How the Internet of Things (IoT) can improve interoperability and clinical workflows in IV medication administration

Francisco Cuesta, BSN
Co-presenter: Aron Weiler

Abstract

Healthcare environments have an abundance of medical devices intended to improve safety by providing real time insights into patient conditions, accuracy in care delivery, and timely and effective actions in support of patient care. The evolution of IoT technology has enabled flexibility, scalability, and portability in nearly every care environment and workflow associated with the patient. Over the past two decades health information technologies and systems have evolved rapidly and become essential to healthcare providers. Most hospitals and IDNs today have an Electronic Medical Record (EMR) system. These systems are implemented to manage patient demographics, clinical history, medication prescriptions, diagnostic imaging, labs, and more. Additionally,some EMR systems offer medical device integration and bi-directional communication capability, enabling interoperability. In an interoperable environment, medical devices share data with EMR systems, and vice versa, to promote safety. For example, a medication order can be automatically populated on an infusion pump, avoiding risks inherent in manual programming. Still, safety requires numerous interactions among patients, providers, and devices. New connectivity features may make workflows simpler and safer. Future systems using proven technologies such as Radio Frequency ID (RFID), Bluetooth Low-Energy (BLE), and Near Field Communication (NFC) will go beyond interactions between the EMR and devices to enable direct communication between patient care devices. This communication will foster data sharing between all medical devices involved in the patient continuum of care and move us forward to the ultimate goal of making medication administration workflows safer and more efficient.