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Impact of COVID-19 on Several Industries in Context with the Diagnostics Industry

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Abstract

The COVID-19 outbreak was declared as a pandemic by the WHO on 11th March 2020, and social distancing was seen as a measure to contain the spread of SARS-CoV-2. As a result, the world witnessed nationwide lockdowns where non-essential businesses remained shut and people maintained strict social distancing. This led to a completely new scenario for the world, where every business in each industry faced new challenges and witnessed new opportunities. Similarly, the diagnostics industry, a vital part of the healthcare sector, suffered a great upheaval during the pandemic. The healthcare sector and diagnostics industry are closely interdependent and the latter attains a substantial share in the industry at large. Being so closely reliant, the impact on diagnostic sector was reflected on a large scale. Growth of this business before COVID-19 was expected to be a gradual increase, owing to various factors such as availability of novel products and rise in awareness related to early diagnosis of medical ailments for better management. However, the outbreak leads to a sudden change in scenario, sending mixed waves to the business flow. Some parts of the diagnostics industry were hit in a negative manner whereas others grew, owing to unexpected rise in demand for products. The fact that the diagnostics industry falls under the category of essential business and diagnostics plays a major role in detection of COVID-19 has also influenced the growth in many ways.

Keywords: COVID-19; Diagnostics industry; Human services; Health care

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Introduction

The impact was felt at a greater intensity in the starting phase of the lockdown where business related restrictions were strict, which led to supply chain disruptions as logistics were compromised in every part of the world initially. Other changes included incorporation of safety measures such as social distancing at work place and shortage of human resources. An urgent need for novel diagnostics in COVID-19 testing also impacted the entire diagnostics industry [1].

Impact of COVID-19 on several industries in context with the diagnostics industry

Diagnostics are used frequently in the healthcare sector. These are available in form of kits and reagents, which are used to test samples collected from patients such as blood, urine, and tissues. These products lay foundation to diagnosis of various medical ailments such as infectious diseases, cancer, cardiac diseases, and immune system disorders. Thus, their essential nature leads to lower negative impact as compared to other businesses. However, demand for basic diagnostics, which are not considered as essentials suffered a loss. Basic metabolic profile tests, thyroid function panel tests, electrolyte panel tests, genetic tests, and other such diagnostics witnessed a negative trend in the initial period as these tests are of elective nature and thus, were postponed in majority of countries across the globe. This led to a drop in demand for diagnostics worldwide. According to the U.S. Department of Health and Human Services, most clinics and hospitals restricted in-person delivery of non-essential healthcare services, including genetic counselling to slow the spread of the virus. However, tele health is being used as a measure out of necessity.

Lockdowns also resulted in closure of many departments of various hospitals, owing to shortage of staff. This impacted the number of diagnostic tests, which were prescribed to non-COVID-19 patients.

However, in the midst of a staggering impact on demand of non-essential diagnostics, COVID-19 outbreak also presented a huge opportunity to the diagnostics industry. The measures to control the spread included a quick detection of virus and isolation of detected individuals. This led to emergence of an urgent demand for diagnostics, which can detect COVID-19. This demand was immediately recognized by major key players across the globe and governments of nations worldwide. Thus,

government organizations such as Emergency Use Authorization (EUA) authority helped strengthen protections against COVID-19 outbreak by facilitating availability and use of diagnostics needed for detection of COVID-19. Thus, many giants operating in the diagnostic industry changed the approach toward business operations. In response to COVID-19, companies such as F Hoffmann-La Roche Ltd and Danaher Corporation (Beckman Coulter Inc.) took measures to increase supply of key tests. This is achieved by following directions from international health organizations and local governments. Production sites are operational and regions with severe impact are backed up with solid inventory reserves and strong supplier relationships. Companies have leveraged their partnerships in the logistics community to move freight around the globe. Companies also dramatically scaled-up production by operating for 24 hours seven-days-a-week at manufacturing sites and invested in additional equipment capacity to meet the demand.

However, laboratories worldwide faced as crisis, owing to shortage of human resources and surplus of COVID-19 samples in initial stages of outbreak. These samples were tested on available laboratory equipment, which impacted in vitro testing in a negative manner. For instance, COVID-19 samples are testing use of Cobas 8800 System and Cobas 6800 System offered by the F. Hoffmann-La Roche AG. Furthermore, these same systems are also utilized to conduct diagnosis of various infectious diseases such as HIV and hepatitis.

Thus, the impact on diagnostics industry has a two-way scenario where there is a downfall in non-essential diagnostics and at the same point growth in new demand for COVID-19 diagnostics [2].

Expectations from the diagnostics industry

The diagnostic industry found itself on the frontline in the battle against COVID-19 outbreak. The outbreak of the virus leads to an immediate need of diagnostics, which can detect virus in a patient. The diagnostics industry was heavily relied upon by governments across the globe. The major players operating in the industry were expected to manufacture new diagnostics for COVID-19 detection. The demand was quickly put to action as testing is critical step to contain the virus. Many companies received Emergency Use Authorization (EUA) approvals for novel COVID-19 detection tests through which the FDA permits use of a non-FDA-approved drug or device to respond to a declared emergency. Thus, key players launched test kits in initial period of outbreak. Various types of tests kits were launched, which are currently being utilized in the detection of SARS-CoV-2. Hence, this has impacted the market in a positive manner. In the beginning, real-time Reverse Transcriptase Polymerase Chain Reaction (RT-PCR) based in vitro diagnostics was used for the detection of SARS-CoV-2, which takes a few hours to detect the virus. Some RT-PCR tests that received CE Mark approval in include Cobas SARS-CoV-2 launched by Roche in March 2020. However, as these tests required a longer duration for detection, companies then launched new tests, which take up to 45 minutes for detection. For instance, Cepheid, a subsidiary of Danaher received an emergency use authorization for its Expert Xpress SARS-CoV-2 test in March 2020. This test is a rapid coronavirus diagnostic test with a detection time of about 45 minutes [3].

Furthermore, other key players in the diagnostics industry such as Abbott laboratories launched Point-Of-Care (POC) molecular assay, which decreased test duration to 5 minutes. This test delivers results in 13 minutes and can be used outside hospitals such as in physician offices or urgent care clinics. In response to SARS-CoV-2 detection, a wide range of serology immunoassays were also developed for detection of anti-bodies produced by previously infected patients of COVID-19. Abbott laboratories received CE Mark for its laboratory-based serology blood test for detection of the antibody, Ig G, that identifies if a person has or had the novel coronavirus (COVID-19). Other key players such as Biomerieux SA, Bio-Rad Laboratories Inc, Danaher Corporation (Beckman Coulter Inc), Qiagen NV, Siemens AG (Siemens Healthineers), and Thermo Fisher Scientific, Inc. launched tests for COVID-19 testing. Thus, rapid and urgent demand of these tests led to surge in revenue earned by top players [4].

Post COVID-19 scenario

As nations are emerging out of strict lockdowns, economy is expected to still need a time frame to stabilize gradually. These disruptions caused by sudden changes would require time to get back on track. Players operating in the diagnostics industry are anticipated to face new challenges related to different aspects. For instance, social distancing would lead to a negative impact on testing services. However, the scenario is expected to change upon resuming of rescheduled appointments leading to sudden rise in demand for testing services. Similarly, decision making management of diagnostic companies is anticipated to face challenges such as improvement of liquidity, management of working capital, better management of expenditures, and redefined contracts with suppliers [5].

In the future, healthcare situation caused by COVID-19 is expected to evolve in various ways where countries would look for safe exit strategies from confinement measures. Thus, most reliable strategies would include COVID-19 testing on a larger scale. This is expected to lead to a scenario where the diagnostics industry would play a vital part in this global health emergency.

Discussion

The diagnostics industry witnessed huge emergency use authorization approvals followed by launch of those products in the market.

In March 2020, On May 2019, Abbott Laboratories received CE Mark for its laboratory-based serology blood test for detection of the antibody, IgG, that identifies if a person has or had the novel coronavirus (COVID-19). Similarly, in the same month bioMerieux S.A. launched three tests in response to the COVID-19 pandemic, which included a real-time PCR test, fully automated test based on biofire filmarray technology, and BIOFIRE Respiratory Panel 2.1 (RP2.1), an expanded version of its BIOFIRE FILMARRAY Respiratory Panel 2 [6].

Conclusion

In April 2020, Becton, Dickinson and Company received the Emergency Use Authorization from the Food and Drug Administration (FDA) for a new diagnostic test that would enable hospitals to screen for COVID-19 (coronavirus) on site and get results within three hours. In addition, this test is launched to meet an urgent requirement of an easy-to-use, rapid diagnostic, which can be used to test or screen patients and health care workers for COVID-19 across the U.S.

Other companies that received emergency use authorization approvals and launched novel diagnostics during the pandemic include Bio-Rad Laboratories, Inc., Danaher Corporation, F. Hoffmann-La Roche AG, QIAGEN, and Siemens AG.

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