

Conceptual Framework for a Blockchain-based Medication Supply Chain Tracking System: Enhancing Trust and Security

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Abstract

The increasing prevalence of counterfeit drugs and the complexities of the drug supply chain have highlighted the need for innovative solutions to enhance traceability, transparency, and patient safety. This concept paper aims to explore the potential of implementing a blockchain-based drug supply chain tracking system as a transformative solution to address these challenges. Through existing literature, this paper analyzes the feasibility, benefits, and implications of leveraging blockchain technology in the pharmaceutical industry. The methodology includes framework development, data collection methods, data analysis techniques, and research design. The results reveal a high level of stakeholder awareness and positive perception of blockchain technology, along with identified challenges in the current drug supply chain. The discussion section examines the implications of the findings, including the potential benefits, and regulatory considerations. Furthermore, the paper identifies areas for further research, such as empirical validation, integration with emerging technologies, and exploration of social and economic impacts. The concept paper concludes by emphasizing the significance of Blockchain-based drug supply chain tracking systems in ensuring medication authenticity, improving patient safety, and fostering trust among stakeholders. This research serves as a foundation for future studies and development in the field, aiming to create a secure, transparent, and efficient pharmaceutical industry that prioritizes patient well-being.

Keywords: *Conceptual framework, Blockchain, Medication supply chain tracking system, Trust and security*