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Re-engineering Paediatric Extracorporeal Membrane Oxygenation (ECMO) Transport to Improve Patient Safety with Crew Resource Management (CRM)

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Introduction

Patient safety is always a major concern during complicated transportations. Being the sole paediatric ECMO center in Hong Kong, we recognised an increasing service need of transporting patients from the Intensive Care Unit to Computerized Tomography (CT) centre and Cardiac Catheterization (CC) laboratory for specific diagnostic purposes. Hence, CRM training has been introduced to enhance the technical and communication skills of nurses in transporting paediatric patients with ECMO.

Objectives

To promote patient safety and staff confidence during transportation of paediatric ECMO patients, with the introduction of CRM training.

Methodology

CRM training has been introduced since October 2013, with 10 designated staff recruited as ECMO transport team, based on the completion of CRM course and ECMO transport competency assessment. CRM training emphasises concepts of leadership, speaking up, conflict resolution and decision making under clinical crisis in team approach, through various lectures, hands-on high fidelity simulation training and structured debriefing sessions, in managing logistic and technical problems during CT centre and CC laboratory transportation. In order to strengthen the inter-departmental communication, briefing and thoroughgoing contact with designated departments were made before transportation. Moreover, comprehensive checklists, photo and diagram illustrations, and prepared equipment such as oxygen extension, were available to facilitate nurses for transportation.

Result

All 16 paediatric ECMO patients were transferred safely to designated departments from Oct 2013 to Oct 2015. 87.5% patients (n=14) were transported to CT centre 22

times and 12.5% patients (n=2) were transported to CC laboratory 5 times. All patients were smoothly transported without any complications and mortality, as good interdepartmental communication and relationship have been established. Pre and post staff confidence evaluation on transport were conducted to assess the effectiveness of CRM training. A remarkable increase of confidence and experience 60% among team members to transport ECMO as the role of leaders after the training were self-reported. The participants also stated that they had developed good communication skills and teamwork on ECMO transport after joining CRM training. To conclude, with the initiation of CRM training, paediatric ECMO patients can be safely and reliably transported with great improvement in staff confidence, which can be further applied in other multidisciplinary healthcare professional training.