

Evaluation of continuous multi-parameter surveillance monitoring, a wearable medical device, on code blue/treat team events for medical-surgical floor patients.

Tonya Judson, RN
Co-presenter: Ada Holyfield

Abstract

Background: Continuous multi-parameter surveillance monitoring (CMSM) monitors a patient's heart rate, blood pressure, oxygen saturation, respiration and skin temperature. The use of CMSM fosters early recognition of deteriorating vital signs with data trends, prompting clinical intervention to promote patient safety and improve patient outcomes. The CMSM real-time data transmits wirelessly to the electronic health record (EHR) and to a remote viewer display (RVD) at the nurses' station. Vital signs that fall outside safe parameters alert the nursing staff at the RVD and the mobile handheld device, prompting intervention. The CMSM communicates through Wi-Fi, allowing monitoring of a patient while in the room, on the unit, or during transport throughout the hospital. Additionally, the CMSM unit is a wearable medical device, facilitating patient mobility. For this study, a 350+ bed, southeastern metropolitan hospital uses a CMSM device in 25 out of 50 beds on a medical-surgical floor. **Objectives:** The aim of this study is to examine code blue/treat team events for non-CMSM and CMSM medical-surgical patients to determine if CMSM improved patient outcomes. **Methods:** A 259-day retrospective study was conducted by reviewing the hospital's code blue/treat team logs and comparing the data to the patient CMSM device usage on the floor. The EHR was examined to determine CMSM usage. Vital signs that were manually entered into the EHR were labeled "clinician" sourced (non-CMSM patients), while vital signs transmitted wirelessly were labeled "device" sourced (CMSM patients). Outcomes were noted for both non-CMSM and CMSM patients that experienced a code blue or treat team event. The data results were further compared and analyzed. **Results:** Non-CMSM patients had 28 events: 61% were transferred to a higher level of care, 32% remained on the unit post an event, and 7% (2 patients) expired. CMSM patients had 24 events: 42% were transferred to a higher level of care, 50% remained on the unit post an event, and 8% (2 patients) expired. EHR review revealed that the CMSM device was used incorrectly for both expired CMSM patients. Additionally, the study revealed incorrect CMSM device usage in 17% of the CMSM patients that had an event. **Conclusions:** It appears that CMSM of medical-surgical patients had an overall decrease of code blue/treat team events, a decrease in patients being transferred to a higher level of care after an event, and an increase in patients remaining on the unit after an event. Review of the staff's roles and responsibilities, as well as staff re-education of correct CMSM device usage, could continue to improve the positive outcomes and prevent patient harm.