



eCQM 101 - Getting Started with Electronic Clinical Quality Measures for Quality Reporting Programs Introduction

December 2023

eCQM 101 Overview

- What is an electronic clinical quality measure (eCQM)?
- Where do I find eCQMs?
- What is included in an eCQM specification?

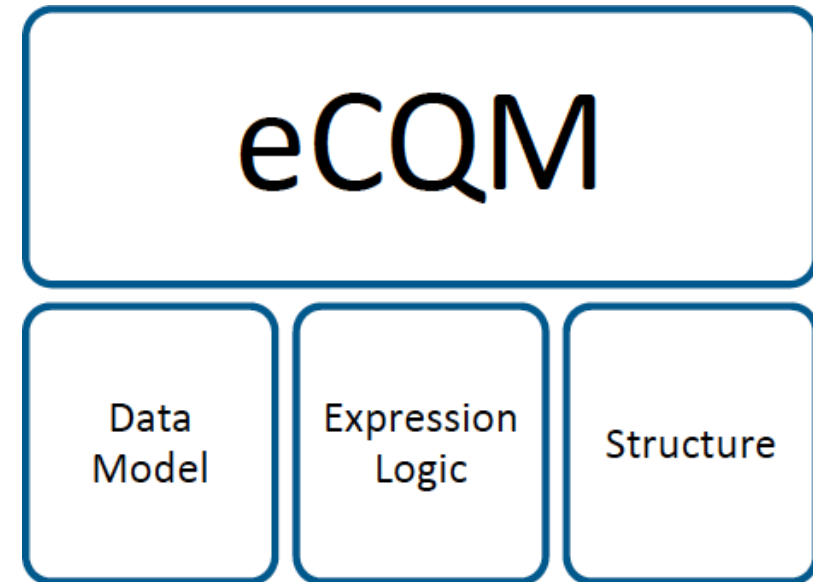
What is an eCQM?

eCQMs

- eCQMs use data electronically extracted from electronic health records and/or health information technology systems to measure the quality of health care provided.
- CMS uses eCQMs in a variety of quality reporting and incentive programs.
- Eligible Clinicians, Eligible Hospitals (EHs), and Critical Access Hospitals (CAHs) report eCQMs to CMS.

Building an eCQM

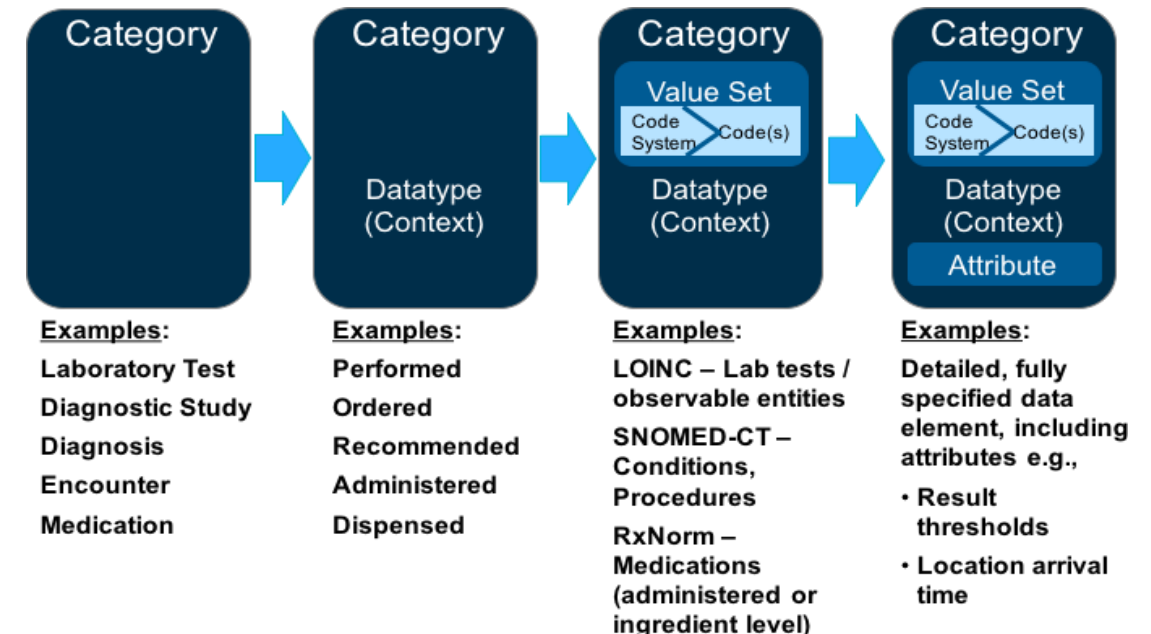
- Data Model - What data to look for in the patient's medical record to capture and report
- Expression Logic - How to calculate the results of the data captured to measure whether the 'right' care was provided
- Structure - metadata, numerator, denominator, exclusions, exceptions



Data Model

Quality Data Model (QDM)

- The QDM is an information model that defines relationships between patients and clinical concepts in a standardized format to enable electronic quality performance measurement.
- The QDM is the current structure for electronically representing quality measure concepts in eCQM development and reporting.
- QDM Data Element structure



eCQM Data Element

- QDM Category - Consists of a single clinical concept identified by a value set. A category is the highest level of definition for a QDM element. QDM versions 5.5 and 5.6 contain 22 categories.
 - Examples: Medication, Procedure, Condition/Diagnosis/Problem, and Encounter
- QDM Datatype - The context in which each category is used to describe a part of the clinical care process.
 - Examples: “Laboratory Test, Order”, “Laboratory Test, Performed”
- QDM Attribute - Provides specific details about a QDM datatype. QDM attributes represent metadata, or information about each QDM datatype that might be used in eCQM expressions to provide necessary details for calculation.
 - Example: “Laboratory Test, Performed: (result)”

eCQM Data Element Repository (DERep)

Measure Collaboration (MC) Workspace

About eCQM Concepts eCQM Testing Opportunities eCQM Data Element Repository

Electronic Clinical Quality Measure (eCQM) Data Element Repository (DERep)

The eCQM DERep provides clarification, definitions, and clinical focus for the data elements associated with eCQMs used in CMS quality reporting and incentive programs. Users can filter information by data element, eCQM, Quality Data Model (QDM) attribute, QDM category, QDM datatype, or QDM entities. See the [MC Workspace User Guide \(PDF\)](#) to learn more about how to use the MC Workspace eCQM DERep Module.

Information within the eCQM DERep is derived from the eCQM specifications, QDM, and the Value Set Authority Center (VSAC). Each eCQM data element includes information about the value set or the direct reference code (DRC), the QDM datatype, and the QDM attribute(s) used by that data element. The QDM information displayed for an eCQM reflects the version used in the development of the eCQM for a specific performance/reporting period.

Year

2024

Select a Filter Option

- Any -

eCQM Data Elements

EC eCQMs

EH/CAH eCQMs

Hybrid Measures

QQR eCQMs

EC Prerulemaking eCQMs

EH Prerulemaking eCQMs

Hybrid Pre-rulemaking Measures

QQR Pre-rulemaking eCQMs

QDM Categories

QDM Datatypes

QDM Attributes

QDM Entities

Search

Apply

Reset

QDM Datatypes

The QDM Datatypes filter provides the respective components by visiting ["Adverse Event"](#) ["Allergy Intolerance"](#)

Data elements that meet references the adverse

types available for use in eCQMs for CMS quality reporting. A QDM datatype is the part of the clinical care process. For each QDM category and datatype, the page attribute groupings for the selected QDM datatype. Learn more about QDM

document the adverse event and its corresponding value set. The relevant dateTime references the time the adverse...

The eCQM DERep provides all the data elements associated with published and tested eCQMs for use in CMS quality reporting programs including definitions and clinical focus for each data element.

Health Quality Measure Format (HQMF) and Expression Logic Clinical Quality Language (CQL)

- The HQMF is the basic electronic specification for the measure. It provides the metadata and population structure. The QDM provides the data model and CQL represents the logic used in the HQMF.
- The HQMF header includes descriptions of the measure populations, any stratifications, the measure steward, measure type, identifiers, rationale, scoring, and other details. The HQMF body includes the population criteria and the data criteria.
- CQL is a Health Level Seven International® (HL7®) human-readable authoring language standard. CQL is the expression logic used with HQMF for eCQMs.

Benefits of CQL

- Expresses measure in easily human-readable logic structured for processing a query electronically
- Provides for sharing measure logic between measures
- Harmonizes the standards used for eCQMs and Clinical Decision Support (CDS)
- Simplifies calculation engine implementation
- Can be used with multiple information data models, e.g., QDM, Fast Healthcare Interoperability Resources® (FHIR®)

Where do I find eCQMs?

eCQI Resource Center

<https://ecqi.healthit.gov/>

eCQI
RESOURCE CENTER

eCQMs
Electronic Clinical
Quality Measures

dQMs
Digital Quality
Measures

Resources
Standards, Tools,
& Resources

About
eCQI, CDS, FAQs
Engage

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Search keyword or phrases (phrase in

Electronic Clinical Quality
Improvement (eCQI) Resource Center

Transforming eCQI through collaboration,
education, and standards

Eligible Clinician eCQMs >

Eligible Hospital / Critical Access Hospital eCQMs >

Outpatient Quality Reporting eCQMs >

Featured News & Events

[View All](#)

Nov 03, 2023

[CMS Publishes 2024 Policy Changes for
the Quality Payment Program...](#)

Nov 14, 2023 @ 2:00pm EST

[CY 2023 eCQM Reporting and Data
Submission Updates](#)

ECQM

PERIOD


eCQM Title or CMSID

- Any -

- Any -


May use partial Title or ID

Find an eCQM




Get Started with eCQMs

New to eCQMs? Learn the basics
about eCQMs, development,
certification, and resources to
get started.




Educational Resources

Educational resources available
for eCQMs and eCQI,
Tools, CQL, FHIR, QDM,
and QRDA.



eCQM Standards

Key standards for the electronic
transmission of health
information used to
support eCQMs.



FHIR®

Fast Healthcare Interoperability
Resources® is a standard for
exchanging healthcare
information electronically.

↑
Top

Different ways to get to eCQMs

The screenshot displays the eCQI Resource Center website interface. At the top, the navigation bar includes the eCQI Resource Center logo, a search bar, and links for eCQMs, dQMs, Resources, About, and Log in. A blue arrow labeled "eCQM Menu" points to the eCQMs dropdown menu, which is open and shows categories: EC ECQMS (Eligible Clinician eCQMs), EH/CAH ECQMS (Eligible Hospital / Critical Access Hospital eCQMs), and OQR ECQMS (Outpatient Quality Reporting eCQMs). Another blue arrow labeled "EC, EH/CAH, and OQR eCQMs" points to these categories. A third blue arrow labeled "Find an eCQM Search" points to the search bar at the bottom of the page. The search bar contains the text "ECQM", "PERIOD", and "eCQM Title or CMSID", with a "Find an eCQM" button. The background of the website features a blue banner with the text "Electronic Clinical Quality Improvement" and "Transforming education, and" followed by three orange buttons: "Eligible Clinician eCQMs", "Eligible Hospital / Critical Access Hospital eCQMs", and "Outpatient Quality Reporting eCQMs".

eCQI
RESO

eCQM Menu

eCQMs
Electronic Clinical
Quality Measures

dQMs
Digital Quality
Measures

Resources
Standards, Tools,
& Resources

About
eCQI, CDS, FAQs
Engage

Log in
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Search keyword or phrases (phrase ii) Q

Electronic Clinical Quality Improvement
Transforming education, and

Eligible Clinician eCQMs

Eligible Hospital / Critical Access Hospital eCQMs

Outpatient Quality Reporting eCQMs

EC ECQMS

Eligible Clinician eCQMs

EH/CAH ECQMS

Eligible Hospital / Critical Access Hospital eCQMs

OQR ECQMS

Outpatient Quality Reporting eCQMs

NEW TO ECQMS?

Get Started with eCQMs

eCQM Lifecycle

MEASURE COLLABORATION

Measure Collaboration (MC) Workspace

eCQM Data Element Repository (DERep)

News & Events

3, 2023

shes 2024 Policy Changes for

Payment Program...

2023 @ 2:00pm EST

CY 2023 eCQM Reporting and Data Submission Updates

EC, EH/CAH, and OQR eCQMs

Find an eCQM Search

ECQM

PERIOD

eCQM Title or CMSID


- Any -

- Any -

May use partial Title or ID

Find an eCQM

Example: Finding Eligible Hospital/Critical Access Hospital eCQM Resources



Eligible Hospital / Critical Access Hospital eCQMs

[Receive updates on this topic](#)

Select Period: 2024 ▼ Filter By: eCQMs ▼ Apply Filters

Find older eCQM specifications in the [eCQM Standards and Tools Version](#) table.

eCQM Resources EH/CAH eCQMs About


2024 Reporting Period Eligible Hospital / Critical Access Hospital Resources

Filter Resources by

- Any - Implementation Guidance Reporting References Standards References Technical Specifications

eCQM Resources	Short Description	Published ▼
Implementation Checklist eCQM Annual Update	Implementation checklist ⓘ	May 2023
Guide for Reading eCQMs v9.0 (PDF)	Assists implementers and measured entities with information on how to read eCQM specifications ⓘ	May 2023
Hospital Quality Reporting Table of eCQMs (PDF)	List of eCQMs available for use ⓘ	Oct 2023

Example: Finding Eligible Hospital/Critical Access Hospital eCQMs



Eligible Hospital / Critical Access Hospital eCQMs

[Receive updates on this topic](#)

Select Period: 2024 Filter By: eCQMs Apply Filters

Find older eCQM specifications in the [eCQM Standards and Tools Version](#) table.

[eCQM Resources](#) **EH/CAH eCQMs** [About](#)

2024 Reporting Period Eligible Hospital / Critical Access Hospital
Total number of EH/CAH eCQMs: 12

Title	Short Name	CMS eCQM ID	NQF Number	Specifications	Notes
Anticoagulation Therapy for Atrial Fibrillation/Flutter	STK-3	CMS71v13	Not Applicable	CMS71v13.zip (ZIP)	
Antithrombotic Therapy By End of Hospital Day 2	STK-5	CMS72v12	Not Applicable	CMS72v12.zip (ZIP)	
Cesarean Birth		CMS334v5	0471e	CMS334v5.zip (ZIP)	

Annotations:

- Select Year (points to 2024)
- Number of Measures (points to 12)
- Sortable Table (points to Notes column)
- Links to Individual Measures (points to measure links)

Example: Finding Eligible Hospital/Critical Access Hospital Individual eCQM Specifications – General Information

Anticoagulation Therapy for Atrial Fibrillation/Flutter

[Receive updates on this topic](#)

Measure Information

Specifications and Data Elements

Release Notes

SELECT eCQM YEARS TO COMPARE

2023 vs 2024

Compare >

Measure Information	2024 Reporting Period
CMS eCQM ID	CMS71v13
Short Name	STK-3
NQF Number	Not Applicable
Description	Ischemic stroke patients with atrial fibrillation/flutter who are prescribed or continuing to take anticoagulation therapy at hospital discharge

Example: Finding Eligible Hospital/Critical Access Hospital Individual eCQM Specifications, Data Element Repository and Value Set Links

Anticoagulation Therapy for Atrial Fibrillation/Flutter

[Receive updates on this topic](#)

Measure Information

Specifications and Data Elements

Release Notes

HQMF, CQL, Human-Readable Files, and Technical Release Notes

Specifications

Attachment	Size
 CMS71v13.html	84.71 KB
 CMS71v13.zip (ZIP)	83.49 KB
 CMS71v13-TRN.xlsx (Excel)	22.18 KB
 CMS71v13-eCQMFlow.pdf (PDF)	250.89 KB

Data Element Repository

[Data Elements contained within CMS71v13](#)

Value Sets

[Value Sets to be used with CMS71v13](#)

Link to the DERep

Link to the Value Sets for eCQM

Hybrid Measures In Use and Pre-Rulemaking



Eligible Hospital / Critical Access Hospital eCQMs

[Receive updates on this topic](#)

Select Period Filter By

Find older eCQM specifications in the eCQM Library.

Hybrid and Pre-Rulemaking eCQMs

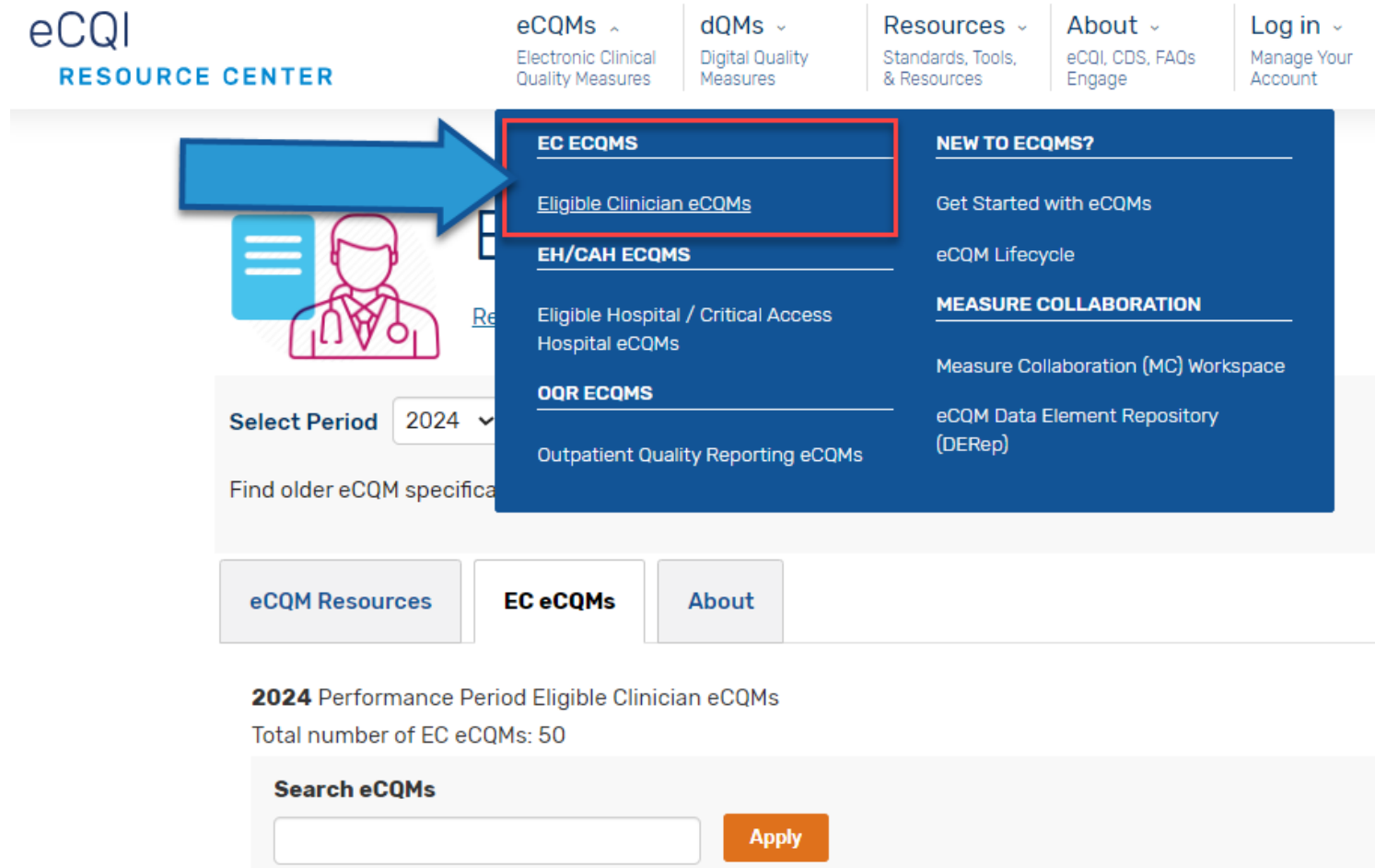
2024 Reporting Period Eligible Hospital / Critical Access Hospital eCQMs

Total number of EH/CAH eCQMs: 2

Title	Short Name	CMS eCQM ID	NQF Number	Specifications
Core Clinical Data Elements for the Hybrid Hospital-Wide (All-Condition, All-Procedure) Risk-Standardized Mortality Measure (HWM)	Hybrid HWM	CMS844v4	3502	CMS844v4.zip (ZIP)
Core Clinical Data Elements for the Hybrid Hospital-Wide Readmission (HWR) Measure with Claims and Electronic Health Record Data	Hybrid HWR	CMS529v4	2879	CMS529v4.zip (ZIP)

*2024 Mandatory reporting period for Hybrid Measures is **July 1, 2024 - June 30, 2025**

Finding Eligible Clinician eCQMs



The screenshot shows the eCQI Resource Center website. The navigation bar at the top includes links for eCQMs, dQMs, Resources, About, and Log in. A large blue arrow points to the 'Eligible Clinician eCQMs' link in the 'EC ECQMS' dropdown menu. Below the navigation bar, there is a section for '2024 Performance Period Eligible Clinician eCQMs' with a total of 50 eCQMs. A search bar is also visible at the bottom of the page.

eCQI
RESOURCE CENTER

eCQMs ^
Electronic Clinical
Quality Measures

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[Eligible Clinician eCQMs](#)

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(DERep)

Select Period 2024 ^

Find older eCQM specifica

eCQM Resources

EC eCQMs

About

2024 Performance Period Eligible Clinician eCQMs

Total number of EC eCQMs: 50

Search eCQMs

Apply

Finding Eligible Clinician eCQMs (cont.)



Eligible Clinician eCQMs

[Receive updates on this topic](#)

Select Period 2024 Filter By eCQMs Apply Filters

Find older eCQM specifications in the [eCQM Standards and Tools Version](#) table.

eCQM Resources EC eCQMs About

2024 Performance Period Eligible Clinician Resources

Filter Resources by

- Any - Implementation Guidance Reporting References Standards References Technical Specifications

eCQM Resources	Short Description	Published
Implementation Checklist eCQM Annual Update	Implementation checklist ⓘ	May 2023
Telehealth Guidance for eCQMs for Eligible Clinician 2024 Quality Reporting (PDF)	List of telehealth eligibility of eligible clinician eCQMs ⓘ	May 2023
Guide for Reading eCQMs v9.0 (PDF)	Assists implementers and measured entities with information on how to read eCQM specifications ⓘ	May 2023

Layout of tabs are the same for Eligible Clinicians, Eligible Hospitals/Critical Access Hospitals, and Outpatient Quality Reporting eCQMs

Data Element and Details

["Diagnosis": "Upper Respiratory Infection"]

eCQM Data Element

Performance/Reporting Period: 2024


Value Set Description from VSAC

CLINICAL FOCUS: The purpose of this value set is to represent concepts for a diagnosis of an acute upper respiratory infection.

DATA ELEMENT SCOPE: This value set may use a model element related to Diagnosis.

INCLUSION CRITERIA: Includes concepts that represent a diagnosis of an acute upper respiratory infection.

EXCLUSION CRITERIA: No exclusions.

Constrained to codes in the Upper Respiratory Infection value set [\(2.16.840.1.113883.3.464.1003.102.12.1022\)](#) 

QDM Datatype and Definition

"Diagnosis"

Data elements that meet criteria using this datatype should document the Condition/Diagnosis/Problem and its corresponding value set. The *onset dateTime* corresponds to the implicit start dateTime of the datatype and the *abatement dateTime* corresponds to the implicit stop dateTime of the datatype. If the *abatement dateTime* is not present, then the diagnosis is considered to still be active. 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.

Timing: The *prevalencePeriod* references the time from the *onset date* to the *abatement date*.

eCQMs using this data element:

[CMS154v12 - Appropriate Treatment for Upper Respiratory Infection \(URI\)](#)

<https://ecqi.healthit.gov/mcw/2024/ecqm-dataelement/diagnosissupperrespiratoryinfection.html>

Data Elements - Used By

Get to the same data element specifics including “eQMs using this data element” by going directly to the data element.

["Diagnosis": "Upper Respiratory Infection"]

eQm Data Element

Performance/Reporting Period: 2024


Value Set Description from VSAC

CLINICAL FOCUS: The purpose of this value set is to represent concepts for a diagnosis of an acute upper respiratory infection.

DATA ELEMENT SCOPE: This value set may use a model element related to Diagnosis.

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QDM Datatype and Definition

"Diagnosis"

Data elements that meet criteria using this datatype should document the Condition/Diagnosis/Problem and its corresponding value set. The *onset dateTime* corresponds to the implicit start dateTime of the datatype and the *abatement dateTime* corresponds to the implicit stop dateTime of the datatype. If the *abatement dateTime* is not present, then the diagnosis is considered to still be active. 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.

Timing: The *prevalencePeriod* references the time from the *onset date* to the *abatement date*.

eQMs using this data element:

[CMS154v12 - Appropriate Treatment for Upper Respiratory Infection \(URI\)](#)



eQMs using this data element

What is included within an eCQM specification?

eCQM Components

- Human-readable HyperText Markup Language (HTML) file
- Machine readable
 - HQMF XML file
 - The header identifies and classifies the document and provides important metadata about the measure
 - The body contains eCQM sections (e.g., definitions, population criteria, supplemental data elements)
 - Shared CQL Libraries (.cql, .xml, .json)
 - CQL file provides the formal description of the computable content in the measure and organized into libraries for reusing or sharing between measures and other artifacts
 - Expression Logical Model (ELM) XML is the machine-readable representation of the eCQM's logic in XML.
 - ELM JavaScript Object Notation (JSON) file is the ELM file in JavaScript Notation, as opposed to XML.

Note: *Value sets and direct reference codes in the eCQM specifications are found in the [Value Set Authority Center](#) (VSAC) and require a free Unified Medical Language System (UMLS) [license](#) to access.*

Human Readable: Header Background, Owner, Endorsement...

eCQM Title	Appropriate Treatment for Upper Respiratory Infection (URI)		
eCQM Identifier (Measure Authoring Tool)	154	eCQM Version Number	12.0.000
NQF Number	Not Applicable	GUID	e455fac0-f2cb-4074-a351-1e68a90fb7cf
Measurement Period	January 1, 20XX through December 31, 20XX		
Measure Steward	National Committee for Quality Assurance		
Measure Developer	National Committee for Quality Assurance		
Endorsed By	None		
Description	Percentage of episodes for patients 3 months that did not result in an antibiotic order		
Copyright	<p>This Physician Performance Measure (Measure) is the property of the National Committee for Quality Assurance (NCQA). NCQA makes no representations, warranties, or endorsements regarding the use of this measure. NCQA has no liability for the use of this measure. The Measure is provided for noncommercial purposes (e.g., use by health care organizations for quality improvement). All commercial uses or requests for modification of the Measure are at the discretion of NCQA. (C) 2012-2022 National Committee for Quality Assurance.</p> <p>Limited proprietary coding is contained in this measure. Users of this measure should obtain all necessary licenses from the appropriate copyright holders to ensure the accuracy of any third-party codes contained in this measure.</p> <p>CPT(R) codes, descriptions and other data are trademarks of the American Medical Association. All other trademarks are included in CPT. The AMA assumes no liability for the data contained herein. Applicable FARS/DFARS restrictions apply to government use.</p> <p>LOINC(R) copyright 2004-2022 Regenstrief Institute, Inc.</p> <p>This material contains SNOMED Clinical Terms(R) (SNOMED CT[R]) copyright 2004-2022 International Health Terminology Standards Development Organisation.</p> <p>ICD-10 copyright 2022 World Health Organization. All Rights Reserved.</p>		

The measure header in the human readable file includes:

- Measure Developer
- Measure Steward
- Description of the Measure
- Rationale and Evidence for the Measure
- Relevant Clinical Guidelines
- Copyright Restrictions
- Measure Type
- How the Measure is Scored
- Who has Endorsed the Measure
- Any Additional Guidance
- Summary of the Different Fields/Criteria

Human Readable: Body- Population Criteria

Population Criteria

▲ Initial Population

```
"Encounter with Upper Respiratory Infection" EncounterWithURI  
where AgeInMonthsAt(date from start of "Measurement Period")>= 3  
return EncounterWithURI
```

▲ Denominator

"Initial Population"

▲ Denominator Exclusions

```
"Encounters and Assessments with Hospice Patient"  
union "Encounter with Comorbid Condition for Upper Respiratory Infection"  
union "Encounter with Upper Respiratory Infection and Complication"  
union "Encounter with Competing Diagnosis for Upper Respiratory Infection"
```

▲ Numerator

```
"Encounter with Upper Respiratory Infection" EncounterWithURI  
without ["Medication, Order": "Antibiotic Medications for Upper Respiratory Infection"] OrderedAntibiotic  
such that OrderedAntibiotic.authorDatetime 3 days or less on or after start of EncounterWithURI.relevantPeriod  
return EncounterWithURI
```

▲ Numerator Exclusions

None

▲ Denominator Exceptions

None

Think of the measure logic as an equation - it relates different pieces of information together and calculates a measure result.

Human Readable: Body- Definitions Snippet

Definitions

▲ Denominator

"Initial Population"

▲ Denominator Exclusions

"Encounters and Assessments with Hospice Patient"
union "Encounter with Comorbid Condition for Upper Respiratory Infection Prior"
union "Encounter with Upper Respiratory Infection and Antibiotics Active In 30 Days Prior to the Episode Date"
union "Encounter with Competing Diagnosis for Upper Respiratory Infection"

▲ Encounter with Comorbid Condition for Upper Respiratory Infection Prior

```
( "Encounter with Upper Respiratory Infection" EncounterWithURI  
  with ["Diagnosis": "Comorbid Conditions for Respiratory Conditions"] ComorbidCondition  
  such that start of ComorbidCondition.prevalencePeriod in day of Interval[start of EncounterWithURI.relevantPeriod - 1 year, start  
  return EncounterWithURI  
)
```

▲ Encounter with Competing Diagnosis for Upper Respiratory Infection

```
( "Encounter with Upper Respiratory Infection" EncounterWithURI  
  with ["Diagnosis": "Competing Conditions for Respiratory Conditions"] CompetingCondition  
  such that CompetingCondition.prevalencePeriod starts 3 days or less on or after day of start of EncounterWithURI.relevantPeriod  
  return EncounterWithURI  
)
```

▲ Encounter with Upper Respiratory Infection

```
from  
  "Qualifying Encounters" QualifyingEncounters,  
  ["Diagnosis": "Upper Respiratory Infection"] URI  
  where URI.prevalencePeriod starts during day of QualifyingEncounters.relevantPeriod  
  or URI.prevalencePeriod overlaps before QualifyingEncounters.relevantPeriod  
  return QualifyingEncounters
```

Human Readable: Body- Functions and Terminology

Functions

▲ **Global.NormalizeInterval(pointInTime DateTime, period Interval<DateTime>)**

```
if pointInTime is not null then Interval[pointInTime, pointInTime]
else if period is not null then period
else null as Interval<DateTime>
```

Terminology

- code "Discharge to healthcare facility for hospice care (procedure)" ("SNOMEDCT Code (428371000124100)")
- code "Discharge to home for hospice care (procedure)" ("SNOMEDCT Code (428361000124107)")
- code "Hospice care [Minimum Data Set]" ("LOINC Code (45755-6)")
- code "Unlisted preventive medicine service" ("CPT Code (99429)")
- code "Yes (qualifier value)" ("SNOMEDCT Code (373066001)")
- valueset "Antibiotic Medications for Upper Respiratory Infection" (2.16.840.1.113883.3.464.1003.1190)
- valueset "Comorbid Conditions for Respiratory Conditions" (2.16.840.1.113883.3.464.1003.102.12.1025)
- valueset "Competing Conditions for Respiratory Conditions" (2.16.840.1.113883.3.464.1003.102.12.1017)
- valueset "Emergency Department Evaluation and Management Visit" (2.16.840.1.113883.3.464.1003.101.12.1010)
- valueset "Encounter Inpatient" (2.16.840.1.113883.3.666.5.307)
- valueset "Ethnicity" (2.16.840.1.114222.4.11.837)
- valueset "Home Healthcare Services" (2.16.840.1.113883.3.464.1003.101.12.1016)
- valueset "Hospice Care Ambulatory" (2.16.840.1.113883.3.526.3.1584)
- valueset "Hospice Diagnosis" (2.16.840.1.113883.3.464.1003.1165)
- valueset "Hospice Encounter" (2.16.840.1.113883.3.464.1003.1003)
- valueset "Initial Hospital Observation Care" (2.16.840.1.113883.3.464.1003.101.12.1002)
- valueset "Medical Disability Exam" (2.16.840.1.113883.3.464.1003.101.12.1073)
- valueset "Observation" (2.16.840.1.113883.3.464.1003.101.12.1086)
- valueset "Office Visit" (2.16.840.1.113883.3.464.1003.101.12.1001)
- valueset "ONC Administrative Sex" (2.16.840.1.113762.1.4.1)
- valueset "Online Assessments" (2.16.840.1.113883.3.464.1003.101.12.1089)
- valueset "Outpatient Consultation" (2.16.840.1.113883.3.464.1003.101.12.1008)
- valueset "Payer" (2.16.840.1.114222.4.11.3591)
- valueset "Preventive Care Services Established Office Visit, 18 and Up" (2.16.840.1.113883.3.464.1003.101.12.1025)
- valueset "Preventive Care Services Group Counseling" (2.16.840.1.113883.3.464.1003.101.12.1027)
- valueset "Preventive Care Services Individual Counseling" (2.16.840.1.113883.3.464.1003.101.12.1026)
- valueset "Preventive Care Services Initial Office Visit, 18 and Up" (2.16.840.1.113883.3.464.1003.101.12.1023)
- valueset "Preventive Care Services, Initial Office Visit, 0 to 17" (2.16.840.1.113883.3.464.1003.101.12.1022)
- valueset "Preventive Care, Established Office Visit, 0 to 17" (2.16.840.1.113883.3.464.1003.101.12.1024)
- valueset "Race" (2.16.840.1.114222.4.11.836)
- valueset "Telephone Visits" (2.16.840.1.113883.3.464.1003.101.12.1080)
- valueset "Upper Respiratory Infection" (2.16.840.1.113883.3.464.1003.102.12.1022)

Human Readable: Body- Data Criteria

Data Criteria (QDM Data Elements)

- "Assessment, Performed: Hospice care [Minimum Data Set]" using "Hospice care [Minimum Data Set] (LOINC Code 45755-6)"
- "Diagnosis: Comorbid Conditions for Respiratory Conditions" using "Comorbid Conditions for Respiratory Conditions (2.16.840.1.113883.3.464.1003.102.12.1025)"
- "Diagnosis: Competing Conditions for Respiratory Conditions" using "Competing Conditions for Respiratory Conditions (2.16.840.1.113883.3.464.1003.102.12.1017)"
- "Diagnosis: Hospice Diagnosis" using "Hospice Diagnosis (2.16.840.1.113883.3.464.1003.1165)"
- "Diagnosis: Upper Respiratory Infection" using "Upper Respiratory Infection (2.16.840.1.113883.3.464.1003.102.12.1022)"
- "Encounter, Performed: Emergency Department Evaluation and Management Visit" using "Emergency Department Evaluation and Management Visit (2.16.840.1.113883.3.464.1003.101.12.1010)"
- "Encounter, Performed: Encounter Inpatient" using "Encounter Inpatient (2.16.840.1.113883.3.666.5.307)"
- "Encounter, Performed: Home Healthcare Services" using "Home Healthcare Services (2.16.840.1.113883.3.464.1003.101.12.1016)"
- "Encounter, Performed: Hospice Encounter" using "Hospice Encounter (2.16.840.1.113883.3.464.1003.1003)"
- "Encounter, Performed: Initial Hospital Observation Care" using "Initial Hospital Observation Care (2.16.840.1.113883.3.464.1003.101.12.1002)"
- "Encounter, Performed: Medical Disability Exam" using "Medical Disability Exam (2.16.840.1.113883.3.464.1003.101.12.1073)"
- "Encounter, Performed: Observation" using "Observation (2.16.840.1.113883.3.464.1003.101.12.1086)"
- "Encounter, Performed: Office Visit" using "Office Visit (2.16.840.1.113883.3.464.1003.101.12.1001)"
- "Encounter, Performed: Online Assessments" using "Online Assessments (2.16.840.1.113883.3.464.1003.101.12.1089)"
- "Encounter, Performed: Outpatient Consultation" using "Outpatient Consultation (2.16.840.1.113883.3.464.1003.101.12.1008)"
- "Encounter, Performed: Preventive Care Services Established Office Visit, 18 and Up" using "Preventive Care Services Established Office Visit, 18 and Up (2.16.840.1.113883.3.464.1003.101.12.1025)"
- "Encounter, Performed: Preventive Care Services Group Counseling" using "Preventive Care Services Group Counseling (2.16.840.1.113883.3.464.1003.101.12.1027)"

Human Readable: Body- Supplemental Data Elements

Supplemental Data Elements

▲ SDE Ethnicity

["Patient Characteristic Ethnicity": "Ethnicity"]

▲ SDE Payer

["Patient Characteristic Payer": "Payer"]

▲ SDE Race

["Patient Characteristic Race": "Race"]

▲ SDE Sex

["Patient Characteristic Sex": "ONC Administrative Sex"]

Machine Readable XML: Measure Header and Logic - Snippet

```
▼<QualityMeasureDocument xmlns="urn:hl7-org:v3" xmlns:cql-ext="urn:hhs-cql:hqmf-n1-extensions:v1"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <!--
    *****
    Measure Details Section
    *****
  -->
  <typeId extension="POQM_HD000001UV02" root="2.16.840.1.113883.1.3"/>
  ▼<templateId>
    <item extension="2021-02-01" root="2.16.840.1.113883.10.20.28.1.2"/>
  </templateId>
  <id root="2c928084-8389-524e-0183-c8d7a6700f02"/>
  ▼<code code="57024-2" codeSystem="2.16.840.1.113883.6.1">
    <displayName value="Health Quality Measure Document"/>
  </code>
  <title value="Appropriate Treatment for Upper Respiratory Infection (URI)"/>
  <text value="Percentage of episodes for patients 3 months of age and older with
  not result in an antibiotic order"/>
  <statusCode code="COMPLETED"/>
  <setId root="e455fac0-f2cb-4074-a351-1e68a90fb7cf"/>
  <versionNumber value="12.0.000"/>
  ▼<author>
    ▼<responsibleParty classCode="ASSIGNED">
      ▼<representedResponsibleOrganization classCode="ORG" determinerCode="INSTANCE">
        ▼<id>
          <item root="2.16.840.1.113883.3.464"/>
        </id>
        <name>
          ▼<item>
            <part value="National Committee for Quality Assurance"/>
          </item>
        </name>
      </representedResponsibleOrganization>
    </responsibleParty>
  </author>
```

The HQMF is an xml-based standard that shows the measure content, both machine-readable logic and header, in a way that a machine can parse the content into sections and perform calculations.

While it does take some investment to create a tool that "reads" the HQMF, it can be used to import the measure and generate the measure results automatically.

Companion eCQM 101 Presentations

- Find additional eCQM presentations on the [eCQM Resources](#) page of the eCQI Resource Center
- Email the [eCQI Resource Center](#) to ask questions or provide website feedback

Acronyms

Acronym	Definition
CMS	Centers for Medicare & Medicaid Services
CQL	Clinical Quality Language
CAH	Critical Access Hospital
DERep	Data Element Repository
eCQI	Electronic Clinical Quality Improvement
eCQM	Electronic Clinical Quality Measure
EH	Eligible Hospital
ELM	Expression Logical Model

Acronyms (Cont'd)

Acronym	Definition
FHIR	Fast Healthcare Interoperability Resources
HL7	Health Level Seven International®
HQMF	Health Quality Reporting Format
HTML	Hyper Text Markup Language
JSON	JavaScript Object Notation
LOINC	Logical Observation Identifiers, Names, and Codes
QDM	Quality Data Model
UMLS	Unified Medical Language System
VSAC	Value Set Authority Center
XML	eXtensible Markup Language