Initiative featured at the RIAC's Report developed to support countries' efforts to address COVID-19's impact

Tech-Based Medical Devices for Treatment of COVID-19 Patients

Multiple Entities

Brazil

Shared by: Foreign Ministry of Brazil through the Permanent Mission of Brazil to the Organization of American States (OAS)

The Foreign Ministry of Brazil through the Permanent Mission of Brazil to the OAS reported the following tech-based medical devices developed by institutions of the private and public sectors to treat COVID-19 patients in Brazil.

- **Platform to Monitor COVID-19 Patients**
  DHMed

  DHMed is a company installed in the Scientific Park and Technological Institute of PUC-RS (TECNOPUC) that focused on tech-based solutions for medical equipment. To strengthen the response to address COVID-19, DHMed boosted its performance for the distribution of ventilators, supplies, and for repairing of hospital equipment.

  Additional Information:
  http://www.dhmed.com.br/bem_vindo

- **Mechanical Ventilator with Touchscreen and Wireless Connectivity**
  Technological Innovation Agency of the Federal University of Paraíba - INOVA-UFPB

  INOVA-UFPB developed a lung ventilator that uses touchscreen technology and is equipped with multibiometric system, in addition to wireless connectivity that enables remote access and real-time monitoring and operation through a smartphone app. It is an open innovation project and a license is open to anyone interested in producing the lung ventilator.

According to the developers, the production cost of the INOVA-UFPB Ventilator is approximately BRL 400 (USD 77), much less than the average cost of the ventilators available on the market. The device still needs to pass tests carried out by the National Institute of Metrology, Standardization and Industrial Quality (INMETRO). Manufacturing should be done by a company registered with Brazilian Health Regulatory Agency (ANVISA).

Contact Information:
inova@reitoria.ufpb.br

Additional Information:
https://bit.ly/3cV6vOJ
https://bit.ly/2A4PD9G
https://bit.ly/2Xfx4ru

- **Electrical Impedance Tomography Monitoring Device and Software**
  Timpel

  Timpel, a healthtech Brazilian startup, developed an electrical impedance tomography device and software to monitor patients under artificial ventilation. The device minimizes the side effects of using mechanical ventilation and decreases the time of dependency on equipment by offering more objective data for its use. Developed through a project supported by The São Paulo Research Foundation (FAPESP), more than 150 units of the device are already in operation in hospitals in Brazil, Europe, the United States, Japan and the Middle East.

  Additional Information:
  http://www.timpel.com.br/

- **Valves and Sensors to Increase Production Capacity of Ventilators**
  Embraer

  Embraer is a global aerospace company headquartered in Brazil that has allocated resources to manufacturing parts of ventilators to increase production capacity.

  Moreover, Embraer has partnered with the Albert Einstein Hospital to provide technical support for the development of exhaust fans for biological control, building on technology of high-efficiency air filters used in aircrafts to facilitate the conversion of regular hospital units into intensive care facilities where COVID-19 patients can be treated.

  Additional Information:
  https://bit.ly/2XdZIJm

- **3D Printed Mechanic Ventilators Designed and Manufactured by Several Startups**
  The Technology Association of Santa Catarina (ACATE) and Eretz.bio of the Albert Einstein Hospital

  ACATE, an innovation and entrepreneurship center based in Brazil, is leading an effort to design and produce 3D-printed ventilators called Project Breath4life. This initiative includes several healthtech startups (such as CogniSigns, Anestech, and Hefesto) incubated in the innovation hub Eretz.bio of the Albert Einstein Hospital. The ventilators Breath4life will be open source to allow other innovation hubs equipped with 3D printers to also produce the ventilators, increasing the availability and diversifying manufacturers across the country. Moreover, the Breath4life ventilator does not require energy to operate but can be activated with an oxygen unit available in an ambulance or hospital.

  Additional Information:
  https://bit.ly/3ggTktB

- **Artificial Ventilator with Mask**
  National Industrial Education Service of Amazonas - SENAI Amazonas

  SENAI Amazonas developed the prototype of an artificial ventilator with support from Samel Clinical Centers and technicians from the Transire Institute of Technology and Biotechnology of the Amazon. The model works for both the invasive procedure, with intubation, and the non-invasive one, through the use of a mask. It is expected that, after regulatory approval of the equipment, it will be possible to produce up to 5 basic modules per day.

  Additional Information:
  https://bit.ly/2Zua4aL

- **Breathing Monitory System**
  Biologix

  Biologix is a Brazilian Health Tech startup focusing on sleep monitoring systems and incubated in Albert Einstein Hospital. Bulling on its sleep monitoring sensor that incorporates Internet of Things to capture data of oxygen saturation and hear rate of sleep apnea patients, Biologix developed a remote monitoring system for COVID-19 Patients. The platform reports in real time the patient's oxygen saturation, hear rate, fever, cough, and other symptoms. The platform uses Internet of Things through a mobile app to send the reports.

  Additional Information:
  https://www.biologix.com.br/monitoramentocovid/

What support does the initiative needs?

Investors/partners to scale the technologies and solutions