Implementation of a Practice Improvement: Impact on Central Line Associated Blood Stream Infections Acquired during ECMO Therapy in Pediatric Patients

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**Background:** Extracorporeal membrane oxygenation (ECMO) is a clinical therapy that allows for prolonged cardiopulmonary support for patients with reversible cardiac or pulmonary disease. Central Line-Associated Blood Stream Infections (CLA-BSI) in pediatric intensive care unit (PICU) patients are a significant source of morbidity, mortality, and increased healthcare costs. There is little published research available on the risk of CLA-BSI in pediatric patients undergoing ECMO therapy. An increase in the number of blood stream infections associated with ECMO therapy prompted our team to investigate and implement a change in clinical practice.

**Purpose:** To determine the incidence of bloodstream infections among neonatal and pediatric patients while on ECMO and to determine the efficacy of a practice change on our CLA-BSI rate over a 10 year period (2002-2011).

**Practice Change:** The ECMO team consists of 10 core ECMO specialist, a combination of Registered Nurses and Respiratory Therapist. The core team underwent extensive education and training on proper sterile technique. Subsequently, the use of sterile technique for assembling ECMO circuits was implemented.

**Evaluation:** This practice change accomplished 2 primary objectives, it: 1) provided a standardized process for ECMO circuit assembly, using sterile technique, and 2) minimized the number of staff involved in ECMO circuit assembly. To determine the efficacy of the practice change, a retrospective, descriptive study design was used. Sources of data collection included the ECMO database and electronic medical record. These were reviewed to obtain patient demographics, indications for ECMO support, type of ECMO support, (VA vs VV), presence of infection during ECMO support, organism type, time to positivity, source of infection, duration of ECMO, and survival to hospital discharge.

**Results:** Final results are pending. However, preliminary results suggest that the practice change contributed to a reduction in the number of CLA-BSI acquired during ECMO therapy. If selected, final results will be available for presentation at the conference.

**Bibliography:**