Workflow: Effective EHR Project Management

Webinar

Ravi Lote
rlote@pmcorp.com
About PMC

- Established in 1979; 30+ years of excellence in Productivity Solutions
- Employees: 80 plus - with a number of PhD and Master Degree holders
- 6000+ Projects Completed, 600+ Clients Served across many industry verticals
PMC’s Locations

- Headquarters: Dearborn, MI, USA
- Other Offices: Texas, California, Seattle, Sweden, India, Thailand, Turkey, Honduras

PMC’s Expertise

- Lean training & implementation
- Value Stream Mapping
- Kaizen workshops
- Line Balancing, Layout Planning & Work station design
- Simulation and Optimization
- Time Studies
- Work Sampling
- Theory of Constraints Applications
- CAD and 3D Modeling

- Business Process Re-engineering
- Continuous improvement initiatives
- Project Management & Support
- Production Management
- IT - Customized and standard (COTS) solutions
- Quality improvement, training & certification
- Scheduling systems
  - Full scale implementation
  - Integration with ERP & technology infrastructure
PMC’s Experience

6000+ Projects Completed
600+ Clients Served
across many industry verticals
What is EHR

- The Electronic Health Record (EHR) is a longitudinal electronic record of patient health information generated by one or more encounters in any care delivery setting.

- Contains information such as:
  - past medical history laboratory data and radiology reports,
  - patient demographics,
  - progress notes,
  - medications,
  - vital signs

Source: HIMSS
Electronic Health Records (EHRs) can create practice workflow efficiency by enhancing:

- Office communication
- Improving patient flow
- Increasing and improving provider-patient interaction
- Making patient information available to providers in real time

Source: Maryland Healthcare Commission
Drivers and Constraints

Drivers
- Emphasis by federal government on EHR adoption
- Offering a EHR solution is part of an organization's competitive strategy
- Gradual transition of patient from passive to active role in care process
- Increasing prevalence and incidence of chronic diseases

Restraints
- Limited awareness & comprehension
- Privacy & security concerns
- Slow migration from paper to digital storage
- Lack of interoperability between clinical data systems
- Additional cost burden
- Limited adoption of EHRs

Source: Frost and Sullivan
Workflow Analysis and EHR

- An EHR can be utilized as a workflow tool giving the practice the ability to collect and present information in one integrated view.

- During the selection and implementation of an EHR, conducting a workflow analysis will help a medical practitioner to:
  - Identify the ways to streamline a process
  - Improve the efficiency of a practice’s clinical workflow
  - Provide an understanding of the complexity in completing a specific task
  - Gain a better appreciation of how these complex tasks are accomplished resulting in better automation results.

Source: Maryland Healthcare Commission
Dealing with Processes

• Key to success of EHR implementation is effective Process mapping
• Technology is an enabler, not the answer
• Some of the common methodologies used to develop Current state and future state maps are:

Business Process Management (BPM)
Business Process Automation (BPA)
Extension of Current IT Systems
Business Driven Development (BDD)
Experience has proven...

- Lack of planning in integrating high volume workflow activities into the implementation of the EHR can cause problems.

- More time and emphasis into documenting the existing paper workflows by the staff needs to be done.

- *Workflow Analysis and Redesign are the Keys to a successful EMR implementation.*
EHR Implementation Methodology

- Pursuit of Perfection
- People
- Technology
- Processes

Source: HIMSS
There is a way to increase the effectiveness of an EHR system by improving the processes that it affects through the utilization of ‘Lean’ principles.

Lean can help an organization save time and money by enhancing workflow throughout the organization and optimizing EHR implementation and usage.
PMC-Healthcare: Our Approach

- Form cross-functional team to develop current state Value Stream Map (VSM)

- Develop future state VSM with focus on design of electronic forms
  - Emphasize on:
    - Customer-centric process design
    - Standardized work
    - Quality at Source
    - Reduction in process time
    - Visual workplace
PMC-Healthcare: Our Approach

- Conduct lean training sessions for all the stakeholders (including physicians) and communicate the future state processes with the following goal(s)
  - Increase OR throughput
  - Reduce patient wait times
  - Improve quality of care
  - Shorten revenue cycle
  - Streamline admissions

- Select department for pilot launch of new processes and roll out the organization wide implementation plan based on lessons learned
Seconds Count!

Salary:

x $10/hr. =
$4580

1 second to look for or do something

x $15/hr. =
$6870

X 200 = 200 sec. (3.33 mins)
X 11 = 36.66 mins
X 3 = 110 mins

x $20/hr. =
$9160

x $25/hr. =
$11,450

X 250 = 27,500 mins
/ 60 = 458 hours
/8 = 57 days

x $30/hr. =
$13,740

or approx. 1 month
Lean Methodology gives us specific rules to use in determining what activities are value-added (VA) or non-value-added (NVA):

RULE 1: The customer must be willing to pay for the activity

RULE 2: The activity must transform the product or service in some way

RULE 3: The activity must be done right the first time
### Value-Added vs. Non-Value-Added

<table>
<thead>
<tr>
<th>Department</th>
<th>Role</th>
<th>VA Activity Example</th>
<th>NVA Activity Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating room</td>
<td>Surgeon</td>
<td>Operating on patient</td>
<td>Waiting for delayed procedure or performing unnecessary steps</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>Pharmacy technician</td>
<td>Creating an IV formulation</td>
<td>Reprocessing medications that were returned from patient units</td>
</tr>
<tr>
<td>Inpatient unit</td>
<td>Nurse</td>
<td>Administering medications to a patient</td>
<td>Copying information from one computer system into another</td>
</tr>
<tr>
<td>Radiology</td>
<td>Radiology technician</td>
<td>Performing MRI procedure</td>
<td>Performing a medically unnecessary scan</td>
</tr>
<tr>
<td>Laboratory</td>
<td>Medical technologist</td>
<td>Interpreting a test result</td>
<td>Fixing a broken instrument</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Department</th>
<th>Product</th>
<th>VA Activity Example</th>
<th>NVA Activity Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency room</td>
<td>Patient</td>
<td>Being evaluated or treated</td>
<td>Waiting to be seen</td>
</tr>
<tr>
<td>Clinical laboratory</td>
<td>Patient specimen</td>
<td>Being centrifuged or tested</td>
<td>Waiting to be moved as a batch</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>Prescription</td>
<td>Medication being formulated or prepared</td>
<td>Being inspected multiple times</td>
</tr>
<tr>
<td>Perioperative services</td>
<td>Sterilized instruments</td>
<td>Time when instruments are being sterilized</td>
<td>Instruments being sterilized repeatedly without ever being used from a standard kit</td>
</tr>
<tr>
<td>Nutrition services</td>
<td>Patient food tray</td>
<td>Time when food is being cooked or tray is being assembled</td>
<td>Being reworked because the tray was made incorrectly</td>
</tr>
</tbody>
</table>
Focus of traditional improvement programs

- Work longer
- Work harder
- Add people
- Add equipment

Focus of Lean: Eliminate Waste
Understanding WASTE

Identification and elimination of WASTE is the central focus of a LEAN system. Success requires all employees to be trained to identify & eliminate WASTE from their work areas.
WASTE exists in ALL work…
... and at ALL levels of the organization!
Waste is anything other than the minimum resources absolutely necessary to add value to the product:

- Equipment & tooling
- Direct & indirect labor
- Material
- Floor space
- Energy
Why use Lean for Workflow Analysis?

Increase ‘value’ for internal and ‘external’ customers by Eliminating waste

- **Overproduction**: Producing more than what the customer needs
- **Waiting**: Employees waiting for another process or a machine/tool
- **Motion**: Extra physical/mental motion that doesn’t add value
- **Transportation**: Moving product from one place to another
- **Inventory**: Building and storing extra services/products the customer has not ordered
- **Rework**: Reprocessing, or correcting work
- **Intellect**: Not using employees full intellectual contribution
- **Over-processing**: Adding excess value when the customer does not require it

Improve your processes first, otherwise, all the automation does is *speed up the mess***!!!
Kanban
(Cards & Squares)
Part of Inventory Control
Inventory Hides Problems

- Unreliable Vendors
- Scrap/Obsolescence
- Capacity Imbalances

Work in process inventory level (hides problems)
Lowering Inventory Reveals Problems

Accommodate lower inventory levels by:

- Reducing variability
- Eliminating waste
- Streamlining flows
- Having Accurate information
Lean Healthcare - Kanbans
Kanban Card

- **Unique Part #**: 46-2811
- **Description**: Yellow Sticky Notes
- **Qty**: 6
- **Refill Quantity**: Where to find replacement part
- **Stock Loc**: Central Storage Shelf 1
- **Return to**: Supply Room B
- **Where to return filled Kanban**
Kanbans

- Controls a linear flow of inventory with a static quantity
Planning and Implementing

Current State

Future (Ideal) State

Kaizen Bursts

Action Plan to guide continuous improvement effort and monitor implementation
Brown Paper Mapping

- Shows the “Big Picture”
- Describes a process as it works today; an “as-is” model
- High touch, low-tech
- Identifies strengths and opportunities
- Captures the complexity and disconnects of key operational issues
- Identifies outside areas involved in the process
<table>
<thead>
<tr>
<th>Task</th>
<th>Responsible</th>
<th>Due Date</th>
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</thead>
<tbody>
<tr>
<td>Reduce Errors by implementing Kanban on Workstation 6</td>
<td>Mario</td>
<td>10/25/07</td>
</tr>
<tr>
<td>Reduce Headcount by implementing Takt Time on Workstation 2</td>
<td>JoAnn</td>
<td>8/26/07</td>
</tr>
<tr>
<td>Reduce Cycle Time by implementing One-piece Flow on Workstation 3</td>
<td>Mario</td>
<td>10/30/07</td>
</tr>
<tr>
<td>Reduce Cycle Time by implementing One-piece Flow on Workstation 3</td>
<td>Frank</td>
<td>8/10/07</td>
</tr>
<tr>
<td>Reduce Repair Time by implementing 5 S on Workstation 4</td>
<td>Joe</td>
<td>9/13/07</td>
</tr>
<tr>
<td>Increase Quality by implementing Six Sigma on Workstation 8</td>
<td>Sanjay</td>
<td>8/26/07</td>
</tr>
<tr>
<td>Reduce Cost by implementing Takt Time on Workstation 3</td>
<td>Joe</td>
<td>9/29/07</td>
</tr>
<tr>
<td>Reduce Number of Failures by implementing Process Route Table on Workstation 2</td>
<td>Wilbur</td>
<td>8/8/07</td>
</tr>
<tr>
<td>Increase Quality by implementing Process Route Table on Workstation 3</td>
<td>Wilbur</td>
<td>10/24/07</td>
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<tr>
<td>Increase Quality by implementing Quick Changeover on Workstation 5</td>
<td>Rocco</td>
<td>8/23/07</td>
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<tr>
<td>Reduce Repair Time by implementing Six Sigma on Workstation 6</td>
<td>Sanjay</td>
<td>9/23/07</td>
</tr>
<tr>
<td>Reduce Cost by implementing Error Proofing on Workstation 10</td>
<td>Frank</td>
<td>8/23/07</td>
</tr>
<tr>
<td>Increase Quality by implementing Lean Metric on Workstation 4</td>
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<tr>
<td>Increase Efficiency by implementing JIT on Workstation 1</td>
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- **WHO will do WHAT, by WHEN?**
- Prioritize based on resources.
  - Thus...what to do first.
- We can prioritize by:
  - the task that will generate the most Net Profit **or**
  - The easiest **or**
  - The fastest **or**
  - Will take the fewest people
  - Least amount of money **or**
  - Etc.

Find the bottleneck (constraint), and then find the solution that has the most impact on it!
Change Management

Success of change management hinges on:

- Well defined, documented, and communicated change
- Strong support from leadership
- Active participation from stakeholders
- Training to build awareness, commitment
‘Lean’ Change Management

- Awareness
- Desire
- Knowledge

Source: Workflow Redesign in Support of the Use of Information Technology Within Healthcare HIMSS,
J. P. Kottler’s 8 Steps

1. **SET THE STAGE**
   Create A Sense of URGENCY - Help others see the need for change and the importance of acting immediately (i.e. SWOT Analysis, Discussion)

2. **Pull Together the Guiding TEAM**
   Make sure a powerful group is leading the change (i.e. leadership skills, bias for action, credibility, authority and communication and analytical skills)

3. **DECIDE WHAT TO DO**
   Develop The Change VISION And Strategy - Clarify how the future will be different to the present, and how to make the future a reality

4. **MAKE IT HAPPEN**
   COMMUNICATE For Understanding and Buy-In - Make sure that as many others as possible understand and accept the change

5. **EMPOWER Others To Act**
   Remove as many barriers as possible so that those who want the vision to become a reality can do so

6. **Produce SHORT TERM WINS**
   Create some visible successes ASAP. Spread short term success stories so that morale is raised, and employees feel a sense of achievement, because they can see evidence of the change's success

7. **DON'T LET UP**
   Be relentless with implementing change, ensuring that the initiation is pushed harder and faster after each Short Term Win

8. **MAKE IT STICK**
   CREATE A NEW CULTURE - Make sure that the new ways of behavior succeed, so that they become apart of the very culture of the group
Conclusions

• Organizational culture is a better indicator of EHR implementation projects.

• Workflow processes must be re-engineered by involving stakeholders from the start of the project.

• Physician involvement is key to success. Dispel the myth that an EMR will make physicians work faster.

• Develop a plan to manage change and provide governance to ensure rapid decision making.

• Demonstrate the support of senior leadership, communicate frequently and build consensus.

• Train end users by hospital staff members who understand the culture and workflows.
Questions ?