

Telemedicine: A Boon in COVID-19 Pandemic in India

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The COVID-19 pandemic has taken the world by storm, drastically affecting every aspect of life. It has become one of the causes of most unexpected number of deaths the world has seen since centuries. COVID-19 has introduced the world to a number of new things like lockdown, social distancing and the list goes on. Telemedicine is one of the terms, which existed since a long time but is made common by the COVID-19.

World Health Organisation defines 'Telemedicine' as 'The delivery of health care services, where distance is a critical factor, by all health care 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 health care providers, all in the interests of advancing the health of individuals and their communities.'^[1]

First concept of Telemedicine was borne in 1924, when an American magazine, called RadioNews, foreshadowed telemedicine in depiction of an imaginative "Radio doctor" who was linked to patients not only by sound but also by a live picture.^[2]

The first published accounts of telemedicine are dated back in the early 20th century when electrocardiogram data was transmitted over telephone wires.^[1] Thereafter, a tele-radiology system was created in 1950s by a radiologist of a Canadian hospital. Medical uses of video communications in the United States are dated to


1959. In that year, clinicians at the University of Nebraska used two-way interactive television to transmit neurological examinations and other information across campus to medical students.^[2]

NASA's telemedical technology has also played a vital role during earthquakes, first in Mexico City in 1985, and later in Soviet Armenia in 1988.^[3]

Considering the vast geographical spread and huge population and limited resources of India, telemedicine can here be proved to be of special significance. Telemedicine Pilot Project launched by Indian Space Research Organisation (ISRO) in 2001 was the pioneer of telemedicine in India. This project led to linking of Chennai's Apollo Hospital with the Apollo Rural Hospital at Aragonda village of the Chittoor district in Andhra Pradesh.

This initiative of ISRO along with the establishment of National Telemedicine Task Force in 2005 by the Health ministry, paved the way for many other projects like Integrated Disease Surveillance Project (IDSP), National Cancer Network (ONCONET), National Rural Telemedicine Network, National Medical College Network and the Digital Medical Library Network.

Apart from attracting international projects like Pan-African eNetwork Project, SAARC (South Asian Association for Regional Co-operation) Telemedicine Network Projects which gained Indian telemedicine its world renowned recognition, these efforts have also led to successful establishment of telemedicine

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facilities not only in Indian hospitals but also during massive Indian gatherings like Maha Kumbhamelas of Uttar Pradesh which use Mobile Telemedicine Systems to provide the health care to the people.^[4]

The private sector with support of central and state governments has also been keen contributor for establishment of Telemedicine in India.

The continuous advancements in wireless broadband technology and the ever growing internet use are capable of making the telemedicine stress-free and cost effective. The modernisation of technologies and digitalisation of systems and improved infrastructures have facilitated sharing of real time audio and video, transfer of images and other medical data like X-rays and scans. To name a few; information storage databases, web service backups, standard formats for data transmission, encryption, password protection, Health Insurance Portability and Accountability Act of 1996 guidelines, digitalizing information, and establishment of electronic medical records ; are some contributions of modern telemedicine.^[5] The most recent advancement in this field is "HEALTHSAT", which is an exclusive satellite, envisioned by ISRO for meeting the healthcare and medical education needs of the country at large.^[6]

The COVID-19 pandemic has caused collapse of even the world's biggest and best health care systems. India is a country where doctor: population is 1:1511, while as recommended by WHO should be at least 1:1000.^[7] According to Human Development Report, 2020; India caters 0.5 beds per 1000 population, which should be 5 per 1000 according to WHO.^[8]

Government of India launched 'e-Sanjeevani OPD' on 13 April 2020 in an effort to handle the COVID-19 pandemic and ensure smooth running of healthcare facilities and to provide health services to the patients in confinement of their homes.^[9] E-Sanjeevani currently permits two types of telemedicine services: Doctor to Doctor (eSanjeevani) and Patient-to-Doctor (eSanjeevani

OPD). As a part of Ayushman Bharat Health and Wellness Center, states have formed dedicated 'Hubs' in medical colleges and district hospitals to provide tele-consultation services to identified sub-centres, primary health centres and health and wellness centres, called as 'Spokes'. This is known as 'Hub and Spoke Model'.^[10] Health ministry have recorded 1.4 crore consultations as on 18 October 2021.^[11]

Government of India on 7 August 2020, released updated strategy of National Digital Health Mission (NDHM) which outlined the envisioned digital registries of doctors, hospitals, pharmacies and insurance companies, digital personal health records and digital clinical decision system. The NDHM is a complete digital health ecosystem which consists of five key components namely: Health ID, Personal Health Records, Digi Doctor or Doctors' Directory, Health facility registry, Electronic Medical Record website application.^[10]

In the wake of COVID-19 pandemic, telemedicine has proved to be a boon both for health care professionals as well as the patients including their family and caretakers. Because of the facility of telemedicine for health care, follow ups, and triage of patients; the medical personnel and equipments were spared for more serious COVID-19 and non-COVID-19 patients leading to decrease in burden on the health care facilities. It helped medical professionals to still be supervising their patients, get second opinions from their peers, share experiences worldwide and arrange trainings and conferences.

Telemedicine also helped patients decrease travel expenditure, decrease medical costs, provided easier access in lockdown period and saved time by escaping long queues. It was especially beneficial for people with chronic diseases like diabetes mellitus, hypertension, thyroid diseases. These are the people who were on greater risk of COVID-19 and were provided with treatment adherence as well as refrained from manageable hospital visits. Telemedicine helped provide emotional and

psychological reassurance, a much needed thing especially in times of social distancing. It helped provide training not only to medical staff but also to the care providers of sick and disabled people especially children and elderly.

Telemedicine has helped to a great extent in infection control especially by minimizing movement of the masses thereby leading to confinement of infection to a particular area and protecting people from hospital acquired infections which acted as a core of infections. Thus, telemedicine can be used as a sword in the world's fight against COVID-19.

Until recently, there were no guidelines on the practice of telemedicine in India. To fill this gap of lack of legislation and ethical consideration, the Board of Governors of the Medical Council of India in partnership with NITI Aayog prepared 'Telemedicine Practice Guidelines' which was released by Ministry of Health and Family Welfare (MOHFW) on March 25, 2020.^[12]

These guidelines are meant for Registered Medical Practitioners (RMPs) under the Indian Medical Council (IMC) Act, 1956. They cover norms and standards of the RMP so as to consult patients via telemedicine.

An outline program will be developed and made available by Board of Governors in supersession of MCI, which will be mandatory to be completed within 3 years of notification. Until then the principles mentioned in the guidelines need to be followed.

There are seven elements that need to be considered before telemedicine consultation:^[12]

1. Context: Telemedicine should be appropriate and sufficient as per context.
2. Identification of RMP and Patient: An RMP should verify and confirm patient's identity by name, age, address, email ID, phone number or registered ID. An RMP should inform the patient about his name and qualifications and should display his registration number accorded by medical council.
3. Mode of Communication: Primarily there are 3 modes: Video, Audio or Text.
4. Consent: Patient consent is necessary. Consent is 'Implied', if the patient initiates the telemedicine consultation; and 'Explicit' when health worker, RMP or a caregiver initiates it.
5. Type of Consultation: They can be of two types: (i) First Consult – If the patient is consulting the RMP for the first time or after more than 6 months since the previous consultation or if the patient has consulted the RMP earlier, but for a different health condition (ii) Follow-Up Consult-If the patient is consulting the same RMP within 6 months of his previous in person consultation and this is for continuation of care of the same health condition.
6. Patient Evaluation: RMPs must make all efforts to gather sufficient medical information about the patient's condition before making any professional judgment. If a physical examination is critical information for consultation, he can recommend for either video consultation or examination by another RMP/ Health Worker or in-person consultation, and then proceed further.
7. Patient Management: If the condition can be appropriately managed via telemedicine, then the RMP may proceed to provide health education; and/or counselling; and/or prescribe medicines.

The categories of medicines that can be prescribed (as notified by central government from time to time) are:

- List O: These are safe to be prescribed through any mode of tele-consultation. They comprise 'over the counter drugs' and also the medicines that may be deemed necessary during public health emergencies.
- List A: These medications are those which can be prescribed during the first consult which is a video consultation and are being re-prescribed in case of follow-up.

- List B: Is a list of medication which RMP can prescribe in a patient who is undergoing follow-up consultation in addition to those which have been prescribed during in-person consult for the same medical condition.
- Prohibited List: These medicines have a high potential of abuse and could harm the patient or the society at large if used improperly. It comprises medicines listed in Schedule X of Drug and Cosmetic Act and Rules or any Narcotic and Psychotropic substance listed in the Narcotic Drugs and Psychotropic Substances, Act, 1985.

Conclusion:

Although telemedicine cannot replace in-person consultations or emergency medicine, yet it is safe to say that it is a boon for the mankind. Telemedicine deserves much needed growth and implementation and requires to reach not only the most modernized but also the remotest and farthest of areas. The extension of telemedicine will help us handle COVID-19 pandemic and will put us together for the unseen future calamities.

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