design on Central Venous Catheter Occlusion in children: A Prospective, Controlled Trial. *JPEN J Parenter and Enteral Nutr* 2006; 30:85-90.

Ryder M, Fisher S, Hamilton G, et al. Bacterial Transfer through Needlefree Connectors: Comparison of Nine Different Devices. In: Program and abstracts of the 17th Annual Scientific Meeting of the Society for Healthcare Epidemiology of America; April 14-17, 2007; Baltimore. Abstract 210. <http://www.icumed.com/Docs-Clave/Ryder%20SHEA%202007%20Poster.pdf>

Bharti A, Fry-Arrighy B, Paravancini BS, et al. Increased Catheter-associated Bloodstream Infection Rates after the Introduction of a New Positive Pressure Mechanical Valve Intravenous Access Device. In: Program and abstracts of the 17th Annual Scientific Meeting of the Society for Healthcare Epidemiology of America; April 14-17, 2007; Baltimore. Abstract 152.

**Source:** Eastern Colorado Health Care System (ECHCS) and published literature.

**Contact:** Dr. Judith Anderson or Mr. Bryanne Patail at VA National Center for Patient Safety (NCPS): (734) 930-5890