

## **Intensive Care Nursing - Analysis of Current Practice and Implications for an ECMO Training Program**

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### Introduction

Extracorporeal Membrane Oxygenation (ECMO) is a mechanical circulatory support system used in treating patients in respiratory or cardiac failure. ECMO has been provided in the Intensive Care Unit (ICU) of the Children's Heart Center (CHC) since 2004. Ten nurses ensure 24-hour care for 6-7 patients treated per year.

Numbers of patients requiring ECMO have increased 3-fold. Therefore, all ICU nurses with at least ½ year's experience are trained in ECMO.

### Method

The CHC ECMO-training program was evaluated using an IST-Analysis. Two questionnaires were developed and available online (Survey Monkey). Questionnaire-I, for newer nurses, focused on a theoretical and practical introduction to ECMO (Group 1). Questionnaire-II was for nurses experienced with ECMO, and focused on practical training (Group 2)

### Results

10 from 12 (83%) nurses in Group 1 answered Questionnaire-I (mean age: 33.9 years; mean years of ICU experience: 5.5). The theoretical content of the ECMO training course was rated as good, but the practical aspect such as 'trouble shooting' or case studies, was rated as insufficient. Nurses working part-time said that they initially needed more practical training.

All 12 nurses from Group 2 answered Questionnaire-II (mean age: 41.25 years; mean years of ICU experience: 12.75; mean years of ECMO experience: 5.2). These nurses had positive attitudes toward the practical training and assessed the differing levels of professional experience and capabilities of the co-workers (Skill-Mix) as helpful in reducing the burden. Staff-planning to provide a balance in experienced vs less-experienced nurses was important.

### Conclusion

It is recommended that all ICU nurses are trained in caring for patients on ECMO. Staff-planning should allow time for practical training and consider the needs of the part-time nurses.

Refresher courses need to be periodically offered. Trouble-shooting and hands-on sessions should be integrated in the program. Online tools such as Easy Learning allow individuals to test their knowledge.

A balanced skill-mix within the nursing teams has been achieved through the specialized training of all ICU nurses. By improving nurses' abilities in working with ECMO, the burden for the ECMO-experienced nurses is lessened, and patient safety and the quality of nursing care are optimized.