



ONC 21st Century Cures Certification
§170.405 Real World Testing
2022 Real World Testing Plan

Compulink Healthcare Solutions, Inc
Product Version 12
Prepared November 3, 2021
Submitted by Karen Perry, OD FAO
Report based on ONC Real World Testing Template
(09/10/2021)

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REAL WORLD TESTING PLAN

BACKGROUND & INSTRUCTIONS

Under the ONC Health IT Certification Program (Program), Health IT Developers are required to conduct Real World Testing of their Certified Health IT (45 CFR 170.556 and 170.523(i)). 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 to develop 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 for 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 which approaches they will take. This Real World Testing plan template was created to assist Health IT Developers in organizing the required information that must be submitted for each element in their Real World Testing plan. Health IT Developers must submit one plan for each year of Real World Testing (see resources listed below for specific timelines and due dates). ONC does not encourage updating plans outside the submission timeline and will not post updates on the Certified Health IT Product List (CHPL). 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 would expect 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. This resource should be read and understood in conjunction with the following companion resources, which describe in detail many of the Program requirements referenced in this resource.

- [Real World Testing–What It Means for Health IT Developers – Fact Sheet](#)
- Real World Testing Resource Guide – Coming Soon
- [Real World Testing Certification Companion Guide](#)

Health IT Developers should also review the following regulatory materials, which establish the core requirements and responsibilities for Real World Testing under the Program.

- 21st Century Cures Act: Interoperability, Information Blocking, and the ONC Health IT Certification Program final rule, [85 FR 25642](#) (May 1, 2020) (**Century Cures final rule**)
 - ↳ [Section VII.B.5](#) – “Real World Testing”

GENERAL INFORMATION

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

Developer Name: Compulink Healthcare Solutions

Product Name(s): Compulink Advantage

Version Number(s): Version 12

Certified Health IT Product List (CHPL) ID(s): 15.04.04.2701.Comp.12.00.1.171106

Developer Real World Testing Page URL: <https://www.compulinkadvantage.com/cures-certification-rwt/>

JUSTIFICATION FOR REAL WORLD TESTING APPROACH

Consistent with the ONC's recommendation that "Real World Testing verify that deployed Certified Health IT continues to **perform as intended by conducting and measuring observations of interoperability and data exchange**", this test plan focuses on capturing and documenting the number of instances that certified capability is successfully utilized in the real world. In instances where no evidence exists due to zero adoption of a certified capability or the inability to capture evidence of successful use for other reasons, we will demonstrate the required certified capability in a semi-controlled setting which closely reflects a "real world" implementation.

It is important to note that Real World Testing is only one component of the Health IT Certification program used to demonstrate compliance with the program requirements. Real World Testing should augment and support testing that was conducted prior to certification being granted. It is not intended to duplicate the methods or results previously demonstrated. Instead, this test plan was developed to demonstrate that the certified capabilities have been successfully deployed for providers to use at their discretion in live settings.

We are using a 3-fold approach to demonstrate successful real-world implementations.

- Adoption Rate
- Summative Testing
- Interactive Testing

Adoption rate will be 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 is 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.

Summative assessments will be used to measure which certified actions were performed at the conclusion of a given time period. These will be conducted by generating reports and examining audit logs from within the certified health IT module to help demonstrate the frequency of actions within the given time frame, and where possible, whether those actions were successful or unsuccessful. High success rates should be an indicator of a successful implementation of a given certified capability in a real-world setting.

Interactive testing will be used to demonstrate conformance to requirements where the adoption rate of a given certified capability is zero and to demonstrate ongoing compliance with updated standards and code sets (SVAP). Interactive tests will require a live test as opposed to examining historical usage statistics. The goal is to allow a user to demonstrate the certified Health IT module being used in a way consistent with their own practice or care setting.

STANDARDS UPDATES (INCLUDING STANDARDS VERSION ADVANCEMENT PROCESS-SVAP AND USCDI)

Compulink is planning to initiate programming of the Advantage product to the new Cures Update criteria and incorporate the certain voluntary SVAP standards to newer versions after the execution of Compulink’s 2022 Real World Test.

CARE SETTINGS

Historically, Compulink Advantage was primarily deployed in ophthalmic practices and is currently expanding the Advantage product into other Healthcare specialty markets with the intent to diversity product offerings. The table below indicates Compulink’s current care settings and justification.

Care Setting	Justification
Behavioral Health	This care setting comprises the third largest care setting among Compulink’s user base. It includes behavioral health specialties including Psychology, Psychiatry, Addiction, and Pain Management. Behavioral health practices have stricter privacy rules than other specialties, which alters how providers implement certified Health IT modules.
Ophthalmic	This care setting comprises nearly 80% of our user base. It includes specialties comprising of, Ophthalmology, Ophthalmic Ambulatory Surgery Centers (ASC), and Optometry. This care setting was distinguished because it comprises such a large percentage of our user base.
Orthopedic	This care setting comprises the second largest care setting among our user base. It includes specialties encompassing Chiropractic, Orthopedics, Physical Therapy, and Podiatry. Several of the providers in this care setting are not permitted to issue prescriptions, so they oftentimes use fewer features than other care settings but differ from Otolaryngology in that they focus on different systems.
Otolaryngology	This care setting includes specialties comprising Audiology and Otolaryngology (ENTs). Several of the providers in this care setting are not permitted to issue prescriptions, so they oftentimes use fewer features than other care settings but differ from Orthopedics in that they focus on different systems.
Other Specialties	This care setting is comprised of all other specialties in our user base, including Dermatology, Gastroenterology, Primary Care, and Urology.

MEASURES USED IN OVERALL APPROACH

For each measurement/metric, describe the elements below:

- ✓ Description of the measurement/metric
- ✓ Associated certification criteria
- ✓ Care setting(s) that are addressed
- ✓ Justification for selected measurement/metric
- ✓ Expected Outcomes

ADOPTION RATES

The following metrics are applicable to all criteria and all care settings. These metrics will not be used directly to demonstrate interoperability or conformance to certification criteria. Instead, they will primarily be used to help determine the participants that will be in scope for this evaluation. They can also aid with the justification for other metrics by providing additional context (i.e., extremely low adoption rates for certain certified capabilities will necessitate a different approach to testing).

Metric	Description
Number of licensed installs/users of EHR <ul style="list-style-type: none"> • The definition of a “license” is dependent upon the model used (e.g., total number of systems, total number of seats per license, etc.) 	Identify the total number of licensed installs/users of the certified Health IT module, regardless of care setting, participation in incentive programs, or use of certified capabilities.
Number of active installs/users of EHR	Identify the total number of active installs and/or users of the certified Health IT module, regardless of care setting, participation in incentive programs, or use of certified capabilities.

The following metrics are applicable to all criteria that are licensed separately from the base license and all care settings.

Metric	Description
Certified capabilities that are licensed separately	Identify which certified capabilities are licensed separately from the base EHR license. Examples may include eRx, CQMs, public health, etc.
Number of installs/users who licensed a certified capability	Where applicable, identify the number of licensed installs/users of a given certified capability.
Number of installs/users that have used the certified capability in the preceding 365 days	Where applicable, identify the number of active installs/users of a given certified capability.

SUMMATIVE ASSESSMENT METRICS

The following metrics will be measured by viewing audit logs and reporting systems available to track the behavior of the certified Health IT module during a given time frame. All metrics are 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 is not possible to determine “success” via an explicit confirmation by a receiving system, success will be defined as a transmission was made where no error was received from the destination system or its intermediaries. Additionally, we will review internal customer and vendor issue tracking systems for reports of failures or unsatisfactory performance in the field.

None of the following criteria were updated to the Cures Update version of criteria prior to August 31, 2021. As a result, all testing is scheduled to be conducted against the 2015 Edition version of the criteria.

Criterion	Metric	Care Setting	Justification and Expected Outcome
170.315(b)(1) Transitions of care	Over a 90-day period: 1) Number of CCDAs created 2) Number of CCDAs sent via edge protocols 3) Number of CCDAs received via edge protocols	<ul style="list-style-type: none"> • Behavioral Health • Ophthalmic • Orthopedic • Otolaryngology • Other Specialties 	This criterion requires the ability of a certified Health IT module to create CCDAs according to specified standards and vocabulary code sets, as well as send and receive CCDAs via edge protocols. However, it is not possible to consistently and reliably demonstrate that all required standards and code sets were used because not all CCDAs created in a real-world setting contain all the necessary data elements. Furthermore, it is not feasible to obtain copies of CCDAs documents from “outside” developers or providers who have no incentive to participate in this exercise. Therefore, we intend to demonstrate the required certified capabilities by demonstrating how often CCDAs are created and exchanged with other systems to demonstrate the certified capability is available and effective, regardless of the frequency it is used. Our expectation is there will be moderate utilization by providers with a high success rate.

<p>170.315(b)(2) Clinical information reconciliation and incorporation</p>	<p>Over a 90-day period:</p> <ol style="list-style-type: none"> 1) Number of times a user reconciled medication list data from a received CCDA 2) Number of times a user reconciled allergies and intolerance list data from a received CCDA 3) Number of times a user reconciled problem list data from a received CCDA 	<ul style="list-style-type: none"> • Behavioral Health • Ophthalmic • Orthopedic • Otolaryngology • Other Specialties 	<p>This criterion requires the ability of a certified Health IT module to take a CCDA received via an outside system and match it to the correct patient; reconcile the medication, allergy, and problem lists; and then incorporate the lists into the patient record. The expectation is each of these steps is done electronically within the certified Health IT module. While this certified capability is available to our users, most providers in the real world typically prefer to perform these steps manually and elect to save any outside received CCDAs as attachments to the patient record. Therefore, we intend to record the frequency that providers are electronically reconciling and incorporating CCDAs that were received from outside providers to demonstrate the certified capability is available and effective, regardless of the frequency it is used. Our expectation is there will be low utilization by providers with a high success rate.</p>
<p>170.315(b)(3) Electronic prescribing</p>	<p>Over a 90-day period:</p> <ol style="list-style-type: none"> 1) Number of prescriptions created 2) Number of prescriptions changed 3) Number of prescriptions canceled 4) Number of prescriptions renewed 	<ul style="list-style-type: none"> • Behavioral Health • Ophthalmic • Orthopedic (not Physical Therapy) • Otolaryngology (Not Audiology) • Other Specialties 	<p>This criterion requires the ability of a certified Health IT module to perform prescription-related electronic transactions (eRx) using required standards. However, it is not possible to demonstrate the correct standards were used because it is not feasible to obtain copies of eRx documents from “outside” companies or pharmacies who have no incentive to participate. Therefore, we intend to demonstrate the required certified capabilities are effective by demonstrating how often eRx transactions are performed by examining reports from our eRx partner. This will demonstrate that not only are the eRx transactions sent from the certified Health IT module, but that the transactions are successfully received by the eRx clearinghouse. Our expectation is there will be high utilization by providers with a high success rate.</p>

<p>170.315(b)(6) Data export</p>	<p>Over a 90-day period:</p> <ol style="list-style-type: none"> 1) Number of times a data export was performed for a patient 2) Number of times a data export was performed for multiple patients in a single transaction 3) Number of times a data export was performed for all patients in a single transaction 	<ul style="list-style-type: none"> • Behavioral Health • Ophthalmic • Orthopedic • Otolaryngology • Other Specialties 	<p>This criterion requires the ability of a certified Health IT module to export a summary of a patient’s record in CCD format according to specified standards and vocabulary code sets. However, it is not possible to consistently and reliably demonstrate that all required standards and code sets were used because not all CCDs created in a real-world setting contain all the necessary data elements. Therefore, we intend to demonstrate the certified capability is available and effective, regardless of the frequency it is used. Our expectation is there will be very low utilization by providers with a high success rate.</p>
<p>170.315(c)(1-3) Clinical quality measures (CQMs)</p>	<p>Over a 90-day period:</p> <ol style="list-style-type: none"> 1) Number of measures recorded during the period 2) Number of QRDA Category 1 files exported 3) Number of QRDA Category 1 files imported (if applicable) 4) Number of QRDA Category 3 aggregate report(s) created over the period 	<ul style="list-style-type: none"> • Ophthalmic 	<p>These criteria will be tested together. C1 requires a certified Health IT module to record required data, calculate CQMs from the recorded data, and export the data in QRDA Category 1 format. C2 requires a certified Health IT module must be able to import data from a QRDA Category 1 formatted file and calculate the CQMs based on that data. C3 requires a certified Health IT module must be able to create a QRDA Category 1 formatted file and a QRDA Category 3 aggregate report to be used for transmitting CQM data to CMS. Compulink intends to record the frequency that CQM files are imported and/or exported by providers to demonstrate the certified capability is available and effective, regardless of the frequency it is used. Metrics for CQMs will be focused on the Ophthalmic care setting. Usage of these features is predominantly leveraged by Ophthalmic providers in the Advantage program. Our expectation is there will be moderate utilization by providers with a high success rate.</p>

<p>170.315(e)(1) View, download, and transmit to 3rd party</p>	<p>Over a 90-day period:</p> <ol style="list-style-type: none"> 1) Number of views of health information by a patient or authorized representative 2) Number of downloads of health information by a patient or authorized representative 3) Number of transmissions of health information by a patient or authorized representative using unencrypted email 4) Number of transmissions of health information by a patient or authorized representative using encrypted method 	<ul style="list-style-type: none"> • Behavioral Health • Ophthalmic • Orthopedic • Otolaryngology • Other Specialties 	<p>This criterion requires the ability of a certified Health IT module to provide patients access to a patient portal with the ability to view, download, and send their health care records to other providers via encrypted or unencrypted transmission methods in CCDA format. We intend to record the frequency that patients are viewing, downloading, and transmitting their records from the portal using the certified capabilities to demonstrate the certified capability is available and effective, regardless of the frequency it is used. Our expectation is there will be moderate utilization by patients for view and lower utilization for download and transmit with a high success rate for all certified capabilities.</p>
<p>170.315(g)(7) Application access — patient selection</p>	<ol style="list-style-type: none"> 1) Number of requests for a patient ID or token 2) Number of requests that provided sufficient information to provide a valid response 3) Number of follow-up requests made using the provided patient ID or token 	<ul style="list-style-type: none"> • Behavioral Health • Ophthalmic • Orthopedic • Otolaryngology • Other Specialties 	<p>This criterion requires the certified Health IT module to provide an API and supporting documentation that enable external applications to request a unique patient identifier from the certified Health IT module that can be used to request additional patient data. We intend to record the frequency that patient ID requests are received by providers via API to demonstrate the certified capability is available and effective, regardless of the frequency it is used. Our expectation is there will be zero adoption of this certified capability by our users, so we have added interactive testing methodology for these capabilities to the test plan below to demonstrate the feature is available and functions as expected should any users elect to begin using this feature.</p>
<p>170.315(g)(8) Application access — data category request</p>	<ol style="list-style-type: none"> 1) Number of requests for a patient's data made by an application via a data category request using a valid patient ID or token 2) 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 	<ul style="list-style-type: none"> • Behavioral Health • Ophthalmic • Orthopedic • Otolaryngology • Other Specialties 	<p>This criterion requires the certified Health IT module to provide an API and supporting documentation that enable external applications to request patient data by category from the certified Health IT module. We intend to record the frequency that patient data requests by category are received by providers and fulfilled via API to demonstrate the certified capability is available and effective, regardless of the frequency it is used. Our expectation is there will be zero adoption of this certified capability by our users, so we have added interactive testing methodology for these capabilities to the test plan below to demonstrate the feature is available and functions as expected should any users elect to begin using this feature.</p>

<p>170.315(g)(9) Application access — all data request</p>	<ol style="list-style-type: none"> 1) 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 2) 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 	<ul style="list-style-type: none"> • Behavioral Health • Ophthalmic • Orthopedic • Otolaryngology • Other Specialties 	<p>This criterion requires the certified Health IT module to provide an API and supporting documentation that enable external applications to request all categories of patient data defined in the CCDS from the certified Health IT module. We intend to record the frequency that patient data requests for all categories are received by providers and fulfilled via API to demonstrate the certified capability is available and effective, regardless of the frequency it is used. Our expectation is there will be zero adoption of this certified capability by our users, so we have added interactive testing methodology for these capabilities to the test plan below to demonstrate the feature is available and functions as expected should any users elect to begin using this feature.</p>
<p>170.315(h)(1) Direct Project</p>	<ol style="list-style-type: none"> 1) Number of Direct Messages sent 2) Number of Delivery Notifications received 3) Number of Direct Messages received 4) Number of Delivery Notifications sent 	<ul style="list-style-type: none"> • Behavioral Health • Ophthalmic • Orthopedic • Otolaryngology • Other Specialties 	<p>This criterion requires the ability of a certified Health IT module to record the frequency that direct messages are sent and received by providers, along with how often MDNs are sent and received. Since not all systems respond with MDNs, we cannot reliably use that metric to define success. Furthermore, it is not feasible to obtain copies of Direct Messages from “outside” developers or providers who have no incentive to participate in this exercise. Therefore, we intend to demonstrate the required certified capabilities by demonstrating how often Direct Messages are exchanged with other systems to demonstrate the certified capability is available and effective, regardless of the frequency it is used. Our expectation is there will be moderate utilization by providers with a high success rate.</p>

INTERACTIVE TESTING

In order to demonstrate Real World functionality for API Criteria, Compulink will use live, interactive testing to show that this functionality is available in the real world.

Compulink will leverage interactive testing for the following criteria:

- § 170.315(g)(7) Application access—patient selection
- § 170.315(g)(8) Application access—data category request
- § 170.315(g)(9) Application access—all data request

Justification for this approach

- Compulink maintains two Application Programming Interfaces (APIs), however only one is certified to the API criteria. With the intent of providing advanced functionality, Compulink API functionality was initially developed per ONC requirements with the expectation of augmenting the View, Download, Transmit functionality and with the intention of providing similar functionality.
- In addition to the ONC required API, Compulink developed a second API to enable digital connectivity between the Advantage Software and patient engagement enterprises per the client needs. This proprietary API facilitates billing and payor technology, clinical diagnostic technology and other third-party solutions which fuel digital networks and eCommerce in a transforming digital economy. Compulink clients have readily adopted to this second API feature.
- Compulink acknowledges that APIs are the cornerstone of digital transformation in healthcare, but overall, the healthcare industry continues to face challenges with API adoption over interoperability, patient data exchange and infrastructure. API adoption has been predominately driven by regulatory compliance rather than improving clinical outcomes, patient care experiences and business processes. The Compulink Advantage user base is mainstream in these considerations. While Compulink healthcare providers aspire to adopt digital transformation, their focus is directed toward immediate patient care operations through traditional workflows. Adoption rates for Compulink API technology have not yet aligned with the priorities of Compulink providers.
- As of this writing, while there continues to be demonstrated adoption of the Compulink portal, there has been no adoption of the API functionality and metrics are not available to demonstrate certified functionality in the Real World.

High Level Interactive Test Plan

- **Care Settings:** Compulink Advantage software is utilized in typical ambulatory care settings and outpatient facilities which include healthcare Primary Care physicians, Specialty Clinicians, Surgeons, Behavioral Health Specialists, Physicians Assistants, Nurse Practitioners, Clinical Psychologists, Physical or Occupational Therapists, Speech-Language Pathologists, Audiologists and other qualified Healthcare providers and support staff.
- **Test Environment:** All interactive testing will be performed in a live, production environment. Compulink Advantage software offers flexible solutions including a cloud-based environment or server based (on-premise) hosting options. Real World Testing for API criteria will be performed utilizing a sampling of data from both platforms representative of Real World deployments.
 - Compulink will use a recorded videoconferencing solution to capture the results of this testing.
 - Compulink will perform real world testing on a representative number of deployments in order to demonstrate that this functionality exists and functions in an identical manner in all cloud-based as well as on-premise deployments.
- **Test Data:** Interactive testing will be performed using live patient data in the live production environment in order to represent characteristics of real-world deployments. Precautions will be taken to reduce the risk of exposure of PHI.

Expected Outcome

Compulink will demonstrate the required, certified capability works as previously demonstrated and is available to users at their request. Specifically, Compulink will deliver expected results of the test as follows:

- Patient selection:
 - Compulink API technology will be able to receive a request to uniquely identify a patient and return an ID or other token that can be used by an application to subsequently execute requests for that patient's data.
- Data category request:

- Compulink API will be capable of responding to requests for patient data (based on an ID or other token) for each of the individual data categories specified in the Common Clinical Data Set (CCD) and able to return the full set of data for that data category (according to the specified standards, where applicable) in a computable format.
- Compulink API will be capable of responding to requests for patient data associated with a specific date and requests for patient data within a specified date range.
- All data request:
 - Compulink API will be able to respond to requests for patient data (based on an ID or other token) for all of the data classes expressed in the CCD document template.
 - Compulink API is able to respond to requests for patient data associated with a specific date as well as requests for patient data within a specified date range.

SCHEDULE OF KEY MILESTONES

Real World test planning will commence in first quarter of 2022. Each phase is expected to take 90-days to complete, with report writing to occur end of 2022/early 2023.

Key Milestone	Care Setting	Date/Timeframe
Scheduling and logistics	<ul style="list-style-type: none"> ● Behavioral Health ● Ophthalmic ● Orthopedic ● Otolaryngology ● Other Specialties 	90-days
Data collection	<ul style="list-style-type: none"> ● Behavioral Health ● Ophthalmic ● Orthopedic ● Otolaryngology ● Other Specialties 	90-days
Review and collate data	<ul style="list-style-type: none"> ● Behavioral Health ● Ophthalmic ● Orthopedic ● Otolaryngology ● Other Specialties 	90-days
Writing report	<ul style="list-style-type: none"> ● Behavioral Health ● Ophthalmic ● Orthopedic ● Otolaryngology ● Other Specialties 	90-days

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 requirementsⁱ.

Authorized Representative Name: [Karen Perry, OD FAAO](#)

Authorized Representative Email: kfp@compulinkadvantage.com

Authorized Representative Phone: [805-716-8677 ext. 348](tel:805-716-8677)

Authorized Representative Signature:

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ⁱ <https://www.federalregister.gov/d/2020-07419/p-3582>