

COVID-19 Outbreak and Health Market Sales, Size and Growth Outlook: Observational study

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ABSTRACT

By the end of March 2020, it became apparent the year would fall into two parts: the “normal” period before COVID-19, and everything that has followed, including our efforts to find the “next normal.” It is fair to say that the winter of 2020–21 may appear to be the darkest time in our experience of the pandemic. Rising COVID-19 case numbers, delays in elective or preventative care, strained critical capacity, a workforce at risk of burnout, and cascading mental health and substance use metrics among patients and providers are keeping many stakeholders awake at night. Despite initial hiccups, the healthcare system in India managed to withstand the pandemic. The various efforts in manufacturing of medical equipment, disposables, drugs and the most recent vaccine efforts made by India has placed us as a global leader. The biggest health emergencies of our times have not just laid bare the myriad challenges and gaps in our health system but also highlighted the importance of investing in ‘well-being’ at both personal and system level. Based on the sector, the COVID-19 Outbreak impact on healthcare market has been segmented into medical devices/equipment, diagnostics, pharmaceuticals, technology healthcare IT, health insurance, medical tourism, healthcare facilities. COVID-19 has highlighted the unarguable reality that population health and economic health are intertwined and underlined the need for new ways to measure and share related data. The world is confronted with a compelling demonstration of the need to accelerate digitalisation of healthcare systems around the world. The hospital industry in India is forecast to increase to Rs. 8.6 trillion (US\$ 132.84 billion) by FY22 from Rs. 4 trillion (US\$ 61.79 billion) in FY17 at a CAGR of 16–17%. The Government of India is planning to increase public health spending to 2.5% of the country's GDP by 2025.

I. INTRODUCTION

By the end of March 2020, it became apparent the year would fall into two parts: the “normal” period before COVID-19, and everything that has followed, including our efforts to find the “next normal.” It is fair to say that the winter of 2020–21 may appear to be the darkest time in our experience of the pandemic. Rising COVID-19 case numbers, delays in elective or preventative care, strained critical capacity, a workforce at risk of burnout, and cascading mental health and substance use metrics among patients and providers are keeping many stakeholders awake at night. Yet amid enormous challenges facing every facet of the healthcare industry, steps forward have been taken to mitigate the crisis and create positive change. We anticipate these trends to accelerate throughout 2021. At the time of evaluating the impact of COVID-19 outbreak on healthcare market the total positive cases reached 1,350,357, the death toll came out to be at 74,866, whereas the total recovered population is 287,481. It has been observed that countries such as South Korea, Taiwan, and Singapore have controlled the spreading of COVID-19 before it could reach the community level. On the other hand, well-developed economies such as the US, Italy, the UK, Spain, France, and Germany are not capable to control the COVID-19 even after having a robust healthcare infrastructure. This has resulted in a very high impact of COVID-19 outbreak on healthcare market. However, precautionary measures such as strict social distancing and lockdown taken by many countries that include India, Italy, Germany, France, Spain, and the US have resulted in the decline in the number of cases of COVID-19. However, China has a low rate of new COVID 19 patients and is in a position of restarting its economy.¹

Impact of COVID-19 Outbreak on Healthcare Market by sector

Continuously rising positive cases are also generating the demand for **medical ventilators** across the globe. It has been observed that around 5% of the total positive COVID-19 cases are severe that require ventilators for the smoothness in breathing. This is resulting in a growing demand for medical ventilators across the globe. Most of the companies have extended their production capacity to meet the ongoing demand. For instance,

- Getinge increased its capacity by 60% compared to its previous production capacity of 10,000
- Philips has doubled its ventilator production capacity from ~1000 ventilators a week to ~2000 ventilators capacity a week
- Medtronic announced to upscale its production with 40% and is working hard to make it double in the coming days
- GE Healthcare has come up with an agreement with Ford to fill the gap between demand and supply

Also, many players such as Mahindra Group, Ford, and Maruti Suzuki are stepping into the healthcare industry.

It has been observed that many companies are repurposing their production lines to join the fight against COVID-19. Along with this, there are many industrialists and luxury hotels that are entering into the hygiene masks and quarantine center services, respectively. Many new start-ups are also contributing to the fight against COVID-19 by introducing apps that help to track COVID-19 cases. A Canada-based company Emerge, a block chain start-up based in Toronto, is introducing a public safety system app called **Civitas** to assist local authorities in many nations.

Apart from a rise in demand and a shortage of medical supply capacity, the spread of medical protectionism has been one of the biggest problems for supply chains in healthcare so far. And though obstacles are eliminated there are still sourcing problems. Malaysia's shutdown may result in a shortage of global supplies of rubber from companies such as Top Glove. However, The G20 heads-of-state meeting has committed to "minimizing trade and global supply chain disruptions" caused by the coronavirus outbreak. Encouragingly, there is a determination to ensure that medical supplies and important agricultural products are distributed "where they are needed the

The COVID-19 pandemic is placing enormous strain on the global health care sector's workforce, infrastructure, and supply chain, and

exposing social inequities in health and care. COVID-19 is also accelerating change across the ecosystem and forcing public and private health systems to adapt and innovate in a short period. A number of foundational shifts are arising from and being exacerbated by COVID-19's spread. Examples include consumers' increasing involvement in health care decision-making; the rapid adoption of virtual health and other digital innovations; the push for interoperable data and data analytics use; and unprecedented public-private collaborations in vaccine and therapeutics development. Amid these dynamics, governments, health care providers, payers, and other stakeholders around the globe are being challenged to quickly pivot, adapt, and innovate. In our 2021 Global Health Care Outlook, we look in detail at six issues driving change in the health care sector and present questions and actions health leaders should consider in the coming year. How stakeholders analyse, understand, and respond to these issues will shape their ability to navigate from recovering to thriving in the post-pandemic "new normal" and advance their journey along the path to the Future of Health.²

Global health care sector issues in 2021

Consumers and the human experience Consumers are driving—and accelerating—the pace of change in health care. Their needs and goals are driving innovation in health-related products, services, and tools. Their preferences are driving the development of digitally enabled, on-demand, and seamlessly connected clinician-patient interactions. Their demands are driving the transition to patient-centric care delivery across geographies and socio-economic groups. And their expectations are driving industry stakeholders to elevate a transactional patient/customer health care encounter into a holistic human health experience.³

Healthcare in India is delivered mainly either by public or private providers. The public healthcare focuses on delivering primary healthcare through community-level health programmes mainly focusing on reducing mortality and morbidity caused by various communicable and non-communicable diseases. It follows a tiered system of infrastructure wherein basic health services are provided through sub-centers and primary health centers, while secondary and tertiary care is delivered at better equipped establishments such as community health centers, district hospitals and medical colleges that are mostly at district headquarters. The private sector largely has its presence concentrated in tier I and II

cities. The disparities and the challenges to equitable, accessible and quality healthcare get exposed when compared geographically. The National Health Policies over the years have served well in guiding the approach towards a more inclusive healthcare system in the country and aim at achieving a Universal Health Coverage (UHC) following a graded manner.

Impact of COVID-19 on the Indian healthcare sector

With the COVID-19 pandemic testing even the more developed healthcare systems globally, the foundations of India's healthcare system have naturally also been shaken. The overall response to the pandemic witnessed both the private and government sector working in tandem. The private Indian healthcare players rose to the occasion and have been providing all the support that the government needs, such as testing, isolation beds for treatment, medical staff and equipment at government COVID-19 hospitals and home healthcare.

India's private healthcare sector has contributed significantly and accounts for about 60 per cent of inpatient care.⁴ Most private facilities initiated their plans in response to the COVID-19 pandemic, which involved significant investments to prepare facilities for controlling and preventing the infection, building infrastructure for quarantine and treatment, and equipping the facility with suitable medical supplies and additional workforce. Additionally, hospitals and labs witnessed a sharp decline in revenue due to delayed medical tourism and elective processes (the pandemic is speculated to trim the private hospitals' operational profit by approximately 40 per cent this fiscal year.⁵ The OPDs (outpatient departments) had also been closed almost throughout the year as per the government advisory.

The healthcare industry, along with the central and state governments, undertook a robust response plan to tackle the pandemic by setting up of dedicated COVID-19 hospitals, isolation centres and tech-enabled mapping of resources. In order to effectively manage the outbreak, the Indian government also leveraged technology and developed various applications both at the central and state-levels. The AarogyaSetu mobile app which assisted in syndromic mapping, contact tracing and self-assessment was widely used throughout the country. Such technology platforms were used to supplement the response management, which included delivery of essential items in containment zones, tele-consultations with patients,

bed management and real-time monitoring and review by the authorities.

Investment in India's healthcare sector

Despite initial hiccups, the healthcare system in India managed to withstand the pandemic. The various efforts in manufacturing of medical equipment, disposables, drugs and the most recent vaccine efforts made by India has placed us as a global leader. India not only fulfilled the domestic requirements, but also rose to the occasion and supported other countries. The healthcare sector, therefore, as an investment opportunity looks promising. A few factors encouraging future investments in the sector are:

- Medical infrastructure in Tier II and III cities: The shortfalls such as the required number of beds or the accessibility of advanced equipment that were highlighted during the worst-hit times of the pandemic are highlighting the need for a healthcare system that is 'emergency-proof' for such situations in the future. Hospital chains and specialty centres are coming forward to build more capacities, especially in Tier II and III cities. Numerous hospital chains have started expanding in these cities by setting up small clinics and associating with reputed local doctors. This is also aligned with government efforts to increase the number of hospital beds per thousand populations and close the accessibility gap mainly in sub-urban and rural parts of the country.
- Health insurance awareness: There has been an increased awareness of health insurance products in the past few years and more people are investing in health insurance with each passing year.
- Government policies: Though planned before the pandemic, government efforts in achieving a universal health cover under 'Health for All' and schemes, such as Ayushman Bharat and National Digital Health Mission have sped up exponentially. These efforts to make healthcare affordable and accessible for the entire population also offer scope for private players to widen their reach and presence.
- Medical tourism: The healthcare sector in India is attractive to foreign patients because of the availability of quality services at relatively lower costs compared to countries in Western Europe or the U.S. As of 2012, Bangladesh (22 per cent) accounted for the highest number of medical FTAs (foreign tourist arrivals) whereas Maldives, Afghanistan and Iraq

accounted for 17 per cent, 9 per cent and 8 per cent, respectively.⁶

- Use of technology: Online consultations and technology platforms are in high demand especially in today's times. In August 2019, the Ministry of Health and Family Welfare introduced the 'eSanjeevani' app, an integrated web-based telemedicine solution. It aims at making healthcare services fair by bridging the gap between urban and rural India.

The prognosis of Health Care Sector is positive

Driven by better healthcare awareness, rise in incomes, increased access to insurance and lifestyle-related diseases, India's healthcare market is expected to reach USD372 billion by 2022.⁷ The Indian government aims at increasing the healthcare spending to 2.5 per cent of the GDP (gross domestic product) by 2025.⁸ The COVID-19 pandemic has also transformed the way the government and private players are planning to bring change in the healthcare system. There has been an increased focus on telemedicine services and the government also issued new guidelines to make telemedicine a legal practice in India. The Ministry of Health and Family Welfare (MoH&FW), along with NITI Aayog has rolled out the new guidelines that will allow registered medical practitioners (RMPs) to provide healthcare services using telemedicine.⁹ Furthermore, the government has also launched the NDHM (National Digital Health Mission) to address the country's health crisis. The major components of this mission encompass telemedicine, health IDs, health records, along with e-pharmacy and digit-doctor services.

The biggest health emergencies of our times have not just laid bare the myriad challenges and gaps in our health system but also highlighted the importance of investing in 'well-being' at both personal and system level. It has ushered in an era of digital and technological innovations and advancements that is expected to help communities fulfil those requirements at a much faster pace.

A view on Union Budget 2021-22

The government has proposed outlay of INR2,23,846 crores for health and well-being, an increase of 137 per cent from the previous year, with INR35,000 crore earmarked for COVID-19 vaccine in the coming fiscal. Ministry of Health and Family Welfare has been allocated INR71,269 crores in FY2021-22, an increase of 10 per cent over previous year (INR65,012 crore). This includes the budgetary allocations to National

Health Mission (INR36,577 crore), Ayushman Bharat – Pradhan Mantri Jan Arogya Yojana (INR6,400 crore), Centrally Sponsored Schemes (INR22,044 crore) and Establishment Expenditure (INR6,245 crore). Department of Health Research has been allocated INR2,663 crores, an increase of 27 per cent over previous year (INR2,100 crore). Ministry of AYUSH has been allocated INR2,970 crores, an increase of 40 per cent over previous year (INR2,122 crore). Allocation for Pradhan Mantri Swasthya Suraksha Yojana (PMSSY) under National Health Mission stands at INR7,000 crores in FY2021-22, an increase of 16 per cent over the allocation of INR6,020 crores last year. A new allocation of INR30 crore has been made for National Digital Health Mission (NDHM) this year under the Centrally Sponsored Schemes. Apart from the INR35,000 crore announced for COVID-19 vaccination, the Made in India Pneumococcal vaccine, currently available in 5 states, will be rolled out pan-India, potentially averting 50,000 child deaths annually.¹⁰

Primary healthcare, one of the most critical elements of healthcare provision in an efficient and equitable system, is now getting strengthened with even the previously neglected urban healthcare component receiving attention and resources. Nearly ₹64,180 crore will be invested over six years to improve primary, secondary and tertiary healthcare, as part of the newly announced PM Atma Nirbhar Swasth Bharat Yojana. This will be in addition to National Health Mission. Certain amount from the budget will be used for establishing critical care hospital blocks in 602 districts and 12 central institutions. The budget also mentioned the introduction of the National Commission for Allied Healthcare Professionals Bill, along with the soon to be introduced National Nursing and Midwifery Commission Bill. The regulatory improvements and institutional restructuring that have been proposed, will all hopefully contribute to improving health outcomes and enhancing economic growth.

In a nutshell, the healthcare sector witnessed an increased public spend on health and well-being. However, addressing the persistent manpower and skill gap and measures to improve private sector participation will bode well for an overall improvement in healthcare delivery as well as education facilities. Success would now lie in how these new initiatives are implemented. It will be important to shift the focus towards the quality of implementation of the new programmes and schemes as well as on fostering convergence across health programmes.

It might also lead to creation of a robust, collaborative ecosystem for the public and private healthcare providers to work together in quest of desirable outcomes.

1. On the brink of collapse, private hospitals now in need of care, *The New Indian Express*, 30 July 2020
2. Pandemic to shave off 40% operating profit of private hospitals, *Business Standard*, accessed on 28 January 2021
3. India Tourism Statistics report 2012, Ministry of Tourism, Government of India
4. Indian healthcare market to hit \$372 billion by 2022, *The Economic Times*, 3 December 2017
5. Committed to raise health expenditure to 2.5% of GDP: Harsh Vardhan, *Business Standard*, 28 September 2020
6. Top Telemedicine companies in India – InnoHEALTH, accessed on 29 January 2021
7. National operational guidelines: Introduction of PCV, Ministry of Health & Family Welfare Government of India, accessed on 3 February 2021

The COVID-19 impact on healthcare market is huge and seriously disrupted the healthcare industry's entire supply chain, from raw materials to manufacturing and delivery. At the global level, the demand for medical ventilators has forced producers to boost demand by up to 40 to 50 percent. In order to satisfy the increasing demand, producers have also cooperated with automakers. Governments and numerous organizations are deeply engaged in meeting the global situation, along with other industry actors. In order to address the consumer demands of vaccines, medications, diagnostics, and medical equipment such as ventilators, the leading actors are involved in research and development operations, strategic alliances & partnerships, and innovative product releases. This is undoubtedly the first time in modern history that the diagnostics industry has been in the absolute spotlight. Suddenly, the industry participants have switched from under the carpet to above the requirement of the carpet. The world has recognized the need for healthcare segment early warning systems, currently for Covid-19, but in the future, this pattern will continue for all types of diagnostics. For the diagnostics industry, there is an anticipation of tremendous growth. In this magnitude, the healthcare sector was ill-prepared to handle a public health emergency. In terms of regulations, technology, risk control, manufacturing, procurement, or supply chain management, the

present state of affairs meant that certain business activities were not stringent enough.¹¹

Based on the sector, the COVID-19 Outbreak impact on healthcare market has been segmented into medical devices/equipment, diagnostics, pharmaceuticals, technology healthcare IT, health insurance, medical tourism, healthcare facilities. The technology segment comprises of cleanroom technology, next-generation, personalized medicine, and PCR. The healthcare IT segment comprises of telehealth, Mhealth, EParmacy, and EHR/EMR. The healthcare facilities segment comprises of hospitals, nursing homes, diagnostics laboratories, and ambulatory care settings.

Impact of COVID-19 on Healthcare Market size: International overview

The Impact of COVID-19 Outbreak on Healthcare Market has been analyzed, by region, into South America, Asia-Pacific, North America, Europe, and the Middle East & Africa. North America is accounted for the largest share of the information technology market in healthcare in 2019. The significant share of this region can be attributed primarily to the high adoption of telehealth solutions, the large amount of positive COVID-19 cases & deaths in the US, a strong health care system and IT infrastructure, and the incidence of numerous large hospitals in the area. In addition, a large number of major global players are based in the US, owing to which the US can manufacture these devices easily. The research deals with the effects of COVID-19 with the United States, Canada, and Mexico in North America, while South America is listed as Brazil and the rest of South America.¹²

Due to the growing number of cases of COVID-19, government & private support for research & development for successful diagnosis, Asia-Pacific is expected to be the fastest growing region. The above factors are projected to raise the demand for test kits, which will have a positive effect on the growth of the Asia-Pacific healthcare industry. Owing to growing COVID-19 cases and rising efforts by governments to strengthen health care, the Middle East & Africa market is projected to see steady expansion.

The Digital Healthcare Market across the assessment period. Across the 2019 to 2025, the Digital Health Market can rise at 26.30% CAGR. By 2025, the Digital Health Market can generate revenue of USD 3,28,887.8 Mn. The expansion of the Digital Health Market can be attributed to its robust operation base that functions on dynamic technologies, such as electronic health record

(EHR), healthcare big data, and electronic medical record (EMR) among others. Digital healthcare facilitates in streamlining and seamless operation of healthcare-related processes, which contribute to the market gain its momentum. Advantages, such as easy management of clinical data and uninterrupted payment procedures for claims or any payments can promote the rise of the Digital Health Market across the review period. The increase in the application of electronic health records for the maintenance of patients' health records, complying with government mandates, can bolster the Digital Health Market in the near future.¹³

Digital Health Market Segment Analysis

The segment assessment of the Digital Health Market is done by Application, Technology, Components, Delivery Mode, and end User. The technology based segment of the Digital Health Market are mHealth, telehealthcare, healthcare analytics, and digital health systems. The digital health system sub-segments are e-prescribing systems and EHR or EMR. The telehealthcare sub-segments are LTC monitoring, remote medication management, activity monitoring, and video consultation. The mHealth segments are mHealth apps and wearables. The Wearables sub-segments are neurological monitors, BP monitors, pulse oximeters, glucose meters, and sleep apnea monitors are among others. The mHealth apps segments are medical apps and fitness apps. Among all the technology segments, the digital health systems segment can acquire about 44.4% share of the global market by 2025.^{14,15}

The application based segment of the Digital Health Market are diabetes, cardiology, sleep apnea, neurology, and oncology among others. Among all application segments, the cardiology segment can secure about 22.3% share of the overall market. The delivery mode based segment of the Digital Health Market are on-premise, software, and cloud based. The software delivery mode based segments can acquire 58.9% share of the worldwide Digital Health Market through the review period. The components based segment of the Digital Health Market are services, software, and hardware. The end user based segments of the Digital Health Market are healthcare payers, healthcare providers, and pharmaceutical companies among others. The healthcare providers segment under the end-user, can register 40.2% share of the global.

Digital Health Market Regional Analysis

The Americas can secure the largest portion of the global Digital Health Market as the rate of adoption of EMRs and EHRs is high. Moreover, the supportive government of the region are introducing initiatives for improving healthcare facilities in the region. The rise in the quality of care at effective healthcare costs can drive the regional Digital Health Market.

In Asia Pacific, the Digital Health Market can thrive due to the existence of reputed companies in the region, supporting research and development. In Europe, similar drivers for the market are observed. In Middle East & Africa, the Digital Health Market can rise at a gradual pace due the rise in the support by governments for improving the healthcare IT industry. The intervention of technological advancements in the healthcare domain can improve the impetus.¹⁶

Digital Health Market Key Players

iHealth Lab Inc. (US), General Electric Company (US), Koninklijke Philips NV (The Netherlands), Cerner Corporation (US), BioTelemetry, Inc. (US), McKesson Corporation (US), Cisco Systems, Inc (US), Athenahealth Inc. (US), AT&T Inc.(US), EclinicalWorks (US), Allscripts Healthcare, LLC (US), and Qualcomm Technologies, Inc.(US) are some well-known companies that are operating in the Digital Health Market that are recognized by MRFR.

The global medical supplies market size is expected to reach a valuation of USD 132 billion by 2022. Major drivers of the medical supplies market comprise the large geriatric pool, rise of chronic disease cases, and launch of advanced devices and equipment. Adoption of safety-enhanced devices for parenteral delivery of drugs to patients, inhalation therapies, and IV and dialysis solutions are likely to bode well for the market. Medical supplies, commonly known as medical equipment, are used in healthcare settings for diagnosis and treatment of patients. Large volume of patients and paucity of hospitals are likely to create demand for medical supplies. The global medical supplies market report by Market Research Future (MRFR) estimates the market size, volume, and other projections for its segments during the period of 2016 to 2022 (forecast period).¹⁷

The Future Must Be Digital

COVID-19 has highlighted the unarguable reality that population health and economic health are intertwined and underlined the need for new ways to measure and share related data. The world is confronted with a compelling demonstration of the need to accelerate digitalisation of healthcare

systems around the world. This is ultimately a political issue, and although some jurisdictions have made progress, new policies to enable data collection, sharing, and analytics, and support the acceptance and adoption of innovative digital technologies must be enacted at a faster pace to protect patients, ensure health system sustainability, and achieve better health outcomes. The need for rapid data exchange and effective interoperability as vital public health issues has been repeatedly emphasised by senior academics and researchers.¹⁸ It is seen by some as a test-case for the future, and it has given new currency to calls for the development of artificial intelligence.¹⁹

Advancing data and analytics capabilities is seen as crucial to meeting the challenges of current and future health threats. Disease surveillance and response activities are hampered by 20th century technology, with critical health data still managed on paper records, non-searchable EHRs, or in spreadsheets that require extensive manual data entry and analysis.²⁰

II. CONCLUSION

Indian healthcare sector is much diversified and is full of opportunities in every segment, which includes providers, payers, and medical technology. With the increase in the competition, businesses are looking to explore for the latest dynamics and trends which will have positive impact on their business. The hospital industry in India is forecast to increase to Rs. 8.6 trillion (US\$ 132.84 billion) by FY22 from Rs. 4 trillion (US\$ 61.79 billion) in FY17 at a CAGR of 16–17%. The Government of India is planning to increase public health spending to 2.5% of the country's GDP by 2025. The pandemic potentially set the stage for healthcare reform along three dimensions: COVID-19-era waivers that could become permanent; actions that may be taken to strengthen the healthcare system to deal with pandemics; and reforms to address Digital technologies and the digital environment offer new opportunities for identifying needs and delivering healthcare from prevention and health promotion to curative interventions and self-management.²¹ As such, they have the potential to transform healthcare services in ways that may contribute to health system goals of quality, accessibility, efficiency, and equity of healthcare. In this sense, digitalisation should be considered as a means, a set of tools, not an aim for public health.²² A key challenge is to ensure that all people enjoy the benefits of digital technologies for everyone. We must make sure as public health professionals that

innovation and technology help to reduce the inequities in our world, instead of becoming another reason people are left behind.

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