Special Mention

Name: Stephanie Vandenberg
Position: Health Sciences Student
Department: Critical Care Medicine
Institution: Hospital for Sick Children
City: Toronto
Country: Canada
Telephone: 416-813-6504
E-mail: chris@sickkids.ca

Co Authors Name: James Hutchison, Christopher S. Parshuram

Institution Affiliation: Hospital for Sick Children

CROSS-SECTIONAL SURVEY OF LEVELS OF CARE AND RESPONSE MECHANISMS FOR EVOLVING CRITICAL ILLNESS IN NORTH AMERICAN PEDIATRIC HOSPITALS

Stephanie Vandenberg, James Hutchison, Christopher S. Parshuram

Objective: Cardiopulmonary arrest in children is frequently devastating, and may be preceded by recognizable clinical deterioration. We sought to describe the levels of care, the frequency of code blues (CB), and identification and response mechanisms for evolving critical illness in North American paediatric hospitals.

Methods: A cross-sectional telephone survey of North American hospitals was performed. Included hospitals had > 50 acute care pediatric beds and > two wards. The survey was developed by two investigators (CP, SV), and was reviewed by the Canadian Critical Care Trials Group.

Results: Four hundred and sixty-four hospitals were contacted. Responses were received from 388 (84%) hospitals, and 398 respondents. All included hospitals had PICUs, 99 (55%) had HDUs, 101 (56%) had ECMO, and 69 (38%) used ECMO for refractory cardiopulmonary arrest. The size of the PICU was variably significant. All hospitals had CB teams; 175 (97%) had intermediate response mechanisms for children who were clinically deteriorating: 29 (17%) had formal medical emergency teams (MET), 92 (53%) consulted the PICU, and 14 (8%) used CB teams. Twenty-three (13%) hospitals reported they were developing a pediatric MET. Only one hospital used a formal early warning score to identify clinical deterioration.

Conclusion: Code blues occurrence was not infrequent and was treated by CB teams. Most hospitals (97%) had additional urgent-response mechanisms for children who were clinically deteriorating; 17% had a formal MET team, and 23 hospitals were developing MET teams. The size of the PICU was the only variable independently associated with CB frequency. While most hospitals had formal mechanisms to treat sick patients, the process of identification was unstructured and may not facilitate the optimal use of response teams.

Outstanding Resident Poster #1

Name: Eddy Fan
Position: Fellow
Professional Initials: MD, FRCPC
Department: Interdepartmental Division of Critical Care Medicine
Institution: University of Toronto
City: Toronto
Province: Ontario
Country: Canada
Postal Code: M5B 2R6
Telephone: 416-616-2345
E-mail: eddy_fan@yahoo.ca

Co Authors Name: Russell D. MacDonald,[3,4,5] Neill K.J. Adhikari,[1,5] Damon C. Scales,[1,6] Randy S. Wax,[1,2] Thomas E. Stewart,[1,2,7] Niall D. Ferguson[1,7]

Institution Affiliation: Interdepartmental Division of Critical Care Medicine,[1] University of Toronto, Toronto, Canada; Mount Sinai Hospital,[2] Toronto, Canada; Division of Emergency Medicine,[3] Department of Medicine, University of Toronto, Toronto, Canada; Ontario Air Ambulance Base Hospital Program,[4] Toronto, Canada; Sunnybrook and Women's College Health Sciences Centre,[5] Toronto, Canada; St. Michael's Hospital,[6] Toronto, Canada; and the University Health Network,[7] Toronto, Canada

OUTCOMES OF INTERFACILITY CRITICAL CARE ADULT PATIENT TRANSPORT: A SYSTEMATIC REVIEW

Russell D. MacDonald,[3,4,5] Neill K.J. Adhikari,[1,5] Damon C. Scales,[1,6] Randy S. Wax,[1,2] Thomas E. Stewart,[1,2,7] Niall D. Ferguson[1,7]

Objective: To determine the adverse events and important prognostic factors associated with interfacility transport of intubated and mechanically ventilated adult patients.

Design: Systematic review of MEDLINE, CENTRAL, EMBASE, CINAHL, HEALTHSTAR, and Web of Science (from inception until January 10, 2005) for all clinical studies describing the incidence and predictors of adverse events in intubated and mechanically ventilated adult patients undergoing interfacility transport. Bibliographies of selected articles were also examined.

Results: Five studies (245 patients) met the inclusion criteria. All were case-series and two were prospective in design. Due to the paucity of studies and significant heterogeneity in study population, outcome events, and results, we synthesized data in a qualitative manner. Pre-transport severity of illness was reported in only one study. The most common indication for transport was a need for investigations and/or specialist care (3 studies, 220 patients). Transport modalities included air (fixed or rotor wing; 66% of patients) and ground (31%) ambulance and commercial aircraft (3%). Transport teams included a physician in three studies (220 patients). Death during transfer was rare (n = 1). No other adverse events or significant therapeutic interventions during transport were reported. One study reported a 19% (28/145) incidence of respiratory alkalosis on arrival and another study documented a 30% overall intensive care unit mortality, while no adverse events or outcomes were reported after arrival in the three other studies.

Conclusions: Insufficient data exist to draw firm conclusions regarding the mortality, morbidity, and/or risk factors associated with the interfacility transport of intubated and mechanically ventilated adult patients. Further study is required to define the risks and benefits of interfacility transfer in this patient population. Such information is important for the planning and allocation of resources related to transporting critically ill adults.