

# Only half of states have guidelines for a ventilator shortage, researchers report

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Only 26 states have publicly available guidelines for the allocation of ventilators in a public health emergency, including the COVID-19 pandemic. Also, the guidelines vary widely from state to state.

Researchers at Rush University Medical Center published these findings recently in *JAMA Network Open* after conducting a systematic evaluation of all publicly available guidelines for ventilator allocation for all states and the District of Columbia.

## **Guidelines are lacking while increasingly needed**

The COVID-19 pandemic has increased the need for ventilators, which help patients breathe when they can't do so on their own. Even though physicians, medical ethicists, medical societies and states have given recommendations for how ventilators should be provided in order to help the greatest amount of people, it was unclear how each state interpreted these recommendations.

"This research is important, because it shows only 26 states have ventilator allocation guidelines if a ventilator [shortage](#) occurs, which may occur during the COVID-19 pandemic," said Dr. Gina M. Piscitello, a hospice and palliative medicine specialist at Rush. "Especially with recent news stories of ICU bed shortages in Arizona, Florida and Texas, it is very possible decisions are or will need to be made regarding which patients are able to receive care with a ventilator using these guidelines."

Using state department of health websites and internet research, Piscitello compiled any documents discussing the process of assigning mechanical ventilatory support during public health emergencies. These documents were then assessed by two independent reviewers.

A total of 27 guidelines that included 26 state protocols and one pediatric-specific state protocol were submitted to the reviewers.

Along with the study published by *JAMA*, Piscitello—who is an assistant professor in the Section of Palliative Medicine at Rush Medical College—also discussed the systematic review on the *JAMA Network*

*Open* podcast.

## **Varying guidelines could lead to inequities in care**

The researchers found that 14 of the 26 states (54%) also have pediatric guidelines, 15 states (58%) recommended using a measure known as the Sequential Organ Failure Assessment score in the initial rank of adult patients, and six (23%) recommended consideration of limited life expectancy because of an underlying illness.

In six states—Illinois, Maryland, Massachusetts, Michigan, Pennsylvania and Utah—priority was recommended for specific groups in the initial evaluation of patients. Three of those guidelines (12%) in Illinois, Michigan and Pennsylvania recommended giving priority to health care workers and others in roles vital to public health.

Eleven states (42%) recommended exclusion criteria in adult ventilator allocation. The withdrawal of mechanical ventilation from a patient to give to another if a shortage occurs was discussed in 22 of the 26 adult guidelines (85%) and nine out of 14 pediatric guidelines (64%).

A total of 25 state guidelines (96%) reported that a committee was involved in the creation of protocols, with the composition of committees varying among states. Examples of committee members included physicians, nurses, medical ethicists, lawyers and representatives from religious congregations.

Community involvement was reported in the creation of 13 guidelines (50%), and five guidelines (19%) recommended [community involvement](#) but did not state whether it had yet occurred. No state guidelines mention legislation to enforce the use the protocols.

The study found that state ventilator allocation guidelines vary widely and that if a ventilator shortage occurs, they will lead to inequity of allocation due to seemingly arbitrary differences in exclusion criteria, scoring systems and priority groups among states. For example, a patient presenting to the hospital in one state may be at higher priority for a ventilator than that same patient if they presented to the hospital in an adjacent state.

In addition, based on some state guidelines, people meeting certain criteria such as metastatic malignancy, severe dementia, age greater than 90, or children with metabolic or chromosomal anomalies automatically will be excluded from consideration for a ventilator without a chance to receive an objective priority score based on their overall health status.

## **Shortages may cause unequal access to ventilators**

Piscitello explained that in the event of a ventilator shortage, some communities could be hit harder than others.

"If a ventilator shortage occurs, there is great concern this will unequally impact medically underserved communities who are already disproportionately impacted by COVID-19," she said. "Some state guidelines give lower priority to patients with chronic comorbidities, which we know impact certain communities more than others, such as people living in poverty."

Some states, including Illinois, prioritize certain essential groups such as medical providers. This raises concern that prioritizing such a large group would diminish available ventilators for the rest of society.

"This could deny equitable access to mechanical ventilations throughout the population," Piscitello explained. "If a tiebreaker is needed when allocating ventilators, multiple states recommend consideration of a first-

come first-served approach, which likely will prioritize patients with greater access to health care over those without."

As Florida, Texas, Arizona and other states continue to see a surge in COVID-19 cases, there is rising concern over future ventilator shortages, especially as these states see more shortages of intensive care unit beds.

"As there is continued concern [ventilator](#) shortages will occur, hopefully state departments of health will look at these findings and try to create more uniform guidelines to prevent disparities from occurring," Piscitello said.

"Hopefully these findings also increase awareness of the use of categorical exclusion criteria for people with cognitive deficits or elderly age and leads to reconsideration of these policies."

**More information:** Gina M. Piscitello et al. Variation in Ventilator Allocation Guidelines by US State During the Coronavirus Disease 2019 Pandemic, *JAMA Network Open* (2020). [DOI: 10.1001/jamanetworkopen.2020.12606](#)

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