April 7th Zoom Meeting Minutes

Attendees:

* William Ng
* Azad Mashari
* Andrew Syrett
* Vahid Anwari
* Matt Ratto
* Brian Read
* Brian Clarkson

Status of Prototypes

1. I3D models in TGH team’s hands, worn/comfort tested by various members. Have window weather stripping as seal. Firm, and may become uncomfortable with prolonged use
2. B1/B2 model (same as 13D but from different machine) to be delivered to TGH today

Will NG discussed new open source model from University of Washington/Veteran’s hospital approved by NIH. We would like to try this model, as it has a larger filter, which would reduce wearer’s work of breathing. We will call this model “NIH”. Brian’s team to produce a prototype today. Vahid will be in contact to share CAD files.

Main Issues:

1. Seal and comfort. We need to find a solution given that the mask material is so firm – prolonged use will cause skin ulceration.
   1. Possible solutions proposed:
      1. Extruded silicone to fit around edge of mask (would require that seam be “welded” so as to prevent air leak
      2. Room temperature vulcanization process whereby silicone would be adhered directly to edge of mask.
      3. Rubber silicone tubing, with a slit cut through it, and wrapped onto edge of mask, which would represent a DIY option
   2. Plan:
      1. Brian R and Brian C will look into extruded silicone and RTV options in their circles
      2. Matt R will liaise with Acro Industries re. extruded silicone
      3. Vahid/Josh will look into sourcing silicone tubing
   3. Issues: some of these solutions may need tweaking of the prototypes to include a lip onto which seal material can be affixed.
2. Filter. We need to find a filter solution that is easily sourced and readily available
   1. Possible solutions - Halyard surgical sterilization wrap sandwiched around HEPA filter material.
      1. Halyard wrap abundant at TGH and most hospitals. We have some in the lab for testing purposes
      2. Matt R to liaise with contacts at Camfil to obtain HEPA material.
   2. Issues: will need to seal/adhere the 3-ply sandwich around the perimeter of each filter. May be possible to use a heat source to bond them together.

Actions to be taken:

1. Will/Azad/Andrew to coordinate grant writing
2. Vahid/Josh to coordinate lab, collecting and preparing prototypes and to source silicone tubing
3. Matt R to liaise with industry partners at Acro and Camfil
4. Matt R to help connect us with testing partners
5. Brian R and Brian B to help with production of NIH prototype, and to investigate feasibility of extruded silicone and RTV seal options.