Chapter 23
Work From Home and Sustainable Development Goals: A Framework for Healthcare Sector

Ridhima Goel
https://orcid.org/0000-0002-0505-9218
Maharshi Dayanand Univesity, India

Jagdeep Singla
https://orcid.org/0000-0001-8628-9244
Maharshi Dayanand University, India

Sanjeet Kumar
Chaudhary Devi Lal University, India

ABSTRACT

The adoption of Work-From-Home models in healthcare, particularly during the COVID-19 outbreak, has brought a new dimension to worldwide health management. By leveraging smart technologies such as telemedicine, AI-powered diagnostics, and IoT-enabled remote monitoring, healthcare delivery has become more accessible, efficient, and inclusive. This chapter explores how WFH models, enhanced by these technologies, are improving global health outcomes and aligning with the third Sustainable Development Goal (SDG 3), ensuring healthy lives while promoting well-being for all. It examines how WFH frameworks reduce healthcare inequalities by extending quality care to underserved regions and populations. Additionally, it highlights the challenges and opportunities of integrating WFH models with smart technology to create sustainable health systems that can be scaled globally. This chapter provides a comprehensive framework for the future of WFH in healthcare, contributing to the realization of SDG 3 and offering a pathway toward more equitable and resilient healthcare systems.

INTRODUCTION

Work-from-home (WFH) models in healthcare have revolutionized the way medical services are delivered, offering new methods to improve accessibility, efficiency, and outcomes. This shift is largely driven by advancements in three key smart technologies: artificial intelligence (AI), telemedicine, and

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the Internet of Things (IoTs). Collectively, all these modern technologies enable healthcare professionals to engage with patients remotely, manage care effectively, and keep track of health issues in real time, without the constraints of traditional clinical environments (Khan et al., 2022). The outbreak of the coronavirus was enacted as a turning point, accelerating the adoption of these technologies and compelling healthcare providers to rethink service delivery as a long-term, sustainable model rather than a temporary solution (Yadav, Alam, et al., 2022).

In this chapter, we examine how WFH models, underpinned by these technologies, are transforming global healthcare delivery and aligning with the third Sustainable Development Goal— ensuring healthy lives while promoting well-being for everyone at all age groups. Despite the goal's focus on universal healthcare access, healthcare systems worldwide have long struggled with disparities in access, quality, and affordability (A. Kumar, Nirala, et al., 2023). WFH models, by breaking down geographical barriers and reducing healthcare costs, offer a solution to these systemic inequities (Yadav, Mishra, et al., 2022). In regions where healthcare resources are limited, these models provide an innovative approach to enhancing healthcare access and quality.

Three central technologies—telemedicine, AI, and IoT—are crucial to the evolution of WFH models in healthcare (Agrawal et al., 2023). Each brings distinct advantages to healthcare delivery, and their combined use is shaping the future of global health systems. This chapter explores these technologies in depth, including why they need to be studied, their broader purpose, and their critical importance for improving healthcare outcomes and advancing SDG 3.

Telemedicine: Expanding Access to Care

Telemedicine refers to the use of telecommunications technology to deliver healthcare services remotely (R. Kumar, Dwivedi, et al., 2023). This can include video consultations, remote diagnostics, electronic prescriptions, and virtual follow-ups (Dash et al., 2022). By eliminating the necessity for in-person visits, telemedicine makes medical care accessible to every patient who might otherwise face barriers such as distance, transportation costs, or limited access to specialists (Dewangan et al., 2020).

The importance of telemedicine lies in its potential to democratize healthcare access. In underserved regions, where healthcare infrastructure is lacking or geographically dispersed, telemedicine can bridge the gap, providing patients with access to medical professionals who might not be locally available (Prasad et al., 2023). This is explicitly essential for every individual maintaining livelihood in rural areas or countries where healthcare resources are stretched thin. Additionally, telemedicine helps reduce the burden on healthcare facilities, alleviating overcrowding and allowing for more focused care for critical patients (Mahor, Pachlasiya, Garg, Chouhan, et al., 2022).

Telemedicine is rapidly evolving, but understanding its full potential and limitations requires further study. Researchers must assess the effectiveness of virtual consultations compared to in-person care, analyze patient outcomes, and explore how telemedicine can be scaled across diverse healthcare systems globally (Kumari et al., 2022). Moreover, the regulatory and technical challenges that come with telemedicine — such as data privacy, cross-border healthcare, and maintaining a high standard of care — necessitate rigorous investigation to ensure sustainable implementation (Mahor, Bijrothiya, Mishra, Rawat, et al., 2022).