❶ Telemedicine in India

1.1 Introduction

Telemedicine includes the use of communication networks and digital solutions in providing health services. It allows collaboration between providers and patients across spatial boundaries, for activities linked to health promotion, prevention, diagnosis, timely referral, management and follow-up of patients.

Evolution of telemedicine in India

E-health solutions, which include telemedicine, are recognized as cost-effective tools to increase access to health care and to improve patient outcomes(1). Telemedicine in India was started with the support of the Indian Space Research Organisation (ISRO) in 2001 (2). Multiple telemedicine projects have been initiated in different states of the country in collaboration with Ministry of Electronics and Information Technology (MEITY) and Ministry of Health and Family Welfare (MoHFW) (3,4).

The National Health Policy-2017 advocated extensive deployment of digital tools for improving the outreach of the healthcare system (5). Online consultation networks for telemedicine, including the National Medical College Network (NMCN) and State telemedicine networks, were established(1). In 2019, the telemedicine guidelines for Health and Wellness Centres (HWC) of the Ayushman Bharat Scheme were released to leverage Information Communication Technologies (ICT) to connect the HCW with the Medical colleges.

Telemedicine guidelines by the Ministry of Health and Family Welfare

MoHFW, Government of India released the 'Telemedicine Practice Guidelines' in March 2020 to give practical inputs to the doctors in realizing the full potential of the telemedicine for better healthcare delivery in the aftermath of the COVID-19 pandemic (6). The guidelines are focussed on the Registered Medical Practitioner (RMP) defined as a person who is enrolled in the State Medical Register or the Indian Medical Register under the Indian Medical Council (IMC) Act 1956.

The following sections are covered in detail in telemedicine guidelines that is a component of the Indian Medical Council (Professional conduct, Etiquette and Ethics Regulations 2002) (IMC Act 2002)

- Definition of telemedicine
- Scope of telemedicine
- Types of telemedicine
- Telemedicine technologies
- Duties & responsibilities of Medical Practitioner

- Patient information, confidentiality and consent
- Drug prescription rules
- Documentation & medical records

These guidelines shall support increased utilization of telemedicine and will increase the availability, access and affordability of health care in the long run. Telemedicine is an important tool to ensure universal health care coverage in India.

1.2 Definitions

Telehealth

The delivery and facilitation of health and health-related services, including medical care, provider and patient education, health information services, and self-care via telecommunications and digital communication technologies(6).

Telemedicine

Telemedicine is defined 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 the 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" (7)(8).

Telemedicine encompasses all systems, modalities and applications involved in the delivery of health services to substitute for any exchange of information and communication employing an electronic format. Hence, telemedicine aids in the electronic exchange of information and communication through -

- **Teleconsultation**

  Teleconsultation is defined as synchronous or asynchronous consultation using information and communication technology to overcome geographical and functional distance (9).

- **Telemonitoring**

  Telemonitoring is described as the use of information and communication technology to track and communicate patient health problems among geographically distant people (10).

- **Teletriage**

  The method of identifying individuals into different categories based on their need for emergency medical attention as opposed to their chance of benefiting from such care using information and communication technology.

1.3 Types of interventions and modes of communication

There are multiple technologies for the implementation of telemedicine today. The technology used and the mode of communication used in telemedicine should be customized to the objectives of the interaction. Commonly, the types of interventions are differentiated based on the time of communication between the stakeholders.

Synchronous

In synchronous interaction, the stakeholders or the participants of the telemedicine are interacting with each other dynamically in real-time. The communication is quick, and it provides an opportunity for the participants to solve queries (if any) in real-time. For example, video consultation is a synchronous teleconsultation.

Asynchronous

It is also called the "store and forward" way of communication. Here the participants can interact or reply in their own time frame. There is no real-time interaction between the stakeholders. It is suitable when the consultation or communication is not urgent. It is mainly used for forwarding the investigation reports, or for routine follow-up. Examples include e-mail, text messages, fax.

Remote monitoring

This is also called the remote patient monitoring and refers to the method of health care delivery that uses the advances in information and technology to monitor

patients outside the healthcare settings. The patient data is electronically transmitted to the healthcare provider, who monitors the patient for the maintenance of health and development of any new disease states.

Mode of communication

The mode of communication chosen should be based on the purpose of the communication.

- **Video**

  Video consultations are closest to the in-person consultations. The communication is two ways, interactive and real-time. Patient identification is straightforward. This mode allows inspecting and getting visual cues from the patient. It also provides an opportunity to examine patient and demonstrate certain activities to the patients.

- **Audio**

  Audio consultation is more convenient and readily available compared to the video consultation. The interaction is dynamic and real-time. The information provided can be exchanged iteratively between the provider and the receiver. Audio consultation provides verbal cues but misses non-verbal cues and is not suitable for conditions that require visual inspection.

- **Text-Based**

  Text-based consultations are convenient and quick. These may be either real-time when the interaction is simultaneous or delayed, like in 'store and forward' systems. These are best for follow-ups and second opinions. The text-based platforms also help in better transmission of documents, including the test reports and previous medical records. However, text-based platforms lack both visual and verbal cues.

1.4 Medical Ethics

Health-related data of patients should be recorded and handled as per Telemedicine guidelines released as Appendix 5 of the Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulation, 2002 (6), that outlines the duties and responsibilities of a doctor, misconduct rules and ethical aspects of consent, data privacy and confidentiality.

1.4.1 Consent

Consent of patient/caregiver holds a vital role in the telemedicine consultation. Consent needs to ensure that the patient understands the nature and scope of telemedicine and also the nature and scope of the disease under consideration.

informed consent should also include aspects of teleconsultation. It should explain

- Scope of the consultation
- Expected benefits
- Nature of consultation
- Medical information and records
- Confidentiality
- Risk and limitations of the consultation

The standards of informed consent as is applicable for the in-person consultation are applicable for the teleconsultation also.

Implied versus Explicit consent

Implied consent is a presumption of approval to do something that is deduced from the acts of a person, rather than expressly stated. When the patient/ person initiates a teleconsultation, it is considered to be implied consent. At the same time, explicit consent is an expressly stated statement of approval. When a teleconsultation is physician/ doctor initiated, there is a need to take explicit consent.

Consent can be obtained through any one or more of the following modes depending on the type of consultation, and this should be recorded in the patient's records.

- Audio Consent- Verbal
- Video Consent- Through video conferencing
- Digital Consent- As text

1.4.2 Data privacy and confidentiality

- Professional standards for data privacy and confidentiality under IMC Act 1956 and IMC (Professional Conduct, Etiquette and Ethics) Regulations 2002 should be adhered to while providing telemedicine consultation.
- The teleconsultation is also bound by similar data protection and privacy laws as applies to an in-person consultation.

- A system should be developed for documentation, storage and retrieval of the medical records. All the documents as applicable for in-person consultation should also be maintained for teleconsultation.

1.4.3 Standards of care

- The doctors providing telemedicine services shall abide by the same standard of care as followed in-person consultation.
- The doctors shall ensure that the patients/ family members will receive correct and timely information on the nature and severity of their illness.

1.5 Preparation

Any organization planning to provide care through telemedicine should assess the preparedness for the same.

Organizational Readiness

Assessing organizational readiness is a comprehensive task and necessary as many stakeholders are involved in running an organization.

- Leaders should be proactive and provide direction in adapting to telehealth services
- The leaders can act as change agents and promote behavioural change of others in the organization for telemedicine.
- Motivation to learn new skills and explore new ways of care provision will help in easy implementation of telemedicine.
- The existing operation and administrative protocols of the organization may need assessment to accommodate telemedicine services.
- While multiple staff of an organization may be involved in care provision, a nodal person or a group of people from different departments should be identified who will be accountable for the smooth functioning of telemedicine services.

Provider Readiness

- Readiness in terms of availability of professionals and ancillary staff, affordability and operational feasibility of delivering services through telemedicine should be assessed and strengthened.

- Capacity building of both professionals and support staff is necessary based on the levels of motivation, and challenges identified.

Patient Readiness

- The readiness should be assessed in terms of availability of technology, affordability, acceptability, user penetration and friendliness of the telemedicine technologies through in-person interviews, exit services or web-based patient surveys as may be appropriate.
- Behavioural change for using telemedicine services can be promoted through counselling, posters, pamphlets and professional guidance.
- Modes of teleconsultation should be customized to the patient's needs and comfort.
- Patients might need handholding in terms of understanding the advice and maintaining electronic health records.