Introduction to QRDA

Kanwarpreet (KP) Sethi

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Outline

Overview of Quality Measurement

QRDA Category I

Quality Data Model and QRDA

QRDA III

CMS QRDA Implementation Guide

Summary

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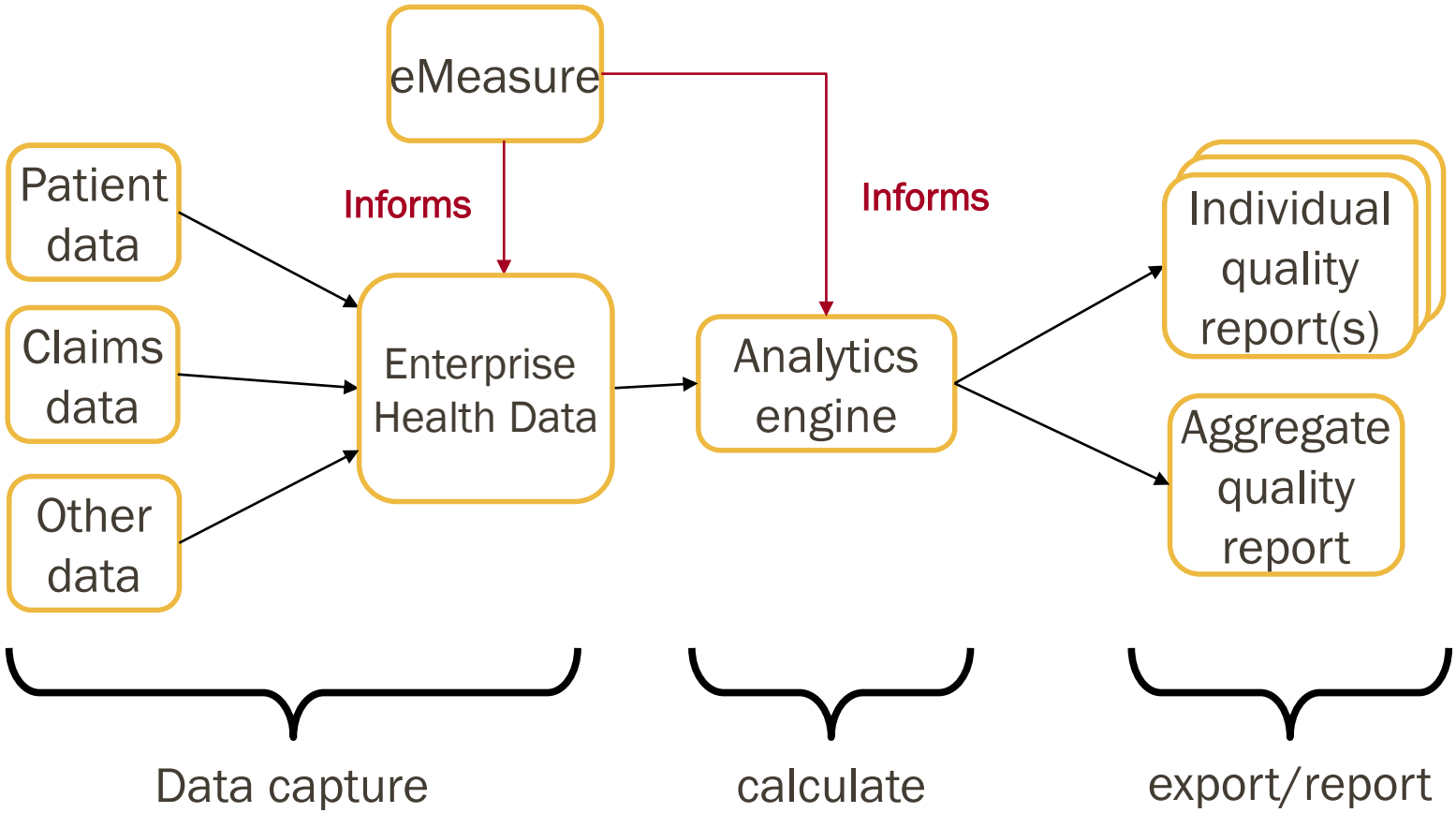
Overview of Quality Measurement

Quality Reporting Process



Quality Reporting Standards

Clinical Document Architecture (CDA)

- Consolidated CDA (C-CDA)
- Quality Reporting Document Architecture (QRDA)
  - QRDA Category I (QRDA-I)
  - QRDA Category III (QRDA-III)

Health Quality Measure Format (HQMF - eMeasure)

US-Realm: Quality Data Model (QDM)

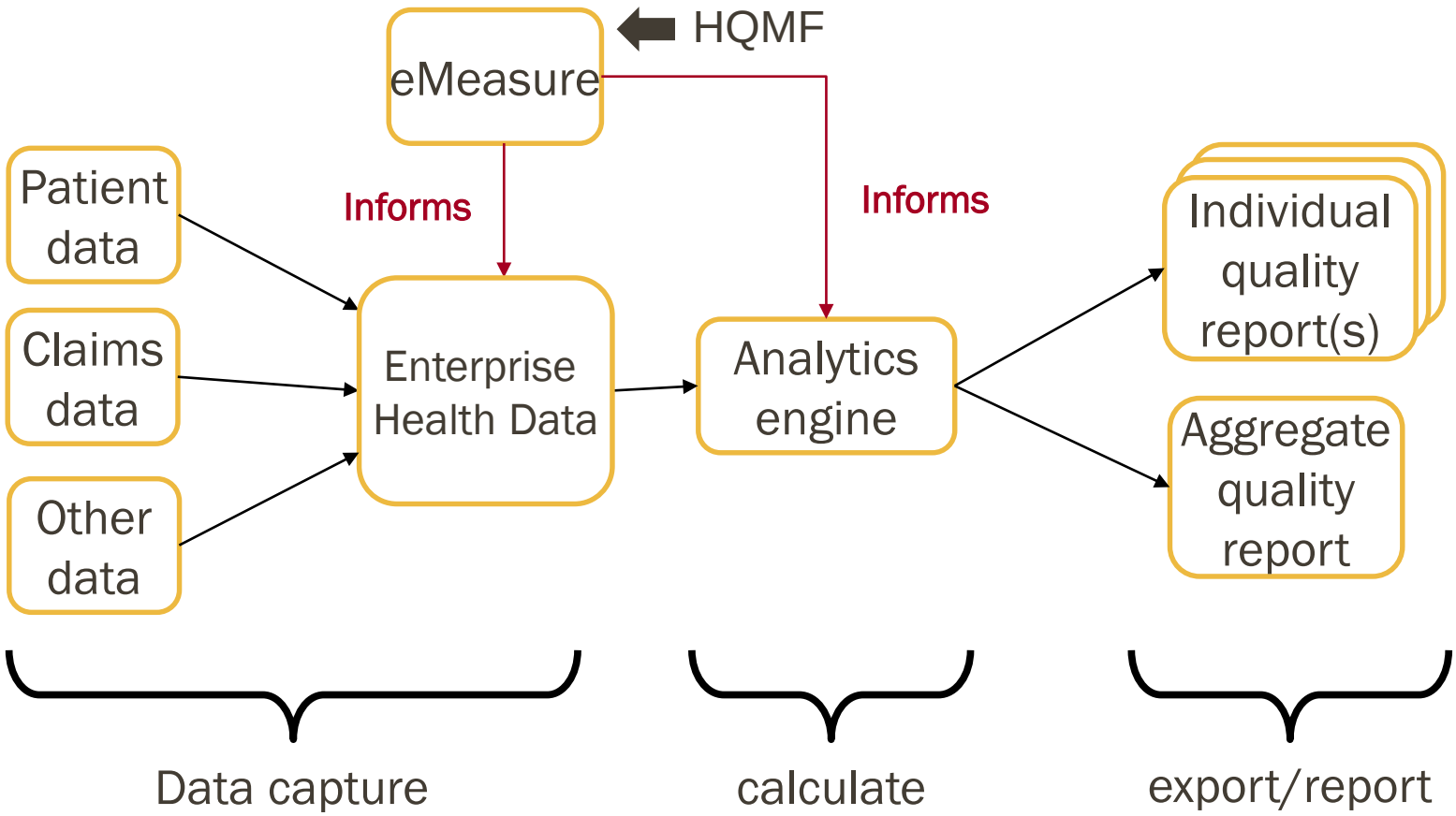
HQMF

HQMF: An international standard for the formal representation of clinical quality measure **metadata**, **data elements**, and **logic**

HQMF IS NOT CDA

```
<QualityMeasureDocument>
  HQMF Header
  HQMF Body
   <section>
     <title>Population criteria</title>
     <text>
     <entry>Initial Patient Popl</entry>
     <entry>Denominator</entry>
     <entry>Numerator</entry>
     ...
   </section>
   <section>
     <title>Data criteria</title>
     <text>
     <entry>
     ...
   </section>
     ...
</QualityMeasureDocument>
```

Quality Reporting Process



What is CDA R2?

A specification for exchange of clinical documents, defining their structure and semantics

ANSI standard developed by HL7's Structured Documents Work Group (SDWG)

ISO standard

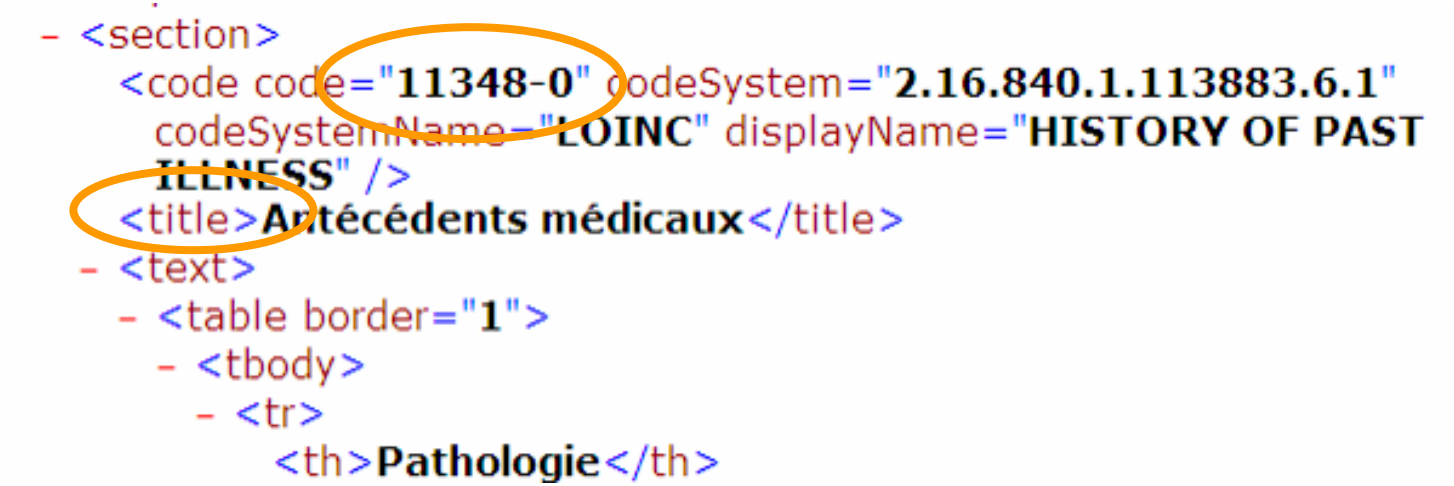
CDA R2 relies on

- XML
- HL7 RIM
- HL7 development methodology
- Controlled vocabularies (SNOMED, LOINC, CIE-9, HL7, etc.)

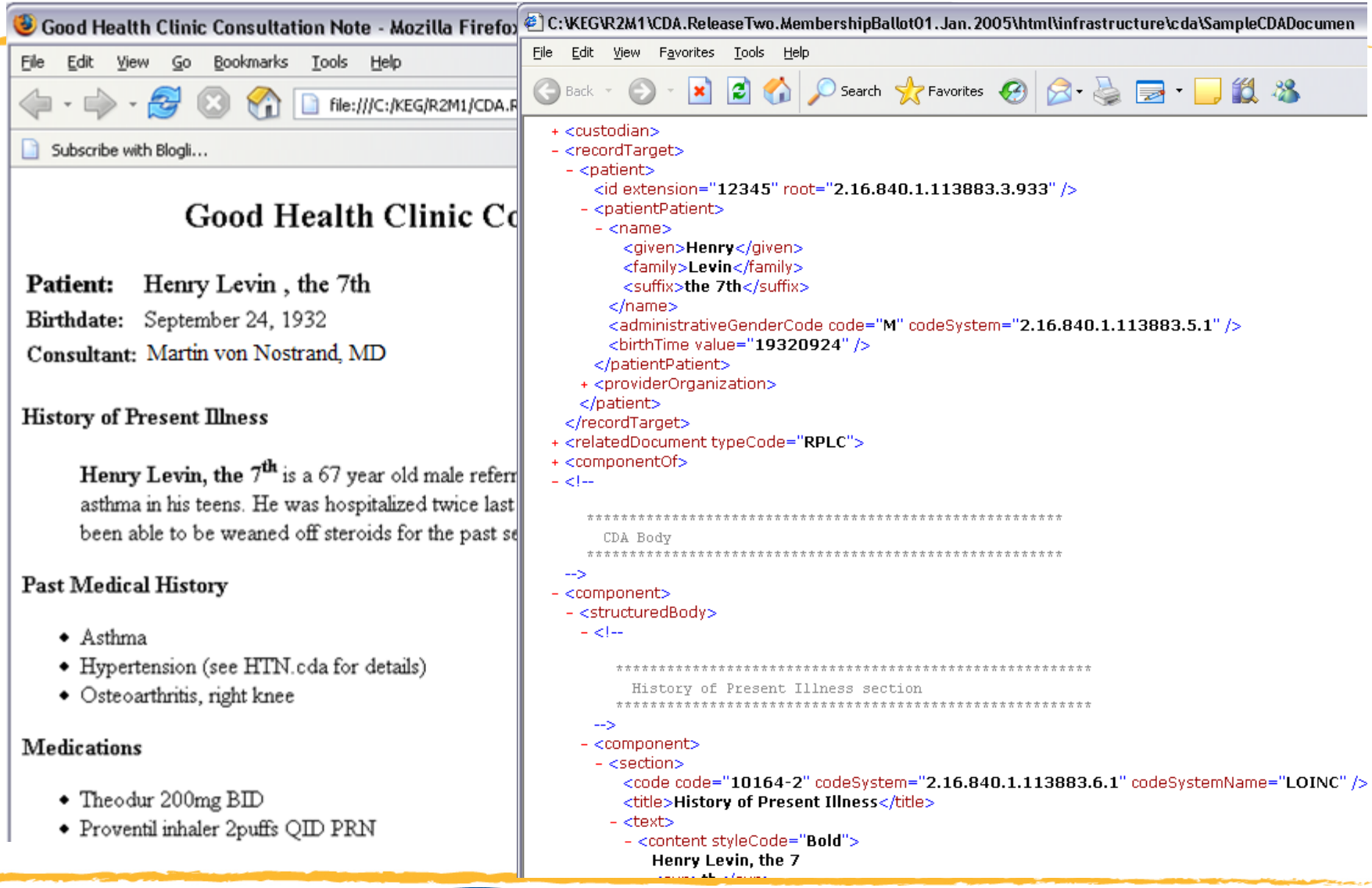
What is XML?

XML is Extensible Markup Language (www.w3c.org)

In XML, structure & format are conveyed by *markup* which is embedded into the information



Sample CDA



CDA = Header + Body

CDA Header

- Patient, provider, author, and encounter information

CDA Body

- Clinical report
  - Discharge Summary
  - Care Record Summary
  - Progress Note
  - H&P
  - Public health report
- … any content that carries a signature

Implementation Guides (IGs)

Developed by HL7 Structured Documents WG

- with HL7 Domain Work Groups
- by other standards organizations
- by other agencies (CDC…)

Balloted IGs to-date: US Realm-specific & Universal

Define *templates* for CDA

- Templates are rules that mold the CDA xml for a specific use case
- E.g. a template for a physical exam or medication or allergy

Cooking with Templates

CDA Without Templates

Like a kitchen full of raw ingredients, but no menu, recipes, cookbooks, or other guidance.

Very flexible, but hard to work with if you are not an expert cook.

Only the cook knows what's going on until the meal has been cooked and delivered to the table.

Templated CDA

Same kitchen, but…

Full menu and recipes are provided.

Food is prepped and ready to be cooked to order according to the provided recipes.

Less flexible, but much easier for the novice to work with.

Both the cook and the diner know what to expect.

What is QRDA?

QRDA is a Clinical Document Architecture (CDA)-based standard for reporting patient quality data for one or more quality measures

QRDA Category I (Single-patient Report)

Individual patient-level report that contains data defined in the measure

*QRDA Category II (Patient List Report) **

Multi-patient report across a defined population that may or may not identify individual patient data within the summary

QRDA Category III (Calculated Report)

Aggregate quality report with a result for a given population and period of time

**Cat I and Cat III are Draft Standards for Trial Use (DSTU). Cat II was proposed, but never formally balloted as a DSTU.*

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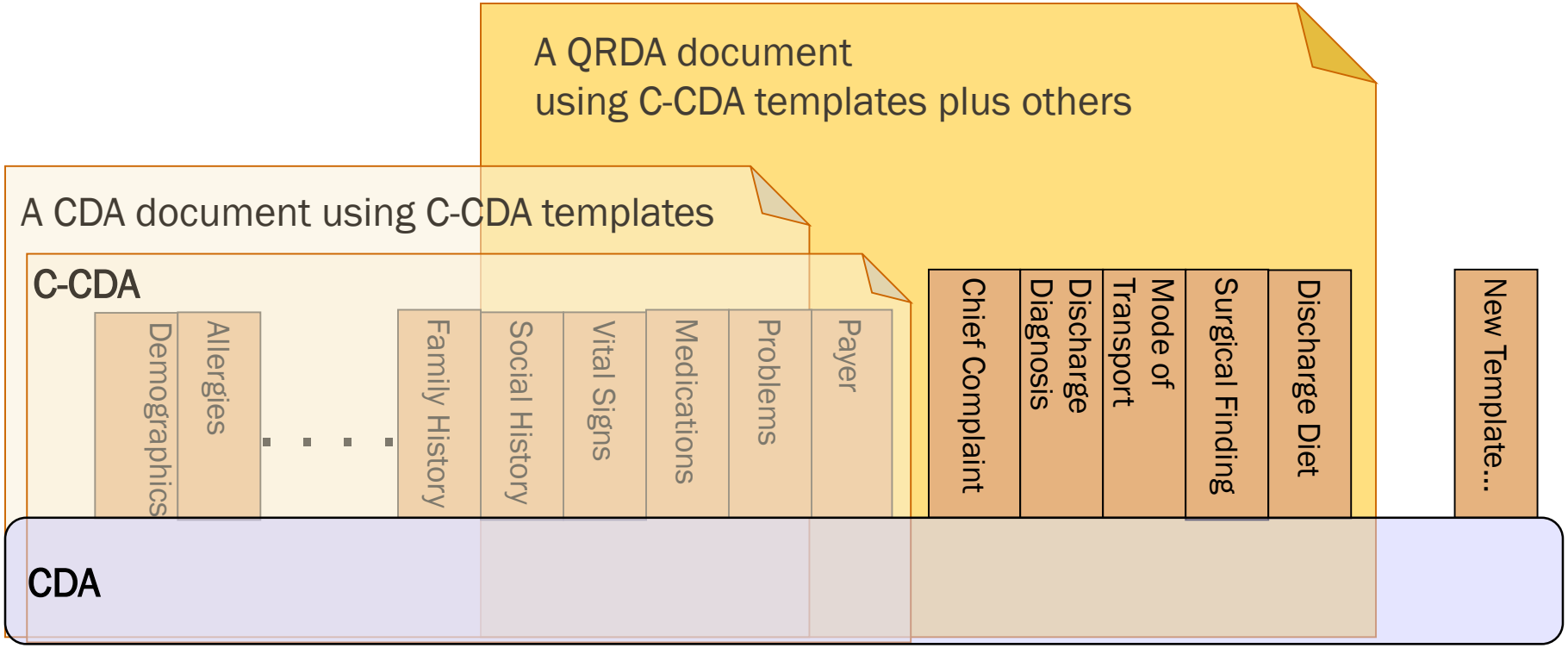
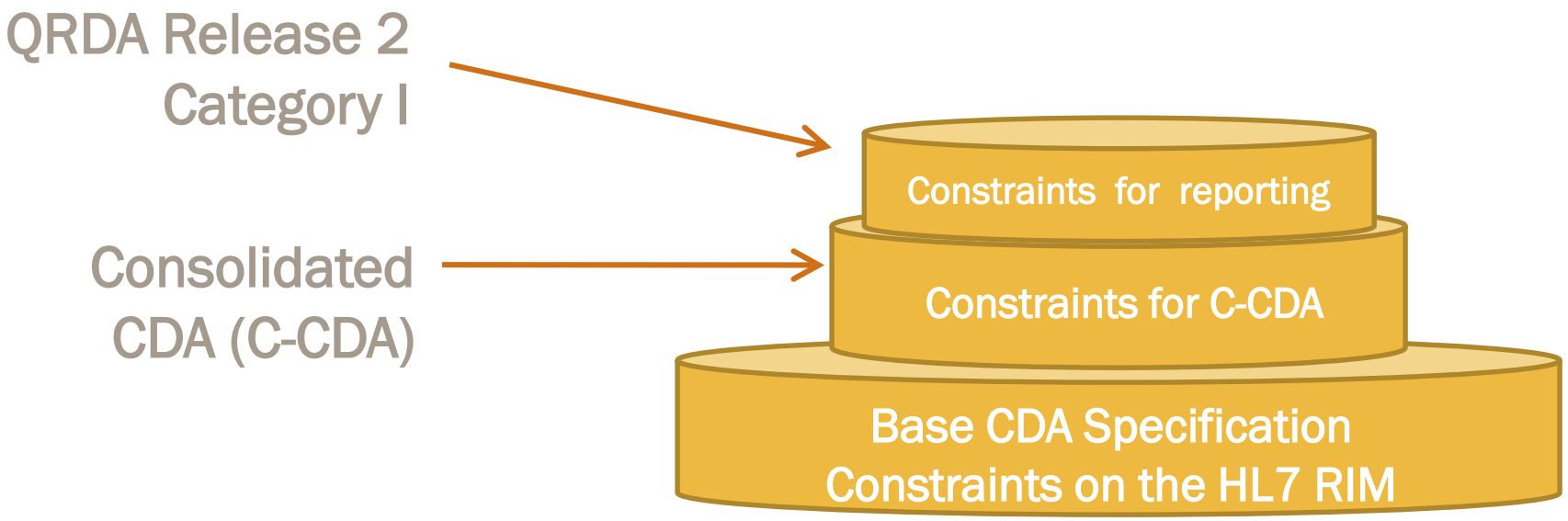
QRDA 1 is a Kind of Templated CDA

QRDA is a CDA-based standard designed to have those data elements needed for quality measurement.

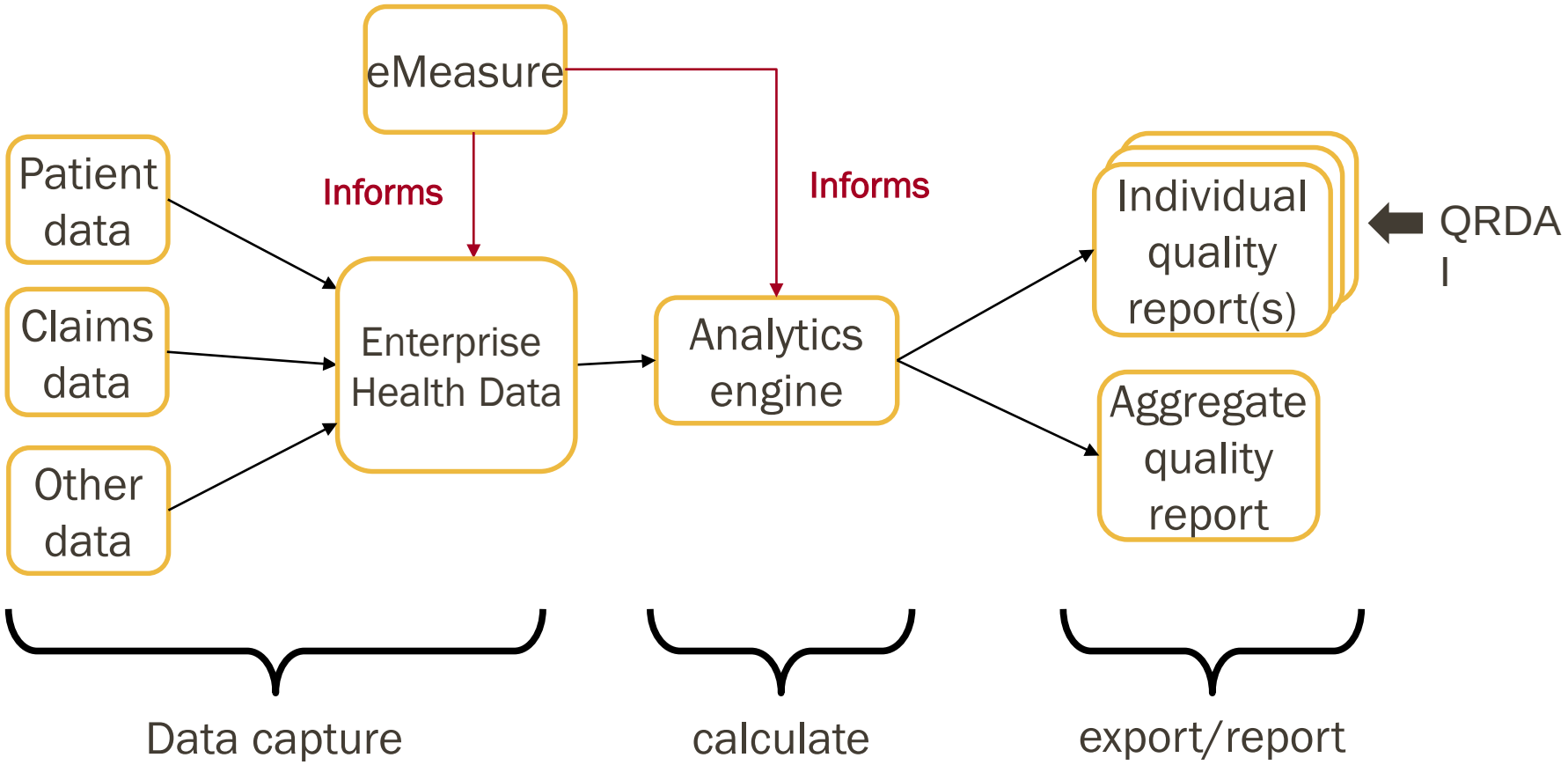


QRDA 1 is a Kind of Templated CDA

QRDA is a CDA-based implementation guide that contains those data elements needed for quality measurement.



Quality Reporting Process



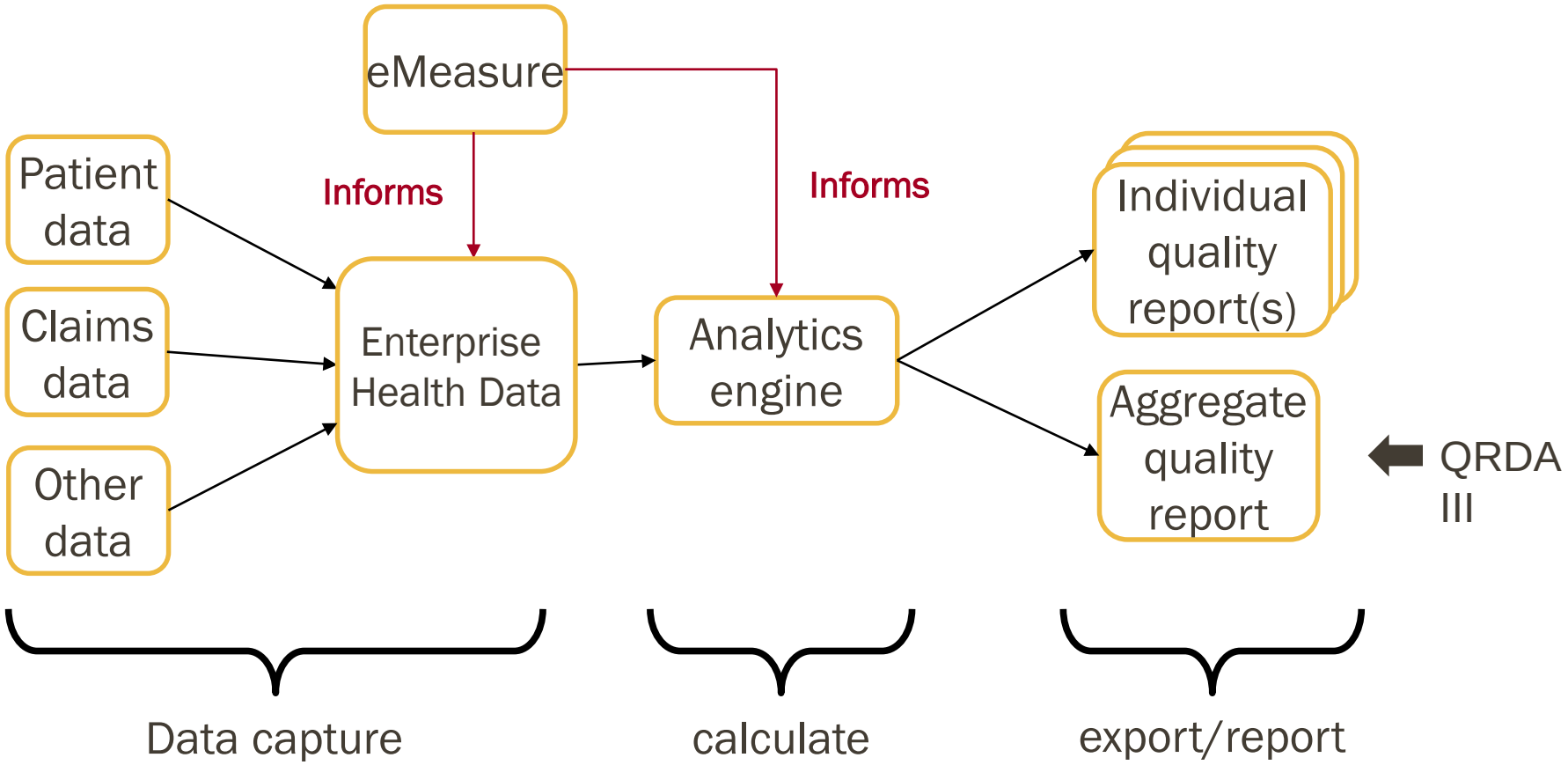
QRDA Category III

An aggregate quality report that contains calculated summary data for one or more measures for a specified population of patients within a particular health system over a specific period of time.

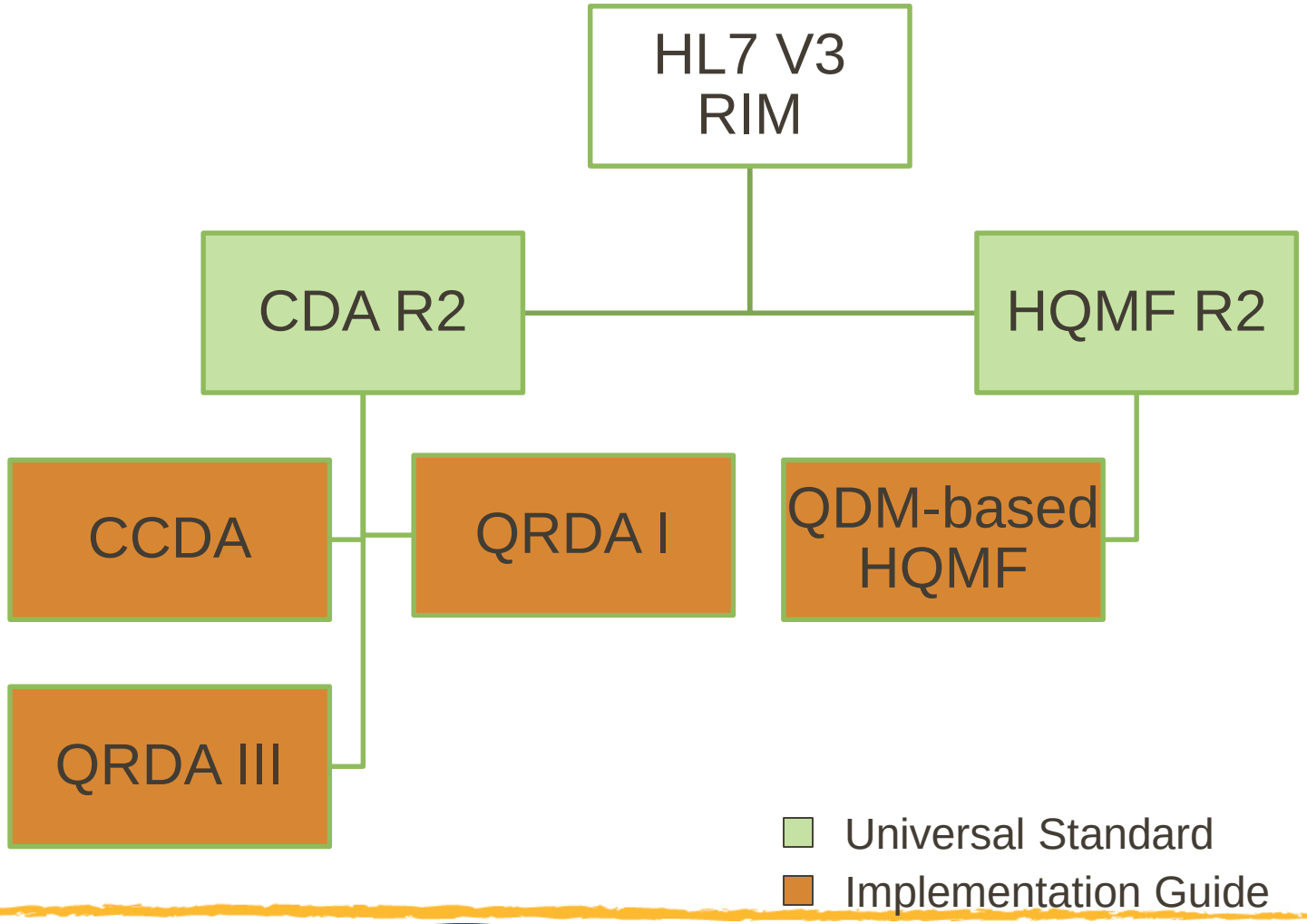
Refers to identifiers in an eMeasure or other query.

Communicates data residing in health information systems that are stripped of all patient identifiers, protecting patients and healthcare providers from the risks of inadvertent leakage of private information.

Quality Reporting Process



Quality Reporting Standards



QRDA Category I

QRDA-I Single Patient Report

A QRDA-I* report is an individual patient-level quality report.

Each report contains quality data for one patient for one or more quality measures, where the data elements in the report are defined by the particular measure(s) being reported on.

A QRDA-I report contains raw applicable patient data. When pooled and analyzed in a report, these quality data are used to calculate population measure metrics.

* Category I was published July 2012 and is required in MU2 § 170.205(h).

QRDA Category I

QRDA-I Framework: A generic framework for reporting patient-level data about any quality measure

Quality Data Model (QDM)-based QRDA-I: A specific use of the framework, to align with Meaningful Use Stage 2 (MU2) QDM-based eMeasures

US Realm

QRDA-I – Single Patient Report

Contact info	1020 Healthcare Drive Burlington, MA 02368, US Tel: (555)555-1003
Author	Good Health Report Generator
Contact info	21 North Ave. Burlington, MA 02368, US Tel: (555)555-1003
Legal authenticator	Virgil Verify, MD of Good Health Hospital signed at December 31, 2011
Contact info	21 North Ave. Burlington, MA 02368, US Tel: (555)555-1003
Document maintained by	Good Health Hospital
Contact info	21 North Ave. Burlington, MA 02368, US Tel: (555)555-1003

Table of Contents

- Measure Section
- Reporting Parameters
- Patient Data

Measure Section

eMeasure Title	Version neutral identifier	eMeasure Version Number	NQF eMeasure Number	eMeasure Identifier (MAT)	Version specific identifier
Children's Asthma Care (CAC-1) Relievers for Inpatient Asthma	dc78ee5d-1487-4d79-84c3-1dfdaff0781c	1	0143	93	8a4d92b2-373f-82e2-0137-7b9e21cc5c8f
Children's Asthma Care (CAC-2) Systemic Corticosteroids for Inpatient Asthma	d7c71959-3991-457c-b8ea-774238c87248	1	0144	106	8a4d92b2-373f-82e2-0137-baed84f55f93

Reporting Parameters

- Reporting period: 01 Jan 2011 - 31 Dec 2011

Patient Data

Data Element	Value	Date/Time
Encounter, Performed: Emergency Department Visit	Emergency Department visit	03/01/2011 4:00 - 03/01/2011 8:30
Encounter, Performed: Encounter Inpatient	Hospital admission	03/01/2011 9:00 - 03/03/2011 10:30
Diagnosis, Active: Asthma	Asthma	01/01/2011
Medication, Administered not done: Patient refusal, Asthma Reliever: albuterol 1.25 MG (albuterol sulfate 1.5 MG) per 3 ML Inhalant Solution	Drug declined by patient - reason unknown	Null
Medication, Administered: Systemic Corticosteroids	Hydrocortisone 10 MG Oral Tablet	03/01/2011 15:00
Patient Characteristic Clinical Trial Participant	True	03/01/2011
Patient Characteristic Payer	Medicare	03/01/2011

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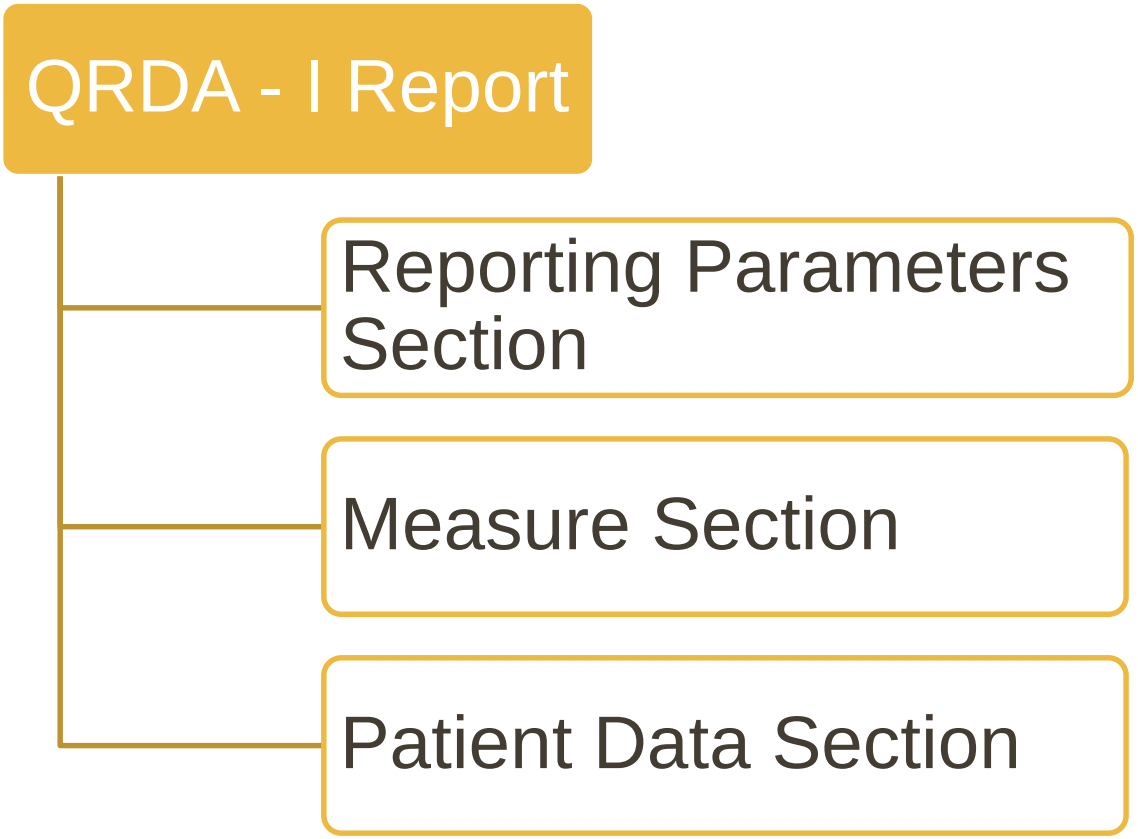
QRDA Framework

QRDA-I is designed as a framework for reporting patient-level data about any quality measure.



QRDA-I Header

Re-uses US Realm Header

Further Restrictions:

- Constrains document code (code="55182-0" Quality Measure Report (CodeSystem: LOINC 2.16.840.1.113883.6.1)
- Constrains RecordTarget to 1 (allows only one patient)
- Requires a legalAuthenticator
- Specifies additional (optional) provider and patient IDs important to CMS
- Defines the required sections

Reporting Parameters Section

The Reporting Parameters Section provides information about:

- Reporting time interval
- May contain other information that provides context for the patient data being reported

Measure Section

Contains information about the measure or measures being reported:

- Identifies the quality measure(s) being reported
- Must contain a reference to at least one externalDocument ID from each measure

Patient Data Section

Contains patient data elements as defined by the referenced measure(s).

Validation of QRDA

- Schema
  - Validate the document XML is following the rules of CDA
- Schematron
  - validate constraints and rules specific to QRDA
  - validate constraints that can't be specified in W3C schema language

    Example: A code element must contain either code and codeSystem attributes or a nullFlavor attribute.

Validation

Implementation Guide	
Schema (Is it CDA?)	Is it a Car? (4 wheels, seats, headlights, steering)
Schematron (Is it QRDA?)	Is it a Muscle Car? (powerful engine, muscular body, big wheels)
CMS Schematron (Is it CMS QRDA?)	Is it a Ford Mustang? (Ford branding, Ford engine, 2 doors, Mustang VIN #)

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Quality Data Model and QRDA I

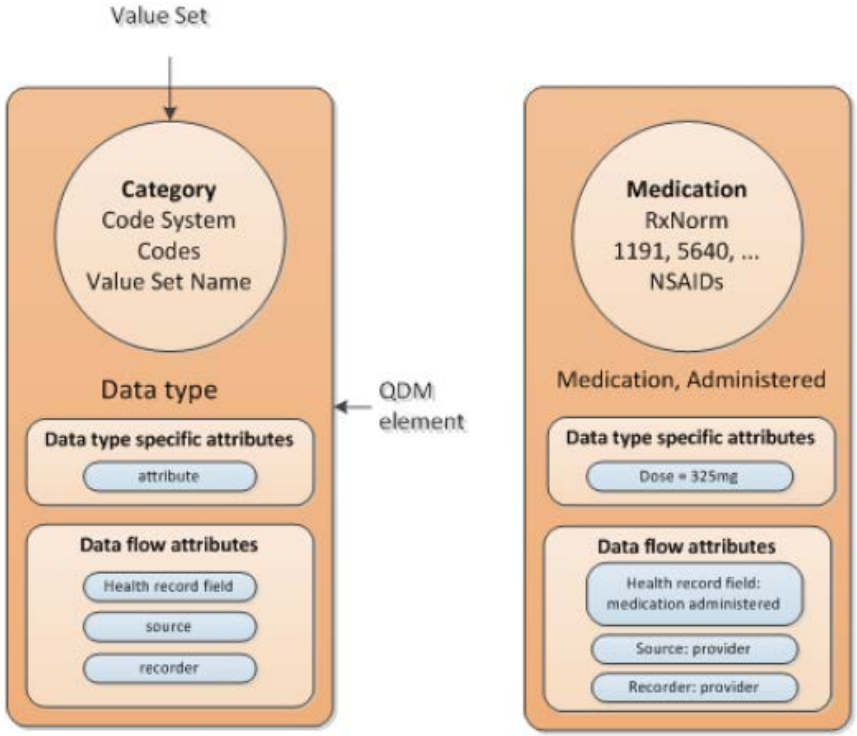
Building-Block Approach to eMeasures: Quality Data Model

A model of information used to express patient, clinical, and community characteristics as well as the basic logic required to express quality measure criteria.

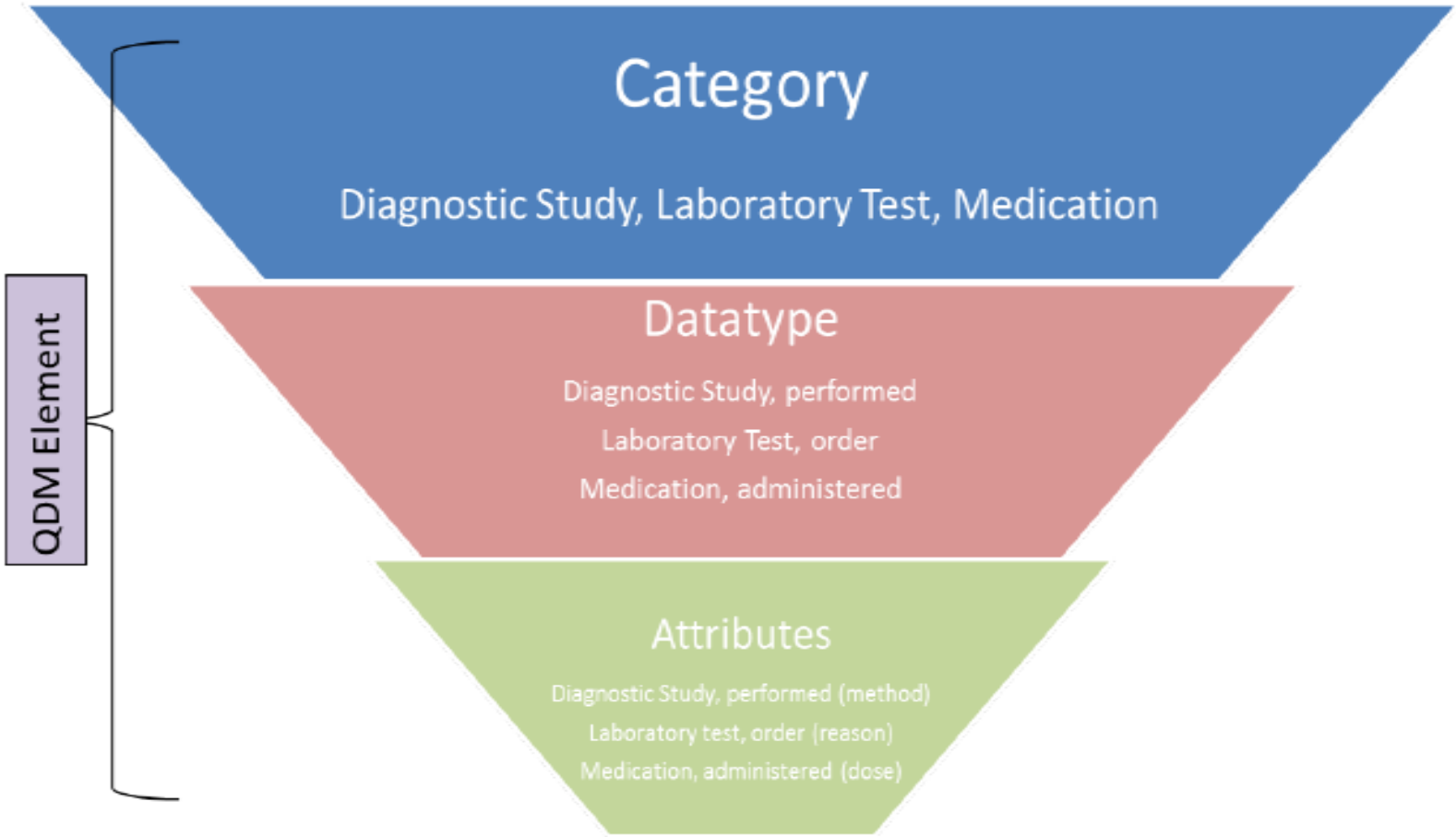
Describes the data elements and the states or contexts in which the data elements are expected to exist in clinical information systems.

Quality Data Model

- Quality Data Model (QDM) is a “Domain Analysis Model”
- HL7 has implemented QDM in HQMF and QRDA
- Provides a common “language” for all eMeasures.



QDM Composition



QDM Categories

Diagnosis

Encounter

Functional Status

Laboratory Test

Medication

Physical Exam

Procedure

QDM Datatypes and Attributes

Datatype	Definition	Attributes
Diagnosis, Active	To meet criteria using this datatype, the diagnosis indicated by the Condition/Diagnosis/Problem QDM category and its corresponding value set should reflect documentation of an active diagnosis. Keep in mind that when this datatype is used with timing relationships, the criterion is looking for an active diagnosis for the time frame indicated by the timing relationships.	• Anatomical Location Site • Laterality • Negation Rationale • Ordinality • Patient Preference • Provider Preference • Severity • Start Datetime • Stop Datetime
Diagnosis, Family History	To meet criteria using this datatype, the diagnosis indicated by the Condition/Diagnosis/Problem QDM category and its corresponding value set should reflect a diagnosis of a family member.	• Negation Rationale • Ordinality • Patient Preference • Provider Preference • Severity • Start Datetime • Status • Stop Datetime
Diagnosis, Inactive	To meet criteria using this datatype, the diagnosis indicated by the Condition/Diagnosis/Problem QDM category and its corresponding value set should reflect documentation of an inactive diagnosis. Keep in mind that when this datatype is used with timing relationships, the criterion is looking for an inactive diagnosis for the time frame indicated by the timing relationships.	• Anatomical Location Site • Negation Rationale • Ordinality • Patient Preference • Provider Preference • Severity • Start Datetime • Stop Datetime

Example: QDM in eMeasure

Data criteria (QDM Data Elements)

- "Diagnosis, Active: Atrial Fibrillation/Flutter" using "Atrial Fibrillation/Flutter Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.202)"
- "Diagnosis, Active: Hemorrhagic Stroke" using "Hemorrhagic Stroke Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.212)"
- "Diagnosis, Active: Ischemic Stroke" using "Ischemic Stroke Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.247)"
- "Diagnosis, Inactive: Atrial Fibrillation/Flutter" using "Atrial Fibrillation/Flutter Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.202)"
- "Encounter, Performed: Emergency Department Visit" using "Emergency Department Visit SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.292)"
- "Encounter, Performed: Non-Elective Inpatient Encounter" using "Non-Elective Inpatient Encounter SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.424)"
- "Intervention, Order: Palliative Care" using "Palliative Care SNOMED-CT Value Set (2.16.840.1.113883.3.526.2.1076)"
- "Intervention, Performed: Palliative Care" using "Palliative Care SNOMED-CT Value Set (2.16.840.1.113883.3.526.2.1076)"
- "Medication, Discharge not done: Medical Reason" using "Medical Reason SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.473)"
- "Medication, Discharge not done: Patient Refusal" using "Patient Refusal SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.93)"
- "Medication, Discharge: Anticoagulant Therapy" using "Anticoagulant Therapy RxNorm Value Set (2.16.840.1.113883.3.117.1.7.1.200)"
- "Patient Characteristic Birthdate: birth date" using "birth date LOINC Value Set (2.16.840.1.113883.3.560.100.4)"
- "Procedure, Performed: Atrial Ablation" using "Atrial Ablation Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.203)"
- Attribute: "Ordinality: Principal Diagnosis" using "Principal Diagnosis SNOMED-CT Value Set (2.16.840.1.113883.3.117.2.7.1.14)"
- Attribute: "Discharge status: Patient Expired" using "Patient Expired SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.309)"
- Attribute: "Discharge status: Discharge To Another Hospital" using "Discharge To Another Hospital SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.87)"
- Attribute: "Discharge status: Discharged to Health Care Facility for Hospice Care" using "Discharged to Health Care Facility for Hospice Care SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.207)"
- Attribute: "Discharge status: Discharged to Home for Hospice Care" using "Discharged to Home for Hospice Care SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.209)"
- Attribute: "Discharge status: Left Against Medical Advice" using "Left Against Medical Advice SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.308)"

Reporting Stratification

- None

Supplemental Data Elements

- "Patient Characteristic Ethnicity: Ethnicity" using "Ethnicity CDC Value Set (2.16.840.1.114222.4.11.837)"
- "Patient Characteristic Payer: Payer" using "Payer Source of Payment Typology Value Set (2.16.840.1.114222.4.11.3591)"
- "Patient Characteristic Race: Race" using "Race CDC Value Set (2.16.840.1.114222.4.11.836)"
- "Patient Characteristic Sex: ONC Administrative Sex" using "ONC Administrative Sex Administrative Sex Value Set (2.16.840.1.113762.1.4.1)"

Measure Set	eMeasure Stroke (eSTK)

QDM and Template Association

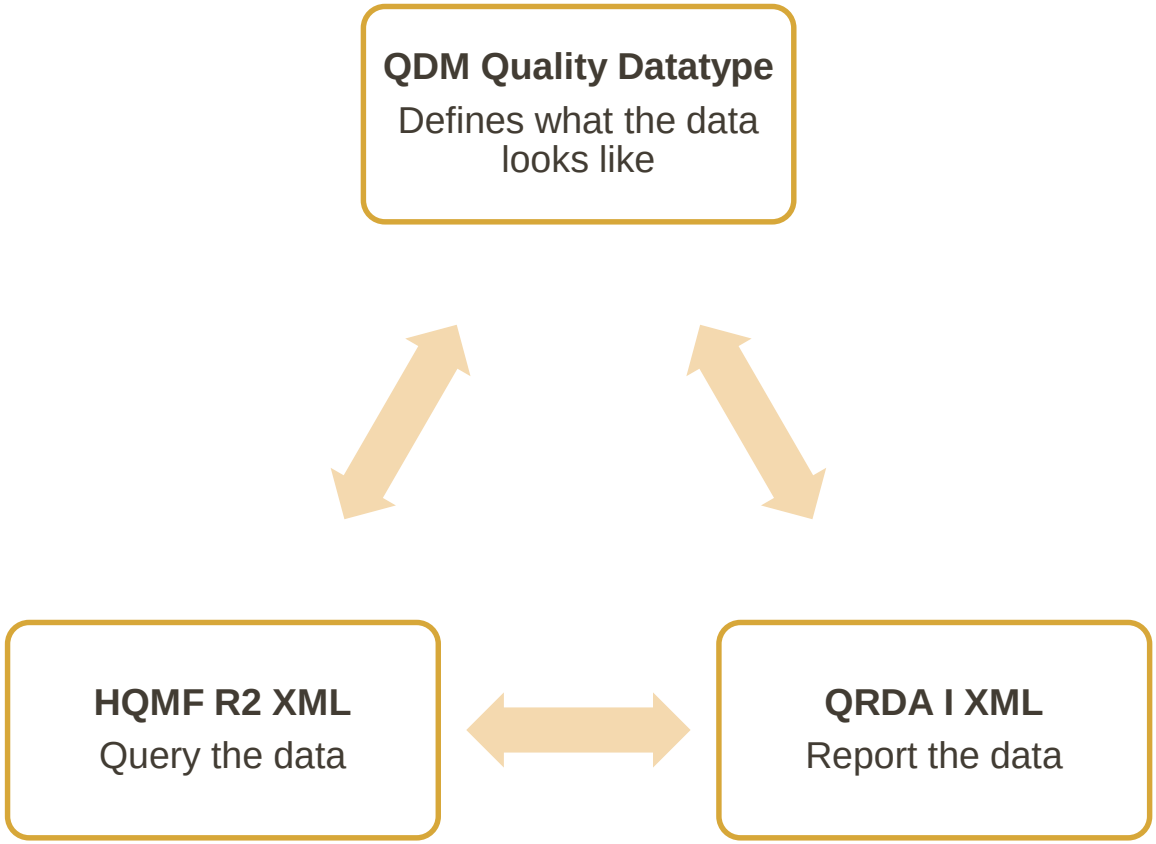
Each QDM Datatype maps to a unique HQMF XML “pattern”.

This unique pattern is present in the eMeasure.

Each QDM Datatype is mapped to a corresponding QRDA I XML pattern.

This QRDA XML is present in the patient level report.

QDM Across Standards



- Datatype maps across HQMF and QRDA

Analogies that may help*

Phrase Book

- QDM = all chapters/categories in a foreign language phrase book, e.g. Greetings
- HQMF = “How are you?” (Question)
- QRDA = “Fine, thank you!” (Response)

Food

- QDM = Different food, soups, salads, desserts etc.
- HQMF = Menu to order Tomato Soup (Question)
- QRDA = prepared Tomato Soup (Response)

Airplanes?

*not guaranteed

Example Mapping Table

Quality Data Type	QDM-HQMF R2 Template Name	QDM-HQMF R2 Template ID	QDM-HQMF R1 Template ID	CDA (QRDA) Template ID
Care Goal	Care Goal (HQMF R2)	2.16.840.1.11388 3.10.20.28.3.7	2.16.840.1.11388 3.3.560.1.9	2.16.840.1.11388 3.10.20.24.3.1
Communication: From Patient to Provider	Communication: From Patient to Provider (HQMF R2)	2.16.840.1.11388 3.10.20.28.3.8	2.16.840.1.11388 3.3.560.1.30	2.16.840.1.11388 3.10.20.24.3.2
Communication: From Provider to Patient	Communication: From Provider to Patient (HQMF R2)	2.16.840.1.11388 3.10.20.28.3.9	2.16.840.1.11388 3.3.560.1.31	2.16.840.1.11388 3.10.20.24.3.3
Communication: From Provider to Provider	Communication: From Provider to Provider (HQMF R2)	2.16.840.1.11388 3.10.20.28.3.10	2.16.840.1.11388 3.3.560.1.29	2.16.840.1.11388 3.10.20.24.3.4
Device, Adverse Event	Device, Adverse Event (HQMF R2)	2.16.840.1.11388 3.10.20.28.3.11	2.16.840.1.11388 3.3.560.1.34	2.16.840.1.11388 3.10.20.24.3.5
Device, Allergy	Device, Allergy (HQMF R2)	2.16.840.1.11388 3.10.20.28.3.12	2.16.840.1.11388 3.3.560.1.35	2.16.840.1.11388 3.10.20.24.3.6
Device, Applied	Device, Applied (HQMF R2)	2.16.840.1.11388 3.10.20.28.3.13	2.16.840.1.11388 3.3.560.1.10	2.16.840.1.11388 3.10.20.24.3.7
Device, Intolerance	Device, Intolerance (HQMF R2)	2.16.840.1.11388 3.10.20.28.3.14	2.16.840.1.11388 3.3.560.1.36	2.16.840.1.11388 3.10.20.24.3.8

QDM-Based QRDA I

Clinical measureable parameters are assembled into quality measures, which are then expressed as eMeasures.

The eMeasures guide the collection of EHR data and other data, which are then assembled into QRDA quality reports and submitted to quality or other organizations.

While there is no prerequisite that a QRDA document must be generated based on an eMeasure, *the QDM-based QRDA standard tightly aligns with HQMF*.

Create a QRDA-I Instance

eMeasure Data Elements

- **eMeasures are comprised of the data elements that are required to compute them**
- **Identify QDEs in the referenced eMeasure(s)**
- **Example: Medication Administered - Aspirin**

Find matching data elements in a patient chart

- **Specification calls this "scooping"**
- **Example: Find all medications administered for a patient**

Filter the data to the relevant elements

- **Example: Only place administrations of Aspirin in the QRDA- I document**
- **This happens by matching clinical codes**
- **Specification calls this "smoking gun"**

Repeat for all QDEs in the referenced eMeasure(s)

Extract Relevant Data Elements from EHR

- Scoop and Filter: QRDA-I sends what is in the electronic health record (EHR). If there's nothing in the EHR, don't send anything in the QRDA-I*.

- Smoking Gun: At a minimum, the QRDA-I should include the positive evidence.*

* eMeasure performance rates are calculated based on a principle of "positive evidence."

Example: Healthy Term Newborn CMS 185

eMeasure

eMeasure Title	Healthy Term Newborn		
eMeasure Identifier (Measure Authoring Tool)	185	**eMeasure Version number**	2
NQF Number	0716	**GUID**	ff796fd9-f99d-41fd-b8c2-57d0a59a5d8d

QDM-based QRDA

QRDA Incidence Report

Patient	Mr. Adam Everyman		
Date of birth	March 1, 2012	**Sex**	Male
Contact info	Pirmary Home: 17 Daws Rd. Blue Bell, MA 02368, US Tel: (781)555-1212	**Patient IDs**	12345 2.16.840.1.113883.4.572
Document Id	f2d5f971-d67a-4456-8833-213f01331ca5		
Document Created:	December 31, 2012, 00:00 -0400		
Author	Good Health Report Generator		
Contact info	21 North Ave. Burlington, MA 02368, US Tel: (555)555-1003		

Table of Contents

- Measure Section
- Reporting Parameters
- Patient Data

Measure Section

eMeasure Title	Version neutral identifier	eMeasure Version Number	NQF eMeasure Number	Version specific identifier
Healthy Term Newborn	ff796fd9-f99d-41fd-b8c2-57d0a59a5d8d	2	0716	40280381-3d27-5493-013d-5c2858ec1933

Example: Healthy Term Newborn CMS 185

Population criteria

- **Initial Patient Population** =
  - AND: "Diagnosis, Active: Gestational age >= 37 weeks" starts during "Occurrence A of Encounter, Performed: Encounter Inpatient"
  - AND: "Occurrence A of Encounter, Performed: Encounter Inpatient" starts during "Measurement Period"
  - AND: "Occurrence A of Encounter, Performed: Encounter Inpatient (length of stay <= 120 day(s))"
  - AND:
    - OR: "Diagnosis, Active: Single Liveborn Newborn Born in Hospital" starts during "Occurrence A of Encounter, Performed: Encounter Inpatient"
    - OR:
      - AND: "Diagnosis, Active: Single Live Birth" starts during "Occurrence A of Encounter, Performed: Encounter Inpatient"
      - AND: "Diagnosis, Active: Liveborn Born In Hospital" starts during "Occurrence A of Encounter, Performed: Encounter Inpatient"
      - AND: "Occurrence A of Encounter, Performed: Encounter Inpatient (reason: 'Birth')"
- **Denominator** =
  - AND: "Initial Patient Population"
- **Denominator Exclusions** =
  - AND:
    - OR: "Diagnosis, Active: Congenital Anomalies Group"
    - OR: "Diagnosis, Active: Laryngeal Stenosis Group"
    - OR: "Diagnosis, Active: Hydrops Group"
    - OR: "Diagnosis, Active: Hemolytic Disease Group"
    - OR: "Diagnosis, Active: Impaired Fetal Growth Group"
    - OR: "Diagnosis, Active: Newborn Affected by Placenta or Abruption Group"
    - OR: "Diagnosis, Active: Drug Withdrawal Syndrome Group"
    - starts during "Occurrence A of Encounter, Performed: Encounter Inpatient"
- **Numerator** =
  - AND NOT:
    - OR: "Diagnosis, Active: Birth Trauma or Injuries Group"
    - OR: "Diagnosis, Active: Congenital or Infantile Cerebral Palsy Group"
    - OR: "Diagnosis, Active: Hypoxia or Asphyxia Group"
    - OR: "Diagnosis, Active: Infection Group"
    - OR: "Diagnosis, Active: Neurologic Complications Group"
    - OR: "Diagnosis, Active: Respiratory Problems Group"
    - OR: "Diagnosis, Active: Shock and Complications Group"
    - starts during "Occurrence A of Encounter, Performed: Encounter Inpatient"
  - AND NOT:
    - OR: "Procedure, Performed: Arterial or Umbilical Venous Cath Group"
    - OR: "Procedure, Performed: Cardiopulmonary Resuscitation Group"
    - OR: "Procedure, Performed: TPN Procedure Group"
    - OR: "Procedure, Performed: Gastrostomy Group"
    - OR: "Procedure, Performed: Neurologic Procedure Group"
    - OR: "Procedure, Performed: Gavage Feeding Group"
    - OR: "Procedure, Performed: Respiratory Procedures Group"
    - during "Occurrence A of Encounter, Performed: Encounter Inpatient"
  - AND NOT:
    - OR: "Occurrence A of Encounter, Performed: Encounter Inpatient (discharge status: 'Discharge To Another Hospital')"
    - OR: "Occurrence A of Encounter, Performed: Encounter Inpatient (discharge status: 'Neonatal Death SM-CT')"
  - AND:
    - OR: "Occurrence A of Encounter, Performed: Encounter Inpatient (length of stay < 6 day(s))"
    - OR:
      - AND: "Occurrence A of Encounter, Performed: Encounter Inpatient (length of stay > 5 day(s))"
      - AND:
        - OR: "Procedure, Performed: Phototherapy Procedure Group" during "Occurrence A of Encounter, Performed: Encounter Inpatient"
        - OR:
          - OR: "Diagnosis, Active: Hyperbilirubinemia Group"
          - OR: "Diagnosis, Active: Social Reasons Group"
          - starts during "Occurrence A of Encounter, Performed: Encounter Inpatient"
- **Denominator Exceptions** =
  - None

Example: Healthy Term Newborn CMS 185

Data criteria (QDM Data Elements)

eMeasure Data Criteria

- "Diagnosis, Active: Birth Trauma or Injuries Group" using "Birth Trauma or Injuries Group Grouping Value Set (2.16.840.1.113883.3.666.5.1567)"
- "Diagnosis, Active: Congenital Anomalies Group" using "Congenital Anomalies Group Grouping Value Set (2.16.840.1.113883.3.666.5.1570)"
- "Diagnosis, Active: Congenital or Infantile Cerebral Palsy Group" using "Congenital or Infantile Cerebral Palsy Group Grouping Value Set (2.16.840.1.113883.3.666.5.1580)"
- "Diagnosis, Active: Drug Withdrawal Syndrome Group" using "Drug Withdrawal Syndrome Group Grouping Value Set (2.16.840.1.113883.3.666.5.1574)"
- "Diagnosis, Active: Gestational age >= 37 weeks" using "Gestational age >= 37 weeks Grouping Value Set (2.16.840.1.113883.3.666.5.1596)"
- "Diagnosis, Active: Hemolytic Disease Group" using "Hemolytic Disease Group Grouping Value Set (2.16.840.1.113883.3.666.5.1571)"
- "Diagnosis, Active: Hydrops Group" using "Hydrops Group Grouping Value Set (2.16.840.1.113883.3.666.5.1573)"
- "Diagnosis, Active: Hyperbilirubinemia Group" using "Hyperbilirubinemia Group Grouping Value Set (2.16.840.1.113883.3.666.5.1593)"
- "Diagnosis, Active: Hypoxia or Asphyxia Group" using "Hypoxia or Asphyxia Group Grouping Value Set (2.16.840.1.113883.3.666.5.1577)"
- "Diagnosis, Active: Impaired Fetal Growth Group" using "Impaired Fetal Growth Group Grouping Value Set (2.16.840.1.113883.3.666.5.1566)"
- "Diagnosis, Active: Infection Group" using "Infection Group Grouping Value Set (2.16.840.1.113883.3.666.5.1590)"
- "Diagnosis, Active: Laryngeal Stenosis Group" using "Laryngeal Stenosis Group Grouping Value Set (2.16.840.1.113883.3.666.5.1576)"
- "Diagnosis, Active: Liveborn Born In Hospital" using "Liveborn Born In Hospital SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.29)"
- "Diagnosis, Active: Neurologic Complications Group" using "Neurologic Complications Group Grouping Value Set (2.16.840.1.113883.3.666.5.1591)"
- "Diagnosis, Active: Newborn Affected by Placenta or Abruption Group" using "Newborn Affected by Placenta or Abruption Group Grouping Value Set (2.16.840.1.113883.3.666.5.1568)"
- "Diagnosis, Active: Respiratory Problems Group" using "Respiratory Problems Group Grouping Value Set (2.16.840.1.113883.3.666.5.1588)"
- "Diagnosis, Active: Shock and Complications Group" using "Shock and Complications Group Grouping Value Set (2.16.840.1.113883.3.666.5.1581)"
- "Diagnosis, Active: Single Live Birth" using "Single Live Birth SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.25)"
- "Diagnosis, Active: Single Liveborn Newborn Born in Hospital" using "Single Liveborn Newborn Born in Hospital Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.26)"
- "Diagnosis, Active: Social Reasons Group" using "Social Reasons Group Grouping Value Set (2.16.840.1.113883.3.666.5.1595)"
- "Encounter, Performed: Encounter Inpatient" using "Encounter Inpatient SNOMED-CT Value Set (2.16.840.1.113883.3.666.5.307)"
- "Procedure, Performed: Arterial or Umbilical Venous Cath Group" using "Arterial or Umbilical Venous Cath Group Grouping Value Set (2.16.840.1.113883.3.666.5.1582)"

Example: Healthy Term Newborn CMS 185

Data criteria (QDM Data Elements)

eMeasure Data Criteria

- "Diagnosis, Active: Birth Trauma or Injuries Group" using "Birth Trauma or Injuries Group Grouping Value Set (2.16.840.1.113883.3.666.5.1567)"
- "Diagnosis, Active: Congenital Anomalies Group" using "Congenital Anomalies Group Grouping Value Set (2.16.840.1.113883.3.666.5.1570)"
- "Diagnosis, Active: Congenital or Infantile Cerebral Palsy Group" using "Congenital or Infantile Cerebral Palsy Group Grouping Value Set (2.16.840.1.113883.3.666.5.1580)"
- "Diagnosis, Active: Drug Withdrawal Syndrome Group" using "Drug Withdrawal Syndrome Group Grouping Value Set (2.16.840.1.113883.3.666.5.1574)"
- "Diagnosis, Active: Gestational age >= 37 weeks" using "Gestational age >= 37 weeks Grouping Value Set (2.16.840.1.113883.3.666.5.1596)"
- "Diagnosis, Active: Hemolytic Disease Group" using "Hemolytic Disease Group Grouping Value Set (2.16.840.1.113883.3.666.5.1571)"
- "Diagnosis, Active: Hydrops Group" using "Hydrops Group Grouping Value Set (2.16.840.1.113883.3.666.5.1573)"
- "Diagnosis, Active: Hyperbilirubinemia Group" using "Hyperbilirubinemia Group Grouping Value Set (2.16.840.1.113883.3.666.5.1593)"
- "Diagnosis, Active: Hypoxia or Asphyxia Group" using "Hypoxia or Asphyxia Group Grouping Value Set (2.16.840.1.113883.3.666.5.1577)"
- "Diagnosis, Active: Impaired Fetal Growth Group" using "Impaired Fetal Growth Group Grouping Value Set (2.16.840.1.113883.3.666.5.1566)"
- "Diagnosis, Active: Infection Group" using "Infection Group Grouping Value Set (2.16.840.1.113883.3.666.5.1590)"
- "Diagnosis, Active: Laryngeal Stenosis Group" using "Laryngeal Stenosis Group Grouping Value Set (2.16.840.1.113883.3.666.5.1576)"
- "Diagnosis, Active: Liveborn Born In Hospital" using "Liveborn Born In Hospital SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.29)"
- "Diagnosis, Active: Neurologic Complications Group" using "Neurologic Complications Group Grouping Value Set (2.16.840.1.113883.3.666.5.1591)"
- "Diagnosis, Active: Newborn Affected by Placenta or Abruption Group" using "Newborn Affected by Placenta or Abruption Group Grouping Value Set (2.16.840.1.113883.3.666.5.1568)"
- "Diagnosis, Active: Respiratory Problems Group" using "Respiratory Problems Group Grouping Value Set (2.16.840.1.113883.3.666.5.1588)"
- "Diagnosis, Active: Shock and Complications Group" using "Shock and Complications Group Grouping Value Set (2.16.840.1.113883.3.666.5.1581)"
- "Diagnosis, Active: Single Live Birth" using "Single Live Birth SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.25)"
- "Diagnosis, Active: Single Liveborn Newborn Born in Hospital" using "Single Liveborn Newborn Born in Hospital Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.26)"
- "Diagnosis, Active: Social Reasons Group" using "Social Reasons Group Grouping Value Set (2.16.840.1.113883.3.666.5.1595)"
- "Encounter, Performed: Encounter Inpatient" using "Encounter Inpatient SNOMED-CT Value Set (2.16.840.1.113883.3.666.5.307)"
- "Procedure, Performed: Arterial or Umbilical Venous Cath Group" using "Arterial or Umbilical Venous Cath Group Grouping Value Set (2.16.840.1.113883.3.666.5.1582)"

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Example: Healthy Term Newborn CMS 185

QDE found in EHR

Diagnosis, Active: Gestational age >= 37 weeks using Gestational age >= 37 weeks Grouping Value Set (2.16.840.1.113883.3.666.5.1596)
Encounter, Performed: Encounter Inpatient using Encounter Inpatient SNOMED-CT Value Set (2.16.840.1.113883.3.666.5.307)
Diagnosis, Active: Liveborn Born In Hospital using Liveborn Born In Hospital SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.29)
Diagnosis, Active: Single Live Birth using Single Live Birth SNOMED-CT Value Set (2.16.840.1.113883.3.117.1.7.1.25)
Diagnosis, Active: Single Liveborn Newborn Born in Hospital“ using "Single Liveborn Newborn Born in Hospital Grouping Value Set (2.16.840.1.113883.3.117.1.7.1.26)
Patient Characteristic Payer using Payer Source of Payment Typology Value Set (2.16.840.1.113883.3.560.101.1“)

QDM-based QRDA Patient Data Section

Patient Data

Data Element - Value
Encounter Performed: In-Patient
Patient Characteristic Payer: Payer - Kaiser MR ID 0018786622
Diagnosis, Active: Liveborn Born In Hospital
Diagnosis, Active: Single Live Birth
Diagnosis, Active: SINGLE LB IN-HOSP W/O CS
Diagnosis, Active: 37+ comp wks gestation

Example: Healthy Term Newborn CMS 185

QRDA Incidence Report

Patient	Adam Asplundh		
Date of birth	March 1, 2012	**Sex**	Male
Race	White	**Ethnicity**	Hispanic or Latino
Contact info	Primary Home: 17 Daws Rd. Blue Bell, MA 02368, US Tel: (781)555-1212	**Patient IDs**	12345 2.16.840.1.113883.4.572
Document Id	f2d5f971-d67a-4456-8833-213f01331caA		
Document Created:	December 31, 2012, 00:00 -0400		
Author	Good Health Report Generator		
Contact info	21 North Ave. Burlington, MA 02368, US Tel: (555)555-1003		
Legal authenticator	Henry Seven signed at December 31, 2012, 00:00 -0400		
Contact info	21 North Ave. Burlington, MA 02368, US Tel: (555)555-1003		
Document maintained by	Good Health Clinic		
Contact info	Work Place: 17 Daws Rd. Blue Bell, MA 02368, US Tel: (555)555-1212		

Table of Contents

- Measure Section
- Reporting Parameters
- Patient Data

Measure Section

eMeasure Title	Version neutral identifier	eMeasure Version Number	NQF eMeasure Number	Version specific identifier
Healthy Term Newborn	ff796fd9-f99d-41fd-b8c2-57d0a59a5d8d	2	0716	40280381-3d27-5493-013d-5c2858ec1933

Reporting Parameters

- Reporting period: 01 Jan 2012 - 31 Dec 2012

Patient Data

Data Element - Value
Encounter Performed: In-Patient (LOS = 1 day) (reason: birth)
Patient Characteristic Payer: Payer - (Kaiser)
Diagnosis, Active: Liveborn Born In Hospital
Diagnosis, Active: Single Live Birth
Diagnosis, Active: SINGLE LB IN-HOSP W/O CS
Diagnosis, Active: 37+ comp wks gestation

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QRDA Category III

What is QRDA Category III (QRDA-III)?

A way of expressing aggregated calculation data for a Clinical Quality Measure (CQM) calculation.

Just the results; no patient data included

Contains data for one or more Measures

XML document (CDA-based)

QRDA-III Document

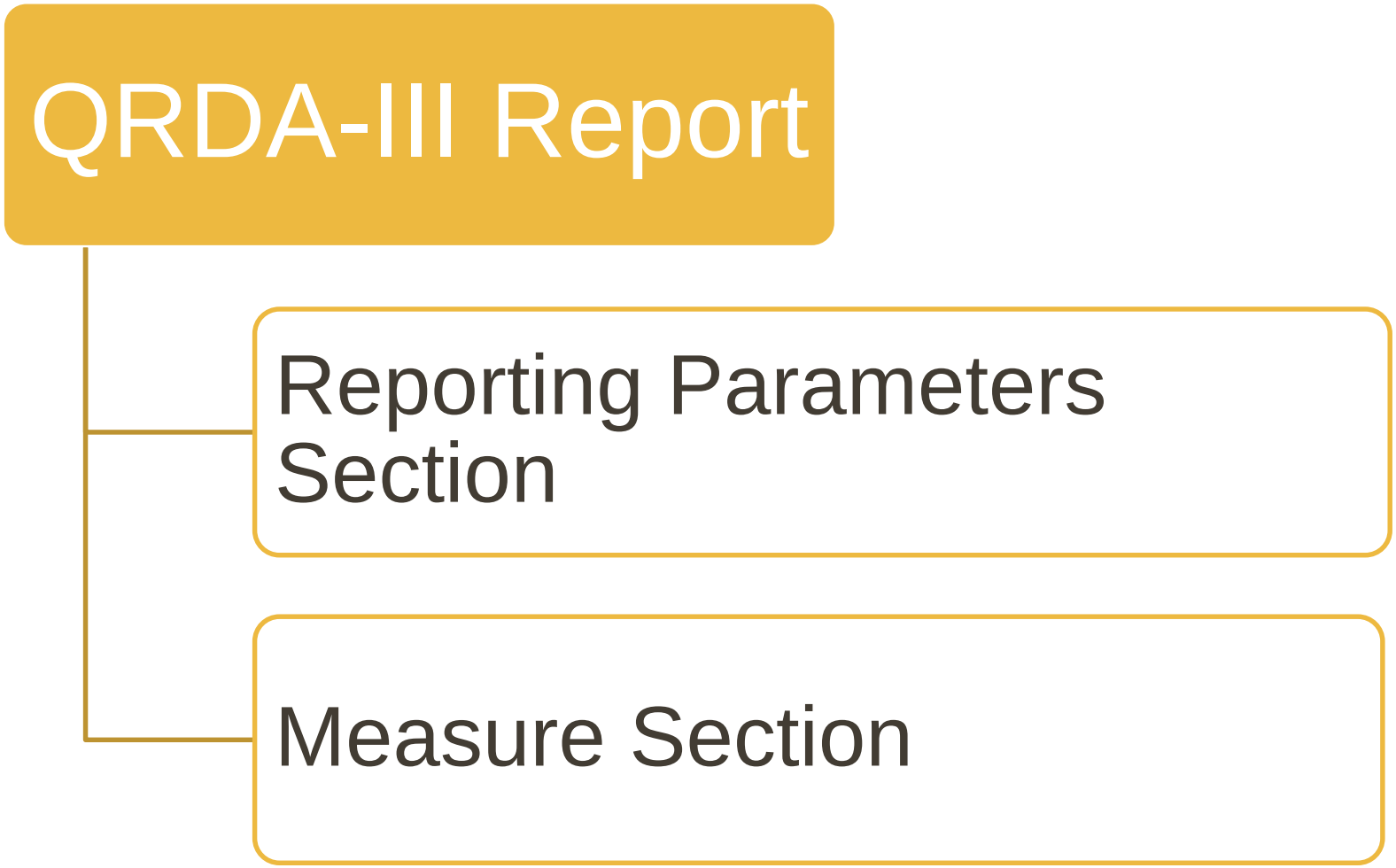
A QRDA-III* document is an aggregate quality report that contains calculated summary data for one or more measures for a specified population of patients within a particular health system over a specific period of time.

Refers to identifiers in an eMeasure or other query.

Communicates data residing in health information systems that are stripped of all patient identifiers, protecting patients and healthcare providers from the risks of inadvertent leakage of private information.

* Category III was published November 2012 and is required in Meaningful Use Stage 2 (MU2) § 170.205(k).

QRDA-III Document



QRDA-III – Aggregate Report

EHR Certification Number	medical record, device 1a2b3c (ONC) 98765 ()
Legal authenticator	Good Health Hospital signed at August 11, 2012
Document maintained by	Good Health Hospital

Table of Contents

- Reporting Parameters
- Measure Section

Reporting Parameters

- Reporting period: 01 January 2012 - 31 March 2012
- First encounter: 05 January 2012
- Last encounter: 24 March 2012

Measure Section

eMeasure Title	Version neutral identifier	eMeasure Version Number	NQF eMeasure Number	eMeasure Identifier (MAT)	Version specific identifier
Anticoagulation Therapy for Atrial Fibrillation/Flutter	03876d69-085b-415c-ae9d-9924171040c2	1	0436	71	8a4d92b2-3887-5df3-0139-013b0c87524a

Member of Measure Set: Clinical Quality Measure Set 2011-2012 - b6ac13e2-beb8-4e4f-94ed-fcc397406cd8

- **Performance Rate:** 83% (Predicted = 62%)
- **Reporting Rate:** 84%
- **Initial Patient Population:** 1000
  - **Male:** 400
  - **Female:** 600
  - **Not Hispanic or Latino:** 350
  - **Hispanic or Latino:** 650
  - **Black:** 300
  - **White:** 350
  - **Asian:** 350
  - **Payer - Medicare:** 250
  - **Payer - Medicaid:** 550
  - **Zipcode 92543:** 15
- **Denominator:** 500
  - **Male:** 200
  - **Female:** 300
  - **Not Hispanic or Latino:** 175
  - **Hispanic or Latino:** 325
  - **Black:** 150
  - **White:** 175
  - **Asian:** 175
  - **Payer - Medicare:** 125
  - **Payer - Medicaid:** 275
  - **Zipcode 92543:** 15
- **Numerator:** 400 (predicted=300)
  - **Male:** 100
  - **Female:** 300
  - **Not Hispanic or Latino:** 140
  - **Hispanic or Latino:** 260
  - **Black:** 120
  - **White:** 140
  - **Asian:** 140
  - **Payer - Medicare:** 100
  - **Payer - Medicaid:** 220
  - **Zipcode 92543:** 6
- **Denominator Exclusions:** 20
  - **Male:** 8

Anatomy of a QRDA-III Document

Document Header

- Information pertaining to the Organization, Author, Custodian …. of the report. Record Target is nulled.

Reporting Parameters Section

- Any parameters used to generate the document
- Typically just the measurement period.

Measures Section

- 1-* Measure Reference and Results

Header Requirements

QRDA-III is designed for reporting aggregate data about any quality measure.

The QRDA-III report format matches the QRDA-I report where appropriate.

RecordTarget is a required element in CDA.

QRDA-III reports data on groups of patients, thus the recordTarget ID contains a nullFlavor.

QRDA-III Reporting Parameters Section

- Conforms to QRDA-I Reporting Parameters section
- Contains Reporting Parameters and information

QRDA-III Measure Section

Conforms to QRDA-I Measure section

Contains Measure Reference and Results including:

- Measure Data
- Performance Rate for Proportion Measure

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CMS QRDA IG

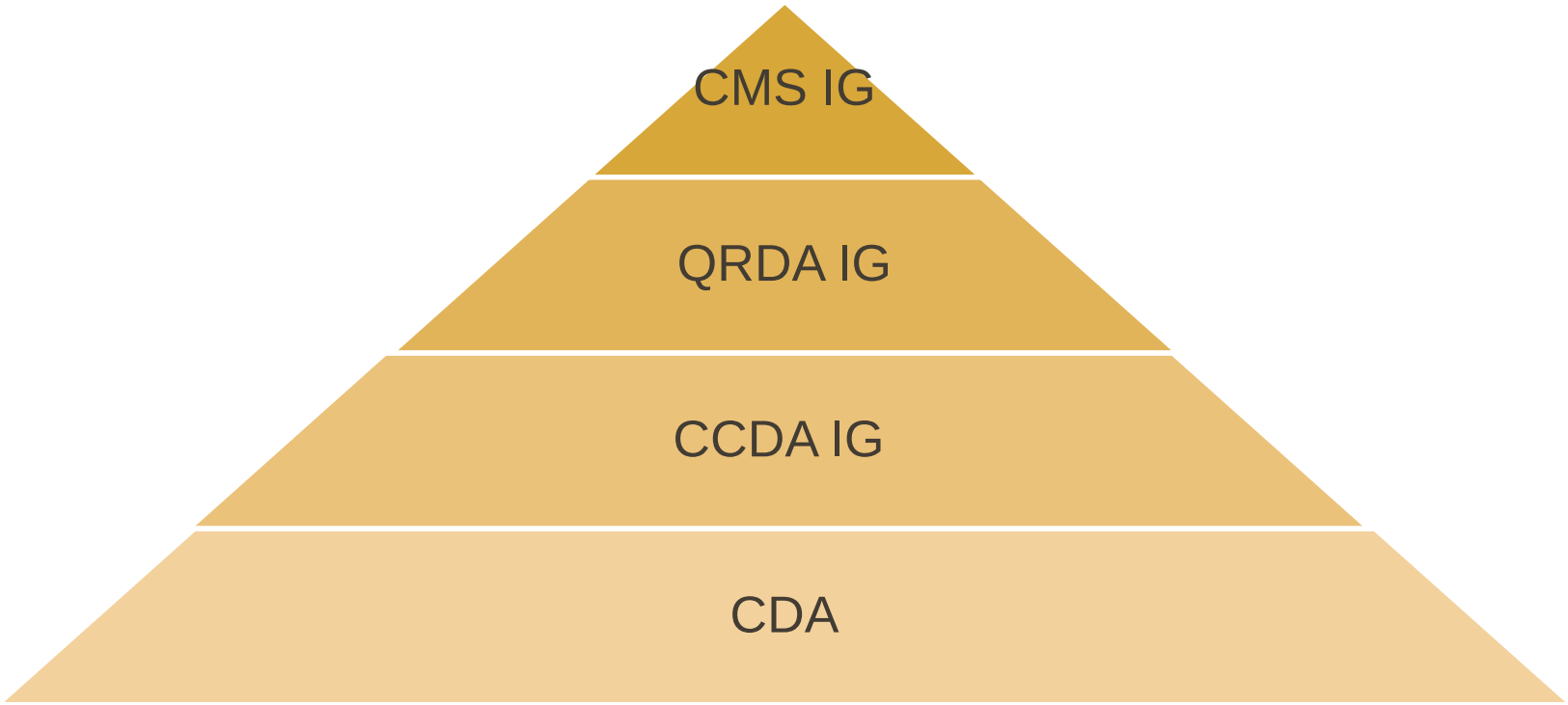
CMS QRDA Implementation Guide

An implementation guide based on QRDA I and III

Defines program-specific submission requirements

Designed for a specific submission year, e.g. 2015

CMS QRDA IG: Layering of Requirements



Summary

CDA is an XML standard for building any Clinical document

QRDA is a type of CDA document for quality reporting

- QRDA I (Patient-Level Report)
- QRDA III (Aggregate Report)

QDM provides the common data elements for all eCQMs

- Connects eCQM calculation with eCQM reporting

CMS publishes it's own QRDA implementation guide

- Enforces CMS' quality reporting program requirements