

Chapter 6

Blockchain–Based Platform for Smart Tracking and Tracing the Pharmaceutical Drug Supply Chain

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ABSTRACT

Every nation is presently addressing the threat posed by the sale of counterfeit medications. It is a growing global issue that has a significant effect on lower middle-income and lower income countries. According to current estimates from the WHO, one in ten of the medications circulating in low- and middle-income nations are either subpar or fake. According to the National Drug Survey 2014–2016, carried out by the National Institute of Biologics, Ministry of Health & Family Welfare, counterfeit or substandard drugs make up about 3% of all pharmaceuticals in India. There is an urgent need for increased visibility and traceability within the supply chain due to the growing threat of counterfeit medications entering it and, in particular, making it into customers' hands.

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INTRODUCTION

E-health is a field of technology that is gaining importance throughout time, from individual real-time data interchange to faraway access to medical information like Electronic Health Records (EHR) or Electronic Medical Records (EMR) (Xie et al., 2018). With the development of IoT and linked products, e-capacity Health’s to give patients access to their clinical data and real-time health monitoring throughout the globe is crucial. Significantly larger availability of Health care, performance in remedies and health management, and less strain on community health budgets are all benefits of improved patient-health effective communication (Ren et al., 2018). EHR is a consistent data that enables inclusion among various health-care providers, and this integration is thought to be its main benefit (Boore et al., 2018). EHR offers a number of advantages, including assisting with prescriptions, enhancing illness management, and reducing serious pharmaceutical errors. However, the accessibility of EHR, the confidentiality of data sent across healthcare organisations, and the exclusion of information on patient well being are all constraints (Schumacher et al., 2017). As a result, blockchain transforms the way clinical data is kept and communicated in the context of e-health by acting as a secure data and decentralised internet platform of numerous computers referred to as nodes. It streamlines operations, keeps an eye on data security and correctness, and lowers maintenance costs.

As the blockchain technology is growing in the area of e-hospital rapidly, Table 1 tells the publications trend in e-hospital research since 2017 to 2021.Scope of blockchain is increasing day by day in healthcare domain to provide high security and trust in medical sector. Blockchain presents a chance to ensure the credibility of the data, the seamless transfer of data between the stakeholders, and the confidentiality of the customer. For the application of blockchain technology, trust issues like adoption, legislation, and morality should be taken into account. Medical care is necessary as much as there is modern society.

Table 1. Number of publication count

Publications year	Count
2017	2
2018	8
2019	10
2020	18
2021	7

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