Workflow Management Systems in Healthcare: Focus on Quality and Throughput

June 23, 2005

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Topics

- What is a Workflow Management System?
- How to apply Workflow Management to Disease Management processes?
- Drivers: Safety, Quality and Throughput
- The parallel objectives of Disease Management and Workflow Management: “More health for less $$$”, or “Do more with Less”
What is a Workflow Management System?

- Process Management Tool
  - Industry: BPM, Business Process Management
- Consisting of:
  - Predefined steps, sequential and parallel,
  - Spanning a period of time,
  - Involving all players on the team.
- “Orchestration”
What's Wrong With the Status Quo?

1. Hospital Discharge Order
2. Nurse notified
3. Nurse review orders
4. Nurse d/c process
5. Family notified
6. Pharm fills d/c Rx's
7. Pharm notified
8. Dietary notified
9. Resp notified
10. Family arrives
11. Patient education
12. Transport notified
13. Pt out of room
14. House-keeping advised
15. House-keeping notified
16. Room cleaned
17. Room queued
18. Nursing supervisor notified
19. Nurse assigned
20. Notify admitting
21. Notify ER

Handoffs
Bed turnaround

Siemens Medical Solutions that help
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Sheridan’s “Degrees of Computerization”

1 5 10

No assistance  Computer suggests one option and executes if human approves  Computer decides everything

- U.S. Medicine today mostly at level 1
- Clinical Decision Support most effective at approx level 5

Sheridan TB, Thompson JM, People versus Computers in Medicine, Human Error in Medicine, 1994, 141-59

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Workflow Management System

- Optimize Workflow
- Manage Tasks
- Prioritize
- Coordinate
- Delegate
- Escalate
Workflow Management Strategy

- Workflow-enable all processes
  - B Intra
  - B Inter
  - B Extra
- Focus on: Team, Time, and Configurability
Example 1: DVT Prophylaxis

This process starts when a patient is admitted. If the patient is older than 40, it waits 4 hours and then checks to see if there is an order for an anticoagulant or a compression device. If not, an alert is sent to the patient's nurse.

DVT Prophylaxis Alert

Revision: 1
Date: 13SEP2004
Author: TJS
Reason for Change: 

Joint Commission, National Quality Forum To Work On Deep Vein Thrombosis Prevention And Care Project
Example 2: Infection Control
Example 3: Bed Management

- Objective: Reduce Turn Around Time from Discharge to Bed Availability
- Notification via beeper, telephone, worklist
Next Workflow Management Scenarios

- Discharge Management
- Case Management
- JCAHO / CMS Metrics
- Clinical Practice Guidelines

- Progressively more complex, involving more members of the healthcare team
Extend into DM Processes

DM processes are ideally suited for Workflow Management.

Challenges:
- Span longer periods of time
- Span organizations – payor, provider
- Includes patient as participant in the process
- Partly predictable, partly unpredictable
- Target: both individual patient as well as population

Opportunities:
- Increase candidate identification
- Improve process definition, yet easier to change
- Reduce manual transactions

Key challenge – particularly in management of chronic diseases in primary care!
Challenges of clinical guidelines for chronic diseases in primary care

- Targets: Hypertension, Angina, Asthma
- Challenges:
  - Timing of triggers
  - Ease of use
  - Helpfulness of content
- Bates: “biggest challenge is identifying accurately where the patient is in their care, so that helpful suggestions can be made.”

Eccles M et al, BMJ 2002; 325:941
Bates DW et al, JAMIA 2003;10:523-530
Eliyahu M. Goldratt: “The Goal”

North River Press 1984
The Process Improvement Dilemma

- What to Change?
- What to Change it to?
- How to Change it?
What is Your Organizational Goal?

- Improve quality
- Increase efficiency
- Increase profits
- Reduce cost of care
- Improve market share
- Improve patient satisfaction
- Improve health of the community
- Provide efficient, high-quality care
- Improve workflow
- Improve performance
- ..... Other suggestions?
Goldratt’s Goal

- Manufacturing: “Make Money”
- But: how does that apply to healthcare organizations???
- Increase Throughput
- Decrease Inventory
- Decrease Operational Expenses

In other words: Do More With Less....
Drivers of Workflow Management Technology in Healthcare

Today:

- Patient Safety
- Quality Improvement

Tomorrow:

- Throughput
  - ...realizing that quality and safety are necessary preconditions to high throughput

Do More With Less....
Conclusions

- Workflow Management Systems as emerging technology in healthcare
  - Starting in inpatient settings, expanding from there into continuum of care
  - Clinical and operational
- Parallel Goals of DM and WFM
  - Optimize health (patient and population) at minimal expense
  - Do more with less – increase throughput for the healthcare system as a whole
- Seeking application areas