



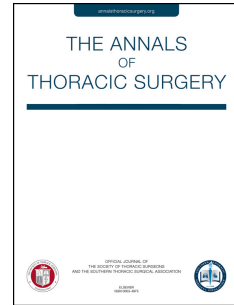
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# Journal Pre-proof

High Nursing Turnover Challenged Nurse-specialist Led ECMO Programs During the COVID-19 Pandemic

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## High Nursing Turnover Challenged Nurse-specialist Led ECMO Programs During the COVID-19 Pandemic

*To the Editor:*

We read with interest the article by Dhamija et al., in which the authors presented a cost analysis of nurse specialist-led extracorporeal membrane oxygenation (ECMO) compared to perfusionist-led ECMO.(1) The authors concluded that in higher volume ECMO centers, use of a nurse specialist-led model could produce significant cost savings.(1)

We have several comments for the authors based on our center's experience with nurse specialist-led ECMO. First, the authors analyzed the cost of 1:1 bedside staffing. We do not believe that 1:1 staffing with an ECMO specialist is the current standard of care. Some busy adult ECMO centers staff multiple ECMO patients with a single ECMO specialist, utilizing ratios of 1:3 or 1:4. In the extracorporeal life support organization's (ELSO's) guidelines for ECMO centers, there is no recommendation to have 1:1 staffing.(2)

Second, we agree that nurse specialist-led ECMO has some potential advantages. Critical care nurses with specialized ECMO training may be able to better titrate sedation, vasopressors, and inotropes in concert with adjusting ECMO circuit parameters such as pump speed and sweep gas flow.(3) For over a decade, our center has had a nurse specialist-led model for ECMO. Prior to the coronavirus disease-2019 pandemic, we had had approximately 40 critical care nurses trained to provide ECMO care. Unfortunately, during the COVID-19 pandemic, many experienced nurses left the United States work force, job competition became fierce, and our hospital lost many nurses with ECMO training, which limited our capacity to provide ECMO for multiple patients simultaneously.(4) Because of this, we had to turn down some potential

ECMO candidates. There were significant costs associated with paying the remaining ECMO nurses overtime and also training new nurses to care for ECMO patients. These factors do not appear to have been accounted for in the authors' analysis, but are important considerations for a nurse-specialist led ECMO program.

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**Declaration of interests**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Michael Mazzeffi reports a relationship with Octapharma that includes: consulting or advisory. Michael Mazzeffi reports a relationship with HemoSonics LLC that includes: consulting or advisory.

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