



Measure Authoring Tool (MAT) Overview

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Measure Authoring Tool- Background

- The Measure Authoring Tool (Beta version) was originally released in January of 2011, under a contract with the National Quality Forum.
- In September of 2013, CMS assumed ownership for the MAT and Telligen and NIC provide support and maintenance for the MAT, under HCIS.
 - Public Facing Website
 - MAT Application
 - Support Center Team
 - Open Source Repository

Measure Authoring Tool – Overview

- The Measure Authoring Tool (MAT) is a web based application that allows Measure Developers to author eCQMs using a standardized data model and expression language. It exports a machine readable file.
- Publicly available Tool and Website
- One tool included in a larger ecosystem of eCQI tools
 - MAT, Bonnie, Value Set Authority Center, Cypress, etc.
- The MAT provides functionality that allows users to document metadata about each measure, identify the data elements needed for the clinical concepts, apply value sets to those elements and express the relationship between those elements (logic).

Measure Authoring Tool – Releases

- The MAT is a software project that follows an agile methodology and the CMS XLC processes.
- The MAT releases 2-3 times a year, usually one major release and minor releases as necessary.
- The MAT priorities and releases are managed by the MAT Change Control Board (MCCB).
- MCCB is a multi-agency governing board that oversees QDM approvals and MAT functionality.

Measure Authoring Tool – Key Functionality

- The MAT uses several inputs to design the GUI and databases:
 - Quality Data Model (data elements/clinical concepts)
 - Health Quality Measure Format (HQMF) provides the structure
 - Measure Blueprint
 - SimpleXML (Internal representation of the measure, in a simplified XML format)
- Connected to the Value Set Authority Center through an API (Application Programming Interface) connection
 - Provides seamless access to curated and under development value sets and codes
 - VSAC (UMLS) credentials required
 - Access/ownership to value sets in VSAC managed by NLM

Measure Authoring Tool - Export Files

Measure Details | QDM Elements | Clause Workspace | Population Workspace | **Measure Packager** | Measure Notes

Create New Grouping

Package Grouping

Measure Grouping 1

Populations

Initial Population 1

Denominator 1

Denominator Exclusions 1

Numerator 1

Numerator Exclusions 1

Stratification 1

Save Grouping

Supplemental Data Elements

QDM Elements

Chronic Hypertension: Diagnosis, Active

Diastolic Blood Pressure: Physical Exam, Perform

Gestational Diabetes: Diagnosis, Active

Home Healthcare Services: Encounter, Performed

Office Visit: Encounter, Performed

Pregnancy: Diagnosis, Active

Systolic Blood Pressure: Physical Exam, Perform

Way: Procedure, Intolerance

Supplemental Data Elements

Ethnicity: Patient Characteristic Ethnicity

ONC Administrative Sex: Patient Characteristic Sex

Payer: Patient Characteristic Payer

Race: Patient Characteristic Race

Save Supplemental Data Elements

Risk Adjustment Variables

Clauses

Age 18

Arbitrate Removal

Chronic Hypertension

Encounters List

Encounters Performed

Systolic Blood Pressure Result

Risk Adjustment Variables

Gestational Diabetes

Save Risk Adjustment Variables

Include VSAC value set data

Create Measure Package

Create Package and Export

Artifact/Export	Published?
Human Readable HTML File	Yes
SimpleXML	Yes
HQMF 2.1 XML File	Yes
Value Set Excel Spreadsheet	No

Measure Authoring Tool – Looking Ahead

- Focus on supporting robust measure development
 - Composite Measures, Measure Logic Re-use
- Evolution of user requirements and standards
 - HQMF, QDM, CQL, ELM
- Currently in month 9 of a 12-month User Acceptance Testing cycle for CQL

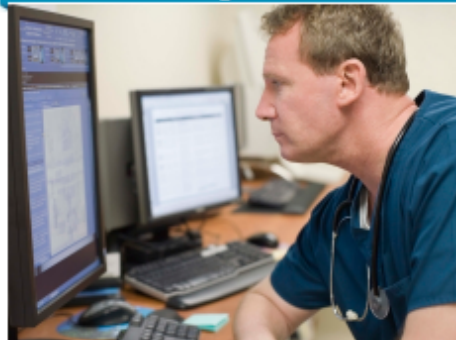
Measure Authoring Tool - Demonstration



Measure Authoring Tool

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Measure Authoring Tool Overview



transform process which ultimately supports the defined export files.

The Measure Authoring Tool (MAT) is a web-based tool that allows measure developers to author electronic Clinical Quality Measures (eCQMs) using the Quality Data Model (QDM). The tool provides the capability to express complex measure logic and export measures in several formats, including a human-readable document that can be viewed in a web browser; the fundamental green eCDM XML syntax (SimpleXML), and an eCDM HCMP XML document for integration with EHRs. The data expressed in the tool by users serves as the input for the

Under contract with the National Quality Forum, a Beta version of the tool was initially developed and released in January 2011. The Basic version of the tool was released in September 2011, followed by the Enhanced version in January 2012. Effective January 2013, the Centers for Medicare & Medicaid Services assumed ownership of the MAT and has contracted with Health Care Innovation Services (HCIS), a Joint Venture between Teligen and Nel-Integrated Consulting (NIC) for the ongoing development, maintenance, and support.

Secure Login

To log in to the MAT a user account is required. If you are unable to login to your MAT account, please contact the Help desk.

[Log in to the MAI](#)[New User Registration](#)

Announcements

[Measure Authoring Tool August Scheduled Downtime Notification](#)

[Off-cycle Downtime Notification - 08/02/2017](#)

[Measure Authoring Tool Planned Downtime Notification](#)

[Measure Authoring Tool Planned Downtime Notification](#)



Measure Authoring Tool - Resources

- Measure Authoring Tool Public Website
- <https://www.emasuretool.cms.gov>
 - Training, User Guide, Downtime and Release notices
 - Link to Open Source Community Resources
 - Get Started and FAQ topics
- Support Center – Contact Us Page
 - Email & Phone
- GitHub – Open Source Community