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NQF

National Quality Forum

Pediatrics and HQMF eMeasures

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And

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National Quality Forum (NQF)

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Who We Are: Gaye Dolin MSN, RN

Gaye is a Nurse Informaticist with Lantana Consulting Group

- 20 years of neonatal intensive care experience as well as experience in pediatric ambulatory practice, labor and delivery and maternal/child home care
 - Healthcare informatics analysis, implementation and product development experience in the provider, vendor and consultant realms
 - Primary or co-editor on several CDA implementation guide standards and the HQMF eMeasure standard
 - Co-chair of HL7 Child Health Work Group
 - Active member HL7 Structured Documents Work Group
 - CDA Release 2 Certified
 - CDA Academy instructor
 - Clinical terminology expertise
 - She received her Masters in Nursing Administration and Informatics from University of Pennsylvania's Nursing and Wharton Schools
-

Who We Are:

Floyd Eisenberg, MD, MPH, FACP

Floyd is the senior vice president for health information technology (HIT) at the National Quality Forum (NQF)

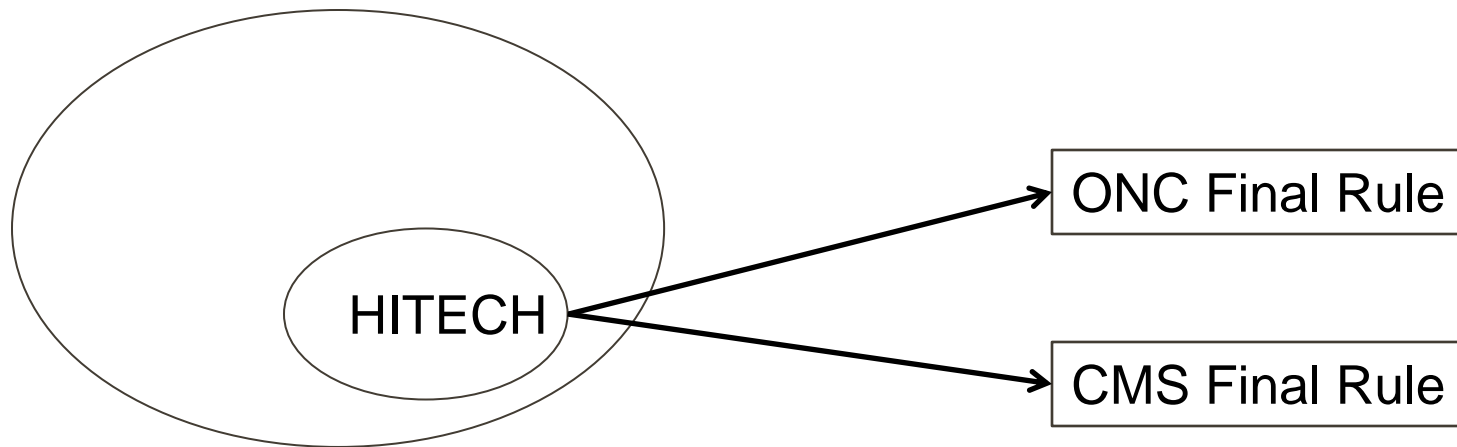
- Internal medicine physician with a subspecialty in infectious diseases with eleven years in clinical practice, four years as a managed care medical director, and more than 10 years in the informatics field.
 - Responsible for leading the development and direction of NQF's HIT strategies and projects aimed at facilitating the establishment of electronic data sources capable of supporting performance measurement and public reporting
 - His primary focus has been repurposing data for use in population health, outcome reporting, research and surveillance activities, and alignment with electronic health record formats.
 - He has served as co-chair of the Healthcare Information Technology Standards Panel (HITSP) Population Perspective Technical Committee of the American National Standards Institute (ANSI), and co-chair of Integrating the Healthcare Enterprise (IHE) Quality, Research & Public Health Domain Technical Committee
 - He received his MD from Pennsylvania State University and his MPH from the Medical College of Wisconsin. He is board certified by the American Board of Internal Medicine in infectious diseases and conducted a fellowship in infectious diseases at Temple University.
-

Outline:

- Final Rule and Quality Measures
 - Overview and Relationship of Quality Standards
 - Reporting Quality Measures from EHRs
 - Pediatric Measures Retooled In 2010
 - Steps in Retooling a Measure Using the NQF Measure Authoring Tool
 - Pediatric Example
-

HITECH, ONC/CMS Final Rules

- **ARRA:** American Recovery and Reinvestment Act of 2009
- **HITECH:** HIT for Economic and Clinical Health Act
- **ONC Final Rule:** HIT: Initial Set of Standards, Implementation Specifications, and Certification Criteria for EHR Technology
- **CMS Final Rule:** Medicare and Medicaid Programs; EHR Incentive Program



ARRA/HITECH

- **HITECH includes:**

- ARRA DIVISION A—APPROPRIATIONS PROVISIONS

- TITLE XIII—HIT

- ARRA DIVISION B—TAX, UNEMPLOYMENT, HEALTH, STATE FISCAL RELIEF, AND OTHER PROVISIONS

- TITLE IV—MEDICARE AND MEDICAID HIT; MISCELLANEOUS MEDICARE PROVISIONS

- Specifies 3 components of *Meaningful Use*:

- Use of certified EHR in a meaningful manner (ex: e-prescribing)

- Use of certified EHR technology for electronic exchange of health information to improve quality of health care

- Use of certified EHR technology to submit clinical quality measures and other such measures selected by the Secretary

- Establishes incentives for the meaningful use of certified EHR technology

ONC/CMS Final Rules

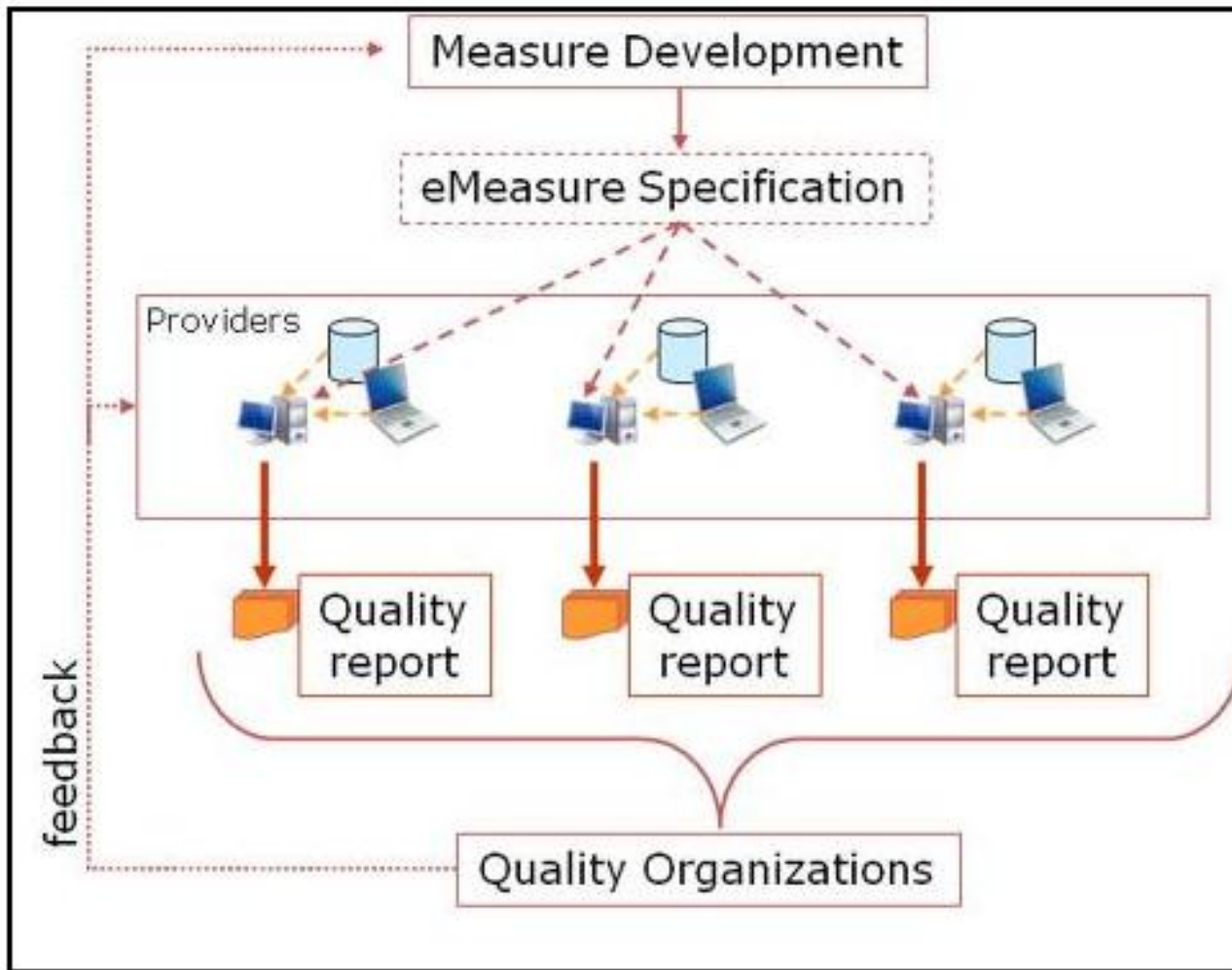
- ONC/CMS Final Rules implement aspects of HITECH
 - ONC and CMS Final Rules: ~ developed in synch
 - **ONC Final Rule:** Defines standards and certification criteria
 - **CMS Final Rule:** Defines incentive payments for certified EHR users
 - **ONC Final Rule:**
 - §170.304 (j) Calculate and submit clinical quality measures
 - §170.306 (i) Calculate and submit clinical quality measures
 - **CMS Final Rule:**
 - Enumerates applicable quality measures
-

ONC/CMS Final Rules

- **CMS Final Rule**
 - For 2011: Report aggregate level data for the numerator, denominator, and exclusions through attestation.
 - For 2012: Electronically submit measures.
 - Log in to a CMS-designated portal
 - Upload a data payload “based on specified structures, such as Clinical Data Architecture (CDA), and accompanying templates produced as output from their certified EHR technology”.
 - CMS will post the technical requirements for portal submission on their website on or before July 1, 2011.
-

Overview and Relationship of Quality Standards

Reporting Quality Measures from EHRs

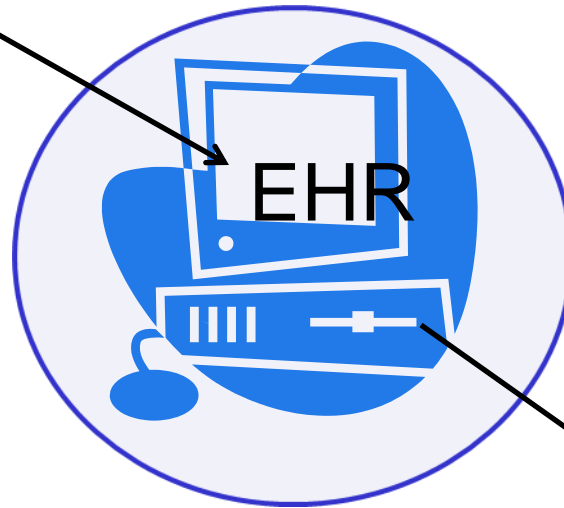


Reporting Quality Measures from EHRs

eMeasure

HL7 Health Quality Measures Format

[<http://www.hl7.org/v3ballot/html/domains/uvqm/uvqm.html>]



QRDA

HL7 CDA R2 Quality Reporting Document Architecture

[http://www.hl7.org/documentcenter/Ballots/2008sep/downloads/CDAR2_QRDA_R1_DSTU_2009APR.zip]

Health Quality Measures Format (HQMF): eMeasures

The Health Quality Measures Format (HQMF): eMeasures is a Health Level Seven (HL7) standard for representing a health quality measure as an electronic document.

Through standardization of a measure's structure, metadata, definitions, and logic, the HQMF provides for quality measure consistency and unambiguous interpretation. A health quality measure encoded in the HQMF format is referred to as an "eMeasure."

HQMF eMeasure and QRDA

- eMeasure provides the rules for determining if a particular patient is included in one of these populations:
 - Initial Patient Population (IPP)
 - Denominator Population (DENOM)
 - Numerator Population (NUM)
 - The QRDA contains sufficient data elements to enable determining if the patient meets IPP, DENOM, NUM criteria.
-

eMeasure

Major components of typical eMeasure

```
<QualityMeasureDocument>
  ... eMeasure Header (eMeasure metadata) ...
  <section>
    <title>Data criteria</title>
    <text>... narrative data criteria descriptions ...</text>
    <entry>... Formal data criteria definition ...</entry>
    <entry>... Formal data criteria definition ...</entry>
    ...
  </section>
  <section>
    <title>Population criteria</title>
    <text>... narrative popl criteria descriptions ...</text>
    <entry>... Formal popl criteria definition ...</entry>
    <entry>... Formal popl criteria definition ...</entry>
    ....
  </section>
</QualityMeasureDocument>
```

eMeasure

Data criteria are the building blocks of population criteria

Data criteria (QDS Data Elements)

- "Encounter: PICU" using "PICU SNOMED-CT Code List (2.16.840.1.113883.3.67.1.101.1.118)"
- "Patient characteristic: birth date" (age) using "birth date HL7 Code List (2.16.840.1.113883.3.67.1.101.1.24)"
- "Risk category / assessment: Pain Assessment" using "Pain Assessment SNOMED-CT Code List (2.16.840.1.113883.3.67.1.101.1.119)"

Population criteria

- Initial Patient Population =
 - AND: "Encounter: PICU" during "Measurement period"
 - AND: "Patient characteristic: birth date" < 18 year(s) starts before start of ("Encounter: PICU" during "Measurement period")
- Denominator =
 - AND: "Initial Patient Population"
- Numerator =
 - AND: "Risk category / assessment: Pain Assessment" <= 60 minute(s) starts after start of ("Encounter: PICU" during "Measurement period")
- Exclusions =
 - None

eMeasure

Many data criteria are built from the NQF HIT Expert Panel-defined Quality Data Elements (HITEP QDEs)

HITEP Quality Data Element	Code List
Encounter	PICU
Patient Characteristic	Birth date
Risk category/assessment	Pain Assessment

Data Criteria

- Encounter: PICU
- Patient characteristic: birth date
- Risk category / assessment: Pain Assessment
- **Population Criteria**
 - DENOM
 - **AND:** Initial Patient Population
 - NUM
 - **AND:** Risk category / assessment: Pain Assessment" <= 60 minute(s) starts after start of ("Encounter: PICU" during "Measurement period")

eMeasure

- HITEP QDEs and other data criteria are turned into “XML-ified patterns” based on corresponding HL7 Continuity of Care Document (CCD) modules.
 - As a result, if an EHR can generate a CCD, it should be able to interpret formal eMeasure criteria.
-

PICU Pain Assessment (NQF 0341)

EMeasure Name	PICU Pain Assessment	EMeasure Id	F13FC49F-BC05-47A7-B130-AEA9E4D6B439
Version number	1	Set Id	68BABFA0-7991-428F-8A8B-A6293D34C29B
Available Date	No information	Measurement Period	January 1, 20xx through December 31, 20xx
Measure Steward	National Association of Children's Hospitals and Related Institutions		
Endorsed by	National Quality Forum		
Description	Percentage of PICU patients receiving pain assessment on admission.		
Copyright			
Measure scoring	Proportion		
Measure type	Process		
Stratification	None		
Risk Adjustment	None		
Data Aggregation			
Rationale	<p>Pain assessment and management are critical to the well-being and care experience of children, and there is significant evidence of under-treatment of pain. Clinical practice guidelines call for the routine assessment of pain. Routine and frequent assessment of pain is not only humane and kind, it may also prevent over dosing, over treatment and unnecessary therapy which would result in prolonged length of stay and economic impact.</p>		
Clinical Recommendation Statement	<p>Clinical guidelines recommend periodic assessment of pain. For example, the American Academy of Pediatrics (AAP) Guideline on the Prevention and Management of Pain in the Neonate – An Update (Available: http://www.guideline.gov/content.aspx?id=10169&search=pain+management#Section420) recommends that neonates should be assessed for pain routinely and before and after procedures. The Royal College of Nursing (in The Recognition and Assessment of Acute Pain in Children – Available: http://www.rcn.org.uk/__data/assets/pdf_file/0004/269185/003542.pdf) recommends that pain be assessed, recorded and re-evaluated at regular intervals, which should be determined according to the individual needs of the patient.</p>		

Table of Contents

- [Population criteria](#)
- [Data criteria \(QDS Data Elements\)](#)
- [Summary Calculation](#)

Population criteria

- **Initial Patient Population =**
 - AND: "Encounter: PICU" during "Measurement period"
 - AND: "Patient characteristic: birth date" < 18 year(s) starts before start of ("Encounter: PICU" during "Measurement period")
- **Denominator =**
 - AND: "Initial Patient Population"
- **Numerator =**
 - AND: "Risk category / assessment: Pain Assessment" <= 60 minute(s) starts after start of ("Encounter: PICU" during "Measurement period")
- **Exclusions =**
 - None

Data criteria (QDS Data Elements)

- "Encounter: PICU" using "PICU SNOMED-CT Code List (2.16.840.1.113883.3.67.1.101.1.118)"
- "Patient characteristic: birth date" (age) using "birth date HL7 Code List (2.16.840.1.113883.3.67.1.101.1.24)"
- "Risk category / assessment: Pain Assessment" using "Pain Assessment SNOMED-CT Code List (2.16.840.1.113883.3.67.1.101.1.119)"

Summary Calculation

Calculation is generic to all measures:

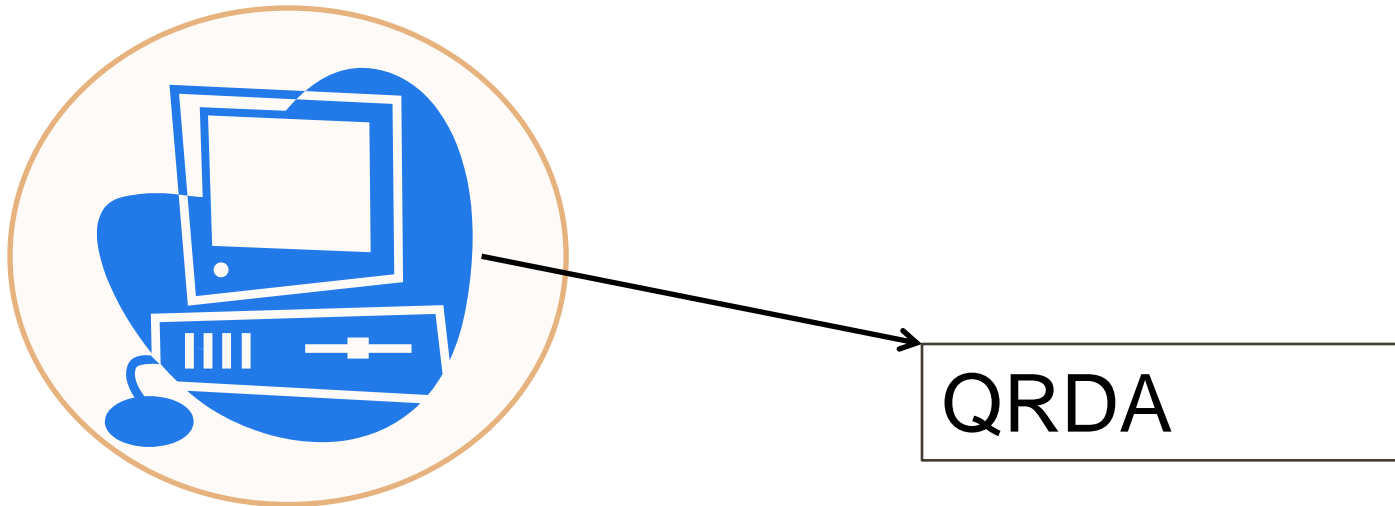
- Calculate the final denominator by adding all that meet denominator criteria.
- Subtract from the final denominator all that do not meet numerator criteria yet also meet exclusion criteria. Note some measures do not have exclusion criteria.
- The performance calculation is based on the "Measure scoring" from header information above:
 - For "Proportion" measures, the calculation is the number meeting numerator criteria divided by the final denominator.
 - For "Ratio" and "Continuous Variable" measures, follow the calculation instructions in the Data Aggregation header information above, if present.
- For measures with multiple denominators, repeat this process for each denominator and report each result separately.
- For measures with multiple patient populations, repeat this process for each patient population and report each result separately.
- For measures with multiple numerators, calculate each numerator separately within each population using the paired exclusion.

QRDA

- Heuristic for QRDA design: What data would a Quality Improvement Organization need in order to compute a quality measure and report on it?
 - Includes data elements to compute eMeasure population criteria
 - Includes data elements to slice and dice the data (e.g. by facility type)
-

QRDA

- QRDA data elements can be represented in a CDA document just as they would be represented in CCD.
- As a result, if an EHR can generate a CCD, it should be able to generate a QRDA.



QRDA Category I Report

Patient	Kari Kidd		
Date of birth	February 2, 2008, 20:00	Sex	Female
Contact info	address not available Telecom information not available	Patient IDs	123456789 2.16.840.1.113883.19.5
Document Id	cf18e3e1-aea7-4553-a087-b42a004dd27d		
Document Created:	May 13, 2008		
Author	Quality Manager, RN, Good Health Hospital		
Informant	Good Health Hospital		
Legal authenticator	Quality Manager, RN of Good Health Hospital signed at May 13, 2008		
Document maintained by	Good Health Hospital		

Table of Contents

- [Measure: Neonatal admission temperature](#)

Measure: Neonatal admission temperature

Infants 501 to 1500 grams with first temperature measured within one hour of admission to the NICU below 36 degrees Centigrade.

Reporting Parameters

Reporting period: 01 Jan 2008 - 31 Dec 2008

Patient Data

- NICU Admission Date: 02 Feb 2008, 20:00
- NICU Discharge Date: 07 Apr 2008
- First NICU temperature: 35.6 Cel (02 Feb 2008, 20:15)
- Birth weight: 700 g
- Birth location: Inborn

Pediatric Measures Retooled In 2010

Pediatric Measures Retooled in 2010			
	NQF #	Title	Description
1.	0001	Asthma Assessment	Percentage of patients aged 5 through 40 years with a diagnosis of asthma who were evaluated during at least one office visit within 12 months for the frequency (numeric) of daytime and nocturnal asthma symptoms.
2.	0002	Appropriate Testing for Children with Pharyngitis	The percentage of children 2-18 years of age who were diagnosed with Pharyngitis, dispensed an antibiotic and received a group A streptococcus (strep) test for the episode.
3.	0024	Weight Assessment and Counseling for Children and Adolescents	The percentage of patients 2-17 years of age who had an outpatient visit with a PCP or OB/GYN and who had evidence of BMI percentile documentation, counseling for nutrition and counseling for physical activity during the measurement year.
4.	0036	Use of Appropriate Medications for Asthma	The percentage of patients 5-50 years of age during the measurement year who were identified as having persistent asthma and were appropriately prescribed medication during the measurement year.
5.	0038	Childhood immunization Status	The percentage of children 2 years of age who had four diphtheria, tetanus and acellular pertussis (DTaP); three polio (IPV); one measles, mumps and rubella (MMR); two H influenza type B (HIB); three hepatitis B (Hep B), one chicken pox (VZV); four pneumococcal conjugate (PCV); two hepatitis A (Hep A); two or three rotavirus (RV); and two influenza (flu) vaccines by their second birthday. The percentage of children 2 years of age who had the complete series of vaccines by 2 years of age. There are 12 rates calculated for this measure 10 for the individual immunizations and 2 for the series of immunizations.
6.	0047	Asthma Pharmacologic Therapy	Percentage of patients aged 5 through 40 years with a diagnosis of mild, moderate, or severe persistent asthma who were prescribed either the preferred long-term control medication (inhaled corticosteroid) or an acceptable alternative treatment.
7.	0060	Hemoglobin A1c Test for Pediatric Patients	Percentage of pediatric patients with diabetes with a HbA1c test in a 12-month measurement period
8.	0069	Treatment for Children with Upper Respiratory Infection (URI): Avoidance of Inappropriate Use	Percentage of children who were given a diagnosis of URI and were not dispensed an antibiotic prescription on or three days after the episode date.

Pediatric Measures Retooled In 2010

9.	0106	Diagnosis of attention deficit hyperactivity disorder (ADHD) in primary care for school age children and adolescents	Percentage of patients newly diagnosed with ADHD whose medical record contains documentation of DSM-IV-TR or DSM-PC criteria.
10.	0107	Management of attention deficit hyperactivity disorder (ADHD) in primary care for school age children and adolescents	Percentage of patients treated psychostimulant with medication for the diagnosis of ADHD whose medical record contains documentation of a follow-up visit at least twice a year.
11.	0108	ADHD: Follow-Up Care for Children Prescribed Attention-Deficit/Hyperactivity Disorder (ADHD) Medication	<p>a) Initiation Phase: Percentage of children 6 - 12 years of age as of the Index Prescription Episode Start Date with an ambulatory prescription dispensed for and ADHD medication and who had one follow-up visit with a practitioner with prescribing authority during the 30-Day Initiation Phase.</p> <p>b) Continuation and Maintenance (C&M) Phase: Percentage of children 6 - 12 years of age as of the Index Prescription Episode Start Date with an ambulatory prescription dispensed for ADHD medication who remained on the medication for at least 210 days and who in addition to the visit in the Initiation Phase had at least two additional follow-up visits with a practitioner within 270 days (9 months) after the Initiation Phase ends.</p>
12.	0341	PICU Pain Assessment	Percentage of PICU patients receiving pain assessment on admission.
13.	0342	PICU Periodic Pain Assessment	Percentage of PICU patients receiving periodic pain assessment.
14.	0348	Iatrogenic Pneumothorax in Non-Neonates (risk adjusted) (PDI5)	Percent of medical and surgical discharges, age under 18 years, with ICD-9-CM code of iatrogenic pneumothorax in any secondary diagnosis field.
15.	0484	Proportion of Infants 22 to 29 Weeks Gestation Treated with Surfactant who are Treated within 2 Hours of Birth	Proportion of infants with gestational age between 22 and 29 completed weeks who were treated with surfactant and were treated within two hours of birth.

High-level Steps in Retooling a Measure Using the NQF Measure Authoring Tool

NQF Quality Data Model

- NQF, through the Health Information Technology Expert Panel (HITEP), established the Quality Data Model (QDM, formerly referred to as the Quality Data Set) to enable expression of data requirements in the context of EHR structured data sharing
 - QDM is an information model that defines concepts that recur across quality measures and clinical care and is intended to enable automation of electronic health record (EHR) use in quality measurement.
 - eMeasure data criteria are derived from the NQF HIT Expert Panel-defined Quality Data Elements (HITEP QDEs)
 - The QDM holds the HQMF eMeasure standard's definition of these criteria
 - The criteria are repeatable, reused and grouped into different eMeasures
-

High-level Steps in Retooling a Measure Using the NQF Measure Authoring Tool

In a nutshell, the QDM describes the data elements and their context as four levels of information:

- standard elements
- quality data types
- quality data elements
- data flow attributes.

Example:

A standard element such as a diagnosis of diabetes is given additional meaning when used in conjunction with a specific quality data type like *active diagnosis* to form a quality data element, *active diabetes diagnosis*.

Building Block Approach to eMeasures

The process:

NQF has developed a building-block approach to develop eMeasures. This approach, built into the NQF authoring tool, takes each quality data type (e.g., *active diagnosis*) in the QDM and represents it as a reusable pattern.

- Map measure data elements to the correct quality data types in the QDM
 - Associate each quality data type with the correct code list(s) to create data criteria
 - Assemble the data criteria into population criteria
-

eMeasure Standard Terminologies

Code lists are specified and bound to coded data elements in an eMeasure.

Meaningful Use recommended vocabularies are used:

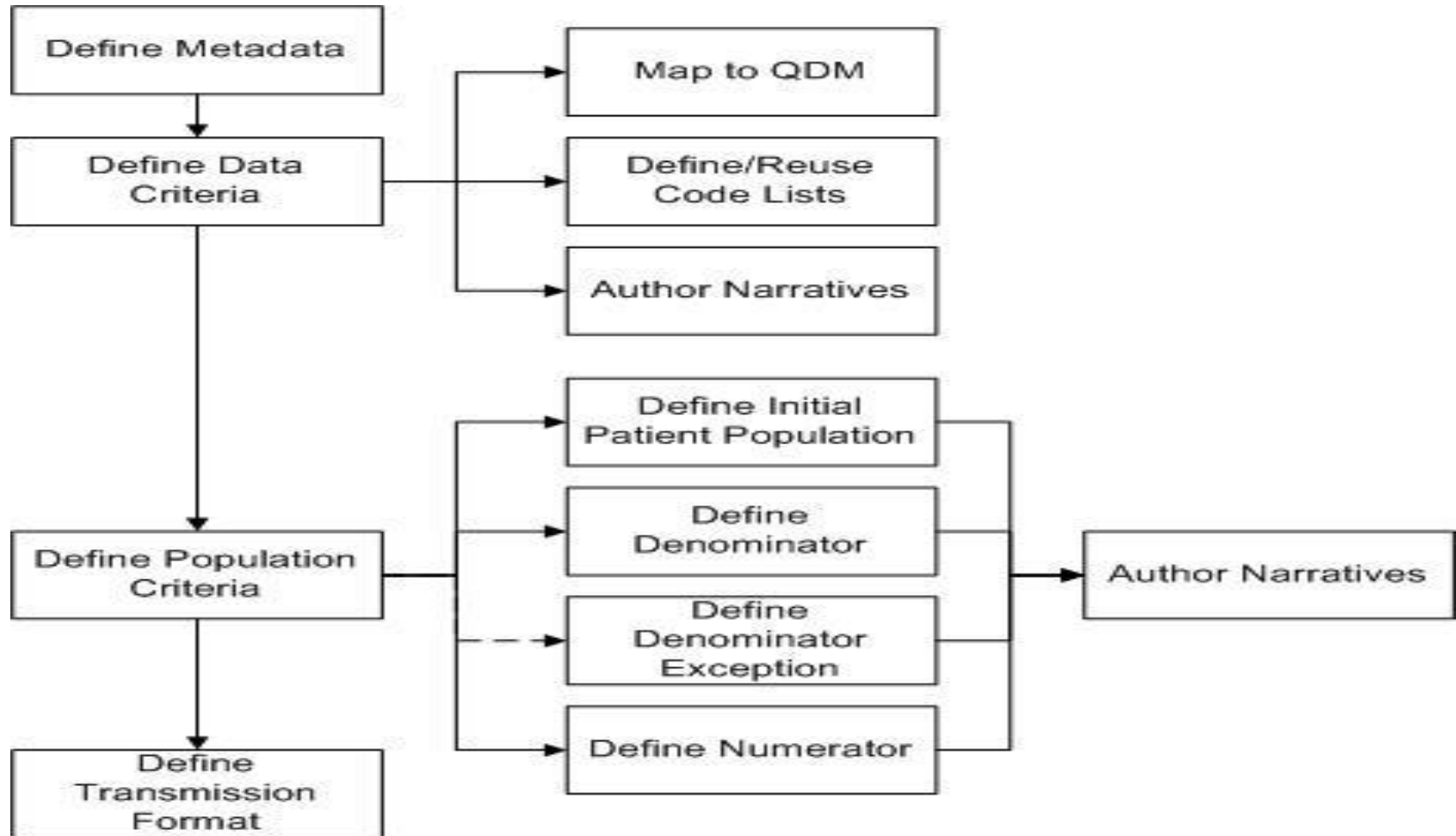
Categories	Vocabulary Standards
Problem List	SNOMED CT® and ICD-9-CM
Procedures	ICD-9-CM, CPT-4, and HCPCS
Medications	RxNorm
Laboratory Procedures and Test Results	LOINC®
Race and Ethnicity	The Office of Management and Budget Standards for Maintaining, Collecting, and Presenting Federal Data on Race and Ethnicity, Statistical Policy Directive No. 15, October 30, 1997
Immunization	HL7 CVX – Vaccines Administered

High-level Steps in Retooling a Measure Using the NQF Measure Authoring Tool

NQF Measure Authoring Tool:

- A web-based, easy to use tool that will allow measure developers to define the information needed in a manner that informs EHRs how to capture and express it.
 - The authoring tool uses a graphical user interface (GUI) to guide measure developers through the measure authoring process to create an eMeasure
 - The tool hides much of the complexity of the underlying HQMF from the developer
 - The Measure Authoring Tool does not require measure developers be knowledgeable about the HQMF standard
 - It is based on the QDM and the building-block approach to creating eMeasures
-

High-level Steps in Retooling a Measure Using the NQF Measure Authoring Tool



Quality Data Model – Application using the Measure Authoring Tool

The screenshot displays the NQF Measure Authoring Tool interface. At the top, the NQF logo and 'Measure Authoring Tool' are visible, along with a 'Sign Out' link. Below the header, there are three tabs: 'Measure Library', 'Measure Composer' (which is active), and 'My Account'. The main content area is divided into several sections:

- Measure Scoring***: A dropdown menu set to 'Proportion'.
- Measure Type***: A text box containing 'Process' and an 'Add/Edit Measure Type' button.
- Measure Steward***: A dropdown menu set to 'National Committee for Quality Assurance'.
- Endorsed By NQF**: Radio buttons for 'No' and 'Yes', with 'Yes' selected.
- Author***: A text box containing 'National Committee for Quality Assurance' and an 'Add/Edit Author(s)' button.
- Description***: A text area containing the text: 'Patients aged 40 through 70 who had a screening mammogram within 18 months prior to an office/outpatient visit or during the office/outpatient visit during the measurement period.'
- Clinical Recommendation Statement**: A text area containing the text: 'Mammograms are recommended for patients...'

General Measure Statement (sample):

Screening mammography every 2 years for all women aged 40 to 70 with two office visits in the measurement period.

Quality Data Model – Application using the Measure Authoring Tool

The screenshot displays the NQF Measure Authoring Tool interface. At the top, the NQF logo and 'Measure Authoring Tool' are visible, along with a 'Sign Out' link. Below this is a navigation bar with 'Measure Library', 'Measure Composer', and 'My Account' tabs. The main content area is titled 'Mammography Screening' and contains several sub-sections:

- Code Lists:** A search box and a list of code lists including Adenoidectomy, Birthdate, and Diabetes.
- Clause Library:** A list of clauses such as 'Age <=70 before start of measurement' and 'Office/outpatient visit during measurement'.
- Population:** A diagram showing a 'Population' box connected to 'Mammography_Popu...' and an 'AND' operator. The 'AND' operator is connected to three blue boxes: 'Age >= 40 before...', 'Age <=70 before ...', and 'Office/outpatient...'.
- Numerator, Denominator, Exclusions, Exceptions, User-defined, Measure Phrase:** A series of expandable sections for defining the measure's components.
- Property Editor:** A section with 'Add Population' and 'Paste Clone' buttons.

At the bottom right of the main content area, there are 'Text View' and 'Preview' options.

eMeasure – Human Readable

Population criteria

- **Initial Patient Population =**
 - AND: "Patient Characteristic: Birthdate" >= 40 year(s) starts before start of "Measurement Period"
 - AND: "Patient Characteristic: Birthdate" <= 70 year(s) starts before start of "Measurement Period"
 - AND: "Encounter, Performed: Office Outpatient Visit" during "Measurement Period"
- **Denominator=**
 - AND: "Initial Patient Population"
 - AND NOT:
 - AND: "Procedure, Performed: Mastectomy Grouping" starts before start of "Encounter, Performed: Office Outpatient Visit"
- **Numerator =**
 - AND:
 - OR: "Diagnostic Study, Performed: Mammogram Grouping" <= 18 month(s) starts before start of ("Encounter, Performed: Office Outpatient Visit" during "Measurement Period")
 - OR: "Diagnostic Study, Performed: Mammogram Grouping" during "Encounter, Performed: Office Outpatient Visit"
- **Exclusions =**
 - None

Data criteria (ODS Data Elements)

- "Diagnostic Study, Performed: Mammogram Grouping" using "Mammogram Grouping Grouping Code List (1.2.3.4.5.851)"
- "Encounter, Performed: Office Outpatient Visit" using "Office Outpatient Visit SNOMED Code List (1.2.3.4.5.817)"
- "Patient Characteristic: Birthdate" using "Birthdate HL7 Code List (1.2.3.4.5.12)"
- "Procedure, Performed: Mastectomy Grouping" using "Mastectomy Grouping Grouping Code List (1.2.3.4.5.852)"

Summary Calculation

Calculation is generic to all measures:

- Calculate the final denominator by adding all that meet denominator criteria.
- Subtract from the final denominator all that do not meet numerator criteria yet also meet exclusion criteria. Note some measures do not have exclusion criteria.
- The performance calculation is based on the "Measure scoring" from header information above:
 - For "Proportion" measures, the calculation is the number meeting numerator criteria divided by the final denominator.
 - For "Ratio" and "Continuous Variable" measures, follow the calculation instructions in the Data Aggregation header information above, if present.
- For measures with multiple denominators, repeat this process for each denominator and report each result separately.
- For measures with multiple patient populations, repeat this process for each patient population and report each result separately.
- For measures with multiple numerators, calculate each numerator separately within each population using the paired exclusion.

eMeasure – Computer Readable (xml)

```
<?xml version="1.0" encoding="UTF-8" ?>
- <QualityMeasureDocument xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="urn:hl7-org:v3">
- <!--
      *****
      Measure Header Section
      *****
-->
<typeId root="2.16.840.1.113883.1.3" extension="POQM_HD000001" />
<id root="887c0ce8-82d7-476e-831d-dc5e86fb909a" />
<code code="57024-2" codeSystem="2.16.840.1.113883.6.1" displayName="Health Quality Measure Document" />
<title>Mammography Screening</title>
<text>Patients aged 40 through 70 who had a screening mammogram within 18 months prior to an office/outpatient
      during the measurement period.</text>
<statusCode code="Complete" />
<availabilityTime value="20110101" />
<setId root="pending" />
<versionNumber value="1" />
- <author typeCode="AUT">
- <assignedPerson classCode="ASSIGNED">
- <representedOrganization classCode="ORG" determinerCode="INSTANCE">
  <id root="c8c59b55-fc03-45a0-8ef2-0f9d8ade06a5" />
  <name>National Committee for Quality Assurance</name>
  <contactParty classCode="CON" nullFlavor="UNK" />
  </representedOrganization>
  </assignedPerson>
</author>
- <custodian>
- <assignedPerson classCode="ASSIGNED">
- <representedOrganization classCode="ORG" determinerCode="INSTANCE">
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  <name>National Committee for Quality Assurance</name>
  <contactParty classCode="CON" nullFlavor="UNK" />
  </representedOrganization>
  </assignedPerson>
</custodian>
- <verifier typeCode="VRF">
- <assignedPerson classCode="ASSIGNED">
- <representedOrganization classCode="ORG" determinerCode="INSTANCE">
  <name>National Quality Forum</name>
  <contactParty classCode="CON" nullFlavor="UNK" />
  </representedOrganization>
```

Pediatric Example:

Paper Pediatric eMeasure Example:

NQF# 0484:

“Proportion of infants with gestational age between 22 and 29 completed weeks who were treated with surfactant and were treated within two hours of birth.”



Adobe Acrobat
Document

Pediatric Example – NQF 0484 eMeasure

Proportion of Infants 22 to 29 Weeks Gestation Treated with Surfactant who are Treated within 2 Hours of Birth (NQF 0484)

EMeasure Name	Proportion of Infants 22 to 29 Weeks Gestation Treated with Surfactant who are Treated within 2 Hours of Birth	EMeasure Id	C9324AE3-524F-4348-A8FA-C036406297C6
Version number	1	Set Id	974AE0AB-308B-4724-9DFE-22A0B06C4E81
Available Date	No information	Measurement Period	January 1, 20xx through December 31, 20xx
Measure Steward	Vermont Oxford Network		
Endorsed by	National Quality Forum		
Description	Proportion of infants with gestational age between 22 and 29 completed weeks who were treated with surfactant and were treated within two hours of birth.		
Copyright			
Measure scoring	Proportion		
Measure type	Process		
Stratification	This measure is stratified by birth location, which includes inborn infants, outborn infants, and all eligible infants.		
Risk Adjustment	None		
Data Aggregation			
Rationale	<p>Meta-analyses of randomized controlled trials show that surfactant replacement, given as prophylaxis or rescue treatment, reduces the incidence and severity of respiratory distress syndrome, air leaks, and mortality in preterm infants with surfactant deficiency (Engle 2008). Prophylactic surfactant administration to infants of less than 30 weeks' gestation reduces mortality, the frequency and severity of respiratory distress syndrome, air leaks, and the combined outcome of bronchopulmonary dysplasia and death compared with infants who receive placebo or rescue surfactant (Soll 2000). Early rescue surfactant (<2 hours from birth) given to infants of less than 30 weeks' gestation reduces the frequency of adverse respiratory outcomes compared with later rescue surfactant (Yost 2000). Despite this evidence, delayed surfactant treatment occurs frequently and the proportion of infants treated within 2 hours of birth varies markedly among hospitals (Horbar 2004a). For 22 to 29 week gestation infants born in 2009 and reported to the Vermont Oxford Network by 850 participating hospitals, 79% were treated with surfactant. Thirteen percent of all infants received the first dose of surfactant after 2 hours of age. Fewer than</p>		

Pediatric Example – NQF 0484 eMeasure

Population criteria

----- Population Criteria 1 -----

• Initial Patient Population 1 =

- AND: "Patient characteristic: birth date" starts after start of ("Encounter: Hospital Stay" during "Measurement Period")
- AND:
 - AND: "Patient characteristic: birth date" > 154 day(s) starts after start of ("Patient characteristic: Estimated Date of Conception" during "Measurement Period")
 - during ("Encounter: Hospital Stay" during "Measurement Period")
- AND:
 - AND: "Patient characteristic: birth date" < 209 day(s) starts after start of ("Patient characteristic: Estimated Date of Conception" during "Measurement Period")
 - during ("Encounter: Hospital Stay" during "Measurement Period")

• Denominator 1=

- AND: "Initial Patient Population 1"
- AND: "Substance administered: Surfactant" starts after start of ("Patient characteristic: birth date" starts before or during ("Encounter: Hospital Stay" during "Measurement Period"))

• Numerator 1 =

- AND: "Substance administered: Surfactant" <= 2 hour(s) starts after end of "Patient characteristic: Time of Birth"

• Exclusions 1 =

- OR: "Patient characteristic: birth date" starts before start of ("Encounter: Hospital Stay" during "Measurement Period")
- OR: "Substance administered: Surfactant (date is present)"
- OR:
 - AND NOT: "Substance administered: Surfactant (time is present)"

----- Population Criteria 2 -----

• Initial Patient Population 2 =

- AND: "Patient characteristic: birth date" < 28 day(s) starts before start of ("Encounter: Hospital Stay" during "Measurement Period")
- AND:
 - AND: "Patient characteristic: birth date" > 154 day(s) starts after start of "Patient characteristic: Estimated Date of Conception"
 - during ("Encounter: Hospital Stay" during "Measurement Period")
- AND:
 - AND: "Patient characteristic: birth date" < 209 day(s) starts after start of "Patient characteristic: Estimated Date of Conception"
 - during ("Encounter: Hospital Stay" during "Measurement Period")
- AND:
 - AND NOT: "Transfer to: Home" starts after start of ("Patient characteristic: birth date" < 28 day(s) starts before start of ("Encounter: Hospital Stay" during "Measurement Period"))

Pediatric Example – NQF 0484 eMeasure

Data criteria (ODS Data Elements)

- "Encounter: Hospital Stay" using "Hospital Stay SNOMED-CT Code List (2.16.840.1.113883.3.67.1.101.1.122)"
- "Patient characteristic: birth date" (age) using "birth date HL7 Code List (2.16.840.1.113883.3.67.1.101.1.24)"
- "Patient characteristic: Estimated Date of Conception" using "Estimated Date of Conception SNOMED-CT Code List (2.16.840.1.113883.3.67.1.101.1.105)"
- "Patient characteristic: Time of Birth" using "Time of Birth SNOMED-CT Code List (2.16.840.1.113883.3.67.1.101.1.121)"
- "Substance administered: Surfactant" using "Surfactant Code List GROUPING (2.16.840.1.113883.3.67.1.101.1.126)"
- "Transfer to: Home" using "Home SNOMED-CT Code List (2.16.840.1.113883.3.67.1.101.1.120)"

Summary Calculation

Calculation is generic to all measures:

- Calculate the final denominator by adding all that meet denominator criteria.
 - Subtract from the final denominator all that do not meet numerator criteria yet also meet exclusion criteria. Note some measures do not have exclusion criteria.
 - The performance calculation is based on the "Measure scoring" from header information above:
 - For "Proportion" measures, the calculation is the number meeting numerator criteria divided by the final denominator.
 - For "Ratio" and "Continuous Variable" measures, follow the calculation instructions in the Data Aggregation header information above, if present.
 - For measures with multiple denominators, repeat this process for each denominator and report each result separately.
 - For measures with multiple patient populations, repeat this process for each patient population and report each result separately.
 - For measures with multiple numerators, calculate each numerator separately within each population using the paired exclusion.
-

Next Steps

- eMeasure
 - Implementation Guide
- QRDA
 - eMeasures and corresponding QRDA

Questions

Questions
