Global Health

Dried Blood Spots May Offer Route to Wider Antibody Testing

Dried blood spot testing could allow wider, population-level testing for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) antibodies, according to a study by British researchers.

Currently, testing for SARS-CoV-2 antibodies requires a phlebotomist to collect a patient’s venous blood. In addition to being impractical on a large-scale basis, clinicians and patients could be exposed to the virus during sample collection. However, patients can collect their own capillary blood at home with a fingerstick and mail the dried sample to a clinical center.

To determine whether this is a viable alternative, the scientists collected dried blood spots and venous blood samples from 80 healthy volunteers, including 31 samples from individuals who previously tested positive for SARS-CoV-2 antibodies using polymerase chain reaction (PCR) testing. The researchers tested the blood spot samples for antibodies to the SARS-CoV-2 spike protein using an enzyme-linked immunosorbent assay and compared the results with matched blood samples that had undergone PCR testing.

Dried blood spot test results were comparable with those of PCR testing, with a 98.1% sensitivity and 100% specificity. Therefore, dried blood spot testing could be a feasible method that enables wider population-based SARS-CoV-2 testing and reduces testing-associated risks for vulnerable populations, senior author Matthew O’Shea, MBChB, DPhil, honorary clinical lecturer at the University of Birmingham’s Institute of Immunology and Immunotherapy in the United Kingdom, said in a statement.

“The simplicity and cost-effectiveness of the dry blood spot method could improve the effectiveness of sampling in low- and middle-income countries, among groups where venepuncture is culturally unacceptable or in geographically dispersed populations,” added study coauthor Adam Cunningham, PhD, professor of functional immunity at the University of Birmingham.

Partnership to Make 120 Million COVID-19 Rapid Tests Available

A global partnership plans to make 120 million COVID-19 rapid antigen tests available in low- and middle-income countries, according to an announcement from the World Health Organization’s (WHO) Access to COVID-19 Tools Accelerator.

The easy-to-administer tests can provide results in 15 to 30 minutes and can be used outside of health care settings. Through an agreement with the Bill & Melinda Gates Foundation, Abbott and SD Biosensor will make the tests available at a cost of no more than $5 each. The WHO’s Global Fund has provided $50 million from its COVID-19 Response Mechanism to help countries begin purchasing the tests. The Africa Centres for Disease Control and Prevention and United, a nongovernmental organization, began a rollout of the tests in up to 20 African countries in October 2020. The WHO and the Foundation for Innovative New Diagnostics are supporting research to determine best practices for using the tests in low- and middle-income countries.

“High-quality rapid tests show us where the virus is hiding, which is key to quickly tracing and isolating contacts and breaking the chains of transmission,” WHO Director General Tedros Adhanom Ghebreyesus, PhD, MSc, said in a statement. “The tests are a critical tool for governments as they look to reopen economies and ultimately save both lives and livelihoods.”

The partnership comes at a critical time as data suggest that the COVID-19 response costs low- and middle-income countries a staggering $52 billion every 4 weeks, which could escalate to $62 billion if transmission increases.

Global Mental Health Services Are Collapsing as Demand Grows

The coronavirus disease 2019 (COVID-19) pandemic has disrupted mental health, neurological, and substance abuse services in 93% of 130 countries surveyed by the World Health Organization (WHO).

About one-third of the countries reported disruptions in life-saving emergency services, including treatment for delirium, severe substance withdrawal symptoms, and epileptic seizures. In addition, 30% reported disruptions in medication supplies for individuals with these conditions. Forty percent of countries reported full or partial closure of outpatient or community-based services.

The statistics are particularly alarming because mental health conditions can be worsened by pandemic-related stressors such as grief over the loss of loved ones, isolation, increased substance use as a coping mechanism, and financial concerns. Patients with COVID-19 also may develop a range of mental health or neurological complications, including delirium, stroke, insomnia, anxiety, depression, or Guillain-Barré syndrome.

More than 80% of high-income countries reported turning to telemedicine or telephone helplines to help fill their gaps in care. However, less than 50% of low-income countries reported doing so.

“COVID-19 has interrupted essential mental health services around the world just when they’re needed most,” WHO Director General Tedros Adhanom Ghebreyesus, PhD, MSc, said in a statement. “World leaders must move fast and decisively to invest more in life-saving mental health programs—during the pandemic and beyond.” — Bridget M. Kuehn, MSJ

Note: Source references are available through embedded hyperlinks in the article text online.