

## CICU: Cardiac intensivist model improves outcomes



The implementation of a collaborative cardiologist-intensivist model is associated with improved outcomes in cardiac intensive care unit (CICU) patients, according to a research letter published in the Journal of the American College of Cardiology.

Researchers at University of Maryland School of Medicine found that the implementation of a dedicated intensivist consult service for mechanically ventilated CICU patients was associated with significant reductions CICU length of stay (LOS), total hospital stay, duration of mechanical ventilation, and mortality.

"Given its associated improvements in CICU care, this staffing model warrants further study," the researchers wrote.

The study was conducted in the University of Maryland Medical Center CICU. The pre-intervention and intervention CICU staffing models and practices did not differ. Both consisted of 2 cardiology teams, 1 advanced heart failure service and 1 general cardiology service staffed with attending cardiologists, fellows, residents, nurse practitioners, and pharmacists. The study period reflected the one-year time spans before and after the implementation of a mandatory medical intensivist consultation for all patients receiving mechanical ventilation. The board-certified attending medical intensivists actively consulted on ventilator and sedation management.

A total of 363 patients receiving mechanical ventilation in the CICU were eligible for analysis, 162 in the pre-implementation group and 201 in the implementation group. Baseline characteristics of both groups were similar except for mean Acute Physiology and Chronic Health Evaluation II score, which was significantly higher in the postintervention group ( $26 \pm 6$  vs.  $22 \pm 8$ ;  $p < 0.001$ ).

The institution of an intensivist consult service resulted in the following:

- A significant reduction in mean CICU LOS ( $9.6 \pm 0.94$  days vs.  $7.4 \pm 0.59$  days;  $p = 0.04$ ) and a nonsignificant reduction in mean total hospital LOS ( $14.8 \pm 2.3$  days vs.  $11.4 \pm 0.8$  days;  $p = 0.17$ ).
- A significant increase in mean 28-day ventilator-free days ( $22.1 \pm 6.0$  days vs.  $23.7 \pm 3.4$  days;  $p = 0.004$ ).
- A significant reduction in mean aggregate charge of CICU stay ( $\$43,265.27 \pm \$3,239.28$  vs.  $\$30,067.25 \pm \$1,900.09$ ;  $p < 0.001$ ).
- A nonsignificant reduction in in-hospital mortality (35.2% vs. 26.3%; odds ratio: 0.66; 95% confidence interval [CI]: 0.42 to 1.03;  $p = 0.085$ ).

After adjusting for Acute Physiology and Chronic Health Evaluation II score, all noted differences remained robust. Importantly, significant reductions in mortality (odds ratio: 0.40; 95% CI: 0.24 to 0.65;  $p < 0.001$ ) became apparent.

The study had several limitations. While the study data may be applicable to other level 2 CICUs at tertiary care referral centres, their implementation may not be consistent in other settings.

"Although our data were consistent in both adjusted and unadjusted analyses, multicentre, cluster-randomised outcomes studies will better parse the clinical and cost effects of a critical care consultation service," the researchers noted.

Source: [Journal of the American College of Cardiology](#)

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