High rates of central venous catheter replacement or revision in children

**Abstract:**

**Background:** Most children with cancer utilize a central venous line (CVL) for treatment. Complications often necessitate early replacement, revision, or addition (RRA), but the rate of these procedures is not known. This study sought to determine rates of RRA in pediatric oncology patients, and associated risk factors.

**Materials and methods:** Data queried from the Pediatric Health Information System including patients ≤18 years old with malignancy and CVL placement. Analysis included: first CVL placement of the calendar year and subsequent procedures for 6 months thereafter.

**Results:** A total of 6553 children met inclusion criteria (55.9% male, median age 6 years, interquartile range: 2 to 12). RRA within 6 months was required in 25.6% of patients, with 1.7% requiring 5 or more lines. Patients with Central Line-Associated Bloodstream Infection (CLABSI) were 2.78 times more likely to require RRA within 6 months of initial CVL placement, but accounted for only 16% of RRA patients. Factors associated with RRA were age below 1 year, CLABSI, hematologic malignancy, malnutrition, clotting disorder, deep vessel thromboembolism, and obesity. Patients with implantable ports as initial CVL (42%) were less likely to need RRA.

**Conclusion:** Twenty-five percent require at least 1 RRA within 6 months, with associated morbidity and costs. Though strongly associated, most revisions were not related to CLABSI episodes.

**Reference:**