ABSTRACT

Pharmaceuticals play an important role in healthcare. It ensures safe and quality patient care, focusing on tracking medication origins and expiration dates. However, limitations in the complex and non-transparent pharmaceutical supply chain ultimately allow the circulation of counterfeit or expired medicines. The circulation of counterfeit medicines has the potential to cause health problems for consumers and even death. Therefore, we harnessed blockchain technology's capability of detecting fraud and errors to improve safety and transparency in the pharmaceutical supply chain. Additionally, it revolutionizes pharmaceutical supply chain management by combining security and transparency, enabling a decentralized network across manufacturers, distributors, pharmacists, doctors, and patients, ensuring patient data security and collaboration. The author conducted this research by reviewing the existing literature and observations, then proposed a blockchain- integrated model that allows stakeholders to track pharmaceutical information securely.

Keywords—Blockchain Model, Pharmaceutical Supply Chain, Transparency, Security, Traceability.