

**Abstract:**

**Background:** Inpatient pediatric central line-associated bloodstream infections (CLABSIs) cause morbidity and increased health care use. Minimal information exists for ambulatory CLABSIs despite ambulatory central line (CL) use in children. In this study, we identified ambulatory pediatric CLABSI incidence density, risk factors, and outcomes.

**Methods:** Retrospective cohort with nested case-control study at 5 sites from 2010 through 2015. Electronic queries were used to identify potential cases on the basis of administrative and laboratory data. Chart review was used to confirm ambulatory CL use and adjudicated CLABSIs. Bivariate followed by multivariable backward logistic regression was used to identify ambulatory CLABSI risk factors.

**Results:** Queries identified 4600 potentially at-risk children; 1658 (36%) had ambulatory CLs. In total, 247 (15%) patients experienced 466 ambulatory CLABSIs with an incidence density of 0.97 CLABSIs per 1000 CL days. Incidence density was highest among patients with tunneled externalized catheters versus peripherally inserted central catheters and totally implanted devices: 2.58 CLABSIs per 1000 CL days versus 1.46 vs 0.23, respectively ( $P < .001$ ). In a multivariable model, clinic visit (odds ratio 2.8; 95% confidence interval : 1.4-5.5) and low albumin (OR 2.3; 95% CI: 1.2-4.3) were positively associated with CLABSI, and prophylactic antimicrobial agents for underlying conditions within the preceding 30 days (OR 0.22; 95% CI: 0.12-0.40) and operating room CL placement (OR 0.36; 95% CI: 0.16-0.79) were inversely associated with CLABSI. A total of 396 patients (85%) were hospitalized because of ambulatory CLABSI with an 8-day median length of stay (interquartile range 5-13).

**Conclusions:** Ambulatory pediatric CLABSI incidence density is appreciable and associated with health care use. CL type, patients with low albumin, prophylactic antimicrobial agents, and placement setting may be targets for reduction efforts.

**Reference:**

Rinke ML, Heo M, Saiman L, Bundy DG, Rosenberg RE, DeLaMora P, Rabin B, Zachariah P, Mirhaji P, Ford WJH, Obaro-Best O, Drasher M, Klein E, Peshansky A, Oyeku SO. Pediatric Ambulatory Central Line-Associated Bloodstream Infections. *Pediatrics*. 2021 Jan;147(1):e20200524. doi: 10.1542/peds.2020-0524. Epub 2020 Dec 18. PMID: 33386333.