eMeasure Learning Collaborative

Advancing Solutions for eMeasure Implementation

September 21, 2012
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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</thead>
</table>
| 8:00 am – 8:30 am | Welcome and Introductions  
Summary: April 26th In-Person Meeting |
| 8:30 am – 10:00 am | Condition/Problem Management                                           |
| 10:00 am – 10:15 am | Networking Break                                                        |
| 10:15 am – 12:15 pm | Medication Management                                                   |
| 12:15 pm – 12:45 pm | Lunch Break                                                             |
| 12:45 pm – 2:15 pm | Data Visibility: Essential Elusive Elements                             |
| 2:15 pm – 2:30 pm | Networking Break                                                        |
| 2:30 pm – 2:45 pm | Measure Developer Panel                                                 |
| 2:45 pm – 3:30 pm | Summary, Implementation Perspectives and Next Steps                    |
| 3:30 pm       | Adjourn                                                                 |
eMeasure Learning Collaborative: What Are We All About?

- Public initiative convened by the NQF to bring together diverse stakeholders from across the quality enterprise.
- Promote shared learning across key eMeasure stakeholders including understanding of major drivers and barriers.
- Advance knowledge and best practices related to the development and implementation of eMeasures.
- Project consisting of interactive webinars and in-person meetings – spearheaded by Collaborative members and focused on array of relevant topics, tools, and resources.
eMeasure Collaborative Deliverables

1. Identification of current best practices (repeatable models)
2. Identification of gap areas
3. Development of recommendations for the future (to expand use of best practices and to address gap areas)
Questions for the Collaborative to Answer

Four Questions for the Collaborative to Answer

1. **What are best practices examples** related to the development and implementation of eMeasures?

2. **What are the mechanisms to enhance data and workflow capability?**

3. **What are the recommendations** for future use of health IT and standards to enable performance measurement?

4. **How can we “rethink” what we are looking for?**
Thank you
eMeasure Learning Collaborative
Planning Committee Members

- Dana Alexander, RN, MSN, MBA
- Dwight Brown, NREMT-P
- Zahid Butt, MD, Chair, Planning Committee
- Jason Colquitt
- Kendra Hanley, MS
- Delane Heldt
- Sharon Hibay, RN, DNP
- Jesse James, MD, MBA
- Liz Johnson, MS, RN-BC
- Kevin Larsen, MD
- John Maese, MD
- Ginny Meadows, RN
- Michael Mirro, MD
- Lori Nichols
- Karen Nielsen, MBA, MPA
- Ted Palen, PhD, MD, MsPH
- Greg Pawlson
- Amit Popat
- Chris Snyder, DO
- David A. Stumpf, MD, PhD
- Aldo Tinoco, MD
- Ann Watt
eMeasure Learning Collaborative Meeting

Advancing Solutions for eMeasure Implementation

April 26th Meeting Summary

Zahid Butt, MD, FACG
CEO, Medisolv
April 26th In-Person Meeting Summary

“Best Practices in eMeasure Implementation”

- **Keynote Speakers**
  - Kate Goodrich MD, MHS (CMS Office of Clinical Standards & Quality)
  - Farzad Mostashari MD, ScM (National Coordinator HIT)

- **Discussion Groups / Parallel Tracks**
  - Implementation Acute Care Group
  - Implementation Small Practices Group
  - Technical Group
  - Clinical Data Analytics Group
  - Innovation Group
April 26th In-Person Meeting Summary

Dr. Farzad Mostashari’s Keynote Points:

- Use the marketplace for solutions
- Keep our eyes on the prize
- Put patients at the center
- Watch out for the little guy
Key Success Factors, Gaps & Recommendations

- Organizational Factors / Leadership
- Learning Health System
- Data Capture / Clinical Workflow
April 26th In-Person Meeting Summary: Key Success Factors

Organizational Factors / Leadership

- Collaborative, multiple stakeholder team
- Strong physician leadership/champions
- Engage bedside clinicians early and often
- Manage the culture: use measures important to clinicians; start with a small committed group
- Sufficient time & Resources for education
- Educate on importance, meaning and methods before measurement
- Drive improvements with clinical staff, using IT awareness
- Use success of program to garner support throughout a system, use benchmarks
Learning Health System Environment

- Emphasis on outcome measures to improve clinical practice; don’t simply measure – learn and revise
- Logic for linking patient conditions in EHR to evidence based practice guidelines through Clinical Decision Support (CDS)
- Evidence based practice vs. specifications – measure specifications sometimes lag changes in evidence and are not updated in timely fashion
- Clinician education on importance, meaning and methods before actual measurement; enough time and resources for education
- Community of successes shared internally and across all stakeholder groups
- Transparency at individual MD, practice and community level
April 26th In-Person Meeting Summary: Recommendations

Organizational Factors/Leadership

- Identify key stakeholders (NQF can take a lead)
- Emphasize eye on prize; goals; buy in; why
- For small specialty practices select small number relevant measures and standardize data capture for those

Learning Health System Environment

- Multidisciplinary approach to eMeasure Development & Implementation; Quality, HIT, Clinicians, Measures Developers, Payers, Government
- Transparency at individual MD, practice and community level
- Focus on one specific measure/area in need of improvement, and take the necessary time to learn from processes to improve outcomes, then roll-out improvement across all settings
- Integrate EHR data into population management and case management
- HIEs collect and report 1 measure per highest cost condition
- Evidence-generating medicine (using eMeasures to produce evidence)
April 26th In-Person Meeting Summary: Key Success Factors

Data Capture/Workflow

- Smart clinical data capture; sharable with CDS and eMeasures
- Reduce data capture burden for quality reporting only; Avoid “Death by a thousand clicks”
- Balance between Liquidity vs. Expressivity – granular detail (expressivity) has the added cost/burden of data entry
- Too many prescriptive requirements as to exactly where in the EHR the data must be captured and stored increase data entry burden and limit innovation
- Implementation requirements for EHRs can only handle limited changes; configuration flexibility to change data capture without losing necessary data standardization
April 26th In-Person Meeting Summary: Gaps

Data Capture/ Clinical Workflow

- Cultural and technical issues with capturing structured data for sufficient eMeasure reporting
- EHRs use a model of use, measures require a model of meaning – i.e., there is a dissonance in requirements
- Usability is not formally addressed by Vendors
- Inability to use unstructured data in an efficient way for eMeasures reporting
- Multiple unresolved issues with using problem lists especially Inpatient
- Don’t have all data in EHR or fully understand the systems from which data are derived; behavioral health data are usually not available in EHR’s
Data Capture/Workflow

- Payers do not recognize and pay for specialty guidelines
- Data capture is often generated from a claims environment versus clinical environments leading to misalignment
- Provider to coder “disconnect”
- Multiple sources: data compatibility, chart review, HIE, understanding of data
- Systems are not ready to make comparisons at a performance level
- The HL7 process is challenging due to a limited number of individuals with expertise in quality measurement and the long ballot cycle – difficult to modify
- How to get everyone to agree on how to set standards
Data Capture/Workflow

- Train physicians on how to use EMR; patient-centered input of data
- Use low hanging fruit first – make it simple to collect, simple to report, leverage existing clinical data for eMeasures
- Select eMeasures with specifications matching data elements captured according to Meaningful Use stages
- Develop cultural and technical solutions for capturing more structured data within clinician workflow (consider compliance and user ability levels)
- Explore use of new technologies such as NLP; improve reliability of same
- Identify mechanisms to capture, validate, use and incorporate external data such as outside care, patient reported data, deaths
- Leverage CDS to help care providers make right choice with care; use data that encourages buy-in and improvement on the part of providers
- Engage patients and discuss their needs/preferences; leverage patient-reported data
April 26th In-Person Meeting Summary: Recommendations

Data Capture/Workflow

- Statutory requirements that require EHR vendors to standardize
- Use the QDM to resolve ambiguity with respect to logic and meaning
- Harmonization of measure specifications, value sets and output for reporting; specifications and standards should be consistent with code sets
- Provide structured English statements that translate to code – use libraries and templates for the existing HQMF but allow English expression of relationships to reduce complexity; Quality Measures should be shareable and understandable by everyone
- Usability testing to ensure that we are accommodating workflow (simulation centers or labs)
- Field testing for eMeasures
- Registry reporting that is broader than specialty-specific data
April 26th In-Person Meeting Summary: Recommendations

Data Capture/Workflow

- Need some XML, but not necessarily the HL7 RIM – a basic schema
- Plug and play capability; CDA for every new rule
- Content standards for the XML to have hooks into the content
- Vendors create a standardized ‘area’ dedicated to Quality Measures
- Vendors should move towards a single source of truth framework
- Common interface for devices to move data into EHRs
- Avoid constraints that limit quality measures. Preconditions and temporal relationships are important to quality measures. The floor, or base, can require implementations constrained to only those elements that are ‘available’ as structured data, but more advanced measures should not be discouraged
April 26th In-Person Meeting Summary

NQF Web Site Links

http://www.qualityforum.org/Topics/HIT/eMeasure_Learning_Collaborative/April26_meeting.aspx

- Agenda (PDF)
- Presentation Slides (PDF)
- Presentation Recording (MP3)
- Synched Audio/Presentation
- Meeting Transcript (PDF)
- Attendance List (Excel)
Condition/Problem Management Panel Discussion

September 21, 2012
Panel Discussion

Panelists:
- Zahid Butt, MD, FACG, CEO, Medisolv, Inc.
- Peggy Pollard, RN, Director, Clinical Informatics, Centra Health

Moderator:
- Ginny Meadows, RN, Executive Director, Program Office, McKesson

Condition/Problem Management
Overall Objectives

- Define condition/problem management and its importance to eMeasures/CQM

- Through panel presentation and group discussion, identify:
  1. Best practices (repeatable models) for data capture, workflow, and eMeasurement
  2. Recommendations
  3. Gap areas requiring focused attention in the future
Condition/Problem Management Panel Discussion

Agenda

- Panel Discussion
  - Clinical case studies highlighting successes, challenges and lessons learned in the acute ambulatory care settings
  - Innovative solutions to address condition/problem management in the acute and ambulatory care settings

- Group Discussion
  1. Best practices (repeatable models) for data capture, workflow, and eMeasurement
  2. Recommendations
  3. Gap areas requiring focused attention in the future
Condition/Problem Management Panel

Zahid Butt, MD, FACG
CEO, Medisolv
Digestive Disease Associates Practice Profile

- **Location**
  - Suburban Baltimore / Howard County - Maryland

- **Statistics**
  - Established in 1988
  - 15 Board Certified Gastroenterologists
  - 1 PA, 2 APN
  - 2 Endoscopy Centers
  - 2 Acute Care Hospital Privileges
  - 3 Clinical Research Associates
  - 3 Anesthesiologists / 4 Nurse Anesthetists
  - 1 part time Pathologist
Advancing Solutions for eMeasures Implementation:
Condition Management

Digestive Disease Associates Practice Profile

- General Community based Consulting Practice
- 2011 Statistics
  - Unique patients: 19503
  - Inpatient Consults: 5047
  - Ambulatory Visits: 22680
  - Hospital OP Procedures: 2130
  - ASC Procedures: 10612
  - Hospital ED Consults: 96
- Provider Age Range: 35 – 66 years
Advancing Solutions for eMeasures Implementation:  
*Condition Management*

**DDA HIT Journey 1996 - 2011**

» Practice Management System installed – 1990

» Ambulatory EMR used by 1 provider – Since 1996
DDA HIT Journey 1996 - 2011

- Practice Management System installed – 1992
- Ambulatory EMR used by 1 provider – Since 1996

### Table 22—Maximum Total Amount of EHR Incentive Payments for a Medicare EP Who Does Not Predominantly Furnish Services in a HPSA

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<tr>
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Advancing Solutions for eMeasures Implementation: 
*Condition Management*

**DDA HIT Journey after 2011**

» Upgraded to CEHRT 2011 Edition – March 2012

» Practice wide implementation
  - *Major Work Flow Changes*
  - *Structured Data Capture*
  - *Forms based data entry*
  - *CPOE & ePrescribing*
  - *Interfaces with Labs, Radiology & ASC Software*
  - *All external documents scanned into patient charts & available online*

» 8 Providers qualified to attest for Stage I Meaningful Use - 10/1/2012
Advancing Solutions for eMeasures Implementation: Condition Management

Pre Meaningful Use EMR Data Capture

- Structured Clinical Data Capture
  - Medications – Non Codified
  - Problem List – ICD 9
  - Lab Results – Selective Manual Entry
- Unstructured Clinical Data Capture
  - Encounter Notes – Text Templates / Typing
- Demographic Data
  - Manual Entry – Minimum data set
  - No interface with Practice Management
Post Meaningful Use EMR Data Capture

- Structured Clinical Data Capture
  - Medications – Codified
  - Problem List – ICD 9
  - Lab Results – Structured via Lab interface
  - Key Data Elements within Notes

- Unstructured Clinical Data Capture
  - Encounter Notes – Only HPI / Assessment Sections

- Demographic Data
  - Full Demographic Set – interface with Practice Management
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Pre Meaningful Use Work Flow

- Provider entered all structured & unstructured data during (or after) the encounter
- Electronic Notes Printed and Filed in Paper Chart
- Paper Chart Pulls
  - Office Encounters
  - Refills / Phone Notes
  - Questions during Scheduling
- Paper Orders & Prescriptions
- Separate Schedules in EMR & Practice Management
Advancing Solutions for eMeasures Implementation:  
*Condition Management*

**Post Meaningful Use Work Flow**

- **Medical Assistants enter data**
  - Problem List / Medication List / Allergy List / PMH / FH / P&S / Vitals
- **Provider enters some structured & unstructured data during (or after) the encounter**
- **All Orders using CPOE / ePrescriptions**
- **All external data scanned in**
- **Internal communication done electronically with charts “attached” to messages with routing capability**
- **Single Scheduling System**
- **Significant Reduction in Paper Chart Pulls**
- **No Transcription Services**
Problem List Documentation Issues

- What should entered & who should enter it
  - Conditions/Diagnosis
  - Presumptive / Suspected (Question of)
  - Procedures
  - Symptoms
  - Family History

- What Conditions should be in the Problem list
  - All Conditions / Diagnosis
  - Only GI Conditions / Diagnosis we manage

- Past Medical History
  - Should it be entered in the Problem list
  - Combination of “Resolved (V. Codes)” & “Ongoing”
  - Should there be two codes for the same problem if it was a past history and also addressed in a new encounter (E.g. diverticulosis)
Advancing Solutions for eMeasures Implementation:
Condition Management
### Past Medical Illnesses

**Gastrointestinal**

- Heartburn/GERD
- Hiatal Hernia
- Gastritis
- H. Pylori
- Stomach Ulcer
- Celiac Disease
- Other Disease

- Gallstones
- Pancreatitis
- Irritable bowel (IBS)
- Spastic Colitis
- Lactose Intolerance
- Diverticulosis
- Other

- Ulcerative Colitis
- Crohn’s Disease
- Colon Polyps
- Colon Cancer
- Hemorrhoids
- Diverticulitis

- Anal Fistula
- Fatty Liver
- Hepatitis
- Cirrhosis
- Anal Fissure
- Gallstones

**Cardiovascular**

- High Blood Pressure
- Atrial Fibrillation
- High Cholesterol
- Sick Sinus
- Other

- Heart Attack
- Extra heart beats (PVC)
- Heart Murmur
- Slow Heart beat

- Angina
- Rheumatic Fever
- Supraventricular Tachycardia
- Bundle Branch Block

- Congestive Heart Failure
- Mitral Valve Prolapse

**Pulmonary**

- Asthma
- Emphysema (COPD)
- Other

- Pneumonia
- Pulmonary Embolism
- Lung Cancer

- Sarcoidosis
- Sleep Apnea

- Pleurisy

**Neuropsychiatric**

- Stroke
- TIA (mini-stroke)
- Multiple Sclerosis
- Seizures
- Other

- Migraines
- Chronic Headaches
- Parkinson’s Disease
- Myasthenia gravis

- Dementia
- Depression
- Anxiety

- Eating Disorder
- ADHD

- Bipolar Disorder

- Cerebral Palsy

- Neuropathy
Advancing Solutions for eMeasures Implementation: Condition Management
Advancing Solutions for eMeasures Implementation: Condition Management
Advancing Solutions for eMeasures Implementation: Condition Management
eMeasure Results-Physician Attribution

Diabetes: Blood Pressure Management (NQF 0061)
Reporting period from 7/1/2012 to 9/30/2012

The percentage of patients 18-75 years of age with diabetes (type 1 or type 2) who had BP < 140/90 mmHg.

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Problem (including Conditions) List Gaps

- Problem list implementation Best Practice and/or Standards
- Harmonization of structured data capture with standardized value sets and QDM States/Attributes
- Automated mapping from SNOMED to ICD in “Encounter Diagnosis”
- Framework for reconciliation with “external lists” – Other providers and facilities
Advancing Solutions for eMeasures Implementation: Condition Management

Lessons Learned-General Implementation

- Select CQM’s to be reported on upfront
- Plan to design / redesign workflow of the entire office
- Physician Leadership / Incentives are critical
- Line up appropriate resources
  - Project Management
  - Content / Forms builder
  - Billing Supervisor
  - Technical
  - Physician Champion(s)
- Plan for
  - Staff education & turnover
  - Temporary help
  - Planned & unplanned downtime
Quality Measures at Centra

Peggy Pollard, RN
Director, Clinical Informatics
Centra Health

September 21, 2012
Centra

**Excellent Care...Every Time**
Centra

- Level 2 Trauma Center
- Top Cardiology Hospital
- Top Orthopedic Hospital
- Stroke Center of Excellence
- Magnet and re-designated Magnet Hospital
- Press- Ganey Award recipient for Pt. Satisfaction
- Premiere Care Science Award Winner
- Most Wired
- Most Wireless
- First to reach MU Stage 1 for our vendor
What is it all about...

Excellent Care...Every Time
We could have chosen anything...

We chose Healthcare
Clinical Technology History

- 2004: Contract for 24 applications to bring advanced clinical technology into the organization
- 2005: 24 applications to 2 campuses, 6000 users including bar-coded drug administration
- 2007: CPOE at two campuses- voluntary adoption with clinical decision support
- 2009: 30 applications introduced to our Southside campus including bar-code scanning of medications and CPOE
- 2011: beta partner for MU code implementation
  - May go-live of code
  - MU reporting period began June 27, 2011
  - Attestation September 27, 2011 all campuses
  - IT functionality scores in the 97-99% range
  - Quality eMeasures reported
What we had already completed made a difference—good and bad

- 260,000 doses of medications bar-coded each month (about 98.8%)
- 82,000 orders entered each month by physicians
- Improvements in the early diagnosis of conditions such as Community Acquired versus complex pneumonias
- Already working towards Stroke Center of Excellence
Challenges

- Who owns the Problem List
- Doctors/Coders/Nurses didn’t know SNOMED
- Doctors felt we had taken a step back
- Problem List initially became more generic
- IT functionality versus quality needs for problem identification
- Quality measures perceived as far harder to implement
What went well

- Rolling out the quality measure criteria incrementally as ready
- Engaging staff early in education
- Monitoring results towards continuous improvement
- Executive Support-assigning each measure an executive sponsor and scorecard
What we feel is needed

- Consistent criteria
- Discussion and Agreement from the eMeasure Collaborative on best practices
- Documentation of logic used by vendors
- Time to implement the right way
Partnership
The opportunity to add value to patient care and provide

Excellent Care... Every Time
Group Discussion

1. Best practices (repeatable models) for data capture, workflow, and eMeasurement
2. Recommendations
3. Gap areas requiring focused attention in the future
Networking Break
10:00 am – 10:15 am
Medication Management Panel Discussion

Panelist:
- Jude Pierre, MD CEO, Phyaura LLC
- Ted Palen, MD, Kaiser Permanente
- Samer K. Khodor, MD, Physician Director of Patient Safety, Hospitalist/Internal Medicine
- Brandy D. McGinnis, PharmD, Clinical Pharmacy Specialist
- Skekhar Mehta, PharmD Director, Clinical Guidelines and Quality Improvement, American Society of Health System Pharmacists
- Heather Sobko, PhD, RN, University of Alabama at Birmingham

Moderator:
- John Derr, R.Ph., HIT Strategy Consultant, Golden Living, Inc
Medication Management Panel Discussion

Overall Objectives

- Define medication management and its importance to eMeasures/CQM and Clinical Decision Support

- Through panel presentation and group discussion, identify:
  1. Best practices (repeatable models) for data capture, workflow, and eMeasurement
  2. Recommendations
  3. Gap areas requiring focused attention in the future
Medication Management Panel Discussion

Agenda

- Panel Discussion
  - Clinical case studies highlighting successes and lessons learned
  - Innovative solutions to address medication management in transitions of care

- Group Discussion
  1. Best practices (repeatable models) for data capture, workflow, and eMeasurement
  2. Recommendations
  3. Gap areas requiring focused attention in the future
Standardizing Medication Review & Management in a Medical Office

Jude A. Pierre, MD
Internal Medicine
Practicing Physician
Access Healthcare Physicians, LLC
Co-Founder & CEO at Phyaura, LLC
Outline

Discussion Topics

- Medication list management
- How data is inputted
- Data source of medications – RxNorm
- Medication sampling using inventory management
- Medication reconciliation
- CPT II code entry for data reporting
- Transfer of CCD to Syntranet HIE
- Effectiveness of Solution
- Challenges
- Future of systems – Quality Improvement
Adding Medications to Patient Chart

Type:
- Problem
- Allergy
- Medication
- Surgery
- Dental
- Procedure
- E-script
- Lab

Code:

Drug:

Sig: 24 HR Testosterone 0.104 MG/HR Transdermal Patch

Begin Date: 24 HR Testosterone 0.104 MG/HR Transdermal Patch [Androderm]

End Date: 24 HR Testosterone 0.104 MG/HR Transdermal Patch [Andropatch]

Occurrence: 24 HR Testosterone 0.15 MG/HR Transdermal Patch

Referred by:

Comments:

Outcome: □ Resolved □ Improved □ Status quo □ Worse □ Pending followup

Destination:

Save As New  Save & Add Another

Cancel
Data Source Used in our EHR

- PHYAURA EHR uses the RxNorm database

- "RxNorm is two things: a normalized naming system for generic and branded drugs; and a tool for supporting semantic interoperation between drug terminologies and pharmacy knowledge base systems. The National Library of Medicine (NLM) produces RxNorm.

"RxNorm contains the names of prescription and many over-the-counter drugs available in the United States. RxNorm includes generic and branded:

» Clinical drugs - pharmaceutical products given to (or taken by) a patient with therapeutic or diagnostic intent

» Drug packs - packs that contain multiple drugs, or drugs designed to be administered in a specified sequence

Radiopharmaceuticals, contrast media, food, dietary supplements, and medical devices, such as bandages and crutches, are all out of scope for RxNorm”

Adding Medications using RxNorm Codes

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- Norvasc
- Lipitor
- Metformin

(Select one of these, or type your own title)
- Check Here to Add a Standardized Medication

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Save As New  Save & Add Another  Cancel
A Patient Portal allows for a better checks and balance when reviewing medications

- Having patient enter medication into a patient portal linked to our EHR improves accuracy
- Patient are also able to edit or delete medications on their list
<table>
<thead>
<tr>
<th>Drug</th>
<th>Medication Details</th>
<th>Currently Taking?</th>
<th>Source</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amoxicillin</td>
<td>Oral Tablet 500 MG QTY: 30 Tablet(s) 1 tablet orally 2 times per day</td>
<td>Renew Yes</td>
<td>Physician</td>
<td>Edit</td>
</tr>
<tr>
<td>Captopril</td>
<td>Oral Tablet 25 MG QTY: 30 Tablet(s) 1 tablet orally 2 times per day</td>
<td>Renew Yes</td>
<td>Physician</td>
<td>Edit</td>
</tr>
<tr>
<td>Furosemide 40 MG Oral Tablet [Lasix]</td>
<td>QTY: 0 UNK</td>
<td>Yes</td>
<td>VAR_Physura_Health Link Associates</td>
<td>Edit</td>
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<tr>
<td>Namenda</td>
<td>Oral Tablet 100 MG QTY: 0</td>
<td>Renew Yes</td>
<td>Patient</td>
<td>Edit</td>
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<tr>
<td>Norvasc</td>
<td>Oral Tablet 5 MG QTY: 0</td>
<td>Renew Yes</td>
<td>Patient</td>
<td>Edit</td>
</tr>
<tr>
<td>Phenergan</td>
<td>Injection Solution 50 MG/ML QTY: 0</td>
<td>Renew Yes</td>
<td>Patient</td>
<td>Edit</td>
</tr>
</tbody>
</table>
Medication Addition by Staff

- Non-standard as well as standardized medications can be entered here

- Example of non-standard medication: Herbal Saw Palmetto

- Type: Non-standard medication

- Code:

- Drug: Herbal Saw Palmetto

- Sig: 1 capsule daily

- Begin Date: 2010-09-11

- End Date: (leave blank if still active)

- Occurrence: Unknown or N/A

- Referred by:

- Comments:

- Outcome: Pending follow-up

- Destination:

- Save As New
- Save & Add Another
- Cancel
Many medical offices fail to properly inventory, store and manage sample medications given by the pharmaceutical industry.

This leads to many issues regarding compliance and medication history tracking:

- Unable to clearly track expiring medications
- Unable to assess compliance
- Difficult to manage Drug to drug interactions
- Adding medications to the patients profile does not allow you to keep track of inventory
- Recalled medication tracking is inefficient
Our offices use a simple inventory process for our samples

- Electronically inventory and catalog all sampled medications
- Assess medication adherence with dispensing reports
# Medical Office Inventory List of Medications

<table>
<thead>
<tr>
<th>Name</th>
<th>Act</th>
<th>NDC</th>
<th>Form</th>
<th>Size</th>
<th>Unit</th>
<th>New</th>
<th>Lot</th>
<th>Warehouse</th>
<th>QCH</th>
<th>Exp</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTOPLUS 15/500 MG</td>
<td>Yes</td>
<td>64786415541</td>
<td>tablet</td>
<td>15</td>
<td>mg</td>
<td>New</td>
<td>A17618</td>
<td>Tampa - 4144</td>
<td>56</td>
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<td>2012-08</td>
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<td>AGGRENOX 25/200</td>
<td>Yes</td>
<td></td>
<td>capsule</td>
<td>25</td>
<td>mg</td>
<td>New</td>
<td>005459</td>
<td>Spring Hill - 5290</td>
<td>10</td>
<td>1201-09</td>
<td></td>
</tr>
</tbody>
</table>
Sample Medication Inventory

- Electronically Inventory and catalog all sampled medications
- Assess medication adherence with dispensing reports
Prescribing from Inventory

Prescriptions

Add/Edit

Save
Save and Dispense

14 units, $ 

Currently Active 

Starting Date
February 15 2012

Provider
Jude Pierre MD

Facility
Access Healthcare Physicians, LLC-5290

In:house
External

Drug
ACTOS PLUS 15/1000

(click here to search)

Quantity
14

Medicine Units
1 none

Take
Twice daily

Refills
03 # of tablets: 14

Notes

Add to Medication List

No Yes

Substitution allowed
Medication Reconciliation by Source
Split screen reconciliation
CPT II Code Entry for Data Reporting

Workflow / HEDIS Measures
- Old records reviewed
- Labs reviewed
- X-Rays reviewed
- Consultation report reviewed
- Stress, echo, EKG reviewed
- Consulted other clinician
- Obtained information from staff or family
- Dietary surveillance and counseling
- Counseling for Tobacco use cessation intermediate 3-10 minutes
- Counseling for Tobacco use cessation intensive >10 minutes
- Discussed Physical Activity
- Discussed Bladder Control Issues
- Discussed Fall Precautions
- Discussed Advanced Directive

Labs reviewed with patient
- Labs reviewed with patient
- X-Rays reviewed with patient
- Colonoscopy reviewed with patient
- PAP reviewed with patient
- Echo reviewed with patient
- EKG reviewed with patient
- Mammogram reviewed with patient
- Stress reviewed with patient
- Hemoccults reviewed with patient
- Mental Health Issues Discussed
- Functional Status of Patient Assessed
- Pain Assessment Performed

Impressions and Plan:

See Sheet

Reporting Category II CEDAS

- Established Patient

Reporting Category II CEDAS

- Medication list documented in medical record
- Current Tobacco Non-User (cad, cap, copd, pr, dm)
- Current Tobacco Smoker (cad, cap, copd, pr, dm)
- Discharge Medication Reconciled
- Medication review performed
- Most Recent A1C <7%
- Most Recent A1C >9%
- Most Recent A1C 7.0-9.0%
- Weight Recorded
Transferring Medication list to HIE

The use of standard code sets facilitates the transfer of data
Using XML files from our EHR

- Continuity of Care Document (CCD) can be transferred to external system like Syntranet (Used by a partner HIE – SunCoast RHIO)
Data Displayed in External System

<table>
<thead>
<tr>
<th>Medications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SyntraNet</strong></td>
</tr>
<tr>
<td><strong>Medications</strong></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
| Amoxicillin OR TABS 500 MG  
1 tablet orally 2 times per day |  
| Captopril Oral Tablet 25 MG  
1 tablet orally 2 times per day |  
| Furosemide 40 MG Oral Tablet [Lasix] |  
| Memantine 10 MG Oral Tablet [Namenda] |  
| Promethazine Hydrochloride 50 MG/ML Injectable Solution [Phenergan] |  
| Tacrolimus 0.5 MG Oral Capsule [Prograf] |  
| Sildenafil 100 MG Oral Tablet [Viagra]  
1 tablet orally daily as needed |  

- If you have remaining refills, contact your pharmacy for additional medication  
- If the medication you need is not listed below, contact your physician
Effectiveness of Solution

- The use of a patient portal interfaced with an EHR allow for real-time medication reconciliation
- Slip screen allows for easy review
- Use of standard RxNorm codes assures that different vendor systems will communicate
- Use of a sample medication inventory allows for electronic tracking of medication compliance
  - Reports could be created to demonstrate adherence to medication
Challenges

- Data is dependent on provider and staff input using the standards available to them
- Patient involvement and use of our patient portal is crucial to accurate medication reconciliation
- Multiple screens could be confusing to those providers who are not familiar with computers
- Training on systems are critical to the process and can impact office revenue
- Reporting of appropriate codes to payers is often not done due to lack of knowledge
Future of Systems - Quality Improvement

- Ideal systems will alert providers via text or email when quality measures need to be addressed
- Systems should track not only when prescriptions are e-prescribed but also when they are picked up from the pharmacy
  - This would help determine adherence to medications that may not be chronically taken
- It is imperative that processes that improve quality of patient care and increase the effectiveness of the private practice be taught early on in a medical professional’s career
  - Instruction on choosing the right health record system
  - Helping young medical professionals understand the importance and impact of quality measures
Summary

- Meaningful use standards encourage better data entry, reporting and exchange of information (RxNorm, SNOMED, CPTII codes)
- Using systems that track all medications (including samples) taken by patients improves the accuracy of quality reporting
- Physicians and their staff are key players when it comes to recording and reviewing medications
- Future systems will track and alert various aspects of the medication dispensing and usage
THANK YOU!

Jude A. Pierre, MD
352-686-3101
www.accesshealthcarellc.net
Goals of eMeasures Medication Management

1. Identify Best Practices
2. Make Recommendations
3. Identify Gaps
Medication Management: Objectives

1. Recognize importance of adding medication management to Primary Care Quality Dashboard
2. Understand the importance of setting Regional expectations and roles for medication management
3. Understand the importance of medication management for members and providers
4. Recognize the impact of an inaccurate medication list
5. Utilize existing data, methods and tools to improve medication list management
Goal of Medication Management

Maintain an accurate list of medications in the EMR (KP HealthConnect™)
Cost of NOT doing Medication Management

- **Medication Errors** caused an additional **303 days** of hospital stay in one hospital over a year.
- Increased hospital cost of treating ADEs averaged **$4,600 per incident**; 700 bed hospital = $2.8 mil.
- Each **preventable ADE** that took place in a hospital added about **$8,750** to the cost of the hospital stay.
- Preventable ADEs in Medicare enrollees aged 65/older had annual cost of **$887 million** for treating medication errors in this group.
- **Extra medical costs** of treating drug-related injuries occurring in hospitals alone conservatively amount to **$3.5 billion** a year.
- 2006 IOM cost estimates do not take into account lost wages and productivity or additional health care costs.
- Median **compensation** per award for medication errors: **$668,000**.
Why is Medication Management Important?

Medication list accuracy directly impacts patient safety and quality by having:

- Fewer Medication Errors
- Improved Transitions of Care
- Increased Compliance with Quality Metrics and Regulatory Agencies
- Decreased cost from medication errors (clinic/ED visits, admits, re-admissions)

**BOTTOM LINE…**

*Safer for our patients!*
Medication Management: Focus and Data Collection

- **Setting:** *Outpatient* (Pilot study - Adult PCPs)
- **Encounter Type:** *Office Visit (OV)*
- **Inclusions:** All *providers* (physicians now – can also measure mid-levels, pharmacy, nursing)
- **Metrics:** *Monthly* data reports
Medication Management:
Data Collection and Measurement

- Medication data acquisition (via Program Office/IMARS):
  - Re-Ordered*
  - Discontinued*
  - “Medications Reviewed”*
  - Duplicate Medications
    » The % of office visits with 1 or more duplicate medications
    » The number of duplicate medications as an average for ALL office visits during one month for a provider

* Number and percent of total monthly visits
### Medication Management: Data Collection and Measurement

<table>
<thead>
<tr>
<th>Location</th>
<th>Dept</th>
<th>Provider</th>
<th># Office Visits (OV)</th>
<th>% OV Dup Meds</th>
<th>% OV Reviewed</th>
<th>% OV D/C</th>
<th>% OV Re-Ordered</th>
<th>Avg Dups per 100 OV</th>
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<tbody>
<tr>
<td>ABC Medical Offices</td>
<td>IM</td>
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<td>17.1%</td>
<td>6.1%</td>
<td>31.8%</td>
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<td>25.8%</td>
<td>16.6%</td>
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<td>16.0%</td>
<td>38.9%</td>
<td>20.6%</td>
<td>7</td>
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Medication Activity

Average percentage of time a provider enters into Medication Activity function in KPHC for the month of November 2011

- Non-Pilot vs Pilot Providers
Average percentage a provider clicks the Medications Reviewed function in KPHC for the month of November 2011

- Non-Pilot vs Pilot Providers
Medication Management on the Quality Dashboard

CPMG REGIONAL SUMMARY / TOTAL
Month of: April, 2012

Avg Dup/100 Encounters

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<tr>
<th>DATE</th>
<th>Rate</th>
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<th>N</th>
<th>D</th>
<th># to Goal</th>
<th>Sig?</th>
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Medication Management on the Quality Dashboard

CPMG REGIONAL SUMMARY / TOTAL
Month of: April, 2012

% OV with One or More DUP MEDS

Regional Goal: 10%
Average Rate: 8.3%

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<tr>
<th>DATE</th>
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<th>N</th>
<th>D</th>
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<th>Sig?</th>
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Medication Management: Collaboration Roles

- **Regional Operational Leaders**
  - Set Regional expectations for providers to complete Medication Management training and perform during office visits

- **Providers (physicians, mid-levels, clinical pharmacy)**
  - Complete Medication Management Training
  - Review and update KPHC Medication List during office visit
  - **Subspecialists:** Review and update medication that pertain to their area of practice

- **Nursing (RN/LPN/MA)**
  - Participate in workflows to assist providers in Medication Management
  - Work within scope of practice in a workflow to minimize variation and duplication (Pilot project in progress)
  - Medication reconciliation by special needs nurses
    - Call patients after hospitalizations, SNF discharges,

- **Clinical Pharmacy and KPHC Teams**
  - Provide initial and ongoing training for appropriate Medication Management
Medication Management:  
**eMetrics for Medication Activity**  

- **Codified information**
  - Medication (NDC, GPI, etc)
  - Status of medication
    - *active, ordered, sold, re-ordered, discontinued*
    - *Dates*
    - *Quantity*
    - *Refills*
    - *Associated diagnosis*
Medication Management: eMetric Gaps

- SIG are usually Free text
- Depends on consistent use of tools by users to adjudicate medication list during patient contacts
  - EMR do not always make this easy
- Medication review function may not be codified
- Lack of medication data standards for medication metrics
- Inter-operability barriers
  - Hinders Health Information Exchange efforts
Medication Management: Recommendations

- Work with EPIC (other EMR vendors) and other Healthcare delivery systems
  - to automate Medication Management process in the EMR
- Medication Management process within visit navigator (similar to existing inpatient EPIC)
- Print *After-Visit Summary (AVS)* with medications accurately listed (similar to EPIC D/C summary from hospital)
- Train users to perform consistent workflows
  - To minimize missing data
  - To make sure data flows to database in consistent manner
- Inter-operability and Medication data standards
Medication Management: Other factors

Medication Management *Why?*

1. Sustainability
2. Patient Safety
3. Quality
4. Cost
5. Supports KP’s Integrated HealthCare Model
6. Regulations: MU 2014, Med Adherence, HEDIS, Medicare, others
Medication Management: Medication Adherence

- Medication Adherence - why is it important?
  - 50% non-adherence at one year
  - Increased mortality/morbidity, ED visits, hospitalizations, nursing home admits, > 200 billion in annual costs
  - Quality measures - Medicare 5 star and HEDIS

- Gaps
  - Lack of adherence data in KPHC
  - External rx’s
  - Accurate med lists
Medication Management: Medication Adherence

Key initiatives at KPCO

- Via collaboration with other KP regions: Integrating adherence data into KPHC and utilizing tools to identify and outreach patients not meeting quality measures
- Education of both providers and patients on the importance of adherence
- Collaboration with med reconciliation and med safety initiatives
Medication Management: Collaborate with other initiatives

- Medication adherence
- Medication safety
- National medication management initiatives
  - Meaningful Use
  - HEDIS
- Quality measures
Medication Management

Shekhar Mehta, Pharm.D., M.S.
Director, Clinical Guidelines and Quality Improvement
American Society of Health-Systems Pharmacists®
Development of eMeasures

- Many of the measures (including core measures) are not well defined causing discrepancies in interpretation among vendors and clinical decision support systems that may not be capable of fully abstracting the designated measure.
  - They had requested a more stringent and clear measure definition based on widely accepted standards. These measure definitions should include clear information on dose and indication and appropriate use.
Medication Management Panel Discussion

Development of eMeasures

- There is a variety of differences in expectations of documentation specifically in areas concerning documentation of medication administration among health IT vendors.
  
  » This is contributing to the lack of interoperability among systems which decreases the quality of care coordination as important information is not communicated in a timely manner. For example the requirements for medication reconciliation at discharge is delayed.
Development of eMeasures

- Finally there is a movement to empower the patient to have rapid and easily obtainable record of current and past medication history and patient records.
  - The empowerment of the patient to easily obtain this information is another important factor and should start with the active medication list.
IVR Care Transition Systems:
Using Technology to Extend Post-
Discharge Medication
Management Support

Heather J. Sobko, PhD, RN
University of Alabama at Birmingham

September 21, 2012
IVR Care Transition Systems: Using Technology to Extend Post-Discharge Medication Management Support

Objectives

- Care Transitions
- Interactive Voice Response Technology
- IVR Care Transition Systems
- Medication Management Support
- Data capture and analysis
- Future Implications
IVR Care Transition Systems:  
Using Technology to Extend Post-Discharge Medication Management Support

**Care Transitions: A vulnerable time**

- Insufficient time for education & clarification
- Information overload for patients
- Complex medication regimes
- High risk for adverse event
- Need for extended support
IVR Care Transition Systems: Using Technology to Extend Post-Discharge Medication Management Support

Interactive Voice Response Technology

- Overcomes geographic boundaries/barriers
- Overcomes health literacy issues
- Cost effective
- Simple
- Standardized format
- Scalable
IVR Care Transition Systems: Using Technology to Extend Post-Discharge Medication Management Support

**IVR Care Transition Systems**
- IVR platform
- Patient centered
  - Scheduling
  - Data entry
- Clinical review
- Follow-up as needed
- Built-in documentation
IVR Care Transition Systems: Using Technology to Extend Post-Discharge Medication Management Support

Benefits
- Built-in triage
- Cost effective
- Trending reports
- Appropriate resource allocation
- Fits existing workflow
- Plug and play system
Medication Management Support

- Relevant queries about medications
  - Prescription and OTC medicines
  - Side effects
  - Cost
  - Purpose for medicines
  - Effectiveness of medicines
  - Missed medications
  - Dosages
IVR Care Transition Systems: Using Technology to Extend Post-Discharge Medication Management Support

Data Capture and Analysis

- Medication review
  - Opportunity for education
  - Validation of understanding
- Documentation linked to electronic medication list
- Provider notification
- Link to most recent hospital encounter
- Trending Reports for QI initiatives
# Care Transition Systems Dashboard

## Daily Dashboard: IVR Care Transition System

**Total Surveys:** 17  **Issues:** 4  **No Issues:** 13

<table>
<thead>
<tr>
<th>Workflow Status</th>
<th>Results Symptoms</th>
<th>Results Medication Mgmt.</th>
<th>Results Follow-up Care</th>
<th>Pt Name</th>
<th>MR#</th>
<th>DX</th>
<th>Surveys Completed</th>
<th>Survey Date</th>
<th>Reviewed By</th>
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<tbody>
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<td>✅</td>
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<tr>
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**Options**
- Show Surveys With:
  - [x] Any Issues
  - [ ] No Issues
  - [ ] 4 Surveys Found
- Return Surveys Within:
  - [x] Last 24 hrs
  - [ ] Last 48 hrs
  - [ ] Last 3 days
  - [ ] 17 Surveys Found
- Include Diagnoses:
  - [x] Heart Failure (HF)

**Icons**
- 🟥: High priority patient issues
- ✅: No issues reported in survey
- 🟠: Patient responded "I don't Know" (9)
- 🟡: Moderate priority patient
- 🟠: No answer / No data entered
- ✗: No response in 3 consecutive calls
- 🟠: Issues not addressed
- 🟠: Issues pending
- 🟧: No issues to address

© 2012 IVR Care Transition Systems
### Daily Dashboard: IVR Care Transition System (facility provided logo for branding)

**Smith, Thomas**

<table>
<thead>
<tr>
<th>MR#</th>
<th>Age</th>
<th>Discharge Date</th>
<th>Home Health Consalt After Discharge</th>
<th>Surveys Attempted</th>
<th>8 Surveys Attempted</th>
<th>6 Surveys with no</th>
<th>4 Surveys with issues Addressed</th>
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</table>

**Results Summary for Smith, Thomas**

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<tr>
<th>Survey Date</th>
<th>MR#</th>
<th>DX</th>
<th>Surveys Completed</th>
<th>Survey Date</th>
<th>Lost Reviewed Date</th>
<th>Lost Reviewed By</th>
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<td>07-19-2010</td>
<td>HSobko</td>
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</table>

#### Survey Status Legend:
- 1 - High priority patient issues
- 2 - Moderate priority patient issues
- 3 - Patient responded "I don't know" (9)
- 4 - No answer/data entered
- 5 - No issues reported

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IVR Care Transition Systems:
Using Technology to Extend Post-Discharge Medication Management Support

Future Implications
- Missing links in med rec processes
- IVR reminders
- Automated medication lists
- Interface with EMR
- Meaningful Use Stage 3
Medication Management Panel Discussion

- Group Discussion

1. Best practices (repeatable models) for data capture, workflow, and eMeasurement
2. Recommendations
3. Gap areas requiring focused attention in the future
Lunch Break

12:15 pm – 12:45 pm
Data Visibility: Essential Elusive Elements

September 21, 2012
Data Visibility: Essential Elusive Elements
Panel Discussion

- **Moderators:**
  - Kevin Larsen, MD
  - Karen Nielsen, MBA, MPA

- **Presenters:**
  - Kenneth Goldblum, MD, FACP
    - Chief Medical Officer, Renaissance Health Network
  - Dave Stumpf, MD, PhD
    - President, Woodstock Health Information and Technology
Data Quality - A Challenge Facing all Business Today

Slaying the Elusive Data Quality Dragon
by Alan Ceepo, D&B Best Practice Consultant - Sales & Marketing

Data Quality Challenges
Our work with customers reveals the following common information management challenges:

- Data disparity across systems – without standard structure across data sets
- Organizational silos – with information living in separate buckets
- Multiple customer views – depending upon data entry point and ownership
- The need to access unstructured data within enterprise systems – social media and crowd-sourced data
- Overwhelming growth in volume & types of data: tenfold growth in five years 2006 – 2011

D&B Best Practice Blueprints | Dun & Bradstreet | Volume I
Discrete value available in electronic format but usually in devices or standalone special software systems

Structured data captured but available in a different setting of care/EHR system

Data usually captured on paper and not electronically

EF from Echocardiogram: PR or QT intervals in EKG

Data captured electronically but not as structured elements

Transcribed Notes
Text Templates

Ambulatory/LTC data not available in Acute Care Hospital EHR

Structured data elements are captured but not codified/standard value sets

Medication Lists
Demographic data

Ambulance/EMT records
Clinician Notes
Capturing EMR Data for Quality Reporting

Kenneth Goldblum, MD, FACP
Chief Medical Officer
Renaissance Health Network
Gateway Medical Associates

- 30 primary care doctors in eight offices outside Philadelphia operating since 1996
- Using Allscripts Professional since 2006
- Three FTE IT staff
- MU1 certified and Level 3 NCQA certified PCMH
- Produce an internal all-patient Quality Report
- Upload quality data to Renaissance
- 260 primary care doctor IPA in southeast PA
- "ACO" arrangement with Independence Blue Cross since 2001
- Pioneer ACO starting 1/1/12
- Use homegrown Web-based application (Population Management Tool) for data collection and quality improvement
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<th>Patient Name</th>
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<td>Angelos, Marian</td>
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</tr>
<tr>
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</tr>
</tbody>
</table>

* Patient has one or more exclusions for these cohorts.

The names and data that appear in these slides were created to illustrate these materials. No actual patient names or data appear.
The names and data that appear in these slides were created to illustrate these materials. No actual patient names or data appear.
Data Elements Collected

- Flu shots and Pneumovax
- BP and BMI/counseling
- Tobacco cessation and counseling
- Glycohemoglobin and LDL cholesterol
- Depression screening
- CRC screening and mammography
- Falls risk assessment
Challenges

- Denominators
- Documenting actions in a searchable way
- Data versus documents
- Searchable fields versus free text
- Standardizing locations across all users
## Immunizations

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<thead>
<tr>
<th>Immunization Type</th>
<th>Immunization Order (CPT)</th>
<th>Date Given</th>
<th>Medication</th>
<th>Funding</th>
<th>Comment</th>
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<td>Influenza, preservative free (3 years and up)</td>
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<td>Private</td>
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### Vitals

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<th>vWeight</th>
<th>Height</th>
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<th>Neck</th>
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**8/15/2012 1:41 PM**

- **Weight:** 147 lb (66.68 kg)
- **Body Surface Area:** 1.75 m²
- **Height:** 65 in (165.1 cm)
- **Body Mass Index:** 24.46 kg/m²
- **Pulse:** 84 (Regular)
- **Blood Pressure:** 130/60 (Sitting, Left Arm, Standard)
Nutritional Counseling 18-64 years BMI <18.5 OR >25 (V65.3)

- BMI out of range follow up plan documented (G8417)
- Pt Education - BMI Education: discussed with patient and provided information.
Face Sheet

Medical History: Alphabetically

- Anemia type unknown (285.9) (7/2/2012 She did one negative stool heme but will complete the set. Recheck next.)
- Depression (311.) (She will continue with the Remeron)
- Diabetes Mellitus Type 2 (250.00) (7/2/2012 We will increase the metformin to bid.)
- Gastroparesis (7/2/2012 VM is up. She doesn't need Zofran. If she keeps gaining we will stop the mirtazapine.)
- Hypertension (401.1) (BP acceptable. Patient should continue the same medicines.)
- Pancreatic pseudocyst
- Pulmonary embolism (2/1/2012 Given that her recent clot was from a line that was removed I think she can stop her

- Cataract, Removal, Insert Lens Prosthetic: OU
- Gallstone pancreatitis/pseudocyst: S/P choley and pancreatic debridement
- SCC right cheek

- Penicillins-Amoxicillin, PenVK

- Father: Deceased- renal failure
- Mother: Deceased- CAD

- Exercise: Does not exercise
- Marital status: Married- 5 kids- 1 died
- Non Drinker/No Alcohol Use
- Patient does not have a living will
- Tobacco Use: Never smoker.

- Annual Eye Exam [1/2011]: no retinopathy
- Bone Density Study [9/2004]: hip +2 spine -23
- Colonoscopy, Screening [2/2008]: Normal per patient
- Foot Exam [6/2012]
- Mammogram, Screening [8/14/2012]: Normal
- Pneumovax: 10/03/2008
- Self Management Goal [6/2012]: advance her activities
Encounters: By Type, Newest to Oldest

Labs
- 9/13/2011: Labs - inr amylase lipase (Kenneth D Goldblum, MD FACP)
- 6/30/2011: Labs - Incoming Fax (Kenneth D Goldblum, MD FACP)
- 6/21/2011: Labs - Incoming Fax (Kenneth D Goldblum, MD FACP)
- 6/15/2011: Labs - Incoming Fax (Marcia Enghofer, RN)
- 6/8/2011: Labs - Incoming Fax (Kenneth D Goldblum, MD FACP)
- 6/1/2011: Labs - Incoming Fax (Kenneth D Goldblum, MD FACP)
- 5/25/2011: Labs - Incoming Fax (Kenneth D Goldblum, MD FACP)
- 5/18/2011: Labs - Incoming Fax (Kenneth D Goldblum, MD FACP)
- 5/10/2011: Labs - inr (Marcia Enghofer, RN)
- 5/4/2011: Labs - inr cbc cmp (Marcia Enghofer, RN)
- 4/28/2011: Labs - nutrition (Kenneth D Goldblum, MD FACP)
- 2/9/2011: Labs - bmp mg inr (Kenneth D Goldblum, MD FACP)
- 12/13/2007: Labs (Sherry R Stumme)

Mammogram

Medications: All, Alphabetically

Current Medications
- AmLODIPine Besylate 5MG, 1 (one) Tablet daily, #30, 05/30/2012, Ref. x5, Mail Order 
- Folic Acid 1MG, 1 Tablet daily, #30, 05/30/2012, Ref. x5. Active.
- MetFORMIN HCI 500MG, 1 (one) Tablet(s) two times daily, #180, 07/17/2012, Ref. x3, 
- Mirtazapine 15MG, 1 Tablet at bedtime, #30, 05/30/2012, Ref. x5. Active.
- Multivitamin & Mineral, 5ml Liquid daily, 150 Liquid, 05/30/2012, Ref. x5. Active.
- Potassium Chloride 20 MEG/15ML(10%), 7.5 ml Liquid daily, 150 Liquid, 05/30/2012, Ref.
- Prevacid SoluTab 30MG, 1 Tablet Disperse two times daily, Mail Order #180, 9 days star 
- Vitamin B-1 100MG, 1 Tablet qd, #30, 05/30/2012, Ref. x5. Active.
- Zofran 8MG, 1 Tablet daily, as needed, #30, 05/30/2012, Ref. x5. Active.

Administered Medications

Previous Medications
- AmLODIPine Besylate (10MG Tablet 1 Oral qd) Inactive.
- Aspirin (81MG Tablet 1 PO daily, Stopped taking 12/04/2007) Discontinued.
- Azithromycin 250MG, 2 (two) Tablet Day 1 then one daily, #6, 10/28/2011, No Refill. Inac
- BD Insulin Syringe Ultrafine 31G X 5/16"0.5 ML. 1 Misc 6 x's daily. 100 Misc. 12/07/2007.

Orders: Reviewed, Newest to Oldest

Less Than a Month Ago
- 8/1/2012: G0202 BILATERAL SCREENING MAMMO [Final, Reviewed]

Two Months Ago
- 7/2/2012: Follow up in 2 months [Final, Reviewed]
- 6/29/2012: CBC w/Diff (85025) [Final, Reviewed]
Face Sheet

Medical History: Alphabetically

- Problem List/Past Medical
  - Diabetes Mellitus II Controlled (250.00) (Sugars well controlled, continue current medications.)
  - Hypertension (401.1)
  - Allergic Rhinitis (477.9)
  - COPD stable (491.20) (on Oxygen)
  - Dizziness (780.4)
  - Hyperlipidemia (272.4)
  - Knee Pain (719.46)
  - Osteoporosis, unspecified (733.00)
  - PAIN IN JOINT INVOLVING MULTIPLE SITES (719.49)
  - Sleep apnea (780.57) (on CPAP)
  - Testosterone Deficiency (257.2)
- Past Surgical
- Allergy
  - ACE Inhibitors: Cough.
  - Doxycycline Calcium *TETRACYCLINES*: rash
  - Isoniazid *ANTIMYCOBACTERIAL AGENTS*: Rash
  - Peanuts
- Family
- Social
- Health Maintenance
  - Depression Screening [8/14/2012]: Depression Screen: Positive, Referral to mental health practitioner, PHQ9 Score: 14
  - Falls Assessment [8/14/2012]: No Risk Identified.
- Diagnostic Studies
- Immunization
Organizing Information for Actionable Analytics
Available knowledge is too rarely applied to improve the care experience, and information generated by the care experience is too rarely gathered to improve the knowledge available.

IMAGINE ... results were routinely captured and used for continuous improvement.
Tasks are the granular units of care

Just as the quantity of clinical information now available exceeds the capacity of any individual to absorb and apply it, the number of tasks needed for regular care outstrips the capabilities of any individual. Significant change can occur only if the environment, context, and systems in which these professionals practice are reconfigured ...
• Recommendation 1: *The digital infrastructure.* Improve the capacity to capture clinical, care delivery process, and financial data for better care, system improvement, and the generation of new knowledge.

• Recommendation 2: *The data utility.* Streamline and revise research regulations to improve care, promote the capture of clinical data, and generate knowledge.
Sociotechnical Framework
Emphasized in a Nov 2011 IOM HIT report

- Technology
  - Software, hardware
- People
  - Clinicians, patients, etc.
- Processes
  - Workflow
- Organization
  - Incentives, capacity, etc.
- External environment
  - Regulation, public opinion, etc.
Accountability falls short ...

- Certification of EHRs is not enough.
- Deployment of EHRs is not enough.
- Meaningful use is too narrowly construed.
- Defects are inadequately detected, reported, attributed, and managed.
- Application interoperability is too constrained by proprietary idiosyncrasies.
- **Tasks** are granular units of work in health care, but inadequately managed.
- Transparency is generally lacking.
Interoperability

• **Expand interoperability.**
  Interoperability is currently too narrowly defined. The ability to generate exchangeable documents is important, but has limitations. Specifically, it restricts access to complete data sets and limits end user ability to integrate other applications.

• **Systems should support applications.**
  Application programming interface (API) designs will facilitate next generation interoperability and also allow measurements of usability and meaningful use.

• **Harmonized data platforms.**
  Data from multiple sources can be organized ontologically on platforms, thereby enabling multidimension queries. Such systems are non-disruptive, scalable and extensible.
Modularity

- **Modular capabilities are desirable.** They compartmentalize capabilities into units which can be developed and managed by subject matter experts incorporating their best system capabilities.

- **Modularity stimulates innovation.** Modularity fosters creative, diverse and synergistic applications, producing exponential growth.

- **Harmonized data platforms.** Harmonization effectively manages the “last mile” by overcoming the insularity of EHR and other health information systems. Modular applications leverage and create the value of a harmonized data platform.
References at NQF / IHE
This presentation is based on prior works

Current update (June 2012) is out for public comment: http://www.qualityforum.org/QualityDataModel.aspx#t=2&s=&p=6%7C
NQF / IHE Frameworks

Person Centered Coordination Plan

PCCP Template
LOINC identifier
Document OID

Person Characteristics
LOINC identifier
Section OID
Demographics
Problem list
Past history
Medications
Laboratory results
Functional status
Literacy
Beliefs & desires
Support systems
Resources
Environment
Each with LOINC Identifier Element OID

EBM Rules
Workflows
Current Status
Intentions
Other Analytics
Service Agreements

Medical Ontology Model Tasks
LOINC identifier
Section OID
Task 1
Accountable entity
Task workflow
Outcome measure
Task 2
Sub-task 2.1
Sub-task 2.2 (unlimited nesting)
Sub-task 2.x
Task X

Update PCCP
Report
Assignment
Task Resources

Task Manager
Accountable entity
Task activities
workflow
resources
Outcome
Competencies

TDABC
Risk Adjusted
Payments

Outcome Rewards
Incentive Manager
Quality Data Model (QDM)
A prelude to a unifying ontology

• Used in ...
  ▪ eMeasure (HL7 HQMF)
  ▪ Quality Data Reporting Architecture (HL7 QRDA)

• Modeled in ...
  ▪ NQF Clinical Decision Framework
  ▪ NQF Utilization Framework (workflows)

• Suitable for ...
  ▪ Service agreements
  ▪ PCCP Tasks
  ▪ Privacy policies
  ▪ Reimbursement transactions
  ▪ Etc.
Task Framework

- Tasks are the fundamental currency of care
  - This conceptual framework is simple
  - Key elements are accountability & outcome
- Tasks can be sequential and hierarchical
  - Bypasses confusing and contentious existing terms
  - Granulizes complexity, enabling computability
Task Generation

• Tasks are generated from analytics
  • This conceptual framework is simple
  • Key elements are person-centeredness and context

• Analytics consider ...
  • Persons have beliefs, desires and intentions (BDI)
  • The ecosystem has rules and workflows
  • Service agreements define accountabilities
Integrating Capabilities Ontologically
Ontologic query identifies best practices
Clinician and patient oversee creation of tasks

<table>
<thead>
<tr>
<th>Event</th>
<th>Rules</th>
<th>Data</th>
<th>Action</th>
<th>Accountable</th>
<th>Expectation</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Diabetes diagnosis</td>
<td>HgA1c</td>
<td>none = gap</td>
<td>order lab</td>
<td>laboratory</td>
<td>result range</td>
</tr>
<tr>
<td>Diabetes Education</td>
<td>none = gap</td>
<td>normal exam</td>
<td>refer</td>
<td>nurse</td>
<td>actionable intelligence</td>
</tr>
<tr>
<td>Eye Exam</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight control</td>
<td>high BMI</td>
<td></td>
<td>Weight Watchers</td>
<td>patient</td>
<td>weight target</td>
</tr>
<tr>
<td>Lipid</td>
<td>normal</td>
<td></td>
<td></td>
<td>dietician</td>
<td></td>
</tr>
</tbody>
</table>

Rules have expectations

Top level query
Query using rule and clinical data aligned ontologies
Linked workflows address gaps
Service agreements have accountable entity

A robust ontology enables a **SINGLE** query to harvest all these data assets.
Task Implementation

- **Start simple**
  - Develop a team to create PCCPs
  - EBM defines tasks we know are required
  - Persons can define their intentions
  - Re-cast existing task creators: orders & referrals

- **Manage tasks**
  - Maintenance of single source PCCP
Recommendations

• Utilize a Medical Ontology Model (MOM) to link task-related capabilities within electronic health information systems.

• Encourage the development of synergistic modules that amplify the value of the MOM.

• Measure and improve the competencies of accountable-entities, including people, organizations, and electronic systems.
Four strategies for exposing data

1. Silo Back-office Reporting:
   - Summaries copied into another silo system
   - Everybody working off different datasets
   - Information stays fragmented & disorganized

2. Information Interchange:
   - A spiders web approach
   - Everybody working off different datasets
   - Information stays fragmented & disorganized
Four strategies for exposing data

3.Generic Data Warehousing:
   - Proprietary and complex data models
   - Back-office, single vendor applications
   - No shared information resource

4. Shared Open Knowledge Platform:
   - Information is unified into a knowledge base
   - Semantically organize and normalized
   - Becomes a shared platform for all apps.
   - Metrics and goals flow across all organizations
Discussion

- **Possible Solutions/Challenges**
  - Device Interfaces/Standards based data interchange
  - Technologic barriers?

Discrete value available in electronic format but usually in devices or standalone special software systems

EF from Echocardiogram:
- PR or QT intervals in EKG
**Possible Solutions/Challenges**

- Standards based data interchange between EHR's
- HIE / NwHIN
- Technologic / implementation challenges?
Discussion

Possible Solutions/Challenges

- Electronic documentation.
- Technological or workflow barriers?

Data usually captured on paper and not electronically

Ambulance/EMT records

Clinician Notes
Discussion

- Possible Solutions/Challenges
  - “Embed” structured data entry fields in electronic documentation at point of care.
  - Workflow issues/incentives for clinicians to support this form of data entry
  - NLP/Data mining.
  - Technologic solutions and issues/implementation challenges?
Discussion

- **Possible Solutions/Challenges**
  - Use codified/standard value set dictionaries for data entry.
  - Workflow issues/incentives for clinicians to support this form of data entry.
  - Mapping Ontologies / QDM
  - Standardized Value sets. NLM Value set Repository

Structured data elements are captured but not codified/standard value sets

Medication Lists

Demographic data
Data visibility questions to think about moving forward

- Can Measure developers help with elusive data elements in specifying measures without elusive elements and without loss of Measure fidelity?

- How can vendors/implementers help in capture of important elusive data elements as part of “routine” clinical documentation without overburdening clinicians? Are there new technologies/out of the box thinking that can solve some of the elusive data element problems.

- What are the benefits/incentives for clinicians to capture structured/codified data? Is CDS the carrot?
Networking Break

2:15 pm – 2:30 pm
In 2006, Quality Insights started developing voluntary ambulatory administrative claims & clinical registry reportable clinical quality measures (CQM) for the Center for Medicare & Medicaid Services (CMS). Select measures were eventually used in PQRS (currently PQRI) & the e-Prescribing Incentive Programs.

Quality Insights has lead the development and/or maintenance activity for over 35 CMS stewarded CQMs in primarily in PQRS, and also in HITECH, ACO, PGP Demo & other measures programs, including MU1 hallmark BMI eMeasure & multiple MU2 eMeasures.
Quality Insights eMeasure Activity

- CMS Contracted Measure Developer for select PQRS eMeasures
- Developed & Tested MU eMeasures (1 MU1 & 6 MU2)
- eMeasures Issues Group (eMIG) Participant (*QDM, MAT & “The Blueprint”*)
- eMeasure Learning Collaborative
- Measure Authoring Tool (MAT) Consultation Group Participant
- NLM/MITRE Value Set & Logic Review Participant
- Coding/Value Set Training (SNOMED-CT, ICD-10, LOINC, RxNorm, HL7)
- US SNOMED-CT Concepts Acceptance
- Eligible Professional & EHR Vendor Engagement in eMeasure testing & REC work
- Alpha Testing (Feasibility & Usability)
- Reliability Testing (Reliability & Validity)
The Measure Development Cycle

- Gap Analysis (clinical & measure gaps), CQM Identification & Selection
- Environmental Scan/Literature Review
- Convene Technical Expert Panel
- CQM Specification Development (Title/Description/D/N/E/E)
- ALPHA Testing
- Public & Stakeholder Input
- Call for Measures
- CQM Program Implementation
- BETA Testing
- NQF Standards (Measures) Endorsement Activity

CQM development & endorsement activities may take between 2 to 3 years from measure concept to NQF endorsement roughly costing between $125,000 to $150,000 per measure.
Developing eMeasures
de Novo & Retooled CQMs

de Novo CQMs – New measures concepts
1. Start with The Measure Development Cycle
2. Develop CQM conceptual framework & calculation algorithms
3. Develop measure logic
4. Develop coding/value sets of for logic elements (transitional & standard)
5. Complete ALPHA & BETA eMeasure Testing
6. Collaborate, collaborate, collaborate!!!

Retooled CQMs – Reconstruct CQMs into eMeasures (de Novo steps 2 thru 5).
This may prove more challenging than de Novo eMeasures due to:
• Input & calculation constraints of the current processes (Shared IP & OP documentation AND QDM/MAT logic evolution)
• Availability & specificity of coding/value set data elements
• The human component of “source” measure reporting
Feasibility

• Are the data elements present in an EHR to calculate the measure or could they easily be added?
• Are they structured or free-text data elements?

Usability

• Where do the data elements reside in the EHR?
• How many clicks to locate & document?
• Are they located in an “usable” area of the EHR?
• Are there available ONC HITSC transitional or standard value sets for each measure concept?
Validity

• Do the data elements represent the clinical concepts of the measure specification (numerator, denominator, exclusions, exceptions, etc.)?

• Does the measures calculate what is intended to calculate?

Reliability

• Does the measure consistently calculate the measure concepts (numerator, denominator, exclusions, exceptions, etc.)?
eMeasures Next Steps

• Coding/Value Set Review
• Measure Calculation Logic Reviews
• Testing Scenario Development & Execution
• Further EHR Vendor & End-User Engagement
• CQM Implementation
• Ongoing Stakeholder Input
Developing & Testing eMeasures

Lesson Learned

• “The Accountability Factor”- Eligible Professionals want to know when and how to report CQMs

• Collaboration between CQM programs, stakeholders, measure developers, EHR vendors & eligible professionals reporting eMeasures is essential and will progress the standardization of eMeasure development mechanisms, as well as the evolution and reliability eMeasures reporting.

• The more eyes the better!!!! Peeling back the layers of the onion is painful, yet necessary.
Thank You,

Sharon Hibay, RN, DNP
Measure Instrument & Development and Support (MIDS) Director
Quality Insights of Pennsylvania
shibay@wvmi.org
The Joint Commission’s Measure Development Process

Ann Watt, MBA
Associate Director
Department of Quality Measurement
The Joint Commission

Mission: To continuously improve health care for the public, in collaboration with other stakeholders, by evaluating health care organizations and inspiring them to excel in providing safe and effective care of the highest quality and value.

1. Establish Technical Advisory Panel (TAP)
2. Conduct Literature/Evidence Review
3. Public Call for Add’l Measures
4. TAP Mtg. - Framework - Identify measures
5. Public//Stakeholder Comment
6. TAP Mtg. - Draft set - Basic specs
7. Measure Specifications Development
8. TAP Mtg. - Review specs.
9. Conduct Alpha & Pilot Tests
10. TAP Mtg. - Finalize measures
11. Prepare for National Implementation

24 mo.

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Closing: Summary, Implementation Perspectives and Next Steps

Moderator: Zahid Butt, MD
Thank you Panelists!

Panelists:
- Zahid Butt, MD, Chair, Planning Committee
- Peggy Pollard
- Jude Pierre, MD
- Ted Palen, MD
- Samer Khodor, MD
- Brandy McGinnis, PharmD
- Skekhar Mehta, PharmD
- Heather Sobko, PhD, RN
- Kenneth Goldblum, MD
- David Stumpf, MD, PhD
- Sharon Hibay, RN, DNP
- Ann Watt, MBA

Moderators:
- Ginny Meadows, RN
- John Derr, R. Ph
- Karen Nielsen
- Kevin Larsen, MD
The eMeasures chain

1. Quality Measure
2. Quality Data Model
3. Measure Authoring Tool
4. eMeasure
5. EHR

Inform all Stakeholders

Electronic Reporting and Sharing

eMeasure: QRDA

Capture Data

Provide Care

eMeasure: Health Quality Measure Format

The eMeasures chain

Electronic Reporting and Sharing

Capture Data

Inform all Stakeholders

Provide Care

eMeasure: Health Quality Measure Format
Feasibility of Condition related QDM states

<table>
<thead>
<tr>
<th>QDM Category</th>
<th>Standards</th>
<th>Feasible*</th>
<th>Feasible but require additional effort, e.g., workflow changes**</th>
</tr>
</thead>
</table>
| Condition/ Diagnosis/ Problem | Vocabulary (Code system): SNOMED-CT
ONC 2014 EHR Certification Standard (proposed):
§ 170.314(a)(5) – Problem List
§ 170.207(m) – Encounter diagnoses [ICD-10 (ICD-10-CM and ICD-10-PCS, respectively)] | States: Active
Inactive
Resolved
Attributes: None | States: None
Attributes: Severity
Anatomical structure
Cardinality (1,2,3,...)
Laterality
Ordinality (principal, secondary, ...)
Suggest retire these contexts from QDM: Declined (That a patient declined to report diagnoses or conditions is a significant issue for clinical care but a measure or clinical decision support requires only knowledge that a diagnosis or condition exists or does not exist)
Reconciled (An individual condition is not reconciled, but the problem list is reconciled, an individual problem or condition is updated) |
<table>
<thead>
<tr>
<th>QDM Category</th>
<th>Standards</th>
<th>Feasible*</th>
<th>Feasible but require additional effort, e.g., workflow changes**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medication</td>
<td>Vocabulary (Code system): RxNorm for medications, CVX for vaccinations (acknowledging that vaccinations are treated as medications in some contexts and as a separate category in others), ONC 2014 EHR Certification Standard (proposed): Standard § 170.299 – by reference includes medications § 170.207(h) – Medications for transitions of care and ambulatory clinical summaries</td>
<td>States: Active, Administered, Dispensed, Ordered Attributes: Dosage, Frequency, Effective time, Start datetime, Stop datetime, Drug name</td>
<td>States: None Attributes: Infusion duration, Method, Recorder, Reason, Route, Cardinality (1,2,3,...), Patient preference, Source</td>
</tr>
</tbody>
</table>

Suggest retire these contexts from QDM:
- Declined
- Discontinued
- Inactive
- Reconciled

(That a patient declined to take a medication is a significant issue for clinical care but a measure or clinical decision support requires only knowledge that a medication was used or it was not.)

(A medication has a start datetime and stop datetime. Discontinued is a process context generally used with ordering. For the purpose of measures or clinical decision support, actual end of use may be the preferred concept.)

(Similar to discontinued, a medication is either active or not. In hospital settings “hold” is interpreted as ‘discontinued” until the medication is re-ordered, if “hold” is allowed at all. In ambulatory settings, the Medication List should indicate what is active and what is not at each point in time.)

(An medication list is reconciled, an individual medication is updated)
Categorizing Data Elements
Joint Commission Example

| GREEN = Element easily available in EHR | 1. Typically collected and captured as structured data  
| 2. Typically captured in the national vocabularies (RxNorm, LOINC, SNOMED-CT, ICD, CPT) as structured data. |
| YELLOW = Moderate ability to use element | 1. Not routinely and consistently captured as structured data, but the element might be derived using various techniques, including post coordination of multiple discrete values, or using NLP or other data mining techniques to derive element from unstructured data.  
| 2. Available, but most clients haven’t captured these yet in their EHR.  
| 3. eMeasure documentation deficiencies.  
| 4. Industry constraints – element is not supported in the current version of HL7 standards, Quality Data Model (QDM), national vocabularies, but it is expected to be supported in the next version.  
| 5. Physicians tend to resist entering data or changing their workflow to allow data entry. Expect that with time and/or training they could be persuaded to enter the data/change their workflow. |
| RED = Not available | 1. Interoperability/technology barriers exist and infeasible to report data.  
| 2. The way the data is documented in the spec doesn’t allow the bedside clinician to document.  
| 3. Industry constraints – element is not supported in the current version of HL7 standards, Quality Data Model (QDM), national vocabularies, and it is unknown when/if it will be supported.  
| 4. Physicians often refuse to enter data or change workflow to allow for data entry. Expect that is would be impossible to change physician behavior, and no amount of time or training will resolve this problem. |
Steps to Categorize the Data Elements

- For each data element determine what category it is currently in and choose the appropriate color: green, yellow or red.
- Also, denote which item(s), by number, that you used to choose the color. When using Green #2 (typically captured in national vocabularies), also include which vocabulary(s) the data is captured in.
- If the data element is not in green, then state the following:
  - What step(s) needs to be taken – what needs to be done to move this data element to the next highest category?
  - How much effort would it take to move this data element to the next level? Effort rating below:
    - Low = minimal effort required
    - Mid = medium effort required
    - High = significant effort required
  - Who / What entity needs to be involved to move this data element to the next level?
Meaningful Use Stage II and Conditions/Problem List

- Problem List

**MU Objective**
Maintain an up-to-date problem list of current and active diagnoses.

**2014 Edition EHR Certification Criterion**
§ 170.314(a)(5) (Problem list)

**Record/Change/Access**

Over Multiple Ambulatory Encounters OR a Single Inpatient Encounter

Vocabulary: SNOMED CT US

Mapping to Local Terms / ICD 10 permitted as long as EHR data is recorded in the database in SNOMED
We stated that SNOMED CT® (and not ICD-10-CM) would be required for calculation of CQMs and proposed only SNOMED CT as the appropriate standard for the recording of patient problems in a problem list.

We noted that this proposal did not, however, preclude the use of ICD-10-CM for the capture and/or transmission of encounter billing diagnoses.
Retooling of Quality Measures

- Process of converting existing measures into an electronic “eMeasures” format replicating all aspects of the original measure
- NQF under contract from HHS “Retooled” 113 NQF endorsed measures
- Many of these were selected for reporting Clinical Quality Measures (CQM’s) in the CMS Meaningful Use Stage I final rule
- Additional efforts to further refine and study some of the original retooled measures are underway
eMeasures Learning Collaborative: Retooling eMeasures

Paper-based measure
- Data element forms
  - Allowable values
  - Abstraction guidelines
- ICD-9-CM tables
- Medication tables
- Measure algorithm
- Measure information form

Data criteria
- Value sets
- QDM elements
  - Category
  - State
  - Attributes

Population criteria

Metadata

Courtesy: The Joint Commission
eMeasures Learning Collaborative: 
Retooling eMeasures

Data element forms
- Allowable values
- Abstraction guidelines

ICD-9-CM tables
Medication tables

Measure algorithm
Measure information form

Paper-based measure

Data criteria
- Value sets
- QDM elements
- Category
- Attributes
- State

Population criteria
Metadata

Courtesy: The Joint Commission
Closing: Summary, Implementation Perspectives and Next Steps

Summary of panel discussions

- **Condition/Problem Management**
  - Repeatable Models
  - Recommendations
  - Barriers/Gaps

- **Medication Management**
  - Repeatable Models
  - Recommendations
  - Barriers/Gaps

- **Data Visibility: Essential Elusive Elements**
  - Repeatable Models
  - Recommendations
  - Barriers/Gaps
Closing: Summary, Implementation Perspectives and Next Steps

- **Next Steps:** Rosemary Kennedy
Useful Links

NQF Health IT Knowledge Base

http://public.qualityforum.org/hitknowledgebase/Pages/Knowledge%20Base%20Home.aspx
Thank you for your participation!