

Desperate measures in desperate times : DIY PPE WITH RESPIRATOR (in areas with minimum resources)

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COVID 19, is a novel disease in the humans which is terrorising the whole world and blew up to become a pandemic in just a span of few months. The virus because of its rapid spread & infectivity is giving the healthcare system of every country a tough time. In India, though not fully blown yet, it will be very difficult to face the situation because of dire lack in the infrastructure and resources. Not just the ventilators but we may even run out of proper masks and PPE as well.

Proper PPE, giving complete protection i.e, including a respirator, is the right of every healthcare worker especially during aerosol generating procedures. But unfortunately neither the technology nor

the resources in our country will be adequate to cater to the present rising demand.

So, in order to protect ourselves to the best of our ability and with the minimum resources, we have come up with this little innovation.

The disadvantage

It is not comfortable for longer use if tucked into the gown completely. If we are using it as only a hood to prevent spillage of contaminated material, we can wear it over our PPE which contains N95 mask, goggles, cap, gown & footwear. This will be bearable for some small procedures.

Step by step picture tutorial of Our DIY HOOD/RESPIRATOR.



Step 1: Requirements for making a hood include a disposable long drape or sheet (with or without hole), OHP sheet, 3 inches plaster, rope and knife/scissors.



Step 2: Open the drape. Make markings for the hole such that we have equal length on front & back covering head & shoulders completely



Step 3: Place OHP sheet horizontally at the place intended for hole as shown above and mark a rectangle measuring 3cm less than OHP sheet on each side.



Step 4: Cut out the hole neatly with the help of a knife



Step 5: Place OHP sheet on the hole, covering 3cm of the drape on all sides.



Step 6: Stick all 4 sides with 3 inches plaster such that it sticks equal length on OHP sheet & drape ensuring good fixation.



Step 7: Mark on either side of upper end of the OHP on the drape, make holes & attach ropes.



Step 8: Now it is ready for donning

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Converting into a Respirator

The advantages are it can be completely tucked into the surgical gown for a complete seal from surrounding environment. The oxygen allows

to stay put for longer times comfortably, prevents fogging of the OHP sheet and most importantly the oxygen flow pushes air out & prevents any inward flow of air.

The step by step picture tutorial for converting into respirator



Step 1: After wearing footwear, goggles, N95 mask & cap, take a new O2 delivery port and put one end inside the mask



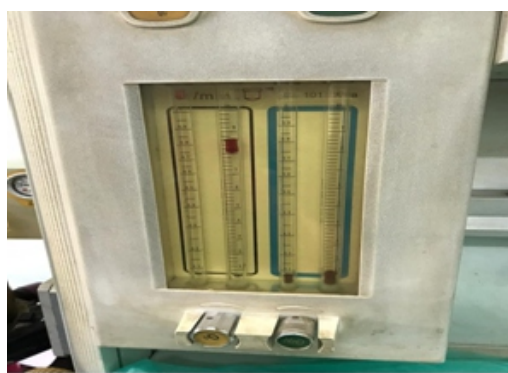
Step 2: Don the hood as described above



Step 3: Don the gown over the hood, tucking all the sides inside, without any gap



Step 4: We need to take extra long ports to allow us considerable movement around. Next we connect the other end to an O2 cylinder/central O2/air/workstation, whichever is available.



Step 5: An oxygen flow rate is then set at 8L/min which we observed is most comfortable.



Ready for procedure

Doffing off & Disposal the Hood

A small note on doffing off the hood. After removing the gown inside out according to the protocols, we then place our gloved hands on

inner side of the hood and just remove it inside out. Then wrap it carefully not touching any outer surface and dispose it in the specific bags.



Doffing off the hood



Disposal Of the hood

These are testing times for all healthcare workers around the world. We are forced to try novel, simple and effective ways to protect ourselves and thus also the society. This is definitely not tested or

evidence based but an attempt to protect ourselves against this dreadful disease.

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