



## **An Evidence-Based Evaluation of Medication Barcode Scanning Acceptance in a Community Hospital**

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**Problem Statement:** There is a lack of adoption and acceptance of barcode scanning during medication administration (BCMA), in spite of the documented safety benefits and the expectations by quality organizations, such as the Leapfrog Group, that scanning is utilized. Barcode scanning studies have been conducted at academic medical centers examining nurses' acceptance of BCMA. **Methods:** This project utilized a survey instrument based on the Technology Acceptance Model (TAM), to understand barcode scanning adoption and acceptance of barcode scanning by nurses and respiratory therapists at a rural community hospital. Data were collected from a convenience sample of 44 participants after the project was deemed to be a quality improvement activity by the hospital's IRB. The reliable survey instrument ( $\alpha = .70$  or greater for all subscales), developed by Holden, Brown, Scanlon, and Karsh, consisted of 32 questions, with each question corresponding to one of nine TAM variables. Demographic data, and participants' years of computer use at home and at work were also collected. The Frames conceptual model developed by Bolman and Deal (2013) was used to guide the project. Data analyses were conducted utilizing the mean for the demographic and descriptive statistics. The data were not normally distributed; therefore, the Kruskal-Wallis and Mann-Whitney U tests were utilized to compare survey responses among the five hospital departments that participated in the survey. IBM SPSS Statistics 20 software was utilized for all data analyses. **Results:** The mean scores for all questions ranged from 3.19 to 4.96 on a seven-point scale. The highest scores for the nine subscales were for the intention to use BCMA ( $M = 4.96$ ,  $SD = 1.42$ ) and the influence of others ( $M = 4.74$ ,  $SD = 1.76$ ) variables. The two lowest mean subscores were technical support ( $M = 3.20$ ,  $SD = 1.88$ ) and training ( $M = 3.2$ ,  $SD = 3.19$ ). There were no significant differences among the variables related to the participants' ages or for the years of using a computer at work or at home. The acute care inpatient units reported the highest mean scores for several of the variables while the surgical services department reported the lowest scores for several of the variables. The follow-up discussions with survey participants, using established shared governance committees, revealed that some medications consistently did not scan in spite of a process in place to address non-scanning medications, and staff believed that patients did not perceive BCMA to be important for their safe care. In the development of the action plan, the registration clerks, who placed the scannable identification bands on patients, were identified as key stakeholders to help inform patients about the safety benefits of BCMA. **Significance:** The survey identified areas for improvements, even though BCMA had been in use at the community hospital for several years. Also, a new stakeholder group in the BCMA process was identified. Through routinely evaluating the BCMA processes and addressing issues and opportunities that are identified, the full adoption and acceptance of BCMA will be supported.