

2022 Real World Testing Results Report

Azalea EHR 3.0

Background

Under the ONC Health IT Certification Program (Certification Program), health IT developers are required to conduct Real World Testing of their certified health IT (45 CFR 170.405). The Office of the National Coordinator for Health Information Technology (ONC) issues Real World Testing resources to clarify health IT developers' responsibilities for conducting Real World Testing, to identify topics and specific elements of Real World Testing that ONC considers a priority, and to assist health IT developers in developing their Real World Testing plans.

Health IT developers have maximum flexibility to develop innovative plans and measures for Real World Testing. As developers are planning how they will execute Real World Testing, they should consider the overall complexity of the workflows and use cases within the care settings in which they market their certified health IT to determine the approaches they will take. If adjustments to approaches are made throughout Real World Testing, the health IT developer should reflect these adjustments in their Real World Testing results report. ONC expects that the Real World Testing results report will include a description of these types of changes, the reasons for them, and how intended outcomes were more efficiently met as a result.

General Information

Plan Report ID Number: [For ONC-Authorized Certification Body use only]

Developer Name: Azalea Health

Product Name(s): Azalea EHR

Version Number: 3.0

Certified Health IT Product List (CHPL) ID: 15.04.04.2688.Azal.03.02.1.180216

Developer Real World Testing Plan Page URL: <https://www.azaleahealth.com/real-world-testing/>

Developer Real World Testing Results Report Page URL (f different from above): same as above

Summary of Testing Methods and Key Findings

Adoption rate was used to determine if/when certified capability is being used in the real world and to help identify differences in care settings. Evidence of high rates of implementation and usage indicate (but don't by themselves prove) a certified capability's usefulness and practical value. Evidence of low rates of implementation and usage might indicate a potential problem, of which there could be several different causes. Note, it was not the goal of this exercise to identify the individual causes of why a given certified capability may have a high or low adoption rate, but rather to identify the users and care settings for which a given test is relevant. Adoption Rate data is included in each of the certified criterion testing results sections, with the exception of overall system usage.

Real-world interoperability was successfully demonstrated for most metrics by Summative Assessment. This was accomplished by gathering real-world data of the use of our certified capabilities by our clients. This data was then analyzed and compiled to demonstrate evidence of successful implementation and use by our clients.

There are some certified capabilities for which we have had little to no client adoption. For those metrics, we chose to test the capabilities interactively by following the documented workflows for those features and submitting to validation tools or witnessing successful use of the feature. These results will be shared in relation to the testing steps outlined in our 2022 Real World Testing Plan.

Standards Updates (Including SVAP and USCDI)

Azalea EHR was not updated to any voluntary standards.

Care Settings

True to our mission of helping underserved healthcare providers improve patient care and profitability, Azalea EHR largely focuses on providing solutions for the unique needs of rural health clinics, primary care/multi-provider practices, and behavioral health providers.

Testing Results

Testing Method: Adoption Rates

Azalea EHR had approximately 580 accounts utilizing the EHR system. This number includes only those clients using the system for clinical documentation that would allow them to utilize the certified capabilities addressed by the 2022 Real World Test Plan and Results Report. Of those 580 accounts, approximately 150 are Rural Health Clinics.

Testing Method: Summative Assessment

The following metrics were measured by viewing audit logs and other reporting sources available to track the behavior of the certified Health IT module during the given timeframe. All metrics were designed to reflect the core elements of the criteria, demonstrate interoperability, and demonstrate the success rate of the certified capability being used. In most cases we elected to record these metrics over a 90-day period to reflect the reporting periods typically required for compliance with the federal incentive programs.

The continued measurable use of certified capabilities will provide implicit evidence of successful implementation of the required certified capability. This is especially meaningful in cases where interoperability with outside systems is demonstrated. In cases where it was not possible to determine “success” via an explicit confirmation by a receiving system, success was defined as a transmission was made where no error was received from the destination system or its intermediaries. Additionally, we also reviewed internal customer and vendor issue tracking systems for reports of failures or unsatisfactory performance in the field.

Criterion 1: 170.315(b)(1) Transitions of Care

- **Changes to original plan:** None
- **Challenges encountered:** None
- **Testing Method:** Review and analysis of audit log data and custom queries for all CCDAs creation activities during the specified timeframe. Azalea EHR relies upon EMR Direct Interoperability Engine for sending and receiving CCDAs documents via Edge protocols.
- **Timeframe:** Data was collected over a 90-day period from April 1, 2022 - June 30, 2022
- **Metrics and Outcomes:**
 - **Metric 1: Number of CCDAs created**
 - 51 unique clients generated a total of 671 CCDAs documents
 - 471 (71%) were created by Rural Health Clinics
 - 195 (29%) were created by Primary Care / Multi-provider Practices
 - 0 were created by Behavioral Health Providers
 - **Metric 2: Number of CCDAs sent via edge protocols**
 - 11 unique clients sent a total of 291 CCDAs documents
 - RHC = 88
 - Primary Care/Multi-provider = 94
 - Behavioral Health = 0
 - Other specialties = 109
 - **Metric 3: Number of CCDAs received via edge protocols**
 - A total of 264 CCDAs documents were received via Edge protocol

Criterion 2: 170.315(b)(2) Clinical information reconciliation and incorporation

- **Changes to original plan:** None
- **Challenges encountered:** None
- **Testing Method:** Review and analysis of custom queries for all CCDA reconciliation activities during the specified timeframe.
- **Timeframe:** Data was collected over a 90-day period from April 1, 2022 - June 30, 2022
- **Metrics and Outcomes:**
 - **Number of times a user reconciled medication list data from a received CCDA**
 - 88 clients recorded a total of 47,404 med list reconciliations
 - RHC = 15,008 (25 unique clients)
 - Primary care/Multi-provider = 23,071 (36 unique clients)
 - Behavioral Health = 278 (4 unique clients)
 - Other specialties = 9,047 (23 unique clients)
 - **Number of times a user reconciled allergies and intolerance list data from a received CCDA**
 - 88 clients recorded a total of 44,031 allergy list reconciliations
 - RHC = 14,262 (25 unique clients)
 - Primary care/Multi-provider = 21,261 (36 unique clients)
 - Behavioral Health = 176 (4 unique clients)
 - Other specialties = 8,332 (23 unique clients)
 - **Number of times a user reconciled problem list data from a received CCDA**
 - 74 clients recorded a total of 29,282 problem list reconciliations
 - RHC = 9,489 (22 unique clients)
 - Primary care/Multi-provider = 13,832 (32 unique clients)
 - Behavioral Health = 59 (3 unique clients)
 - Other specialties = 5,902 (17 unique clients)

Criterion 3: 170.315(b)(3) Electronic Prescribing

- **Changes to original plan:** None
- **Challenges encountered:** None
- **Testing Method:** Activity reports were obtained from our electronic prescribing partner, and relied upon software, DrFirst. Clients must have an Rcopia (DrFirst) license to perform Electronic Prescribing in Azalea EHR. Data was aggregated for all clients for all metrics in demonstration of successful implementation and use of the certified capability. Data was also compiled for samples of 3 clients from each care setting being tested.
- **Timeframe:** Data was collected over a 90-day period from April 1, 2022 - June 30, 2022
- **Metrics and Outcomes:**
 - Totals are from 1,441 licensed providers across 422 clients
 - **Metric 1: Number of prescriptions created**
 - Total = 479,119
 - RHC sample = 8,008

- Primary care/Multi-provider sample = 16,562
- Behavioral Health sample = 17,234
- **Metric 2: Number of prescriptions changed**
 - Total = 427
 - RHC sample = 4
 - Primary care/Multi-provider sample = 3
 - Behavioral Health sample = 0
- **Metric 3: Number of prescriptions canceled**
 - Total = 4,660
 - RHC sample = 96
 - Primary care/Multi-provider sample = 200
 - Behavioral Health sample = 1
- **Metric 4: Number of prescriptions renewed (refills)**
 - Total = 56,520
 - RHC sample = 1,164
 - Primary care/Multi-provider sample = 2,014
 - Behavioral Health sample = 299

Criterion 4: 170.315(b)(6) Data Export

- **Changes to original plan:** Upon reviewing audit log and custom query data for this criterion, it was discovered that there was no record of any clients conducting single or multiple patient data exports. Therefore, a plan was developed to test this certified capability interactively. The results of that testing will be covered below in the Interactive Testing section of the Results Report.
- **Challenges encountered:** Less than anticipated use of this functionality
- **Testing Method:** Audit log and custom query data review and analysis
- **Timeframe:** Data was collected over a 90-day period from April 1, 2022 - June 30, 2022
- **Metrics and Outcomes:**
 - **Number of times a data export was performed for a patient**
 - 0
 - **Number of times a data export was performed for multiple patients in a single transaction**
 - 0

Criterion 5: 170.315(c)(1) Clinical quality measures (CQMs) - record and export

- **Changes to original plan:** Data review was first considered only for the first quarter of the year to correspond with the MIPS submission window. However, upon reviewing the data, we see increased activity during other months of the year as many of our clients report through an ACO. Therefore, the timeframe for data collection for this criterion was expanded.

- **Challenges encountered:** Less than anticipated use of this functionality
- **Testing Method:** Review and analysis of audit log data for all CQM activities during the specified timeframe
- **Timeframe:** Data was collected for January 1, 2022 - September 30, 2022
- **Metrics and Outcomes:**
 - **Number of measures recorded during the period**
 - Azalea EHR is certified to and supports 43 eCQMS
 - **Number of QRDA Category 1 files exported**
 - 0 QRDA Category 1 files were created and exported January 1, 2022 - March 31, 2022
 - 2 QRDA Category 1 files were created and exported April 1, 2022 - June 30, 2022
 - RHC = 1 file
 - Specialty clinic = 1 file
 - 17 QRDA Category 1 files were created and exported July 1, 2022 - September 30, 2022
 - RHC = 12 files
 - Primary care/Multi-provider = 3 files
 - Other specialty = 2 files

Criterion 6: 170.315(c)(2) Clinical quality measures (CQMs) - import and calculate

- **Changes to original plan:** Upon reviewing audit log data for this criterion, it was discovered that there was no record of any clients importing QRDA Category 1 files and using those files to calculate eCQM data. Therefore, a plan was developed to test this certified capability interactively. The results of that testing will be covered below in the Interactive Testing section of the Results Report.
- **Challenges encountered:** Less than anticipated use of this functionality
- **Testing Method:** Review and analysis of audit log data for all CQM activities during the specified timeframe.
- **Timeframe:** Data was collected for January 1, 2022 - September 30, 2022
- **Metrics and Outcomes:**
 - **Number of measures recorded during the period**
 - Azalea EHR is certified to and supports 43 eCQMS
 - **Number of QRDA Category 1 files imported (if applicable)**
 - We have no data of any QRDA Category 1 files being imported - see Interactive Testing method for this criterion

Criterion 7: 170.315(c)(3) Clinical quality measures (CQMs) - report

- **Changes to original plan:** Data review was first considered only for the first quarter of the year to correspond with the MIPS submission window. However, upon reviewing the data, we see increased activity during other months of the year as many of our clients report through an ACO. Therefore, the timeframe for data collection for this criterion was expanded.
- **Challenges encountered:** None
- **Testing Method:** Review and analysis of audit log data for all CQM activities during the specified timeframe.
- **Milestones:** Data was collected for January 1, 2022 - September 30, 2022
- **Metrics and Outcomes:**
 - **Number of measures recorded during the period**
 - Azalea EHR is certified to and supports 43 eCQMS
 - **Number of QRDA Category 3 aggregate report(s) created during the timeframe**
 - 39 QRDA Category 3 files were created and exported January 1, 2022 - March 31, 2022
 - Rural Health Clinics = 17
 - Primary Care/Multi-provider = 20
 - Behavioral Health = 0
 - Other specialties = 2
 - 14 QRDA Category 3 files were created and exported April 1, 2022 - June 30, 2022
 - Rural Health Clinics = 8
 - Primary Care/Multi-provider = 3
 - Behavioral Health = 0
 - Other specialties = 3
 - 7 QRDA Category 3 files were created and exported July 1, 2022 - September 30, 2022
 - Rural Health Clinics = 4
 - Primary Care/Multi-provider = 3
 - Behavioral Health = 0

Criterion 8: 170.315(e)(1) View, download, and transmit to 3rd party

- **Changes to original plan:** Upon reviewing audit log data for this criterion, it was discovered that there was no record of any patients using the CCDA download or encrypted transmittal. Therefore, a plan was developed to test this certified capability interactively. The results of that testing will be covered below in the Interactive Testing section of the Results Report.
- **Challenges encountered:** Less than anticipated use of some functionality

- **Testing Method:** Review and analysis of audit log data for patient portal view, download, and transmit activities during the specified timeframe . Azalea EHR relies upon EMR Direct Interoperability Engine (phiMail) for sending and receiving CCDA documents.
- **Timeframe:** Data was collected over a 90-day period from April 1, 2022 - June 30, 2022
- **Metrics and Outcomes:**
 - **Number of views of health information by a patient or authorized representative**
 - 440,000+ total views of CCDA documents over 350+ clients were recorded from January 1, 2022 - September 30, 2022
 - 118,582 total views across 90 clients (top 25% of portal adopters with at least one view recorded) all care settings
 - 68,984 views among the 3 target care settings
 - RHC = 10,332 views
 - Primary Care/Multi-provider = 25,495 views
 - Behavioral Health = 33,157
 - **Number of downloads of health information by a patient or authorized representative**
 - There is no record of patients downloading their CCDA during the time period
 - **Number of transmissions of health information by a patient or authorized representative using unencrypted email**
 - There was extremely low utilization of this function
 - 3 clients recorded patient portal CCDA sending activity during the time period from April 1, 2022 - June 30, 2022
 - RHC = 0
 - Primary care/multi-provider = 2 patients transmitted CCDA
 - Behavioral Health = 1 patient transmitted CCDA
 - **Number of transmissions of health information by a patient or authorized representative using encrypted method**
 - There were no recorded CCDAs transmitted via encrypted mail

Criterion 9: 170.315(f)(1) Transmission to public health agencies - immunization registries

- **Changes to original plan:** None
- **Challenges encountered:** None
- **Testing Method:** Feature adoption metrics and transmission records from the Azalea EHR system were reviewed and analyzed.
- **Milestones:** Data was collected over 3 separate 10-day timeframes. One 10-day period was selected from each month during the 90-days from April 1, 2022 - June 30, 2022.
- **Metrics and Outcomes:**
 - **Number (or percentage) of immunization records submitted to the immunization record**
 - There are 32 active immunization interfaces for Azalea clients
 - Total transmissions for the 30 days of data collection = 6,917
 - Of the 6,917 transmissions, only 3 registry errors were received in the logs
 - Any other errors/warnings received were user workflow related
 - This produces a 99.97% success rate

	Interfaces Transmitting	Average Sends per Transmitting Interface	Total Sends per 10-day Period
4/4/22 - 4/13/22	20	68.9	2206
5/16/22 - 5/25/22	21	74.7	2390
6/1/22 - 6/10/22	23	72.5	2321

Criterion 10: 170.315(f)(2) Transmission to public health agencies - syndromic surveillance

- **Changes to original plan:** None - interactive testing was required as expected due to no adoption of this functionality.
- **Challenges encountered:** None
- **Testing Method:** We have no established Syndromic Surveillance interfaces for clients so there was no real-world activity recorded for this criterion. This testing was conducted interactively as expected and the results of that testing will be covered below in the Interactive Testing section of the Results Report.
- **Timeframe:** It was verified in February 2022 that there were no established client interfaces for this certified capability.

- **Metrics and Outcomes:**
 - **Total number of syndromic events created and submitted**
 - 0 as anticipated - see Interactive Testing method for this criterion

Criterion 11: 170.315(f)(7) Transmission to public health agencies - health care surveys

- **Changes to original plan:** None - interactive testing was required as expected due to no adoption of this functionality.
- **Challenges encountered:** None
- **Testing Method:** We anticipated having no real-world activity recorded for this criterion. This testing was conducted interactively as expected and the results of that testing will be covered below in the Interactive Testing section of the Results Report.
- **Timeframe:** Audit logs for the year were reviewed for activity for this criterion
- **Metrics and Outcomes:**
 - **Total number of health care surveys created and submitted**
 - 0 as anticipated - see Interactive Testing method for this criterion

Criterion 12: 170.315(g)(7) Application access - patient selection

- **Changes to original plan:** None - see Interactive Testing method for this criterion
- **Challenges encountered:** Azalea EHR has had zero user adoption of the available API functionality
- **Testing Method:** There were no Patient ID requests recorded
- **Timeframe:** Data was reviewed for January 1, 2022 - September 30, 2022 to determine no adoption of the certified capability
- **Metrics and Outcomes:** see Interactive Testing method for this criterion
 - **Number of requests for a patient ID or token**
 - 0
 - **Number of requests that provided sufficient information to provide a valid response**
 - 0
 - **Number of follow-up requests made using the provided patient ID or token**
 - 0

Criterion 13: 170.315(g)(8) Application access - data category request

- **Changes to original plan:** None - see Interactive Testing method for this criterion
- **Challenges encountered:** Azalea EHR has had zero user adoption of the available API functionality
- **Testing Method:** There were no patient data requests recorded
- **Timeframe:** Data was reviewed for January 1, 2022 - September 30, 2022 to determine no adoption of the certified capability

- **Metrics and Outcomes:**
 - **Number of requests for a patient's data made by an application via a data category request using a valid patient ID or token**
 - 0
 - **Number of requests for a patient's data made by an application via a data category request using a valid patient ID or token for a specific date range**
 - 0

Criterion 14: 170.315(g)(9) Application access - all data request

- **Changes to original plan:** None - see Interactive Testing method for this criterion
- **Challenges encountered:** Azalea EHR has had zero user adoption of the available API functionality
- **Testing Method:** There were no patient Summary Record requests recorded
- **Timeframe:** Data was reviewed for January 1, 2022 - September 30, 2022 to determine no adoption of the certified capability
- **Metrics and Outcomes:**
 - **Number of requests for a patient's Summary Record made by an application via an all data category request using a valid patient ID or token**
 - 0
 - **Number of requests for a patient's Summary Record made by an application via an all data category request using a valid patient ID or token for a specific date range**
 - 0

Criterion 15: 170.315(h)(1) Direct Project

- **Changes to original plan:** None
- **Challenges encountered:** None
- **Testing Method:** Activity reports were obtained from our direct messaging partner, and relied upon software, EMR Direct. Data was requested for the same sample of clients from each care setting as was used for 170.315(b)(3).
- **Timeframe:** Data was received from EMR Direct in October 2022 and covers the 90-day period from April 1, 2022 - June 30, 2022
- **Metrics and Outcomes:**
 - **Number of Direct Messages sent**
 - Total (all Direct Messaging clients) = 247
 - RHC sample = 0
 - Primary Care/Multi-provider sample = 0
 - Behavioral Health sample = 0

- **Number of Delivery Notifications received**

- Total POSITIVE Delivery Notifications received (all Direct Messaging clients) = 243
 - RHC sample = 0
 - Primary Care/Multi-provider sample = 0
 - Behavioral Health sample = 0
- Total NEGATIVE Delivery Notifications received (all Direct Messaging clients) = 3
 - RHC sample = 0
 - Primary Care/Multi-provider sample = 0
 - Behavioral Health sample = 0

- **Number of Direct Messages received**

- Total (all Direct Messaging clients) = 19007
 - RHC sample = 3
 - Primary Care/Multi-provider sample = 2509
 - Behavioral Health sample = 0

- **Number of Delivery Notifications sent**

It should be noted that some of the senders transmitting messages to Azalea accounts did not request delivery notification. Per the Direct protocol, a positive delivery notification message is only sent back to the sender upon final delivery if delivery notification was requested by the sender.

- Total POSITIVE Delivery Notifications sent (all Direct Messaging clients) = 18330
 - RHC sample = 1
 - Primary Care/Multi-provider sample = 2076
 - Behavioral Health sample = 0
- Total NEGATIVE Delivery Notifications sent (all Direct Messaging clients) = 0
 - RHC sample = 0
 - Primary Care/Multi-provider sample = 0
 - Behavioral Health sample = 0

Testing Method: Interactive Demonstration

The following test plans were executed to demonstrate Real World certified capabilities for criteria where metrics were not available. Azalea EHR is focused on helping underserved providers, including those designated as Rural Health Clinics. Due to a lack of adoption of the available functionality for the following certified criteria, these criteria required and underwent testing via interactive demonstration.

All interactive testing was performed in a cloud-hosted production or near-production environment. A near-production test database is representative of all Azalea EHR practices and identifies in all aspects to the way the EHR is deployed to each practice, except with regards to the data contained in the database. Therefore, all interactive testing demonstrates that the certified capability works in the real world as deployed in the current production environment. Azalea Health captured screenshots where appropriate to document these tests to maintain as evidence of the results in the event that the ONC should wish to verify the reported results. Precautions will be taken to reduce any risk of exposure of PHI.

Criterion 1: 170.315(b)(6) Data Export

- **Changes to original plan:** Upon reviewing audit log and custom query data for this criterion, it was discovered that there was no record of any clients conducting single or multiple patient data exports. Therefore, a plan was developed to test this certified capability interactively.
- **Challenges encountered:** Less than anticipated use of this functionality
- **Testing Method:** Azalea Health performed single and multiple patient data exports with approximately 50, 250, 500 and 1000 included patients to demonstrate that this certified capability is available to export smaller and larger numbers of records.
- **Timeframe:** This testing was performed across different days and times of day during November and December 2022
- **Outcomes:**
 - Each generated single and multiple patient data export produced a .zip file containing the expected number of individual patient .xml files.
 - The exports were produced quickly without delay or error in the system.
 - Exports may be generated in real-time or scheduled.
 - User must have permissions to generate data exports.
 - This functionality and certified capability is operational and available for clients who wish to generate single or multiple patient data exports.

Criterion 2: 170.315(c)(2) Clinical quality measures (CQMs) - import and calculate

- **Changes to original plan:** Upon reviewing audit log data for this criterion, it was discovered that there was no record of any clients importing QRDA Category 1 files and using those files to calculate eCQM data. Therefore, a plan was developed to test this certified capability interactively.
- **Challenges encountered:** Less than anticipated use of this functionality
- **Testing Method:** Azalea Health leveraged 2 unique clients for this testing.
 - Within Client #1
 - Aggregate CQM reports were generated for eCQMs 68 and 122
 - Each measure contains one patient in the IPP, Denom, and Num
 - QRDA Category 1 files were generated for these 2 measures
 - Within Client #2
 - Initial aggregate reports were generated for CQMs 68 and 122
 - QRDA Cat I files were imported into Client #2 and extracted
 - New aggregate reports were generated for CQMs 68 and 122
 - Verified that the IPP, Denominator and Numerator increased by 1 for both measures
 - Verified that the expected patients were present in the new reports
- **Timeframe:** Interactive testing process was conducted during the month of December 2022
- **Outcomes:**
 - QRDA Category 1 files were successfully imported into Client #2
 - eCQMs were accurately calculated in Client #2 as verified by expected changes in populations for the 2 eCQMs tested
 - This functionality and certified capability is operational and available for clients who wish or need to import QRDA Category 1 files and calculate eCQMs from those imports.

Criterion 3: 170.315(e)(1) View, download, and transmit to 3rd party

- **Changes to original plan:** Upon reviewing audit log data for this criterion, it was discovered that there was no record of any patients using the CCDA download or encrypted transmittal. Therefore, a plan was developed to test this certified capability interactively.
- **Challenges encountered:** Less than anticipated use of some functionality
- **Testing Method:** Azalea Health logged into the patient portal as a patient and as an authorized representative for the patient. The patient's CCDA was downloaded and saved to the desktop. The CCDA file was also emailed to a direct address via phiMail.
- **Timeframe:** Interactive testing of the download and transmit (encrypted) functionalities completed in November and December 2022.

- **Outcomes:**
 - The CCDAs were downloaded (and ultimately saved to the desktop) successfully for both users.
 - The CCDAs were sent via encrypted email as captured by audit logs.
 - This functionality and certified capability is operational and available for patients or their authorized representative who wish to download and save their CCDAs or transmit them via encrypted email.

Criterion 4: 170.315(f)(2) Transmission to public health agencies - syndromic surveillance

- **Changes to original plan:** None - interactive testing was required as expected due to no adoption of this functionality.
- **Challenges encountered:** None
- **Testing Method:** Azalea Health created 3 test patients in an urgent care setting in our near-production environment. The 3 patients consisted of the NHCS test patient and 2 developer-created patients typical of those served by our clients. We then followed the appropriate workflows which would, in the real world, trigger the required messages to be automatically generated and sent by the system. For testing purposes, those resulting messages were intercepted and sent to the tester's email. The tester then uploaded the messages to the NIST syndromic surveillance HLv2 validator tool found here: <https://hl7v2-ss-r2-testing.nist.gov/ss-r2/#/home>. This testing method made use of both the context-based and context-free test tools.
- **Timeframe:** Interactive testing of this capability was conducted and completed in September 2022.
- **Metrics and Outcomes:**
 - Appropriate PHIN ADT admission and discharge messages for syndromic surveillance were automatically generated upon appropriate workflows built into the system.
 - The resulting PHIN ADT messages passed the appropriate validation tool without errors.
 - This functionality and certified capability is operational and available for clients who choose to participate in the Syndromic Surveillance PI activity.

Criterion 5: 170.315(f)(7) Transmission to public health agencies - health care surveys

- **Changes to original plan:** None - interactive testing was required as expected due to no adoption of this functionality.
- **Challenges encountered:** None
- **Testing Method:** Azalea Health configured 3 test patients with data representative of typical Azalea EHR provider patients. The first test patient was the test patient provided by the NHCS. The EHR generated health care survey CDA documents for each patient. Azalea Health uploaded each of the created health care survey documents to the National

Health Care Surveys IG Release 1.2 validator found here:

<https://cda-validation.nist.gov/cda-validation/muNHCS12.html>.

- **Timeframe:** Interactive testing of this capability was conducted and completed in November and December 2022.
- **Outcomes:**
 - All NHCS files passed the validator tool without error.
 - This functionality and certified capability is operational and available to clients who choose, and are selected, to participate in the National Health Care Surveys PI activity

Criterion 6: 170.315(g)(7) Application access - patient selection

Criterion 7: 170.315(g)(8) Application access - data category request

Criterion 8: 170.315(g)(9) Application access - all data request

- **Changes to original plan:** None - interactive testing was required as expected due to no adoption of this functionality.
- **Challenges encountered:** None
- **Testing Method:** (*The 3 Application Access certified criteria were tested together.*) Azalea Health used Postman to demonstrate that a mock user can request data from the API hosted in the production environment. Using representative patient data for 2 patients, Azalea Health set up an API key for a Test Clinic. The mock user then followed these high-level steps:
 - Mock user submitted their patient demographics to the test clinic in order to obtain the token that was used to select the patient and allow queries for subsequent data.
 - The test app queried the API for discrete CCDS fields.
 - The test app queried the API for patient CCDA documents.
- **Timeframe:** Interactive testing of this capability was conducted and completed in November 2022.
- **Outcomes:**
 - For both test patients:
 - The patient ID was accepted.
 - The token was returned.
 - Patient CCDS data was visible in the app as discrete data and was able to be visualized as a CCDA.
 - This functionality and certified capability is operational and available to clients who desire connection to the API via third-party application.

Key Milestones

Key Milestone	Care Setting	Date/Timeframe
Scheduling/Logistics Necessary audits and reports created by engineering teams, care setting samples identified, timeframes identified for data collection	All	January 1, 2022 - June 30, 2022
Data Collection Data requests sent to partners as needed, early data collection reviewed for completeness, additional audits or reports created as needed, began identifying additional criterion that would require interactive testing due to low utilization, some interactive testing completed	All	July 1, 2022 - September 30, 2022
Review and Collate Data Intermittent work on data as it was finalized, remaining interactive testing completed	All	October 1, 2022 - January 4, 2023
Writing Report	All	December 1, 2022 - January 6, 2023