Redesigning Workflow: A Crucial Component of EHRs

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What It’s All About

Please Stand → Put Your Right Foot In → Put Your Right Foot Out

Put Your Right Foot In and Shake it All About → Do the Hokey Pokey and Turn Yourself Around

Is That What It’s All About?
What It’s Really All About

- Inefficiency – When Hospital implements EHR
  - Hospital installs computers in each room
  - MDs don’t enter orders
  - Nurses return to nursing station to enter the orders
    - *That’s where they used to write up paper orders*

- Safety – With New EHR
  - MDs order meds on paper
  - Nurses enter orders in EHR
  - Because paper is still in play, some drugs get administered without the record being updated
Objectives

- Learn the value of understanding current clinical workflows
- Understand how workflow documentation can improve patient safety, quality of care and clinical efficiency
- Learn how to get started with workflow documentation
- Review some workflows for actual examples of improvement
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 structured thinking
- Potential for process improvement
  - Almost always “aha moments”
- Captures key controls, processes, important ways you are unique
- EHR bring benefits only when People and Process integrate with technology -- process mapping makes this connection.
Process Maps & the EHR

- Process maps illustrate nature of the activities and the sequence & flow of the work
- Process maps are a visual representation of complex activities
- Process mapping begins the change management process by engaging users
- Process maps help identify problems and workarounds in the current system
- Process maps can form the basis for identifying functional requirements in the EHR
How to Map Processes

- With a reason
  - Way too much work to complete without a clear purpose
  - Understand current state to enable proper EHR implementation
  - Ensure EHR-enforced process don’t affect quality, safety, or efficiency
  - General process improvement, safety, or other

- 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 or excitement
Using Shapes

Terminator: Start and Finish

Process: Who Does What

Decision: Question with 2 choices

- Generally run top to bottom, left to right
- Each step needs to say clearly:
  - Who - Subject
  - Does - Verb
  - What – Object
- Decision diamonds represent key choices or decisions.
  - Label routes
  - Yes or No most frequent
Scenario

After two incidents of responding to tearful calls from their 9-year old child, a parent decides to document the process of making sure the child leaves the house with her lunch.

Situation:

- Monday, Wednesday and Friday: The parent makes a regular bag lunch for the child.
- Tuesdays: The child takes $3.50 to buy school lunch – the parent leaves early that morning and doesn’t have time to make a lunch.
- Thursday: In addition to lunch, the child takes an extra snack (granola bars, fruit, etc) because she stays late for soccer practice.
- The parent will make the lunch, (or money, or lunch and extra snack) put it on the counter. The child will put the lunch in her backpack and leave.

Please get a post-it pad and write out the steps of this process. Take 5 minutes to think and arrange, then we will discuss as a group.
Flowcharting

- Assemble team
- Give folks sticky notes and bold pens
- Start with beginning and end of the process
• Use a square pad for decision diamonds
• Don’t start drawing lines
• Add steps as you think of them
• When steps are complete review for improvements – What jumps out?
• Because you used sticky notes, it’s easy to change
• Note improvements with star or other color
• Continue to review – look harder, ask “Why do we do that” and “Do we all agree this is the right way?”
- When complete draw the lines
- Move into an electronic format
- Digital camera is a great tool – phones work in a pinch

- **CAUTION:** Photos or paper don’t lend themselves to updates
To What Level: Process Map vs. Work Instruction

- Common hang up – how much detail?
- Remember the purpose:
  - Feeding the design of an EHR
  - Standardization
  - Improvement
- Distinguish between flow charts and work instructions
  - Flows are higher level – Who / Does / What
  - Work instructions are the details
In Home First Appointment

- Front desk verifies insurance beforehand.
- If info available, provider goes to client home.
- Provider performs diagnostic assessment.
- Client and parent/guardian completes SDQ.
- Front desk verifies insurance.
- Client and parent/guardian completes SDQ.
- Provider completes CASII.
- Provider enters SDQ into online database and prints out for chart.

Notes:
- Provider completes CASII is a process flow step.
- Steps to fill out CASII would be work instructions and would not appear on a flow chart.
- Note use of Who / Does / What.
- Note all sorts of opportunities for improvement.
Let’s Talk About Some Real Examples
CPOE Before the EHR

1. Physician Begins Rounds
2. Is paper chart available? NO
   - Physician Requests Chart
   - Is chart available? NO

3. Is medication order necessary? NO
   - End process
   - Physician gives order to ward clerk

4. YES
   - Physician sees patient
   - Physician reviews chart
   - Is chart available? NO

5. NO
   - at least 10 minutes is wasted here
   - Physician fills out med order form

6. YES
   - Pharmacist completes order
   - Pharmacist Reviews Order
   - Pharmacy Tech enters order into Pharmacy system

7. Nurse faxes order to pharmacy (one floor down)
   - Is the handwriting legible?
   - If this is a "stat" order, ward clerk calls pharmacy after faxing

   Nurse reviews order
Some Possible Issues...

**How will physician access records when they are electronic?**

- **Is paper chart available?**
  - **YES**: Physician reviews chart
  - **NO**: Physician requests chart

**Is chart available?**

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

- **NO**: at least 10 minutes is wasted here
  - **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)**

**Is the handwriting legible?**

**How will the orders flow to the pharmacy when CPOE is in use?**

**If this is a “stat” order, ward clerk calls pharmacy after faxing**

**Physician gives order to ward clerk**
CPOE After the EHR

1. Physician Begins Rounds
2. Is a computer available?
   - NO: Find a computer/kick off someone
   - YES: Physician reviews chart/acknowledge results and alerts
3. Physician sees patient
4. Is medication order necessary?
   - NO: End process
   - YES: Physician places order in CPOE
5. Order is checked for drug-drug and drug-allergy contraindications
6. Pharmacist completes order
7. Pharmacist Reviews Order
8. Pharmacy staff receive notification of order
9. Nurse approves order
10. Nurse receives notification to review order
11. Significant opportunity for time wasting and frustration. Are there enough computers?
Some New Issues...

Are there enough computers? Are we using the right devices?

- Is a computer available? NO
  - Find a computer/kick off someone

- Is a computer available? YES
  - Physician reviews chart/acknowledge results and alerts

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

  - Physician sees patient

  - Is medication order necessary? YES
    - Physician places order in CPOE
  
    - Order is checked for drug-drug and drug-allergy contraindications

  
    - End process

  
    - Nurse approves order

  
    - Nurse receives notification to review order

Is the notification system sufficient? Are nurses routinely calling to ensure they received the order?
A Clinic Process: Lab Orders – Pre-EHR

1. **Patient Needs Lab Test**
   - Physician circles lab order on charge ticket
   - Physician hands charge ticket to nurse
   - Nurse fills out lab order form
   - Nurse escorts patient to lab

2. **Are lab staff available to perform draw?**
   - Patient waits
   - **YES**
   - Specimen collected by phlebotomist
   - **NO**

3. **Physician reviews result**
   - Someone picks up fax and places in folder for physician review
   - Lab staff fax lab results to clinic
   - Lab staff complete test

4. **Is result “normal”?**
   - **YES**
     - Registration staff send letter to patient
     - Medical records staff file the result
   - **NO**
     - Physician calls patient
     - Registration staff schedule follow up care
Opportunities for Improvement

Patient Needs Lab Test

Physician circles lab order on charge ticket → Physician hands charge ticket to nurse → Nurse fills out lab order form → Nurse escorts patient to lab

Waste: Double entry of information

Patient waits

Are lab staff available to perform draw?

Yes → Specimen collected by phlebotomist

No → Patient waits

Significant delay possible = Sleepless nights for patient

Physician reviews result → Someone picks up fax and places in folder for physician review → Lab staff fax lab results to clinic

Lab staff complete test

Lab staff → Specimen collected by phlebotomist

Is result “normal”?

Yes → Registration staff send letter to patient

Opportunity for automation of letter creation

Medical records staff file the result

No → Physician calls patient

Registration staff schedule follow-up care
EHR is in, But Our Work May Not Be Done...

**Patient Needs Lab Test**

- Physician selects lab test in EHR
  - Are all the lab tests setup and easy to find?

- Lab test is transmitted to lab system via HL7
  - Is the interface setup properly and well tested? How do we know if it is down?

- Lab staff notified of order
- Lab system prints labels for collection
  - Lab staff need training on order notification.
    - Nurse escorts patient to lab

- Patient waits
  - Are lab staff available to perform draw?
    - NO
    - YES
      - Specimen collected by phlebotomist

- Physician sees lab result in list of alerts
  - Lab result is transmitted back to clinic EHR

- Lab staff complete test

- "Normal" letter is generated and sent to patient
  - End process (no filing...)

- Letter templates will need to be created. There is now no need for filing of lab results.

- Physician calls patient
  - Registration staff schedule follow up care

- Physician reviews result

- Physician will need to change workflow:
  - Checking a task list instead of paper
A Bit More Theory
Swim lanes show who does what

Swim lanes show Handoffs
Moving from Design to Implementation

- Redesign is the easy part of changing workflows
- When you know Who / Does / What you can begin to plan the change management effort
- Publicize the new design
  - Clear roles and tasks will ignite discussion and raise change management issues
- Training plan emerges from Who / Does / What
  - Training should be role-based and process-focused
Process Mapping Tools

- Start with paper and sticky notes
- Move to an electronic format
  - Visio is great but expensive
  - Other products like FlowBreeze less expensive
  - PowerPoint has all the shapes
  - Excel works well
- Worst case, write out without symbols using If statements instead of diamonds
Conclusion

- The power of process mapping lies in the visual representation of complicated concepts.
- Process mapping is a vital step in preparing for EHR implementation.
- Process mapping has inherent benefits beyond the EHR.
- Engaging people who do the work is essential to success.
- Understanding and communicating Who / Does / What empowers the change management effort.
Bonus Slide -- What to Map

- **Common process list:**
  1. Pre-Visit
     - Appointment scheduling
     - Diagnostic studies scheduling
     - Insurance verification
     - Chart preparation
  2. Patient intake
     - Documentation of vitals, HPI, etc.
     - Check on health maintenance
     - Patient preparation
  3. Review chart
     - Review results (incl. images)
     - Review past encounter data
     - Review other provider & patient-supplied data
  4. Clinical documentation
     - Validate history data
     - Record physical exam
     - Document encounter notes
  5. Care planning
     - Develop care plan consistent with guidelines
  6. Medication management
     - Order medications
     - Manage refills: local pharmacy, mail order
     - Manage samples
     - Reconcile medications across continuum of care
  7. Ordering
     - Diagnostic studies
     - Surgery
     - Referrals
     - Admissions
     - Nursing services
  8. E&M coding
  9. Charge capture
  10. Patient instruction
  11. Check out