

Blockchain-based Medication Supply Chain Tracking: A Systematic Review

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Abstract. Fake medications that appear like genuine medications are a global issue that has not been addressed yet with a proper solution. The World Health Organization (WHO) mentions that 1 out of 10 medications are found to be counterfeit medications in developing countries and it is affecting almost all the countries in the world adversely. The drugs manufactured are distributed to hospitals and pharmacies where the consumers receive these medications through distributors. Counterfeit medications mostly enter the drug market through distributors. Due to this issue, millions of deaths and lifelong diseases are reported globally. To overcome this issue, several studies have been conducted by tracking the drug supply chain from beginning to end utilizing blockchain technology. Also, if information relating to the supply chain is made transparent, counterfeit drugs can be prevented. The aim of this paper is to present a systematic review of the existing studies on blockchain-based systems that track the supply chain of drugs. A comprehensive search strategy with search criteria was used in this paper to select the appropriate studies out of many different studies. The selected studies were then subjected to quantitative and qualitative analysis. The findings of the selected studies indicate that utilizing blockchain can bring security and transparency to drug supply chain tracking systems. Malicious attacks such as middleman attacks are not possible when blockchain is used due to its high security and therefore using blockchain is the best solution for this growing issue.

Keywords: *Blockchain, Supply chain tracking, Counterfeit drugs, Decentralized system*