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Current Trends in Telemedicine in India

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Abstract - The word "telemedicine" refers to a broad range of practices including remote patient diagnosis and medication administration from remote locations using innovative technology. It is changing the way the traditional healthcare system appears and has been shown to be beneficial in resolving the issue of inadequate infrastructure in public healthcare. Due to a number of issues, including inadequate funding, unequal resource distribution, geographic barriers, inadequate infrastructure and treatment, under qualified medical personnel, a lack of public awareness, antiquated working conditions, and others, the current healthcare system is unable to guarantee access to health and equity in healthcare. In this article we consider the history of telemedicine in brief, growth of telemedicine and telemedicine business model in India along with short summary and profiles of tech companies which are focused on the telemedicine business and their impact on improving the healthcare system in India. We also provide state of the art of telemedicine business in India and suggestions to improve itfor better healthcare facilities in India

***KeyWords*:** Telemedicine, Telemedicine business, Healthcare, Healthcare services, Data privacy

1. INTRODUCTION

The World Health Organization (WHO) claims that, “health is a state of complete physical, mental and social well being and not just the absence of disease”. In 1946, the constitution of the World Health Organization established the first mention of the right to health. According to this, "one of every human being's fundamental rights is to enjoy the highest attainable standard of health."

The delivery of Medicare facilities was enhanced and made more accessible to an increasing number of citizens with the fantastic help of state-of-the-art innovations and skyrocketing connectivity. "Tele" means "distance," and "mederi" means curing in the name "telemedicine."

Additionally, the concept of telemedicine has been explained as follows by the World Health Organization (WHO): "The delivery of healthcare services, where distance is a critical factor, by all healthcare professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment, and prevention of disease and injuries, research and evaluation, and for the continuing education of healthcare providers, all in the interests of advancing the health of individuals and their communities”.

Most of us associate visits to the doctor or the emergency room when we think about healthcare. Whether for a simple check-up, lab testing, an outpatient procedure, or major surgery, patients and caregivers usually leave their homes to meet their doctor at a healthcare facility of some kind (often while snarled in traffic or rushing from work). But conditions are shifting.

1.1 STRUCTURE

The distant delivery of healthcare services over a communications network is referred to as telehealth, sometimes known as tele- medicine or e-medicine. Telehealth enables medical practitioners to remotely examine, diagnose, instruct, and treat patients without needing to visit them in person. Patients can consult with physicians from the convenience of their own homes via a dedicated telehealth kiosk or by utilizing their own personal devices. Utilizing technology and communication in the field of telehealth technology to facilitate the provision of health and related services, such as medical care, provider and patient education, health information services, and self- care. Telehealth technologies encompass remote patient monitoring (RPM), real-time video conferencing, “retain and transmit “electronic transmission and mobile health applications.

In India, telemedicine has become one of the most significant advancements in digital health. Its extraordinary advantages during the epidemic era are indisputable. Its expansion in India was spurred by the fact that it not only improved healthcare in rural regions but also made access to high-quality patient care more affordable. In 2022, the telemedicine industry in India was valued at US$1.8billion, and by 2028, it is projected to grow to US$10.7 billion, according to a report by IMARC Group. As telemedicine expands and becomes the standard, the sector is undergoing a number of changes and technological breakthroughs. This has led to the emergence of multiple new trends that are completely reshaping the healthcare sector.

First, tele-consultation services—which allow patients to confer with licensed physicians remotely via text, voice, or video—are becoming more and more popular.

Patients can use text-based, audio-based, or video-based communication to consult with licensed medical professionals remotely. The COVID19 pandemic has expedited this trend by creating a greater need for remote healthcare services. Second, in remote locations with limited access to the eServices, telemedicine is being used to enhance access to specialist healthcare services including tele-radiology, tele-cardiology, and tele-psychiatry. Third, people can now receive healthcare services using mobile-based telemedicine applications, which are growing more and more common in India. Smart phones are becoming ubiquitous in the country. Fourth, telemedicine is becoming more and more important in the care of chronic illnesses. Diabetes, hypertension, and respiratory disorders are

just a few of the problems that are being managed with the help of tele-rehabilitation and remote monitoring services

2. HISTORY OF TELEMEDICINE

Despite what many people think, telemedicine is not a recent development. The idea of telemedicine actually dates back to the 1800s! On-demand medical treatment has always been in high demand, from house calls to urgent care centers. Nobody plans for strep throat or an ankle twisted, after all. These days, patients want to be able to contact their doctors at all times, and doctors may make money from home by using telemedicine. Although telemedicine has been available for much longer than most people realize—since the first part of the 20th century—technologies like Face time and Skype appear to be relatively new. What started out as a few hospitals trying to connect with patients in isolated areas developed into an integrated system that covers the whole spectrum of care. The development of telemedicine over time will show us how we arrived at this point. In 1879, a physician by the name of George Edward Davis utilized the newly developed telephone to give medical advice to patients in rural Pennsylvania. This was the first known occurrence of telemedicine. At the first occurrence of an acronym, spell it out followed by the acronym in parentheses, e.g., charge-coupled diode (CCD).

Davis would speak with patients over the phone, assess their illnesses, and either recommend a course of therapy or refer them to another doctor in the area.

2.1 FROM A GLOBAL PERSPECTIVE

The development of the telegraph, telephone, and radio as part of the telecommunications infrastructure marked the beginning of telemedicine. During the Civil War, the telegraph was used to procure medical supplies and consults, as well as to report casualties and injuries. This is regarded as one of the first times telemedicine technology was used. An image of a physician treating a patient over a video connection appears in a 1924issue of Radio News Magazine with the headline "The Radio Doctor–Maybe!"Although this was merely an editor's conception of the technology of the future at the time, these hopes would come true ninety years later.

A Lancet article from 1879 covered the topic of utilizing the phone to cut down on pointless office visits. This was just the start of a radical change in patient care.

The inaugural transfer of electronic medical records transpired in the 1940s when radiographic images were transmitted over a telephone link across 24 miles between two townships in Pennsylvania. This technology was advanced in the 1950s by a Canadian physician who developed a tele radiology system that was used in and around Montreal .Motion pictures adopted these techniques as they spread, and as modern film technology advanced, so did the aspirations for video medicine. Clinicians at the University of Nebraska were the first to use video conferencing for medical needs. In 1959, the organization installed a two-way television system to disseminate information to medical students around the campus. After five years, it established a connection with a public hospital to enable video consultations.

20th-centurytelemedicine

The teledactyl was first described by Dr. Hugo Gernsback in a science publication in 1922. According to Gernsback's prediction, this sensory feedback system will enable doctors to touch and view their patients from a distance using robot arms, as well as observe them through a television screen.

2.2 India’s Telemedicine Development

The study "India Telemedicine Market –Industry Size, Share, Trends, Competition Forecast & Opportunities, 2029" by Tech-Sci Research pegged the market's worth at USD 1.54 billion in 2023. With a Compound Annual Growth Rate (CAGR) of 20.75% predicted for the projection period of 2025 to 2029, this market is expected to grow rapidly. The telemedicine industry in India has grown rapidly due to several variables that have all worked together to support this growth.

- ✓ In 1996, CDAC Noida's first domestically created hospital information system software was introduced at SGPGIMS in Lucknow, Uttar Pradesh.
- ✓ In 1999, the Indian government's AIIMS, New Delhi; PGIMER, SGPGIMS, Lucknow ;DeitY, MCIT; indigenous development of telemedicine technology and pilot deployments
- ✓ Apollo Hospitals in Aragonda received SATCOM-based telemedicine in 2000 thanks to an ISRO deployment.
- ✓ Telemedicine has been established at two District Hospitals and the School of Tropical Medicine (STM) in Kolkata. Telemedicine facilities have been established by two West Bengali hospitals :the First Coronary Care Unit was opened at Siliguri District Hospital in Siliguri on June 24, 2001,and at Bankura Sammilani Hospital in Bankura, West Bengal, on July 21, 2001
- ✓ By linking Chennai's Apollo Hospital with the Apollo Rural Hospital, situated in Aragonda village in the Andhra Pradesh district of Chittoor, the Indian Space Research Organization (ISRO) created a modest start for telemedicine in the nation in 2001 through a Telemedicine Pilot Project. Proactive measures taken by the Department of Information Technology (DIT), Ministry of External Affairs, Ministry of Health and Family Welfare, ISRO, and state governments greatly aided in the expansion of telemedicine services in India.
- ✓ Major medical facilities (both government and private) began implementing telemedicine in 2001–2003.
- ✓ In order to provide tele-education and tele consultation services, ISRO deployed SATCOM-based TM Nodes around the nation in 2003–2004.
- ✓ In 2005, MoHFW formed the Indian Task Force on Telemedicine.
- ✓ In 2006, the Planning Commission approved the 11th Five Year Plan budget for telemedicine and e-health.

- ✓ The Biomedical Informatics & Telemedicine School (STBI)), located in SGPGIMS, Lucknow, was founded by the Government of Uttar Pradesh. PHFI operated the MoHFW "Healthy India" Website for Health Education from 2007–2008 to 2012–2013 with the support of a Grant- in-Aid.
- ✓ The National Rural TM Network received funding from MoHFW in 2009 to begin its telemedicine trial programs, amounting to Rs. 25-50 lakh.
- ✓ National Medical College Network Project development began in 2010. The MoHFW, a branch of the Indian government, has named SGPGIMS a National Resource Center for Telemedicine.
- ✓ The MoHFW expert group developed EMR/EHR standards in 2012 and the establishment of NMCN was initiated through open tender in 2013. National Fibre Optic Network (2011) Through MCIT scheme, 270,000 Gram Panchayats will get high speed bandwidth. As part of telemedicine trial, a US medical college has been connected to three telemedicine centres (PHC/CHC).
- ✓ The National Health Portal was officially opened on November 14,2014,and it offers a single point of access to verified health information for citizens, students, healthcare providers, and researchers.
- ✓ (IDY) Portal: For the celebration of the International Dayof Yoga on June 21, 2015, NHP served as the Ministry of AYUSH's official portal. Over 1,000 pictures and videos were uploaded on IDY.
- ✓ As the official national software for the implementation of telemedicine throughout India, e-Sanjeevni was one of the first Telemedicine Software development projects in India. The software solution for e-Sanjeevni telemedicine won the 'Digital India' award for best health IT innovation during the corona virus later in 2020.

The practice of telemedicine is becoming more widespread in India. The expansion of telemedicine services in India is well supported by the Department of Research Technology (DIT), state governments, ISRO, Ministry of External Affairs, Ministry of Health and Family Welfare etc.

3. GROWTH OF TELEMEDICINCE IN INDIA

3.1 Tele-Mental Health

Due to the pandemic, the elderly are experiencing more mental health issues. In order to improve access to mental health services and quality care, address the underlying issues of mental health and address the shortage of mental health professionals, the government has launched a National Tele-Mental Health Initiative with NIMHANS, Bengaluru as its nodal centre. The mental health space is not adequate. There will be 23 centres of excellence for telemental health as part of the project. The National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, will be its nodal centre.

3.2 ABHA

The 'Ayushman Bharat Health Account' (ABHA) card is a digital health identity card issued by the government of India.

- ✓ Anywhere in the world can access all medical information, including test results, diagnoses, and prescription drugs.
- ✓ Physicians, hospitals, clinics, and other healthcare providers can readily access medical records.
- ✓ The platform has access to Indian doctors.
- ✓ Health Facility Register (HFR) is a comprehensive list of public and commercial healthcare facilities in India, available online.

3.3 Initiatives in global telemedicine started by India

The Ministry of External Affairs (MEA) with the support of the Pan African Electronic Network Project and the South Asian Association for Regional Cooperation has launched a global telemedicine initiative in Africa and South Asia to augment telehealth and education programmes (SAARC).

3.4 Hospital on Wheels

Lifeline Express, also known as Jeevan Rekha Express, is a seven- coach train that was founded with the goal of giving medical care to people who reside in undeveloped areas of India with inadequate healthcare facilities. It is the first hospital train in history. The Mumbai-based NGO Impact India Foundation brought this idea to the attention of the Indian Railways. The train visits many rural locales to gather the various data needed for their prescription. Using this information, the team works with the neighborhood primary health centers to compile a list of patients in need of surgery. The NGO's idea, which focuses on people's wellbeing, is truly fantastic. Presently, the train accommodates 5,000 passengers, and up to this point, the lifeline express has provided free medication to almost a million underprivileged individuals throughout India. Indian Railways added two new cars to the train in 2016 so that it could provide extra services like family planning and cancer diagnosis.

3.5 SAARC telemedicine network

The formation of SAARC is the result of the region's decision to establish two affiliated hospitals for a regional cooperation framework or affiliated hospitals, which was decided at the 14th SAARC Summit held in New Delhi in April 2007. Groundwork is being laid. As of April 2009, the plan linked the Jigme Dorji Wangchuck National Referral Hospital in Thimphu, Bhutan, to SGPGIMS in Lucknow and PGIMER in Chandigarh.

3.6 International telemedicine initiative started by India

In an effort to improve health and education services, the Ministry of External Affairs (MEA) for South Asia and Africa has established a global telemedicine programme with the support of the Pan African Electronic Networks Programme and the South Asia Regional Cooperation (SAARC) Association.

3.7 India's use of mobile telemedicine

With the help of ISRO, Aravinda Eye Hospital in Madurai, Meenakshi Eye Mission, Shankar Nethralaya in Chennai, and four additional corporate eye hospitalal Blindness Control Program. To increase access to specialized medical treatment in rural places, SGRH, AIMS, SRMC, and AHF have implemented mobile tele- hospitals.s have introduced mobile tele-ophthalmology services as part of the Nation. In order to give its members quick access to first- rate medical care and real-time doctor interaction.

3.8 Pan-African e-network project

The MEA is executing this project, which intends to provide 53 African nations that are members of the African Union with a Very Small Aperture Terminal (VSAT) infrastructure, through Telecommunications Consultants India, Ltd. (TCIL). A satellite and fiber optic network will enable effective Internet, videoconferencing, telemedicine, tele education, and voice over Internet Protocol services, making this infrastructure possible. Super specialized hospitals in India will provide telemedicine services to over 50 remote African hospitals.

4. TELEMEDICINE BUSINESS MODEL IN INDIA

A few unicorns in the healthcare industry have developed from the many start-ups working in the field of telemedicine, which is gradually revolutionizing the way high-quality healthcare is delivered in India.

The following list includes specific so far select Indian health tech start-ups that have achieved market peak. Information about a few Indian health IT startups that have peaked in the industry

Company Name	Starting Year	Valuation (in-2024$)	Services	Mobile based/web
Practo	2008	650M	Offers a thorough medical directory along with services including online appointment scheduling, online-consultations, online medication Delivery, and diagnostics.	Mobile based app
TATA-1Mg	2015	450M	The top digital platform-for consumer-health care in India. Digital consultation, diagnostic pharmacy makeup the majority of 1mg'sofferings.	Mobile based app
Cure-Fit	2016	1.45B	The app provides workout classes across multiple formats: physical fitness dance,yoga,workouts, healthy food and mental well-being strength,Through the day.	Mobile based app
Net-Meds	2010	2.7B	In India, Netmeds runs an online pharmacy selling over-the-counter, prescription, and health and wellness items. Also, the app provides services For-doctor consultations.	Mobile based app
Ambula	2013	100K	Ambula is an App based on UHI(Unified Health Interface) which connects patients live with the unified health network across India for all Healthcare needs.	Mobile based app
MediBuddy	2000	1.3B	MediBuddy offers additional services in addition to online doctor consultations through a mobile app. It gives consumers access to a mobile app and an internet portal where they can check doctors and treatments.	Both a Mobile and Web based app

5. REGULATIONS THAT CONTROL TELEMEDICINE

In India, telemedicine is regulated by the legislation listed below

5.1 National Medical Commission Act,2019 ("NMCAct")

The main piece of law guiding medical education and the practice of medicine in India was declared to be the NMC Act in September 2020 by the Ministry of Health and Family Welfare (the "Health Ministry"). According to the NMC Act, people can only practice medicine in India if they are registered with a state medical council and have a recognized medical degree. The NMC Act replaced the Indian Medical Council Act of 1956 ("IMC Act"), which governed the medical industry before to September 2020. Rules and regulations established under the IMC Act shall continue to be

in effect and followed until new standards or requirements are specified in the NMC Act, according to transitional provisions in the Act.

The applicable sections of the NMC Act are complied with by publishing the rules and regulations. The Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations, 2002 (the "MCI Code") is one of the regulations made possible by the IMC Act. It lays out the moral and professional guidelines that doctors must follow when communicating with patients, pharmaceutical companies, and other members of the medical community. Until a distinct medical ethics regulation is passed under the NMC Act, the MCI Code will be considered to have been adopted under the NMC Act and will stay in effect.

5.2 TPG issued under the MCI code

In collaboration with the NITI Aayog, the Board of Governors, a body designated by the Central Government to oversee medical education and the practice of medicine in India (supplanting the Medical Council of India), created the Telemedicine Practice Guidelines. Allopathic medical professionals are required to abide by these rules, which are now included in the MCI Code. Until a new set of regulations is prepared under the NMC Act covering this subject, the guidelines will stay in effect and be treated as having been issued under the NMC Act. Thanks to the Telemedicine conduct Guidelines, which provide direction on what treatments can be administered and how to administer them, medical professionals can conduct telemedicine from anywhere in the nation.

5.3 Drugs and Cosmetic Act, 1948

The Laws and Regulations governing the manufacture, trade, import and export of medicines in India. In many foreign countries, there is a significant difference between over-the-counter ("OTC") medicines available from general stores and medicines that require pharmacist supervision. authorization and proof of a valid prescription (signed by a licensed physician). The definition is different from Indian law. All sales of medicines must comply with the licensing requirements of the D&C Act. The D&C Act specifies which medicines can only be obtained with a prescription from a licensed physician, meaning there is a difference between prescription and over-the-counter medicines.

Prescription medications are only able to filled with a valid prescription that satisfies the standards of the D&C guidelines, according to the guidelines. For a prescription to be considered valid, it has to be in writing, signed and dated in accordance with the D&C Rules by the prescribing physician. Together with the Name and address of the sufferer, the prescription must specify amount to be given as well as its purpose.

5.4 Government regulations regarding medical records

With the ultimate goal of electronically capturing all medical records in the country, the Indian government continues to improve the country's healthcare system. The National Digital Health Ecosystem 2017 was the beginning of this plan and set the creation of the National Digital Health Ecosystem ("NDHE") as one of the goals. Since then, the Ministry of Health and the Indian government have suspected that the NITI Aayog tank is involved in the plans to build NDHEs. Two of these policies, the National Health Stack and the National Digital Health Plan report together form the framework and framework of the NDHE.

On August 15, 2020, the government of India launched the National Digital Health Mission ("NDHM"). The primary objective of this digital health system is to provide a health identity card to every citizen. In parallel, the Ministry of Health has developed a Health Information Management Policy ("HDMPolicy") under the NDHM for public participation. The HDM policy outlines the rights and responsibilities of all parties involved in the collection and processing of digital health information, including patients, doctors, clinics, pharmaceutical companies, medical diseases, etc. It also addresses data security and privacy issues related to health information. With the implementation of this process, doctors providing remote consultations will be able to access patients' electronic medical records quickly and easily. However, it is important to note that telemedicine platforms and HCPs must comply with the law to ensure that they process patient information as per the instructions from the NDHE.

5.5 The 2018 Telecom Commercial Communication Customer Preference Regulations (also known as the "TCCP Regulations")

Telemedicine platforms may be required to send referrals to clients and patients. TCCP rules prohibit sending unsolicited advertisements via telephone or postal mail. Only clients who are registered with their access provider and have opted in to receive promotional messages will receive these messages. However, sending text messages or making phone calls is still permitted. As long as the recipient is a client of the sender, the communication is sent within 30 minutes of the transaction and is directly related to the business, it is considered a transaction. It is initiated by the recipient successfully sending the message. For example, a comment on the OTP or the purchase of goods and services will be considered a transaction. All other messages, even if directly related to the delivered goods, are sent only in a recorded format and the provider has access to the recipient's account.

6. CURRENT SCENARIO IN INDIA

With an estimated population of 1.44 billion, India is a vast nation. Cities, which house around 30% of the nation's population, are home to about 70% of the nation's health care infrastructure. Compared to the global average of 6%, India's healthcare spending in 2017–18 was merely 3.9% of GDP but now it's1.6-1.8%. Since there is a physician scarcity in India (1: 1457), not everyone can access healthcare facilities equally. The doctor-to-patient ratio in India is below than the WHO recommended ratio of 1:1000, at about 1:1500. In India, almost 90 million people are considered impoverished, as well as a more lopsided doctor-to-patient ratio (1:2600). These factors make it extremely difficult to provide health care services effectively and consistently across the nation.

Telemedicine in India began in 2001 when the Indian Space Research Organisation (ISRO) connected the Apollo Hospital in Chennai to the Apollo Rural Hospital in Aragonda village

in Chittoor district of Andhra Pradesh. Telemedicine services are on the rise in India due to significant initiatives taken by the Department of Research Technology (DIT), Ministry of External Affairs, Ministry of Health and Family Welfare, ISRO and the government in the state.

In March 2020, the Ministry of Health and Family Welfare issued guidelines for the use of telemedicine in India. These guidelines provide a framework for the use of telemedicine and also address issues such as patient privacy, data security, and informed consent.

Telemedicine has become popular in India over the last few years, especially after the onset of the COVID-19 pandemic. During the COVID-19 pandemic, telemedicine services have been widely used to provide medical consultation and support to patients who are isolated or isolated. Connect with doctors and other healthcare professionals. The Indian government has also launched several telemedicine initiatives to improve access to healthcare in underserved and rural areas. Patients can connect with doctors and other healthcare providers across the country using the telemedicine platform, which is part of the Digital Health Infrastructure National Health Stack.

Telemedicine has the potential to solve many of the problems plaguing India's healthcare sector, including a shortage of doctors, high healthcare costs, and lack of access to healthcare in remote and impoverished areas.

With telemedicine platforms and applications, patients can now easily talk to doctors and other healthcare professionals from their homes. Therefore, people do not have to travel long or distant distances to receive treatment, which increases the accessibility and convenience of medical services. Lack of understanding and trust in telemedicine is a major problem, especially in rural areas. Patients may be reluctant to use telemedicine services due to concerns about standards of care, security of personal information, and reliability of technology.

The need for infrastructure development and communications, especially in rural areas, is another challenge. Access to healthcare can be difficult in many parts of India, where electricity and internet connections are still lacking.

The final issues that need to be addressed are privacy and data security. Patients may not be willing to disclose their personal and medical information through telemedicine platforms and apps if they are concerned about the privacy and security of their information. The need to reduce healthcare costs is likely to drive the adoption of telemedicine in India in the coming years.

The Indian telemedicine market is expected to be valued at USD 1.1 billion by 2022, growing at a compound annual growth rate (CAGR) of 22.2% from 2022 to 2030 to reach USD 5.15 billion. The growth of this market is primarily driven by two factors: increasing chronic diseases and lifestyles, and advancement in technology. The market is segmented based on product type, submodality, and end user. Key companies in this space include Practo Technologies, 1mg Technologies, Apollo Telehealth Services, and Clove Dental.

6.1 Impact of Covid-19

The Indian government imposed a nationwide lockdown in response to the coronavirus, and government and private medical schools have since closed outpatient clinics or reduced the services they provide. When disease strikes, telemedicine can be used to improve clinical trial management, disease control, and epidemiological research. Telemedicine technology is a 21st-century approach to patient care and safety for patients, physicians, and other stakeholders.

Physicians who use information and communication technology (ICT) to provide reliable information can provide care in remote areas where the patient is concerned. This practice is called telemedicine. Telehealth services use point-of-care, in-store, and delivery technologies. Due to the rapid growth and decline of portable electronic devices, many families now have at least one digital device, such as a smartphone or webcam, to facilitate patient-doctor communication.

The absence of legislation and a framework for the ethical practice of telemedicine has left a significant gap, which has been attempted to be filled by the Board of Governors of the Medical Council of India (MCI), the former regulator of medical education in India that prepared them in consultation with the leading planning body, the NITI Aayog (National Institution for Transforming India), through the release of guidelines for the practice of telemedicine. Three forms of communication are listed in the guidelines: texting, audio, and video. They also include instructions for practitioners to follow regarding their use, including some limitations.

6.2 eSanjeevani national telemedicine service

The National Telemedicine Service (e-sanjeevani) under the Ministry of Health and Family Welfare, Government of India has become the largest adopter of telemedicine in primary healthcare in the world. As of May 7, 2024, the National Telemedicine Service of India is responsible for providing services to over 241,304,053 million patients across 122,699+ health and wellness centres through 372+ online OPDs, with over 212,290 doctors, medical practitioners, super doctors and healthcare personnel working together.

In line with Prime Minister Narendra Modi's Digital India vision, eSanjeevani, which enables the delivery of quality healthcare to the remotest areas, was launched in November 2019. The concept shipment is a testament to the world's largest health insurance scheme that provides universal coverage. The advancement of digital healthcare in India. With eSanjeevani, digital healthcare is now widely available to many people in rural and remote villages.

Two modes of operation are available for the cloud-based eSanjeevani platform.

A. e-Sanjeevani AB-HWC (Doctor to Doctor teleconsultation):

This model allows patients to receive telehealth services while attending a Health and Wellbeing Centre (HWC). Community health workers at HWCs connect patients with doctors and specialists in secondary/tertiary care facilities or medical school settings for remote communication. This version is derived from the Hub-and-Spoke paradigm.

B. e-Sanjeevani OPD (Patient to doctor teleconsultation):

MoHFW updated the "eSanjeevani" application in the wake of the COVID-19 pandemic to allow for free

patient-doctor teleconsultations, ensuring continuity of treatment and facilitating health services for all citizens in the comfort of their own homes.

Fig -1: Figure

Fig-1 shows the process of consultation between patient and the doctor.

Fig -2: Figure

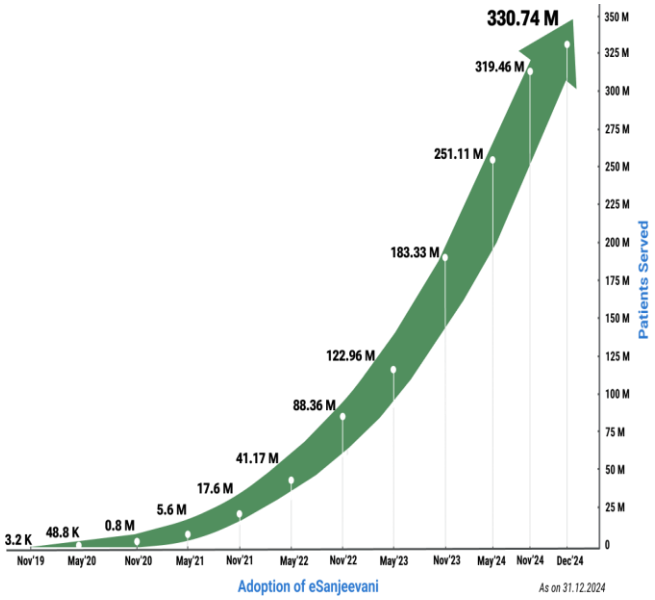

Fig-2 shows the adoption rate of eSanjeevani.
Thirty-six states and one district have implemented healthcare. Over Rs 14 million worth of remote meetings have been successfully completed through the eSanjeevani platform so far.

7. CONCLUSIONS

Due to insufficient funds, unequal distribution, geographical problems, inadequate infrastructure and treatment, insufficient medical personnel, weak public awareness and dysfunction, current health systems cannot guarantee people's health and social well-being

A. Telemedicine has the potential to increase health equity and accessibility for people living in rural areas. However, patients must travel far from the city to the pharmacy to get their medicine, which is the main purpose of telemedicine and teleconsultation.

B. Although telemedicine is frequently used to ensure health, the technological development required for the use of telemedicine and teleconsultation in rural areas is lacking.

C. India has a long history of using telemedicine. The Telemedicine Guidelines 2020 were issued in response to COVID-19, allowing telemedicine in India. There are no laws regarding consent, medical confidentiality, healthcare standards, and professional accreditation for telemedicine services. The above law should provide detailed information on liability, fraud, civil liability, medical malpractice, warranty, and indemnity.

D. Health-related information is considered personal and sensitive information. However, the use of telemedicine as a communication method is not recommended due to privacy and confidentiality concerns due to the absence of legislation addressing this issue.

8. SUGGESTIONS

With government measures to increase rural centers (Phcs) and large medical centers, larger hospitals and medical colleges. The average time to determine the target is important. There is a long overdue review of public and private telemedicine schemes, including eSanjeevani. The results of the review should inform future changes in rules and regulations.

Despite the progress and advancement made over the years, telemedicine is still not a fully integrated healthcare system. The integration of telemedicine into the healthcare system is as important as its use as a sole measure for its success. As mentioned earlier, the transition of telemedicine from the experimental phase to the operational phase in primary healthcare systems is important.

Although telemedicine is becoming increasingly popular under the Telemedicine Practice Rules 2020, the rules are not legal unless backed by law. A law should be enacted to regulate telecommunications and telecommunications to ensure smooth functioning and regulation of services in India.

The recommendations for doctors and patients regarding the use of information and confidentiality are unclear. The standard does not specify how long data should be stored and under what conditions it can be used in the future. Essentially, the guidelines emphasize the need for professionals to understand and comply with privacy and data protection laws. Privacy issues arise when doctors are required to record the patient's address and other "reasonable" personal information.

Although the different consent rules are vague and clear, the right to initiate a telemedicine consultation is still considered invalid consent. More information about consent for remote communication should be included in the instructions, including how to obtain and write consent.

In most cases, doctors only prescribe medicines or discuss other procedures face-to-face with patients over the phone using telemedicine. Therefore, the legality of e-pharmacy and telepharmacy remains the biggest hurdle to providing telemedicine services in India. India needs to

implement telemedicine and e-pharmacy laws to be able to provide telemedicine services.

Medicines are usually prescribed over the phone by doctors who practice telemedicine or speak to patients through some other visual medium. Therefore, the biggest hurdle in providing telemedicine services in India continues to be the acceptance of e-pharmacy and telepharmacy. Legalization of e-pharmacy and telepharmacy is necessary to enable the provision of telemedicine services in India.

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