


# Chapter 8

## Integrating Telemedicine Into Population Health Management for Pharmacogenomics and Patient–Centered Care in Rural India

**Khushboo Malik**

 <https://orcid.org/0009-0005-3911-4122>

*Christ University, India*


**Kamal Upreti**

*Christ University, India*

**Anusha Chaudhary**

*Christ University, India*


**Nishant Kumar**

 <https://orcid.org/0000-0003-0124>

-9337

*Christ University, India*

**Onam Singh**

 <https://orcid.org/0009-0008-7070-2944>

*Dr. B.R. Ambedkar University, Delhi,  
India*

**Sumegh Tharewal**

*DBS Global University, Dehradun,  
India*

### ABSTRACT

*The health of ourselves and our loved ones is always our top priority as human beings; it is something we are concerned about on a daily basis. Regardless of age, gender, socio-economic, cultural, or ethnic origin, health is regarded as our most valuable possession. Although about 75% of Indians live in rural areas, more than 75% of Indian doctors live in cities. The majority of India's 620 million rural*

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*residents do not have access to primary health care. A study by the Indian Institute of Public Opinion found that 89% of Indian patients in rural areas walk up to five miles to receive primary health care. Telemedicine has the potential and the ability to reform this inequality by allowing doctors in urban areas to consult with local people, including specialized care when needed. The chapter outlines the legality of telemedicine, the effectiveness of the framework in regulating the practice, the different modes available for tele-consultation, and how it can be integrated into population health management, pharmacogenomics and patient-centered care.*

## **INTRODUCTION**

India's healthcare landscape presents a complex scenario marked by critical challenges, like crumbling infrastructure, workforce shortages, and unequal healthcare access between urban and rural areas, highlighting glaring disparity. Despite notable advancements in medical technology and healthcare services in recent years, a significant portion of the population, particularly those residing in rural and remote regions, still lacks access to basic healthcare facilities and services. According to the National Health Profile (2020), India faces a considerable shortage of healthcare professionals, with rural areas bearing the brunt of this deficit. This shortage exacerbates the already existing healthcare disparities, resulting in unequal access to medical care and poorer health outcomes for rural populations.

This urban-rural healthcare divide in India is a persistent challenge that hampers efforts to achieve equitable healthcare for all citizens. Urban communities have a wealth of resources like better-equipped hospitals, advanced medical services, and a high concentration of specialists readily available compared to rural areas. This urban bias in healthcare infrastructure and resources creates barriers for rural residents to access timely and quality healthcare services. Moreover, socioeconomic factors, including poverty, illiteracy, and lack of awareness, further make it harder for rural communities to access timely and quality healthcare. Consequently, individuals in rural areas seek assistance from informal providers, traditional healers, or quacks, which may not always effectively meet their healthcare needs.

Telemedicine, defined as the digitally enabled remote provision of healthcare services using telecommunications technology, holds promise as a compelling solution to bridge the gap of timely and quality healthcare accessibility between urban and rural communities. By leveraging advancements in information and communication technology (ICT), telemedicine facilitates the delivery of medical consultations, diagnosis, treatment, and monitoring of patients in remote or underserved regions. Through telemedicine portals, patients can engage in synchronous consultations with healthcare providers, receive medical advice, and access specialist

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