The Systems Development Life Cycle: Nursing Informatics Contributions To a Mobile Medication Scanning Implementation

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**Who Are We?**
- Located in Houston, Texas
- A leader in Pediatric, Women’s Health, and Maternal-Fetal Medicine
- Over 630 beds
- 31,000 Inpatient Visits/year
- 110,000 EC Visits/year
- 2500+ Inpatient Nurses & RTs
- EMR Rollout Timeline:
  - eMar (2010)
  - ED Application (2010)
  - Inpatient Documentation (2011)
  - CPOE (2011)
  - Mobile BCMA Solution (2015)

**Planning**
- The primary Strategic Imperative guiding this implementation at TCH was to improve Patient Safety
- Governance Structure: Executive Steering Team (EST) and Project Steering Team (PST)
- Informatics nurses participated on both project steering teams
- Resources were identified from several interprofessional groups
- What was our Scope?
  - All inpatient care areas using the inpatient MAR
  - Nurses and Respiratory Therapists

**Design**
- Informatics documented the Future State Workflows
- Developed Communication Plans including:
  - Nursing Council(s) presentations
  - Nurses’ Week Poster Presentation
  - Nurses’ Professional Development Day
  - Updates in Quarterly Informatics Newsletter
  - Updates via TCH intranet site
- Facilitated a Clinical Subgroup to make decisions on workflow, design, and the operational implementation plan
- Nursing Informatics led the development of the Training Plan and coordinated resources to participate in Integrated Testing

**Implementation**
- Pilot lasted two weeks and was in an area transitioning from handheld tethered scanners to the mobile solution
- Following the pilot, BCMA was implemented in a Phased Approach:
  - Eight separate go-lives over eight weeks
  - Similar units (3-4) were combined into groups for go-lives
- Nursing Informatics staffed the Command Center and provided Floor Support around the clock for the first three days of each go-live
- Facilitated technical, application, and workflow Issue Resolution

**Metrics**
- Pre-implementation metrics were available from Pilot location
- Implementation goal: 90% Scanning Compliance
- Daily, weekly, and monthly Reports available to clinical leadership
- Identify Trends and review with leadership

**Analysis**
- Site Visit was conducted with a similar Pediatric facility in Texas
  - This visit influenced the decision to implement a mobile solution for BCMA rather than tethered scanners fixed to mobile workstations
  - Informatics modified and validated existing Current State Workflows for medication administration and the associated clinical documentation

**Informatics @ TCH**
- Clinical Informatics functions as an innovative partner to deliver technology and redesign workflows to translate best practices into clinical operations
- Created in 2013, we are a team of eight. All informaticists are registered nurses with a variety of informatics experience

**Lessons Learned**
- Awareness of implementation Timelines
- Go-Live Plan: Big-Bang versus phased approach
- Challenges with ongoing Support during subsequent roll outs
- Ensuring an adequate Communication strategy amongst workgroups
- Unit-based strategy for Device Management:
  - Check in/Check Out
  - Battery swap/replacement
  - Broken devices
- Impact of Connectivity on clinical workflows
- Challenges withOverride workflows and automatic dispensing systems (ADS)
- Consider ID Badge Scanning to provide easy access to the device
- Identify and prioritize Reporting Needs

**The Future**
- Monitor ongoing Scanning Compliance to achieve and maintain an overall combined goal of 90% or higher
- Address workflow and systems issues through PDSA Cycles
- Implement additional mobile scanning projects for:
  - Breastmilk and Formula feedings
  - Mother Baby Matching
  - Lab Specimen Collection
  - Blood Product Administration

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