

Role of technology in detecting counterfeit drugs in the forward pharmaceutical supply chain

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Abstract

Drug counterfeits have been a severe international issue for almost two decades, and the latest statistics show that fake medications will continue to penetrate legitimate pharmaceutical supply chains to fulfill the desperate need of different segments of patients. Therefore, identifying the issues faced by the pharmaceutical supply chain is essential to understand better and combat the drug counterfeited issues, which require technological implementation and their applications in various phases of the pharmaceutical supply chain to gain better visibility and ensure safety. In this regard, a review has been conducted to fulfill the following objectives:

- (i) Review the application of traceability technologies in various pharmaceutical supply chain phases to detect and solve counterfeit issues.
- (ii) Analyze the various barriers affecting establishing a safe pharmaceutical supply chain and the critical success factors to overcome those barriers.
- (iii) Develop a conceptual framework for showing the influence of technologies and success factors on overcoming the various barriers in different phases of the pharmaceutical supply chain.

Recent statistics show that counterfeit drugs will continue to penetrate the legitimate pharmaceutical supply chains and target more significant patient segments. Furthermore, smugglers and counterfeiters will also continue to target all phases of the pharmaceutical supply chain. This study developed a conceptual framework for achieving a safe PSC by demonstrating the influence of traceability technologies and success factors on overcoming the various barriers in different phases of the PSC. The critical finding of this review was that the traceability technologies and the critical success factors have a significant influence on overcoming the barriers in establishing a safe PSC.

Keywords

Pharmaceutical supply chain, Drug counterfeit, Traceability technologies, Critical barriers and success factors

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