

ELECTRONIC AUTOMATED DRUG DISPENSER SYSTEM

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Background: An automated drug dispenser system is a system that automatically dispenses drugs at the right time, in the right dosage and to the right patient, for a relevant duration. This system, would essentially eliminate the potential human errors from the equation as well as healthcare worker burnout.

Methodology: The methods included reviewing existing systems to identify gaps, and developing the software with a user-friendly interface, medication database, alert system, and security measures. Additionally, sketching an appropriate hardware design was proposed as well. Finally, the methodology encompassed future work involving prototyping and testing, where the developed hardware and software were integrated, and the system's outputs evaluated and fine-tuned to achieve desired effectiveness and accuracy.

Deliverables: The system software design included a user-friendly touchscreen interface, a medication database with accurate dosages and schedules that was regularly updated, a low medication alert system, and stringent security measures. The hardware design consisted of a medication cabinet with barcode scanning capabilities and an automated dispensing mechanism. The system's functionality in a hospital ward was illustrated through a basic layout and a detailed description of the patient registration process leading up to medication dispensing.

Conclusions: This automated drug dispensing system enhances patient safety, accuracy, and medication management, benefiting nursing staff and overall patient care. While it has significant potential to deliver on these promises, financial limitations, particularly in resource-limited settings like Sri Lanka, pose challenges due to the high initial costs of advanced components.

Keywords - Automated Drug Dispensing, Patient Safety Healthcare Efficiency