Improving Medication Safety with Barcode Medication Administration (BCMA) in the Cardiovascular Investigations Unit (Cath Lab)

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Introduction

- Barcode Medication Administration (BCMA) technology improves patient safety by verifying the correct patient and medication prior to administration.
- Despite strong evidence showing up to a 50% reduction in medication errors, baseline BCMA compliance in the cardiac catheterization lab was 0% following EHR implementation.
- High-acuity and fast-paced environments and workflow barriers contribute to low adoption, with workarounds reported in over 60% of medication administrations.

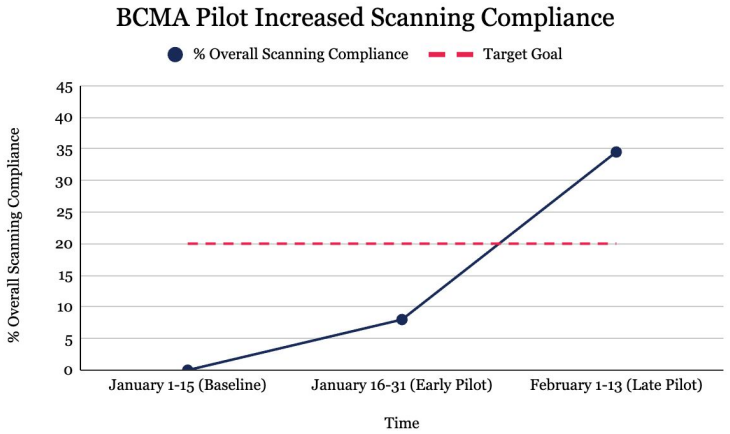
Aim

- To increase overall BCMA compliance to 20% in the cardiac catheterization lab for post-procedure electrophysiology and implantable devices patients by March 31, 2026.

References

Methodology

- A targeted quality improvement initiative was implemented using three key strategies:
  1. Environmental optimization: Equipment assessment and replacement of scanners to improve functionality and access.
  2. Workflow and culture adaptation: Small-scale rollout focused on a defined patient population to build adoption and refine processes.
  3. Education and clinical support: Training five nurses with a four-week hands-on intervention including real-time coaching.
- Implementation occurred from January 16 to February 13, 2026, during which 156 medications were administered across multiple routes.



Results

- BCMA compliance increased from 0% to 34.5% within 30 days, exceeding the project goal.
- Staff feedback was highly positive:
  - 83% reported BCMA as easy to use and effective
  - 92% felt confident in medication administration
  - 91% were satisfied with training
  - Additionally, 50% of staff reported preventing at least one near-miss medication error, demonstrating early safety impact.

Conclusion

- Targeted implementation of BCMA in a high-acuity procedural setting significantly improved compliance and enhanced medication safety.
- Success was driven by frontline engagement, workflow-aligned design, and adaptability during implementation.
- This project highlights that effective safety interventions depend not only on technology, but on thoughtful integration into real clinical practice.