Basic Biomedical Assignment-VI
5 Solutions to Covid19 provided by Biomedical Engineers

Aashutosh Patel
Roll no- 21111001

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5 Solutions to Covid19 by Biomedical Engineers:

1 Artificial Intelligence In Covid Management:

Artificial intelligence-based solutions assist healthcare organisations in coping with and combating viruses. It could be used to predict forthcoming pandemics or epidemics at an early stage, before they spread. It is feasible to anticipate and track patients by studying data. It could also be used to create and test novel vaccinations, as well as gain a better knowledge of result.
Few notable uses are:
1.AI is used for drug delivery design and development for vaccines.
2.Monitoring the treatment and the global cases distribution.
3.Early detection and diagnosis of the infection.

2 Patient Monitoring:

An essential element of the ICU equipment is the monitoring equipment that keeps track of some of the patient vitals especially when they are ventilated and sedated but also during their recovery phase to ensure the regime of ventilation is optimised for their condition. Ventilators already provide their set of patient parameters, but usually patient monitors are separate devices as they continue to be useful after the patient can resume breathing on their own unassisted.
One of the key parameters for COVID-19 patient is the amount of oxygen in their bloodstream (SpO2), measured by pulse oximetry which uses optics within a finger clamp. Pulse oximetry tends to be used for the duration of the patient's stay in ICU. Modern patient monitors provide many more patient parameters all the way to breathing waveforms to enable clinicians to fine tune their care of the patients.
Because of the risk of infection and quick transmission, the development of software and technical applications, such as telemedicine to watch the virus's evolution in the population, has gotten a lot of interest.

3 Mental Health:

People are expected to quarantine and self-isolate, closing themselves off socially, as the number of mental health concerns rises amid the Covid-19 health crisis. For overcoming this many apps were developed like covid coach .
Even many people were using AR and VR for their entertainment purpose. Doing exercise and yoga to keep themselves fit and while doing this the smart watch records all their biological activities for tracking their health

4 Solution to Health Disparities:

A systems approach to health disparities by engineers affords a special opportunity to merge the development of innovative technologies with unmet health needs fueled by structural racism and social determinants of health. Without a lens through which inequities that shape disease processes and access to care, designs that are accessible and fully effective for all populations will be lacking.
Collaborations between engineers and clinicians through clinically centered experiences—also known as clinical immersion and biodesign allows for the collaborative identification of unmet needs and pursuit of technical solutions to meet those needs. This can be done in a number of training settings ranging from courses co-led by engineering and medical schools to intensive short-term programs. The author has led a program called Coulter College funded by the Wallace H. Coulter Foundation and recently hosted by Medtronic. During an intensive 3-day program focused on the translation of biomedical innovations, student teams are guided through a dynamic process to develop solutions to clinical needs while gaining a better understanding of resource constraints and disparities that must be considered during the design process.
Students learn how to evaluate the best point of leverage within a given clinical need, how to evaluate solutions, and how to balance clinical benefits alongside a viable commercial model. Efforts like Coulter College and training that combines clinical immersion and biodesign will benefit from expansion and a constant focus on underserved disparity populations.

5 PPE Kit:

According to infectious disease experts, face shields protect the face from fluids, spray, and droplets, while extending the life of N95 face masks. The COVID-19 pandemic has depleted supplies of personal protective equipment (PPE) for healthcare professionals nationwide. Dr. Karilyn Larkin is a hematologist at The Ohio State University Comprehensive Cancer Center – Arthur G. James Cancer Hospital and Richard J. Solove Research Institute. When she and her colleagues experienced shortages of face shields, she turned to Ohio State engineers—specifically Mechanical and Aerospace Engineering Professor Carlos Castro—for help 3D printing face shields.