80% by 2018 FORUM III

Workshop:
Effectively Using Electronic Health Records

Henry Oliver F
EHR POPULATION MANAGEMENT CRC SCREENING AT A FQHC

IT CAN BE DONE!

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Clinical Services Director
Albany Area Primary Health Care
### Initial Assessment of Colorectal Cancer Screening Strategies at AAPHC - EVEN PAPER WORKS! BUT TAKES TIME

<table>
<thead>
<tr>
<th>Year</th>
<th>Strategy</th>
<th>Compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>Chart audit revealed colonoscopy rate</td>
<td>12%</td>
</tr>
<tr>
<td>2005</td>
<td>Patient letter, telephone call reminders</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td><strong>BUT without Insurance</strong></td>
<td>0%</td>
</tr>
<tr>
<td>2005</td>
<td>Physician reminders and patient reminders</td>
<td>29%</td>
</tr>
<tr>
<td>2006</td>
<td>Audit of Physician Prompt Use:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If Used by Physician</td>
<td>46%</td>
</tr>
<tr>
<td></td>
<td>If Not Used</td>
<td>21%</td>
</tr>
</tbody>
</table>
Population Management to Overcome EHR Analytics & the Outreach Challenge to Improve CRC Screening Rates

**Background**

Colorectal Cancer (CRC) is the 4th most commonly diagnosed cancer and 2nd leading cause of cancer death in the United States. CRC screening rates are 65% nationally and 67% in Georgia for 2012. Community Health Centers (CHCs) provide services to the nation's uninsured and underserved population and have screening rates of 92.6% nationally and 68% in Georgia. The National Colorectal Cancer Roundtable created the initiative to increase CRC screening rates in the United States to 80% by 2018. If screening rates for CRC reach 80% by 2018, an estimated 725,000 CRC deaths in the United States could be saved between years of 2011-2020.

**Objectives**

Primary Objectives include:
- Evaluating a population analytics tool used in an EHR (ClinicalWorks) in order to facilitate achieving a CRC (Colorectal Cancer) screening rate of 80% by 2018.

Secondary Objectives include:
- A workforce tool created in an initial study was also tested to overcome obstacles in effective population management.

**Methodology**

A retrospective case study was performed evaluating a population analytic tool, Guideline Advantage (CA) used in an EHR (ClinicalWorks). An electronic record review was conducted on individuals 50-75 years old that were patients of Family Medicine at Georgia. CA was used to identify up to date (green bar) and not up to date (red bar) patients. A list was then generated by clicking the respective bars.

Charts were assessed for colon cancer screening documentation over the past 10 years and were compared to recommended standards of care. EHR locations searched included:
- History of Present Illness, Surgical History, Medical History, Review of Systems, Assessment, Problem List, Preventive Medicine, and scanned documents. Charts were also assessed for CRC historical risks and endoscopic findings. A work flow tool was developed based on chart review and risk assessment.

Time Study was done on 50 patients to discover time required to update population list and place CRC data in Diagnostic Imaging section.

**Results**

- Total patients in study: 844
- Patients up to date by USD: 734 (86.61%)
- Patients up to date by HEDIS: 692 (82.25%)
- Patients not up to date by USD: 110 (13.39%)
- Patients not up to date by HEDIS: 52 (6.75%)
- True Average Risk: 770/86.61% True High Risk: 684/81.85%
- Patients up to date by Endoscopic examination: 438/51.62%
- Patients not up to date by Endoscopic examination: 606/72.75%
- Patients Unable to be up to date because no pathology report: 8/0.95%
- A workflow tool was developed to address the challenge to in data entry and risk assessment to identify patients not appropriate for 10 year screening intervals (Work Flow Picture)
- Time Study: 10 minutes to update CRC data
- There were identifications due to data discrepancies of 5% to 7% and 10% to 15%

**Conclusion**

Population management tools show promise, however accurate standard data entry in proper structured fields is paramount. An effective workflow tool for ClinicalWorks was implemented in order to help FQHCs in Georgia achieve 80% CRC screening rates by 2018.

A risk assessment process is an essential component of the workflow tool. Once the time burden of updating CRC screening coupled with the burden of other cancer screening and prevention documentation, the implementation of a Population Management Specialist position to add to the medical team may increase efficacy and improve clinical outcomes.

**Next Steps**

Test and refine the workflow tool at other FQHC sites. Implement change by putting into action Population Management Specialists whose task is to use EHR and analytics in Guideline Advantage for focused outreach and navigation for CRC screening as well as other significant prevention services: blood pressure control, diabetes management, cholesterol lowering, antiplatelet use in ischemic vascular disease, breast cancer screening, cervical cancer screening, and pneumonia vaccinations.
Lesson Learned: Proper Use of EHR Analytics Lead to Improved Screening Rates (*regardless of your community*)

Practices in one of Georgia’s poorest counties, Calhoun County

<table>
<thead>
<tr>
<th>Measure Set</th>
<th>Group</th>
<th>Current Results - 2017 January</th>
<th>%</th>
<th>View</th>
</tr>
</thead>
<tbody>
<tr>
<td>IVD: Use of Aspirin or Other Antithrombotic</td>
<td>All</td>
<td>ASA or other antithrombotic</td>
<td>68</td>
<td>6</td>
</tr>
<tr>
<td>Hypertension: Blood Pressure Screening</td>
<td></td>
<td>BP screened in past 12 months</td>
<td>558</td>
<td>1</td>
</tr>
<tr>
<td>Hypertension: Controlling High Blood Pressure</td>
<td></td>
<td>BP &lt; 140/90</td>
<td>448</td>
<td>110</td>
</tr>
<tr>
<td>Statin Therapy for Adults with an LDL &gt;= 190 mg/dL</td>
<td></td>
<td>On statin therapy</td>
<td>32</td>
<td>1</td>
</tr>
<tr>
<td>Preventive Care: Tobacco Use Screening</td>
<td></td>
<td>Screened in past 24 months</td>
<td>721</td>
<td>2</td>
</tr>
<tr>
<td>Preventive Care: Tobacco Users</td>
<td></td>
<td>Tobacco non-users</td>
<td>583</td>
<td>138</td>
</tr>
<tr>
<td>Preventive: Tobacco Use - Cessation Intervention</td>
<td></td>
<td>Tobacco users with intervention within 24 months</td>
<td>136</td>
<td>2</td>
</tr>
<tr>
<td>Diabetes: Hemoglobin A1c Testing</td>
<td></td>
<td>Heme A1c in past 12 months</td>
<td>245</td>
<td>3</td>
</tr>
<tr>
<td>Diabetes: Hemoglobin A1c Control</td>
<td></td>
<td>Heme A1c &lt; 7%</td>
<td>82</td>
<td>58</td>
</tr>
<tr>
<td>Diabetes: Urine Protein Screening</td>
<td></td>
<td>Urine protein within 12 months or on ACEI/ARB or with evidence of nephropathy</td>
<td>217</td>
<td>1</td>
</tr>
<tr>
<td>Breast Cancer Screening</td>
<td></td>
<td>Mammogram in past 24 months</td>
<td>269</td>
<td>68</td>
</tr>
<tr>
<td>Cervical Cancer Screening</td>
<td></td>
<td>Paps in past 3 years</td>
<td>210</td>
<td>88</td>
</tr>
<tr>
<td>Colorectal Cancer Screening</td>
<td></td>
<td>Appropriately screened</td>
<td>407</td>
<td>71</td>
</tr>
<tr>
<td>Pneumonia Vaccination Status for Older Adults</td>
<td></td>
<td>Pneumonia vaccine at any time</td>
<td>192</td>
<td>15</td>
</tr>
</tbody>
</table>
Population Management Outcomes - CRC Screening Program at Albany Area Primary Health Care – Collaboration Works!

Dec. 2015: Low Point for entire AAPHC group, 34.8%
Dec. 2015: Low Point for Dr. Rosenbaum, 56.7%
Jan. 2017: AAPHC 62.4%
Jan. 2017: Dr. Rosenbaum, 85.1%
Special Theory of Relativity #2

\[ E^T = mc^2 \]

Endoscopy (timely) = My Colon Cancer Control and Cure

BUT RELATIVELY COMPLEX TO APPLY TO A POPULATION
EHR Best Practices Guide: A look under the hood

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September 7, 2017
Learning Objectives

1. Identify opportunities to improve both application and care team processes to support colorectal cancer screening improvement using electronic health records.

2. Determine when and why to use referrals versus orders, which ICD codes are most appropriate in various circumstances, effective and compliant patient follow-up procedures, proper results documentation, and other key components of the colorectal cancer screening process.

3. Access the key information points and documentation steps necessary to develop patient screening goals based on family history of cancer.

4. Describe implementation of evidence-based interventions, challenges, and lessons learned.
Key Features:
- Process flows for FIT/FOBT and Colonoscopy Screening and follow-up
- Documenting follow-up outreach for incomplete tests
- Notifying patients of test results
- Documenting family history
FIT/FOBT Workflow – Goals

- Track and measure:
  - Cards distributed and returned
  - Tests done for average risk CRC Screening
  - Follow-up/communication with patients to return cards
  - Follow-up/communication with patients on test results

- Associate Lab Order with ICD-10 code

- Ensure appropriate billing for test (if billing)

- Document Test Results

- Generate Referral for follow-up colonoscopy if test result is positive
FIT/FOBT Workflow – eCW Challenges

• Billing in eCW (may vary in other EMRs)

• Procedure codes (CPTs) can be tied to orders, users prompted upon order to include CPT.

⇒ No such prompt exists when entering results or indicating receipt of samples (necessary for FOBT/FIT). Some centers billing “accidentally” upon order due to CPT linkage, others not billing at all due to complexity.

⇒ Recommended Workflow offers options
• Billing is handled entirely by lab
• Completion of FIT test order when resulted meets care guideline and resets screening interval
• Provider must enter Z12.11 code into today’s assessments when ordering test
• Pairing of ICD-10 code with test meets ACO measure (charge submission)
• NextGen reporting tool able to generate lists of tests with results and/or not
FIT/FOBT Workflow – NextGen Challenges

• Bidirectional lab interface allows for order submission which must be tied to an appropriate ICD-10 code

• Billing occurs on the laboratory services provider side

• Future orders reside in the laboratory information system (not NextGen)

• Tests when resulted flow into the NextGen laboratory flowsheet. The provider is alerted to their return and can plan for patient notice and subsequent care if required.

• Sample kit distribution was a problem in
Colonoscopy Workflow – Goals

- Track and measure:
  - Tests done for average risk CRC Screening
  - Tests done as follow-up to positive FOBT
  - Tests done for high-risk patients
  - Follow-up/communication with patients to make appointment with specialist
  - Follow-up/communication with patients on test results

- Document Test Results
- Document Follow-up
Colonoscopy Workflow - Challenges

**Reason for colonoscopy referrals**

- Educate that for the centers’ purpose, ICD-10 Code is a *reason code*, not a *billing diagnosis code* (GI is responsible for billing) (Both systems)

- Workflow recommends associating referral with ICD code. (eCW)

- Workflow *requires* associating referral with ICD code. (NextGen)

**Date test was performed**

- Order date commonly used as the date the test was performed, which often is the date the patient was referred. (eCW)

- Workflow recommends including date test was performed in the DI Order. (eCW)

- Order management allows for completion of the order and entry of date test was obtained, results, and order completion. (NextGen)

**Colonoscopy results - inconsistent capture**

- Patient usually gets results from specialist after colonoscopy. (eCW)

- Need to determine lines of responsibility for patients co-managed by specialist. (eCW)

- Referrals and provider support staff are provided reports of incomplete orders and may contact patient or specialist as appropriate to determine if
Colonoscopy Workflow in eCW-DI Order & Colonoscopy Referral

- Associate with ICD-10 Code
- Record date test was performed
- Document follow-up attempts with Structured Data
Referrals staff reviews incomplete order intervals to identify or specialists to consult test results or requests.
Colonoscopy Workflow in eCW – Documenting Results

- Date test was performed
- Date results were received
- Positive or Abnormal – High Priority
- Positive for polyps – Abnormal
- Create patient specific alert for more frequent screening
- Positive for cancer – Positive or Cancer
- Add diagnosis to Problem List
- Referral to oncologist
PROCESSING COLONOSCOPY RESULTS

1. Colonoscopy Report Received
   - Is there a colonoscopy order in the chart?
     - Yes: Add item ordered elsewhere (colonoscopy) in order management
     - No: Is there a GI referral in the chart?
       - Yes: Proceed with next step
       - No: Proceed with next step

2. Report is tasked to PAQ for review and signoff
   - Positive findings?
     - Yes: Patient contacted with results documented in EHR using Provider Test Action template
     - No: Proceed with next step

3. Use order management to record results and complete order
   - Proceed with next step
Tracking, Follow-up & Closing the Loop Challenges

- **Automated messaging in eCW**
  - Task lists for referrals and orders are available. Letters, automated messaging (SMS, phone, portal) can be used.
  - No clear best practice; challenging to design efficient workflow utilizing the right fields to support automated messaging.

- **Automated messaging in NextGen**
  - Patient messaging occurs by portal message, telephone call, or postal mail.
  - Documentation occurs on Provider Test Action Template.
  - There is potential to develop a population health campaign using our population health software. 

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Closing the Loop in eCW – Structured Data

- Was appointment made?
  - No: Document follow-up attempts from pending file in structured data tab in referral window
  - Yes: Attempt to contact patient and specialist 3 times to confirm patient went to appointment

- Notes from the follow-up attempts can be entered in the notes field for each of the structured data questions
- When creating the follow-up call questions in the structured tab, choose the first date option from the drop-down menu

Additional notes for each attempt can be added by clicking on the notes field.
Notes are entered in order management reflecting communication attempts with both patient and consultant. The order will remain uncompleted until the report is received or the order is cancelled.
CRC Data Capture Challenges

• Growing desire to work within the EHR rather than from external registries to improve efficiency

• Years of creative workflows and poor data capture to overcome, primarily with Results documentation

Query of patients seen in August 2015 with an FOBT/FIT result on file showed only 162 of the 5,356 results (3%) were "junk results". HUGE improvement from 3 years ago!
Family History – Cancer
Goals
Key elements for minimum adequate cancer family history:

- First-degree relatives: siblings, parents, children
- Second-degree relatives: grandparents, aunts, uncles, grandchildren, nieces, nephews, half siblings
- Both maternal and paternal sides
- For each cancer case in the family establish:
  - Age at cancer diagnosis
  - Type of primary cancer
Family History Challenges

- Limited views of structured data capture
  - Identified vendor enhancement requests.
- Age at diagnosis exists, but is not intuitive
  - Identified vendor enhancement requests.
- Doesn’t allow for ICD-10 code entry and doesn’t link to problem list
  - Workflow recommends documenting family history of colon cancer and other risk factors for CRC in Medical History and Problem List using the ICD-10 code.
Documenting Family History in eCW

Hover mouse over blank space next to checkbox to get box for entering age at diagnosis.

- Customize Columns
  - Show Custom Names in Progress Notes
  - ICD Code: Diagnosis
  - Snomed C: Custom Name

- Order: Hypertension, Diabetes, Heart Disease, Stroke, Unspecified nonpsychotic mental disorder, Breast Cancer, Cancer, Ovary, Malignant neoplasm of colon, unspecified
Documenting Family History in NextGen

Family history of familial adenomatous polyposis (Z83.71)
Family history of FAP (familial adenomatous polyposis) (Z83.71)

Results 1 - 2 shown.

Search Help
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Documenting Family History in NextGen (continued)

Family history of FAP (familial adenomatous polyposis) (Z83.71)

Results 1 - 1 shown.

Search Help
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Documenting Family History in eCW – Medical History and Problem List
CRC Screening – Current Measures

• Colorectal Cancer Screening – Past 12 Months and Past Month (UDS; NQF 0034)

• % of CRC Screenings that are Colonoscopy – Past 12 Months and Past Month

• % of CRC Screenings that are FIT/FOBT – Past 12 Months and Past Month
Colorectal Cancer Screening – UDS Measure

Colorectal Cancer Screening has been revised to align with CMS 130v5 (NQF 0034)

**Colorectal Cancer Screening**

**Percentage of patients aged 50 to 75 who had appropriate screening for colorectal cancer**

**Numerator:** Number of patients aged 51 through 74 with appropriate screening for colorectal cancer

**Denominator:** Number of patients who were aged 51 through 74 at some point during the measurement year, who had at least one medical visit during the reporting year
# Reporting Challenge – “Aligned Measures”

<table>
<thead>
<tr>
<th>Measure</th>
<th>CRC Denominator</th>
<th>Age Specification</th>
<th>Interpretation of Age Specification (2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UDS (HRSA/BPHC)</td>
<td>Patients who were aged 50-75 during the measurement period.</td>
<td>People who were born between January 1, 1941 and December 31, 1965.</td>
<td>Dates correspond to individuals who were 51-75 during the measurement period (or individuals who were age 50 at the start of the measurement period and 75 at the end of the measurement period).</td>
</tr>
<tr>
<td>eCQMS (CMS)</td>
<td>Individuals between the ages of 50-75 in the measurement period</td>
<td>Individuals &gt;=50 and &lt;75 as of the measurement period</td>
<td>Individuals between the ages of 50-74, with birthdate ranges between January 1, 1942 and December 31, 1966</td>
</tr>
<tr>
<td>To align both measures:</td>
<td>Adults as of their 51\textsuperscript{st} birthday through their 75\textsuperscript{th} birthday with a medical visit in the measurement period.</td>
<td>People who were born between January 1, 1941 and December 31, 1966</td>
<td>include patients who were 50 years old in 2016 (patients aged 50-75), Individuals in the denominator should be those who were the specified age at the START of the measurement period, rather than at the END of the measurement period</td>
</tr>
</tbody>
</table>
CRC Screening – Exploratory Measures

• Screening Colonoscopy Referrals

• Screening Colonoscopy Referral to Completion Time

• Adenomas detected during colonoscopy

• Positive FIT/FOBT

• Number of Referrals for follow up colonoscopies after positive FIT/FOBT
eCW Enhancement Requests

- Family History
  - Add column to capture ICD-10 code in a structured manner
  - eCW response: Columns can be customized manually; can change and convert to ICD-10.
  - Indicate that the box to the right of the checkbox is for age of diagnosis
  - eCW response: in 10e – can only type in numbers; earlier versions can type anything. eCW Idea: Provide label for age at diagnosis.

- Results Fields
  - Create structured results field in addition to the free-form results field available today

- Order Screens
  - Provide access to Dx field regardless of where launched
  - eCW response: Users have access to the Dx field from the Order Screen (Treatment>Lab/DI/Procedure/Rx)

- Lab Order - FIT/FOBT Results
  - Option for CPT Code association upon result entry
  - eCW response: CPT code association is possible, but
eCW Enhancement Requests (continued)

- Clinical Decision Support System (CDSS)
  - Improve alerts to allow for more granular logic such as Colonoscopy in 10 years OR FOBT/FIT in 1 year..., OR screening in XX years if they have a diagnosis of xxx
  - At a minimum, order the colonoscopy and FOBT alerts sequential in the CDSS display
NextGen Enhancement Requests

- **Family History**
  - We use IMO (Intelligent Medical Objects) overlay program to simplify location and addition of diagnoses to CPL. These are SNOMED codes that, when selected, can locate associated ICD-10 code.

- **Results Fields**
  - Create structured results field in addition to the free-form results field available today

- **Order Screens**
  - Customized labs template mandates an order for test. In addition, we have customized our template to automagically enter the “Screening for Colon Cancer” (Z12.11) diagnosis when a FIT test is ordered

- **Reporting**
  - Simplify reporting tool
Lessons Learned - ECW

• Billing with FOBT/FIT Testing
• Providing affordable options for patients and capturing in eCW
• Process for follow-up on FOBT/FIT
• Closing the Loop on Referrals for Colonoscopy
• Moving towards using more structured data fields
• Team-based care
Lessons Learned – NextGen

• Adequate reporting requires SQL savvy team to locate the colonoscopy orders that may be either diagnostic or referral orders

• Software add-ons such as IMO and CareSentry can improve the end-user experience
Next Steps

Immediate

Disseminate EHR
Best Practice
Guide

Submit enhancement requests to vendor

Leverage automated features of EHR for outreach and follow-up

Future

Further define & develop exploratory measures

Assess workflow implementation

Develop outcome measures

Further explore quality of family history in EHRs
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