Evaluation of the use of the Bar Code Medication Administration(BCMA) Process after the First Decade

Lynne Bittner, MS, RN-BC
Co-presenter: Anne Lara, RN, EdD

Abstract

Bar Coded Medication administration (BCMA) has been widely adopted in the United States, with more than 50% percent of acute care hospitals adopting the technology. The use of BCMA is intended to reduce medication errors, but some of the patient safety features of the technology may be reduced if end-user staff members employ workarounds. Our small community hospital is a 122 bed not-for-profit, full-service hospital. BCMA was implemented in our hospital in 2006, beginning in the Emergency Department (ED) as a pilot and subsequently implementing in the inpatient units. In 2014 our hospital underwent an EHR upgrade, expanding our use of BCMA and it is now live in the ED, the inpatient units, the Behavioral Health Unit, the Observation Unit, the Pre- and Post-Surgical Units, and the Infusion Center. Post Go Live reports from nursing services of inefficiencies encountered during BCMA led us to develop a survey to determine contributing factors. A literature search was performed to review existing surveys, many of which examined the transition from paper medication administration documentation to BCMA and were not appropriate for our purpose. We then developed a survey to assess multiple aspects of Medication Administration in a mature BCMA system. The survey consisted of five demographic questions followed by 20 questions with six response choices ranging from Strongly Agree to Strongly Disagree in a Likert Scale design. The study was approved in an expedited review by a university Institutional Review Board (IRB). The target population for the survey was a convenience sample of staff nurses and respiratory therapists who were identified from a list of staff members who had removed medications from the automated medication dispensing system in the previous six months. An email request containing the purpose of the study, an invitation to participate, a consent statement and a link to the survey was sent. Consent from participants was obtained when they accessed and completed the survey. The survey was open for three weeks. Of the 325 staff sent the link, 120 completed the survey, for a response rate of 37%. Survey findings revealed opportunities for improvement in the following areas: pharmacy workflow, medication delivery/administration processes, equipment availability/function, documentation on the medication administration record(MAR), and staff education. Results were shared with the organization executive team and action plans for addressing improvement opportunities were developed. Priority was given to those areas where patient safety was directly impacted.