Key Messages From 2 New Studies for M Booth/Abbott Laboratories, February 2021

Overview

- Today, healthcare workers have many rapid point-of-care (POC) and lab-based polymerase chain reaction (PCR) COVID-19 molecular testing options to choose from. Results of two new modeling studies can help inform their decision-making by demonstrating that molecular testing at the point of care leads to significantly greater public health and economic benefits over time compared with PCR testing.

- In a study published in [journal], researchers used mathematical modeling to evaluate the benefits of using the POC test ID NOW vs PCR to test symptomatic patients in an Emergency Department (ED) setting. Results demonstrated that the rapid time to diagnosis with ID NOW significantly curbed the spread of infection and reduced associated healthcare costs over a 2-year period.

- In a second study published in [journal], researchers compared the economic outcomes of testing patients with influenza-like illness (ILI) for COVID-19 and seasonal flu with POC versus PCR in an outpatient setting and found that rapid point-of-care diagnosis had a positive impact on infection spread, as well as on the overall costs per patient.

Impact on spread of infection and healthcare costs

- The results of both studies showed that POC testing significantly reduces new infections vs PCR because of its rapid and actionable time to results.
    - The ED study projected that using the POC test ID NOW would potentially decrease infection incidence by as much as -36% (-63.4 million infections).
        - Because POC results are delivered at the point of care, patients can be counseled while still in the ED; because results are delivered with 30 minutes, HCPs can suggest immediate isolation for COVID-19-positive patients, thus eliminating the risk of unknowingly spreading infection while waiting 2 days for results.
        - Patients who received a positive diagnosis at the point of care would be more likely to comply with quarantine; additionally, a positive test would trigger contact tracing and quarantine of affected contacts.

- Study results also demonstrated that deploying POC molecular tests reduces costs to individual patients and the healthcare system, which is a significant finding in light of the pandemic's staggering economic toll.
    - The ED study projected healthcare utilization cost savings of as much as $92.5 billion when COVID-19 is diagnosed at the point of care. By eliminating the 2-day waiting period, the POC test effectively diminished healthcare costs.

        - The POC test permits for diagnosis at the point of care; HCPs can promptly recommend isolation, which curbs the spread of infection and the associated costs of treating more infected individuals.
        - Patients who receive a COVID-19 diagnosis at the point of care are more likely to comply with quarantine guidelines and can immediately assess for whom they may have affected; when the modeling study calculated the cost savings for better isolation compliance and immediate contact tracing, data still showed a significant cost savings of $59.7 billion.
    - In the outpatient study, testing with POC vs PCR led to significant cost savings for the patient, payer, and society.
        - Obtaining immediate results with the POC test allows doctors to differentiate between COVID-19 and the flu at the point of care; if the diagnosis is flu, they can prescribe treatment, and if diagnosis is COVID-19, they can recommend quarantine. This effectively diminished helped diminish costs.
            - Per patient costs were reduced by a total of $267, primarily attributed to reduced patient productivity loss because patients do not have to self-quarantine and miss work while awaiting results.
            - Testing with POC saved $43 per patient from the payer's perspective vs PCR testing; the results were primarily driven by reduced costs from secondary transmissions.
            - Testing with POC saved $102 in secondary transmission costs; because results are delivered at the point of care, the risk of unknowingly spreading the virus while awaiting results (2 days with PCR) is effectively diminished. There were higher secondary transmission costs with PCR testing because patients are less likely to comply with quarantine while waiting for their results.

- Both studies also showed that adherence to public health guidance to prevent infection (eg, mask-wearing, social distancing) yields universal benefits, regardless of which test is used.
    - The results of the ED study showed that that these contact-reducing measures heightened the benefits of using POC testing compared to PCR testing.
        - A faster time to results triggers prompt isolation, better quarantine compliance, and immediate contact tracing; when the study calculated for these *plus* adherence to public health guidance, the results showed a decrease in infection incidence of -28% (-65.6 million infections) in a high-transmission scenario, and the near elimination of infection spread in a low-transmission scenario.
        - A faster time to results triggers prompt isolation, better quarantine compliance, and immediate contact tracing; when the study calculated for these *plus* adherence to public health guidance, the results showed a decrease in healthcare utilization costs of as much as $97.2 billion in a

high-transmission scenario, and a sustained cost savings even in a low-transmission scenario.

Implications for HCPs

- The results of these studies point to the urgent need to accelerate the availability and utilization of rapid molecular diagnostic testing to reduce the devastating health and economic burden COVID-19.
    - Molecular testing at the point of care empowers HCPs to make informed clinical decisions in real time, facilitating patients' compliance with public health guidance and curbing the spread of infection.
    - Rapid molecular tests are best deployed for testing patients in the acute phase of illness when they are most likely to spread the virus to others. Abbott's ID NOW detects SARS-CoV-2 with 94.7% sensitivity and 98.6% specificity when testing patients <7 days post symptom onset.
    - Looking ahead, once public health mandates like mask wearing are no longer in effect and rates of seasonal flu return to historical norms, POC testing will enable healthcare workers to differentiate between COVID-19 and the flu during one patient visit.

- Deploying both POC and PCR tests in settings where they are best suited is critical to containing the COVID-19 pandemic and re-opening the country.
    - For individual patients who present with symptoms in the ED and outpatient settings, POC confers significant benefits over PCR.
    - Automated, high-volume PCR lab tests facilitate broad community testing and early detection of COVID-positive patients, including those without symptoms.

Abbott's commitment to COVID-19 diagnosis

- Abbott is committed to supporting research that helps healthcare workers make evidence-based decisions about the optimal COVID-19 testing method for a specific situation and population.

- Every testing modality has an important role in fighting the pandemic. Abbott has launched eight antigen, molecular, and serology tests for COVID-19, all of which received Emergency Use Authorization (EUA) from the FDA.