

HOW AI AND DATA ANALYTICS ARE CHANGING HEALTHCARE INDUSTRY DYNAMICS

BY P.B. JAYAKUMAR
PHOTOGRAPH BY VIKRAM SHARMA

160,00,000



This is the number of research papers on Covid-19 that have been published in reputed medical journals till now. A majority of India's main Covid warriors, its doctors, have not been able to read even a tiny fraction of these as they are busy fighting the virus. But the reality is that Continuous Medical Education (CME) had taken a backseat long ago, say experts. "India has some 12.5 lakh allopathic doctors, and around 4.5 lakh non-MBBS doctors. Except for the 15-20 per cent in metros and Tier-1 cities, most are unable to stay up to date with innovations in their field," says Bhagwat Dhingra, former CEO of Unichem Laboratories and



an industry veteran. Doctors usually update themselves through CME programmes organised by pharmaceutical companies and annual meetings of their associations. Another source is interactions with medical representatives. “If I remember correctly, using the Reliance cyber cafes, Apollo Hospitals telecast a live surgery connecting specialists in 60 centres. That was one of the first digital CME programmes in India,” says Dhingra. That was 10-12 years ago. Things did not change for years after that.

CME is not the only area where India’s healthcare sector is lagging. A total of 6,000-7,000 hospitals across the world are performing robotic surgeries compared to less than 100 in India. When it comes to data, most non-corporate hospitals keep hard copies of files in dusty store-rooms. Lack of digitisation also plagues drug distribution and delivery.

However, all this is set to change with technology, whether in research and development or healthcare delivery, with adoption of artificial intelligence, Internet of Things (IoT) and data analytics. These and other cutting-edge digital technologies are steadily revolutionising the way doctors learn, perform surgeries and assess patients. Even drug companies are digitising their sales operations. The digital healthcare market in India, valued at ₹11,611 crore in 2018, is estimated to reach ₹48,543 crore by 2024, expanding at a compounded annual growth rate (CAGR) of 27.41 per cent, says a Research and Markets report.

Digital Lessons

Bhagwat Dhingra, along with Abhishek Ghosh, runs MediSage, an e-learning CME content platform. The two-year-old MediSage publishes global experts’ evidence-based advice in video and podcast format, and also enables live interactions with national and international experts. Additionally, it brings updated news feed from globally reputed journals and runs multiple discussion forums. “We have a reach of over 430,000 doctors, and had over one million views this year,” says Ghosh. The content is sponsored by over 25 top pharmaceutical firms. MediSage has partnered with universities, medical associations and experts. Its target is to earn ₹700-800 crore in revenues in five years from last year’s ₹70-80 crore and become the knowledge partner of over one million healthcare professionals. It is also planning to launch courses in collaboration with leading global universities. Similar platforms include Gurugram-based Curofy and US-based UpToDate and PEPID.

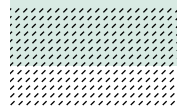
Delivery Promise

A large number of people are embracing digital health with the help of thousands of health apps and wear-



The path forward is to build a connected health ecosystem that can harness data, provide insights to improve health outcomes, reduce the cost of care and enable healthier lives”

Rajiv Sodhi, Chief Operating Officer, Microsoft Corporation (India)



able devices. In order to tap into the trend, several companies — Practo, Lybrate, DocsApp, 1mg, DOCASAP, Welcome Cure and Zoylo, to name a few — have started working in the field of patient-doctor interactions. The rollout of the National Digital Health Mission is attracting even global digital health management players. “The biggest issue for patients in India is getting in touch with the best doctor and services. Our operations in India will try to address such issues,” Sigal Atzmon, Founder & CEO of Medix Global, told *Business Today* in a recent interaction. London-based Medix, which operates in 90 countries with 40 lakh clients, plans to start with seven

HEALTHCARE IN NUMBERS

11

LAKHS DOCTORS
IN INDIA

<20

PER CENT

Doctors who regularly update their skills with changes in technology

ROBOTIC SURGERIES

6,000

Hospitals having robotic surgery facilities globally

<100

Indian hospitals having robotic surgery facilities



cities, employ 1,000-2,000 people and lay pan-India digital infrastructure for tele-medicine and offline medical solutions.

Cure Goes Digital

Apollo Hospitals recently rolled out Apollo 24/7, an omni-channel healthcare platform built with Microsoft, to take healthcare solutions to consumers through an easy-to-use web and mobile interface. It connects over 7,000 doctors across Apollo hospitals and clinics, offering round-the-clock virtual consultation with Apollo-certified doctors within 15 minutes. It also delivers medicines across 15,000 PIN codes with the help of more than 4,000 Apollo medical stores in India. Fortis Healthcare, one of India's largest healthcare providers with 28 hospitals and over 410 diagnostic centres, has also worked with Microsoft to facilitate virtual visits on Microsoft Teams with integrated telephonic and video consultations. Patients receive a URL when they book an appointment. They just have to click on the link to talk to the doctor on Teams.

"The path forward is to build a connected health ecosystem that can harness data, provide insights to improve health outcomes, reduce the cost of care and enable healthier lives. The Microsoft Cloud for Healthcare's connected cloud is designed to address these needs," says Rajiv Sodhi, Chief Operating Officer, Microsoft Corporation (India). He says physicians frequently do not get the right data, at the right time and in the right format to make informed decisions. The Microsoft Cloud for Healthcare includes Azure API (application programming interface) for FHIR (Fast Healthcare Interoperability Resources), which enables rapid exchange of data. It is backed by a managed platform as a service, an AI-powered health bot and an IoT connector to track a patient's health, monitor his or her adherence to treatment plans and provide personalised care. Its other solutions include medical imaging and AI-powered data analytics of medical records.

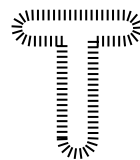


PHOTOGRAPH BY SUDHIR DAMERLA



We have installed about 75 da Vinci surgical systems in India. At least one-third are either the latest fourth generation or have been upgraded"

Mandeep Singh Kumar, VP & GM,
Intuitive India



telemedicine, remote medicine and IoT-based technological solutions are also catching on in a big way. "At Aster DM Healthcare, we saw a sharp uptick in demand for telemedicine services, which enabled us to onboard 800 doctors across GCC (Gulf Council Countries) and India who managed to provide more than 1,00,000 consultations in just eight months," says Dr. Azad Moopen, Founder Chairman and Managing Director of Aster DM Healthcare.

Automation and asset management expert Honeywell, which employs over 5,000 engineers in research and development in India, has also come up with a series of innovations. One is a bed management system for hospitals so that the patient does not have to wait at the time of ad-

mission. Another is a Lifecare platform that helps easing the pressure on ICU beds by remotely monitoring the patient with connected devices to track ECG, oxygen saturation, heartbeat, pulse and breathing rate and sends an alert when any of these reach dangerous levels. “We have developed several such innovations. Take constant monitoring of temperature during shipments and logistics, which is crucial in modern day healthcare delivery,” says Ajeya Motaganahalli, Chief Technology Officer, Honeywell SPS India. Another innovation is a sophisticated satellite terminal to monitor high-value assets in remote parts of the world where there is no Cellular or GPS signals, using the ‘Inmarsat’ satellite constellation. For Honeywell, only Orbcomm is a competitor and has a similar technology. “The entire development of this product starting with its conception and design has been done from here in India,” says Motaganahalli. Other innovations include thermal scanners that can check temperature from 30 feet, robotic UV disinfectant systems that reduce radiation and can operate in aeroplanes/hospitals and an AI-powered vision platform that can alert how many people are not wearing mask in a crowd, says Motaganahalli.

Surgeries and Drugs

Even therapy is going digital. Mumbai-based digital therapeutics (DTx) startup Wellthy Therapeutics is going international and expanding into new areas. Backed by companies such as Bayer Pharma AG, Cipla and some private equity investors, Wellthy Therapeutics helps patients reverse, control or prevent chronic conditions such as type-II diabetes, hypertension and respiratory diseases with AI-powered data analysis. “In the last two years, half our revenues have come from outside India, with business growing 100-200 per cent every year,” says Abhishek Shah, CEO & Co-founder, Wellthy Therapeutics. The company was started in 2015 and works on a B2B2C model.

The DTx market is expected to grow with increasing awareness among patients regarding its benefits. Data Bridge Market Research estimates that the global DTx market will be worth ₹64,875 crore by 2027 by growing at a CAGR of 22.95 per cent between 2020 and 2027. The Indi-

INDIAN HEALTHTECH MARKET

39% CAGR

\$50 billion (₹ 3,63,956 crore) by 2033

Current size - \$2 billion (₹14,558 crore), of which...

...e-pharmacies - \$700 million (₹5,095 crore)

B2B healthtech - \$60.2 million (₹438.2 crore)

B2B medical supplies - \$28.8 million (₹209.6 crore)

Other health-tech services - \$100 million (₹727.9 crore)

e-diagnostics - \$70 million (₹509.5 crore)

Tele consultation - \$45 million (₹327.5 crore)

(Source: RBSA Advisors, May 2021 report)

DIGITAL HEALTHCARE MARKET IN INDIA

₹11,611 crore (2018)

₹48,543 crore (by 2024)

CAGR: 27.41%

SURGICAL MARKET - GLOBAL

₹28,400 crore in 2018

₹47,323 crore by 2023

10.4% - CAGR between 2018 and 2023

GLOBAL DIGITAL THERAPEUTICS MARKET

₹64,875 crore by 2027

Growth - 22.95% CAGR (estimated between 2020 and 2027)

an DTx market is also expanding with companies such as FitterFly, Twin Health and HealthifyMe entering the fray.

“Over 100-crore people globally have or are at the risk of a cardiometabolic condition with a global cost of over \$2 trillion. Asia has 24-crore diabetics. Close to 80-crore hypertensives are projected to live here by 2025. Our target beneficiaries are individuals suffering from chronic diseases globally, and our goal is to help the healthcare stakeholder improve these,” says Abhishek Shah.

AI and machine learning are also revolutionising the medical device segment. One example is small pace makers with a long life that can be inserted through arteries, says Mani Prakash, Vice President, Enterprise R&D of



In the last two years, half our revenues have come from outside India, with business growing 100–200 per cent every year. Our target beneficiaries are individuals suffering from or are at risk of non-communicable diseases”

Abhishek Shah, CEO & Co-Founder, Wellthy Therapeutics

Medtronic, the world’s leading medical devices maker. “In diabetes, AI innovations will decide how much insulin needs to be delivered to a patient by measuring the kind and quality of food he or she is eating,” he says.

New-age AI-powered robotic-assisted surgeries are also changing the world of healthcare. “We have installed about 75 da Vinci surgical systems in India. At least one-third are either the latest fourth generation systems or have been upgraded at the end of their life cycle,” says Mandeep Singh Kumar, VP & GM, Intuitive India. US-based Intuitive’s da Vinci systems have cornered almost 90 per cent of the global market with 6,000 machines which perform over 12 lakh surgeries in a year.

The global surgical robot market is expected to grow from ₹28,400 crore in 2018 to ₹47,323 crore by 2023, expanding at a CAGR of 10.4 per cent, say market experts. “India has some 40,000 hospitals. Only 80–90 are capable of doing robotic surgeries. The opportunity is huge,” says renowned robotic cardiothoracic surgeon Dr. Sudhir P. Srivastava, who will soon launch India’s first and ‘cheapest in the world’ general robotic surgery system. His SS Innovations plans to initially make 100 units of the multi-arm Mantra surgical robotic systems, which will cost only ₹4–5 crore per piece; a robotic surgery system like da Vinci sells for ₹15–17 crore. CMR Surgical, a UK-based company behind surgical robotic system Versius, has also started selling in India. SS Innovation has so far invested ₹300 crore and plans to invest another ₹1,000 crore to scale up production. “We have about 100 letters of intent from Indian hospitals. The response has been very good,” says Dr. Srivastava.

Johnson & Johnson’s general surgery robot system Ottava is expected to go for first human studies by 2022. J&J was working on general surgery robotics with Google’s parent company Alphabet’s life sciences research arm, Verily, through a joint initiative called Verb Surgical. J&J bought out Verily’s stake in Verb Surgical. Medtronic had already launched its Hugo RAS system in 2019. About a dozen other global medical devices companies are also selling specific robotic surgery systems for knee, spine and cardiac surgeries.

Training surgeons for future robotic surgeries is the need of the hour, says Mandeep Singh Kumar of Intuitive India. The company is planning to train about 500 doctors this year. Intuitive India, together with AIIMS-New Delhi, has developed an educational programme called the Intuitive Robotic Onboarding Program and Education to familiarise resident surgeons with robotic-assisted surgery. Intuitive is driving this programme in many renowned government medical institutions, including AIIMS (New Delhi), AIIMS (Bhubaneswar), Dr. Ram Manohar Lohia Hospital (New Delhi) and Armed Forces Medical College (Pune). As a pilot, AIIMS (New Delhi) ran this programme for 70 fellows in its Oncology division. Based on the feedback by the surgical students, Intuitive extended this programme to other specialities and institutions across India. More than 200 resident surgeons are going through this programme across institutions.

These fast-paced changes may propel Indian healthcare industry among the top users of technology in the world. **BT**

@pb_pbjayan