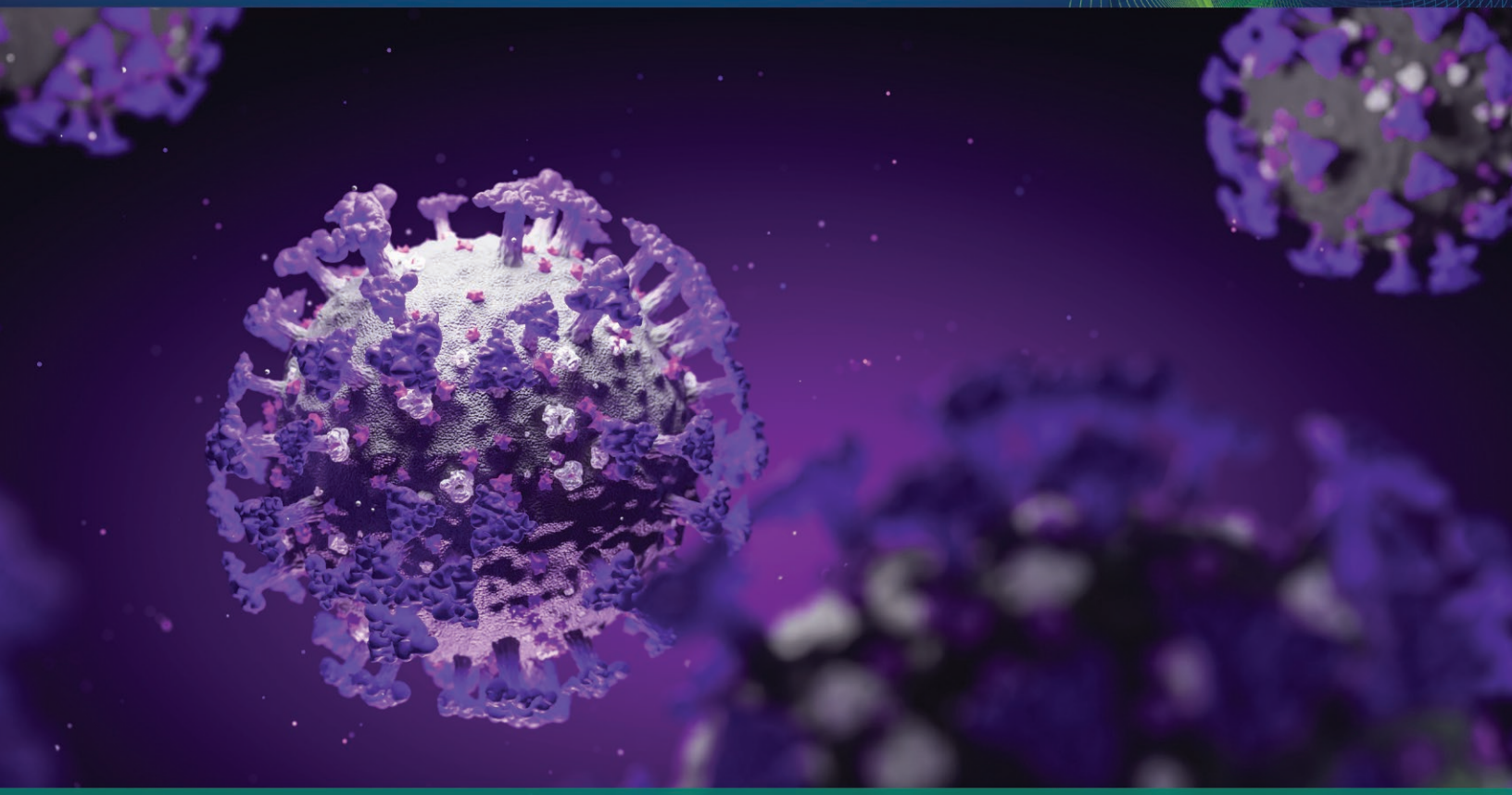
ALBERTA INNOVATES

Accelerating Innovations into CarE – Validate Program (AICE-Validate)



Point-of-care diagnostic devices for rapid differentiation of respiratory viral infections

PROJECT FAST FACTS

RECIPIENT: Critical Care Dx Ltd.
AWARD: $275,000
AWARD DATE: July 12, 2023
PROJECT DURATION: 12 months

THE PROBLEM

COVID-19 and influenza A/B (flu) are major causes of hospitalization with significant illness and mortality. The symptoms of COVID-19 and the flu overlap, making it impossible to tell them apart quickly and reliably. Rapid tests do not adequately distinguish between viruses, requiring lab tests to confirm the diagnosis, which can take up to four days. This may result in delayed or incorrect diagnosis, unnecessary treatments (e.g., adding to antibiotic resistance), patient anxiety or distress and the spread of infection to others. These could all be prevented by an easy-to-use, accurate, affordable, portable test done in the clinic. Ideally, the test would be run at point of care requiring minimal lab expertise.

THE SOLUTION

Criticare Dx (Criticare) is a diagnostic platform using ultra-sensitive biosensors and a novel sensing process within a disposable cartridge enabling accurate, low-cost point-of-care tests. In partnership with Alberta Precision Laboratories (APL), Criticare has demonstrated a proof of concept for a point-of-care test that can differentiate between COVID-19 and the flu. Electrochemical sensors detect the target viruses with an accuracy comparable to the gold-standard polymerase chain reaction (PCR) test. The sensors are integrated into a customized, self-powered, microfluidic cartridge that automates the process of sample preparation and detection, offering a lab-on-a-chip test kit. On-chip testing enables an increased level of detection and the ability to conduct multiple virus tests in one kit. Criticare's low-cost, digital reader can detect multiple target viral targets at once without needing a lab test.

PROJECT OBJECTIVES

Criticare's objectives for the project are:

- ***Perform analytical and preclinical validation of integrated multiplex kits/readers for the rapid identification of SARS-CoV-2 and flu A/B for their aimed utility for symptomatic (and likely asymptomatic) patients.***
- ***Establish quality assurance of test kits and readers.***
- ***Design experimentation for clinical trials of test kits/readers.***

ABOUT THE AICE-VALIDATE PROGRAM

AICE-Validate is an opportunity for Alberta's health-tech innovators to accelerate commercialization of digital and data-enabled health technologies through the early validation phase. If you'd like to learn more, please check out AICE Validate on the Alberta Innovates website.

Learn how

albertainnovates.ca