Workflow Analysis and Redesign for Electronic Health Records (EHRs)
Tools, Examples, and Discussion for RHITND Grantees

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Objectives

• Overview of workflow analysis and redesign
• Real-world examples
  – Pre-implementation
  – Post-implementation
• Discussion of important workflows to consider
Why is Workflow Analysis Important?

• Inefficiency – When Hospital implements EHR
  – Hospital installs computers in each room
  – Providers don’t enter orders
  – Nurses return to nursing station to enter the orders
    ○ That’s where they used to write up paper orders
Why is Workflow Analysis Important?

• Safety – With new EHR
  – Providers order meds on paper
  – Nurses enter orders in EHR
  – Because paper is still in play, some drugs get administered without the record being updated

• ICD10 and the EHR: Perfect storm or perfect timing?
What if you merely put this into an electronic version?

Coding in the paper world...

Patient visit → Provider documents encounter → Chart delivered to coding → Coder checks documentation and enters codes → Billing takes over

Inefficient

Inconsistent

Physician Dictates, circles items on a charge ticket, etc

H&P SOAP Note Charge Ticket etc

Incomplete

Compliant?
Maximize the benefits of the EHR by redesigning your processes with the EHR in mind!

Coding in the EHR world...

- More complete
  - Drop boxes, checklists, etc create discrete data

- More efficient
  - Provider documents encounter in EHR
  - Provider completes visit
  - E&M Coding ICD9/10 Codes (preliminary)
  - Coder is notified of completed chart
  - Coder checks documentation and adjusts codes
  - Discrete data in the electronic chart
  - Billing takes over

- Compliance is improved

- More consistent
Why Map Processes?

• Excellent early step to engage the organization in the idea of change
  – EHR will force standardization
  – EHR implementation requires a review of workflow
  – Process mapping engages staff and structured thinking
Why Map Processes?

• Potential for process improvement
  – Almost always “aha moments”
  – Captures key controls and processes
  – EHR bring benefits only when people and process integrate with technology
  – Privacy and Security – good risk assessment will lead to process improvement
How to Map Processes

• With a purpose
  – Understand current state to enable proper EHR implementation
  – Ensure EHR-enforced processes positively impact quality, safety, or efficiency
  – Utilize as a problem-solving tool
How to Map Processes

• With a team of experts – those who do the work
• Dynamically – in a way that can be updated
• With or without flow charting tools
• With a sense of engagement and excitement
Before the EHR...

• Understand your current processes
• Understand your EHR
  – Use the test system
  – Talk to peers
• Redesign your process to take advantage of the EHR’s features
  – NOT a redesign of processes around the EHR
  – Best of both worlds
• Measure and evaluate your new processes
“But I already have an EHR installed!”

- Understand your processes today
- Use your test system
  - If your EHR does not have a test or training system, ask for one from the vendor
  - Pilot any changes here first
- Talk to peers with the same system
- Redesign processes taking into account EHR features and your experiences
- Measure and evaluate your new process
CPOE Before the EHR

Physician Begins Rounds

- Is paper chart available?
  - NO: Physician Requests Chart
  - YES: Physician reviews chart

- Physician sees patient
  - Is medication order necessary?
    - NO: End process
    - YES: Physician fills out med order form

- Physician gives order to ward clerk

Pharmacist completes order

- Pharmacist Reviews Order

Pharmacy Tech enters order into Pharmacy system

- Nurse faxes order to pharmacy (one floor down)

- Nurse reviews order

- Is the handwriting legible?
  - YES: If this is a "stat" order, ward clerk calls pharmacy after faxing

- NO: Return to Pharmacist Reviews Order
Some possible issues...
CPOE After the EHR

Physician Begins Rounds → Is a computer available? YES → Physician reviews chart/acknowledge results and alerts → Physician sees patient

NO → Find a computer/kick off someone

→ Significant opportunity for time wasting and frustration. Are there enough computers?

→ End process

NO → Is medication order necessary? YES → Physician places order in CPOE

NO → Order is checked for drug-drug and drug-allergy contraindications

Pharmacist completes order → Pharmacist Reviews Order

Pharmacy staff receive notification of order → Nurse approves order → Nurse receives notification to review order
Some new issues arise = Another performance improvement (PI) opportunity!
Other Real-World Examples

• Discharge process
• Emergency room quick admit
• Required demographics
  – Race and ethnicity
• Documentation process review
Documentation Process (EHR, no PI)

Provider rounds on Med/Surg → Provider rounds on patient → Orders Necessary?
  YES → Physician writes order → Nurse or Ward Clerk enters order into system → Order is also filed in the paper chart
  NO → Provider dictates progress note → Note is transcribed by transcriptionist → Note is printed → Note is filed in the chart by Medical Records

Involves a whole process of checking for signatures, ensuring completeness, etc

Patient discharged → Medical Records reviews documentation
Documentation Process (EHR + PI)

Provider rounds on Med/Surg → Provider rounds on patient → Orders Necessary?

- NO: Provider dictates progress note → Note is transcribed by transcriptionist directly in the system → Patient discharged
- YES: Physician places order in CPOE → Nurse reviews order → Review now involves checking for e-sig and completeness → Medical Records reviews documentation
Important Workflows: Where to Start

• Ordering Processes
  – Lab
  – Imaging
  – Dietary
  – PT/RT/Speech etc

• Patient-Centered Processes
  – Admission
  – Discharge
  – Patient education
  – Transitions of care

• Back Office Processes
  – Scanning and imaging
  – Release of information
  – ICD10
  – Documentation review

• Core Measures
• Meaningful Use Clinical Quality Measurements (CQMs)
Common process list:

1. Pre-Visit
   - Appointment scheduling
   - Diagnostic studies scheduling
   - Insurance verification
   - Chart preparation

3. Patient intake
   - Documentation of vitals, HPI, etc.
   - Check on health maintenance
   - Patient preparation

4. Review chart
   - Review results (incl. images)
   - Review past encounter data
   - Review other provider & patient-supplied data

5. Clinical documentation
   - Validate history data
   - Record physical exam
   - Document encounter notes

6. Care planning
   - Develop care plan consistent with guidelines

7. Medication management
   - Order medications
   - Manage refills: local pharmacy, mail order
   - Manage samples
   - Reconcile medications across continuum of care

8. Ordering
   - Diagnostic studies
   - Surgery
   - Referrals
   - Admissions
   - Nursing services

9. E&M coding
10. Charge capture
11. Patient instruction
    - Education
    - Summary of visit
12. Check out
Techniques and Tools

• If you have a process methodology, use it!
• Lean
  – www.ruralcenter.org
Conclusion

• Workflow analysis and redesign is necessary to be able to realize value from the EHR

• Should be a continuous process
  – Tied into the organizational PI process
  – Before and after implementation

• Don’t make it more complicated than it needs to be
  – Use the test system
  – Involve the necessary people
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