Short on specialized intensive care physicians, team-based approach improves ICU outcomes

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The severe shortage of specially-trained intensivist physicians has hospital intensive care units (ICUs) nationwide struggling to staff units with critical care teams led by intensivists, even though the presence of these specially trained physicians reduces the risk of death for patients in the ICU. A new Penn Medicine report found that replacing intensivist-led teams with multidisciplinary care teams can also reduce the risk of dying in intensive care units. The study appears in the February 22 edition of the *Archives of Internal Medicine*.

"Hospitals without intensivists can still achieve significant reductions in mortality in their ICUs by implementing a multidisciplinary, team-based approach," said the study's lead author, Jeremy Kahn, MD, MS, Assistant Professor of Medicine at the University of Pennsylvania School of Medicine. "Patient outcomes are improved when physicians, nurses, respiratory therapists, clinical pharmacists and other staff members work together to provide critical care as a team."

There are more than four million intensive care unit admissions in the U.S. each year. With an intensivist at the helm, intensive care units have shown to lower mortality rates, even when caring for the sickest patients. Yet there are not enough trained intensivists to meet either current or future demand, and only a minority of ICUs are currently staffed with intensivists.

The study authors examined data from 112 hospitals in Pennsylvania comparing outcomes from ICUs that both were and were not staffed by intensivists. The researchers found that a multidisciplinary approach to care teams, with or without an intensivist, was associated with a 16 percent reduction in the odds of death. This was comparable to an intensivist alone. When hospitals employed both a multidisciplinary care team and an intensivist physician, there was a 22 percent reduction in the risk of death during an ICU stay.

Perhaps most importantly, a multidisciplinary approach in the absence of trained intensivist was associated with a significant 12 percent reduction in mortality. "Given our findings, having ICU clinicians work better together is a key strategy to improving survival in the ICU", said Kahn.

Researchers noted a few explanations for the impact of the multidisciplinary care team model. Multidisciplinary care may facilitate implementation of best practices, including the application of evidence-based treatments, pharmacists identifying potential adverse drug indications, and implementation of respiratory therapy and nurse-driven protocols to reduce ventilation time and shorten ICU length of stay.

Health care providers and administrators can use these results to help organize their critical care services and potentially improve outcomes for critically ill patients in hospitals where intensivist staffing is not available.

The study looked at data from the Pennsylvania Health Care Cost Containment Council (PHC4) and was funded by grants from the National Institutes of Health's National Institute on Aging and National Heart Lung and Blood Institute, as well as a grant from the Leonard Davis Institute of Health Economics at the University of Pennsylvania.

Other study authors included Lee Fleischer, MD, professor and chair of

Anesthesiology and Critical Care Medicine at the University of Pennsylvania School of Medicine, Michelle Kim, MSc, of the Health Care Management and Economics program at Penn's Wharton School of Business, and Amber Barnato, MD, MPH and Derek Angus, MD, MPH, both of the University of Pittsburgh School of Medicine and Graduate School of Public Health.