

### **Abstract**

Medication administration errors adversely affect patient outcomes, satisfaction, safety, and quality of care. Barcode medication administration (BCMA) technology automates the verification process during medication administration by requiring that nurses scan the barcode on the medication and the patient identification wristband to confirm the five rights of medication administration. The BCMA thus helps to intercept medication errors that occur at the point of administration. A review of 32 articles published within the past six years was conducted to explore the impact of using BCMA technology on medication error rates in inpatient hospital settings. The review findings indicate that systemic and individual nurse factors cause medication errors. Individual nurse factors include constant disruptions during medication administration, a negative attitude toward medication safety practices, and incompetence. To eliminate these challenges and enhance the effectiveness of BCMA in preventing medical error rates, nurse involvement and comprehensive education and training during the implementation process are key. The implication of this integrative review on clinical practice is the increased need to embrace BCMA technology.

*Keywords:* medication errors, effectiveness, implementation, BCMA technology