Abstract:

Background: The specialty of pediatric vascular access has grown rapidly during the past 5 years across the United States. The majority of children’s hospitals have nurse-led vascular access teams that are providing comprehensive services, including the placement of peripherally inserted central catheters. A children’s hospital in the southeastern United States conducted an Internal Review Board approved, retrospective analysis of 669 patients who had a peripherally inserted central catheter placed.

Objective: The objective was to have a better understanding of the program and clinical outcomes as well as identify areas for improvement.

Methods: A data collection tool was developed to review the medical records of patients receiving a peripherally inserted central catheter from January 2009 through June 2011. Variables of interest included patient age, admitting diagnosis, intended therapy, procedure location, sedation type and usage, procedure success, insertion attempts, vessel selected, catheter size and type, catheter tip location, reason for discontinuation, and infection. The data was collected and analyzed by a nurse researcher from the University of South Florida.

Results: Using the Modified Seldinger Technique and ultrasound, the team inserted a full line of polyurethane catheters, including computed tomography-injectable catheters, with an insertion success rate of 94%. We identified a significant reduction in our hospital’s infection rate—from 9.12 per 1,000 catheter line days to 2.0 per 1,000 catheter line days—during the first year and a half of the program. The use of sedation and anesthesia was significantly reduced, with 49% of patients receiving an oral anxiolytic dose of midazolam and the integration of certified child life specialists into the procedure.

Conclusions: Pediatric vascular access is a rapidly growing specialty in nursing. Nurse-led vascular access teams have become commonplace in children’s hospitals throughout the United States. Although the specialty has grown rapidly during the past 5 years, there is a
need for data sharing to contribute to the knowledge base of pediatric vascular access.