

## COMMENTARY

# Charting the Course: Telemedicine Trends, Regulatory Frameworks, and Implementation Challenges in India

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### ABSTRACT

**Background:** In low- and middle-income countries like India, telemedicine emerges as an important solution for healthcare delivery as geographical, workforce, and infrastructural disparities limit access to care. **Objective:** This article explores the evolution of telemedicine in India, with a focus on legal framework, policy shifts, implementation challenges, and comparison with global telemedicine. **Methods:** The method employed was a qualitative narrative review. Peer-reviewed Google Scholar, PubMed and Scopus-indexed journal articles, World Health Organisation reports, and Indian government telemedicine laws and regulations were among the data sources. Documents published between 2000 and 2024 were evaluated for legislative provisions, implementation hurdles, and relevance, excluding technical or clinical reports without policy analysis or those in regional languages. **Results:** India has established a foundational regulatory structure for telemedicine through the Telemedicine Practice Guidelines (2020), which is backed by current laws like the Indian Medical Council Regulations (2002) and the Information Technology Act (2000). The COVID-19 epidemic sped up adoption, increased the number of teleconsultation modalities that are acceptable, and revealed structural limitations such as provider preparedness, digital inequality, and data privacy issues. **Conclusion:** Although India's telemedicine framework is flexible and forward-thinking, its successful implementation necessitates improved digital infrastructure, uniform training, strong data security measures, and ongoing regulatory improvement in line with international best practices.

### KEYWORDS

COVID-19, Developing Countries, Information Technology, World Health Organization

### INTRODUCTION

Telemedicine is the practice of providing healthcare services via information and communication technology to enhance access to care and serve inaccessible geographical locations(1). The need for continuity of care

during public health emergencies, growing healthcare expenses, and a lack of healthcare workers have made telemedicine more popular worldwide. (2)

In a vast country like India with unequal specialist distribution, rural-urban inequities, and limited health infrastructure, telemedicine becomes pertinent.(3) To acknowledge the potential of telemedicine in India, the government is gradually developing ethical and legal frameworks to control the practice of telemedicine. This article explores the regulatory development of telemedicine in India, current policy changes, implementation difficulties, and lessons from international telemedicine models.

**MATERIAL & METHODS**

A qualitative narrative review of telemedicine policy and regulations in India was conducted. Data sources included peer-reviewed Google Scholar, PubMed and Scopus-indexed journal papers, as well as reports from the World Health Organisation and the Indian government on law and regulations governing telemedicine. Only English language documents issued between 2000 and 2024 were evaluated for legislative provisions, implementation hurdles, and relevance, excluding technical or clinical reports without policy analysis or those in regional languages. (4,5)

**India's Telemedicine Regulatory Framework**  
**Table 1. Timeline of Telemedicine regulations**

Year	Regulation
2000	Information Technology Act (IT Act)
2002	Medical Council of India (Professional Conduct, Etiquette and Ethics) Regulations (MCI Ethics Regulations)
2017	National Health Policy (NHP)
2019	National Medical Commission Act (NMC Act)
2020	Telemedicine Practice Guidelines (TPG)
2020-24	Ayushman Bharat Digital Mission rollout (ABDM rollout)
2023	Digital Personal Data Protection Act (DPDP Act)

**Indian Medical Council (Professional Conduct, Etiquette and Ethics) Regulations, 2002**

This Indian government act establishes a framework of regulations for Indian doctors,

including core moral values that prioritise patient privacy, informed consent, and professional accountability as first priority. These ethical guidelines, which were initially created for in-person care, also apply to telemedicine and serve as the foundation for remote consultations. (6)

**Telemedicine Practice Guidelines, 2020**

This act serves as the foundation for telemedicine regulations in India. It defines telemedicine, specifies acceptable consultation methods, sets criteria for patient identification and permission, imposes documentation requirements, and classifies medications that are appropriate for teleprescription.(7,8)

**Information Technology Act, 2000**

It governs cybersecurity, digital authentication, and electronic data transfer in India. Regulations on data protection, secure management of digital health records, and sensitive personal data confidentiality must be followed by telemedicine providers.(9)

**Drugs and Cosmetics Act, 1940**

Telemedicine practitioners who prescribe medications must abide by this act, which controls the manufacture, distribution, and sale of pharmaceuticals in India. The Telemedicine Practice Guidelines limit the prescription of some medications by teleconsultation to protect patient safety.(10)

**Current Changes and Advancements in Policy Extension of Teleconsultation's Purview**

During the COVID-19 pandemic, telemedicine use increased substantially, ensuring a continuum of care while reducing in-person visits, providing electronic prescriptions and follow-up consultations. (8,11)

**Adaptability in Telemedicine Systems**

The regulations permit the use of a variety of communication modes, including text-based platforms, video, and audio, if patient consent, confidentiality, and data security standards are fulfilled. This flexibility has maintained minimal care standards while enhancing accessibility. (7,12)

**Training and Bridge Programs for Proficiency in Telemedicine**

Bridge courses and organised training programs are crucial for providing medical professionals with the necessary information

on telemedicine regulations. These programs will enhance clinical knowledge, ethical compliance, and medico-legal awareness for providing digital healthcare delivery (7,13)

#### **Difficulties in Implementing Telemedicine**

Despite regulatory clarity, several barriers to effective telemedicine adoption exist in India. Inadequate digital literacy and the digital divide between rural and urban communities impede equitable access to services. (3,14) Issues with cybersecurity and data privacy also make telemedicine implementation more difficult. (9,15,16)

Disparities in provider preparedness, telemedicine acceptance, and medico-legal knowledge compromise patient confidentiality and trust-building, as well as the quality of services.(13,12) The extensive integration of telemedicine into healthcare delivery systems is further hampered by its incompatibility with public health systems and its dispersed digital health infrastructure. (17)

#### **Insights and Comparisons across the Globe**

Unlike India, developed countries like United States, United Kingdom, and Australia have been able to fully integrate telemedicine into their healthcare delivery systems due to strong data protection laws and compatible digital platforms.(18-20) Thus, developing countries like India need to take insights from these developed nations to build robust data governance systems, provider reimbursements, and regulatory harmonisation for effective telemedicine implementation guidelines suited to our needs.(21)

#### **CONCLUSION**

Telemedicine has rapidly grown in India due to the COVID-19 pandemic and the quick introduction of supporting guidelines. However, to achieve a sustainable and fair scale-up, deficiencies in physical infrastructure must be filled, legal and data protection frameworks must be strengthened, provider capacities must be increased, and implementation must be coordinated with international best practices. To fully achieve telemedicine's potential to improve healthcare access and equity, legislative developments

and ongoing investments in digital health infrastructure are necessary.

#### **LIMITATION OF THE STUDY**

- Only English language sources were used, missing out on potentially relevant regional publications containing potential policy analysis.
- It also lacks the exhaustive comprehensiveness of a full systematic review.
- For this narrative review, we focused on national-level policies and regulations, which may cause subjectivity bias
- Since digital health is rapidly evolving, some recent developments may have been missed, which could be addressed by future systematic reviews with multilingual searches and databases.

#### **AUTHORS CONTRIBUTION**

All authors have contributed equally.

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#### **CONFLICT OF INTEREST**

There are no conflicts of interest.

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The authors haven't used any generative AI/AI assisted technologies in the writing process.

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