SOLUTIONS TO COVID 19 BY BIOMEDICAL ENGINEERS

A054$_{S}halaiAmte$

February 2022

1 Introduction

The role of biomedical engineer includer build the biomedical equipment devices to the aid the recovery of improve the health of human being. This includes internal as well as external devices.

Biomedical engineer can range from industry background to the having normal tasks that build ventilators or PPE to help NHS care for the increasing numbers of patients in intensive care units with covid 19 .

2 CONTINUOUS POSITIVE AIRWAY PRESSURE

The continuous airway pressure which initially intended to prevent airways collapses in sleep has shown progression when it come to covid patients if applied early enough progression of the diseases.

A well fitted mask is an essential component of CPAP system , it is only appropriate for patients who are capable of some breathing strength as it opposes some resistance to expiration.

3 VENTILATORS

Ventilators are capable of replacing the breath function and patient in advanced state of respiratory distress usually intubated and sedated at the beginning of the treatment.

The complex system providing the healthcare professionals with a lot of flexibility to adapt the assisted breathing settings and to be able to wean recovering patients off the ventilator gradually.

Modern ventilators are typically closed loop which are capable of detecting spontaneous breathing to synchronise assistance for recovering patients.

4 GRASSROOTS SOLUTION

In Ohio state university the director has been involved on the volunteer organizing team since early covid recruiting hundreds of students, faculty and alumini to build the solutions.

Where the group of engineers and healthcare professionals convened a mask for all policy which can have significant effect in slowing community transmission. this should be done with simple cloth masks that do not take stocks away from healthcare workers and strict hand hygiene in addition to all pertinent CDC guidelines.