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1 Step1.

Ventilators:-patients who can not breathe breathe spontaneously need to be put on a ventilator. Ventilators are capable of replacing the breath function and patients in an advanced state of respiratory distress are usually intubated and sedated at the beginning of the treatment. Ventilators are capable of replacing the breath function and patients in an advanced state of respiratory distress are usually intubated and sedated at the beginning of the treatment. They are complex systems 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 pressure controlled and capable of detecting spontaneous breathing to synchronise assistance for recovering patients. They also enable the control of the composition of the gas the patient breathes from normal air to oxygen, usually taking their supply from the hospital's gas supply network but can also be coupled to oxygen tanks or oxygen concentrators if used in a setting where there is no gas network.

2 step 2.

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 engineer specifically Mechanical and Aerospace Engineering Professor Carlos Castr for help 3D printing face shields. According to infectious disease experts, face shields protect the face from fluids, spray, and droplets, while extending the life of N95 face masks.

3 step 3.

The labs of Biomedical Engineering Professors Daniel Gallego-Perez and Natalia Higuita-Castro are developing novel, highly benign and targeted methods for the delivery of mrna vaccines. While the researchers normally focus on cancer and regerative medicine , their methods may be applicable to vaccine development and deployment. We are working on developing approaches to deliver mrna vaccines to specific cell types in a highly targeted manner, said Gallego-Perez. Once we find the right approach, we will engage experts on covid-19 to possibly transition this research into the right arena for subsequent efficacy studies.

4 step4.

Bio-medical engineers design instruments , device and software used in health-care . Developed new procedure using knowledge from many technical sources or conduct research needed to solve clinical problems.They frequently work in research and development or quality . Biomedical engineers design electrical circuit , software to run medical equipment.

5 step 5

Bio-medical engineers and companys worldwide have changed their focus or production lines to develop products that meet the needs of medical personnel and patients motivated by the covid-19 urgency and satisfy the demand of medical supplies and emergency care equipment, with special emphasis on personal protective equipment. Since the beginning of the pandemic the distribution lines were affected. China, being the largest producer of personal protective equipment (PPE), was the first country to close its borders, making it impossible for other countries to get supplied with large amounts of protective equipment.