

athenaClinicals v20 2022 Real World Test Results

Contents

General Information.....	2
Summary of Testing Methods and Key Findings.....	2
Standards Updates (SVAP and USCDI)	2
Care Setting(s).....	3
Metrics and Outcomes	3
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.....	3
Use Case 1 Outcomes.....	5
Use Case 2 – During the course of ambulatory care, patients access a copy of their record (CCDs) for viewing, downloading and/or transmitting.....	5
Use Case 2 Outcomes.....	6
Use Case 3 – EHR users export CCDAs for one or many patients for the purpose of sharing with providers, patients or other third-parties under the purview of HIPAA.....	7
Use Case 3 Outcomes.....	7
Use Case 4 – Clinicians electronically prescribe medications	8
Use Case 4 Outcomes.....	8
Use Case 5 – EHR users generate QRDA files that comply with the latest specifications for submission to CMS and other quality reporting needs.....	9
Use Case 5 Outcomes.....	10
Use Case 6 – Data is appropriately triggered and submitted to relevant public health agencies.....	10
Use Case 6 Outcomes.....	11
Use Case 7 – Independent vendors, as well as athenahealth customers use certified APIs for both patient and provider-oriented use cases.....	12
Use Case 7 Outcomes.....	12
Key Milestones.....	13

General Information

Plan Report ID Number: [For ONC-Authorized Certification Body use only]
Developer Name: athenahealth, Inc
Product Name(s): athenaClinicals
Version Number(s): v20
Certified Health IT: 2015 Edition
Product List (CHPL) ID(s): 15.04.04.2880.Athe.AM.07.1.200312
Developer Real World Testing Page URL: <https://www.athenahealth.com/terms-and-conditions>

Summary of Testing Methods and Key Findings

More than a million Direct messages successfully sent and received from providers and patients and all eRx transaction types and all API measures near a 100% success rate are but a few of the examples of how this report reflects the successful use of the athenaOne product in the real world.

The primary lesson learned was to ensure our athenaClinicals network insights, which was core to obtaining the results in this report, continue to evolve alongside new interoperability capabilities so that we can continue to demonstrate successful use of the product in the real world.

Standards Updates (SVAP and USCDI)

athenaClinicals v20 is certified with the voluntary SVAP or USCDI standards below:

Standard (and version)	§170.205(h)(3) CMS Implementation Guide for Quality Reporting Document Architecture: Category III; Eligible Clinicians and Eligible Professionals Programs; Implementation Guide for 2021
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Updated certification criteria and associated product	§170.315(c)(3) – CQMs – Report
CHPL Product Number	15.04.04.2880.Athe.AM.07.1.200312
Conformance measure	Use Case 5, Measure 2, Sub-Measure 2

Care Setting(s)

At this time, athenaClinicals is a Certified electronic health record (EHR) that is sold to primary care, specialty and multi-specialty ambulatory groups. Functionality within the EHR overlaps regardless of care setting and being a cloud-based application all measures (unless otherwise noted) used data from all athenaClinicals customers as of when the data was pulled.

Metrics and Outcomes

To keep the flow and context of the associated test plan, which was drafted through the lens of “Use Case” as opposed to criterion, the below results will use the same format.

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	Requirement
§ 170.315 (b)(1) Transition of care	(i) Send and receive via edge protocol...
	(ii) Validate and display...
	(iii) Create...
§ 170.315 (b)(2) Clinical information reconciliation and incorporation	(i) General requirements...
	(iii) Reconciliation...
§ 170.315 (b)(9) Care plan	Enable a user to record, change, access, create, and receive care plan information in accordance with the Care Plan document template...
§ 170.315 (g)(6) Consolidated CDA creation performance	(i) Reference C-CDA match..
	(ii) Document-template conformance...
	(iii) Vocabulary conformance...
	(iv) Completeness verification...
§ 170.315 (h)(1) Direct project	(i) Applicability Statement for Secure Health Transport...
	(ii) Delivery Notification in Direct

Measure 1: Create a valid CCDA – This measure will demonstrate EHR ability to create and send a CCDA that is conformant to the standards outlined in § 170.315 (b)(1) Transition of care and § 170.315 (g)(6) Consolidated CDA creation performance

- **Justification:** Other EHRs will expect to successfully receive a CCDA formatted to Release 2.1 with all required data elements from athenaClinicals
- **Test Methodology:** A CCDA of each required type (Referral Note, CCD, Care Plan) will be created in athenaClinicals and sent to another EHR via each certified workflow (if applicable). athenaClinicals and the other EHR will be using a production-grade environment configured in a way typical of the marketed care settings. System logs will be reviewed to identify possible errors in transport. A user in the receiving EHR will demonstrate successful display of all required elements
- **Expected Outcomes:** Success is when a different EHR receives and recognizes each type of CCDA as conformant

Measure 2: 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 athenaClinicals in a live production environment

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

Measure 3: Receive and display a CCDA – This measure will demonstrate EHR ability to receive and display a CCDA of each required type (Referral Note, CCD, Care Plan) in a live production environment

- **Justification:** Two sub-measures will be evaluated: 1) A manual evaluation of several production examples of each required type of CCDA (Referral Note, CCD and Care Plan) will show that athenaClinicals can successfully receive and display CCDAs. 2) An evaluation of a statistically significant number of CCDAs received and displayed by providers using athenaClinicals 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 athenaClinicals network. 2) System logs will be evaluated to identify each type of CCDA that were successfully received
- **Expected Outcomes:** Success is defined as:
 - 1) Chosen examples are successfully received and displayed
 - 2) CCDAs successfully received via Direct and displayed with expected errors (e.g. incorrect CCDA format)

Measure 4: Receive and reconcile a CCDA – This measure will demonstrate EHR ability to receive and reconcile a CCDA of each required type (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 a 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

No changes from plan.

Measure	Relied Upon Software	Outcomes	Challenges
1: Create a valid CCDA	N/A	Test samples of a CCD and Referral Note were successfully sent via Direct from athenaClinicals and received by the athenaPractice EHR. Receipt and conformance to standards was verified by displaying the documents in athenaPractice.	N/A
2: Create and send a CCDA	N/A	Review of audit logs for Q2 2022 of all athenaClinicals customers yielded validation of 939,753 successful Referral Note and 665 successful CCD Direct message transmissions. The CCD send via Direct feature has low utilization which accounts for the low volume. The failures identified primarily relate to MDN's received as "Unable to process," "Address no longer valid," "Unable to verify trust certificate" or "Certificate is expired."	N/A
3: Receive and display a CCDA	N/A	Sub-measure 1: An example Referral Note and CCD sent from the athenaPractice EHR was successfully received and displayed in athenaClinicals. Sub-measure 2: Review of audit logs for Q2 2022 of all athenaClinicals customers yielded a validation of 8,079,947 user views of received CCDAs	N/A
4: Receive and reconcile a CCDA	N/A	Review of audit logs for Q2 2022 of all athenaClinicals customers yielded validation that 97,975 unique users reconciled at least one problem, medication, or allergy from a CCDA.	N/A

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	Requirement
§ 170.315 (e)(1) View, download, and transmit to 3 rd party	(i) (A) View...
	(i)(B) Download...
	(i)(C) Transmit to third party...
§ 170.315 (h)(1) Direct project	(i) Applicability Statement for Secure Health Transport...
	(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 the athenaClinicals patient portal (athenaCommunicator)

- 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 patients with a successful CCD document view in athenaCommunicator
- **Expected Outcomes:** Success is defined by the number of patients with successful CCD document previews

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 athenaCommunicator

- **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 patients with a successful CCD document download in athenaCommunicator
- **Expected Outcomes:** Success is defined as the number of patients that can 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 athenaCommunicator

- **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 CCD documents successfully transmitted from athenaCommunicator. The analysis will breakout 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.)

Use Case 2 Outcomes

No changes from plan.

Measure	Relied Upon Software	Outcomes	Challenges
1: Validate user behavior around view actions	athenaCommunicator	Review of audit logs for 6/29/22 – 9/8/22 for 5157 customers yielded validation of 415,290 successful views and only 27 failures. Note – A view requires the download of a CCDA which is why the data is aligned to Measure 2 below.	N/A
2: Validate user behavior around download actions		Review of audit logs for 6/29/22 – 9/8/22 for 5157 customers yielded validation of 415,290 successful views and only 27 failures.	N/A
3: Validate user behavior around transmit actions		Review of audit logs for 6/29/22 – 9/8/22 yielded validation as follows: <ul style="list-style-type: none"> • Transmit via email: 88,964 successful transmits spanning 5275 customers with 0 errors 	N/A

		<ul style="list-style-type: none"> Transmit via Direct: 748 successful transmits spanning 421 customers with 31 errors 	
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Use Case 3 – EHR users export CCDAs for one or many patients for the purpose of sharing with providers, patients or other third-parties under the purview of HIPAA

Certification Criteria	Requirement
§ 170.315 (b)(6) Data export	(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 a statistically significant number of exports by users spanning multiple organizations using athenaClinicals 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	Relied Upon Software	Outcomes	Challenges
1: Single/Multi patient export	N/A	Review of audit logs of all athenaClinicals customers for Q2 2022 yielded validation as follows (only authorized users): <ul style="list-style-type: none"> 1-10 patients: 4045 total export requests spanning 24 customers with 37,576 CCDAs generated 10-120 patients: 175 total export requests spanning 47 customers with 439,118 CCDAs generated All patients: 93 total export requests spanning 38 customers with 4,011,443 CCDAs generated 	N/A

Use Case 4 – Clinicians electronically prescribe medications

Certification Criteria	Requirement
§ 170.315 (b)(3) Electronic prescribing	(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 athenaClinicals successful use of required eRx transaction types

- **Justification:** A statistically significant sample size of electronic prescriptions spanning multiple organizations using athenaClinicals will demonstrate the real world utility of the feature
- **Test Methodology:** System logs will be reviewed to determine success rate for each transaction type relative to the listed benchmark
- **Expected Outcomes:** Transactions are successfully delivered with expected errors (e.g. pharmacy does not support electronic transactions, etc.) and achieving the following transaction success rates:
 - NewRx – 99%
 - RxChange – 90%
 - CancelRx – 99%
 - RxRenewal – 99%
 - RxFill – 99%
 - Medication History – 99%

Use Case 4 Outcomes

No changes from plan.

Measure	Relied Upon Software	Outcomes	Challenges
1: Transaction success rates	N/A	Review of audit logs of all athenaClinicals customers yielded the following results. Goals are noted above. <ul style="list-style-type: none"> • Range: 8/15/22 – 9/15/22 <ul style="list-style-type: none"> ○ NewRx: 99.90% success rate ○ RxChange: 99.60% success rate ○ CancelRx: 99.95% success rate ○ RxRenewal: 99.95% success rate ○ RxFill: 100% success rate • Range: Q2 2022 <ul style="list-style-type: none"> ○ Medication History: 99.91% success rate <p>Notes on analysis:</p>	N/A

		<ul style="list-style-type: none"> • RxNew transactions with a response that indicate the pharmacy record is inactive, item is not in stock, a duplicate or does not support the transaction are considered numerator compliant • Surescripts does not support non-electronic RxChange requests so those requests submitted from non-interface are excluded • Prescriber responses to a RxChange request from the pharmacy with a subsequent pharmacy response of “prescription not on file” or “prescription cancelled,” was approved by prescriber with changes (prior authorizations), the request is a duplicate or where RxChange transaction is not supported are considered numerator compliant • Pharmacy responses that indicate the pharmacy record is inactive, the request is a duplicate or CancelRx transaction is not supported are considered numerator compliant • Prescriber responses to a RxRenewal request from a pharmacy with a subsequent pharmacy response of “prescription not on file,” “prescription cancelled,” the request is a duplicate or where the RxRenewal transaction is not supported are considered numerator compliant • RxFill messages that don’t have enough information to process, such as the identification information are excluded 	
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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	Requirement
§ 170.315 (c)(1) CQMs – record and export	(i) Record...
	(ii) Export...
§ 170.315 (c)(2) CQMs – import and calculate	(i) Import...
	(ii) Calculate each and every clinical quality measure...
§ 170.315 (c)(3) – report	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 1) that a QRDA I file generated by athenaClinicals can be successfully imported by a different EHR and 2) that a QRDA III file generated by athenaClinicals visually conforms to the standard

- **Justification:** 1) The ability for a different EHR to recognize and successfully import a QRDA I file generated by athenaClinicals will demonstrate file conformance. 2) A visual inspection of a file generated in production will validate conformance of what is implemented in the real world



- **Test Methodology:** 1) A QRDA I file using synthetic test data will be generated by athenaClinicals and imported into a different EHR. Manual review of system logs and eCQM reports in the other EHR will validate conformance to specifications. 2) Visual inspection of sample QRDA III files generated in production using currently implemented QRDA III standard
- **Expected Outcomes:** 1) Files conform to required specifications and all data for the eCQMs in the file are present in the other EHR. 2) File samples conform to currently implemented QRDA III standard

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

- **Justification:** The ability for athenaClinicals 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:** A QRDA I file will be generated in a different EHR using synthetic test data and then imported into athenaClinicals. Manual review of system logs and eCQM reports will validate the successful import and calculation of eCQMs based on imported data
- **Expected Outcomes:** Files import, with any import errors (file or formatting related) flagged to users, and imported data is used to calculate eCQMs results correctly

Use Case 5 Outcomes

No changes from plan.

Measure	Relied Upon Software	Outcomes	Challenges
1: eCQM calculation success rates	N/A	99.66% of 1178 automated tests returned successfully	N/A
2: QRDA file export conformance	N/A	<p>Sub-measure 1: QRDA I file was successfully exported from athenaClinicals and then successfully imported into the athenaPractice “Clinical Quality Reporting” tool. The number of patient files, as well as counts of initial population, exclusions, exceptions, denominator, etc. were all as expected.</p> <p>Sub-measure 2: A production QRDA III sample file was viewed and key elements including the template ID and date were compared to the associated CMS 2022 Implementation Guide to validate conformance.</p>	N/A
3: QRDA file import conformance	N/A	QRDA 1 file was successfully exported from athenaPractice “Clinical Quality Reporting” tool and then successfully imported into athenaClinicals. The number of patient files, as well as counts of initial population, exclusions, exceptions, denominator, etc. were all as expected.	N/A

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

Certification Criteria	Requirement
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§ 170.315 (f)(2) Transmission to public health agencies – syndromic surveillance	Create syndrome-based public health surveillance information...
§ 170.315 (f)(7) Transmission to public health agencies – health care surveys	Create health care survey information for electronic transmission...

Measure 1: Syndromic surveillance message success – This measure will evaluate the ability for athenaClinicals 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 athenaClinicals will demonstrate the real world utility of the capability. Although these messages apply to urgent care, emergency department and inpatient settings, athenaClinicals 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 2: Healthcare survey generation success – This measure will evaluate the ability for athenaClinicals to generate conformant healthcare survey CCDAs in the ambulatory setting

- **Justification:** The evaluation of documents spanning multiple organizations using athenaClinicals will demonstrate the real world utility of the capability
- **Test Methodology:** System logs will be evaluated for all applicable CCDAs
- **Expected Outcomes:** Surveys successfully generated and accepted by National Center for Health Statistics (NCHS) with expected errors (e.g. formatting error beyond the scope of CEHRT specification requirement, etc.)

Use Case 6 Outcomes

No changes from plan.

Measure	Relied Upon Software	Outcomes	Challenges
1: Syndromic surveillance message success	N/A	Review of audit logs for Q2 2022 for all athenaClinicals customers validated 756,891 successful messages sent. There were 122 errors, all of which must be managed directly by customers.	N/A
2: Healthcare survey generation success	N/A	The focus in 2022 was primarily testing with NCHS, but with this successful testing there was one alpha customer that submitted production data with 89,995 messages sent and ~117 MDN errors.	N/A



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

Certification Criteria	Requirement
§ 170.315 (g)(7) Application access – patient selection	(i) Functional requirement...
§ 170.315 (f)(8) Application access – data category request	(i) Functional requirements...
§ 170.315 (g)(9) Application access – all data request	(i) Functional requirements...

Measure 1: Request success rate for certified APIs – This measure will evaluate the successful use of all certified APIs (https://docs.athenahealth.com/api/resources/complete_list_athena_apis) 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 spanning a broad spectrum of API Information Sources will demonstrate the real world utility of the APIs
- **Test Methodology:** System logs will be reviewed to determine the success rates for the following:
 - Requests Served
 - Denominator: Total requests of certified API(s)
 - Numerator: # of successful responses
 - API Information Sources with at least one successful response – Validates successful API use spanning current API Information Sources
 - Denominator: Total API Information Sources with at least one request
 - Numerator: Total API Information Sources with at least one successful response
 - API Users with at least one successful response – Validates successful API use spanning current API Users
 - Denominator: Total API Users with at least one request
 - Numerator: Total API Users with at least one successful response
- **Expected Outcomes:** We expect to see >99% of requests successful (including expected errors that could include failure in authorization/authentication, incorrectly formatted request, etc.) as summarized in the table:

Measure	§ 170.315 (g)(7)	§ 170.315 (g)(8)	§ 170.315 (g)(9)
Requests Served	>99%	>99%	>99%
API Information Sources	>99%	>99%	>99%
API Users	>99%	>99%	>99%

Use Case 7 Outcomes

Changes from plan: Results below are combined spanning (g)(7), (g)(8) and (g)(9) APIs to simplify reporting.

Measure	Relied Upon Software	Outcomes	Challenges

1: Request success rate for certified APIs	N/A	<p>Review of audit logs for Q2 2022 for all athenaClinicals customers validated the following results. Goals are noted above.</p> <ul style="list-style-type: none"> • Requests Served: 99.96% success • API Information Sources: 100% success • API Users: 100% success <p>Notes on analysis:</p> <ul style="list-style-type: none"> • In addition to “2xx” (Success) responses, “4xx” (Client Error) responses are considered “success” for the purpose of numerator calculation 	N/A
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Key Milestones

Key Milestone	Care Setting	Date/Timeframe
Publication that informs athenaClinicals customers that de-identified data will be used in the execution of real world test plans annually beginning in 2022	All	January 2022
Start of collection of necessary data as laid out by plan (will vary by measure)	All	January 2022
End of collection of necessary data as laid out by plan (will vary by measure)	All	December 2022
Analysis of data (will vary by measure)	All	Q3-Q4 2022
Submit Real World Testing report to ACB	All	January 2023

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: 1/19/2023