Implementers: Incorporating Clinical Quality Measurement into Health Information Technology

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Conflict of Interest Disclosure

All speakers are employees of their respective companies, and own stock in their company.
Learning Objectives

• Describe the quality eMeasures implementation process, along with some of the challenges in implementing retooled versus de novo measures

• Identify the technical standards used to define, manage and report electronic clinical quality measures

• Recognize the importance of a partnership between all key stakeholders in the CQM development and implementation process
“Health IT holds great promise for facilitating accurate and timely reporting of measures to intended users, such as clinicians, caregivers, patients, payers, and public health officials. Diversified stakeholders of varying resources and priorities are striving to make advancements in health IT-enabled quality measurement.”
Stage 1 and Stage 2 eCQM Experience

- Because of regulatory timelines, adequate time was not available in both Stages 1 and 2 to test the accuracy and feasibility of eCQMs.
- eCQMs were retooled from existing manual measures, not developed de novo (new), leading to significant new workflows and data requirements.
- Nearly 100% of the Stage 2 eMeasure specifications contained errors.
- The 2014 edition eCQM certification process is much more complex than Stage 1.
- The certification tools and process have had significant software and data changes and issues.
- Providers have identified unexpected differences in results between manually abstracted vs. electronically extracted measure results.
Engaged in Multiple Improvement Efforts

- Vendors support the importance of electronic quality measurement
- eMeasures will ultimately improve the capture and reporting of clinical quality and performance
  - Accuracy
  - Alignment with clinical workflows
  - Shortened implementation timeframes
- eMeasure development and implementation is a learning process
- Requirements will evolve as we learn
- Today we live in both manual and electronic environments which adds another level of complexity
The Quality eMeasure Implementation Process

Karen H. Nielsen, MBA, MPA, Research and Development, Siemens Medical Solutions
Evolution of Quality Measures

• **Manual Chart Abstraction:**
  – Gold standard for Clinical Quality Measure (CQM) data abstraction.
  – Historically used by The Joint Commission and the Centers for Medicare & Medicaid Services (CMS)

• **Electronic Abstracted Measures:**
  – Relies on data capture by Electronic Healthcare Record (EHR)
  – Requires new standards and data models for proper exchange of clinical data.
Manually-Abstracted CQMs

Human-readable narrative definition

- Manual chart review allows data collection from any documentation
- Inconsistent provider documentation standards offset by use of manual abstraction/coding staff
- No need to tightly align data elements specifically with EHR requirements

Electronically-Extracted CQMs

CQM eMeasure specifications and value sets

- Certification requirements demand specific data coding per QDM category
- Consistent provider documentation required to assure accurate record tagging for analysis
- Data elements must be tightly aligned with EHR requirements
New Terminology

eMeasure or eClinical Quality Measure (eCQM)

- The electronic format for quality measures using the Quality Data Model (QDM) and the Healthcare Quality Measure Format (HQMF), an HL7 standard. This standard representation of quality measures enables consistent reporting and comparison across clinical electronic system vendors across the nation.

Quality Data Model (QDM)

- An “information model” intended to clearly define concepts used in quality measures and clinical care.

Health Quality Measure Format (HQMF)

- An Health Level Seven International (HL7) standard used to represent quality measures in an electronic format.
New Terminology

Value sets:

- Are lists of specific values (terms and their codes) derived from single or multiple standard vocabularies used to define clinical concepts (e.g., patients with diabetes, clinical visit, reportable diseases) used in clinical quality measures and to support effective health information exchange. The National Library of Medicine (NLM) maintains the Value Set Authority Center (VSAC).

Quality Reporting Document Architecture (QRDA):

- Is a HL7 standard document format for the exchange of CQM data. QRDA reports represent quality measure data at the patient and organization level.
Terms and Codes

Metathesaurus: Terms and codes from many vocabularies, including CPT®, ICD-10-CM, LOINC®, MeSH®, RxNorm, and SNOMED CT®

ULMS information available at: https://uts.nlm.nih.gov/home.html
Building eMeasures: Measure Authoring Tool (MAT)

Value set details

- **Name:** Hemorrhagic Stroke
- **OID:** 2.16.840.1.113883.3.117.1.7.1.212
- **Type:** Grouping
- **Version:** 20130401
- **Steward:** Joint Commission
- **Status:** Active

**Code System:**
- ICD9CM, ICD10CM, SNOMEDCT

**Effective Date:** 2013-04-01

Grouping value set

<table>
<thead>
<tr>
<th>Value Set Name</th>
<th>OID</th>
<th>CodeSystem</th>
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<tbody>
<tr>
<td>Hemorrhagic Stroke</td>
<td>2.16.840.1.113883.3.117.1.7.1.233</td>
<td>ICD9CM</td>
</tr>
<tr>
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<td>2.16.840.1.113883.3.117.1.7.1.234</td>
<td>ICD10CM</td>
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<tr>
<td>Hemorrhagic Stroke</td>
<td>2.16.840.1.113883.3.117.1.7.1.235</td>
<td>SNOMEDCT</td>
</tr>
</tbody>
</table>

QDM Element

The Centers for Medicare & Medicaid Services Measure Authoring Tool information available at: [https://www.emeasuretool.cms.gov/](https://www.emeasuretool.cms.gov/)
Building eMeasures: Value Sets

- The Value Set Authority Center (VSAC) currently serves as the authority and central repository for the official versions of value sets that support Meaningful Use 2014 eCQMs.
- The VSAC provides downloadable access to all official versions of vocabulary value sets contained in the 2014 Clinical Quality Measures (CQMs).

**Applied QDM Elements**

<table>
<thead>
<tr>
<th>Select</th>
<th>Name</th>
<th>Datatype</th>
<th>OID</th>
<th>Version</th>
<th>Effective Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>birth date</td>
<td>Patient Characteristic Birthdate</td>
<td>2.16.840.1.113883.3.560.100.4</td>
<td>20130401</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hemorrhagic Stroke</td>
<td>Diagnosis, Active</td>
<td>2.16.840.1.113883.3.117.1.7.1.212</td>
<td>20130401</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LDL-c</td>
<td>Laboratory Test, Result</td>
<td>2.16.840.1.113883.3.117.1.7.1.215</td>
<td>Most Recent</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LDL-c</td>
<td>Laboratory Test, Order</td>
<td>2.16.840.1.113883.3.117.1.7.1.215</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Different QDM Elements can be applied to the same Value Set

Different Value Set versions can be applied
Human to Computer Readable

**Initial Patient Population**
- AND: "Patient Characteristic Birthdate: birth date” \( \geq 18 \) year(s) starts before start of "Encounter, Performed: Non-Elective Inpatient Encounter"
- AND: "Encounter, Performed: Non-Elective Inpatient Encounter (length of stay \( \leq 120 \) day(s))"
- AND: "Encounter, Performed: Non-Elective Inpatient Encounter (discharge datetime) during "Measurement Period"
- AND: "Diagnosis, Active: Hemorrhagic Stroke (originality: ‘Principal Diagnosis’) starts during "Encounter, Performed: Non-Elective Inpatient Encounter"

**Denominator**
- AND: "Initial Patient Population"
- AND:
  - OR: "Encounter, Performed: Non-Elective Inpatient Encounter (admission datetime)" \( \leq 30 \) day(s) after end of "Laboratory Test, Result: LDL-c"
  - OR: "Laboratory Test, Result: LDL-c" \( \leq 48 \) hour(s) after start of "Encounter, Performed: Non-Elective Inpatient Encounter"

**Denominator Exclusions**
- None

**Numerator**
- None

**Numerator Exclusions**
- OR: "Encounter, Performed: Non-Elective Inpatient Encounter (admission datetime)" \( \leq 30 \) day(s) after end of "Laboratory Test, Result: LDL-c (result \( \geq 100 \) mg/dL)"
- OR: "Laboratory Test, Result: LDL-c (result \( \geq 100 \) mg/dL)" \( \leq 48 \) hour(s) after start of "Encounter, Performed: Non-Elective Inpatient Encounter"

Simple XML – HQMF Format

```xml
<MeasureGrouping>
  <Group Sequence="1">
    <Rule displayName="InitialPatientPopulation" type="InitialPatientPopulation" uuid="9AEE1824-02FC-47B2-A5EE-25E280F02175">
      <logicOp displayName="AND" type="and">
        <relationalOp displayName="\( \geq 18 \) years Starts Before Start Of" operatorType="Greater Than or Equal To" quantity="18" type="SBS" unit="years">
          <elementRef displayName="birthDate: Patient Characteristic Birthdate" id="b9a8b6ab10010" type="qdm"/>
        </relationalOp>
        <relationalOp displayName="Non-Elective Inpatient Encounter: Encounter, Performed" id="40569c21-cfd0-49de-b3b2-62e4707e7e6f" type="qdm"/>
        <attribute displayValue="\( \leq 120 \) mode:Less Than Or Equal To" name="length of stay" unit="days"/>
      </logicOp>
      <elementRef displayName="Non-Elective Inpatient Encounter: Encounter, Performed" id="40569c21-cfd0-49de-b3b2-62e4707e7e6f" type="qdm"/>
      <attribute displayValue="\( \geq 18 \) years Starts Before Start Of" operatorType="Greater Than or Equal To" quantity="18" type="SBS" unit="years">
        <elementRef displayName="birthDate: Patient Characteristic Birthdate" id="b9a8b6ab10010" type="qdm"/>
      </relationalOp>
      <elementRef displayName="Non-Elective Inpatient Encounter: Encounter, Performed" id="40569c21-cfd0-49de-b3b2-62e4707e7e6f" type="qdm"/>
      <attribute displayValue="\( \leq 120 \) mode:Less Than Or Equal To" name="length of stay" unit="days"/>
    </Rule>
  </Group>
</MeasureGrouping>
```
Use of HL7 Standards

- HQMF:
  - eMeasure Logic

- QRDA:
  - Find codified data
  - Exchange

HIMSS14 Annual Conference & Exhibition
eMeasure Framework Interdependencies

Timeline Interdependencies
- Regulations
- Annual QDM Updates
- MAT Updates
- Value Set Versioning
- Codes set updates
  - RxNorm is updated weekly
- QRDA and HQMF revision Balloting

Regulations
Standards Certification

Measure Authoring Tool
Quality Data Model

eMeasure Value Sets
UMLS Terminology Services

Quality Reporting Document Architecture (QRDA)
Health Quality Measures Format (HQMF)

[Links]
eMeasure Implementation Process

- EHR Vendor: Design, Coding, Certification, Beta test, General release, Installation across customer base
- Providers: Evaluation and Planning, Analysis, Technology assessment, Implementation

- Regulations
  - Standards
  - Certification
- Measure Authoring Tool
  - Quality Data Model
- eMeasure Value Sets
  - UMLS Terminology Services
- Quality Reporting Document Architecture (QRDA)
  - Health Quality Measures Format (HQMF)
General EHR Developer Processes

Requirements, Risks analysis
- Business requirements
- System requirements
- Certification requirements
- User workflow analysis
- Extension of existing functionality v. net new
- Resource estimates
- Impacts on users, patient safety, risk mitigation
- End-to-end data and process flow
- Solution approach
- Documentation and training plan
- Testing strategy and plans
- Business/budget impacts
- Project/resource plan
- Customer communication

Design, coding, and supporting materials
- Detailed design
- Project plan and schedule
- Coding
- Unit testing
- Integrated testing
- System testing
- Usability testing
- Documentation and training deliverables
- Tools and materials to support both internal and customer installation, implementation, and technical and end-user training
- Customer communication

Certification, beta test, and general release
- Certification prep, practice, execution
- Beta testing w/one or more customers
- Iterations based on feedback
- General availability
- Announcement and implementation planning with customers
- Implementation schedule and resource planning for both vendor and customers
- Customer communication

Installation across customer base
- Delivery plan and schedule
- Individual customer meeting
- Slotting (when applicable)
- Deliver updated software and documentation to customers
- Hardware planning and implementation (when applicable)
- Combined customer/vendor project plans.
- Schedule and deploy staff per customer schedules
- Customer communication

Notes:
- Generalized for waterfall and Agile development methods
- Represents general steps and processes - does not account for changing requirements related to MU and certification
General EHR Developer Processes

- Business requirements
- System requirements
- Certification requirements
- User workflow analysis
- Extension of existing functionality v. net new
- Resource estimates
- Impacts on users, patient safety, risk mitigation
- End-to-end data and process flow
- Solution approach
- Documentation and training plan
- Testing strategy and plans
- Business/budget impacts
- Project/resource plan
- Customer communication

- What is required and by when?
- How does it impact our customers?
- How will it impact our current system?
- What resources are needed?
- What projects get moved to the backlog?
General EHR Developer Processes

- Detailed design
- Project plan and schedule
- Coding
- Unit testing
- Integrated testing
- System testing
- Usability testing
- Documentation and training deliverables
- Tools and materials to support both internal and customer installation, implementation, and technical and end-user training
- Customer communication

- Certification, beta test, and general release

- Installation across customer base

- eMeasures:
  - What data is needed?
  - Where will data be collected?
  - Is data structured?
  - How will data be codified?
  - Does the measure logic work?
  - What is customer feedback on design?
General EHR Developer Processes

- **eMeasures:**
  - **Testing**
    - Did the data get captured?
    - Did it get codified correctly?
    - Was the QRDA file correct?
  - **Customer Training**

- Certification prep, practice, execution
- Beta testing w/one or more customers
- Iterations based on feedback
- General availability
- Announcement and implementation planning with customers
- Implementation schedule and resource planning for both vendor and customers
- Customer communication
General EHR Developer Processes

- eMeasures:
  - Have customers selected their eCQMs?
  - Have they identified workflow changes?
  - Will they customize installation?
    - What is the impact to codification of data?

- Delivery plan and schedule
- Individual customer meeting
- Slotting (when applicable)
- Deliver updated software and documentation to customers
- Hardware planning and implementation (when applicable)
- Combined customer/vendor project plans.
- Schedule and deploy staff per customer schedules
- Customer communication
Provider Processes
- Software Installation & Implementation

**Evaluation and Planning**
- Articulate goals/needs
- Communicate with staff; gain physician buy-in
- Model financials
- Research systems/options
- Selection process/contracting process
- Potential waiting period between agreement and implementation
- Resource planning

**Analysis**
- Review current system workflows to anticipate where new features will change workflows
- Identify interfaces that may require modification to work with new software - may require engaging other health IT suppliers
- Identify and modify all reports that will be updated by new features or data

**Technology Assessment**
- Identify, acquire, and implement any new technology required to support new software

**Implementation**
- Test network operation and response time
- Integrated test with new functionality turned off
- Confirm workflow changes
- Test interfaces
- Test reports
- Workflow and process re-engineering
- Implementation of new features (test)
- Troubleshoot problems and find solutions
- Train end-users
- Go live
- Customization
- Compare projected costs with actual costs
- Update system and train staff on an ongoing basis

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25
The Delicate Ecosystem

QDRA (HL7 Specifications)

Desynchronization between the QDM specs and QRDA specs

“Transfer To” and “Transfer From”

• QRDA specs - defined as attributes to “Encounter Performed” datatype
• QDM specs - defined as datatypes in QDM specs

Datetime stamp in QRDA

• In measures where a 'during' clause needs to be evaluated, both a start and end date for the element are needed for a 'during' clause to be true.
• Currently the datatypes, Procedure, Order and Encounter, Order, have a single datetime stamp in QRDA, however 2 are required to support the during clause.

Dependence on Start Times

• QRDA requires a precise time, therefore the EHR requires a precise time from the user, when they may not have one.
The Delicate Ecosystem
Value Sets-Contents impact workflow

Workflow implications:
Value set contents impact documentation.

- What level of granularity is needed for documentation of "Medication, Discharge not done"?
  Ingredient or Semantic Clinical Drug?

"Medication, Order not done: Medical Reason" for "Hospital Measures-Aspirin RxNorm Value Set"
The Delicate Ecosystem
Value Sets- Missing Contents

Tretinoin 1 MG/ML Topical Cream
Triamterene 50 MG Oral Capsule
Aspirin 325 MG Enteric Coated Tablet

Amoxicillin 250 MG [Galenamox TP]
Lisinopril 5 MG [Zestril]
Haloperidol 1.5 MG [Serenace]

Calculation implications:
Example: Value set missing key information.
- Clinician orders Ecotrin with a valid RxNorm code for aspirin, but Ecotrin does not show up in the value set since only semantic clinical drugs are used. Missing content leads to measure failure.

"Medication, Discharge: Hospital Measures-Aspirin"
Retooling Measures

Measure Specifications for the Manual Abstraction Process

- **Capture**
  - Data documented in patient record

- **Interpret**
  - Manual chart review by abstraction/coding staff

- **Calculate**
  - Data manually extracted and calculated for reporting

Transformed into Measure Specifications for the eMeasure Process

- **Capture**
  - Structured data must be entered into the EHR by clinician

- **Codify**
  - Data must be **codified** to QDM requirements

- **Calculate**
  - Electronically extracted data for calculation and reporting
## Retooled Measures - The Challenge of Data Capture

<table>
<thead>
<tr>
<th>Types of Elusive Data</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discrete value available in electronic format but usually in devices or standalone special software systems</td>
<td>Ejection Fraction from Echocardiogram and PR or QT intervals in ECG</td>
</tr>
<tr>
<td>Structured data captured but available in a different setting of care/EHR system</td>
<td>Ambulatory or Long Term Care data not available in Acute Care Hospital EHR</td>
</tr>
<tr>
<td>Data usually captured on paper and not electronically</td>
<td>Clinician Notes</td>
</tr>
<tr>
<td>Data captured electronically but not as structured elements</td>
<td>Transcribed Notes</td>
</tr>
</tbody>
</table>
“Many data elements that are difficult or impossible to automate are also essential for measure meaningfulness.”

The Quality eMeasure Implementation Process: Workflow and Data Capture

Sarah Corley, MD, FACP, FHIMSS, Chief Medical Officer, NextGen Healthcare
“Data is like garbage. You had better know what you are going to do with it before you collect it.”

- attributed to Mark Twain (probably mistakenly)
"As new measures are developed de novo for EHRs, feasibility testing should be done during measure development to ensure that the data elements critical for the measure can be consistently found in EHRs.”*

- **De novo eMeasure**: A new performance measure developed for use in EHRs; it is not re-specified from an existing measure based on other data sources.

- **eMeasure feasibility**: The extent to which the required data are readily available or could be captured without undue burden and can be implemented for performance measurement in EHRs.

eMeasure Feasibility Assessment

National Quality Forum (NQF) eMeasure Feasibility Assessment Project*

Recommendations:
1. Assess feasibility throughout eMeasure development.
2. Create Framework for eMeasure feasibility assessment.
   a. Data element feasibility assessment.
   b. eMeasure feasibility assessment.
3. Validating the data element feasibility scoring.
4. Data element feasibility catalogue/repository.
5. NQF evaluation for endorsement.

*NQF convened a 15-member Technical Expert Panel which was comprised of eMeasure developers, experts in eMeasure development and testing, EHR vendors, and eMeasure users and implementers.
**Recommendation #2**

**Data element feasibility assessment:**

- **Data availability:** the extent to which the data are readily available in a structured format in the EHR.
- **Data accuracy:** the extent to which the information in the data is correct.
- **Data standards:** the extent to which the data element is coded using a nationally accepted terminology standard.
- **Workflow:** the extent to which capturing the data element fits the typical workflow for that user.

**eMeasure feasibility assessment:**

- The measure *specifications* and the *calculation logic* are important to understanding the intent of the measure and the context for each data element within the logic.
Data Availability

- Determine if data elements are being collected at all
- Measure developer requirement
  - But this is not always done
- Determine if data elements are being collected in all domains of care
- Vendors must assess their products, their client base and client workflows
  - Identify where data could possibly be collected
  - Assess if it is currently codified
  - Assess frequency of use
  - Determine if end user education is required
  - Determine if current workflows support collection
Example: Data NOT Collected

• Breast feeding eCQM
• This CQM requires that every breastfeeding event is captured as a coded SNOMED CT value with time and duration documented
  – Mothers have babies room in and breastfeed on demand
  – Measure requires collection of every breast feeding incident
  – Time of breast feeding
  – Duration of breast feeding
• Nurses and staff do not observe all breastfeeding events
• Mothers do not have access to chart in EHR
  – unlikely to record all events even on paper
• Likely outcome is inaccurate data being treated as fact
  – Underreported events
  – Estimated events
Data Accuracy

• Data not consistently collected results in under-reporting
  – Exclusions not routinely documented unless related to allergy or an existing diagnosis
  – Data entered in free text fields or fields not selected for reporting
• Data requiring level of detail beyond what is necessary for clinical care can lead to inaccurate generic data entry
  – e.g. Requirement to pick exact drug and strength you would have prescribed if the patient did not have a contraindication
• Allowance for self reported values can lead to inaccurate results
  – Height and weight are notoriously inaccurately reported by patients
• PHI concerns
  – Measure to document maternal depression screening in child's chart
• Flaws in measures can result in inaccurate data being submitted
Flawed Measure Example

• Diabetic foot exam exclusions should include all instances of bilateral foot amputations
  – Code set only includes traumatic amputations and not surgical amputations

• Vendor options
  – Inaccurate code reported by mapping non traumatic amputation to traumatic amputation code
  – What should be a valid exclusion because the patient has no feet to examine is not reported resulting in lower performance
Data Standards

- ECQMs require that code sets be assigned to aggregate data
- Data that is not natively codified must be mapped
- Code sets have variable degrees of granularity
- Some data elements have multiple code sets
  - Diagnoses-SNOMED, ICD9, ICD10
  - Procedures-CPT, SNOMED
  - Medications-RxNorm, NDC, proprietary codes
  - Allergies-SNOMED, RxNorm, UNII
Data Elements Widely or Easily Codified

- Diagnoses (to ICD not SNOMED)
- Allergies
- Medications
- Lab results (variable)
- Radiology orders
- Procedures
- Vital signs
Data Elements Not Widely Codified

• History of present illness
• Past Medical History
• Social History
• Physical exam findings
• Patient education
• Measure exclusions
• Radiology results
• Diagnostic test results
• Plan
Examples of Coding Issues

- Diabetic foot exam
  - Documented in physical exam which is generally not codified
  - Generally non-billable so no CPT code created in course of care
  - Field, even if structured must be mapped to appropriate code set

- Lab results not reported in LOINC by the lab must be mapped to a code which may not accurately reflect the testing mechanism

- Past Medical History may include vague diagnoses not amenable to granular code sets
  - e.g. history of ulcers which could be peptic, gastric, not ulcers at all, just reflux or dyspepsia

- Family history- Only a limited number of diseases are pre-coordinated as “family history of”
  - Post code coordination can result in confusion as to whether the patient or the relative had the condition
Workflow Evaluation-The Who

• Determine who collects data currently
  – Patient
  – Admin staff
  – Nurses
  – Physicians
  – Lab personnel
• Does this vary by specialty?
• Does this vary by practice domain
  – Ambulatory
  – Hospital
  – ED
  – Long term care
  – Home
Data Consistency

• If data is being collected, are the individual elements collected uniformly?

• Different specialties may collect the same information in different ways

• Different specialties may collect information with different degrees of completeness

• Specialties that would not normally collect data must do so now

• Different specialties may collect information in different parts of the chart
  – Data must be mapped and shared to reduce risk of discordant documentation and improve efficiency
Examples of Disparate Data Collection

• Smoking data
  – Many specialties outside of primary care did not document
  – Specialties where smoking has less of an impact on care will need this in staff workflow rather than physician workflow
  – Some specialties will only want to collect the minimum information to comply with MU, others want complete data as it is relevant for care

• Blood pressure data
  – Specialties that typically do not treat HTN need an easy way to refer patients with elevated blood pressures from within the workflow without involving physicians-standing orders and default completion
Workflow Evaluation - The When

- Determine when in the process of care data collection occurs
  - Before the visit on a patient portal
  - Front desk staff
  - Nurse/MA
  - Educator
  - Care coordinator
  - Mid-level/Allied Health Professional
  - Lab tech
  - Physician
• Does this vary by specialty?
• Does this vary by practice domain?
• Is clinical decision support (CDS) important for this data element?
  – Do different users need different CDS?
• Does the measure require patient education be linked to it?
If a data element is not already being collected, where should it be placed in the workflow?
  – This requires testing with users and usability experts

What level of prompt/alert/reminder is tolerable
  – Prompts for more granular diagnosis
  – Requirement to document exclusion

Is the measure so important there needs to be a hard stop?
  – Physician cannot leave screen without documenting all required elements
Workflow Evaluation-The Complexity

• Will adding new data elements require development of new training materials?
  – Will clients undergo the training?
• How often will end users have to upgrade to stay current with mandated measures
• What is the impact of new clinical terms? Should they be hidden?
  – e.g. current some day smoker confuses many users
• What is the impact of different measures for what is commonly treated as one data element
  – e.g. smoking status vs. tobacco use
Workflow Evaluation-The Complexity

• Is the measure so important there needs to be an extra step before the patient leaves to be sure that all data has been collected?
  – e.g. A summary quality measure template that must be reviewed

• Does the measure require coordination of information from multiple providers/encounters/locations/domains?
  – Closed loop referrals
  – Requirement for at least 2 visits in reporting period

• Does the measure allow for attribution to more than one provider
  – Halo effect

• Is the action limited to care provided by the reporting clinician?
  – Flu shot given in the office vs. one given in pharmacy
Stakeholder Participation

• Successful Quality measurement using EHRs requires a different set of resources
  – More time must be spent in measure development and incorporation into EHRs

• Practicing clinicians must be involved for buy in of the importance of the measure relative to the effort to collect the data

• Vendors must be involved to provide details of the existing technical capabilities, workflows, and current frequency of data collection

• Measure developers need to create de novo eCQMs understanding that no human judgment will be involved as exists in a chart review
  – Code sets must be evaluated for completeness
  – Code sets must be evaluated for availability in EHRs
  – Code sets must be evaluated for appropriateness to the clinical situation
Quality Measurement
-A few closing thoughts

• Not all specialties have relevant quality measures that are measurable using EHR technology

• Tying reimbursement, incentives, and penalties to reporting of CQMs can lead to unintended consequences
  – Diversion of clinician resources to collect data or provide services not generally within the scope of the practice
  – Diversion of vendor resources to incorporate CQMs in workflows where end users do not perceive value
  – Diversion of attention from measures which support improving care for the health conditions with the greatest impact on longevity, productivity, or cost to the nation.

• Careful review of results should be undertaken before new measure requirements are added

• EHR use and quality reporting have great potential if thoughtfully implemented
Questions?

Thank You!

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