Less invasive ventilation use grows dramatically, without needed data

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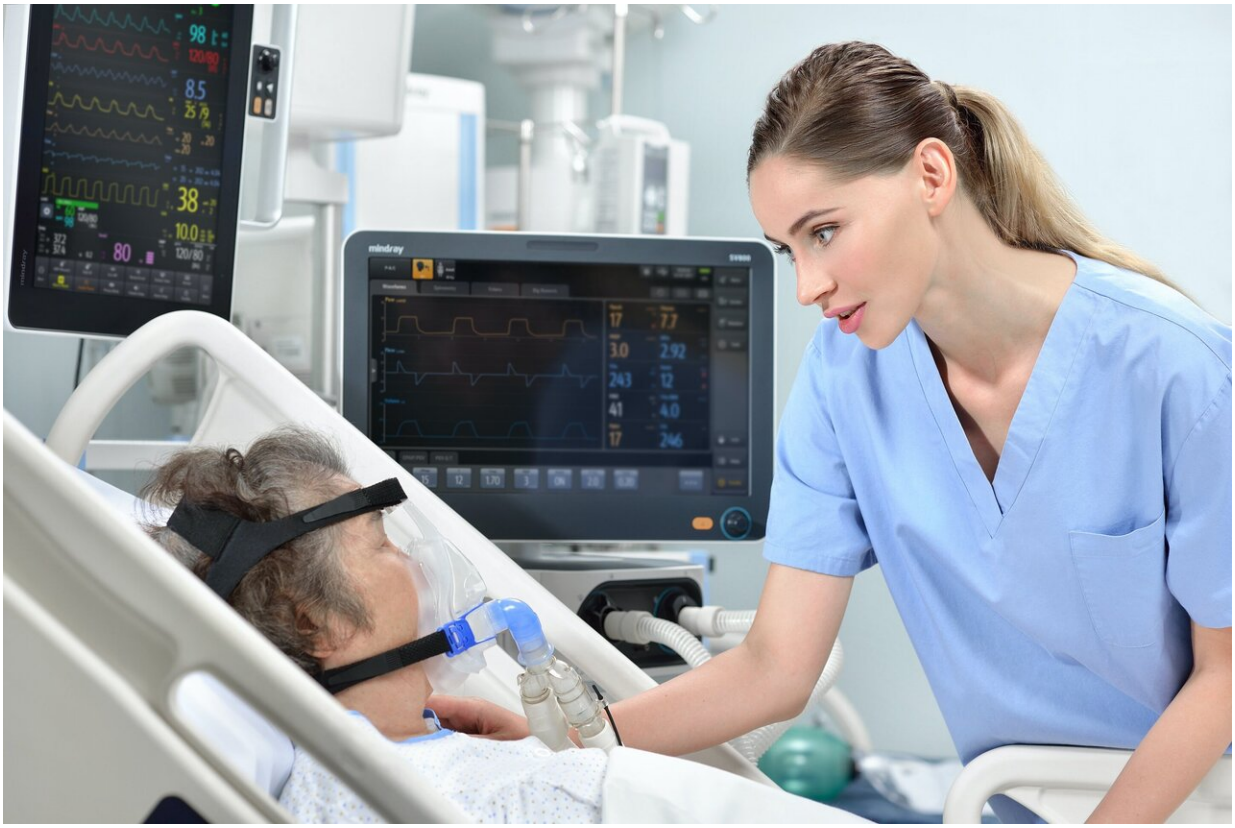

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More research is needed before a less invasive form of ventilation is used near the end of life for patients who have cancer and dementia, recommends the authors of a scientific paper published in *JAMA*

Internal Medicine.

While analyzing data from nearly 2.5 million Medicare-funded hospitalizations within the last 30 days of a patient's life, the researchers found overall use of non-invasive ventilation increased substantially. That increase was nearly nine-fold, going from 0.8% of patients in 2000 to 7.1% of patients 2017. This change came without much data measuring the therapy's effectiveness for certain patient groups such as those with cancer and dementia, the authors noted.

Non-invasive ventilation delivers air through a face mask to help hospitalized patients breathe, similar to how breathing machines help people with sleep apnea at night. It also avoids some of the drawbacks of mechanical ventilation, such as needing to sedate a patient and insert a tube into the windpipe, both of which increase various health risks and make patient communication difficult.

Studies have shown non-invasive ventilation can help hospitalized patients with congestive heart failure and chronic lung disease. However, there is very little data supporting non-invasive ventilation use for hospitalized patients who are near the end of life and have breathing problems from other diseases such as cancer and dementia. Some small studies suggest this therapy also may provide cancer patients with more quality time with their loved ones toward the end of life.

"But just because non-invasive ventilation can work well for some patients, that doesn't automatically mean it will work well for others," said Donald Sullivan, M.D., M.A., M.C.R., the paper's lead author. "More hospitalized patients are using non-invasive ventilation toward the end of their lives, even though there isn't a lot of evidence that clearly lays out the therapy's pros and cons.

"To help our patients and their families make informed decisions, we

need to know more about when non-invasive ventilation may be helpful, and when it might be harmful," added Sullivan, who is also an associate professor of medicine (pulmonary and critical care medicine) in the OHSU School of Medicine.

Wearing a mask can make patients with altered cognition anxious and distressed. People dying of dementia may need to be sedated to receive this therapy. Ultimately, this therapy could prolong suffering for patients near the end of life, Sullivan said.

Sullivan and his co-authors recommend pursuing randomized clinical trials to evaluate the safety and effectiveness of non-invasive ventilation in different patient groups.

More information: Donald R. Sullivan et al, Trends in Noninvasive and Invasive Mechanical Ventilation Among Medicare Beneficiaries at the End of Life, *JAMA Internal Medicine* (2020). DOI: 10.1001/jamainternmed.2020.5640

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