CPOE:
Computerized Provider Order Entry

March 2006
WHY CPOE?

- Quality Council review of handwritten orders showed recurring deficiencies in order completeness, quality and legibility

- Education, communication and ongoing monitoring efforts resulted in some improvement, but nothing sustainable

- Interest in an electronic solution peaked

- CPOE would **definitely** ensure:
  - Complete orders
  - Legible orders
  - Electronic signature on all orders

- We **hoped** that CPOE would:
  - Improve order quality and compliance with standards
  - Decrease VOs and improve cosignature compliance
  - Improve communication among caregivers
  - Improve order turn-around time
  - Increase patient safety
CPOE PROJECT BACKGROUND & TIMELINE

- 1998 – Pilot Area identified – Reproductive Medicine
- July, 1999 - Implemented for all OB patients
- November, 2000 - Healthy Newborn service
- Focus shifted to other projects
- 2002 – Developed Med/Surg Team
- Identified changes necessary to succeed in varied world of physician and patient populations
- Redesigned and rebuilt many portions of the system
- May, 2003 – Implemented Med/Surg units at Thornton
- Sept, 2004 – Live for all Hillcrest Med/Surg units
- May, 2005 – Live in Thornton ICU
- June, 2005 – Live in Hillcrest ICUs (SICU, CCU/Pulm, Burn ICU/IMU)
Now have CPOE fully implemented in all inpatient areas except:

- NICU
- Psychiatry
- BMT

- 90% penetration
- 99% physician compliance

- Outpatient CPOE – Hyperspace/EpiCare Ambulatory

- ED CPOE – Inhouse-developed system
Key Factor for Success

Major projects that look like or are tagged as “I.T.” are multi-threaded and must marry:

People....

Processes....

and Technology
DEPLOYMENT STRATEGY

• Clinical Champions
  – Physicians, Nurses, Pharmacists, I.T., Ancillaries, Administration

• Good workflow model

• Orderset design and development

• Implementation approach

• “The Huddle”

• Communication
ORDERS NOTIFICATION

- Already in place for most ancillaries
- Critical for nursing
- Tried many things
- Combination approach now in place:
  - Online notification of new orders
  - Printed orders on scheduled basis
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ORDERSET DESIGN

• Developed to assist physicians in the ordering process and to apply standards of care for specific groups of orders

• Typically start with paper order forms

• Team approach – physicians, pharmacy, nursing ancillaries

• Ensure clear wording of orders

• Use conditional logic to provide for clinical checking, branching to screens based on prior input

• Allows for teaching

• High degree of satisfaction and sophistication

• Time-consuming build process; tedious maintenance
IMPLEMENTATION APPROACH

• Implemented in broad groups by nursing units
• Pilot first; then add more
• No perfect staging strategy
• Not optional!
• Got easier for physicians as more units were added
• Big change for nursing each time
• Up-front training is essential
• Superusers
• 7/24 knowledgeable support
"THE HUDDLE"; COMMUNICATION

- Listen; Observe; Learn from experience
- Daily recap; Plan for next shift/day
- Make critical changes quickly; make sure people know about them
- Be visible, available, empathetic
- Continue to meet post-implementation
- Make rounds
- Continuous Process Improvement
• What’s best for one group is not always ideal for another!

• Many people use orders in different ways and for different reasons

• It’s not all about making it “easy” for the physicians

• Need to make things clear to order recipients

• Nursing orders need to be worded and formatted so they can carry them out

• Ancillary orders need to get to them correctly without being “fixed” by intermediaries
NURSING NEEDS VARY

- Discovered with implementation of ICUs
- Needs/wants of floor nurses are sometimes very different from those of critical care nurses
- Sorting of orders on displays/prints
- Need to keep nursing worklists manageable
- ICU nurses want ability to “erase” things; floor nurses don’t have that need
- New way of organizing the day
- Tough to come up with universal acceptance of one way to do things
MOBILITY OF CPOE – BOON OR BANE??

- Physicians quickly embraced the ability to enter orders from any location
- 80-hour work week – physicians try to do everything possible to save time; this is a new tool that can save them time
- Some take it to extreme and physician/nurse communication has diminished
- Even though the orders are legible, further clarification by the physician is occasionally required. CPOE is not the end of nursing calls to physicians or vice versa
OPERATIONAL DISCOVERIES

- Try to find Technical solutions to ease operational challenges

- Can sometimes help, but need sometimes need workflow, process, or policy changes to truly make the best change

- Many times, these are the very things that had been handled in the past with workarounds to get things done in the not-so-right way

Don’t let “perfect” become the enemy of “good”
• Order quality and patient care has improved
  – Subcutaneous Insulin orderset improved glycemic control by:
    • Driving providers to select only one form of long-acting insulin
    • Preventing use of two kinds of short-acting insulin
    • Pre-populating best practice “adjustment scale”
  – Orders upon transfer to new level of care are straightforward and clearly defined

• Compliance has improved
  – Orders that delineate observation patient status resulted in more accurate reporting of true one-day admissions
  – Medicare denials decreased

• Verbal orders have decreased
**BENEFITS**

- Turnaround Time – Med orders
  - Pre-CPOE: Median turnaround time = 112 minutes
  - Post-CPOE: Median turnaround time = 15 minutes
- Many orders are reviewed and validated prior to nurse going to PYXIS to remove a med; thus, overrides have decreased from an average of 7.75% to 5%
- Post-op orders for patients going to ICUs are typically entered before the case is completed; Nurses in units that receive post-op patients see orders for their patients in advance of arrival
- Drips and other meds that Pharmacy needs to make are oftentimes made and delivered to the unit before the patient arrives
- MARs are auto-generated to nursing units after Admission and Transfer orders are validated
ONGOING AND FUTURE CHALLENGES

- Physician/Nurse communication
- Electronic Viewing of MAR; closing the med order life cycle
- Clear and Timely Communication of changes/enhancements
- Training for Registry nurses
- Training for physicians in an academic environment
- Prioritization of enhancement requests