



Indian Institute of Management Calcutta

Working Paper Series

WPS No. 902/ July 2023

Smart Healthcare Supply Chains: Past, Present, and Future[#]

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This project is funded by IIM Calcutta research grant 3877/RP:TOMIHSCN:CO

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URL: <https://www.iimcal.ac.in/faculty/publications/working-papers/>

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Abstract

Healthcare supply chain networks face various obstacles in efficiently and effectively designing their strategic, tactical, and operational policies due to their unique characteristics. Traditional healthcare supply chain systems are frequently plagued by concerns such as a lack of transparency in patients' health records, inefficient collaboration and coordination among key stakeholders, and difficulties monitoring and tracing medical supplies. Integration of the Internet of Things (IoT), Artificial Intelligence (AI), and Blockchain technology has emerged as a possible answer to these difficulties. The purpose of this research study is to investigate the use of IoT, AI, and Blockchain in the development of a smart healthcare supply chain network. This work provides a detailed analysis of the literature on the role of technology in healthcare supply chains, as well as a careful examination of the challenges and opportunities involved with harnessing the combined abilities of IoT, AI, and Blockchain technology in these supply chains. We also present a conceptual framework for the proposed smart healthcare supply chain system, emphasizing essential components, capabilities, and advantages. This work highlights the role of these technologies in transforming the healthcare supply chain into a safe, transparent, effective, and efficient system, hence improving patient outcomes and optimizing healthcare delivery.

Keywords: Healthcare management; Smart supply chain; Blockchain; Artificial intelligence; Internet of things