

Surge Mechanical Ventilation During COVID-19



During the COVID-19 pandemic, many hospitals in the U.S. exceeded their mechanical ventilation capability. As COVID-19 spread to communities with limited immunity, challenges associated with providing surge mechanical ventilation were reported. Hospitals, healthcare systems, and jurisdictional authorities purchased more ventilators. But the fear that the supply would not be able to fulfill the demand continued to stress the system.

Several creative ideas were proposed to augment the supply of resuscitators or mechanical ventilators. Significant effort was made to prevent shortages of these life-saving devices, and strategies were used to ration them adequately in case of a shortage.

The focus on mechanical ventilators was logical and well-intentioned, keeping the situation in mind. However, most critical care systems failed to realise that mechanical ventilators were not equivalent to critical care support. Most of the strategies and concepts of providing emergency mass critical care have generally been derived from experiences gained during other epidemics, including the SARS-1 epidemic and the 2001 anthrax cases in the U.S. Guidelines have also usually been very specific about ensuring adequate supplies of mechanical ventilators. However, completely shifting the focus to stockpiling these devices without comprehensive strategies to increase the number of trained staff, provide safe treatment space and ensure the availability of other key equipment is insufficient.

The number of critical care workers, which include nurses, respiratory therapists, physicians, advanced practice clinicians, and pharmacists, must be sufficient to care for patients in case of mass respiratory failure. However, it became evident during the pandemic that staffing needs were not addressed, which resulted in critical care staffing shortfalls at the outset of the pandemic. ICU staffing was a critical challenge in the U.S. during the pandemic, second only to personal protective equipment shortage. The excessive focus on mechanical ventilators was important but not as crucial as ensuring adequate staffing.

Hence, the strategy for future pandemics of this nature should be to look beyond stockpiling devices. There should be an equal focus on its competent use, training among staff, storage and transport, integration with other hospital equipment and evaluations to ensure the devices are consistent with evolving practice.

Despite the excessive focus on ventilators, at no point during the pandemic did the need exceed the pre-COVID quantity of stockpiled ventilators. The more important challenges were related to device contracts, device readiness and the number of clinicians comfortable using them. It is also important to consider that the stockpiled devices can provide the required response compared to newer devices.

The lessons learned during the COVID-19 pandemic should be applied to future outbreaks. Investments should be made to provide better care, but these investments should be justified and made in the right direction, with the end goal being improved patient outcomes and adequate care.

Source: [JAMA](#)

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