

Peripheral venous catheters pose infection risk

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A new study from Rhode Island Hospital has found that more than one in 10 catheter-related bloodstream infections due to Staph aureus in hospitalized adults are caused by infected peripheral venous catheters (PVC). The study points out the substantial medical burden that arises from complications from these infections due to the large number of such catheters used in hospitalized patients. The study is published in the journal *Infection Control and Hospital Epidemiology* and is now available online in advance of print.

Senior author Leonard Mermel, D.O., Sc.M., medical director of epidemiology and infection control at Rhode Island Hospital, and his colleagues note that [Staphylococcus aureus](#) is the second most common cause of hospital-acquired [bloodstream infections](#). It is the pathogen most often associated with serious and costly catheter-related bloodstream infection. Thus, they were interested in investigating Staph aureus bloodstream infections associated with the commonly used PVCs.

They performed a point-prevalence survey and found that 76 percent of hospitalized adult patients had a PVC. They also found a greater than expected number of PVCs associated with Staph aureus bloodstream infections were placed in the emergency department, or an outside hospital, were inserted in the antecubital fossa (the "elbow pit"), and were in for a longer period of time compared to uninfected PVCs. In fact, 46 percent of patients with PVC-related Staph bloodstream infections had their PVCs in place for greater than three days.

Mermel says, "While a published meta-analysis suggests that changing PVCs every three days does not reduce infection risk, in one national survey, more than 90 percent of PVC [sepsis](#) cases were due to PVCs in place for three or more days. Another published study found an independent, linear relationship between PVC infectious

complications and the length of time the PVC was in place."

Mermel notes, "Peripheral venous [catheter](#) infections have been deemphasized as most of our national and local preventative efforts have focused on central venous catheters. In our study, we documented 24 PVC-related Staph aureus bloodstream infections among 77,852 hospital discharges. Based on these figures, we estimate there are approximately 10,000 PVC-related Staph aureus bloodstream infections each year in adults hospitalized in the United States."

T. Tony Trinh, MD, the lead author of the study, says, "Peripheral venous catheters, also known as peripheral IVs, are a ubiquitous aspect of hospital patient care. Our study sheds an important light on the underappreciated and significant risks of peripheral IVs."

Based on this study, Mermel concludes, "Our study suggests that hospitals should assess their risk of PVC-related infections and initiate interventions to mitigate risk if such infections are found. Further, minimizing PVC placement in the antecubital fossa, consideration for removing catheters within 24 hours if they were placed under emergency conditions, and strong consideration for replacing PVCs after a 72-hour dwell time will reduce the risk of infection in adult patients."

Provided by Lifespan

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