

# Ventilator Challenge hailed a success as UK production finishes

Scientific modelling at the start of the coronavirus crisis predicted that the NHS was going to run out of ventilators, so the Government launched the Ventilator Challenge with a call to arms to manufacturers and medical device companies to step up production of existing designs and design new ventilators from scratch.

The Government received an overwhelming response, with over 5000 companies offering their support and over 7500 members of staff contributing to the effort.

Thanks to the extraordinary sacrifices of the British people, and to businesses across the United Kingdom in joining the national effort, the NHS has been protected throughout the coronavirus crisis and everyone who needed a ventilator has been able to access one.

Prime Minister Boris Johnson said:

The Ventilator Challenge has proven just how much Britain can achieve when confronted with a difficult problem – bringing together the best minds in manufacturing, innovation and design.

Thanks to these efforts, everyone who needed a ventilator has had access to one, and the NHS has the vital machines it needs to continue providing life-saving support against this deadly virus.

UK production of ventilators under the Ventilator Challenge is to draw to a close this weekend with 14,000 devices expected to have been produced in around three months, accounting for over a half of all the ventilators now available to the NHS frontline.

It has also been confirmed that the Penlon ventilator has had its CE mark confirmed, meaning that the device, which was newly adapted for the Ventilator Challenge, is now available for export abroad. Learning from their experiences of the Ventilator Challenge Penlon are now setting up a new line aimed at exporting across the world.

Chancellor of the Duchy of Lancaster Michael Gove said:

The Ventilator Challenge has been a great success and I would like to thank every manufacturer and designer, and their incredible workforces, for the huge part they've played in the national effort to protect our NHS and save lives.

In around three months, industry has stepped up to make 14,000 new

machines to save lives on the NHS frontline and to help safeguard against any future outbreak.

The Ventilator Challenge has shown that UK manufacturing always rises to the challenge at a time of national need. Everyone involved is truly a hero of the coronavirus crisis.

The programme has formed a key part of a successful three pillar strategy to increase the number of mechanical ventilators, with over 25,000 devices now available in total to the NHS, up from 9,000 before the start of the pandemic. Over 2,500 have been imported from abroad.

Health and Social Care Secretary Matt Hancock said:

We protected the NHS during this global pandemic. The impact of COVID-19 showed the best and the brightest stepping forward to serve their country. The response the government received to this challenge was astonishing.

Alongside the government's wider ventilator strategy, the Ventilator Challenge has played a crucial role in ensuring everyone who has needed a ventilator during this pandemic has had access to one.

The Government's strategy involved procuring devices from overseas, scaling up the production of existing devices and calling on manufacturers who do not make ventilators, to help design and build new models.

The Ventilator Challenge helped scale up the production of three models (paraPAC, Vivo65 and Nippy4+) and helped guide one newly adapted model, the Penlon ESO 2, all the way through regulatory approval.

A number of other UK manufacturers also progressed novel designs to advanced stages within weeks. Four of these designs, the Dyson/TTP CoVent, the Babcock Zephyr+, the Cambridge Consultants Veloci-Vent and the Swagelok Piran Vent, were deemed to have achieved a performance level which met the MHRA's requirements. The independent testing organisation (MD-TEC) concluded that they would have all been clinically usable as pandemic ventilators and could have supported large numbers of critically ill patients. Ultimately these designs were not progressed to mass production as part of the Ventilator Challenge due to reduced demand.

Director of the Medical Devices Testing and Evaluation Centre, which tested the Ventilator Challenge devices, Dr Tom Clutton-Brock, said:

Designing, manufacturing and testing ventilators usually takes years. So it's outstanding the progress which has been made in a space of months.

Having tested all of these devices, it's impressive that several new models met the regulator's requirements.

These models would all have been clinically usable as pandemic ventilators and could have supported large numbers of critically ill patients.

The NHS now has a readily available supply of devices that will enable the health service to have resilience of supply for possible future pandemics.

Penlon and Smiths, who are part of the Ventilator Challenge UK consortium have so far delivered over 10,000 devices. Penlon is now making more ventilators in one day than the company used to deliver in ten months, further underlining the success of the scaling up of the device.

The last Penlon and Smiths devices will be delivered this weekend, subject to final manufacturing and testing, and with the addition of the final Breas devices arriving in the coming weeks, we expect the Ventilator Challenge will produce a total of over 14,000 devices.

In addition, today there are also around 11,000 non-invasive ventilators and almost 5,000 CPAP machines available to the NHS across the UK which were not available before the start of the crisis.

Guru Krishnamoorthy, CEO Penlon said:

It has been an amazing and humbling experience for Penlon to be a part of such a nationally important project. There is nothing more purposeful for a UK medical device company than rising to an occasion like this to save thousands of lives.

Every member of Penlon has put in their best lifetime efforts into this project. We have been supported extremely well by the members and leaders of the Consortium companies, our suppliers and other business partners. We take this opportunity to thank each one of them. We wish the people of the UK and rest of the world a very safe and healthy life. We commit ourselves to do everything required and continue to provide high quality medical devices.

Raffi Stepanian, CEO Breas Medical said:

I would like to thank my colleagues, our suppliers and the UK Cabinet Office for the extraordinary efforts everyone has made to address the emergency need for ventilators and to support us to ramp up capacity. The ingenuity, commitment, pace and collaboration has been breathtaking and truly inspirational all against the backdrop of such demanding circumstances.