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**Securing E-Prescription from Medical Identity Theft Using Steganography and Antiphishing Techniques**

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**ABSTRACT**

Drug prescription is among the health care process that usually makes references to the patients’ medical and insurance information among other personal data, because this information is very vital and delicate, it should be adequately protected from identity thieves. This article aims at securing Electronic Prescription (EP) in order to minimize patient’s data theft and foster patients’ trust of EP system.

This paper presents a steganography and antiphishing technique for preventing medical identity theft in EP. The proposed EP system design focused on the security features in the prescriber and dispensers’ modules of EP by ensuring the prescriber sends the prescription of the patient in a safe manner and to the right dispenser without the interference of fake third parties. Hexadecimal steganography image system is used to cover and secure the sent prescription details. Malicious electronic dispensing system is prevented through an authentication technique where a dispenser uses a captcha together with a one-time password, and the web server encrypted token for prescriber’s device authentication. The steganography system is evaluated using Peak Signal to Noise Ratio (PSNR). The system implementation results showed that steganography and antiphishing techniques are capable of providing a secure EP system.

**KEYWORDS**

Electronic prescription; one-time password; steganography; phishing; medical identity theft