EMR, CPOE, BCMA & eMAR Implementation... How

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Objectives

• BHMC-NLR overview
• Guidelines that exists
• Practice model prior to implementation
• Preparation for implementation
• Implementation and aftermath
• Practice model subsequent to implementation
• What needs to happen now…..

February 26, 2012 @ 0200

• Paper chart → Electronic chart
• Pharmacist order entry → CPOE
• Bar Code Medication Administration
• Paper MARs → Electronic MARs
• EPIC and automation integration

ASHP Guidelines and Statements

BHMC-NLR Overview

• 248 bed facility (daily census 150-200)
• Services:
  – General inpatient
  – Surgery
    • General & cardiac
    • Inpatient & outpatient
  – OB/GYN

BHMC-NLR Overview

• Services:
  – Pediatrics
  – Angiography
  – Oncology
  – DaVinci robot – 1st in the state
    (prostatectomy)
Department of Pharmacy Overview

- **FTEs**
  - Pharmacist - 14.65 (Full-Time & Part-Time)
  - Technicians - 10.5
  - Students – 1.4
- **Services:**
  - Distributive
  - Clinical
  - 24 hours
- GREAT TEAM MEMBERS AND TEAMWORK

BHMC-NLR: Timeline

- **Pharmacy System**
  - McKesson
  - Pyxis
  - Pharmacist
  - Decentralized
  - Handheld Devices
  - Computer Generated MARs
  - MDATA
  - CareFusion
  - Pharmacy
  - Paperless
  - Documentation:
    - Pendragon
    - Phamis
    - Clinical
    - Documenation
    - Computer
    - Generated
    - MARs

- **Core Measures**
  - CMS
  - Core Measures

Distributive: Prior to 2/26/12 @ 0200

- **Procurement/Receiving**
  - "Want Book" / "Walk the Shelves"
  - Replenishment software (M&D)
  - No Par levels
  - Non-bar-code receiving
- **Storage**
  - Static shelving of product
  - Pyxis Narcotic Vault
  - Pyxis machine (nursing units)
  - Floor-stock

Distributive: Prior to 2/26/12 @ 0200

- **Preparation/Dispensing**
  - Pharmacist order entry (Pyxis Connect)
  - Manual product verification (IV/UD)
  - Signature on label
  - Charge on dispense / Tubed 'first doses'
  - Non-profiled / Profiled (ER, PreOp, & PACU)
- **Pyxis Replenishment**
  - Refill / Stock out reports
  - Refill pull times – Varied
  - Repetitive workflows/ steps (spaghetti diagrams)

Distributive: Prior to 2/26/12 @ 0200

- **Inventory**
  - Controlled – perpetual
  - Non-controlled – PRN
- **Missing Doses**
  - Phone call
  - Fax / Scanned Requests
- **Computer generated paper MARS**
  - New admits - Manual
  - House-wide - Daily

Clinical: Prior to 2/26/12 @ 0200

- **Pharmacokinetics**
  - Vancomycin
  - Aminoglycosides
- **Intravenous Nutrition**
  - TPN
  - PPN
- **Anticoagulation**
  - Factor Xa inhibitors
  - UFH/LMWH
  - Warfarin
  - Newer agents
Clinical: Prior to 2/26/12 @ 0200

- Renal Dosing
  - Antibiotics
  - Anticoagulants
- Code Blue Attendance
  - Medication information
  - Medication preparation
- Electrolyte Management
  - Magnesium
  - Potassium
  - Sodium

Clinical: Prior to 2/26/12 @ 0200

- Core Measures
  - PN
  - VTE (VTE-2, VTE-1, etc)
- Antibiotic Stewardship
  - Daily culture reviews
  - Antibiotic duration screening
  - Reserved antibiotic criteria review
  - IV to PO
  - CSF Management

Clinical: Prior to 2/26/12 @ 0200

- Restricted Formulary
  - Review for approved use
  - Appropriate criteria for use
- Professional Development
  - Projects
  - Preceptor (IPPE & APPE)
  - Clinical Pharmacist II
- Tier approach
  - Prioritization
  - Shift specific
- Admission home med rec

Clinical: Prior to 2/26/12 @ 0200

![Graph showing VTE data over time]

Clinical: Prior to 2/26/12 @ 0200

![Graph showing Pharmacy Clinical Interventions over time]
EPIC Post Go-Live: Issues

- Pharmacy
  - Pyxis Connect scanners
  - Med list maintenance
  - Bar-coding scanning
  - Interface (EPIC, etc)
  - Pyxis – Variable dosing
- All Disciplines
  - Different charts presentation for all disciplines
  - Navigators

EPIC Post Go-Live: Issues

- Physicians
  - MD super-users
  - Multiple orders (same thing)
  - Warnings ignored
  - LMA's ignored
  - Phase of Care
  - Sign and Hold
  - SureScripts
  - Order-sets (where is mine?)

EPIC Post Go-Live: Issues

- Medications involved?
  Call pharmacy ……..
  - MD
    - Warnings
    - SureScripts
    - MD Rec issues (all)
  - Nurses
    - eMAR problems
    - Nearly Pyxis profiled units

EPIC Post Go-Live: Successes

- CPOE - 66%
- Meaningful Use: Hitting all threshold targets
- BCMA > 90%
- Medical Transcription Reduction:
  - NLR ER - 99%
  - NLR Medical - 50-60%

EPIC Post Go-Live: How We Made It

- Positive attitude
- Change management
- Realistic expectations
- Quick resolution of critical issues
- Teamwork
- Leadership (all levels)

BHMC-NLR: EPIC Implementation

“Congratulations on what will almost certainly go down in Epic history as one of the most successful initial go-lives ever. It was incredibly well-prepared for and well-executed. Your cutover alone serves as a model to be replicated.”

Matthew Gerez, Epic Implementation Services

“Our congratulations on your smooth and successful go-live at North Little Rock. I’d love to bottle the Baptist approach, but it’s really the great people and great can-do culture that makes the difference.”

Put Thompson, Epic
Distributive: After 2/26/12 @ 0200

- Preparation/Dispensing
  - Order verification (complete chart available)
  - Bar-code scanning of product (in addition to visual ID)
  - Bar-code documentation of pharmacist check
  - Charge on administration
  - Charge of dispense (Cath Lab, OR, etc)
  - IV room – Dispense Prep/Check
  - New orders – Carousel / Narcotic vault

- Pyxis Replenishment
  - Refill / Stock-outs – Auto ‘drop’ to carousel
  - Refill times – Automated by software
  - Streamline ‘pull’ process – Bar-code scanning and less time

Distributive: After 2/26/12 @ 0200

- Inventory
  - Controlled substances – perpetual
  - Non-controlled substances – perpetual

- eMARS

- Missing Doses
  - MAR messages
  - Phone calls

Clinical: After 2/26/12 @ 0200

- Clinical Duties
  - Consults etc
  - MDATA
  - Home Med Rec Process
  - EPIC – RX Acuity Scoring process
  - Preceptor (PGY-1)

- ADR Reporting/Intervention Documentation
  - EPIC (virtual chart, ease of ordering, eMAR, etc)
  - EPIC – iVents
  - Pendragon

Data.. Data.. Data..
What are the next steps??

**Distributive**
- Organization/Efficiency of central pharmacy / IV Room
- Space
- Streamline Workflows
- ADS machine optimization - Adjust Max/Min levels
- Ordering
- Package sharing
- Standardization across system

**Clinical**
- Re-evaluate clinical workflows and assigned responsibilities
- Documentation (EPIC iVent vs. Pendragon)
- Productive/Efficiency reports (standardize across system)
- Next clinical initiatives... ER? DC Med Rec?

**Summary**

- Pre-EPIC: Distributive / Clinical Duties
- Go-Live
- Post Go-Live
- EPIC: Distributive / Clinical Duties
- Data... Data... Data...
- Next steps / Plans for the future

**References**