

Development of Smart Healthcare Monitoring System Using IoT

**Mr. Vikram Abhang, Nakul P. Karande, Aaditya M. Kuldharan,
Abhinav A. Lahare, Rushika S. Landage**

Assistant Professor, Department of Computer Engineering
Students, Department of Computer Engineering
Amrutvahini College of Engineering, Sangamner, India

Abstract: *Using an ESP32 microcontroller, load cell sensors, and a GSM module for real-time saline tracking and alerts, our Internet of Things-enabled IV monitoring system improves patient safety. In order to handle intravenous therapy effectively, a web-based program facilitates remote monitoring, lowers risks, minimizes human error, and optimizes hospital efficiency. Intravenous (IV) fluid delivery necessitates constant monitoring to avoid issues such as saline backflow, and patient safety in healthcare facilities is of utmost importance. We suggest an Internet of Things (IoT)-enabled alert system that incorporates smart sensors to monitor saline flow and identify anomalies instantly in order to improve patient care. The device, which is based on the ESP32 microcontroller, uses a GSM module to send SMS alerts to medical personnel and a load cell sensor to track fluid levels. Hospital procedures can be streamlined by using a web-based program to remotely monitor saline levels and flow rates. By lowering the dangers associated with saline, eliminating human error, and streamlining hospital operations, this innovation greatly enhances patient safety. In critical care, the automated alarm system improves response time, guaranteeing prompt intervention and effective fluid management. This system offers a scalable and efficient way to enhance intravenous therapy administration in clinical and hospital environments by utilizing IoT technologies.*

Keywords: Alert System; Internet of Things (IoT); Patient safety; Real-time monitoring; AVCOE, Department of Computer Engineering 2024-25 IV Saline Monitoring System

