

# What is a ventilator that every country in the world is racing to have as much as possible?

The most effective 'tool' to save a patient's life from the 'enemy' Covid-19 at the present time.

The US has officially become the largest outbreak of patients in the world, but the hospital does not have enough ventilators - medical devices that determine the lives of patients carrying Covid-19 in them. A February report showed that US hospitals have about 160,000 ventilators and 8,900 units in stock waiting for emergency days. It sounds like a lot, but in an urgent situation, the authorities in New York have repeatedly warned that the state is on the verge of a serious shortage of medical supplies.



According to analysis by Dr. James Lawler, an infectious disease and public health expert from the University of Nebraska Medical Center, about 1 million Americans will need ventilators in the context of the Covid-19 pandemic. . However, Lawler's analysis doesn't include a timeline, so maybe 1 million doesn't mean they will need to be ventilated at the same time.

While breathing machines are becoming the focus of production as well as a cure for Covid-19 infections, let's learn a bit about it.

## **This is how the ventilator works**

Some Covid-19 patients were short of breath and had difficulty breathing, requiring mechanical assistance to breathe. The ventilator comes in many shapes, but is usually rectangular in shape, with a tube that transmits air

from the machine into the patient's lungs. They can make breathing easier.

' Basically, a breathing machine blows air into your lungs, supporting natural breathing, ' says Dr. Nicholas Hill from Tufts Medical University.



**Patients will have one of the following two types of respiratory failure:**

The first is hypercapnia, which is when air does not enter the lungs enough and CO2 accumulates to an overload. To help this patient breathe, doctors do not need a ventilator to direct air into the lungs, but a mask is sufficient.

The second type is called hypoxemic respiratory failure; True to its name, it is when breathing is difficult and the blood doesn't receive enough oxygen. This type of respiratory failure can affect the lungs, and the SARS-CoV-2 virus causes similar lung damage.

When respiratory failure takes place, the lungs swell and a fluid builds up, making it difficult for the lungs to function normally.

' We treat these manifestations by adding oxygen to the patient's lungs, ' said Dr. Hill. ' We can give you 100% oxygen to push the blood oxygen level up, but also be very careful because pure oxygen can be harmful . '

**Address the shortage of ventilator**

New York is the state with the highest number of Covid-19 cases, the number of ventilators available here is still sufficient to sustain life in more than 800 cases. However, according to estimates by local authorities, the state will need 30,000 breathing machines to use when the number of virus infections can peak in the next few weeks.



There is a proposed place to use a ventilator or patient if the shortage continues. This can affect patient health, because the ventilator is designed to provide breathing support to a single patient. In an emergency, if two patients must use the same device, they must have the same lung volume and body size in order to be effective.

According to Dr. Hill, the two patients share a ventilator is very risky, so the best solution is to focus on manufacturing ventilators to save as many people as possible. At present, a number of automobile manufacturers have participated in the manufacture of ventilators, such as Elon Musk's electric car company Tesla.

In addition, importing breathing apparatus from China is also a good method. The country of billions of people has begun to control the epidemic, some manufacturing units also have surplus medical equipment, ready to resell to countries in need. Elon Musk also used as an example: yesterday, he ordered 1,255 units and gave free 1,000 equipment to hospitals in the state of California, the remaining 255 ventilators will be installed in places where crews are needed.

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