

# Innovative 'pop-up tent' could be latest line of defense for frontline NHS staff treating patients with COVID-19

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Credit: University of Birmingham

A disposable plastic 'pop-up tent' which creates a protective barrier between patients and healthcare professionals could be the latest line of defense for frontline NHS workers thanks to a new product developed by a team from the U.K.

Designed by experts at the University of Birmingham, the Disposable Resuscitation, Intubation and Nebulisation Kit Shield—or DRs INK Shield—is a compact device designed to cover the patient's head, neck and shoulder area while treatments for COVID-19 are administered. The transparent plastic shield, which features self-closing access points, protects [medical staff](#) from airborne droplets that may put them at risk of contracting the virus while allowing them line-of-sight access to the patients airways to perform life-saving procedures such as inserting or removing breathing tubes.

Barrier products like these already exist, however current designs are often hard walled boxes which are not only difficult to store in large numbers, but difficult to maneuver in emergency situations. The DRs INK Shield is around five times lighter and one third of the cost of currently available solutions. Its pop-up design means it can be assembled in seconds as well as easy to store prior to use while the disposable material means that it can be disposed of along with other clinical waste.

The project, which has rapidly moved from conception through product development to launch and taking orders in less than a week, has brought together the expertise of staff from the University's College of Medical

and Dental Sciences and College of Engineering and Physical Sciences.



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Design lead Matthew Campbell-Hill from the Institute of Clinical Sciences said: "We're told that COVID-19 is primarily spread through respiratory secretions which transmit the virus via the fine spray of droplets released when infected people talk, cough, sneeze or even yawn. With much of the treatment for the virus focused around the airways, it is imperative that healthcare workers are protected from potential

contamination while still being able to deliver the vital treatments that will save people's lives.

"Our shield offers an additional form of PPE that can be rapidly assembled during [emergency situations](#) adding an extra layer of protection for frontline staff. Staff who have used it report increased confidence in their [personal safety](#), as well as the ease of use and lightness. While this design has the potential to be a vital tool during the current pandemic, we envisage its use in a range of care settings beyond hospitals including ambulances, care homes and public areas."

Dr. Richard Williams, Research Fellow in the Healthcare Technologies Institute added:"Taking the time to fully understand the clinical problem and then move at speed was essential. Even in this national emergency, some basic considerations of placing a product into service still apply. We drew upon our key contacts and worked remotely to provide an appropriate solution in a timely manner with the ability scale."

The next stage of the project will see the team deploy the solution as quickly as possible to the front-line of COVID-19 care.

**More information:** For more information, see [www.aerosolshield.com](http://www.aerosolshield.com)

Provided by University of Birmingham

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