

Telemonitoring may not offer improved outcomes for critically ill patients

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Telemonitoring may offer promise for patients in remote locations without access to specially trained intensive care physicians. However, a recent study indicates telemonitoring does not offer improved clinical outcomes compared to patients who receive standard care.

The study will be presented at the ATS 2011 International Conference in Denver.

"In a [meta-analysis](#) including over 40,000 critically ill [patients](#), we found no statistically significant difference in hospital mortality between critically ill patients who received ICU telemonitoring and those who did not," said study authors Marc Freiman, MD, and Renda Wiener MD, physicians at Boston Medical Center. "These results could have significant clinical implications given the current pressure to provide 24 hour intensivist coverage for critically ill patients.

"Previous studies have shown that care given to patients by physicians trained in ICU care, called intensivists, leads to better outcomes for patients," Dr. Freiman said. "Unfortunately, there is (and is expected to be) a shortage in intensivist physicians over the coming decade. One of the technologies that has the potential to help areas lacking in intensivists is remote telemonitoring by trained intensivists. "

For their meta-analysis, the researchers reviewed 13 studies including over 40,000 critically-ill patients who were treated using telemonitoring. After comparing the results of these studies, the researchers found that

although hospital mortality was lower after the initiation of telemonitoring for all studies combined, the difference was not statistically significant, which means the study was unable to say with certainty that the results were not due to mere chance.

"Since this technology was introduced, it has been widely adopted, without a careful analysis of whether or not it improves [patient outcomes](#)," Dr. Freiman said. "More recently, centers using telemonitoring for critical care patients have published their experience, with conflicting results as to the effectiveness of the intervention. Our study synthesizes these studies of telemonitoring for ICU patients to see if there was a decrease in the number of patient deaths when they were used."

In a telemonitoring system, intensivists in a central monitoring facility have the ability to provide care to patients in another location (such as a geographically remote region) through the use of technology: they can see the patient through video cameras, speak to them and listen to them through audio equipment, monitor their vital signs, directly interact with nurses and other medical staff at the point of care and enter medication orders.

Data regarding the effectiveness of telemonitoring of ICU patients is limited, and there are currently no randomized controlled trials focusing on the treatment, Dr. Freiman noted. To determine whether or not the technique is ultimately effective in treating these patients, additional large-scale studies need to be performed, he said.

"A randomized trial in which some critically ill patients are randomized to receive remote telemonitoring and others receive usual care would be ideal to ascertain whether the intervention has any effect on mortality and other patient outcomes," Drs. Freiman and Wiener said. "If further research also shows no reduction in [mortality](#), hospital administrators may be reluctant to undertake the significant financial investment and

restructuring that implementation of telemonitoring for critically ill patients requires."

Provided by American Thoracic Society

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