ELIGIBLE CLINICIAN eCQM WEBINAR SERIES #1:
INTRODUCTION TO ELIGIBLE CLINICIAN eCQMNs
FOR PERFORMANCE PERIOD 2022

April 14, 2022
OBJECTIVES

• Understand Eligible Clinician Electronic Clinical Quality Measure (eCQM) basics

• Understand how to locate and use Eligible Clinician eCQM specifications, tools, and resources

• Understand how to interpret measure logic, using CMS125v10—Breast Cancer Screening as an example
ROADMAP FOR TODAY

• Define eCQMs and the standards used with them
• Conduct a live demonstration of the Electronic Clinical Quality Improvement (eCQI) Resource Center:
  • Learn where to access Eligible Clinician eCQM specifications and important implementation resources
  • Review the performance period 2022 human-readable specification for CMS125v10—Breast Cancer Screening
• Provide an overview of Clinical Quality Language (CQL) basics to create a foundation before reviewing CMS125v10—Breast Cancer Screening
  • Explain the measure logic, using plain language
• Review Eligible Clinician eCQM engagement opportunities and additional resources
VISIT THE eCQI RESOURCE CENTER TO ACCESS ELIGIBLE CLINICIAN eCQMS

One-stop shop for eCQMS
https://ecqi.healthit.gov

Find information on:
- Eligible Clinician eCQM specifications
- Eligible Clinician eCQM standards
- Eligible Clinician eCQM educational materials
- Engaging with the eCQM community
WHAT IS AN eCQM?

eCQMs use data electronically extracted from electronic health records (EHRs) or health information technology systems to measure the quality of health care provided.

- Health Quality Measure Format (HQMF)
- Quality Data Model (QDM)
- Clinical Quality Language (CQL)
- Quality Reporting Document Architecture (QRDA)

Source: https://ecqi.healthit.gov/standards-summary?qt-standards=0
CQL BASICS

Population Criteria

Initial Population

```
exists (["Patient Characteristic Sex": "Female"])
   and exists ["Patient Characteristic Birthdate": "Birth date"] BirthDate
   where Global."CalendarAgeInYearsAt" (BirthDate.birthDatet ime, start of "Measurement Period") in Interval[51, 74]
   and exists ( AdultOutpatientEncounters "Qualifying Encounters"
     union "Telehealth Services"
   )
```
CQL BASICS

Definitions

AdultOutpatientEncounters Qualifying Encounters

Frailty.LT1 Advanced Illness and Frailty Exclusion Not Including Over Age 80

Functions

Global.CalendarAgeInYearsAt(BirthDateTime DateTime, AsOf DateTime)

Global.NormalizeInterval(pointInTime DateTime, period Interval<DateTime>)
CQL BASICS: GENERIC POPULATION CRITERIA

Initial Population = C

= B + Age

= A + Diagnosis

= Encounters
CQL BASICS: DEFINITION ANATOMY

Definitions are made up of:

- Library alias
- Name
- Expression

```cql
AdultOutpatientEncounters("Qualifying Encounters")

// Example expression
("Encounter, Performed": "Office Visit")
union ("Encounter, Performed": "Annual Wellness Visit")
union ("Encounter, Performed": "Preventive Care Services - Established Office Visit, 18 and Up")
union ("Encounter, Performed": "Preventive Care Services-Initial Office Visit, 18 and Up")
union ("Encounter, Performed": "Home Healthcare Services")
ValidEncounter
where ValidEncounter.relevantPeriod during "Measurement Period"
```
CQL BASICS: DEFINITION ANATOMY

Source: https://ecqi.healthit.gov/qdm
# DEFINITION ANATOMY—DIRECT REFERENCE CODES

**Terminology**

- code "Birth date" ("LOINC Code (21112-8)"")
- code "Discharge to healthcare facility for hospice care (procedure)" ("SNOMEDCT Code (428371000124100)"")
- code "Discharge to home for hospice care (procedure)" ("SNOMEDCT Code (428361000124107)"")
- code "Functional Assessment of Chronic Illness Therapy - Palliative Care Questionnaire (FACIT-Pal)" ("LOINC Code (71007-9)"")
- code "Left (qualifier value)" ("SNOMEDCT Code (7771000)"")
- code "Right (qualifier value)" ("SNOMEDCT Code (24028007)"")

- valueset "Acute Inpatient" (2.16.840.1.113883.3.464.1003.101.12.1083)
- valueset "Advanced Illness" (2.16.840.1.113883.3.464.1003.110.12.1082)
- valueset "Annual Wellness Visit" (2.16.840.1.113883.3.526.3.1240)
- valueset "Bilateral Mastectomy" (2.16.840.1.113883.3.464.1003.198.12.1005)
- valueset "Care Services in Long-Term Residential Facility" (2.16.840.1.113883.3.464.1003.101.12.1014)
- valueset "Dementia Medications" (2.16.840.1.113883.3.464.1003.196.12.1510)
- valueset "Emergency Department 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 "Female" (2.16.840.1.113883.3.560.100.2)
- valueset "Frailty Device" (2.16.840.1.113883.3.464.1003.118.12.1300)

DEFINITION ANATOMY—VALUE SETS

COMMON CQL OPERATORS

Operators

• >=
• exists
• overlaps
• during
• union
• intersect

Interval comparison operators:
COMMON CQL OPERATORS—UNION

Example: Combining a list of encounters

// AdultOutpatientEncounters.Qualifying Encounters

( ["Encounter, Performed": "Office Visit"]
union ["Encounter, Performed": "Annual Wellness Visit"]
union ["Encounter, Performed": "Preventive Care Services - Established Office Visit, 18 and Up"]
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union ["Encounter, Performed": "Home Healthcare Services" ] ) ValidEncounter
where ValidEncounter.relevantPeriod during "Measurement Period"
COMMON CQL OPERATORS—OVERLAPS
INITIAL POPULATION—CMS125V10

Women 51–74 years of age with a visit during the measurement period

Initial Population:
exists ("Patient Characteristic Sex": "Female")
and exists ("Patient Characteristic Birthdate": "Birth date") BirthDate
where Global."CalendarAgeInYearsAt" (BirthDate.birthDatetime, start of “Measurement Period”) in Interval[51,74)
and exists (AdultOutpatientEncounters."Qualifying Encounters" union "Telehealth Services")

AdultOutpatientEncounters.Qualifying Encounters
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union ["Encounter, Performed": "Home Healthcare Services"] ) ValidEncounter where ValidEncounter.relevantPeriod
during "Measurement Period"

Telehealth Services
(["Encounter, Performed": "Online Assessments"] union “Encounter, Performed”: “Telephone Visits”)
TelehealthEncounter where TelehealthEncounter.relevantPeriod during “Measurement Period”
Initial Population—CMS125V10

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exists ("Patient Characteristic Sex": “Female")
and exists [“Patient Characteristic Birthdate”: “Birth date”] BirthDate
where Global.‘CalendarAgeInYearsAt’ (BirthDate.birthDatetime, start of “Measurement Period”) in Interval[51,74)
and exists (AdultOutpatientEncounters.‘Qualifying Encounters” (union “Telehealth Services” )

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Telehealth Services
( ["Encounter, Performed": "Online Assessments"] union "Encounter, Performed": "Telephone Visits“)
TelehealthEncounter where TelehealthEncounter.relevantPeriod during “Measurement Period”
DENOMINATOR—CMS125V10

Equals initial population

Denominator:
“Initial Population”
DENOMINATOR EXCLUSIONS—CMS125V10

Women who had or have a history of bilateral mastectomy, or for whom there is evidence of a right and left unilateral mastectomy

Patients 66 and older with an indication of frailty for any part of the measurement period who meet any of the following criteria during the measurement period or the year prior:

- Advanced illness with two outpatient encounters
- Advanced illness with one inpatient encounter
- Taking dementia medications

Patients 66 and older who are living long term in an institution for more than 90 consecutive days during the measurement period

Patients receiving palliative care during the measurement period

Denominator Exclusions:
Hospice.‘Has Hospice’
or ((exists (“Right Mastectomy Diagnosis”) or exists (“Right Mastectomy Procedure”))
and (exists(“Left Mastectomy Diagnosis”) or exists (“Left Mastectomy Procedure”)))
or exists “Bilateral Mastectomy Diagnosis” or exists “Bilateral Mastectomy Procedure
or FrailtyLTI.‘Advanced Illness and Frailty Exclusion Not Including Over Age 80”
or (exists [“Patient Characteristic Birthdate”: “Birth date”] BirthDate where (Global.‘CalendarAgeInYearsAt’
(BirthDate.birthDatetime, start of “Measurement Period”) >=65) and FrailtyLTI.‘Has Long Term Care Periods Longer Than 90
Consecutive Days”)
or PalliativeCare.‘Palliative Care in the Measurement Period’
Women who had or have a history of bilateral mastectomy, or for whom there is evidence of a right and left unilateral mastectomy

Denominator Exclusions:

or ((exists ("Right Mastectomy Diagnosis") or exists ("Right Mastectomy Procedure"))
and (exists("Left Mastectomy Diagnosis") or exists ("Left Mastectomy Procedure")))

or exists "Bilateral Mastectomy Diagnosis” or exists “Bilateral Mastectomy Procedure"

Right Mastectomy Diagnosis

{"Diagnosis": “Status Post Right Mastectomy”} RightMastectomyProcedure union
{"Diagnosis": “Unilateral Mastectomy, Unspecified Laterality”} UnilateralMastectomyDiagnosis
where UnilateralMastectomyDiagnosis.anatomicalLocationSite ~ “Right (qualifier value)"

RightMastectomy where RightMastectomy.prevalencePeriod starts on or before end of “Measurement Period”

Right Mastectomy Procedure

{"Procedure, Performed": “Unilateral Mastectomy Right”} UnilateralMastectomyRightPerformed
where Global."NormalizeInterval"

(UnilateralMastectomyRightPerformed.relevantDatetime, UnilateralMastectomyRightPerformed.relevantPeriod ends on or before end of “Measurement Period”

Function:

Global.NormalizeInterval(pointInTime DateTime, periodInterval<DateTime>)

if pointInTime is not null then

Interval[pointInTime, pointInTime]

else if period is not null then period

else null as Interval<DateTime>
Denominator Exclusions—CMS125V10

Women who had or have a history of bilateral mastectomy, or for whom there is evidence of a right and left unilateral mastectomy

Denominator Exclusions:

or ((exists ("Right Mastectomy Diagnosis") or exists ("Right Mastectomy Procedure"))
  and (exists("Left Mastectomy Diagnosis") or exists ("Left Mastectomy Procedure")))

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Right Mastectomy Diagnosis

("Diagnosis": “Status Post Right Mastectomy”] RightMastectomyProcedure union ("Diagnosis": “Unilateral Mastectomy, Unspecified Laterality”] UnilateralMastectomyDiagnosis where UnilateralMastectomyDiagnosis.anatomicalLocationSite ~ “Right (qualifier value)"

RightMastectomy where RightMastectomy.prevalencePeriod starts on or before end of “Measurement Period"

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DENOMINATOR EXCLUSIONS—CMS125V10

Women who had or have a history of bilateral mastectomy, or for whom there is evidence of a right and left unilateral mastectomy

Denominator Exclusions:

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Right Mastectomy Diagnosis

([“Diagnosis”: “Status Post Right Mastectomy”] RightMastectomyProcedure union ([“Diagnosis”: “Unilateral Mastectomy, Unspecified Laterality”] UnilateralMastectomyDiagnosis where UnilateralMastectomyDiagnosis.anatomicalLocationSite ~ “Right (qualifier value)”))
RightMastectomy where RightMastectomy.prevalencePeriod starts on or before end of “Measurement Period”

Right Mastectomy Procedure

([“Procedure, Performed”: “Unilateral Mastectomy Right”] UnilateralMastectomyRightPerformed where Global.”NormalizeInterval”
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DENOMINATOR EXCLUSIONS—CMS125V10

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Denominator Exclusions:

\[
\text{or (exists ("Right Mastectomy Diagnosis") or exists ("Right Mastectomy Procedure") and (exists("Left Mastectomy Diagnosis") or exists ("Left Mastectomy Procedure"))) or exists “Bilateral Mastectomy Diagnosis” or exists “Bilateral Mastectomy Procedure”}
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Right Mastectomy Diagnosis

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RightMastectomy where RightMastectomy.prevalencePeriod starts on or before end of “Measurement Period”

Terminology

- code "Birth date" ("LOINC Code (21112-8)"")
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- code "Discharge to home for hospice care (procedure)" ("SNOMEDCT Code (428361000124107)"")
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DENOMINATOR EXCLUSIONS—CMS125V10

Women who had or have a history of bilateral mastectomy, or for whom there is evidence of a right and left unilateral mastectomy

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Function:

Global.NormalizeInterval(pointInTime DateTime, periodInterval<DateTime>)

if pointInTime is not null then

Interval[pointInTime, pointInTime]

else if period is not null then period

else null as Interval<DateTime>
DENOMINATOR EXCLUSIONS—CMS125V10

Women who had or have a history of bilateral mastectomy, or for whom there is evidence of a right and left unilateral mastectomy

Denominator Exclusions:

or ((exists (“Right Mastectomy Diagnosis”) or exists (“Right Mastectomy Procedure”))

and (exists (“Left Mastectomy Diagnosis”) or exists (“Left Mastectomy Procedure”)))

or exists “Bilateral Mastectomy Diagnosis” or exists “Bilateral Mastectomy Procedure

Left Mastectomy Diagnosis

([“Diagnosis”": “Status Post Left Mastectomy”] union ([“Diagnosis”": “Unilateral Mastectomy, Unspecified Laterality”]

UnilateralMastectomyDiagnosis where UnilateralMastectomyDiagnosis.anatomicalLocationSite ~ “Left (qualifier value)”)

LeftMastectomy

where LeftMastectomy.prevalencePeriod starts on or before end of “Measurement Period”

Left Mastectomy Procedure

([“Procedure, Performed”": “Unilateral Mastectomy Left”] UnilateralMastectomyLeftPerformed where Global.”NormalizeInterval”

(UnilateralMastectomyLeftPerformed.relevantDatetime, UnilateralMastectomyLeftPerformed.relevantPeriod ends on or before end of “Measurement Period”

Function:

Global.NormalizeInterval(pointInTime DateTime, 
periodInterval<DateTime>)

if pointInTime is not null then

Interval[pointInTime, pointInTime]

else if period is not null then period

else null as Interval<DateTime>
DENOMINATOR EXCLUSIONS—CMS125V10

Women who had or have a history of bilateral mastectomy, or for whom there is evidence of a right and left unilateral mastectomy

Denominator Exclusions:

or ((exists (“Right Mastectomy Diagnosis”) or exists (“Right Mastectomy Procedure”))
and (exists (“Left Mastectomy Diagnosis”) or exists (“Left Mastectomy Procedure”)))
or exists “Bilateral Mastectomy Diagnosis” or exists “Bilateral Mastectomy Procedure

Left Mastectomy Diagnosis

([“Diagnosis”: “Status Post Left Mastectomy”] union ([“Diagnosis”: “Unilateral Mastectomy, Unspecified Laterality”]
UnilateralMastectomyDiagnosis where UnilateralMastectomyDiagnosis.anatomicalLocationSite ~ “Left (qualifier value)”)) LeftMastectomy
where LeftMastectomy.prevalencePeriod starts on or before end of “Measurement Period”

Left Mastectomy Procedure

([“Procedure, Performed”: “Unilateral Mastectomy Left”] UnilateralMastectomyLeftPerformed where Global.“NormalizeInterval”
(UnilateralMastectomyLeftPerformed.relevantDatetime, UnilateralMastectomyLeftPerformed.relevantPeriod ends on or before
derived from “Measurement Period”

Function:

Global.NormalizeInterval(pointInTime DateTime,
periodInterval<DateTime>)
if pointInTime is not null then
   Interval[pointInTime, pointInTime]
else if period is not null then period
else null as Interval<DateTime>
Women who had or have a history of bilateral mastectomy, or for whom there is evidence of a right and left unilateral mastectomy

**Bilateral Mastectomy Diagnosis**
([“Diagnosis”: “History of bilateral mastectomy”] BilateralMastectomyHistory where BilateralMastectomyHistory.prevalencePeriod starts on or before end of “Measurement Period”

**Bilateral Mastectomy Procedure**
([“Procedure, Performed”: “Bilateral Mastectomy”] BilateralMastectomyPerformed where Global.”NormalizeInterval” (BilaterallMastectomyPerformed.relevantDatetime, UnilateralMastectomyLeftPerformed.relevantPeriod ends on or before end of “Measurement Period”

Function:
Global.NormalizeInterval(pointInTime DateTime, periodInterval<DateTime>)
if pointInTime is not null then
Interval[pointInTime, pointInTime]
else if period is not null then period
else null as Interval<DateTime>

or ((exists (“Right Mastectomy Diagnosis”) or exists (“Right Mastectomy Procedure”))
and (exists(“Left Mastectomy Diagnosis”) or exists (“Left Mastectomy Procedure”)))
or exists “Bilateral Mastectomy Diagnosis” or exists “Bilateral Mastectomy Procedure"
NUMERATOR—CMS125V10

Women with one or more mammograms during the 27 months prior to the end of the measurement period

Numerator:
exists ([“Diagnostic Study, Performed”: “Mammography”] Mammogram where (Global.“NormalizeInterval”(Mammogram.relevantDatetime, Mammogram.relevantPeriod) ends 27 months or less on or before day of end of “Measurement Period”))
NUMERATOR—CMS125V10

Women with one or more mammograms during the 27 months prior to the end of the measurement period

Numerator:
exists ([“Diagnostic Study, Performed”: “Mammography”] Mammogram
where (Global.“NormalizeInterval”(Mammogram.relevantDatetime, Mammogram.relevantPeriod) ends 27 months or less on or before day of end of “Measurement Period”))
NUMERATOR—CMS 125V10

Women with one or more mammograms during the 27 months prior to the end of the measurement period

Numerator:
exists ([“Diagnostic Study, Performed”: “Mammography”] Mammogram where (Global."NormalizeInterval"(Mammogram.relevantDatetime, Mammogram.relevantPeriod) ends 27 months or less on or before day of end of “Measurement Period”))
NUMERATOR—CMS 125V10

Women with one or more mammograms during the 27 months prior to the end of the measurement period

Numerator:
exists ([“Diagnostic Study, Performed”: “Mammography”] Mammogram
where (Global."NormalizeInterval"(Mammogram.relevantDatetime, Mammogram.relevantPeriod) ends 27 months or less on or before day of end of “Measurement Period”))

Function:
Global.NormalizeInterval(pointInTime DateTime, periodInterval<DateTime>)
  if pointInTime is not null then Interval[pointInTime, pointInTime]
  else if period is not null then period
  else null as Interval<DateTime>
NUMERATOR—CMS 125V10

Women with one or more mammograms during the 27 months prior to the end of the measurement period

Numerator:
exists (["Diagnostic Study, Performed": “Mammography"] Mammogram where (Global."NormalizeInterval"(Mammogram.relevantDatetime, Mammogram.relevantPeriod) ends 27 months or less on or before day of end of “Measurement Period”))

Function:
Global.NormalizeInterval(pointInTime DateTime, periodInterval<DateInterval>)
  if pointInTime is not null then Interval[pointInTime, pointInTime]
  else if period is not null then period
  else null as Interval<DateInterval>
## eCQM RESOURCES

| **eCQI Resource Center** | • The one-stop shop for the most current resources to support electronic clinical quality improvement  
• The eCQI Resource Center will include CRP announcements |
|-------------------------|--------------------------------------------------------------------------------------------------|
| **Office of National Coordinator Project Tracking System (ONC Jira) eCQM Issue Tracker** | • CMS receives questions on eCQMs through ONC Jira, which is used as a collaborative platform for logging, tracking, and discussing issues related to program eCQMs  
• Jira uses platforms, known as trackers or projects. The Jira eCQM Issue Tracker addresses questions specific to eCQM specifications, from questions on measure intent, logic implementation, and value set coding, to eCQM reporting and recommendations for updates to specifications.  
• Measure developers use the eCQM Issue Tracker as a source for gathering new requirements for the eCQM Annual Update and are included as Change Review Process (CRP) tickets on the eCQM Issue Tracker summary page. |
ENgagement opportunities

• Take part in eCQI Resource Center events
  • QDM User Group
  • Cooking with CQL, QDM, and Fast Healthcare Interoperability Resources®
  • Cypress Tech Talks

• Provide public comment
  • Regulatory rulings
  • Change review process (CRP)
  • Jira

• HL7 work groups
  • Clinical Quality Information
  • Clinical Decision Support
  • Clinical Information Modeling Initiative
  • Vocabulary
  • Patient Care
  • Orders and Observations
  • Clinical Interoperability Council
  • [link]

[link]
ADDITIONAL RESOURCES

Guide for Reading eCQMs
• To help providers, quality analysts, implementers, and health information technology vendors understand eCQMs and their related documents

eCQM Logic and Implementation Guide
• Provide general implementation guidance, including defining how specific logic and data elements should be conceptualized and addressed during eCQM implementation

Value Set Authority Center
• A repository for value sets across authors and stewards, with downloadable access to all official versions of value sets in the eCQMs
Pioneers in Quality Video Short—CQL Basics
• https://ecqi.healthit.gov/cql?qt-tabs_cql=2

CMS Measures Management System Blueprint
• A standardized approach to developing and maintaining quality measures used in quality initiatives and programs
• https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/MMS/MMS-Blueprint

QDM
• QDM is an information model that defines relationships between patients and clinical concepts in a standardized format
• https://ecqi.healthit.gov/qdm

CQL
• CQL is the new expression logic used in the Health Quality Forum and has replaced the QDM; the logic in all eCQMs you will review will be in CQL
• https://ecqi.healthit.gov/cql