Improving Productivity & Efficiency in Clinic Documentation

Session # 177, February 22, 2017

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Speaker Introduction

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Speaker Introduction

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Conflict of Interest

The authors of this presentation have no real or apparent conflicts of interest to report.

Tord Alden, MD, CMIO
Agata Nytko
Agenda

• EHR Impact on Medicine
• Background
• Approach
• Results
• Areas of Success
• Challenges and Barriers
• Lessons Learned
• Continuing Optimization
Learning Objectives

• Identify the challenges of engaging clinicians in workflow improvement

• Compare the various improvement methods taken by the project team to achieve the project goals

• Evaluate the benefits of the EHR improvements on the clinician documentation and communication workflows
Realizing the Value of Health IT

<table>
<thead>
<tr>
<th>Step</th>
<th>Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Satisfaction</td>
</tr>
<tr>
<td>T</td>
<td>Treatment/Clinical</td>
</tr>
<tr>
<td>E</td>
<td>Electronic Secure Data</td>
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<tr>
<td>P</td>
<td>Patient Engagement</td>
</tr>
<tr>
<td>S</td>
<td>Savings</td>
</tr>
</tbody>
</table>
Questions

• How many organizations have updated content since initial EHR roll out?

• How many times have you made updates in the last 5 years?

• How many actually use everything they’ve developed?
Can EHR use Improve Quality?

Original Research

Outpatient Electronic Health Records and the Clinical Care and Outcomes of Patients With Diabetes Mellitus

Mary Reed, DrPH; Jie Huang, PhD; Ilana Graetz, BA; Richard Brand, PhD; John Hsu, MD, MBA, MSCE; Bruce Fireman, MA; and Marc Jaffe, MD

**Background:** Physicians can receive federal payments for meaningful use of complete certified electronic health records (EHRs). Evidence on the impact of EHRs on clinical care and outcomes in diabetes mellitus patients is limited. We examined diabetes care and outcomes in 1,630 patients with diabetes mellitus from two practices, one using a clinical decision support system (CDSS) and the other a non-CDSS EHR, from 2005 to 2009. Mean HbA1c decreased by 0.6% in patients using the CDSS, compared with 0.3% in non-CDSS patients (p = 0.04). Mean LDL-C decreased by 16.5 mg/dL in CDSS patients, compared with 5.3 mg/dL in non-CDSS patients (p < 0.001). The proportion of patients with LDL-C < 100 mg/dL increased from 0.1% to 46.8% in CDSS patients (p < 0.001). Use of CDSS was associated with a 45% reduction in 1-year retaking of HbA1c (CI, 1.00 to 1.12) and an 18% reduction in LDL-C (CI, 1.44 to 1.87). These findings provide evidence that CDSS use can improve clinical outcomes for diabetes mellitus patients.

Can EHR use Improve Quality?

Electronic Health Records and Quality of Diabetes Care

Randall D. Cebul, M.D., Thomas E. Love, Ph.D., Anil K. Jain, M.D.,
and Christopher J. Hebert, M.D.

ABSTRACT

BACKGROUND
Available studies have shown few quality-related advantages of electronic health records (EHRs) over traditional paper records. We compared achievement of and improvement in quality standards for diabetes at practices using EHRs with those
How has the EHR Changed Medicine?
Paper

Provider
- Read the outside/referring records
- See and Examine the patient (exam table, reflex hammer, ophthalmoscope, computer)
- Dictate
- Fill out sheet
  - Diagnosis
  - Billing
  - Orders
- Sign letter

Someone else
- Rooms patient
- Gets vitals
- Take billing form to coder/biller
- Take orders and send to
  - Lab
  - Radiology
  - Other
- Transcribe and correct dictation
- Print out letter
- Take signed letter
  - Fax
  - Mail
EHR

Provider

• Read the outside/referring records
• See and Examine the patient (exam table, reflex hammer, ophthalmoscope, computer)
• Go to Allergies section
• Go to Medications section
• Go to Problem List section
• Go to Family History section
• Type note in progress note section
• Go to diagnosis section
• Go to orders section
• Go to billing section
• Review any best practice alerts and clinical decision support
• Letter
  – Create letter template from progress note
  – Choose PCP and referring provider
  – Choose others who see the patient
• Type patient instructions and follow-up
• Click and print after visit summary
• Hand AVS to patient and review with patient and family
• Close encounter
  – Routes bill
  – Routes orders
  – Routes letter

Someone else

• Rooms patient
• Gets vitals
Current EHR

- Created one source of truth
- Increased availability of information
- Allows for rapid communication
- Allows for improved research

- Reduced time for patient-clinician interactions
- Transferred data entry tasks to front line clinicians
- Lengthened workdays
- Reduced patient satisfaction
- Reduced provider satisfaction
Future EHR

• Integrated
• Interoperable
• Health System
  – Patients
  – Providers
  – Public health and population management
  – Support clinical and basic science research

• Improve safety
• Improve quality
• Control cost
• Improve Efficiency
Report of the AMIA EHR 2020 Task Force on the Status and Future Direction of EHRs

Simplify and Speed Documentation

• Recommendation 1. Decrease data entry burden for the clinician.
• Recommendation 2. Separate data entry from data reporting.
• Recommendation 3. EHRs should enable systematic learning and research at the point of care during routine practice, including a better understanding of the costs (in time) and benefits (to care delivery, research, and billing) of different approaches to capturing and reporting clinical data.

Refocus Regulation

• Recommendation 4. Regulation should focus on 1) clarifying and simplifying certification procedures and MU regulations, 2) improving data exchange and interoperability, 3) reducing the need for re-entering data, and 4) prioritizing patient outcomes over new functional measures. Regulatory guidance should be provided to local carriers so that vendors and providers can work together to streamline workflows, relieve data entry burden, promote innovation, and thereby enhance usability of EHRs.

• Recommendation 5: Changes in reimbursement regulations should support novel changes and innovation in EHR systems.

Increase Transparency and Streamline Certification

• Recommendation 6. In order to improve usability and safety, to foster innovation and to empower providers and EHR purchasers, how a vendor satisfies a certification criterion, such as for the CEHRT program, should be flexible and transparent.

• Recommendation 7. In order to improve usability and safety and to foster innovation, health care organizations, providers and vendors should be fully transparent about unintended consequences and new safety risks introduced by health information technology systems, including EHRs, as well as best practices for mitigating these risks.

Foster Innovation

- Recommendation 8. EHR vendors should use public standards-based application programming interfaces (APIs) and data standards that will enable EHRs to become more open to innovators, researchers and patients.

The EHR in 2020 Must Support Person Centered Care Delivery

- The EHR is a shared record between the patient, the care provider teams and the institutions that pay for and provide care. As a result, EHR technologies must be able to evolve at the same pace as changes in the culture of care delivery. To accomplish this goal, AMIA recommends the following:

- Recommendation 9. Promote the integration of EHRs into the full social context of care, moving beyond acute care and clinic settings to include all areas of care: home health, specialist care, laboratory, pharmacy, population health, long-term care, and physical and behavioral therapies.

- Recommendation 10. Improve the designs of interfaces so that they support and build upon how people think (i.e., cognitive-support design). These designs would include empirical findings from such areas as human factor engineering as well as traditional social sciences (anthropology, psychology, sociology, and economics.)

Ann & Robert H. Lurie Children’s Hospital of Chicago

One of the top pediatric hospitals in the nation, Lurie Children’s provides the highest quality, family-centered care to children.

- More than 620,000 total patient visits
- 15,110 inpatient admissions
- 594,784 outpatient visits
- 19,770 surgeries
- 84,007 emergency/urgent visits

1,353 physicians & allied health professionals in 70 pediatric specialties
EHR Timeline
Approach

• 10 months to optimize 3 divisions

• Team:
  – Primary:
    • Clinical Informatics
    • Information Management
    • Division Representation
    • Training
  – Ad hoc:
    • Process Improvement
    • Reporting
    • Ancillary Service Areas

• Tools
  – Charter
  – SIPOC
  – Survey and Pareto analysis
  – Process mapping

• Defined scope
  – Check-in
  – Check-out
### Operational Definitions

- **Date/Time:** The date and/or time the process was completed and/or observed
- **Notes:** Document all details here. Things to consider are:
  - Was the process completed?
  - Did this process occur?
  - Did this process occur in this order?
  - What were the barriers to completing this task?
  - Did the correct person perform the process?

### Observation

<table>
<thead>
<tr>
<th>Process</th>
<th>Date/Time</th>
<th>Process Name</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Patient roomed</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>RN/CNA/Medical Assistant sees patient</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Provider sees patient</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Orders placed and notes written</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>Follow up communication (letters, orders, patient instructions)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Encounter closed</td>
<td></td>
</tr>
</tbody>
</table>

### Templates

- **SmartSets**
- **XR workflow**

### Surgeon

- Templates for billing

### Ortho Optimization Survey Analysis

Data obtained through open-ended internal customer survey

16 participants: 12/15/14 - 1/6/15

### Tools

- Pre-Optimization Survey
- The Optimization Team would this survey help us to better

Please circle the choices be

<table>
<thead>
<tr>
<th>How satisfied are you overa</th>
<th>35%</th>
</tr>
</thead>
<tbody>
<tr>
<td>How confident are you at pe</td>
<td>30%</td>
</tr>
<tr>
<td>daily tasks within Epic?</td>
<td></td>
</tr>
<tr>
<td>How well are you able to us</td>
<td>25%</td>
</tr>
<tr>
<td>for patient care?</td>
<td></td>
</tr>
</tbody>
</table>

| How many hours do you spe | 20% |
| each week?                 |     |
| 2-4 hrs/wk                |     |
| 6-8 hrs/wk                |     |

<table>
<thead>
<tr>
<th>Do you have any suggestio</th>
<th>15%</th>
</tr>
</thead>
</table>

### Levels of Service

- Visit can be billed
- Documentation completed
- Closed Epic Clinical Encounter
- PCP and referring physicians receive follow up information

### Referring Physician

- APN
- Epic Visit Navigator
- Medical Equipment
- Orders Placed
- Multidisciplinary Team
- Medical Assistants
- Letters
- Ancillary Staff
- Completed Appointment
- Patient receives follow up
Results

• Each Division focused on their own needs
  – Extended timeline as needed to allow for other workflow improvements
• Success varied based on:
  – Effectiveness of current EHR usage
  – Division and Clinician effort and commitment
Workflow Improvements

21 steps

16 steps
Patient Visit Time: Check-in to Check-out

- Cast visits – 14 minute decrease in overall visit time
- General visits – 10 minute decrease
- $29,000 \times 10\text{ minutes} = 290,000\text{ minutes}$
  - $4,833\text{ hours}$
Completed Visits with Communications
Percent of Visits Closed in 3 Days

8% increase in average charts closed since 2014
Percent of Visits Closed in 30 Days

7% increase in average charts closed since 2014; 2000 more charts closed.
Billing Improvements

• Level of service level 3 and higher
  – Pre-optimization 45%
  – Post-optimization 55%

• $100,000 more billed annually normalized by volume (10% increase in level 3 and higher)

• Additional $130,332 of actually billed charts (based on 7% more charts closed)

• Total of $230,332 (higher level of service and actually billed encounters)
Quality and Research

• Added Division specific content
• Added structured data elements to some of the progress note templates
• Research and Quality Improvement
  – Self-service reporting tool
  – Enterprise Data Warehouse
Clinician Comments

This is worth the change in the view. I don’t have to retype the diagnosis and search every time!

I love it, now we know the order of the patients and exactly when they’re coming.

This is awesome! I can read my resident’s note and attest in one click.

This will help us eliminate extra and unnecessary visits. Patients won’t have to come back for an additional spine x-ray.
Post Optimization Survey

*Please answer all questions based on current workflows*

Name (optional):

Role:

Currently, how satisfied are you with Epic?

1. Not Satisfied 2 3 4 5. Very Satisfied

How confident are you at performing your daily tasks within Epic?

1. Not Confident 2 3 4 5. Very Confident

How well are you able to use tools within Epic for patient care?

1. Not Well 2 3 4 5. Very Well

Have your workflows improved after the Optimization process?

Yes, improved  No, not improved  Stayed the same

How many hours do you spend finishing up charts in Epic outside of your clinic hours each week?

2-4 hours 6-8 hours 10-12 hours 14-16 hours 18-20+ hours N/A

Do you have any comments or feedback about the process, the changes made in Epic, or suggestions for future projects like this one?

Click here to enter text.
Survey Results

**Ability to Use Epic Tools**

- Pre-optimization
- Post-optimization

**Charting Outside of Clinic**

**Overall Satisfaction**
Challenges and Barriers

• Forming assumptions without a full analysis
• Schedules and dedicating time to the work
• Commitment of entire division
Areas of Success

• Importance of Physician Champion
  – Division engagement

• Continuous communication
  – Through project team, division meetings, Practice Manager

• Go-live support
  – On site support for each attending physician
Lessons Learned

• Initial timeline length would not allow for full project completion for several years
• Willingness to participate by divisions determines overall success
• Global issues would benefit from a full organization-wide project rather than current per division plan
  – Rolled out organization-wide, standard view
Current Project

• Focus on Provider/Practice efficiency and effectiveness
  – Provider informed workflow and content optimization
  – Consistent patient and family experience
  – Streamline key processes for efficiency and consistency across sites
Implementation Approach

• Blend organization-wide improvement with division-specific needs
• Organization-Wide Workflow Optimization
  – Clinical and Operational Representatives from across several divisions participating in workflow design and validation
• Division-Specific Content Optimization
  – Division representatives will review content, request new/updated content and retire content not using
  – Content usage history will be available to help guide decision-making
<table>
<thead>
<tr>
<th>Initiative</th>
<th>Dec ’16</th>
<th>Jan ’17</th>
<th>Feb ’17</th>
<th>Mar ’17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organization-Wide Workflows</strong></td>
<td>Design, Validate, and Build</td>
<td>Testing and Training</td>
<td>Go-Live</td>
<td></td>
</tr>
<tr>
<td><strong>Division-Specific Content</strong></td>
<td>Playbook Review/Content Development</td>
<td>Content Review, Build, and Validate (rolling, as divisions ready)</td>
<td>Content Go Live (rolling, as divisions are ready)</td>
<td></td>
</tr>
</tbody>
</table>
Organization-wide Improvements

• Focus on 4 key areas
  – Standardize security
  – Improve communication tools
  – Improve messaging tools
  – Improve clinic management

• Provider and staff participation through design and validation sessions help determine best practices for standardized workflows
Division Playbook

Chief Complaints

Preference Lists help you find your most frequently used Chief Complaints without having to search through every chief complaint available in Epic.

Current Chief Complaint Preference List

This is your current chief complaint preference list. The “count” column indicates how frequently a chief complaint was used in your division between 3/31/2016 and 5/19/2016. Please review your preference list and determine which, if any, chief complaints should be removed from preference list to make it easier to find the chief complaints you do use. The chief complaints will still be available in Epic, when needed.

<table>
<thead>
<tr>
<th>ID</th>
<th>Chief Complaint Preference List</th>
<th>Count</th>
<th>Remove</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>ABDOMINAL PAIN</td>
<td>296</td>
<td></td>
</tr>
<tr>
<td>1296</td>
<td>CONSTIPATION</td>
<td>274</td>
<td></td>
</tr>
<tr>
<td>1568</td>
<td>CROHN'S DISEASE</td>
<td>131</td>
<td></td>
</tr>
<tr>
<td>89</td>
<td>VOMITING</td>
<td>94</td>
<td></td>
</tr>
<tr>
<td>162</td>
<td>GERD</td>
<td>83</td>
<td></td>
</tr>
<tr>
<td>2437</td>
<td>POOR WEIGHT GAIN</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>GI SYMPTOMS</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>2442</td>
<td>ROUTINE FOLLOW UP</td>
<td>58</td>
<td></td>
</tr>
<tr>
<td>1681</td>
<td>IULCERATIVE COLITIS</td>
<td>57</td>
<td></td>
</tr>
</tbody>
</table>

Recommended Additions to the Chief Complaint Preference List

The chief complaints listed below were frequently used in your division but are not on your preference list. Indicate which frequently used chief complaints you would like added to your preference list to make them easier to find.

<table>
<thead>
<tr>
<th>ID</th>
<th>Top Used Chief Complaints Not on Pref List</th>
<th>Count</th>
<th>Add?</th>
</tr>
</thead>
<tbody>
<tr>
<td>664</td>
<td>FOLLOW UP RETURN</td>
<td>666</td>
<td></td>
</tr>
<tr>
<td>1418</td>
<td>NEW VISIT</td>
<td>321</td>
<td></td>
</tr>
<tr>
<td>280</td>
<td>FOLLOW-UP</td>
<td>106</td>
<td></td>
</tr>
<tr>
<td>852</td>
<td>DYSPHAGIA</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>1289</td>
<td>INITIAL VISIT</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>1477</td>
<td>FEEDING DIFFICULTY</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>209</td>
<td>NUTRITION RISK/FAILURE, FOLLOW UP</td>
<td>54</td>
<td></td>
</tr>
</tbody>
</table>

- Playbook includes list of current content and usage history (when available)
- Place an “X” next to content you want added or removed from your preference list
Plan
- Identify team, scope, timeline
- Identify Physician Champion

Gather Information
- Observations
- Interviews
- Data
- Survey

Design/Validate
- End user approval and buy-in
- Steering committee approvals

Build/Test
- Usability testing

Measure
- Data
- Survey

Implement
- At the elbow support

Train/Educate
- Classroom sessions
- E-Learnings
- Handouts
# Realizing the Value of Health IT

<table>
<thead>
<tr>
<th>S</th>
<th>Satisfaction</th>
<th>Increased provider satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>Treatment/ Clinical</td>
<td>Overall increased efficiencies</td>
</tr>
<tr>
<td>E</td>
<td>Electronic Secure Data</td>
<td>Improved communication among providers</td>
</tr>
<tr>
<td>P</td>
<td>Patient Engagement</td>
<td>Improved distribution of patient educational materials</td>
</tr>
<tr>
<td>S</td>
<td>Savings</td>
<td>Improved workflow/practice efficiency</td>
</tr>
</tbody>
</table>
Core Team Members

- Tord Alden, CMIO
- Lisa Dykstra, CIO
- Anne Bobb, Senior Director Clinical Quality Excellence
- Roger King, Director Clinical Informatics
- Colleen Gorman, IM Director Strategic Projects
- Molly Beran, Manager, IM Clinical Applications and Epic Training
- Jason Muldrow, Manager, IM Business Applications
- Erin Birk, Project Manager
- Agata Nytko, Clinical Informatics Consultant
- Andie Romaniuk, Senior Application Analyst
- Michael LaRosa, Consultant
Questions?

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Please complete online session evaluation