

Almost 60 million confirmed cases of COVID-19 and over one million deaths worldwide by November 2020¹ show the tragic course of the disease since a pneumonia of unknown cause has been reported to WHO (World Health Organisation) on 31 December 2019.²

In Europe, we currently already have a total of more than 11 million cases and over 135,000 new cases daily.³ The rising patient numbers put medical personnel and hospitals' Intensive Care Units (ICUs) under increasing pressure.

A Horizon 2020 initiative

As a reaction to the coronavirus disease, the European Union's Horizon 2020 research and innovation programme has set up an innovation action to support projects developing tools and technologies to improve surveillance and care of COVID-19 patients.

The Challenge in Intensive Care Units

Approximately 10% of those infected are admitted to hospital and treated at the ICU, the majority being over 65 years old and with comorbidities. Due to the rapidly and often changing health conditions of COVID-19 patients, some of the biggest challenges for intensivists and other medical staff working in ICUs involve monitoring patients, predicting possible changes in their health status and launching necessary interventions.

The ENVISION project

In ENVISION, 19 partners from 13 European countries come together to collect data and increase our knowledge of the disease in order to advance an innovative digital tool, the Sandman.MD, a real-time and plug-and-play monitoring app, to an intelligent decision-support system for monitoring, prediction and treatment of COVID-19 patients in ICUs – the Sandman.ICU. This innovative digital tool enhanced by Artificial Intelligence will be validated at our 12 clinical partners and made available soon afterward.

The Sandman.ICU is distinguished by the integration of data on physiological changes, crucial medical events and administered medications during the intensive care of COVID-19 patients. Such a tool is crucial to support informed decision-making, prediction and treatment. COVID-19 patient data gathered from many data sources in ICUs and their intelligent analysis will provide insights into how the disease develops and affects the human body. Whereas the surveillance tool - the Sandman.ICU – will be easily adaptable to the needs of other clinical departments, its multi-layer ICT architecture with its integrated data analytics technology will also be set up in a way to make it useful in other sectors and industries. The predictive models established in the ENVISION project can be trained and used for any disease and indication, thereby serving millions of patients.

For more information visit our website at www.envision-icu.eu

¹ <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>

² <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>

³ <https://www.worldometers.info/coronavirus/#countries>

