Optimizing Electronic Health Record Software in a Primary Care Practice

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 Agenda

• About Me
• Biomedical Informatics
  – Clinical Informaticians
• Motivations
  – Value-Based Care
• Internship Report
• Conclusion
About Me: Incoming medical student with training in Biomedical & Health Informatics.

University of Puerto Rico, School of Medicine
- Doctor of Medicine (Expected: 2021)

University of North Carolina at Chapel Hill
- Professional Science Master’s Candidate (Expected: August 2017)
  • Biomedical and Health Informatics

Emory University
- Bachelor of Science (2016)
  • Anthropology and Human Biology
Biomedical informatics is the

• “scientific field that deals with biomedical information, data, and knowledge – their storage, retrieval, and optimal use for problem solving and decision making.”

Source: Shortliffe and Cimino (2006)
Biomedical informatics is the

- “scientific field that deals with biomedical information, data, and knowledge – their storage, retrieval, and optimal use for problem solving and decision making.”

Source: (Shortliffe and Cimino, 2006) & (AMIA, 2010)
AMIA defines clinical informaticians as those who:

- “transform health care by analyzing, designing, implementing, and evaluating information and communication systems…”

With three goals:

1. Enhance individual and population health outcomes
2. Improve patient care
3. Strengthen the clinician-patient relationship

Source: (AMIA, 2016)
Fee-for service has been the predominant payment model in the U.S.
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Traditional Medical Education
Value-Based care presents complex challenges to primary care providers.
Fee-for service has been the predominant payment model in the U.S.
Transition to Value-Based Care

- Volume to Value
- Pay for Performance
Transition to Value-Based Care

- Volume to Value
- Pay for Performance

Table 1: Laws that Support Transition to VBC

<table>
<thead>
<tr>
<th>Legislation</th>
<th>Year Passed</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>HITECH</td>
<td>2009</td>
<td>Incentives for technology adoption</td>
</tr>
<tr>
<td>ACA PPACA</td>
<td>2010</td>
<td>Lower uninsured rate and reduce health care costs</td>
</tr>
<tr>
<td>MACRA</td>
<td>2015</td>
<td>Quality metrics</td>
</tr>
</tbody>
</table>

(Source: CMS, 2015)
Insurance companies may “ding” physicians if patient’s health is not optimal.
Insurance companies may “ding” physicians if their patient’s health is not optimal.
Optimizing eCW in a Primary Care Practice in Humble, TX

An internship report
Northeast Medical Associates, P.A., is a primary care practice of internal medicine physicians.

- Internal Medicine
- Small practice
  - Admitting privileges
- Services
  - EKG, bone densitometry, lab station
- Location: Humble, TX
As an informatician, I help maximize the use of information and communication technologies.

Systems Analyst
– Process Improvement

Electronic Health Record (EHR)
– Training, functionality, capability
My internship timeline:

1. Shadowing
2. Crash Course, eCW
3. Process Maps
4. Optimizing eCW
5. Reporting Tools
6. Tutorial/Guides
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Shadowing at NEMA:

- MD Office
- Room 1
- Room 2
- Room 3
- Room 4
- Room 5
- Room 6
- Room 7
- Room 8
- Nurse/MA Station
- Kitchen
- Office Manager
- Waiting Area
- Empty space (old file room)
- Check in/out
- Referral
- eClinicalWorks stations

Shadowing locations
After shadowing, I suggested updating the clinic's website.

For example:
- Layout
- Mobile-friendly
- Services provided
- Registration forms
- Patient education
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eClinicalWorks (eCW) is the EHR of choice for NEMA.
Patient: Test, 30 Y, F  DOB: 10/10/1986  Age: 28 Y  Sex: Female
Phone: 713-704-3627  Primary Insurance: Aetna  Payer ID: 60054
Address: 920 Frostwood, Houston, TX 77024
Account Number: 9195
Encounter Date: 05/12/2015  Provider: Srinivas K. Rumalla, MD
Appointment Facility: Northeast Medical Associates

Subjective:
Chief Complaint(s):
- Annual Wellness Visit, Initial

HPI:
- Depression Screening
- PHQ-9: Thoughts that you would be better off dead, or of hurting yourself in some way? Several days (Consider Suicide Assessment Risk), Total Score: 10, Interpretation: Moderate Depression.

Patient Care Team:
- No providers on record.

Medicare Annual Visit
- Type of Visit: First Annual Wellness Visit (IAV). Language or Communication Barrier addressed: Yes. Health Risk Assessment Form:
  - How old are you? ______. How would you best describe your ethnicity? ______. How would you describe your marital status? ______. How would you describe your employment status? ______. How many children do you have? None. Do you currently use tobacco products? No. Have you ever used tobacco products? No. What type of tobacco do you use or have you used? ______. Have you smoked? ______. If cigarette smoker: How many cigarettes do you smoke per day? ______. How many alcoholic beverages (i.e. 1 oz hard liquor, one glass of wine, one bottle of beer) do you drink daily, on average? None. Have you ever felt the need to cut down on drinking? No. Have people annoyed you with criticism of your drinking? No. Do you or have you felt guilty for drinking? No. Have you ever felt the need to drink first thing in the morning to steady your nerves or to get rid of a hangover? No. How often do you exercise? Never. How vigorously can you exercise? Minimally. How often do you use seatbelts? Always. How often do you experience pain with sex? Never. How often do you use condoms during sex? Always. In the past two weeks, how often have you felt depressed, down or hopeless? Never. In the past month, how often have you felt anxious or stressed? Never. In the past two weeks, have you felt a lack of interest in doing things? Never. In the past two weeks, how often have you had difficulty falling asleep or episodes of sleeping too long? Never. In the past two weeks, how often have you had a lack of energy? Never. In the past month, how often have you had difficulty concentrating or following through with things you wanted to do? Never. In the past week, how often have you felt sad, hopeless or helpless? Never. In the past month, how often have you felt depersonalized or detached from your life? Never. In the past month, how often have you felt that life was worth living? Never.
How to crash-course the eClinicalWorks EHR (1/2):

Training guides:

- Hanover Hospital
- Kentucky Department of Public Health

User forum:

- Independent eCW user forum
How to crash-course the eClinicalWorks EHR (2/2):

eCW -> File -> Settings -> My Local Settings
My internship timeline:

- Shadowing
- Crash Course, eCW
- Process Map
- Optimizing eCW
- Reporting Tools
- Tutorial/Guides
Pt. arrives and checks in at front desk.

Is this a new pt.?

Did pt. complete yearly update form?

Measures vitals, reviews medical history, allergies, medications, eCW.

Greets and escorts pt. to room.

Assigns room; Change ‘Status’ code for pt. on Office Visits screen to ‘NURS’, eCW.

Fulfills order (test, EKG, bone density, immunization, etc.)

Complete’s pt. “Superbill”

In-house follow up needed?

Orders/ review treatment plan (prescribe meds, lab/DI orders, immun., procedure, etc.), eCW.

Enters pt. room and greets pt.

Reviews Progress Note & previous visits in eCW.

Enters pt. room and greets pt.

Web enable patient, eCW.

Assign Referral to appropriate staff, eCW.

Collect co-pay $$

Is pt. web-enabled (Patient portal)?

Does pt. need referral?

Does pt. need follow up appointment?

Schedule follow up appointment.

Examines “Superbill”

Examines “Superbill”

Fulfills order.

Complete’s pt. “Superbill”

Yes

No

Yes

Yes

No

Yes

Yes

No

Yes

Change ‘Visit Status’ code for pt. on Office Visits screen to ‘ARR’, eCW.

Change ‘Visit Status’ code for pt. on Office Visits screen to ‘MD’, eCW.

Change ‘Visit Status’ code for pt. on Office Visits screen to ‘CHK’, eCW.

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No

Yes

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No

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Change ‘Visit Status’ code for pt. on Office Visits screen to ‘CHK’, eCW.
Some of the features in the patient portal:

- **Medical Records**
- **Messaging:** Providers & Refills
- **Appointments**
Process Map: Web-enabled patients have access to the patient portal.
Process Map: Patient Registration Form

Import
Process Map: Lab, Medication, and Diagnostic Imaging Orders
Process Map: Lab, Medication, and Diagnostic Imaging Orders
Process Map: **Printing** Medication, Lab, Diagnostic Imaging Orders
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eCW offers two reporting tools for extracting data:

- **eCW**
  - Registry
  - eBO
  - Simple Reports
  - Query Studio
  - Report Studio

- **eBO**
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- **Registry**
- **Simple Reports**
- **Query Studio**
- **Report Studio**

**eCW**

**eBO**
# Registry

![Registry Interface](image)

## Registry Interface

The image shows a screenshot of the Registry section within an electronic health record (EHR) software. The interface includes several modules such as Demographics, Visits, Encounters, Labs / Dx / Prac., ICD, CPT, Rx, Chief Complaints, and Medical History. The screenshot highlights the 'Encounters' module.

### Encounters Module

- **Data Range:** 7/12/2017 to 12/20/2017
- **App. Provider:**
- **Rec. Provider/PCP:**
- **Visit Type:**
  - Include Cancelled Visits
  - Include NEC Visits
  - Show Office Visits Only
  - Include Rescheduled Visits

### Patient Information Table

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Name</td>
<td></td>
</tr>
<tr>
<td>DOB</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>Tel. No</td>
<td></td>
</tr>
<tr>
<td>Acc. #</td>
<td></td>
</tr>
</tbody>
</table>
Registry challenges and workaround...
Registry challenges and workaround...
Registry reports can help the practice target patients for quality improvement initiatives.

- **Encounters**
  - No-shows, future
- **Demographics**
  - Web-enabled
- **Insurance**
- **ICD codes**

Example Report:

- *Patients who are currently uncontrolled and have not had an HbA1c test in greater than 3 months*
eCW offers two reporting tools for extracting data:
eBO – Enterprise Business Optimizer, features:

- Email reports
  - Frequency
- Burst reports
  - Specific individuals based off of data
    - Unlocked Progress Note
    - No show report
- Control access
eBO Query Studio

Query Studio

Create ➤ Enhance ➤ Manage

“Drag and Drop”
Less restrictive than Registry
eBO Report Studio did not open...

This application only supports Microsoft Internet Explorer 6.0 or higher
eBO Report Studio did not open…
eBO Report Studio did not open…
eBO Report Studio did not open…
eBO Report Studio opened!
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Tutorials

Creating a Favorites List for Orders

To make ordering easier, eCW allows users to create favorites lists for Labs, Diagnostic Imaging, and Procedures.

1. Under the EMR Menu, select Labs, DI, & Procedures.
2. Choose ‘My Labs, DI & Procedures’ Favorites.
3. Select which type of testing you would like to begin adding.
4. On the lookup screen, select the test you would like to add to your favorites list and click ok.

You will be able to find your favorites list by clicking on the star from the ordering screen.

Referrals

Texas Health Spring Referral

- Referrals

- Referrals Summer 2017

- Referral FAX to Specialist

- Office Notify patient through preferred method of communication found in eCW.
Some lessons learned and challenges:

• Stakeholder engagement

• “You know what would be really cool? If…”
  – Under-promise, over-deliver

• Internet
  – Cloud-based
Conclusion: This summer I gained some great hands-on experience in health IT!

- Value-Based care is changing how care is provided
- Improved workflow efficiency and processes at NEMA
- Informaticians do a little bit of everything

Thanks! Q/A

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ADDENDUM
Value based Care


MIPS: Merit Based Incentive Payment Systems

APM: Alternative Payment Model
CPOE

- Computerized physician order entry (CPOE) permits clinical providers to electronically order laboratory, pharmacy, and radiology services. CPOE systems offer a range of functionality, from pharmacy ordering capabilities alone to more sophisticated systems such as complete ancillary service ordering, alerting, customized order sets, and result reporting.
Clinical Documentation

- Physician, nurse, and other clinician notes
- Flow sheets (vital signs, input and output, problem lists, MARs)
- Discharge summaries
- Transcription document management
- Medical records abstracts
- Advance directives or living wills
- Durable powers of attorney for healthcare decisions
- Consents (procedural)
- Releases of information (including authorizations)
Frost & Sullivan Recognizes eClinicalWorks’ Cloud-based EHR for Highest Market Share

By: Bhakti Shah | Tags: Award, cloud, EHR, FROST & SULLIVAN | January 26th, 2016

eClinicalWorks’ Scalable and Uniform Technology Solutions offer Tremendous Value to Customers

Mountain View, Calif.—January 26, 2016—Based on its recent analysis of the cloud ambulatory electronic health record (EHR) solutions market, Frost & Sullivan recognizes eClinicalWorks with the 2015 US Frost & Sullivan Award for Market Leadership for capturing the highest market share (10 percent) among all cloud-based EHR vendors. eClinicalWorks’ comprehensive cloud-based technology solutions, coupled with pioneering implementation support services, have helped it firmly entrench itself at the top of the leader board.
eCW Settlement:

Compliance & Legal

eClinicalWorks to pay $155 million to settle suit alleging it faked meaningful use certification

U.S. Attorney says that the resolution proves EHR vendors can’t ‘flout’ certification requirements and get away with it.