# athenaFlow 2024 Real World Test Results (v22 and v23)

## Contents

# General Information

Plan Report ID Number: [For ONC-Authorized Certification Body use only]
Developer Name: athenahealth, Inc
Product Name(s): athenaFlow
Version Number(s): v22 (withdrawn), v23 (withdrawn), v24
Product List (CHPL) ID(s): 15.04.04.2880.flow.24.07.1.241222
Withdrawn Product List (CHPL) ID(s): 15.04.04.2880.flow.22.05.1.220621; 15.04.04.2880.flow.23.06.1.230403
Developer Real World Testing Page URL: https://www.athenahealth.com/onc-certified-health-it

# Justification for Real World Testing approach

At this time, athenaFlow v22 and v23 are certified Electronic Health Records (EHR) that are sold to primary care, specialty and multi-specialty ambulatory groups. Functionality within the EHR greatly overlaps regardless of care setting, but the Real World Testing plan aims to incorporate data from as diverse a set of these settings as is possible.
As all of the certification criteria apply broadly to the care settings noted above, the Real World Testing plan will incorporate several certification criteria into one plan:

- §170.315(b)(1) – Transitions of Care
- §170.315(b)(2) – Clinical Information Reconciliation and Incorporation
- §170.315(b)(3) – Electronic Prescribing
- §170.315(b)(9) – Care Plan
- §170.315(b)(10) - Electronic Health Information Export
- §170.315(c)(1) – CQMs – Record and Export
- §170.315(c)(2) – CQMs – Import and Calculate

- §170.315(c)(3) – CQMs – Report
- §170.315(e)(1) – View, Download, and Transmit to 3rd Party
- §170.315(f)(1) – Transmission to Public Health Agencies – Immunization Registry
- §170.315(f)(2) – Transmission to Public Health Agencies – Syndromic Surveillance
- §170.315(f)(5) - Transmission to Public Health Agencies - Electronic Case Reporting
- §170.315(g)(7) – Application Access – Patient Selection
- §170.315(g)(9) – Application Access – All Data Request
- §170.315(g)(10) – Standardized API for patient and population services
- §170.315(h)(1) – Direct Project

# Standards Updates (SVAP and USCDI)

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|---|---|
| Standard (and version) | All standards versions are as specified in regulation except for:<br>§170.315(c)(3) – CQMs – Report<br>CMS Implementation Guide for Quality Reporting Document Architecture: Category III; Eligible Clinicians and Eligible Professionals Programs; Implementation Guide for 2024 |
| Date of ONC-ACB notification (SVAP or USCDI) | January 2025 (next quarterly attestation) |
| Date of customer notification (SVAP only) | July 2025 |
| USCDI-updated criteria | Not applicable |

# Care Setting(s)

See summary of supported care settings listed in the "Justification for Real World Testing Approach" section.

# Overall Expected Outcomes

- Real World Testing will demonstrate that the EHR is conformant to the criteria listed in the "Justification for Real World Testing" section.
- See below for measures and outcomes associated with the use cases associated with the listed certification criteria.

# Measure Used

**Use Case 1 – During the course of ambulatory care, providers share patient records (CCDAs) with each other and where appropriate, reconcile key clinical data elements into the chart.**

| Certification Criteria | Relied Upon Software | Requirement |
|---|---|---|
| § 170.315 (b)(1) Transition of care | ○ Medical Office Technologies ezAccess Patient Portal OR<br>○ Medical Office Technologies ezAccess Direct Messaging | (i) Send and receive via edge protocol…<br>(ii) Validate and display…<br>(iii) Create… |
| § 170.315 (b)(2) Clinical information reconciliation and incorporation | Qvera Interface Engine | (i) General requirements…<br>(iii) Reconciliation… |
| § 170.315 (b)(9) Care plan | N/A | Enable a user to record, change, access, create, and receive care plan information in accordance with the Care Plan document template… |
| § 170.315 (h)(1) Direct project | ○ Medical Office Technologies ezAccess Patient Portal OR<br>○ Medical Office Technologies ezAccess Direct Messaging | (i) Applicability Statement for Secure Health Transport…<br>(ii) Delivery Notification in Direct |

**Measure 1: Create and send a CCDA:** This measure will evaluate the creation and sending of required CCDAs (Referral Note, CCD) at scale across many providers using athenaFlow in a live production environment.

- Justification: A statistically significant sample size of CCDAs generated and sent by athenaFlow spanning multiple organizations with expected errors will validate successful use in the real world.
- Test Methodology: System logs will be evaluated for the required types of CCDAs that were created and sent.
- Expected Outcomes: Success is defined as CCDAs of the required types successfully being created and sent via Direct with expected errors (e.g., invalid direct address, no response from receiver, etc.)

**Measure 2: Receive and display a CCDA** – This measure will demonstrate EHR ability to receive and display a CCDA of the required types (Referral Note, CCD, Care Plan) in a live production environment.

- Justification: Two sub-measures will be evaluated: 1) A manual evaluation of examples of each required type of CCDA (Referral Note, CCD and Care Plan) will show that athenaFlow can successfully receive and display CCDAs. 2) An evaluation of a statistically significant number of CCDAs received by providers using athenaFlow spanning multiple organizations will validate successful use in the real world.
- Test Methodology: 1) Examples of CCDAs of each type will be randomly selected for manual review spanning various care settings in the athenaFlow network. 2) System logs will be evaluated to identify CCDAs that were successfully received.
- Expected Outcomes: Success is defined as:
  1) Chosen examples are successfully received and displayed.
  2) CCDAs successfully received via Direct.

**Measure 3: Receive and reconcile a CCDA** – This measure will demonstrate EHR ability to receive and reconcile required CCDAs (Referral Note, CCD) in a live production environment.

- Justification: An evaluation of reconciliation use spanning a statistically significant number of active users spanning multiple organizations will validate successful use in the real world.
- Test Methodology: System logs will be evaluated to determine the number of users that successfully reconcile at least one CCDA using CEHRT.
- Expected Outcomes: A high number of users successfully use CEHRT to receive and reconcile data into patient charts.

# Use Case 1 Outcomes

Removed MedAllies and Qvera Interface Engine as relied upon software as no athenaFlow customers are using MedAllies.

| Measure | Outcomes | Challenges |
|---|---|---|
| **1: Create and send a CCDA** | Review of audit logs of Direct transactions via the following HISP's yielded these results:<br>**ezAccess:** 15,173 total messages and 90 failures for six customers during the period of 6/1/24 to 12/1/24.<br>Ex: Bad address, bad email, connection errors. | • Unable to break data out by CCDA document type |
| **2: Receive and display a CCDA** | **Sub-measure 1:** An example Referral Note, Care Plan and CCD were successfully received and displayed in athenaFlow, yielding a 100% success rate.<br>**Sub-measure 2:** Review of audit logs of Direct transactions via ezAccess yielded confirmation of 30,647 total messages received for six customers during the period of 6/1/24 to 12/1/24. | • Unable to break data out by CCDA document type. |
| **3: Receive and reconcile a CCDA** | Review of audit logs for 05/04/24 – 06/23/24 for one customer yielded validation that two unique providers reconciled at least one item from a CCDA. | • Data was only available for one athenaFlow customer during RWT data collection |

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|---|---|---|
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**Use Case 2 – During the course of ambulatory care, patients access a copy of their record (CCDs) for viewing, downloading and/or transmitting.**

| Certification Criteria | Relied Upon Software | Requirement |
|---|---|---|
| § 170.315 (e)(1) View, download, and transmit to 3rd party | ○ Medical Office Technologies ezAccess Patient Portal OR<br>○ Medical Office Technologies ezAccess Direct Messaging | (i) (A) View…<br>(i)(B) Download…<br>(i)(C) Transmit to third party… |
| § 170.315 (h)(1) Direct project | ○ Medical Office Technologies ezAccess Patient Portal OR<br>○ Medical Office Technologies ezAccess Direct Messaging | (i) Applicability Statement for Secure Health Transport…<br>(ii) Delivery Notification in Direct |

**Measure 1: Validate user behavior around view actions** – This measure will demonstrate the ability for a patient to preview a CCD document template in a live production environment of their patient portal.

- Justification: The CCD document template contains all required data elements in § 170.315 (e)(1)(i)(A)
- Test Methodology: System logs will be evaluated to identify successful CCD document views in the patient portal.
- Expected Outcomes: Success is defined by the number of successful CCD document views.

**Measure 2: Validate user behavior around download actions** – This measure will demonstrate the ability for a patient to download a CCD document template in a live production environment of their patient portal.

- Justification: An evaluation of a statistically significant number of CCD document downloads spanning multiple organizations will demonstrate the successful real-world use of the download feature.
- Test Methodology: System logs will be evaluated to identify successful CCD document downloads in the patient portal.
- Expected Outcomes: Success is defined by the number of successfully download CCD documents.

**Measure 3: Validate user behavior around transmit actions** – This measure will demonstrate the ability for a patient to transmit a CCD document template to a third party in a live production environment of their patient portal.

- Justification: An evaluation of a statistically significant number of CCD document transmissions spanning multiple organizations will demonstrate the successful real-world use of the transmit feature.
- Test Methodology: System logs will be evaluated to identify the volume of successful CCD document transmits in the portal. The analysis will break out use of transmission via either Direct or email.
- Expected Outcomes: Success is defined as:
    - CCD documents successfully sent via Direct with expected errors (e.g., invalid Direct address, lack of response, etc.)
    - CCD documents successfully sent via email with expected errors (e.g., invalid email address, etc.)

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# Use Case 2 Outcomes

Removed MedAllies and Qvera Interface Engine as relied upon software as no athenaFlow customers are using MedAllies.

| Measure | Outcome | Challenges |
|---|---|---|
| **1: Validate user behavior around view actions** | Review of audit logs of patient views via the ezAccess Portal yielded 60,154 views for six customers during the period of 6/1/24 to 12/1/24. | N/A |
| **2: Validate user behavior around download actions** | Review of audit logs of patient downloads via the ezAccess portal yielded 884 downloads for six customers during a period of 6/1/24 to 12/1/24. | N/A |
| **3: Validate user behavior around transmit actions** | Review of audit logs of patient transmits via the ezAccess portal yielded the following results:<br><br>**Transmit via Email: 123** transmits for six customers during the period of 6/1/24 to 12/1/24.<br>**Transmit via Direct:** 89 transmits for six customers during the period of 6/1/24 to 12/1/24.<br>There were five errors spanning both email and Direct, with most due to direct address being invalid. | N/A |

## Use Case 3 – EHR users export Electronic Health Information (EHI) for one or many patients for the purpose of sharing with providers, patients or moving bulk data to another EHR.

| Certification Criteria | Relied Upon Software | Requirement |
|---|---|---|
| § 170.315 (b)(10)Electronic health information export | Qvera Interface Engine | (i) General requirements for export summary configuration… |
| | | (ii) Creation… |
| | | (iii) Timeframe configuration… |
| | | (iv) Location configuration… |

**Measure 1: Single/Multi patient export** – This measure will assess functionality used to export EHI for a single patient and multiple patients in a production environment.

- Justification: The evaluation of statistically significant number of exports by users spanning multiple organizations using athenaFlow will demonstrate the real-world utility of the data export.
- Test Methodology: System logs will be reviewed to determine the volume of exports generated in various configurations (e.g., single-patient, multi-patient, etc.) and only by authorized users.
- Expected Outcomes: Only authorized users will be able to successfully create export summaries and there will be evidence of successful exports using various configurations (e.g., single-patient, multi-patient, etc.)

# Use Case 3 Outcomes

No Changes from plan.

| Measure | Outcome | Challenges |
|---|---|---|
| **1: Single/Multi patient export** | Due to lack of production data representing the use of this feature, an internal validation of the feature was successfully executed in a test environment with test data, yielding a 100% success rate. | • None of the athenaFlow customers are using EHI Export during RWT data collection |

### Use Case 4 – Clinicians electronically prescribe medications.

| Certification Criteria | Relied Upon Software | Requirement |
|---|---|---|
| § 170.315 (b)(3) Electronic prescribing | Dr First Rcopia | (i)(A) Enable a user to perform the following prescription-related electronic transactions… |
| | | (i)(C) For the following transactions, the technology must be able to receive and transmit the reason for the prescription… |

**Measure 1: Transaction success rates** – This measure will evaluate successful use of required eRx transaction types in a production environment.

- Justification: A statistically significant sample size of electronic prescriptions spanning multiple organizations using athenaFlow will demonstrate the real-world utility of the feature.
- Test Methodology: System logs will be reviewed to determine frequency of errors for each transaction type.
- Expected Outcomes: Transactions are successfully delivered with expected errors (e.g., pharmacy does not support electronic transactions) and achieve the following transaction success rates. Data validation errors are prevented, or end user is notified of errors when appropriate:
    - NewRx – 99%
    - RxChange – 90%
    - CancelRx – 98%
    - RxRenewal – 97%
    - RxFill – 100%
    - Medication History – 99%

# Use Case 4 Outcomes

No Changes from plan.

| Measure | Outcomes | Challenges |
|---|---|---|
| **1: Transaction success rates** | Review of audit logs of all athenaFlow customers yielded the following results:<br>• Range: 1/1/24 – 6/30/24<br>  ○ NewRx: 99.5% success rate<br>  ○ CancelRx: 99.41% success rate<br>  ○ RxRenewal: 98.63% success rate<br>  ○ Medication History: 100% success rate<br>  ○ RxFill: 100% success rate<br>• Range: 05/07/24 - 08/03/24<br>  ○ RxChange: 99.75% success rate<br><br>**Notes on analysis:** Prescriber responses to a RxChange request from the pharmacy with a response resulted in successful transmission are considered numerator Compliant.<br>Transmission statuses considered for numerator compliance:<br>• Message type not supported by sender<br>• NCPDPID does not match header value<br>• Patient DOB does not match with the request<br>• Pharmacy already processed Rx. Response not accepted<br>• Pharmacy: telephone number is invalid<br>• Prescriber: telephone number is invalid<br>• Prescription no longer active<br>• PSUD<br>• Request has been canceled prior to response. Response not processed.<br>• Response does not match the request sent<br>• The system does not accept EPCS RxChange Response messages<br>• Unable to associate Response to Request<br>• UNABLE TO DELETE FROM PENDING | N/A |

## Use Case 5 – EHR users generate QRDA files that comply with the latest specifications for submission to CMS and other quality reporting needs.

| Certification Criteria | Relied Upon Software | Requirement |
|---|---|---|
| § 170.315 (c)(1) CQMs – record and export | Qvera Interface Engine | (i) Record… |
| | | (ii) Export… |
| § 170.315 (c)(2) CQMs – import and calculate | N/A | (i) Import… |
| | | (ii) Calculate each and every clinical quality measure… |
| § 170.315 (c)(3) – report | N/A | Enable a user to electronically create a data file for transmission… |

**Measure 1: eCQM calculation success rates** – This measure will validate the correct calculation of implemented eCQMs relative to measure specifications.

- Justification: Using live customer data to validate the accurate calculation of eCQMs is difficult due to the variability of data inputs. A better approach is to have a controlled production-grade environment with known eCQM data inputs that can be regularly run to evaluate the accurate calculation of the eCQMs over time.
- Test Methodology: A comprehensive test tool previously developed by the EHR vendor for the same purpose will be leveraged to assure the accurate calculation of eCQMs. We will leverage the end-to-end testing framework for eCQMs using production test cases for each scenario (namely IPP, Denominator, Numerator, Exclusions and Exceptions) and the various workflows which satisfy in EHR.
- Expected Outcomes: Test cases pass with expected errors (e.g., due to known specification gap, etc.)

**Measure 2: QRDA file export conformance** – This measure will validate successful user generation of QRDA I and QRDA III files using athenaFlow.

- Justification: Evidence of QRDA I and III files generated by athenaFlow spanning multiple organizations will validate successful use in the real world.
- Test Methodology: System logs will be evaluated to determine the count of practices that have created at least one QRDA I/III file.
- Expected Outcomes: Success is defined as evidence of QRDA I/III file generation by users.

**Measure 3: QRDA file import conformance** – This measure will assess the use of the athenaFlow QRDA I import feature using a QRDA I file created in a different EHR.

- Justification: The ability for athenaFlow to successfully import a QRDA I file generated by a different EHR that is also certified to the CQM criteria will demonstrate the real-world utility of the QRDA I import feature.
- Test Methodology: System logs will be evaluated to determine the count of practices that have imported at least one QRDA I file.
- Expected Outcomes: Success is defined as evidence of QRDA I file import by users.

# Use Case 5 Outcomes

No changes from plan.

| Measure | Outcomes | Challenges |
|---|---|---|
| **1: eCQM calculation success rates** | 100% of 65 manual tests returned successfully. | N/A |
| **2: QRDA file export conformance** | Two practices exported a QRDA I/III at least one time in 2024. | N/A |
| **3: QRDA file import conformance** | Due to lack of production data representing the use of this feature, an internal validation of the feature was successfully executed in a test environment with test data, yielding a 100% success rate. | • None of the athenaFlow customers used this feature at the time of RWT data collection. |

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## Use Case 6 – Data is appropriately triggered and submitted to relevant public health agencies.

| Certification Criteria | Relied Upon Software | Requirement |
|---|---|---|
| § 170.315 (f)(1) Transmission to immunization registries | Qvera Interface Engine | (i) Create immunization information for electronic transmission… |
| | | (ii) Enable a user to request, access, and display… |
| § 170.315 (f)(2) Transmission to public health agencies – syndromic surveillance | Qvera Interface Engine | Create syndrome-based public health surveillance information… |
| § 170.315 (f)(5) Transmission to public health agencies – electronic case reporting | Qvera Interface Engine | Create electronic case reporting for reportable conditions |

**Measure 1: Immunization message success** – This measure will evaluate the ability for athenaFlow to submit conformant immunization messages.

- Justification: The evaluation of a statistically significant number of immunization messages spanning multiple organizations using athenaFlow will demonstrate the real-world utility of the capability.
- Test Methodology: System logs will be evaluated for different message types including administered, historical and forecast query.
- Expected Outcomes: Success is defined as (with expected errors including no response from registry, formatting error beyond the scope of CEHRT specification requirements, etc.):
    - Administered vaccines successfully sent to immunization registry.
    - Historical vaccines recorded are successfully sent to immunizations registry.
    - Forecast query requests successfully sent with historical immunizations and forecast returned.

**Measure 2: Syndromic surveillance message success** – This measure will evaluate the ability for athenaFlow to submit conformant syndromic surveillance messages in the urgent care setting.

- Justification: The evaluation of a statistically significant number of syndromic surveillance messages spanning multiple organizations using athenaFlow will demonstrate the real-world utility of the capability. Although these messages apply to urgent care, emergency department and inpatient settings, athenaFlow only serves the urgent care setting.
- Test Methodology: System logs will be evaluated for all applicable messages sent to registries.
- Expected Outcomes: Success is defined as the successful message submission to and receipt by all actively engaged registries, with expected errors (e.g., no response from registry, formatting error beyond scope of CEHRT specification requirement, etc.)

**Measure 3: Electronic case reporting success -** This measure will evaluate the ability for athenaFlow to send Case Reporting electronically to public health agencies through the AIMS Platform.

- Justification: athenaFlow supports Electronic Case Reporting using the eCR Now application. The evaluation of documents generated and submitted to public health agencies from the eCR Now application will demonstrate the real-world utility of the capability.
- Test Methodology: System logs will be evaluated to determine 1) the count of encounters that generate Electronic Initial Case Report (eICR) documents and 2) the number of eICR documents for which a Reportability Response is received from the public health agency.

- Expected Outcomes: 1) eICR documents are successfully generated for reportable conditions and 2) successfully received by public health agencies via AIMS platform as acknowledged by Reportability Responses.

# Use Case 6 Outcomes

No changes from plan.

| Measure | Outcomes | Challenges |
|---|---|---|
| **1: Immunization message success** | Review of audit logs of two athenaFlow customers during a period of 07/24/24 – 08/08/24 yielded validation of 503 successful historical messages, 800 successful administered immunizations messages and zero total forecast and history messages. | • Data was only available for two athenaFlow customers during RWT data collection |
| **2: Syndromic surveillance message success** | Due to lack of production data representing the use of this feature, a successful internal validation of the feature was executed in a test environment with test data, yielding a 100% success rate. | • No athenaFlow customers have a live interface with Syndromic Surveillance at the time of RWT data collection. |
| **3: Electronic case reporting** | Due to lack of production data representing the use of this feature, a successful internal validation of the feature was executed in a test environment with test data, yielding a 100% success rate. | • No athenaFlow customers have a live interface with electronic case reporting at the time of RWT data collection. |

### Use Case 7 – Independent vendors, as well as athenahealth customers use certified APIs for both patient and provider-oriented use cases.

| Certification Criteria | Relied Upon Software | Requirement |
|---|---|---|
| § 170.315 (g)(7) Application access – patient selection | N/A | (i) Functional requirement… |
| § 170.315 (g)(9) Application access – all data request | N/A | (i) Functional requirements… |
| §170.315(g)(10) Standardized API for Patient and Population Services | Qvera Interface Engine | (i) Functional requirements… |

**Measure 1: Request success rate for certified APIs** – This measure will evaluate the successful use of all certified APIs under (g)(7), (g)(9) and (g)(10) certification criteria (https://mydata.athenahealth.com/fhirapidoc) through the lens of individual transaction requests by request, API Information Source and API Users.

- Justification: The evaluation of a statistically significant sample size of API requests in production systems spanning a broad spectrum of API Information Sources demonstrates real-world request volume from external applications. Tracking success and failure rates of our API responses by HTTP response status codes further validates the results of the APIs against real-world use cases. The measures also demonstrate the ability to provide sufficient supporting API documentation to enable external API developers to integrate with athenaFlow.
- Test Methodology: Production system logs of external API usage will be reviewed to determine the success rates for the following:
    - (g)(7, 9) - API Requests Served (excluding bulk calls)
        - Numerator: # of successful responses
        - Denominator: Total requests of certified API(s)
    - (g)(10) - API Requests Served (including bulk calls)
        - Numerator: # of successful responses
        - Denominator: Total requests of certified API(s)
    - (g)(7, 9, 10) - Bulk tokens Requests Served
        - Numerator: # of successful responses
        - Denominator: Total token requests
    - (g)(7, 9, 10) – Non-Bulk token Requests Served
        - Numerator: # of successful responses
        - Denominator: Total token requests
    - (g)(7, 9, 10) - API Information Sources with at least one successful response – Validates successful API use spanning current API Information Sources
        - Numerator: Total API Information Sources with at least one successful response
        - Denominator: Total API Information Sources with at least one request
    - (g)(7, 9, 10) API Users with at least one successful response – Validates successful API use spanning current API Users
        - Numerator: Total API Users with at least one successful response
        - Denominator: Total API Users with at least one request
- Expected Outcomes: We expect to see performance of >99% on the above measures.

# Use Case 7 Outcomes

No changes from plan.

| Measure | Outcomes | Challenges |
|---|---|---|
| **1: Request success rate for certified APIs** | Review of audit logs of five athenaFlow customers during a period of 05/1/2024 to 06/31/2024 yielded validation of the following results:<br>• API Requests Served (excluding bulk calls): 97.00% success<br>• API Requests Served (including bulk calls): 97.00% success<br>• Bulk tokens Requests Served: 0<br>• Non-Bulk token Requests Served: 97.00% success<br>• API Information Sources: 100% success<br>• API Users: 98.15% success | N/A |

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|---|---|---|

# Schedule of key milestones

| Key Milestones | Date/Timeframe |
|---|---|
| Recruitment of organizations that will participate in de-identified data collection | Q2 2024 |
| Start of collection of necessary data as laid out by plan (will vary by measure) | January 2024 |
| End of collection of necessary data as laid out by plan (will vary by measure) | January 2025 |
| Analysis of data (will vary by measure) | On-going 2024 |
| Submit Real World Testing report to ACB | February 2025 |

# Attestation

This Real World Testing plan is complete with all required elements, including measures that address all certification criteria and care settings. All information in this plan is up to date and fully addresses the health IT developer's Real World Testing requirements.

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Date: 1/29/2025