

# Measurement of Digital Health Services in India

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## Abstract

*In the current situation it turns into a disappointing activity for a patient to genuinely visit the specialist by voyaging significant distances under terrible traffic or climate conditions. In the Indian situation, one needs to stand by in long lines to get guidance. Also, patients may contract infectious diseases in waiting rooms. After the COVID Pandemic the situation is so worst that there is strictly need for the digital health system. From doctor's consultation to medication buy, arrangement for next OPD to assessment of hazard because of COVID by Aarogya setu application, all have gotten a lot of important in current circumstance. The present study will explore the different issues and challenges related to the digital health system in India.*

**Key Words: Digital Health, COVID, Diseases, Medicine.**

## Introduction

Health care is a significant issue for a country's government assistance status on the whole levels, either monetarily and socially, or demographically. We live during a time that the E-Health care area requests on decreasing expenses and at the same time on improving his quality and admittance to all. The presence of data innovation into society, and thus into healthcare, has prompted the way that the term E-Health is progressively utilized. Grain being used before 1999, this term presently appears to fill in as a general "trendy expression," used to describe "Web medication", yet additionally essentially everything identified with PCs and medication. Intel alluded to E-Health as "A deliberate exertion attempted by pioneers in health care and howdy tech enterprises to completely saddle the advantages accessible through combination of Internet and health-care".

There are currently a large number of E-Health web sites online offering general content on health and medical care including hundreds of thousands of individual web pages dedicated to a wide range of points Even as its structure and structure continue to emerge, E-Health is being used to change business and

medical practices. The Internet clearly drives the development and appropriation of E-Health applications. It has the reach, the infrastructure, and the acceptance to achieve wide spread change. E-Health is perceived as being especially useful in the operational help of the new decentralized and collaborative E-Health care models being implemented in numerous countries.

### **Services under Digital Health**

Digital Health has expanded from web-based services to mobile Digital Health applications, online video services and web-based media, and new services and technologies are continually being presented. A few examples of Digital Health services that are already being used in numerous countries all throughout the planet are online conferences, electronic patient records, computerized radiological systems, decision-support devices, self-help applications, tele-monitoring, and E-prescriptions.

### **Review of Literature**

**Diaz J et al (2002)**, conducted an investigation to determine the percentage of patients enrolled in a primary care practice who use the Internet for health information and to describe the types of information looked for. Of the 512 patients, 60% felt that the information on the Internet was the "same as" or "better than" information from their primary care physicians. Of those utilizing the Internet for health information, 59% didn't talk about this information with their PCP. However, patients who discussed this information with their PCPs rated the nature of information higher than those who didn't share this information with their providers.

**Korp(2006)** in research paper specified that Empowering aspects of health on the Internet include the enabling of advanced information and knowledge retrieval, anonymity and convenience in accessing information, creation of social contacts and backing independent of time and space, and challenging the expert-lay entertainer relationship. The disempowering aspects of health on the Internet are that it involves a move towards the expert control and evaluation of sources of health information, that it widens the hole between 'information-rich' and 'information-poor' users, subsequently reproducing existing social divisions, and that the increase in medicalization and healthism results in increased anxiety and poorer health.

**Meher SK et al (2009)**, conducted a research to find out about the awareness and attitudes to telemedicine among doctors and patients in India. They collected information about awareness and attitudes to telemedicine from 143 doctors at 14 different hospitals in India. Majority of patients were not aware of telemedicine. However, when the concept was explained, most patients had a positive attitude towards telemedicine. They concluded that proper hospital training programmes should be organized for all doctors, which will assist in future utilization of telemedicine. Further awareness programmes are also required for patients.

**Wen et al (2010)** in examination about consumer's perception about use of internet for Personal Health Record concluded that Despite widespread positive evaluation of electronic access to Personal Health Records, Internet use for following Personal Health Records remains uncommon. They further suggested that to promote Personal Health Records selection, the advanced divide associated with the hole in health literacy must be improved, and social issues and the specialist patient relationship need to be studied. Further work additionally needs to address consumer concerns regarding the security of Health information Exchange.

**Saberwal G et al (2014)**, conducted an interview-based study to find out the nature of work, challenges and finances in E-Health in India today. After interviewing 30 individuals including designers, implementers, evaluators and technology providers for E-Health programmes. They concluded that it is unlikely that E-Health will have widespread and sustainable impact without government involvement, especially in rural areas. Nevertheless, programmes run solely by the government are unlikely to be the most effective.

**Bhattacharyya A et al (2019)** in the research paper specified that poor Information and Communication Technology (ICT) infrastructure creates a key obstacle for rural India due to low bandwidth and intermittent Internet connectivity. They commented that the primary need for mass E-Health service is, the remote doctor should be able to examine the patient through video communication over public Information and Communication Technology (ICT) infrastructure. They proposes that an end-to-end solution such that the Quality of Experience (QoE) for remote visual examination can be ensured over IP connectivity even in a 2G network called A-REaLiST (Adaptive-RESTful Real time Streaming for Things) and extended the design principles of communication in order to achieve an acceptable Quality of Experience (QoE) by effectively harnessing the latent potential in the existing infrastructure.

### **Objectives of the study**

- To study about the current status of digital health services in India
- To study challenges and opportunities in digital health services in India

## Research Methodology

Research methodology is a way to systematically solve the research problem it may be understood as a science of studying how research is done scientifically. In this, we will study the various steps that are generally adopted in studying research problem along with the logic behind. Researcher also need to understand the assumptions underlying various techniques and they need to know the criteria by which they can decide that certain technique and procedure will be applicable to certain problems and other will not.

### Data Collection:

The task of data collection begins after a research problem has been defined and research design/ plan chalked out. While deciding about the method of data collection to be used for the study, the researcher should keep in mind two types of data: Primary data and Secondary data. Secondary data is used for this study from different journals, books, websites etc.

### Current Scenario of Digital Health Services in India

India, like most other developing countries, is confronting several general health challenges like communicable diseases, hunger, and cardiovascular disorders. The diversity and heterogeneity of essential facilities and health care delivery mechanisms in different pieces of this tremendous nation is an area of concern for any cross country program. Several paradoxes and unresolved challenges actually exist in the present health care system. While we gloat of the recent dispatch of 'Tele-ICU' – an internet-based ICU 24x7 Health Care in New Delhi; there are several pockets in the nation confronting the everyday challenges of helpless vehicle systems, poverty, illiteracy and large families. The specialist populace proportion in India has been worked to be around 1 per 2000. The difference in metropolitan and provincial specialist appropriation is inauspicious. In the rustic settings, it is pretty much as low as 1 specialist per 25000 people. It is largely because, 68.8% of the populace lives in villages but just about 2% of specialists practice in country areas. About 75% practice in metropolitan areas and 23% practice in semi-metropolitan areas. Numerous youthful medical professionals are reluctant to work in country areas due to the challenges of unprepared clinics in ineffectively accessible area with limited actual facilities. E-Health can be a potential answer to the herculean undertaking of reaching the masses and delivering the fundamental health services to one what not.

Major I.T. initiatives by Ministry include various M-Health initiatives for improving efficiency and efficacy of public healthcare across the country under the Digital India Programme. For example, the Vaccine Tracker mobile application support parents in tracking immunization status of their children and helps them in ensuring complete and timely vaccination. The India Fights Dengue mobile application provides interactive information on identification of symptoms of Dengue and links users to nearest hospitals and blood banks. The Swasth Bharat (Health India) mobile application provides detailed

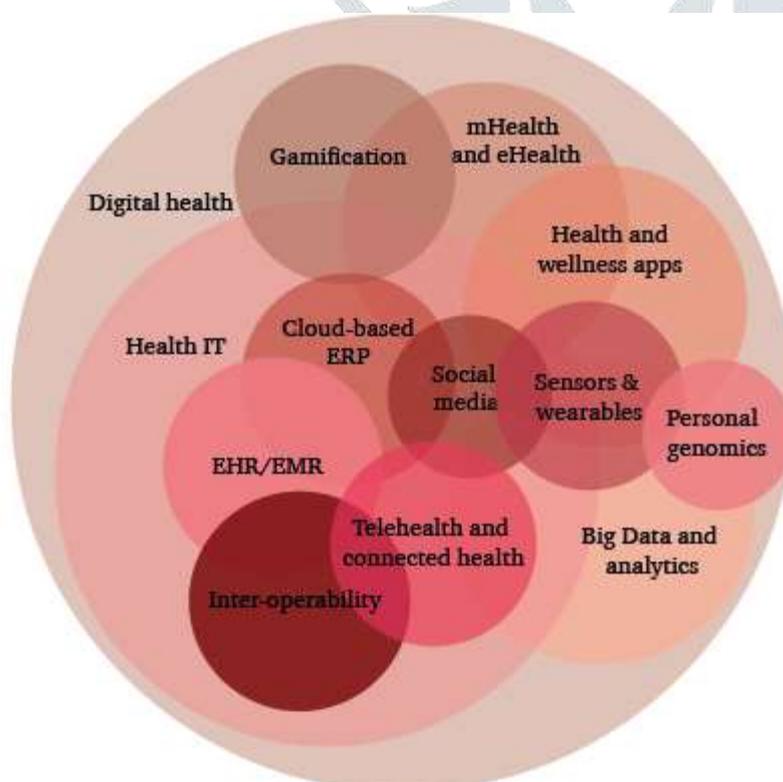
information on healthy lifestyle, disease conditions and their symptoms, treatment options, first aid and public health alerts. Other M-Health initiatives include National Health Portal, Online Registration System, E-RaktKosh, ANM Online (ANMOL), telemedicine projects (in remote & inaccessible areas), Tobacco Cessation Programme and leveraging mobile phones for reaching patients of Tuberculosis.

43285 health application are available on google play store (Data - Ist quarter 2020) and 45478 health applications on apple play store (Data - Ist quarter 2020). Online search for Health application on googles trends over the period of last five years (August 2015 to August 2020) shows spike in last 6 months (figure 1). This spurt in online activity can be attribute to lockdown due to covid pandemic.



Figure 1 - Google trends Health Application 2015 to 2020 (Numbers represent search interest relative to the highest point on the chart for the given region and time. A value of 100 is the peak popularity for the term. A value of 50 means that the term is half as popular. A score of 0 means there was not enough data for this term.)

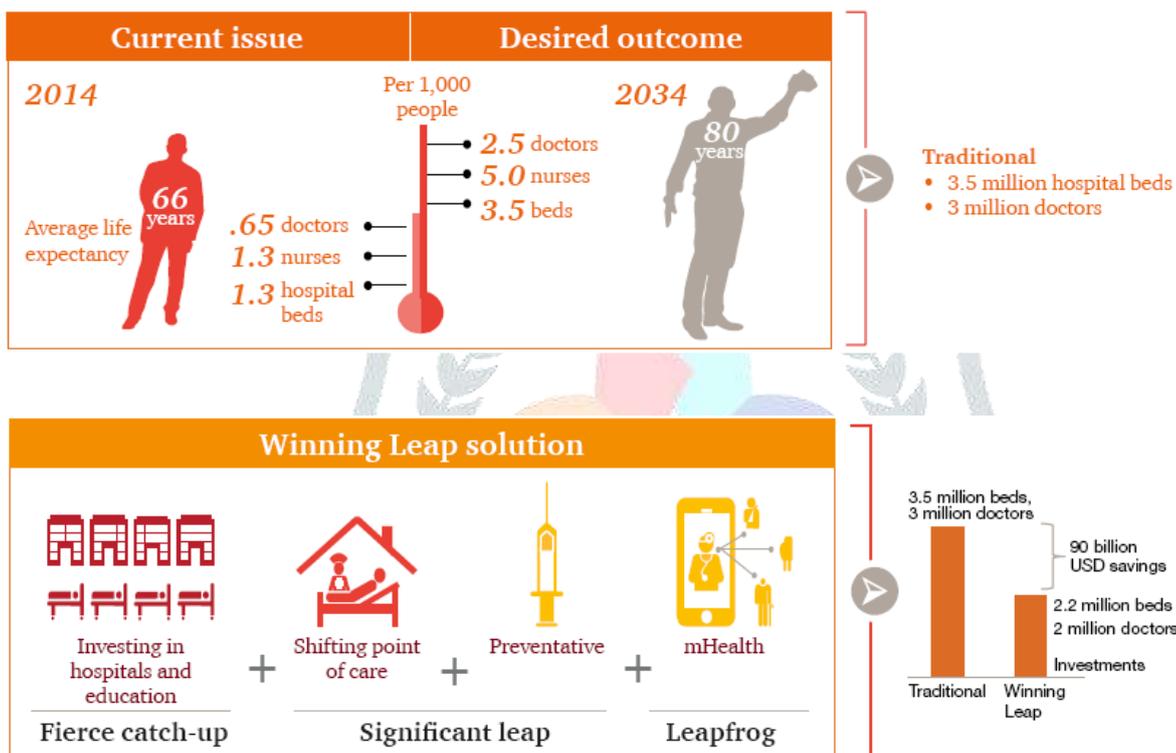
### Digital Health Components



## Challenges of Digital Health System in India

- It is important to be holistic, incorporating major determinants of urban health and differentiated health vulnerabilities of the urban population.
- Cities need ecosystem services in urban environments as well as urban fringe areas.
- Mutual interactions of society and environment in dense urban settings create complex relations and feedback mechanisms.
- Urban environments are heavily affected by air and water pollution and collapse of the waste management system.
- Urbanisation process is accompanied by a growing process of social polarisation.
- Rapid economic transitions lead to changes in lifestyles, giving rise to changing patterns of diseases.
- Growing population faces higher risks due to non-infectious diseases caused by 'modern' nutrition, lifestyle patterns and socio-cultural practices.

## Desires outcomes in health system in India



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