

# Researchers develop tool to predict need for life support

October 14 2015

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It is now possible to determine which patients have an increased chance of one day needing life support with mechanical ventilation. Researchers have developed a simple tool to predict an individual's five-year risk of requiring this care.

The study, which appears in *Journal of the American Geriatric Society*, may assist physicians in facilitating discussions around advanced care planning with patients and their families.

The need for [mechanical ventilation](#) during critical illness represents an event of significant short- and long-term consequence. Patients requiring mechanical ventilation have approximately 30 percent hospital mortality rates, a substantial risk of near-term death. Older patients who survive hospitalization requiring mechanical ventilation experience a doubling of pre-hospitalization disability levels, with approximately 60 percent requiring discharge to skilled care facilities, and 70 percent dying within 12 months. During this process patients often lose the ability to participate actively in shared decision making about what types of medical care they would like to receive.

The study used data from the Framingham Heart Study, focusing on participants age 65 years or older who were enrolled in Medicare. The researchers assigned points to factors that were found to be strongly associated with needing life support, including older age, male gender, diabetes, hypertension, atrial fibrillation, moderate to severe alcohol use, [chronic pulmonary disease](#) and hospitalization within the prior year.

They then developed a scoring system to estimate the probability of needing life support within a five-year period. They validated the accuracy of their model by using the scoring system on clinical data collected from a similar demographic of patients from the Intermountain Healthcare system in Utah.

"We anticipate that a tool that improves the identification of people who are at risk for needing life support will allow for better communication between patients, family and physicians regarding patient wishes should these patients become incapacitated by critical illness," explained corresponding author Allan Walkey, MD, MSc, assistant professor of medicine at Boston University School of Medicine. "Improved early communication may lead to later care more in-line with patient wishes, increasing patient autonomy and improving our ability to care for patients," added Walkey who is also a pulmonary, allergy, sleep & critical care physician at Boston Medical Center.

The researchers hope this tool will assist physicians in correctly identifying individuals who are at high risk for requiring advanced [life support](#), and allow meaningful discussions to occur that might allow [patients](#) and families to better prepare for a severe illness that requires support with a mechanical ventilator. They believe further study is needed to determine whether clinical implementation of a mechanical ventilation risk score would improve preparation for [critical illness](#), including advance care planning.

Provided by Boston University Medical Center

Citation: Researchers develop tool to predict need for life support (2015, October 14) retrieved 23 April 2024 from <https://medicalxpress.com/news/2015-10-tool-life.html>

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