
Hospitals' Creative Responses to Coronavirus Challenges



While hospitals around the world are [struggling](#) to fight the COVID-19 pandemic with limited or unavailable supplies and equipment, some are forced to become creative and find new ways to continue care delivery and, at the same time, protect the staff.

One-Person Booths

South Korea has already proven the effectiveness of its rigorous testing policies. Of over 8,500 confirmed cases only slightly above 1% [were fatal](#), and the number of infected people per day has reduced to less than 100 as of 18 March from over 900 on 29 February.

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Earlier the country showcased the [first drive-thru](#), which is now becoming the new norm elsewhere. Another innovation is instalment at Seoul-based H+ Yangji Hospital of [one-person safe booths](#) for coronavirus testing.

The booth, called 'SAFETY' (Safe Assessment and Fast Evaluation Technical booth of Yangji hospital), is modelled on a bio safety cabinet (BSC) used for handling hazardous materials in the lab. The doctor, separated from the patient to minimise the risk of virus transmission, uses the gloves attached to the booth's wall to swab patients. Inside the booths negative pressure is maintained, and the communication is allowed through an interphone.

3D Printed Parts

A Brescia-based medical centre in northern Italy was [helped out](#) by a 3D printing company to replicate and create lacking replacement valves for an intensive care device that provides respiratory support to COVID-19 patients. The stock at the hospital's supplier had run out, so the Rome-based 3D printing company brought a 3D printer to the facility and needed just a few hours to redesign and produce the missing part.

Make-Shift Supplies

In the absence of necessary supplies and equipment, staff at the All India Institute of Medical Sciences (AIIMS) [are using](#) hand sanitiser and plastic face shields, ie masks, made by the doctors of the microbiology department. The [alcohol-based hand sanitiser](#), prepared in line with the World Health Organization (WHO) guidelines, is comprised of ethanol, hydrogen peroxide, glycerol and distilled water.

In another hospital in the U.S, infection control and quality experts managed [to design](#) prototype face-shields with off-the-shelf materials bought from craft stores, such as marine-grade vinyl, industrial tape, foam and elastic. Administrative staff members volunteered to work an assembly line in a conference room and put together 500 make-shift face shields. Another prototype is a facemask made from a surgical wrap material that typically lines surgical trays.

Novel Means of Communication

With visits from family and friends being effectively banned in many healthcare facilities, staff at the Keosauqua Health Care Center (Iowa, USA) [arranged](#) for a resident to communicate with a visitor. They carried on an entire conversation chatting over the phone from both sides of a room window, being able to not only talk to but also see each other. Meanwhile, the nursing home staff is also encouraging family members to send their loved one an [e-card](#) through the facility's website.

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