How to Implement eCQM Annual Updates

November 2023
Objectives

- Determine how to identify changes in the electronic clinical quality measure (eCQM) updates that could impact an existing eCQM implementation
- Evaluate existing processes for managing workflow when implementing a quality measure
- Understand the changes in measure specifications from one eCQM Annual Update to the next
Overview

- Overview of eCQM updates
- Preparing for the implementation of eCQM updates
- Step-by-step explanation of eCQM updates
  - Step 1: Get updates
  - Step 2: Gap analysis
  - Step 3: Data capture and workflow redesign
  - Step 4: Data extraction and eCQM calculation
  - Step 5: Validation
  - Step 6: Downstream uses of eCQM results
- Help regarding implementing eCQMs and eCQM updates
- Help regarding use of eCQMs in CMS quality programs
eCQM Updates
What changes and why?

- CMS makes updates to the eCQMs adopted for submission in CMS programs annually. CMS requires the use of updated eCQMs for all its quality programs.
- Updates to eCQMs may include:
  - Codes system changes – SNOMED CT, RxNorm, etc.
  - Logic, data model, value set and direct reference code (DRC) updates
  - Clinical updates based on new research, literature, and clinical guidelines
  - Clarifications based on implementation issues reported in the Office of the National Coordinator (ONC) Project Tracking System (JIRA)
  - Changes based on advances in technical standards and data exchange protocols
When does it change?

**eCQM Annual Timeline**

The eCQM Annual Timeline is a general guide provided for referencing scheduled updates for eCQMs, tools, reporting, rules, public comments and more. The timelines listed are subject to change. [Interactive pdf](https://ecqi.healthit.gov/ecqm-annual-timeline) (PDF)

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### eCQM Annual Timeline by Calendar Quarter

**1st Quarter**

**eCQM**
- CMS Measures Inventory Tool Updated
- CMS Quality Reporting Document Architecture Implementation Guide Public Comments
- Draft Electronic Clinical Quality Measure Specifications Posted in ONC Project Tracking System (Jira) for Public Testing and Comments

**Reporting**
- Inpatient Quality Reporting Submission Closed
- MIPS Quality Measure Benchmarks (ZIP)
- Quality Payment Program Reporting Submission Open and Closed

**Rule**
- Pre-Rulemaking: Measures Under Consideration Opens for New Measures
- Pre-Rulemaking: Pre-Rulemaking Measure Review Publishes Final Report

[https://ecqi.healthit.gov/ecqm-annual-timeline](https://ecqi.healthit.gov/ecqm-annual-timeline)
eCQM Implementation Process

1. Get Update
2. Gap analysis
3. Data capture and workflow redesign
4. Data extraction and eCQM calculation
5. Validation
6. Downstream uses of eCQM results
Preparing for the Implementation of eCQM Updates
eCQM Implementation Checklist

Preparation Checklist

1. Sign up for a Unified Medical Language System (UMLS) account to view codes within the value sets in VSAC

2. Sign up for an ONC Project Tracking Jira account to ask technical questions regarding eCQMs

3. Sign up for eCQM page change notifications on the eCOI Resource Center to receive updates on specific eCQMs

4. Review the code system versions used in the eCQM specification for the upcoming reporting/performance year

5. Review the standards, tools, and documents used to support the eCQM specification for the upcoming reporting/performance year

https://ecqi.healthit.gov/ecqm-implementation-checklist
Pre-Check

- Sign up for a [Unified Medical Language System (UMLS)](https://ecqi.healthit.gov/ecqm-implementation-checklist) account
- Sign up for an [ONC Project Tracking System (JIRA)](https://ecqi.healthit.gov/ecqm-implementation-checklist) account
- Sign up for an [Electronic Clinical Quality Improvement (eCQI) Resource Center](https://ecqi.healthit.gov/ecqm-implementation-checklist) account
- Subscribe to the [Eligible Clinician (EC)](https://ecqi.healthit.gov/ecqm-implementation-checklist) and/or [Eligible Hospital (EH)/Critical Access Hospital (CAH)](https://ecqi.healthit.gov/ecqm-implementation-checklist) pages for alerts when the EC or EH/CAH pages have been updated
- Review the code versions used in the Annual Update
  - [eCQM Pre-Publication document](https://ecqi.healthit.gov/ecqm-implementation-checklist) and the [Value Set Authority Center (VSAC)](https://ecqi.healthit.gov/ecqm-implementation-checklist) download page
- Review the standards, tools, and documents used in the Annual Update

[https://ecqi.healthit.gov/ecqm-implementation-checklist](https://ecqi.healthit.gov/ecqm-implementation-checklist)
Step-by-Step Process for Implementing eCQM Updates

Step 1: Get Updates
Get Update

1. Gap analysis
2. Data capture and workflow redesign
3. Data extraction and eCQM calculation
4. Validation
5. Downstream uses of eCQM results
What eCQM materials are updated?

- Implementation Checklist
- Guide for Reading eCQMs
- eCQM Tables
- Specifications (human-readable and machine-readable XMLs)
- Technical Release Notes
- Value Sets, Binding Parameter Specification (BPS), DRCs
- Measure Logic and Guidance Document
- Telehealth Guidance
- eCQM Flows*
- CMS Quality Reporting Document Architecture (QRDA) Implementation Guides*

*Usually published after the Annual Update

https://ecqi.healthit.gov/eh-cah
https://ecqi.healthit.gov/ep-ec
eCQM Implementation Checklist

Follow the Implementation Checklist steps to implement updates to the eCQMs

1.) Access the appropriate eCQM Annual Update

2.) Secure detailed information about each measure

3.) Download value sets

4.) Prepare to implement the updates by understanding changes to the eCQM

5.) Prepare to report the updated eCQMs

6.) Report eCQMs

7.) Reach out for help

https://ecqi.healthit.gov/ecqm-implementation-checklist
Implementation Checklist

- Access the appropriate eCQM Annual Update on the eCQI Resource Center Eligible Clinician and/or EH/CAH pages
- Secure detailed information about each measure
  - Click into an eCQM on the online table to view detailed human-readable information on the measure
  - Download and open zip files for the individual eCQMs your organization uses
  - Open the Hyper Text Markup Language (HTML) document that contains the human readable measure specification description
  - Review Health Quality Measure Format (HQMF) document (including specific reading instructions)
  - Review data elements for the eCQM in the eCQM Data Element Repository (DERep)
  - Use the Measure Compare feature on the individual measure pages to view specification changes

https://ecqi.healthit.gov/ecqm-implementation-checklist
• Download Value Sets
  ▪ Download corresponding annual update value sets, DRCs, and BPS from the VSAC using your UMLS license log in
• Use the Value Set Comparison Tool to identify changes to value sets
• Prepare to implement the updates by understanding changes to the eCQMs
• Prepare to report the updated eCQMs
• Reach out for help

https://ecqi.healthit.gov/ecqm-implementation-checklist
Where do I find the updated specifications and materials?

https://ecqi.healthit.gov/
Finding EH/CAH eCQMs and Materials

Eligible Hospital / Critical Access Hospital eCQMs

Select Year

Measure dropdown

eCQM Materials

https://ecqi.healthit.gov/eh-cah
## Eligible Hospital / Critical Access Hospital eCQMs

### Select Period: 2024 Filter By: eCQMs

Find older eCQM specifications in the eCQM Standard based on the period above table.

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### 2024 Reporting Period Eligible Hospital / Critical Access Hospital eCQMs

Total number of EH/CAH eCQMs: 12

<table>
<thead>
<tr>
<th>Title</th>
<th>Short Name</th>
<th>CMS eCQM ID</th>
<th>NQF Number</th>
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[https://ecqi.healthit.gov/eh-cah](https://ecqi.healthit.gov/eh-cah)
### Finding EH/CAH eCQMs and Materials (Cont’d)

**2024 Reporting Period Eligible Hospital / Critical Access Hospital eCQMs**

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There is a known issue on CMS986v2. See issue [EKL-212](#) on the ONC eCQM Known Issues Dashboard for details.
Example: Individual Measure Page - Downloadable Measure Specifications and DERep

Anticoagulation Therapy for Atrial Fibrillation/Flutter

Receive updates on this topic

Specifications

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Data Element Repository

Data Elements contained within CMS71v13

Value Sets

Value Sets to be used with CMS71v13

Measure Specification

• Contents of the measure specifications:
  ▪ Human-Readable HTML file - Provides high level understanding of the element definition and the underlying logic used in measure calculation
  ▪ Machine-Readable (XML) - Translates metadata from human-readable header into computer code, the XML also contains code to reflect the population criteria
  ▪ Technical Release Notes (TRNs) - Provide a list of all changes by measure and identifies the updates that require action
Updated eCQM Value Sets

- The National Library of Medicine publishes updates to the eCQM value sets to align with the most recent releases to terminologies, including, but not limited to:
  - International Classification of Diseases (ICD)-10 Clinical Modification (CM) and Procedure Coding System (PCS)
  - SNOMED CT
  - Logical Observation Identifiers Names and Codes (LOINC)
  - RxNorm
- The changes to the value sets consist of
  - Deletion of expired codes
  - Addition of relevant replacement codes
  - Addition of newly available codes that represent concepts consistent with the intent of the value set and corresponding measure(s)
- Use the Value Set Comparison Tool to identify changes to value sets

Where do I find the updated value sets?

The VSAC publishes updated eCQM value sets annually. The Downloadable Resource Table provides prepackaged downloads for the most recently updated and released eCQM value sets, as well as for previously released versions.

Finding Value Sets (Cont’d)

VSAC Downloadable Resources

This page contains groups of value sets designated for a particular program usage. You can search the entire repository of published value sets by label, measure, value set name, or model category.

Download value sets by measure, value set name, or quality data model category.

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**May 2023 Release eCQM & Hybrid Measure Value Sets**

*Publication Date: May 04, 2023*

<table>
<thead>
<tr>
<th>Available Downloads</th>
<th>Sorted by CMS ID*</th>
<th>Sorted by Value Set Name*</th>
<th>Sorted by Quality Data Model Category*</th>
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All pre-rulemaking Eligible Hospital, Hospital Outpatient Quality Reporting (OQR), and Hospital Inpatient Quality Reporting (IQR) measures are located here in the CMS eCQM & Hybrid Measure Value Sets: CMS529, CMS526, CMS532, CMS844, CMS1074, and CMS1206.
Updated QRDA Implementation Guides (IGs)

QRDA - Quality Reporting Document Architecture

Find most current QRDA IGs here and linked in the eCQM Materials on the measure pages

Current QRDA Reference and Implementation Guides:

Find QRDA Known Issues in the ONC QRDA Known Issues Project.

2024 Reporting and Performance Period

The 2024 CMS QRDA I Implementation Guide for Hospital Quality Reporting for 2024 eCQM reporting is based on the HL7 CDA Release 2: QRDA Category I, Release 1, Standard for Trial Use Release 5.3 with errata (published December 2022).

- 2024 CMS QRDA I Implementation Guide for Hospital Quality Reporting (PDF) (Updated August 2023)
- 2024 CMS QRDA I Schematron and Sample Files for Hospital Quality Reporting (ZIP) (Updated August 2023)


- 2024 CMS QRDA III Implementation Guide for Eligible Clinicians (published July 2023)
- 2024 CMS QRDA III Schematrons and Sample Files for Eligible Clinicians (published July 2023)

https://ecqi.healthit.gov/qrda
Where do I find eCQM Tools and Resources?

https://ecqi.healthit.gov/ecqi-tools-key-resources?qt-teste=0
Where do I find eCQM Standards and Tools Versions Changes?

eCQI Tools & Key Resources

Receive updates on this topic

https://ecqi.healthit.gov/ecqi-tools-key-resources?qt-teste=1
Step-by-Step Process for Implementing eCQM Updates
Step 2: Gap Analysis
Gap Analysis

1. Data capture and workflow redesign
2. Data extraction and eCQM calculation
3. Validation
4. Downstream uses of eCQM results
Gap Analysis: Analyzing Specifications

• Review eCQM Updates:
  ▪ Are there new data elements that you need to capture?
  ▪ Are there changes to the measure logic that may have workflow implications?
  ▪ Are there changes that may impact calculation such as updates to inclusion/exclusion criteria?
## What are the changes for my measures?

Technical Release Notes provide a list of all changes by measure so you can focus on those measures that you report on and identify the updates that require action.

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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.

How should I implement changes?

The eCQM Measure Logic and Implementation Guidance document provides information for those using and/or implementing the eCQMs.

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https://ecqi.healthit.gov/eh-cah
Step-by-Step Process for Implementing eCQM Updates
Step 3: Data Capture and Workflow Redesign
Data Capture and Workflow Redesign

1. Get Update
2. Gap analysis
3. Data capture and workflow redesign
4. Validation
5. Data extraction and eCQM calculation
6. Downstream uses of eCQM results
Workflow Analysis

• Definitions of workflow vary:
  ▪ The flow of work through space and time, where work is comprised of three components: inputs are transformed into outputs.²
  ▪ The activities, tools, and processes needed to produce or modify work, products, or services. More specifically, clinical workflow encompasses all of the 1) activities, 2) technologies, 3) environments, 4) people, and 5) organizations engaged in providing and promoting health care.³
Consider Different Workflow Interactions$^{2,3}$

- Clinic-level workflow: the flow of information, in paper or electronic formats, among people at a practice or clinic
- Intra-visit workflow: workflow during a patient visit
- Inter-organizational workflow: workflow between healthcare organizations
- Cognitive workflow: the workflow in the mind
Data Capture and Workflow Redesign

• Data Capture
  ▪ Consider new query build in your electronic health record (EHR)
  ▪ Interface to bring data from disparate application into certified EHR
  ▪ Deploy alerts, reminders, and order sets judiciously

• Workflow Redesign
  ▪ Work with subject matter experts to determine where/how data should be captured (e.g., cardiovascular services)
  ▪ Evaluate aspects of care coordination or transitions of care
Workflow Analysis Process

- Step 1: Decide what processes to examine
- Step 2: Create a preliminary flowchart
- Step 3: Add detail to the flowchart
- Step 4: Determine who you need to observe and interview
- Step 5: Perform observations and interviews
Goals of a Flowchart\textsuperscript{2,3}

- Shows how processes \textit{really} happen, as opposed to how they are supposed to happen or how we expect they will happen
- Allows a better understanding of what contributes to different types of flows for the same processes
- Helps to identify ways to improve the flows
- Can illustrate ways that health IT will affect workflows
Example Flowcharts: Simple vs. Detailed

Example 1
- Patient arrives
- Patient goes to check-in desk
- Patient checks in
- Patient waits in waiting area

Example 2
- Patient arrives at check-in desk
- Receptionist asks for patient name
- Receptionist types in name
- Is the name in the system?
  - No: Tell patient how to register or enroll in health plan
  - Yes: Ask for second form of ID
- Has insurance changed?
  - No: Confirm personal information
  - Yes: Enter new insurance info into system
Example: Flowchart comparison \(^2, ^3\)

- Both flowcharts show the workflow of “patient check-in”
- Both are accurate descriptions of the same process at a particular clinic, but only example #2 shows the details of what the workflow really is
- The details of the workflow will change when you implement health IT
  - If you don’t understand the details, you cannot plan for the changes that will come
Step-by-Step Process for Implementing eCQM Updates
Step 4: Data Extraction and eCQM Calculation
Data Extraction and eCQM Calculation

Get Update → Gap analysis → Data capture and workflow redesign → Validation → Downstream uses of eCQM results

Data extraction and eCQM calculation
Data Extraction and eCQM Calculation

- Once data are available, move forward with data extraction and calculation
- Continue iterative process of validation
- Make tweaks to data capture and/or workflow after validation if necessary
- Update internal documentation based on workflow changes
Step-by-Step Process for Implementing eCQM Updates

Step 5: Validation
Validation

- Get Update
- Gap analysis
- Data capture and workflow redesign
- Data extraction and eCQM calculation
- Validation
- Downstream uses of eCQM results
Validation (Cont’d)

• Utilize available data, knowledge of patient population, and secondary data sources to review performance

• If performance not as expected, immediately engage entire collaborative team to determine the source
  - Data capture issue
  - Mapping issue
  - Measure issue
  - Value set issue
  - Workflow issue
Testing QRDA: Cypress Validation Utility (CVU)

- **The Cypress Validation Utility (CVU)** conformance tool provides implementers with the ability to validate the conformance of QRDA Category I and Category III documents to CMS implementation guides.
The CVU+ utility within Cypress allows implementers to validate the conformance of QRDA Category I and Category III documents to CMS implementation guides and verify the results of eCQM calculation.
Cypress Validation Utility + Calculation Check allows for the testing of QRDA Category I and Category III documents for conformance to CMS reporting submission requirements and to verify the results of eCQM calculation.
Step-by-Step Process for Implementing eCQM Updates

Step 6: Downstream uses of eCQM results
Downstream Uses of eCQM Results

1. Get Update
2. Gap analysis
3. Data capture and workflow redesign
4. Data extraction and eCQM calculation
5. Validation
6. Downstream uses of eCQM results
Downstream Uses of eCQM Results (Cont’d)

• Improve quality of care
• Decrease healthcare disparities
• Inform practice
• Propagate research
• Guide value-based care
Where do I go for help regarding implementing eCQMs and eCQMs updates?
Log and Review eCQM Implementation Issues
ONC Project Tracking System (JIRA)

https://oncprojecttracking.healthit.gov/wiki/olp
ONC eCQM Issue Tracker (JIRA)

https://oncprojecttracking.healthit.gov/support/projects/CQM/summary
Using ONC eCQM Tracker (JIRA)

- **Create an Account (Optional).** You will need an account to create a new issue or to track (watch) an existing issue, but you don’t need one to search for a public issue.

- **Search for an Issue.** Have a question? Search by keyword or project, see if others have submitted the same question, and review the responses.

- **Track an Issue.** Find an issue that you’re interested in? Keep track of changes or comments on a ticket by clicking ‘Start watching this issue’ on the right-hand side of the issue. You will need to be logged into your JIRA account.

- **Create an Issue.** Can’t find your issue? Make sure you’re logged in – create an issue by clicking the orange “Create Issue” button at the top of the screen. Be sure to select the correct project and issue type from the dropdown menu in the form. Reminder: Do not include any Protected Health Information (PHI).

- **Review your Issue.** Once you create an issue, you will be listed as a reporter of that issue. You can make comments, edits, change, add attachments, and communicate with assigned subject matter experts via the comments feature. Additionally, you will receive an email notification of any status changes to your issue.
Where do I go for help regarding use of eCQMs in CMS Quality programs?
CMS Policy/Quality Reporting Program Questions

- Hospital Inpatient Quality Reporting (IQR) Program - Hospital Inpatient Value, Incentives, and Quality Reporting Outreach and Education Support
  [https://cmsqualitysupport.servicenowservices.com/qnet_qa](https://cmsqualitysupport.servicenowservices.com/qnet_qa) or (844) 472-4477
- Medicare and Medicaid Promoting Interoperability Programs - Quality Net Help Desk [qnetsupport@cms.hhs.gov](mailto:qnetsupport@cms.hhs.gov) or (866) 288-8912
- Quality Payment Program (QPP) - [QPP@cms.hhs.gov](mailto:QPP@cms.hhs.gov) or (866) 288-8292
- Quality Net reporting, data upload - Quality Net Help Desk [qnetsupport@cms.hhs.gov](mailto:qnetsupport@cms.hhs.gov) or (866) 288-8912
How do I get involved?

- **Engage in eCQI**
  - This overview provides a listing of ways to engage with the community including open meetings, public comment periods, workgroups, technical expert panels, and educational events


## Acronyms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>API</td>
<td>Application Program Interface</td>
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<tr>
<td>BPS</td>
<td>Binding Parameter Specification</td>
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<tr>
<td>CAH</td>
<td>Critical Access Hospital</td>
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<tr>
<td>CVU</td>
<td>Cypress Validation Utility</td>
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<tr>
<td>DERep</td>
<td>Data Element Repository</td>
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<tr>
<td>DRC</td>
<td>Direct Reference Code</td>
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<tr>
<td>eCQI</td>
<td>Electronic Clinical Quality Improvement</td>
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<tr>
<td>eCQM</td>
<td>Electronic Clinical Quality Measure</td>
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<td>EH</td>
<td>Eligible Hospital</td>
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<td>EHR</td>
<td>Electronic Health Record</td>
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<tr>
<td>HL7</td>
<td>Health Level Seven International</td>
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<tr>
<td>HQMF</td>
<td>Health Quality Measure Format</td>
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<tr>
<td>HTML</td>
<td>Hyper Text Markup Language</td>
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<tr>
<td>ICD-10-CM/PCS</td>
<td>International Classification of Diseases, 10th Revision, Clinical Modification/Procedure Coding System</td>
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## Acronyms (Cont’d)

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>IG</td>
<td>Implementation Guide</td>
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<tr>
<td>IQR</td>
<td>Inpatient Quality Reporting</td>
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<tr>
<td>IT</td>
<td>Information Technology</td>
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<tr>
<td>LOINC</td>
<td>Logical Observation Identifiers Names and Codes</td>
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<tr>
<td>ONC</td>
<td>Office of the National Coordinator for Health Information Technology</td>
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<tr>
<td>PCS</td>
<td>Procedure Coding System</td>
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<td>PHI</td>
<td>Protected Health Information</td>
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<tr>
<td>QDM</td>
<td>Quality Data Model</td>
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<td>Quality Payment Program</td>
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<td>Quality Reporting Document Architecture</td>
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<td>TRN</td>
<td>Technical Release Notes</td>
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<tr>
<td>UMLS</td>
<td>Unified Medical Language System</td>
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<tr>
<td>VSAC</td>
<td>Value Set Authority Center</td>
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