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Healthcare seeks proper investment in IoT infrastructure

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Technology enabled services such as telemedicine and mHealth are emerging as a life saviour for countries like India whose majority of the population still resides in rural and remote areas. In the current scenario, telemedicine and mHealth may turn out to be the cheapest, as well as the fastest, way to not only bridge the rural–urban health divide but also manage the Covid-19 crisis in a more structured manner.

Bridging the Gaps in the Heathcare Sector with Technology, Policy Frameworks and Political Will

Series of events have led to mass adoption of technology in our country starting from the Digital India Mission 2015 followed by demonetization, India crossing the mark of having 1 billion plus mobile phone connections and now the Covid 19 pandemic which forced everyone to shift to internet for buying groceries, medicines, clothes to banking to working remotely.

The Government of India is doing instrumental work to facilitate the digitization of all sectors including the Indian healthcare systems both at infrastructure and policy level. Tremendous efforts have been made for ensuring safety and security in digital healthcare in the National Health Policy 2017 itself based on the principles of universality, citizen?centricity, quality of care and accountability for performance.

The policy lays significant emphasis on leveraging digital technologies for enhancing the efficiency and effectiveness of delivery of all the healthcare services.

The National Digital Health Blueprint launched in January 2020 provides a detailed framework for a Federated National Health Information System and has diverse elements of a futuristic digital health ecosystem, representing the interplay of new science, new actors, and technological innovations creating a suitable policy framework for India. NABH in the first initiative of its kind in the world, started work on the Health Standards, including accreditation of digital health providers which will act as a catalyst in the faster adoption of technology.

The National Digital Health Mission (NDHM) announced by the Prime Minister on 15 August 2020 will lead to the creation of an integrated healthcare ecosystem with all stakeholders working with more efficiency and transparency. The government

has also assured that the data provided will be protected and health records will only be shared after authorisation by an individual.

India is now promoting technology as a tool to solve the problems of accessibility and limited resources in the healthcare industry. This is where telemedicine comes as a promising solution for its fight against COVID-19 and its broader ongoing healthcare shortages. On March 26, 2020, the health ministry issued telemedicine guidelines enabling doctors to write prescriptions based on telephone conversations that reduce risks of transmission for medical professionals as well as patients. For frontline physicians, telehealth is primarily a way to perform Covid-19 and other urgent-care screenings.

Blending Communications Technology with Digitisation in Medical Science

Telemedicine, or telehealth, is the distribution of health-related services and information via electronic and telecommunication technologies. When access to care is restricted by rural settings, lack of mobility, limited funding, or a lack of staff, telemedicine can enable healthcare providers to bridge the gap. Depending on the need, telemedicine offers simple solutions, in situations such as two clinicians discussing a case over video conferencing, or more complex procedures, such as robotic surgery occurring through remote access. It allows long-distance patient and clinician contact, care, advice, and monitoring solutions.

To achieve remote care of patients and enable real-time connectivity and information exchange, telemedicine and telehealth infrastructures vastly utilize the Internet of Things (IoT). The effectiveness of telemedicine depends on the extent and accuracy of the data being gathered. IoT-enabled remote diagnostic tools provide information about a patient's condition and enable doctors to diagnose conditions wherever their patients are situated accurately. With advanced technologies, healthcare professionals can detect severe conditions at a much earlier stage, significantly increasing the quality of care possible with telemedicine.

The Solution to India's Healthcare Shortfalls

We can genuinely envision telemedicine as the answer to addressing India's lack of accessible healthcare. In the Indian context, statistics predict that there is only one government doctor for every 10,189 people. Telemedicine proves as a promising way forward for improved medical care in both rural and semi-urban regions in the country. Taking to telehealth will help bifurcate the seriousness of the patients in several aspects, from the requirement of hospitalization to home care. Doctors can check patients' symptoms through teleconferencing, advise them about medication and precautions, and even refer them to a healthcare facility in case their symptoms aggravate. Leading hospitals in India have already deployed technologies for contactless patient screening and segregation of critical cases from non-critical ones.

Technology in healthcare brings the benefits of reduced overall cost and improved patient recovery time by eliminating extended hospital stays. This has led to extensive use of connected healthcare devices and mHealth tools, not just among the medical fraternity but also pharmacies, insurance patients and caregivers. Hundreds of thousands of messages are being sent on daily basis by government health departments, NGOs and the private sector are ensuring better adherence and compliance be it for immunisation, vaccination, ante natal counselling, or blood sugar evaluation. Medical call centres are sharing authenticated validated health information through mobile phones. Thousands of health "apps" can now be downloaded. Video Conferences with doctors through mobiles, using 3G, 4G and eventually 5G is on the rise.

Universal Connectivity is the Major Challenge

In this post-COVID-19 world, 100% implementation of telemedicine and telehealth across India will face specific challenges. To deliver telehealth services effectively, the communication infrastructure must offer seamless connectivity and proper data encryption, network security, and guaranteed reliability. Thus, with proper investment in IoT infrastructure, telemedicine can be a significant addition to a long-term solution for India's healthcare challenges.

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