**Unknown Issues**

*This questionnaire is intended to address unknown issues regarding mechanical ventilators. Please provide your input as it will influence our designs for our low-cost, rapidly manufactured D-I-Y ventilator.*

1. How plentiful is 4 bar oxygen supply?

a. Absolute minimum oxygen requirement is the human consumption of about 250 ml/min in a healthy person but upto 500 ml/min in severe sepsis. However, achieving this is only possible if certain breathing system designs are used and ‘driving’ gas is done by air.

To the best of my knowledge, Currently no hospital deploys centralized oxygen supply, Oxygen tanks which are placed next to the patient with regulators are filled from oxygen manufacturers. One exception is Hallelujah hospital, they have the centralized system. Similarly St. Paul Hospital has done some work on this but has not deployed it yet.

i. Specifically, would have to use circle breathing system with active CO2

absorption. Is sufficient soda lime available?

b. If consumption in the range 1-2 l/min is acceptable then a wider range of

designs are possible, but some very basic designs are not.

c. If consumption in the range 10l/min is acceptable then any possible design can

be considered.

2. What is the resistance of HMEF-bacterial-viral filters that are to be used with the

ventilator? Is it clinically relevant?

3. Is there any need to consider running from only low-pressure oxygen e.g. from a

concentrator? This makes design more complex.

4. How plentiful is the supply of syringe drivers and drugs for sedation? N/A

a. If limited, then a vaporizer could be used to vaporize Isoflurane for sedation.

b. This would need certain breathing system designs, mandatory AGSS and a

supply of vaporizers.

5. Can monitoring be done by another machine? Please specify what machine. If yes, will this machine have essential parameters available to the clinician (we’re asking this question, to see if we can leave monitoring out of the ventilator)

6. Please provide your email address – so we can contact you if we have any further questions.