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Prevention of Intravenous Bacterial Injection from Health Care Provider Hands: The Importance of Catheter Design and Handling

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Recent studies have documented a need for implementation of infection prevention measures in the intraoperative work area due to an association of patient mortality with bacteria contamination of traditional open lumen stopcocks during surgical procedures.

In this study, Dr. Loftus, et al of Dartmouth Hitchcock Medical Center, compared the ULTRAPORT™ zer0 stopcock, containing an incorporated swabbable valve, to an open lumen stopcock requiring sterile replacement caps to determine the efficacy of the valve with and without hub disinfection as a barrier to inadvertent bacterial injection.

Results:

- ULTRAPORT zer0 **with** hub disinfection had 0% (0/152) instances of contamination.
- ULTRAPORT zer0 **without** hub disinfection had 4% (7/162) instances of contamination.
- Traditional open lumen stopcock with sterile replacement cap had 3.2% (5/154) instances of contamination.

Key finding of the study: "The ULTRAPORT zer0 stopcock with hub disinfection before injection was associated with a significant reduction in the risk of inadvertent bacterial injection." Prior disinfection appears to be the most important factor for reducing the incidence of bacteria injection from the anesthesia provider's hands and may reduce the chance of catheter related blood stream infections (CRBSIs), when compared to a traditional open lumen stopcock.