

Feedback of an Automated Hospital about the Performance of an Automated Drug Dispensing System's Implementation

Authors : Bouami Hind, Millot Patrick

Abstract : The implementation of automated devices in life-critical systems such as hospitals can bring a new set of challenges related to automation malfunctions. While automation has been identified as great leverage for the medication dispensing system's security and efficiency, it also increases the complexity of the organization. In particular, the installation and operation stage of automated devices can be complex when malfunctions related to automated systems occur. This paper aims to document operators' situation awareness about the malfunctions of automated drug delivery systems (ADCs) during their implementation through Saint Brieuc hospital's feedback. Our evaluation approach has been deployed in Saint Brieuc hospital center's pharmacy, which has been equipped with automated nominative drug dispensing systems since January of 2021. The analysis of Saint Brieuc hospital center pharmacy's automation revealed numerous malfunctions related to the implementation of Automated Delivery Cabinets. It appears that the targeted performance is not reached in the first year of implementation in this case study. Also, errors have been collected in patients' automated treatments' production such as lack of drugs in pill boxes or nominative carnets, excess of drugs, wrong location of the drug, drug blister damaged, non-compliant sachet, or ticket errors. Saint Brieuc hospital center's pharmacy is doing a tremendous job of setting up and monitoring performance indicators from the beginning of automation and throughout ADC's operation to control ADC's malfunctions and meet the performance targeted by the hospital. Health professionals, including pharmacists, biomedical engineers and directors of work, technical services and safety, are heavily involved in an automation project. This study highlights the importance of the evaluation of ADCs' performance throughout the implementation process and the hospital's team involvement in automation supervision and management.

Keywords : life-critical systems, situation awareness, automated delivery cabinets, implementation, risks and malfunctions

Conference Title : ICHRCO 2022 : International Conference on Healthcare Robotics, Challenges and Opportunities

Conference Location : San Francisco, United States

Conference Dates : September 27-28, 2022