



**Indian Institute of Management Calcutta**

**Working Paper Series**

**WPS No. 902/ July 2023**

**Smart Healthcare Supply Chains: Past, Present, and Future<sup>#</sup>**

**Pratik Srivastava**

Student, Mechanical Engineering

VIIT, Pune, India

Email: pratik.21910246@viit.ac.in

**Vishal Bansal\***

Assistant Professor, Operations Management Group

Indian Institute of Management Calcutta, India

Email: vishalb@iimcal.ac.in

A copy of the working paper can be sought from the corresponding author.

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

**Indian Institute of Management Calcutta, Joka, D.H. Road, Kolkata 700104**

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

# **Smart Healthcare Supply Chains: Past, Present, and Future**

## **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