Practical Insights on Meeting Objectives of Meaningful Use III

Presented By:
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Sarah Scholle, DrPH; Kim Kimminau, PhD

Moderated By:
Rebecca Roper, MS, MPH, Director, Practice-Based Research Network Initiative,
Agency for Healthcare Research and Quality

Discussants:
Steven Ornstein, MD; Victoria Neale, MPH, PhD; Valory Pavlik, MPH, PhD

Sponsored by the AHRQ PBRN Resource Center
January 28, 2015
Agenda

• Welcome and introductions
• Presentations
• Q&A session with all presenters and discussants
• Instructions for obtaining CME credits

Note: After today’s webinar, a copy of the slides will be e-mailed to all webinar participants.
Disclosures

• Presenters will not discuss off label use and/or investigational use of medications in their presentations.

• Dr. Fiks and Dr. Grundmeier are co-inventors of the Care Assistant software used to create the clinician side of MyAsthma. They hold no patent on the software and have earned no money from this invention.

• The rest of Dr. Fiks’s study team and our other presenters do not have financial relationships to disclose.
How to Submit a Question

• At any time during the presentation, type your question into the “Questions” section of your GoToWebinar control panel.
• Select “Send” to submit your question to the moderator.
• Questions will be read aloud by the moderator.
Spurring Adoption of Patient Portals to Collect Patient-Reported Outcomes: Lessons Learned

Alex Fiks, MD, MSCE
Associate Director, Pediatric Research in Office Settings, The American Academy of Pediatrics;
Associate Director, The Center for Pediatric Clinical Effectiveness (CPCE);
Associate Medical Director, The Pediatric Research Consortium (PeRC);
Attending Physician, The Children's Hospital of Philadelphia Care Network;
Assistant Professor of Pediatrics, Perelman School of Medicine at the University of Pennsylvania
Funding

• This project was supported by the Agency for Healthcare Research and Quality (1R18HS022689)

• Additional support from:
  ► The Children’s Hospital of Philadelphia
  ► Eunice Kennedy Shriver National Institute of Child Health & Human Development (K23HD059919)
Background: Meaningful Use Program

- Created by the Health Information Technology and Clinical Health (HITECH) Act which was part of the American Recovery and Reinvestment Act of 2009 (ARRA, aka “The Stimulus”)
- A program to promote the spread of electronic health records to improve health care
Stages of Meaningful Use

A Conceptual Approach to Meaningful Use

Stage 1
Data capture and sharing

Stage 2
Advanced clinical processes

Stage 3
Improved outcomes
Meaningful Use Program: Pediatrics

- Fewer than half of pediatricians participate in the early stages of meaningful use
- Qualifications for pediatricians to participate in the program are different than in adult health care
A patient portal is a secure online website that gives patients convenient 24-hour access to personal health information from anywhere with an Internet connection.
What innovation, organization, and structural characteristics influence portal implementation?

How might meaningful use incentives and supports be structured to promote adoption, sustained use, and clinical benefit?
Model adapted from Chaudoir SR, Dugan AG, Barr CH. Measuring factors affecting implementation of health innovations: A systematic review of structural, organizational, provider, patient, and innovation level measures. 

Our Specific Study

Aims:

• Evaluate the feasibility and effectiveness of a patient portal to help manage care for children with asthma

• Determine barriers and factors associated with portal adoption and sustained use
Portal Studied: “MyAsthma”

- Provides educational material
- Allows parent to identify concerns
- Allows parent and child to identify goals for asthma treatment
- Tracks symptoms, side effects, parent-reported medication adherence, and progress toward goals over time
- Provides decision support (ex: if asthma is poorly controlled that month, both parent and practice receive a message)
MyAsthma

Check-in Results

Your child's asthma is: **UNCONTROLLED**
You reported your child is experiencing medication side effects

Instructions:
Please call your doctor's office to discuss your child's asthma control and side effects.

The results of the check-in have been sent to your doctor's office.

You can always call or send a message to your doctor's office with any questions.

If this is a medical emergency, please call 911.

Would you like to learn more about asthma with CHOP videos and handouts?

[Yes]  [No, thanks]
### Check-in Survey

- **You are up-to-date!**
- **Next check-in:** Oct 1, 2014
- **Last check-in:** Sep 11, 2014

### Goals
- **Parent’s Goal:** Not miss work due to child’s asthma
- **Child’s Goal:** NOT miss school

### Concerns
- Steroids impacting growth
- Cost of medication
- Impact on life
- Time to manage medications
- Other: taste of prednisone

### Check-in Survey Timeline

<table>
<thead>
<tr>
<th>Asthma Control Assessment</th>
<th>Sep</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma control</td>
<td>Well</td>
<td>Well</td>
<td>Well</td>
<td>Uncontrolled</td>
<td>Uncontrolled</td>
<td>Poor</td>
<td>Well</td>
<td>Well</td>
<td>Well</td>
<td>Well</td>
<td>Well</td>
<td>Well</td>
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<tr>
<td>Meeting goals</td>
<td>Very much</td>
<td>Very much</td>
<td>Moderately</td>
<td>Slightly</td>
<td>Slightly</td>
<td>Moderately</td>
<td>Very much</td>
<td>Very much</td>
<td>Very much</td>
<td>Very much</td>
<td>Very much</td>
<td>Very much</td>
</tr>
<tr>
<td>Managing concerns</td>
<td>Very much</td>
<td>Very much</td>
<td>Moderately</td>
<td>Moderately</td>
<td>Definitely</td>
<td>Definitely</td>
<td>Very much</td>
<td>Very much</td>
<td>Definitely</td>
<td>Very much</td>
<td>Very much</td>
<td>Very much</td>
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<td>Side effects</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
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<td>Missed school/day care</td>
<td>1</td>
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<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<td>3 or urgent care visit</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Steroid by mouth</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Home/school disruption</td>
<td>None of the time</td>
<td>None of the time</td>
<td>A little of the time</td>
<td>Some of the time</td>
<td>Some of the time</td>
<td>None of the time</td>
<td>A little of the time</td>
<td>A little of the time</td>
<td>A little of the time</td>
<td>None of the time</td>
<td>None of the time</td>
<td>None of the time</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>Not at all</td>
<td>Not at all</td>
<td>Once or twice a week</td>
<td>Once a day</td>
<td>2 or 3 nights a week</td>
<td>Once or twice a week</td>
<td>Not at all</td>
<td>Not at all</td>
<td>Not at all</td>
<td>Not at all</td>
<td>Not at all</td>
<td>Not at all</td>
</tr>
<tr>
<td>Symptoms at night</td>
<td>Not at all</td>
<td>Not at all</td>
<td>Once or twice a week</td>
<td>2 or 3 nights a week</td>
<td>2 or 3 nights a week</td>
<td>Once a week</td>
<td>Once or twice a week</td>
<td>Once or twice a week</td>
<td>Once or twice a week</td>
<td>Once or twice a week</td>
<td>Once or twice a week</td>
<td>Not at all</td>
</tr>
<tr>
<td>Rescue inhaler/nebulizer</td>
<td>Not at all</td>
<td>Once a week or less</td>
<td>Once a week or less</td>
<td>1 or 2 times per day</td>
<td>1 or 2 times per day</td>
<td>Once a week or less</td>
<td>Once or twice a week</td>
<td>Once or twice a week</td>
<td>Once or twice a week</td>
<td>Once or twice a week</td>
<td>Once or twice a week</td>
<td>Not at all</td>
</tr>
<tr>
<td>Parent rating of control</td>
<td>Completely controlled</td>
<td>Well controlled</td>
<td>Poorly controlled</td>
<td>Somewhat controlled</td>
<td>Somewhat controlled</td>
<td>Completely controlled</td>
<td>Completely controlled</td>
<td>Completely controlled</td>
<td>Completely controlled</td>
<td>Completely controlled</td>
<td>Completely controlled</td>
<td>Completely controlled</td>
</tr>
<tr>
<td>Taking medications</td>
<td>More than half</td>
<td>More than half</td>
<td>More than half</td>
<td>All</td>
<td>All</td>
<td>All</td>
<td>More than half</td>
<td>More than half</td>
<td>More than half</td>
<td>More than half</td>
<td>All</td>
<td>All</td>
</tr>
</tbody>
</table>
Impact of MyAsthma: Prior Trial Results

- 60 families enrolled (30 control; 30 intervention)
- 57% used MyAsthma 5 of 6 study months
- 92% were satisfied with MyAsthma
- Families in the intervention group reported fewer flares
- Parents in the intervention group missed fewer days of work
The Pediatric Research Consortium (PeRC) of The Children’s Hospital of Philadelphia

1 Hospital
3 Urban primary care centers
28 Suburban and rural practices
13 Specialty care centers with 6 Pediatric inpatient units at local community hospitals
Current Implementation Evaluation: Procedures

- 20 practices enrolled (9 PROS, 11 PeRC)
- 2,012 families of children with asthma (per EHRs) at PROS identified
- 7,227 families of children with asthma at PeRC identified
- 2 rounds of mailings, over 18,000 letters sent
- Study team then called 50 families at each practice
- Providers were given cards to refer families to the portal team
Preliminary Results

• Overall, enrollment was low
  ► 130 children enrolled at PROS practices
  ► 164 children enrolled at PeRC practices

• Nearly ¼ of those responding had active asthma symptoms requiring attention.
Range of MyAsthma Adoption Across Practices

Percentage of eligible families of children with asthma enrolled in MyAsthma

National Practices including: Alaska, Kansas, California, Oklahoma, Ohio, South Carolina, Tennessee, Missouri, Kentucky

Philadelphia Area Practices

All PROS Practices: 6.5%

All PergoP PRACTICES: 2.3%
Preliminary Results

After completing the portal, 30% of families indicated they would take at least one new action to better manage their child’s asthma:

- 19% of families were more or much more likely to change environment.
- 16% of families were more or much more likely to speak to their doctor.
- 12.5% of families were more or much more likely to make a change to their child’s medications.
Many families with asthma in the child’s chart did not believe their child presently had asthma
  ▶ 20 out of 50 in one practice

Clinician referral for the portal may be better than letters/phone calls
  ▶ But, even when cards to refer families for the portal, few clinicians did.

Streamlining the sign up may increase enrollment.
  ▶ Simpler enrollment in PROS practices
Provider Focus Groups

- Ongoing training and administrative assistance may be needed to further solidify portals as part of clinic’s asthma workflow
  - “We haven’t built a great infrastructure in terms of care coordinators…so until we feel secure that’s in place and really well running, it feels like we are putting the cart before the horse.”

- The portal was very helpful in identifying children with active asthma symptoms
  - “I had this one kid that was doing really bad, we didn’t know that until the questionnaire went to them, which prompted an allergy evaluation. She’s gotten more on board with things, she has filled [the asthma portal] out and [has] shown improvement”
• Portal helped identify children with poor asthma control
  ► “At the beginning, I never would have thought that his asthma was uncontrolled…now I have it controlled.”

• Parents responded positively to instant feedback
  ► “I’m a single parent with three children so I thought that [the asthma portal] would definitely be a time saver…to be able to access the portal via the internet instead of having to call and wait for somebody to call me back”

• Parents cited the timeline as one reason for signing into the survey each month
  ► “It allowed me to look really in depth about how often she was having a flare.”

• Helped start conversations about asthma questions
  ► “It propelled me to call my doctor more… and to ask more appropriate questions.”
Themes Related to Adoption of MyAsthma: Parents Not Enrolled

• Unaware of the portal; felt that letters were not an ideal method of communication

• Did not feel that child’s asthma was a concern; felt asthma was well managed/controlled
  ▶ “My son’s asthma is not very severe, so I think that if it was a significant daily type of problem for our family then I probably would have been interested....”
Conclusions

- Providing MU incentives for the use of portals is warranted because outcomes may be improved.
- Participation thresholds should be low to start.
- Synergy is needed between technology and office-based programs such as asthma care coordination—Practices need more than technology.
- Tools such as this should be focused on children with active health problems—more work is needed to facilitate the identification of these children within EHRs.
MyAsthma Study Team

- Alexander Fiks, MD, MSCE
- Nathalie duRivage, MPH
- Dean Karavite, MSI
- Bob Grundmeier, MD
- Stephanie Mayne, MHS
- Michelle Ross, PhD
- Valerie McGoldrick, RN
- Ryan O’Hara
- Lemar Davidson
- Andrew Suh
- Jim Massey, RN, BSN, MBA
- Kathleen Noonan, JD
- Dorothy Miller, JD, MPH
- Peter Croughan
- Laura Repcheck, MSW
- Jen Eder, MPH

- Stacia Finch, MA
- Laura Shone, DrPh, MSW
- Jennifer Steffes, MSW
- Victoria Weiley, MIS
- Louissetta Williams
- Richard “Mort” Wasserman, MD
- Wilson Pace, MD
- Elizabeth Staton, MSTC
- Kelli Giacometti
- Christoph Lehmann, MD
- Vanessa Shorte
How to Submit a Question

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Best Practices For Integrating Clinical Decision Support Into Clinical Workflows

Muriel Jean-Jacques, MD, MAPP
Assistant Professor, Division of General Medicine and Geriatrics, Northwestern University Feinberg School of Medicine
Best Practices for Integrating Clinical Decision Support and Clinical Workflows

PBRN Resource Center Webinar
Muriel Jean-Jacques, MD MA
January 28, 2015
• Electronic health record system user community
  – 34 Federally Qualified Health Centers
  – 180+ clinical sites
  – 14 states

• Practice-based Research Network

• Member of CHARN (Community Health Applied Research Network)
The Challenge of Meaningful Use

- **Stage 1**
  - Data capture and sharing

- **Stage 2**
  - Support of advanced clinical processes

- **Stage 3**
  - Achievement of improved health outcomes
Clinical Decision Support

• **Traditional Definition**
  – An electronic system designed to aid in clinical decision making, in which characteristics of individual patients are used to generate patient-specific assessments or recommendations that are then presented to clinicians for consideration.\(^1\)
  
  alerts, reminders, order sets

• **Contemporary Definition**
  – A process for enhancing health-related decisions and actions with pertinent, organized clinical knowledge and patient information to improve health and healthcare delivery.\(^2\)
  
  people and processes are as important as the electronic system

Clinical Decision Support and Clinical Outcomes

• The Evidence
  – CDS has had a modest effect on clinical processes
  – CDS has had a minimal effect on clinical outcomes

• Leading explanations
  – Lack of integration of CDS with clinical workflows
  – Lack of built-in capabilities to support population health management

• Potential Solutions
  – Implementation toolkits
  – Practice coaches
Stage 3 Clinical Decision Support (CDS) Objective

• Objective
  – To promote the use of CDS to improve performance on high priority health conditions
  – To support higher levels of outcomes-oriented population health management

• Proposed requirements
  – Number of CDS interventions implemented
  – Target areas for CDS interventions
    • Preventive care
    • Chronic disease management
    • Appropriateness of lab/radiology orders
    • Advanced medication management
    • Problem list, medication list, and drug allergy list management
    • Checks for drug-drug and drug-allergy interactions
Study Aims

1. To determine the intensity of support needed by Federally Qualified Health Centers (FQHCs) to achieve the goal of the Stage 3 Meaningful Use CDS Objective (to improve performance on high priority health conditions)
   - Intensity of support
     - Low: CDS implementation tool kit
     - High: CDS implementation tool kit + practice coaching
   - Health conditions
     - Cardiovascular disease prevention
     - Asthma

2. To determine how the intensity of support needed varies by the health center’s care management infrastructure (measured by their patient centered medical home level)
### Participating Health Centers

<table>
<thead>
<tr>
<th></th>
<th>CHC A</th>
<th>CHC B</th>
<th>CHC C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Geographic Characteristics</strong></td>
<td>Urban</td>
<td>Rural</td>
<td>Urban</td>
</tr>
<tr>
<td><strong>Demographic Characteristics</strong></td>
<td>Predominantly Black and Hispanic</td>
<td>Predominantly White; 14% Hispanic, 12% Native American</td>
<td>Predominantly Black</td>
</tr>
<tr>
<td><strong># Annual Patient Visits</strong></td>
<td>33,000</td>
<td>34,000</td>
<td>50,000</td>
</tr>
<tr>
<td><strong># Sites</strong></td>
<td>8</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td><strong>PCMH Status</strong></td>
<td>0</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Approach

Site-randomized Trial
Six month duration

Low PCMH
4 sites

- Tool kit
  2 sites
- Tool kit + Practice Coach
  2 sites

Medium PCMH
4 sites

- Tool kit
  2 sites
- Tool kit + Practice Coach
  2 sites

High PCMH
4 sites

- Tool kit
  2 sites
- Tool kit + Practice Coach
  2 sites
## Outcomes

<table>
<thead>
<tr>
<th>Use of CDS Interventions</th>
<th>Asthma</th>
<th>Cardiovascular Disease Prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Assessment of asthma severity</td>
<td>Estimation of CVD Risk (Framingham Risk Score, ASCVD Risk Calculator)</td>
</tr>
<tr>
<td>Clinical Outcome (Appropriate medication prescribing)</td>
<td>Controller medication for patients with persistent asthma</td>
<td>Statin for patients with high estimated CVD risk</td>
</tr>
</tbody>
</table>
Intervention

CDS Implementation Teams

• 3 member “CDS implementation team” assembled at each site
  – Team members
    • Physician or mid-level provider (NP or PA)
    • Nurse (RN or LPN)
    • Medical assistant
  – Training
    • 2 hour training on CDS Implementation Tool Kit (pre-randomization)
  – Time
    • Each team member funded 2 hours/month x 6 months
  – Support
    • Monthly feedback on performance on target measures
    • Health IT support
Intervention

Study Arms

• Lower Intensity
  – 2 hours/month x 6 months
  – Teams work through CDS Implementation Tool Kit on own
  – Submit monthly progress reports

• Higher Intensity
  – 2 hours/month x 6 months
    • 1 hour/month with Practice Coach
    • 1 hour/month on own
  – Teams work through CDS Implementation Tool Kit
  – Submit monthly progress reports and receive feedback from practice-coach
CDS Tools

• Primary Prevention of Coronary Heart Disease
  – Risk factor assessment reminders
  – Estimation of 10 year CVD risk using the Framingham Coronary Heart Disease Risk Score
  – Order sets to facilitate guideline concordant medication prescribing:
    • Statins for FRS ≥ 10%
  – Low health literacy appropriate patient education materials

• Asthma Management
  – Trigger assessment tool
  – Asthma severity assessment
  – Asthma control assessment (ATAQ)
  – Order sets to facilitate guideline concordant medications prescribing:
    • Controller medication for persistent asthma
  – Asthma Action Plan
  – Patient Education Tools
CDS Implementation Tool Kit
The CDS 5 Rights: A framework for guiding CDS implementation

1. The right information
   • evidence-based, suitable to guide action, pertinent to the circumstance

2. To the right person
   • considering all members of the care team, including clinicians, patients, and their caretakers

3. In the right CDS intervention format
   • such as an alert, order set, or reference information to answer a clinical question

4. Through the right channel
   • for example, an electronic health record, personal health record, or a more general channel such as the Internet or a mobile device

5. At the right time in workflow
   • at time of the decision/action/need
CDS Five Rights Tool Kit

Helps users apply a structured approach

- Understand current information flow/workflow
- Consider each care flow step
- Identify opportunities to improve CDS integration, improve communication
- Brainstorm and implement enhancements
Example of Worksheet from Tool Kit

<table>
<thead>
<tr>
<th>Target</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Performance on Target</td>
<td></td>
</tr>
</tbody>
</table>

### Patient-specific Activities

- Not Visit Related
- Before Patient Comes to Office
- Daily Care Team Huddle
- Check-in/Waiting/Rooming
- Provider Encounter
- Encounter Closing
- After Patient Leaves Office

### Population-oriented Activities

- Outside Encounters (Population management)

### CDS/QI Approach Summary

<table>
<thead>
<tr>
<th>Not Visit Related</th>
<th>Before Patient Comes to Office</th>
<th>Daily Care Team Huddle</th>
<th>Check-in/Waiting/Rooming</th>
<th>Provider Encounter</th>
<th>Encounter Closing</th>
<th>After Patient Leaves Office</th>
<th>Outside Encounters (Population management)</th>
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</thead>
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<tr>
<td>Current Information flow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potential Enhancements</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Not Visit Related**

**Description:** Not related to a patient's visit to the office/clinic or just before or after that visit.

- **Current Information flow**:  
- **Potential Enhancements**:  

---

**Northwestern Medicine**
Team Characteristics
Quality Improvement Training

Prior to working on the CDS 5 Rights team, how much training did you have regarding quality improvement methods?

- None: 50%
- A little: 20%
- A moderate amount: 10%
- A lot: 10%
Prior to working on the CDS 5 Rights team, how much experience did you have working on quality improvement projects?

- None: 0%
- A little: 40%
- A moderate amount: 30%
- A lot: 10%
Staff Evaluation of CDS Tools

The asthma CDS tools help me to improve the health of patients with asthma.
The cardiovascular disease CDS tool helps me to improve the health of patients at risk for cardiovascular disease.
# Team Evaluation of CDS Implementation Tool Kit

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree or Agree</th>
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<tbody>
<tr>
<td>Tool kit is easy to use</td>
<td>17.7%</td>
</tr>
<tr>
<td>Felt confident using tool kit</td>
<td>23.5%</td>
</tr>
<tr>
<td>Others could learn to use the tool kit quickly</td>
<td>29.4%</td>
</tr>
<tr>
<td>Tool kit is too complex</td>
<td>76.5%</td>
</tr>
<tr>
<td>Tool kit is too cumbersome</td>
<td>58.8%</td>
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## Results

Change in CDS Use and Achievement of Clinical Targets for the Low and High Intensity Groups: 3 month baseline vs. 3 month post intervention

<table>
<thead>
<tr>
<th></th>
<th>Absolute % Change: Low Intensity Group</th>
<th>Absolute % Change: High Intensity Group</th>
<th>Difference in Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVD Risk Assessed</td>
<td>-2.8**</td>
<td>4.3**</td>
<td>7.2%**</td>
</tr>
<tr>
<td>Statin Rx for High Risk</td>
<td>-4.7</td>
<td>-3.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Asthma Severity Assessed</td>
<td>9.2**</td>
<td>7.3**</td>
<td>-1.9</td>
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<tr>
<td>Controller Rx for Persistent Asthma</td>
<td>0.6</td>
<td>-1.9</td>
<td>-2.6</td>
</tr>
</tbody>
</table>

**P < 0.01
* P < 0.05

Northwestern Medicine
Opportunities for Improved CDS/Clinical Workflow Integration Identified by the CDS Implementation Teams

• Recognition that changing provider behavior is not the only target
• Leverage the full care team
• Leverage care opportunities outside the traditional patient-clinician office visit
  – Pre-visit preparation
  – Inter-visit outreach
• EHR enhancements
  – Increase CDS availability to nurses and MAs
    • Result templates
    • Phone templates
    • Vital signs
  – Attention to burden of data entry for highest level providers: MD, PA, NPs
Conclusions

• Use of a CDS Implementation Tool Kit, with or without practice-coaching, led to modest improvements in the use of CDS targeting CVD prevention and asthma management at 6 months

• Use of a CDS Implementation Tool Kit, with or without practice-coaching, did not lead to improvements in the CVD and asthma clinical targets at 6 months
  – CDS Tools
  – CDS Implementation Tool Kit
  – Short study duration

• Results did not differ based on the health centers’ baseline PCMH infrastructure
Implications for Practice Improvement

• The use of relatively low intensity, publicly and freely available tool kits may help safety net practices to increase the use of priority CDS interventions

• Further study is needed to assess the impact of these tool kits on clinical outcomes
  – Simpler/revised tool kit
  – More experienced implementation team
  – More advanced “out of the box” population health management tools

• Continued attention to CDS/Workflow integration is important
Implications for Dissemination

• The CDS 5 Rights Tool Kit is a CDS implementation resources that can be applied to a diverse set of practice settings and EHR platforms

• Even without practice coach support, using the CDS 5 Rights Tool Kit requires the commitment of significant staff time and support
Policy Implications

• The Meaningful Use CDS Objectives have focused on the CDS intervention capabilities.
  – Consider providing more explicit guidance regarding the care processes that can optimize the impact of those CDS capabilities.
  – Consider directly incentivizing validated QI processes that are important for the delivery of high quality preventive care and chronic disease management, not just the (CDS) technology that is required.
  – Consider incentivizing improvement on a small number of conditions rather than weak use of multiple CDS interventions.

• Set higher standards for “out of the box” functionality to support population health management within certified EHRs.
  – Include higher standards for the usability of the CDS functions
Study Team

Northwestern
• Mya Carter
• Ji Young Li
• Kenzie Cameron, PhD

Other Collaborators
• Yunfeng Shi
• Jerry Osheroff, MD

Alliance
• Fred Rachman, MD
• Andrew Hamilton, RN
• Sarah Rittner
• Marjorie Altergott, PhD
• Anne Newland, MD
• Tim Long, MD
Thank you
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Care Coordination Enabled by Health Information Technology: What Will It Take?

Sarah Scholle, DrPH
Vice President, Research and Analysis, National Committee for Quality Assurance

Kim Kimminau, PhD
Associate Professor, Department of Family Medicine, University of Kansas Medical Center;
Research Director, American Academy of Family Physicians National Research Network (AAFP NRN)
Care Coordination Enabled by Health IT: What Will It Take?

January 28, 2015
Disclosures

We have no financial disclosures.
Partnership

- National Committee for Quality Assurance (NCQA)
- American Academy of Family Physicians National Research Network (AAFP NRN)
- Primary Care Information Project, New York City Department of Health and Mental Hygiene
Project Overview

• **Goal to assess proposed care coordination objectives for Stage 3 of Meaningful Use Program**
  - Feasibility
  - Clinical acceptance

• **Mixed Methods**
  - Survey of Patient-Centered Medical Home (PCMH) practices
  - Interviews and observations at selected practices
### Proposed MU Objectives for Care Coordination

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The clinical summary for patients should be pertinent to the office visit, not just an abstract from the medical record.</td>
</tr>
<tr>
<td>2.</td>
<td>Use computerized provider order entry for referrals/transition of care orders</td>
</tr>
<tr>
<td>3.</td>
<td>Provide a summary of care record for each site transition or referral when transition or referral occurs with available information</td>
</tr>
<tr>
<td>4.</td>
<td>Provider receiving referral acknowledges receipt of external information and provides referral results to the requesting provider, thereby beginning to close the loop.</td>
</tr>
<tr>
<td>5.</td>
<td>Electronic notification of a significant healthcare event in a timely manner to key members of the patient’s care team, (significant event = arrival at an Emergency Department (ED), admission to a hospital, discharge from an ED or hospital, or death)</td>
</tr>
<tr>
<td>6.</td>
<td>Generate lists of patients for multiple specific conditions and present near real-time patient-oriented dashboards</td>
</tr>
</tbody>
</table>
## Respondents

<table>
<thead>
<tr>
<th>Practice Type</th>
<th>% of Survey Respondents N=350</th>
<th>% of Case Study Practices N=13</th>
</tr>
</thead>
<tbody>
<tr>
<td>FQHC/Community Health Center</td>
<td>26.0</td>
<td>30.8</td>
</tr>
<tr>
<td>Hospital, hospital system, health care system, or HMO</td>
<td>26.3</td>
<td>23.1</td>
</tr>
<tr>
<td>Physician-owned, &lt;5 FTE clinicians</td>
<td>25.1</td>
<td>30.8</td>
</tr>
<tr>
<td>Physician-owned, &gt;= 5 FTE clinicians</td>
<td>22.6</td>
<td>15.4</td>
</tr>
<tr>
<td><strong>EHR System</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>eClinicalWorks</td>
<td>20.7</td>
<td>30.8</td>
</tr>
<tr>
<td>Allscripts</td>
<td>14.6</td>
<td>23.1</td>
</tr>
<tr>
<td>NextGen</td>
<td>14.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Epic</td>
<td>13.4</td>
<td>8.0</td>
</tr>
<tr>
<td>GE/Centricity</td>
<td>7.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Other</td>
<td>30.3</td>
<td>30.8</td>
</tr>
</tbody>
</table>
Variation in Performance of Care Coordination Activities

- Provide clinical summaries: 81.4%
- Send referral requests: 92.3%
- Send comprehensive medical summary: 69.4%
- Respond to requests for information: 90.0%
- Track urgent referrals: 68.6%
- Track non-urgent referrals: 57.4%
- See consultation/diagnostic reports: 82.0%
- Reminders for interventions/screenings: 74.3%
- Identify hospitalizations: 75.4%
- Identify ED visits: 63.1%

■ Perform Activity Routinely (%)
Care Coordination Often Done Without Health IT Support

- Provide clinical summaries: 76.8% perform routinely, 81.4% use electronic system routinely
- Send referral requests: 68.6% perform routinely, 92.3% use electronic system routinely
- Send comprehensive medical summary: 45.4% perform routinely, 69.4% use electronic system routinely
- Respond to requests for information: 54.0% perform routinely, 90.0% use electronic system routinely
- Track urgent referrals: 51.7% perform routinely, 68.6% use electronic system routinely
- Track non-urgent referrals: 51.7% perform routinely, 57.4% use electronic system routinely
- See consultation/diagnostic reports: 53.4% perform routinely, 82.0% use electronic system routinely
- Reminders for interventions/screenings: 64.9% perform routinely, 74.3% use electronic system routinely
- Identify hospitalizations: 48.9% perform routinely, 75.4% use electronic system routinely
- Identify ED visits: 39.4% perform routinely, 63.1% use electronic system routinely
- Have remote access to records: 80.9% perform routinely, 80.9% use electronic system routinely
Health IT Support Doesn’t Always Match Importance

<table>
<thead>
<tr>
<th>Service</th>
<th>Use Electronic System Routinely (%)</th>
<th>Very Important (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide clinical summaries</td>
<td>47.7</td>
<td>76.6</td>
</tr>
<tr>
<td>Send referral requests</td>
<td>45.4</td>
<td>68.6</td>
</tr>
<tr>
<td>Send comprehensive medical summary</td>
<td>45.4</td>
<td>69.6</td>
</tr>
<tr>
<td>See consultation/diagnostic reports</td>
<td>53.4</td>
<td>69.6</td>
</tr>
<tr>
<td>Reminders for interventions/screenings</td>
<td>53.8</td>
<td>64.9</td>
</tr>
<tr>
<td>Identify hospitalizations</td>
<td>48.9</td>
<td>77.5</td>
</tr>
<tr>
<td>Identify ED visits</td>
<td>39.4</td>
<td>59.0</td>
</tr>
</tbody>
</table>
Practice Characteristics Associated with Care Coordination and Health IT Use (n=332)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Care Coordination Index Odds Ratio (95% C.I.)</th>
<th>Health IT Index Beta Coefficient (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural/suburban</td>
<td>2.5 (1.2, 5.3)</td>
<td>NS</td>
</tr>
<tr>
<td>Financial concerns</td>
<td>0.4 (0.2, 0.8)</td>
<td>NS</td>
</tr>
<tr>
<td>Change strategies</td>
<td>1.1 (1.0, 1.2)</td>
<td>0.2 (p &lt;0.0001)</td>
</tr>
<tr>
<td>Have non-clinician in charge of care coordination</td>
<td>1.9 (1.0, 3.5)</td>
<td>0.7 (p=0.01)</td>
</tr>
<tr>
<td>Consultation/Support</td>
<td>2.6 (1.1, 6.4)</td>
<td>0.6 (p=0.06)</td>
</tr>
</tbody>
</table>

Practice type and PCMH level were not significant in either model.
Case Study Analysis

Observations of:

- Workflow
- Technical capability
- Extent to which goal of objective achieved
## Findings from Case Studies

<table>
<thead>
<tr>
<th>Findings</th>
<th>Workflow exists</th>
<th>Technical capability exists</th>
<th>Extent to which overall goal of the objective is achieved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical summary that is pertinent to visit</td>
<td>Yes</td>
<td>Yes</td>
<td>Wide variation, mostly low</td>
</tr>
<tr>
<td>Referral order entry</td>
<td>Yes</td>
<td>Yes</td>
<td>Low</td>
</tr>
<tr>
<td>Summary of care record provided when referral made</td>
<td>Yes</td>
<td>Yes</td>
<td>Low</td>
</tr>
<tr>
<td>Acknowledgement of receipt <em>and</em> referral results provided</td>
<td>Partial</td>
<td>Partial</td>
<td>Partial</td>
</tr>
<tr>
<td>Generate patient lists and real-time dashboards</td>
<td>Partial</td>
<td>Varied</td>
<td>Moderate</td>
</tr>
<tr>
<td>Notification of significant health care events</td>
<td>Yes</td>
<td>Not within EHRs</td>
<td>Low</td>
</tr>
</tbody>
</table>
Summary of Themes

1. Variation in perceived importance of objectives

2. High variation in workflow and how EHR and other health IT capabilities are used

3. Fax and telephone dependency remains high

4. Proactive population health management lower than expected (even when patient registries available and used for care)
5. Even with EHR capabilities and electronic information exchange, care coordination requires significant, dedicated staff and resources.

6. Buy-in to MU care coordination is context-specific.

7. Motivation/solutions to address fragmentation of care is local.
EHR System Vendor Engagement

- Vendors want more information but not prescriptive rules
- Vendors want info on user perspective and clinical processes and workflow
- Standards necessary for the proposed objectives may not be mature enough to fully support interoperability (e.g., standard formats for referrals)
Recommendations

• Create standardized models for care coordination workflow with explicit steps for engaging patients

• Enhance interoperability standards for systems

• Allow flexibility to use non-EHR systems for incentives

• Encourage payment models that support data sharing and care coordination

• Provide technical support to practices
Conclusions

- Practices vary in performance of proposed Meaningful Use objectives related to care coordination
- Clinical relevance does not always match current health IT capability
- Standard workflows and enhanced interoperability are needed
- Many practices need financial and technical support
- Engaging patients in care coordination should be a priority
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