

Study: Wake Up and Breathe program benefits ICU patients

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Researchers from the Regenstrief Institute and the Indiana University Center for Aging Research report that waking intensive care unit patients and having them breathe on their own decreased both sedation levels and coma prevalence. The Wake Up and Breathe program also showed a trend toward reduced delirium in a critically ill population.

Participants in the study, which is published in the December 2014 issue of the peer-reviewed journal *Critical Care Medicine*, were 702 Eskenazi Health ICU patients 18 and older. Results were achieved without a change in ICU staffing practices by integrating the Wake Up and Breathe program into the clinical workflow.

While on a ventilator, patients typically receive both sedatives and painkillers. Excessive [sedation](#) can result in a longer need for the ventilator and an extended stay in the ICU and can predispose the patient to delirium. However, too little sedation can lead to patient agitation and unplanned disconnection from the breathing machine. Excessive pain medication and sedation have been associated with acute brain dysfunction characterized by coma and delirium.

"Being on too high a dose of sedation medications or painkillers isn't good for the brain, especially the aging brain. Typically about 80 percent of patients in an ICU develop delirium," said Babar A. Khan, M.D., the pulmonologist and critical care physician who led the study. "In our study, in a real-world setting—an ICU of a large public hospital that was supportive of our program—we stopped sedation in the morning and

woke patients up to breathe on their own with assistance from an interdisciplinary team of nursing, physicians and respiratory therapists. Only 50 percent developed delirium, still too high a number, but significantly better than typical."

Approximately 5 million Americans are admitted to a medical or surgical ICU every year. Slightly more than a third of these critically ill patients receive mechanical ventilation because they are comatose, have lung disease, pneumonia or sepsis, or for other reasons can't maintain an open airway.

Delirium has been associated with longer hospital stays and a higher probability of developing dementia.

"In addition to increasing the probability of long-term cognitive impairment, we know that assisted breathing over a period of time is bad for the body as it increases muscle atrophy, resulting in physical function problems later," said Dr. Khan, a Regenstrief Institute and IU Center for Aging Research investigator and a faculty member of the IU School of Medicine. "Unfortunately, our program showed an increase in duration of mechanical ventilation, but [patients](#) were more awake and were breathing spontaneously. The reasons behind this increase are unclear and could reflect a conservative practice pattern in the ICU where we conducted this quality improvement study. Further investigation to tease out these factors is needed. We need to get folks off ventilators sooner."

More information: "Effectiveness of Implementing a Wake Up and Breathe Program on Sedation and Delirium in the ICU" *Critical Care Medicine*, 2014.

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