

EVALUATE HOW THE IMPLEMENTATION OF THE NATIONAL DIGITAL HEALTH MISSION (NDHM) HAS IMPROVED AND HEALTHCARE ACCESS IN RURAL AND REMOTE AREAS – A STUDY

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Abstract

The National Digital Health Mission (NDHM) unveiled by Prime Minister Narendra Modi on August 15, 2020, marks a pivotal transformation in India's healthcare ecosystem, aspiring to provide equitable healthcare access to all citizens through digital means. This research explores the multifaceted impact of India's digital health campaign, focusing on grassroots-level implementation, tele-consultation services and the role of start-ups in advancing digital health solutions. The NDHM comprises six fundamental components: Health ID, Digi-Doctor, Health Facility Register and Personal Health Data with plans to expand into internet and telemedicine services. By examining state-wise digital health initiatives, the study highlights regional variations and success stories, identifying key drivers and barriers to adoption. Additionally, the research delves into the benefits of tele-consultancy, particularly in enhancing accessibility and efficiency in healthcare delivery. Through a comprehensive analysis, this article sheds light on the current state and future potential of digital healthcare in India, underscoring the transformative shift propelled by technological advancements and innovative start-ups. The findings aim to provide valuable insights for policymakers, healthcare providers and stakeholders committed to harnessing digital tools for achieving healthcare goals in India.

Keywords: Digital Health Ecosystem, including Health ID, Digi-Doctor, Health Facility Register, Personal Health Data, State-Wise of Digital Health Initiatives and Tele-consultancy benefits and future of Digital Healthcare in India.

INTRODUCTION

The Ministry of Health emphasized that the goal of the NDHM campaign is to free citizens from the hassle of selecting the best doctors, booking an appointment with them, paying consultation fees, and making many trips to hospitals for prescription forms. While the government will own, operate, and maintain the primary NDHM building blocks—such as health ID, Digi-Doctor, and the health facility registry—private stakeholders will also have an equal opportunity to integrate with these building blocks and produce their own goods for the market according to Dr. Indu Bhushan, Chief Executive Officer of the National Health Authority. The government will continue to handle the essential tasks and checks, such as creating a Health ID or approving a facility or doctor. Other elements like the personal health record (PHR).

- **Health ID:** A health ID is a database that contains all of the citizens' health-related data. It will be used to specifically identify and validate citizens across numerous systems and stakeholders. It is an optional card. It will be expected that a variety of healthcare providers, including hospitals, insurance businesses, online pharmacies, and telemedicine companies, will take part in this system.
- **Digi-Doctor:** Digi-Doctor is an extensive database of all physicians who are either now practicing or instructing in medical fields. Connecting with users and other health service providers is made easier for doctors when they sign up for Digi Doctor's optional enrolment programme.
- **Health Facility Registry (HFR):** This database, which include both public and private health facilities such pharmacies, hospitals, clinics, diagnostic labs, and imaging centers, is an encyclopedic collection of Indian medical facilities from various medical systems.
- **Personal Health Records (PHRs):** PHRs are electronic health records that are managed, shared, and controlled by the user and comply with national interoperability requirements. PHRs can be accessed from a variety of sources.
- **Electronic Medical Records (EMRs):** An EMR is a digital representation of a patient's whole medical history, from their most recent institution of registration to the present. With the patient's permission, this data may be shared with other healthcare facilities and will be connected to their "Health ID."

TELEMEDICINE – MARKET SIZE IN INDIA

According to a report by EY-IPA titled "Healthcare goes mobile: evolution of tele-consultation and e-pharmacy in new normal," the market for telemedicine in India is predicted to reach US\$ 5.4 billion by 2025. The pandemic is giving telemedicine, which includes Tele-consultation and e-pharmacy, a welcome boost in India. Tele-consultation and e-pharmacy, which will together make up around 95% of the telemedicine business by 2025, are projected to benefit from this stimulus. In India, the market for tele-consultation is anticipated to grow from US\$ 100 million to US\$ 700 million during the following five years at a CAGR of 48%.



OBJECTIVES OF THE STUDY

The present research paper has the following objectives:

- To study the implementation of Start-ups giving a push towards India's Digi-health goals.
- To analyse the State-Wise of Digital Health initiatives taken by the Government of India.
- To examine the Tele-consultancy benefits and future of Digital Healthcare in India.

RESEARCH METHODOLOGY

The research study is entirely based on secondary data. The relevant data have been collected from various Reports from (RBI), RBI Bulletin (RBI) and Centre for Monitoring Indian Economy (CMIE), Statistical Outline of India, Economic Survey (Government of India), Handbook of Statistics, Economic and Political Weekly and various websites such as www.cmie.org, www.rbi.org.in and www.msme.gov.in

STARTUPS ACHIEVING THE DIGI-HEALTH GOALS OF INDIA

a) Health CARE 360

For Dr. Vishnu Reddy's clinic, Health CARE 360 introduced a digital patient experience platform in August 2020. Patients and healthcare organizations can interact via the web and mobile application HealthCARE360. For both core medical and allied health services, the platform is appropriate for hospitals, solo practitioners, and multispecialty clinics. The Face-book Messenger both for HealthCARE360, powered by AI, facilitates pre-diagnosis, triage and matching patients with the right medical services. By giving patients, a more individualized, accessible and one-on-one experience, the HealthCARE360 platform strengthens the relationship between doctors and patients.

b) Swasth Alliance

The Swasth Alliance is an association of doctors, professionals, and businesspeople in the Indian healthcare industry who share similar values. Together, these individuals hope to use their time, knowledge, creative works, and financial backing to establish a robust digital health infrastructure in India. "Swasth Stack," a platform that brings together various healthcare providers and startups to jointly offer services to residents, was introduced by the Swasth Alliance in June 2020. The platform's objectives include digitizing patient data and records and building an online platform for medical consultations and hospital treatment. Through the numerous Health Stack layers, National Health Stack (NHS) would facilitate consent and data management, hence supporting Swasth Stack. An auditable money settlement mechanism and the Open Health Services Network (OHSN) layer will enforce the regulations. Tele consultation won't be free anymore as a result of suppliers competing to offer the best service. As a result, the market for tele consultations will develop steadily.

c) Practo

Practo is the earliest telemedicine startup in India, having been founded in May 2008. Through its website and mobile application, the Practo platform helps with insurance claims, scheduling doctor appointments, keeping medical records, and delivering medications. Practo is present in more than 15 countries, employs about 2,000 physicians, and processes 50 million appointments annually. These physicians are validated by means of their medical licenses,

qualifications, and areas of expertise. In order to protect patient confidentiality and privacy, they must adhere to HIPAA compliance regulations. Practo started a TVC campaign called "Hello Doctor" in August 2020 to entice people to use video conferencing to consult an expert. This 10-week campaign had 13,000+ advertisements across 100+ channels, including TV and digital media (YouTube, Facebook, Instagram) and was driven by six films in seven distinct languages.

d) eSanjeevani OPD

All over the nation, the eSanjeevani OPD platform is accessible since its introduction in April 2020. More than 6,000 physicians' staff 217 virtual outpatient departments on the platform using a patient-to-doctor telemedicine approach to deliver e-health services. During the pandemic, eSanjeevani OPD recently completed six lakh consultations with one lakh consultations finished in just 15 days. The usage of eSanjeevani OPD for prisoners and elderly home residents is currently being seriously considered by the Health Ministry. There are the top 10 states recorded the most consultations via eSanjeevani OPD systems like Gujarat, Karnataka, Maharashtra, Andhra Pradesh, Madhya Pradesh, Uttarakhand, Tamil Nadu, Uttar Pradesh, Kerala, Himachal Pradesh and Himachal Pradesh.

e) 1mg

1mg is an online pharmacy was founded in 2015. It helps consumers obtain medications in an efficient and secure manner by providing verified information about medications. The network allows licensed pharmacies in over a thousand Indian cities to deliver medications and other health supplies right to customers' homes. It also provides telemedicine services and at-home lab testing. The company found it simple to enter the telemedicine services market because of its well-known reputation as a reliable supplier of online pharmacies. Within 30 minutes, it offers limitless, cost-free consultations with certified physicians. With 20 verified doctors, the company has completed 30 lakh consultations since it began using the platform for telemedicine.

f) Med-life

Med-life, which was established in 2014, wants to lower the cost and increase access to healthcare in the nation. Through online consultations, medication delivery, lab testing and health record preservation, the organization offers a wide range of health services. Med-life offers round-

the-clock online medical consultations in as little as one hour. Only doctors who have been verified, experienced and highly rated by patients on the platform are allowed. With more than 1000 doctors listed on the platform, it offers more than 30 specialties and serves the entire nation. More than 10 million clients have benefited from its consultation services.

g) Digi-Doctor

Developed by Criterion Tech and Era Medical College, Digi-Doctor is a Lucknow-based platform that offers specialized tele-consultation services in nearly all wide specialty medicine disciplines. Over 1,000 patients have received free consultations via the app while it has been in operation for the past four to five months. When in-person visits are hazardous and challenging due to the ongoing pandemic, telemedicine apps like Mentdoc (for telepsychiatry) and Remedico (for dermatology issues) have helped patients.

STATE-SPECIFIC DIGITAL HEALTH INITIATIVES

▪ **Tamil Nadu**

In Madurai, tele-consultation services have been implemented by various private hospitals. The primary reason for this Programme is the large number of non-COVID patients that the system neglects to treat at these times. Meenakshi Mission Hospital and Research Centre (MMHRC), a multispecialty private hospital in the city, launched a video consultation and advice service called "MMRHC Consult" to enable people to receive professional medical assistance while remaining in the comfort of their own homes. Both a website and a mobile app are available for accessing the tele-consultation service. Aravind Eye Hospitals (AEH), a private eye care facility, switched from general consultations to e-consultations. With an ophthalmologist via teleconference, patients can have an interactive eye care consultation via a computer or Smartphone.

▪ **Puducherry**

In order to provide Puducherry people with access to digital healthcare, the Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER) initiated an internship course in September 2020 as part of the "National Digital Health Mission." As part of this plan, residents

will receive personalized digital health ID cards that can conveniently facilitate doctor services and healthcare facilities. These cards will also serve as a digital repository of all of their personal health information. In order to reap the benefits of the digital revolution in the public healthcare system, the government has mandated that citizens cooperate fully with this purpose. Mr. Ashok Badhe, Director of JIPMER, made this call to the inhabitants.

- **Karnataka**

Karnataka joined together with Practo in April 2020 to adopt Tele-consultation. The state government is attempting to utilize technology as much as possible to make life easier during the lockdown caused by the corona virus but the tele-consultation is making doctors more accessible. The movement's Deputy Chief Minister, Mr. CN Ashwath Narayan, stated in an interview with Deccan Herald that this project was tested in Malleswaram, the seat he represents and that it will be accessible throughout the state. Residents can consult with physicians simply by utilizing the app. Yes, this will include approximately 4,000 doctors.

- **West Bengal**

The government declared in October 2020 that it will hire more than 17,000 physicians to keep an eye on the COVID-19 positive patients kept in home isolation. This is because many patients choose not to seek medical attention until their condition has gotten worse and often overlook early warning signals of consequences. Currently, the state health department employs tele callers to monitor 97,613 COVID-19 patients who are isolated at home. Doctors can check patients' metrics by staying in regular communication with them using this programme. They can quickly alert the health department and other local civic organizations to any changes.

- **Kerala**

The state's health minister, Mr. K. K. Shylaja, approved the usage of the telemedicine platform "eSanjeevani" in October 2020 as a long-term option for general patient care (apart from COVID-19). He said that if the trend continues, the government will provide 24/7 health consultations and he support telemedicine programmes. Additionally, Mr. Rathan Kelkar, the Director of the NHM Kerala Mission, stated that since eSanjeevani's inception, citizens have responded favorably to it, with the service recording more than 125 consultations per day—the

highest number nationwide. We have had talks about offering specialized consultation services where customers can access the expertise of centers of excellence like the RCC, MCC, IMHANS, SCTIMST, CCRC and IID. The work on this will begin shortly.

- **Uttar Pradesh**

The Uttar Pradesh government made the decision to introduce telemedicine services in a number of primary health centers' (PHCs) and community health centers' (CHCs) with the goal of offering safe and effective healthcare services to patients in rural regions, especially those living below the poverty line. The project offers establishment, deployment, operation and maintenance services. It is suggested that it be created using a public-private partnership (PPP) approach. Healthcare facilities in need of telemedicine services have been identified and a framework for the private sector's involvement has been devised. A proposal has been made to establish a contact center with 50 staff members for the purpose of Tele-consultation. Furthermore, the service provider will arrange medical consultations and appointments for individuals referred by the CHC physicians. Additionally, this approach will generate patient electronic health records. Over 10,000 Tele-consultations on the "eSanjeevani" OPD platform were performed by Uttar Pradesh, according to a July 2020 tweet from the Ministry of Health. The majority of patients are using the program's tele-consultation services to speak with doctors in the midst of the pandemic.

TELE-CONSULTANCY BENEFITS

- **Accommodating a Vast Geographic Area with Limited Resources:** Due to the enormous geographic distances and scarce resources, providing in-person healthcare in India is difficult. Patients in remote areas can save money and effort by using Tele-consultation, as it eliminates the need for them to travel great distances for care and consultation. Moreover, this technique lessens the annoyance to secondary hospitals, cares and families. It is especially useful in situations where the patient does not need to visit the doctor in person, such as for ongoing monitoring or routine check-ups.
- **Easy Maintenance of Records:** Digital record-keeping and documentation are part of tele-consultations, which reduces the possibility of missing a doctor's advice. A copy of the recommendations made via tele-consultation is available to the patient as well as the physician. Digital documentation also gives both parties more legal protection.

- **Safety of Health:** In circumstances where there is a risk of infectious infection, tele-consultation offers safety for both patients and medical personnel. Patients may better manage their illnesses and follow their prescription schedules with the aid of numerous technologies. Further helpful in providing the doctor with critical patient data are medical gadgets that measure blood pressure and glucose.



THE FUTURE OF INDIAN DIGITAL HEALTHCARE

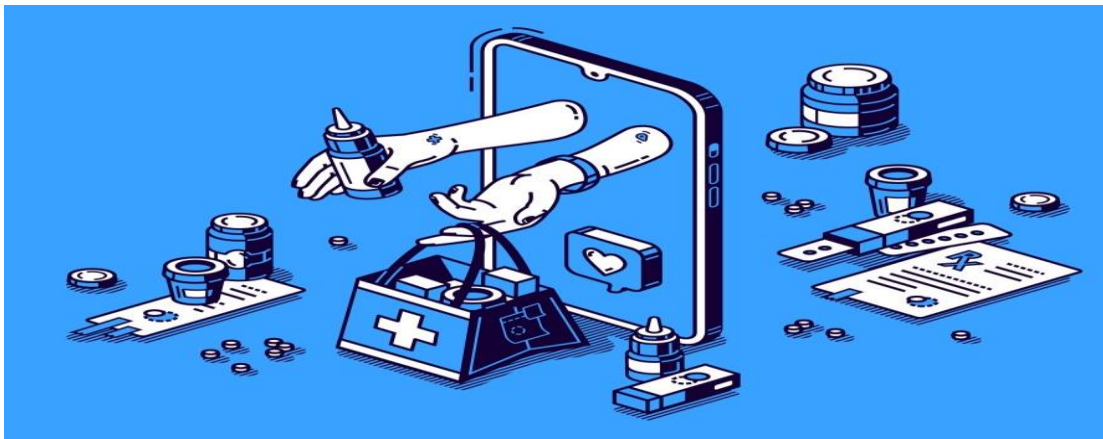
India's Prime Minister, Mr. Narendra Modi, stated that the COVID-19 pandemic had taught the country the importance of independence in his remarks launching the mission. He emphasized the significance of the mission on digital health as a critical first step towards achieving universal health care. A digitally linked healthcare ecosystem that securely connects patients and physicians is now necessary as a result of the pandemic's exposure of the nation's healthcare system's many shortcomings. Several Tele-consultation and e-pharmacy systems are attracting the interest of important players in the healthcare industry. Some pharmaceutical corporations are creating their own platforms or have joined with platform providers to facilitate patient-doctor connections. With the majority of e-pharmacies introducing Tele-consultation options.

CONCLUSION

In India, Tele-consultation platforms are becoming more common and, in the future, more associations are probably going to act as platform providers. For every sector of the healthcare ecosystem a platform provider will have a distinct value. Hospitals may utilize it to digitize patient

journeys and manage patient data while pharmaceutical companies might use it to help doctors and connect with online pharmacies. E-pharmacies might utilize it to drive sales of prescription drugs online. Nonetheless, patients, providers, payers and fulfillment centers' will all integrate as a result of this entire setup and their various activities. The Tele-consultation ecosystem's core component will be this integration.

This extensive digital health ecosystem will be supported by policies, laws, infrastructure and technology. Large amounts of the gathered data will be useful to the healthcare ecosystem. Data will therefore be at the core of this ecosystem, improving healthcare quality all over the nation. The National Digital Health Mission currently offers telemedicine, Digi-Doctor, and e-pharmacy services to citizens during regular outpatient department closures. Tele-consultation can offer comprehensive care to everyone, given that all necessary safeguards are in place.



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