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Online Testing and Monitoring of Quality of Medicines and Consumables

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Abstract: This project addresses The Ensuring the quality and safety of medicines and medical consumables is critical for public health and effective healthcare delivery. Traditional quality control methods often involve time-consuming laboratory testing, which can delay product deployment and fail to detect degradation during storage and transportation. This paper presents a novel approach to online testing and real-time monitoring of the quality of pharmaceutical products and medical consumables using integrated sensor technologies, Internet of Things (IoT) frameworks, and machine learning algorithms. The proposed system enables continuous assessment of key parameters such as temperature, humidity, chemical composition, and physical integrity to detect substandard or counterfeit products. Data is collected via embedded sensors and transmitted securely to cloud-based platforms for analysis and visualization. A predictive model is employed to identify anomalies and forecast potential quality degradation, enabling proactive interventions..

Keywords: public health

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