Test Procedure for §170.314 (b)(1) Transitions of care – receive, display and incorporate transition of care/referral summaries

This document describes the test procedure for evaluating conformance of EHR technology to the certification criteria defined in 45 CFR Part 170 Subpart C of the Health Information Technology: Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology, 2014 Edition; Revisions to the Permanent Certification Program for Health Information Technology, Final Rule. The document[1] is organized by test procedure and derived test requirements with traceability to the normative certification criteria as described in the Overview document located at http://www.healthit.gov/certification (navigation: 2014 Edition Test Method). The test procedures may be updated to reflect on-going feedback received during the certification activities.

The Department of Health and Human Services (HHS)/Office of the National Coordinator for Health Information Technology (ONC) has defined the standards, implementation guides and certification criteria used in this test procedure. Applicability and interpretation of the standards, implementation guides and certification criteria to EHR technology is determined by ONC. Testing of EHR technology in the Permanent Certification Program, henceforth referred to as the ONC Health Information Technology (HIT) Certification Program[2], is carried out by National Voluntary Laboratory Accreditation Program (NVLAP)-Accredited Testing Laboratories (ATLs) as set forth in the final rule establishing the Permanent Certification Program (*Establishment of the Permanent Certification Program for Health Information Technology, 45 CFR Part 170; February 7, 2011*).

Questions or concerns regarding the ONC HIT Certification Program should be directed to ONC at ONC.Certification@hhs.gov.

CERTIFICATION CRITERIA

This certification criterion is from the Health Information Technology: Standards, Implementation Specifications, and certification criteria for Electronic Health Record Technology, 2014 Edition; Revisions to the Permanent Certification Program for Health Information Technology, Final Rule issued by the Department of Health and Human Services (HHS) on September 4, 2012. This certification criterion is included in the definition of a Base EHR.

§170.314(b)(1) Transitions of care – receive, display, and incorporate transition of care/referral summaries.

i) Receive. EHR technology must be able to electronically receive transition of care/referral summaries in accordance with:
   (A) The standard specified in § 170.202(a).

[1] Disclaimer: Certain commercial products may be identified in this document. Such identification does not imply recommendation or endorsement by ONC.

[2] Health Information Technology: Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology, 2014 Edition; Revisions to the Permanent Certification Program for Health Information Technology, Final Rule.

(B) Optional. The standards specified in § 170.202(a) and (b).
(C) Optional. The standards specified in § 170.202(b) and (c).

ii) Display. EHR technology must be able to electronically display in human readable format the data included in transition of care/referral summaries received and formatted according to any of the following standards (and applicable implementation specifications) specified in: § 170.205(a)(1), § 170.205(a)(2), and § 170.205(a)(3).

iii) Incorporate. Upon receipt of a transition of care/referral summary formatted according to the standard adopted at § 170.205(a)(3), EHR technology must be able to:
(A) Correct patient. Demonstrate that the transition of care/referral summary received is or can be properly matched to the correct patient
(B) Data incorporation. Electronically incorporate the following data expressed according to the specified standard(s):
(1) Medications. At a minimum, the version of the standard specified in § 170.207(d)(2);
(2) Problems. At a minimum, the version of the standard specified in § 170.207(a)(3);
(3) Medication allergies. At a minimum, the version of the standard specified in § 170.207(d)(2)
(C) Section views. Extract and allow for individual display each additional section or sections (and the accompanying document header information) that were included in a transition of care/referral summary received and formatted in accordance with the standard adopted at § 170.205(a)(3)

Per Section III.A of the preamble of the Health Information Technology: Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology, 2014 Edition; Revisions to the Permanent Certification Program for Health Information Technology, Final Rule, the 2014 Edition of this Certification Criterion is classified as revised from the 2011 Edition. This Certification Criterion meets at least one of the three factors of revised certification criteria: (1) the certification criterion includes changes to capabilities that were specified in the previously adopted certification criterion, (2) the certification criterion has a new mandatory capability that was not included in the previously adopted certification criterion, or (3) the certification criterion was previously adopted as "optional" for a particular setting and is subsequently adopted as "mandatory" for that setting.

2014 Edition Preamble Language

Per Section III.A of the preamble of the Health Information Technology: Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology, 2014 Edition; Revisions to the Permanent Certification Program for Health Information Technology, Final Rule where the transitions of care – receive, display, and incorporate transitions of care/referral summaries certification criterion is discussed:

- "We acknowledged that care plan, additional care team members, referring or transitioning provider's name and contact information as well as certain hospital discharge information are not explicitly required to be captured by separate certification criteria, unlike most other data included in the summary care record. We noted that the ability to capture these data elements is both

implicit and necessary to satisfy this certification criterion (as well as the other certification criteria that rely on the same data)."

- "We have revised the final certification criterion to require that EHR technology must be able to display in human readable format the data included in transition of care/referral summaries received and formatted according to each of the transition of care/referral summary standards we have adopted (i.e., CCD/C32; CCR; and Consolidated CDA)."
- "…commenters expressed concern regarding hospitalizations with large volumes of data such as lab results and how this information would display in a summary document of considerable length. … This certification criterion expresses that EHR technology must be able to display transition of care/referral summaries received … It does not, however, dictate how that information is displayed to a user. Those design decisions are fully within an EHR technology developer's discretion."
- "… we intended for the term "incorporate" to mean that EHR technology would be able to process the structured data contained in those three Consolidated CDA sections (medications, problems, medication allergies) such that it could be combined (in structured form) with data already maintained by EHR technology and would subsequently be available for use, such as to be used as part of the clinical information reconciliation capabilities (expressed in the certification criterion adopted at (§ 170.314(b)(4))."
- "… we believe that there is clinical value to the extraction and individual display of the individual sections of the Consolidated CDA … we have added to this certification criterion a specific capability that EHR technology be able to extract and allow for individual display each additional section or sections (and the accompanying document header information (i.e., metadata)) that were included in a transition of care/referral summary received and formatted in accordance with the Consolidated CDA."
- "… EHR technology would need to provide the user with a mechanism to select and just view those [Consolidated CDA] sections without having to navigate through what could be a lengthy document."
- "We intend for testing and certification to verify that the document header information can be displayed with whatever individual sections are selected, but leave the ultimate quantity of header data to be displayed through implementation up to the EHR technology developer and its customers' preferences."
- "… this certification criterion does not necessarily require that it [the incorporate capability] be fully automated. … it was implied by the certification criterion, that some form of matching would occur when a transition of care/referral summary is received in order to correctly determine that the document as a whole … was attributed to the right patient."
- "… upon receipt of a transition of care/referral summary is the appropriate point at which to verify that the transition of care/referral summary is being attributed to the correct patient."
- "…we have revised this certification criterion to include a general statement that the EHR technology must be able to demonstrate that a transition of care/referral summary received is or can be properly matched to the correct patient. … we have intentionally left this requirement flexible to permit many different ways for this capability to be designed."

CHANGES FROM 2011 TO 2014 EDITION

Per Section III.A of the preamble of the Health Information Technology: Standards, Implementation Specifications, and Certification Criteria for Electronic Health Record Technology, 2014 Edition; Revisions to the Permanent Certification Program for Health Information Technology, Final Rule where the transitions of care – receive, display and incorporate transitions of care/referral summaries certification criterion is discussed:

- "…we proposed to adopt the Consolidated CDA for this certification criterion because its template structure can accommodate the formatting of a summary care record that includes all of the data elements that CMS proposed be available for inclusion in a summary care record."
- "We proposed that EHR technology would need to be capable of transmitting a summary care record according to both of the Direct Project's specifications for secure transport. We also proposed to adopt as an optional standard at § 170.202(a)(3) the SOAP-Based Secure Transport RTM version 1.0[3] which was developed under the nationwide health information network Exchange Initiative and to which we stated EHR technology should be able to be certified…"
- "We have revised the final certification criterion to require that EHR technology must be able to display in human readable format the data included in transition of care/referral summaries received and formatted according to each of the transition of care/referral summary standards we have adopted (i.e., CCD/C32; CCR; and Consolidated CDA)."
- "We recognize this certification criterion is more rigorous than the 2011 Edition EHR certification criterion, but believe that it is necessary to continue to introduce more demanding certification requirements for interoperability in order to advance our policy objectives for widespread electronic health information exchange."

INFORMATIVE TEST DESCRIPTION

This section provides an informative description of how the test procedure is organized and conducted. It is not intended to provide normative statements of the certification requirements.

This test evaluates the capability for an EHR Technology to electronically receive, display in human readable format, and incorporate transition of care/referral summaries. The transition of care/referral summary (summary care record) must be received using the Applicability Statement for Secure Health Transport standard. The Vendor may optionally elect to be evaluated for the capability to receive transition of care/referral summaries using the Applicability Statement for Secure Health Transport standard and the ONC XDR and XDM for Direct Messaging Specification standard. The vendor may also optionally elect to be evaluated for the capability to electronically receive transition of care/referral summaries using the ONC XDR and XDM for Direct Messaging Specification standard and the ONC Transport and Security Specification.

This test evaluates the capability for an EHR technology to electronically display a received transition of care/referral summary; and to match the correct patient, incorporate Problems, Medications, and Medication allergies data, and incorporate (and display) individual sections of the received transition of care/referral summary. Both ambulatory EHR technology and inpatient EHR technology presented for

[3] http://wiki.siframework.org/Modular+Specs+Soap+Based+Secure+Transport

certification should be able to receive, display, and incorporate both ambulatory and inpatient summary care records (transition of care/referral summary). The incorporation of medications, medication allergies, and problems data, provides the ability for the data to be available for reconciliation (as evaluated in §170.314(b)(4) clinical information reconciliation). Incorporation, as evaluated in this test procedure, followed by clinical information reconciliation (§170.314(b)(4)) provides the ability for the medications, medication allergies, and problems received from a transition of care/referral summary to be available for triggering of clinical decision support interventions (as evaluated in §170.314(a)(8)).

ONC provides the test data for this test procedure. This test procedure is organized into three required sections (and two optional sections):

- Receive – Evaluates the capability of EHR technology to electronically receive a transition of care/referral summary for a test patient from both ambulatory and inpatient care settings:
  - The Tester verifies that the EHR can correctly host address-bound or domain-bound certificates in either DNS CERT records or LDAP servers that are discoverable by other parties[4]
  - Using the Vendor-identified function(s), the Tester causes the health information in C-CDA, HITSP/C32, and ASTM CCR formats to be transmitted from the Edge Testing Tool (using the Direct Testing, Send Direct Message section) to the EHR using the Direct transport standard (ONC Applicability Statement for Secure Health Transport standard), based on ONC-supplied test information
  - The Tester verifies successful receipt of C-CDA conformant documents using the Direct transport standard for unwrapped messages; If the vendor offers the capability to accept both unwrapped and wrapped messages (according to RFC-5751), the tester will verify successful receipt of a Direct message using both capabilities
  - The Tester verifies that the EHR rejects receipt of Direct messages when sent with an invalid trust anchor
  - The Tester verifies that the EHR rejects receipt of Direct messages when sent using an invalid, or expired certificate or sent using an invalid trust store
  - The Tester verifies successful receipt of the health information by the EHR, and that the health information can be successfully decrypted and that a Message Disposition Notification (MDN) is sent by the EHR to the Edge Testing Tool
  - Optional: Using the Vendor-identified function(s), the Tester causes the health information in C-CDA format to be transmitted from the Edge Testing Tool to the EHR using Direct and the Cross-Enterprise Document Reliable Interchange (XDR) and Cross-Enterprise Document Media Interchange (XDM) for Direct Messaging Specification, based on ONC supplied test information
  - Optional: Using the Vendor-identified function(s), the Tester causes the health information in C-CDA format to be transmitted from the Edge Testing Tool (using the

[4] Section 5.0 of the ONC Applicability Statement for Secure Health Transport v1.1: "STAs MUST be able to discover certificates using both the DNS as specified in this section and LDAP as described by the S&I Framework Certificate Discovery for Direct Project Implementation Guide. To achieve universal certificate discovery, STAs MAY elect to publish certificates in the DNS or using LDAP through the capabilities detailed in this section and in the S&I Framework Certificate Discovery for Direct Project Implementation Guide respectively"

Edge Testing, XDR Test Cases section) to the EHR using the SOAP-Based Secure Transport RTM version 1.0 and XDR, based on ONC supplied test information

- Display – Evaluates the capability of the EHR technology to electronically display, in human readable format, the transition of care/referral summary that was received in the "Receive" step:
  - The Tester logs in to the EHR technology as a provider
  - The Tester causes the EHR to display the transition of care/referral summary transmitted to the EHR in the "Receive" step
  - The Tester validates that the transition of care/referral summary received by the EHR system is electronically displayed in a human readable format for all three acceptable document conformance types: C-CDA, HITSP/C32, and ASTM CCR
  - The Tester verifies that the individual sections of the C-CDA conformant document for both the inpatient summary and ambulatory transition of care/referral summary records formatted to the C-CDA standard can be displayed in a human readable format
  - The Tester evaluates that the EHR technology individually displays all sections and accompanying document header information from the transition of care/referral summary received in the "Receive" step using the C-CDA standard and that the individual sections and header information is complete and accurate
  - The Tester verifies that the transition of care/referral summary information is accurate and complete, and verifies that the Common MU Data Set data are displayed in their English representation if they associate with a vocabulary/code set:
    1) Patient name
    2) Sex
    3) Date of birth
    4) Race
    5) Ethnicity
    6) Preferred language
    7) Smoking status
    8) Problems
    9) Medications
    10) Medication Allergies
    11) Laboratory test(s)
    12) Laboratory value(s)/result(s)
    13) Vital signs – height, weight, blood pressure, BMI
    14) Care plan field(s), including goals and instructions
    15) Procedures
    16) Care team member(s)
        - For ambulatory transition of care/referral summary C-CDA: encounter diagnoses, immunizations, cognitive status, functional status, reason for referral, referring provider's name and contact information
        - For inpatient transition of care C-CDA: encounter diagnoses, immunizations, cognitive status, functional status, and discharge instructions

- Incorporate data – Evaluates that the EHR technology electronically incorporates medication, problem, and medication allergy list data from the transition of care/referral summary received in the "Receive" step:
  - Using Vendor-identified functions, the Tester evaluates that the inpatient and ambulatory transition of care/referral summary received in the "Receive" step using the C-CDA standard is properly matched to the correct patient
  - Using Vendor-identified function(s) the Tester verifies that the expected information is able to be incorporated into the patient's health record, including available for clinical information reconciliation:
    - Medications according to RxNorm standard at a minimum,
    - Problems according to the SNOMED CT standard at a minimum, and
    - Medication allergies according to the RxNorm standard at a minimum.

REFERENCED STANDARDS

§170.202 Transport standards.	Regulatory Referenced Standard
The Secretary adopts the following transport standards:	
(a) Standard. ONC Applicability Statement for Secure Health Transport (incorporated by reference in § 170.299).	
(b) Standard. ONC XDR and XDM for Direct Messaging Specification (incorporated by reference in § 170.299).	
(c) Standard. ONC Transport and Security Specification (incorporated by reference in § 170.299).	

§170.205 Content exchange standards and implementation specifications for exchanging electronic health information.	Regulatory Referenced Standard
The Secretary adopts the following content exchange standards and associated implementation specifications:	
(a) Patient summary record. (1) Standard. Health Level Seven Clinical Document Architecture (CDA) Release 2, Continuity of Care Document (CCD) (incorporated by reference in §170.299). Implementation specifications. The Healthcare Information Technology Standards Panel (HITSP) Summary Documents Using HL7 CCD Component HITSP/C32 (incorporated by reference in §170.299).	
(a) (2) Standard. ASTM E2369 Standard Specification for Continuity of Care Record and Adjunct to ASTM E2369 (incorporated by reference in §170.299).	
(a)(3) Standard. HL7 Implementation Guide for CDA® Release 2: IHE Health Story Consolidation, (incorporated by reference in § 170.299). The use of the "unstructured document" document-level template is prohibited.	

§170.207 Vocabulary standards for representing electronic health information.	Regulatory Referenced Standard
The Secretary adopts the following code sets, terminology, and nomenclature as the vocabulary standards for the purpose of representing electronic health information:	
(a)(3) Standard. IHTSDO SNOMED CT® International Release July 2012 (incorporated by reference in § 170.299) and US Extension to SNOMED CT® March 2012 Release (incorporated by reference in § 170.299).	
(d) Medications (2) Standard. RxNorm, a standardized nomenclature for clinical drugs produced by the United States National Library of Medicine, August 6, 2012 Release (incorporated by reference in § 170.299).	

NORMATIVE TEST PROCEDURES

Derived Test Requirements

DTR170.314(b)(1) – 1: Receive Summary Care Record Using Direct

DTR170.314(b)(1) – 2: Receive Summary Care Record Using Direct and XDM Validation (Optional)

DTR170.314(b)(1) – 3: Receive Summary Care Record Using SOAP Protocols (Optional)

DTR170.314(b)(1) – 4: Display Summary Care Record

DTR170.314(b)(1) – 5: Incorporate Summary Care Record Data

DTR170.314(b)(1) – 1: Receive Summary Care Record Using Direct

Required Vendor Information

VE170.314(b)(1) – 1.01: The Vendor shall identify whether the EHR stores certificates as address-bound or domain-bound certificates and whether the EHR hosts certificates in DNS or LDAP servers

VE170.314(b)(1) – 1.02: The Vendor shall identify the Direct address for Test Cases within the Direct Certificate Discovery Tool

VE170.314(b)(1) – 1.03: The Vendor shall identify a Contact Email address to be used for receipt of the validation report generated by the Edge Testing Tool

VE170.314(b)(1) – 1.04: The Vendor shall identify the Direct address for registering within the Edge Testing Tool that shall receive the direct message

VE170.314(b)(1) – 1.05: The Vendor shall install the Valid Trust Anchor available from Edge Testing Tool Direct homepage

VE170.314(b)(1) – 1.06: The Vendor shall identify the Edge Testing Tool's public certificate for use by the EHR to decrypt messages sent from the Edge Testing Tool

VE170.314(b)(1) – 1.07: The Vendor shall create and identify certificate(s) for Direct receive address(es) to be used for digital signing of the Direct message(s) to be sent by the Edge Testing Tool to the EHR

VE170.314(b)(1) – 1.08: The Vendor shall identify the EHR's Public Key (certificate) for encryption of the Direct message(s) to be uploaded to the Edge Testing Tool for sending of messages from the tool to the EHR

VE170.314(b)(1) – 1.09: Using ONC-supplied test data, the Vendor shall create test patients with existing records in the EHR to be used for this test as indicated in TD170.314(b)(1) – 1 and TD170.314(b)(1) – 2

VE170.314(b)(1) – 1.10: The Vendor shall identify a provider with authorized access to the test patients' records

VE170.314(b)(1) – 1.11: The Vendor shall identify the EHR function(s) that are available for a provider to receive Summary Care Records from Third Parties using the Direct standard

VE170.314(b)(1) – 1.12: The Vendor shall identify whether the EHR offers the capability to accept only unwrapped messages or both unwrapped messages and wrapped (according to RFC-5751) messages

Required Test Procedures

TE170.314(b)(1) – 1.01: Using the Vendor-identified EHR function(s), the Tester shall access the ONC-supplied test patient's record as the provider

TE170.314(b)(1) – 1.02: The Tester shall execute all test cases using the Direct Certificate Discovery Tool for address or domain-bound certificates hosted in DNS or LDAP servers based upon the Vendor's certificate hosting methods identified in VE170.314(b)(1) – 1.01 and the Direct address specified in VE170.314(b)(1) – 1.02

TE170.314(b)(1) – 1.03: Using the Inspection Test Guide, the Tester shall verify that the EHR technology is able to correctly host either address-bound and domain-bound certificate(s) hosted in either DNS or LDAP servers that is discoverable by others

TE170.314(b)(1) – 1.04: The Tester shall enter a test session name for the sending of an unwrapped Ambulatory Summary of Care Record in C-CDA format using the Direct standard. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 1.05: The Tester shall utilize the Edge Testing Tool to transmit an unwrapped Direct message (that does not use the Direct RFC-5751 wrapper) digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one Ambulatory Summary of Care Record in C-CDA format (without an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 1.04 (tested for both ambulatory EHR and inpatient EHR settings) and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 1.06: The Tester shall enter a test session name for the sending of an unwrapped Inpatient Summary of Care Record in C-CDA format using the Direct standard. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 1.07: The Tester shall utilize the Edge Testing Tool to transmit an unwrapped Direct message (that does not use the Direct RFC-5751 wrapper) digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one Inpatient Summary of Care Record in C-CDA format (without an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 1.04 (tested for both ambulatory EHR and inpatient EHR settings) and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 1.08: The Tester shall enter a test session name for the sending of an unwrapped HITSP/C32 document using the Direct standard. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 1.09: The Tester shall utilize the Edge Testing Tool to transmit an unwrapped Direct message (that does not use the Direct RFC-5751 wrapper) digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one HITSP/C32 document (without an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 1.04 and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 1.10: The Tester shall enter a test session name for the sending of an unwrapped ASTM CCR document using the Direct standard. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 1.11: The Tester shall utilize the Edge Testing Tool to transmit an unwrapped Direct message (that does not use the Direct RFC-5751 wrapper) digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one ASTM CCR document (without an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 1.04 and verify that the MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 1.12: If the Vendor offers the capability to receive both Direct RFC-5751 wrapped and unwrapped messages as specified in VE170.314(b)(1) – 1.12. The Tester shall enter a test session name for the sending of a wrapped Ambulatory Summary of Care Record in C-CDA format using the Direct standard. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 1.13: If the Vendor offers the capability to receive both Direct RFC-5751 wrapped and unwrapped messages as specified in VE170.314(b)(1) – 1.12, the Tester shall utilize the Edge Testing Tool to transmit a RFC-5751 wrapped Direct message digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.04 and VE170.314(b)(1) – 1.05) for one Ambulatory Summary of Care Record in C-CDA format (without an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 1.04 and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 1.14: If the Vendor offers the capability to receive both Direct RFC-5751 wrapped and unwrapped messages as specified in VE170.314(b)(1) – 1.12, The Tester shall enter a test session name for the sending of a wrapped Inpatient Summary of Care Record in C-CDA format using the Direct standard. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 1.15: If the Vendor offers the capability to receive both Direct RFC-5751 wrapped and unwrapped messages as specified in VE170.314(b)(1) – 1.12, the Tester shall utilize the Edge Testing Tool to transmit a RFC-5751 wrapped Direct message digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one Inpatient Summary of Care Record in C-CDA format (without an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 1.04 (tested for both ambulatory EHR and inpatient EHR settings) and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 1.16: If the Vendor offers the capability to receive both Direct RFC-5751 wrapped and unwrapped messages as specified in VE170.314(b)(1) – 1.12, The Tester shall enter a test session name for the sending of a wrapped HITSP/C32 document using the Direct standard. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 1.17: If the Vendor offers the capability to receive both Direct RFC-5751 wrapped and unwrapped messages as specified in VE170.314(b)(1) – 1.12, the Tester shall utilize the Edge Testing Tool to transmit a RFC-5751 wrapped Direct message digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one HITSP/C32 document (without an XDM label) and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 1.18: If the Vendor offers the capability to receive both Direct RFC-5751 wrapped and unwrapped messages as specified in VE170.314(b)(1) – 1.12, The Tester shall enter a test session name for the sending of a wrapped ASTM CCR document using the Direct standard. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 1.19: If the Vendor offers the capability to receive both Direct RFC-5751 wrapped and unwrapped messages as specified in VE170.314(b)(1) – 1.12, the Tester shall utilize the Edge Testing Tool to transmit a RFC-5751 wrapped Direct message digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one ASTM CCR document (without an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 1.04 and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 1.20: The Vendor shall download and install an invalid Trust Anchor available from the Edge Testing Tool

TE170.314(b)(1) – 1.21: The Tester shall enter a test session name for the sending of an unwrapped C-CDA conformant document with an invalid Trust Anchor using the Direct standard. This name will be used later in the procedure to verify that no corresponding MDN was sent

TE170.314(b)(1) – 1.22: The Tester shall utilize the Edge Testing Tool to transmit an unwrapped C-CDA conformant document (any C-CDA selection available in the Edge Testing Tool) to the EHR using the Direct transport standard

TE170.314(b)(1) – 1.23: Using the Inspection Test Guide, the Tester shall verify that the EHR rejects receipt of the Direct message transmitted in TE170.314(b)(1) – 1.22 and no MDN was received by the Edge Testing Tool

TE170.314(b)(1) – 1.24: The Vendor shall remove the invalid Trust Anchor and reinstall the valid Trust Anchor as in VE170.314(b)(1) – 1.05

TE170.314(b)(1) – 1.25: The Tester shall enter a test session name for the sending of an unwrapped C-CDA conformant document with an invalid certificate using the Direct standard. This name will be used later in the procedure to verify that no corresponding MDN was sent

TE170.314(b)(1) – 1.26: The Tester shall utilize the Edge Testing Tool to transmit an unwrapped C-CDA conformant document (either the ambulatory or inpatient C-CDA selection available in the Edge Testing Tool) using an invalid certificate (INVALID_CERT) to the EHR using the Direct transport standard

TE170.314(b)(1) – 1.27: Using the Inspection Test Guide, the Tester shall verify that the EHR rejects receipt of the Direct message transmitted in TE170.314(b)(1) – 1.26 and no MDN was received by the Edge Testing Tool

TE170.314(b)(1) – 1.28: The Tester shall enter a test session name for the sending of an unwrapped C-CDA conformant document with an expired certificate using the Direct standard. This name will be used later in the procedure to verify that no corresponding MDN was sent

TE170.314(b)(1) – 1.29: The Tester shall utilize the Edge Testing Tool to transmit an unwrapped C-CDA conformant document (either the ambulatory or inpatient C-CDA selection available in the Edge Testing Tool) using an expired certificate (EXPIRED_CERT) to the EHR using the Direct transport standard

TE170.314(b)(1) – 1.30: Using the Inspection Test Guide, the Tester shall verify that the EHR rejects receipt of the Direct message transmitted in TE170.314(b)(1) – 1.29 and no MDN was received by the Edge Testing Tool

TE170.314(b)(1) – 1.31: The Tester shall enter a test session name for the sending of an unwrapped C-CDA conformant document with a certificate with an invalid trust relationship using the Direct standard. This name will be used later in the procedure to verify that no corresponding MDN was sent

TE170.314(b)(1) – 1.32: The Tester shall utilize the Edge Testing Tool to transmit an unwrapped C-CDA conformant document (either the ambulatory or inpatient C-CDA selection available in the Edge Testing Tool) using a certificate with an invalid trust relationship (CERT_FROM_DIFFERENT_TRUST_ANCHOR) to the EHR using the Direct transport standard

TE170.314(b)(1) – 1.33: Using the Inspection Test Guide, the Tester shall verify that the EHR rejects receipt of the Direct message transmitted in TE170.314(b)(1) – 1.32 and no MDN was received by the Edge Testing Tool

TE170.314(b)(1) – 1.34: Using the Inspection Test Guide, the Tester shall verify that the EHR rejects receipt of the Direct messages using certificates that are invalid or expired, or have an invalid trust relationship to the ONC trust store stored in the EHR

Inspection Test Guide

IN170.314(b)(1) – 1.01: Using the 2014 Direct Certificate Discovery Tool, the Tester shall verify that the EHR's hosted certificates are discoverable for the selected test cases

IN170.314(b)(1) – 1.02: Tester shall verify that all messages wrapped, unwrapped, or both were received. This may be accomplished by reviewing log files (or other equivalent methods) or by viewing all received messages within DTR – 4 Display Summary Care Record

IN170.314(b)(1) – 1.03: Using the Edge Testing Tool HISP Testing & Delivery Notification Message Tracking, the Tester shall verify that Message Disposition Notifications were sent by the EHR to indicate successful receipt of messages sent in: TE170.314(b)(1) – 1.05, TE170.314(b)(1) – 1.07, TE170.314(b)(1) – 1.09, TE170.314(b)(1) – 1.11, TE170.314(b)(1) – 1.13, TE170.314(b)(1) – 1.15, TE170.314(b)(1) – 1.17, TE170.314(b)(1) – 1.19 through inspection of the Validation Reports sent to the email address registered in VE170.314(b)(1) – 1.03 or by clicking on " "Message

Status" on the Edge Testing Tool and looking in the Table for the time stamp corresponding to when the message was sent or the Msg ID that matches the "Test Session" name entered in steps TE170.314(b)(1) – 1.04. TE170.314(b)(1) – 1.06, TE170.314(b)(1) – 1.08, TE170.314(b)(1) – 1.010, TE170.314(b)(1) – 1.12, TE170.314(b)(1) – 1.14, TE170.314(b)(1) – 1.16, and TE170.314(b)(1) – 1.18 above. Note: There should be a different Test Session name for each CCDA/CCR/C32 sent.

IN170.314(b)(1) – 1.04: Using the SUT system logs, the Tester shall verify that the Messages transmitted in: TE170.314(b)(1) – 1.22 , TE170.314(b)(1) – 1.26, TE170.314(b)(1) – 1.29, and TE170.314(b)(1) – 1.32 were rejected and not received by the EHR (e.g. inspecting audit logs to verify rejections)

IN170.314(b)(1) – 1.05: Using the Edge Testing Tool HISP Testing & Delivery Notification Message Tracking, the Tester shall verify that no MDN was received in response to the messages transmitted in TE170.314(b)(1) – 1.22 , TE170.314(b)(1) – 1.26, TE170.314(b)(1) – 1.29, and TE170.314(b)(1) – 1.32 by verifying that no Validation Report was sent to the email address registered in VE170.314(b)(1) – 1.03 or by clicking on "Message Status" on the Edge Testing Tool and looking in the Table to verify that no MDN was received for the time stamp corresponding to when the message was sent or the Msg ID that matches the "Test Session" name entered in steps TE170.314(b)(1) – 1.21, TE170.314(b)(1) – 1.25, TE170.314(b)(1) – 1.27, and TE170.314(b)(1) – 1.31

DTR170.314(b)(1)–2: Receive Summary of Care Record Using Direct and XDM Validation (Optional)

Required Vendor Information

VE170.314(b)(1) – 2.01: The Vendor shall identify a Contact Email address to be used for receipt of the validation report generated by the Edge Testing Tool if the Contact email address for XDM Validation differs from the one identified in VE170.314(b)(1) – 1.03

VE170.314(b)(1) – 2.02: The Vendor shall identify the Direct address for registering within the Edge Testing Tool that shall receive the direct message if the Direct address for XDM Validation differs from the one identified in VE170.314(b)(1) – 1.04

Required Test Procedures

TE170.314(b)(1) – 2.01: Using the Vendor-identified EHR function(s), the Tester shall access the ONC-supplied test patient's record as the provider

TE170.314(b)(1) – 2.02: The Tester shall enter a test session name for the sending of an unwrapped Ambulatory Summary of Care Record in C-CDA format using Direct with XDM validation. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 2.03: The Tester shall utilize the Edge Testing Tool Direct to transmit an unwrapped message (that does not use the Direct RFC-5751 wrapper) digitally signed using a valid certificate and public key for the Vendor's EHR (provided in

VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one Ambulatory Summary of Care Record in C-CDA format (with an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 2.02 using ONC Applicability Statement for Secure Health Transport (Direct) standard with XDM Validation and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 2.04: The Tester shall enter a test session name for the sending of an unwrapped Inpatient Summary of Care Record in C-CDA format using Direct with XDM validation. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 2.05: The Tester shall utilize the Edge Testing Tool Direct to transmit an unwrapped message (that does not use the Direct RFC-5751 wrapper) digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one Inpatient Summary of Care Record in C-CDA format (with an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 2.02 using ONC Applicability Statement for Secure Health Transport (Direct) standard with XDM Validation and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 2.06: The Tester shall enter a test session name for the sending of an unwrapped HITSP/C32 document using Direct with XDM validation. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 2.07: The Tester shall utilize the Edge Testing Tool Direct to transmit an unwrapped message (that does not use the Direct RFC-5751 wrapper) digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one HITSP/C32 document (with an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 2.02 using ONC Applicability Statement for Secure Health Transport (Direct) standard with XDM Validation and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 2.08: The Tester shall enter a test session name for the sending of an unwrapped ASTM CCR document using Direct with XDM validation. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 2.09: The Tester shall utilize the Edge Testing Tool Direct to transmit an unwrapped message (that does not use the Direct RFC-5751 wrapper) digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one ASTM CCR document (with an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 2.02 using ONC Applicability Statement for Secure Health Transport (Direct) standard with XDM Validation and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 2.10: The Tester shall enter a test session name for the sending of a wrapped Ambulatory Summary of Care Record in C-CDA format using Direct with XDM

validation. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 2.11: If the Vendor offers the capability to receive Direct RFC-5751 wrapped messages as specified in VE170.314(b)(1) – 1.012, The Tester shall utilize the Edge Testing Tool Direct to transmit a Direct RFC-5751 wrapped message digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one Ambulatory Summary of Care Record in C-CDA format (with an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 2.02 using ONC Applicability Statement for Secure Health Transport (Direct) standard with XDM Validation and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 2.12: The Tester shall enter a test session name for the sending of a wrapped Inpatient Summary of Care Record in C-CDA format using Direct with XDM validation. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 2.13: If the Vendor offers the capability to receive Direct RFC-5751 wrapped messages as specified in VE170.314(b)(1) – 1.012, The Tester shall utilize the Edge Testing Tool Direct to transmit a Direct RFC-5751 wrapped message digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one Inpatient Summary of Care Record in C-CDA format (with an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 2.02 using ONC Applicability Statement for Secure Health Transport (Direct) standard with XDM Validation and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 2.14: The Tester shall enter a test session name for the sending of a wrapped HITSP/C32 document using Direct with XDM validation. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 2.15: If the Vendor offers the capability to receive Direct RFC-5751 wrapped messages as specified in VE170.314(b)(1) – 1.012, The Tester shall utilize the Edge Testing Tool Direct to transmit a Direct RFC-5751 wrapped message digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one HITSP/C32 document (with an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 2.02 using ONC Applicability Statement for Secure Health Transport (Direct) standard with XDM Validation and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

TE170.314(b)(1) – 2.16: The Tester shall enter a test session name for the sending of a wrapped ASTM CCR document using Direct with XDM validation. This name will be used later in the procedure to identify the corresponding MDN

TE170.314(b)(1) – 2.17: If the Vendor offers the capability to receive Direct RFC-5751 wrapped messages as specified in VE170.314(b)(1) – 1.012, The Tester shall utilize the

Edge Testing Tool Direct to transmit a Direct RFC-5751 wrapped message digitally signed using a valid certificate and public key for the Vendor's EHR (provided in VE170.314(b)(1) – 1.05 and VE170.314(b)(1) – 1.06) for one ASTM CCR document (with an XDM label) to the Vendor's Direct address specified in VE170.314(b)(1) – 2.02 using ONC Applicability Statement for Secure Health Transport (Direct) standard with XDM Validation and verify that an MDN was received by the Edge Testing Tool using the Inspection Test Guide

Inspection Test Guide

IN170.314(b)(1) – 1.01: Using the Edge Testing Tool HISP Testing & Delivery Notification Message Tracking, the Tester shall verify that Message Disposition Notifications were sent by the EHR to indicate successful receipt of messages sent in: TE170.314(b)(1) – 2.03, TE170.314(b)(1) – 2.05, TE170.314(b)(1) – 2.07, and TE170.314(b)(1) – 2.09 through inspection of the Validation Reports sent to the email address registered in VE170.314(b)(1) – 2.01 or by clicking on "Message Status" on the Edge Testing Tool and looking in the Table for the time stamp corresponding to when the message was sent or for the Msg ID that matches the "Test Session" name entered in steps TE170.314(b)(1) – 2.02. TE170.314(b)(1) – 2.04, TE170.314(b)(1) – 2.06, TE170.314(b)(1) – 2.08. Note: There should be a different Test Session name for each CCDA/CCR/C32 sent

IN170.314(b)(1) – 1.02: If the Vendor offers the capability to receive both Direct RFC-5751 wrapped and unwrapped messages as specified in VE170.314(b)(1) – 1.12, the Tester shall verify that Message Disposition Notifications were sent by the EHR to indicate successful receipt of messages sent in: TE170.314(b)(1) – 2.11, TE170.314(b)(1) – 2.13, TE170.314(b)(1) – 2.15, and TE170.314(b)(1) – 2.17 through inspection of the Validation Reports sent to the email address registered in VE170.314(b)(1) – 2.01 or by clicking on "Message Status" on the Edge Testing Tool and looking in the Table for the time stamp corresponding to when the message was sent or for the Msg ID that matches the "Test Session" name entered in steps TE170.314(b)(1) – 2.10, TE170.314(b)(1) – 2.12, TE170.314(b)(1) – 2.14, TE170.314(b)(1) – 2.16. Note: There should be a different Test Session name for each CCDA/CCR/C32 sent

DTR170.314(b)(1) – 3: Receive Summary of Care Record Using SOAP Protocols (Optional)

Required Vendor Information

VE170.314(b)(1) – 3.01: The Vendor shall provide a Site Name, a separate endpoint used by the SUT to receive each XDR message, and a valid patient ID for the patients created in VE170.314(b)(1) – 1.09

VE170.314(b)(1) – 3.02 : Vendor shall define and identify an Actor Simulator in the Edge Testing Tool terminology (as described in the Edge Testing Tool User Guide)

Required Test Procedures

TE170.314(b)(1) – 3.01: The Tester shall cause the Edge Testing Tool Message Validators XDR Validator to transmit one Ambulatory Summary of Care Record in C-CDA format using SOAP Protocols with XDR Validation to the EHR's SOAP endpoint provided in VE170.314(b)(1) – 3.01

TE170.314(b)(1) – 3.02: The Tester shall cause the Edge Testing Tool Message Validators XDR Validator to transmit one Inpatient Summary of Care Record in C-CDA format using SOAP Protocols with XDR Validation to the EHR's SOAP endpoint provided in VE170.314(b)(1) – 3.01

TE170.314(b)(1) – 3.03: The Tester shall cause the Edge Testing Tool Message Validators XDR Validator to transmit for one HITSP/C32 document using SOAP Protocols with XDR Validation to the EHR's SOAP endpoint provided in VE170.314(b)(1) – 3.01

TE170.314(b)(1) – 3.04: The Tester shall cause the Edge Testing Tool Message Validators XDR Validator to transmit for one ASTM CCR document using SOAP Protocols with XDR Validation to the EHR's SOAP endpoint provided in VE170.314(b)(1) – 3.01

TE170.314(b)(1) – 3.05: Using the Inspection Test Guide, the Tester shall verify that the Summary of Care documents transmitted in TE170.314(b)(1) – 3.01 through TE170.314(b)(1) – 3.04 were successful

Inspection Test Guide

IN170.314(b)(1) – 3.01: Using the Edge Testing Tool Message Validators XDR Validator Validation Report , the Tester shall verify that the transmitted documents were received successfully by the EHR according to SOAP Protocols with XDR Validation with no errors reported by the ETT

DTR170.314(b)(1) – 4: Display Summary of Care Record

Required Vendor Information

VE170.314(b)(1) – 4.01: Vendor shall identify the EHR function(s) that are available for a provider to display Summary Care Records received electronically by third parties

Required Test Procedures

TE170.314(b)(1) – 4.01: Using the Vendor-identified EHR function(s), the Tester shall access the ONC supplied test patient's record, created in VE170.314(b)(1) – 1.09, as the provider

TE170.314(b)(1) – 4.02: Using the Vendor-identified EHR function(s), the Tester shall display the Ambulatory Summary Care Record received in TE170.314(b)(1) – 1.04 (If the EHR technology requires additional users that are not the provider to receive the message, view message header information, and match the summary care record to the patient prior to being available for the provider, this is permitted)

TE170.314(b)(1) – 4.03: Using the Inspection Test Guide, the Tester shall verify that the information displayed for the Ambulatory Summary of Care record is complete and accurate and all sections are displayed individually

TE170.314(b)(1) – 4.04: Using the Vendor-identified EHR function(s), the Tester shall display the Inpatient Summary Care Record received in TE170.314(b)(1) – 1.05 If the EHR technology requires additional users that are not the provider to receive the message, view message header information, and match the summary care record to the patient prior to being available for the provider, this is permitted)

TE170.314(b)(1) – 4.05: Using the Inspection Test Guide, the Tester shall verify that the information displayed for the Inpatient Summary of Care record is complete and accurate and all sections are displayed individually

TE170.314(b)(1) – 4.06: Using the Vendor-identified EHR function(s), the Tester shall cause the EHR to select individual sections (not all) for display for either the Inpatient or Ambulatory received C-CDA conformant Summary Care record

TE170.314(b)(1) – 4.07: Using the Vendor-identified EHR function(s), the Tester shall display the HITSP/C32 document received in TE170.314(b)(1) – 1.06

TE170.314(b)(1) – 4.08: Using the Inspection Test Guide, the Tester shall verify that the HITSP/C32 document can be successfully displayed

TE170.314(b)(1) – 4.09: Using the Vendor-identified EHR function(s), the Tester shall display the ASTM CCR document received in TE170.314(b)(1) – 1.07

TE170.314(b)(1) – 4.10: Using the Inspection Test Guide, the Tester shall verify that the ASTM CCR document can be successfully displayed

Inspection Test Guide

IN170.314(b)(1) – 4.01: Using the ONC-provided test data, the Tester shall verify that the content of the received C-CDA conformant Ambulatory Summary of Care Record displays completely and accurately, including section headings and at a minimum, the following data elements (in their English representation if they associate with a vocabulary/code set):

1) Encounter diagnoses
2) Immunizations
3) Cognitive status
4) Functional status
5) Reason for referral
6) Referring or transitioning provider's name

7) Provider name
8) Provider office contact information
9) Common MU Data Set
    1) Patient name
    2) Sex
    3) Date of birth
    4) Race
    5) Ethnicity
    6) Preferred language
    7) Smoking status
    8) Problems
    9) Medications
    10) Medication Allergies
    11) Laboratory test(s)
    12) Laboratory value(s)/result(s)
    13) Vital signs – height, weight, blood pressure, BMI
    14) Care plan field(s), including goals and instructions
    15) Procedures
    16) Care team member(s)

IN170.314(b)(1) – 4.02: Using the ONC-provided test data, the Tester shall verify that the content of the received C-CDA conformant Inpatient Summary of Care Record displays completely and accurately, including section headings and at a minimum, the following data elements (in their English representation if they associate with a vocabulary/code set):

1) Encounter diagnoses
2) Immunizations
3) Cognitive status
4) Functional status
5) Discharge instructions
6) Common MU Data Set
    1) Patient name
    2) Sex
    3) Date of birth
    4) Race
    5) Ethnicity
    6) Preferred language
    7) Smoking status
    8) Problems
    9) Medications
    10) Medication Allergies
    11) Laboratory test(s)
    12) Laboratory value(s)/result(s)
    13) Vital signs – height, weight, blood pressure, BMI

14) Care plan field(s), including goals and instructions
15) Procedures
16) Care team member(s)

IN170.314(b)(1) – 4.03: Using the ONC-provided test data, the Tester shall verify the EHR provides the individual section information contained within the Summary Care Record C-CDA conformant documents

IN170.314(b)(1) – 4.04: Using the ONC-provided test data, the Tester shall verify the EHR accurately displays header information and only the selected sections in TE170.314(b)(1) – 4.05 without having to view or navigate the entire document

IN170.314(b)(1) – 4.05: Using the ONC-provided test data, the Tester shall verify that the content of the received HITSP/C32 document displays completely and accurately and coded information displays in its English representation if associated with a vocabulary/code set

IN170.314(b)(1) – 4.06: Using the ONC-provided test data, the Tester shall verify that the content of the received ASTM CCR document displays completely and accurately and coded information displays in its English representation if associated with a vocabulary/code set

DTR170.314(b)(1) – 5: Incorporate Summary Care Record Data

Required Vendor Information

VE170.314(b)(1) – 5.01: Vendor shall identify the EHR function(s) that are available for a provider to match patient identifying information from documents received electronically using Direct, Direct with XDM, and SOAP transport protocols with patient records within the EHR

VE170.314(b)(1) – 5.02: Vendor shall identify the EHR function(s) that are available to save documents received electronically from third parties within a patient's record

VE170.314(b)(1) – 5.03: Vendor shall identify the EHR function(s) that are available to incorporate medication list, problem list, and medication allergy list data from C-CDA conformant documents as structured data within the EHR

VE170.314(b)(1) – 5.04: Vendor shall identify the EHR function(s) that are available to incorporate medication list, problem list, and medication allergy list data from C-CDA conformant documents for clinical information reconciliation

Required Test Procedures

TE170.314(b)(1) – 5.01: Using the Vendor-identified EHR function(s), the Tester shall access the ONC-supplied test patient's record, created in VE170.314(b)(1) – 1.05, as the provider

TE170.314(b)(1) – 5.02: Using the Vendor-identified EHR function(s), the Tester shall cause the EHR to match and display the received Ambulatory Summary Care Record C-CDA conformant document received in TE170.314(b)(1) - 1.04 with the correct patient's record created in VE170.314(b)(1) – 1.09

TE170.314(b)(1) – 5.03: Using the Vendor-identified EHR function(s), the Tester shall cause the EHR to display that the Ambulatory Summary Care Record C-CDA conformant document

received in TE170.314(b)(1) - 1.04 is stored as a C-CDA conformant document within the EHR

TE170.314(b)(1) – 5.04: Using the Vendor-identified EHR function(s), the Tester shall cause the EHR to display the medication list, problem list, and medication allergy information within the Ambulatory Summary Care Record C-CDA conformant document received in TE170.314(b)(1) - 1.04 as structured data, available for clinical information reconciliation

TE170.314(b)(1) – 5.05: Using the Vendor-identified EHR function(s), the Tester shall cause the EHR to match and display the received Inpatient Summary Care Record C-CDA conformant document received in TE170.314(b)(1) - 1.05 with the correct patient's record created in VE170.314(b)(1) – 1.09

TE170.314(b)(1) – 5.06: Using the Vendor-identified EHR function(s), the Tester shall cause the EHR to display that the Inpatient Summary Care Record C-CDA conformant document received in TE170.314(b)(1) - 1.05 is stored as a C-CDA conformant document within the EHR

TE170.314(b)(1) – 5.07: Using the Vendor-identified EHR function(s), the Tester shall cause the EHR to display the medication list, problem list, and medication allergy information within the Inpatient Summary Care Record C-CDA conformant document received in TE170.314(b)(1) - 1.05 as structured data, available for clinical information reconciliation

Inspection Test Guide

IN170.314(b)(1) – 5.01: Using the ONC-provided test data, the Tester shall verify that the documents received electronically are matched with the correct patient record and are stored as part of the patient record created in VE170.314(b)(1) – 1.09

IN170.314(b)(1) – 5.02: Using the ONC-provided test data, the Tester shall verify that medication list, problem list, and allergy list data is incorporated as structured and coded data for the received C-CDA conformant Summary Care Records

IN170.314(b)(1) – 5.03: Using the ONC-provided test data, the Tester shall verify that medication list, problem list, and allergy list data for received C-CDA conformant Summary Care Records displayed for clinical information reconciliation are complete and accurate

TEST DATA

ONC supplied test data are provided with the test procedure to ensure that the applicable requirements identified in the criteria can be adequately evaluated for conformance, as well as, to provide consistency in the testing process across multiple National Voluntary Laboratory Accreditation Program-Accredited Testing Laboratories (ATLs). The provided test data focus on evaluating the basic capabilities of required EHR technology, rather than exercising the full breadth/depth of capability that installed EHR technology might be expected to support. The test data are formatted for readability of use within the testing process.

The format is not prescribing a particular end-user view or rendering. No additional requirements should be drawn from the format.

The Tester shall use and apply the provided test data during the test, without exception, unless one of the following conditions exists:

- The Tester determines that the Vendor-selected message format requires some modification to the test data.
- The Tester determines that the Vendor product is sufficiently specialized that the provided test data needs to be modified in order to conduct an adequate test. Having made the determination that some modification to the provided test data is necessary, the Tester shall record the modifications made as part of the test documentation.
- The Tester determines that changes to the test data will improve the efficiency of the testing process; primarily through using consistent demographic data throughout the testing workflow. The Tester shall ensure that the functional and interoperable requirements identified in the criterion can be adequately evaluated for conformance and that the test data provides a comparable level of robustness. Having made the determination that some modification to the provided test data is necessary, the Tester shall record the modifications made as part of the test documentation.

Test data for §170.314(b)(1) Receive Display Incorporate referenced in VE170.314(b)(1) – 1.09 is available at http://www.healthit.gov/certification (navigation: 2014 Edition Test Method). Test data sent by the Edge Testing Tool is available through the Message Validators CCDA R1.1 Validators section (reference Conformance Tool Section for tool access).

Any departure from the provided test data shall strictly focus on meeting the basic capabilities required of EHR technology relative to the certification criterion rather than exercising the full breadth/depth of capability that installed EHR technology might be expected to support. For additional information on changes to the test data, refer to the Edge Test Tool documentation.

The test procedures require that the Tester enter the test data into the EHR technology being evaluated for conformance. The intent is that the Tester fully controls the process of entering the test data in order to ensure that the data are correctly entered as specified in the test procedure. If a situation arises where it is impractical for a Tester to directly enter the test data, the Tester, at the Tester's discretion, may instruct the Vendor to enter the test data, so long as the Tester remains in full control of the testing process, directly observes the test data being entered by the Vendor, and validates that the test data are entered correctly as specified in the test procedure.

CONFORMANCE TEST TOOLS

The following testing tools are available to evaluate conformance to the standards referenced in this test procedure:

- 2014 Direct Certificate Discovery Tool (2014 DCDT) – ONC provides a web application certificate discovery testing tool (which may be accessed through the Cert Discovery section of the Edge Testing Tool) to support this test procedure. This tool was created to support automated testing of systems that plan to enact the Certificate Discovery and Provider Directory Implementation Guide, approved as normative specification by the Direct community, as of July 9, 2012. It is based on the written test package and requirement traceability matrix created by the Modular Specifications project.
    - This application can be installed and deployed locally
    - The Direct Certificate Discovery Tool, User's Guide, configuration instructions, and other documentation are available at: https://sitenv.org/direct-certificate-discovery-tool

- Edge Testing Tool (ETT) – the Edge Testing Tool is designed to support this test procedure.
    - The Edge Testing Tool Direct Testing (Sections: Register Direct, Send Direct Message and Message Validator) includes the capability to verify the ability to exchange Consolidated CDA (C-CDA) conformant documents using Direct transport standards (e.g., Direct and Direct + XDM).
    - The Edge Testing Tool Message Validators (Section: XDR Validator) includes the capability to verify the ability to exchange Consolidated CDA (C-CDA) conformant documents using ONC XDR and XDM for Direct Messaging.
    - The Edge Testing Tool Message Validators (Section: CCDA R1.1 Validator) includes the capability to verify the conformance of the CDA (C-CDA R1.1) documents.
    - The Edge Testing Tool Edge Testing (Sections: Homepage, SMTP Test Cases, IMAP Test Cases, POP3 Test Cases, XDR Test Cases) includes the capability to verify the ability to exchange Consolidated CDA (C-CDA) conformant documents using transport standards (e.g. SOAP).
    - The Edge Testing Tool HISP Testing and Delivery Notification (Section: Message Tracking) includes the capability to verify the receipt of messages.
        - This application can be installed and deployed locally.
        - The Edge Testing Tool (ETT) is available at: healthit.gov/ett

Multiple browsers may be used to access this tool. As the tool has been testing using both Chrome and Firefox browsers, these are the recommended browsers. The Edge Testing Tool has been verified to function properly with the Firefox 3.x and Chrome browsers. The Edge Testing Tool uses non-standard ports. If your firewall blocks HTTP traffic on non-standard ports, this tool may not be accessible. Please retry access from a location without a firewall that blocks non-standard ports. Alternatively, users may download and run a local version of the tool.

DOCUMENT HISTORY

Version Number	Description of Change	Date Published
1.0	Released for public comment	November 19, 2012
1.1	Delivered for National Coordinator Approval	December 3, 2012
1.2	Posted Approved Test Procedure	December 14, 2012
1.3	Posted Updated Approved Test Procedure Updates (to align with TTT functionality): • Changed RFC 8222 to RFC 5751 in Informative Test Description and Normative Test Procedure • Strikethrough of DTR 170.314(b)(1) – 2 and 170.314(b)(1) – 3 in Normative Test Procedure and reference to functionalities tested in Informative Test Description • Modified Informative Test Description and Normative Test Procedure to allow for testing of receipt of wrapped, unwrapped, or both wrapped/unwrapped Direct messages • Strikethrough of negative test of invalid, revoked and expired certificates in Normative Test Procedure and references to this test in the Informative Test Description • Inserted notation in Informative Test Description clarifying purpose of strikethrough text • Inserted test data reference in Normative Test Procedure	February 1, 2013

Version Number	Description of Change	Date Published
1.4	Updated Test Procedure Updates (to align with TTT functionality) • Removed strikethrough of DTR 170.314(b)(1) – 2 and 170.314(b)(1) – 3 in Normative Test Procedure and reference to functionalities tested in Informative Test Description • Removed strikethrough of negative test in Normative Test Procedure and Informative Test Description of invalid trust anchor, invalid certificate, expired certificate and certificate with invalid trust relationship and added reference to certificate names on tool • Added Normative Test Procedure steps directing the tester to verify that the EHR rejects invalid certificates and verify that no MDN is sent • Updated strikethrough clarification text to reference correct version of test procedure (1.4) • Added registering of Direct address steps VE170.314(b)(1) – 1.03 and 170.314(b)(1) – 1.04 and VE170.314(b)(1) – 2.01 and 170.314(b)(1) – 2.02 • Modified Normative Test Procedure and Informative Test Description to indicate that all EHRs must receive unwrapped messages and must receive wrapped messages if they offer the capability • Modified DTR170.314(b)(1) - 3 Normative Test Procedure to reflect current functionalities in the Transport Testing Tool • Inserted reference to Test Data available on the ONC website in Test Data section • Corrected Message Delivery Notification to Message Disposition Notification • Clarified and added individual test procedure steps for each document type to be sent in DTR170.314(b)(1) – 1, DTR170.314(b)(1) – 2, and DTR 170.314(b)(1) – 3 (CCDA Inpatient Summary, CCDA Ambulatory Summary, C32 and CCR) including specifying labels of documents in the Transport Testing Tool (e.g. with an XDM label or without an XDM label) • Updated references to Normative Test Procedure steps throughout the Normative Test Procedure • Added individual steps in the Normative Test Procedure to direct the tester to enter a test session name prior to sending each document to indicate testing functionalities that will be present in the next Transport Testing Tool release • Added instruction to tester in Normative Test Procedure of DTR170.314(b)(1) – 1 and DTR170.314(b)(1) – 2 to verify MDN receipt after each document is sent • Clarified in Inspection Test Guide of DTR170.314(b)(1) – 1 and DTR 170.314(b)(1) – 2 to validate that MDNs were received through inspection of the validation report sent by the Transport Testing Tool • Added clarification text in to the Inspection Test Guide of DTR170.314(b)(1) – 1 and DTR 170.314(b)(1) – 2 providing direction on other methods of MDN receipt verification	March 1, 2013

Version Number	Description of Change	Date Published
1.4, continued	• Updated Inspection Test Guide in DTR170.314(b)(1) – 4 to indicate that all test data must be human readable if it associates with a code instead of only the Common MU data set • Added reference to test step VE170.314(b)(1) – 1.09 in DTR170.314(b)(1) – 5	March 1, 2013
1.5	Updated to use the Edge Testing Tool (ETT) rather than the Transport Testing Tool (TTT). TTT has been retired. • The following sections have been modified to reflect the use of the ETT Tool • Informative Test Description • Normative Test Procedures ○ DTR170.314(b)(1) – 1: Receive Summary Care Record Using Direct VE170.314(b)(1) – 1.03, VE170.314(b)(1) – 1.04, VE170.314(b)(1) – 1.05, VE170.314(b)(1) – 1.06, VE170.314(b)(1) – 1.07, VE170.314(b)(1) – 1.08, TE170.314(b)(1) – 1.05, TE170.314(b)(1) – 1.06, TE170.314(b)(1) – 1.07, TE170.314(b)(1) – 1.09, TE170.314(b)(1) – 1.11, TE170.314(b)(1) – 1.13, TE170.314(b)(1) – 1.15, TE170.314(b)(1) – 1.17, TE170.314(b)(1) – 1.19, TE170.314(b)(1) – 1.20, TE170.314(b)(1) – 1.22, TE170.314(b)(1) – 1.23, TE170.314(b)(1) – 1.26, TE170.314(b)(1) – 1.27, TE170.314(b)(1) – 1.29, TE170.314(b)(1) – 1.30, TE170.314(b)(1) – 1.32, TE170.314(b)(1) – 1.33, TE170.314(b)(1) – 1.34, IN170.314(b)(1) – 1.03, IN170.314(b)(1) – 1.05 ○ DTR170.314(b)(1)–2: Receive Summary of Care Record Using Direct and XDM Validation: VE170.314(b)(1) – 2.01, VE170.314(b)(1) – 2.02, TE170.314(b)(1) – 2.03, TE170.314(b)(1) – 2.05, TE170.314(b)(1) – 2.07, TE170.314(b)(1) – 2.09, TE170.314(b)(1) – 2.011, TE170.314(b)(1) – 2.13, TE170.314(b)(1) – 2.15, TE170.314(b)(1) – 2.17, IN170.314(b)(1) – 1.01, IN170.314(b)(1) – 1.02 ○ DTR170.314(b)(1) – 3: Receive Summary Care Record Using SOAP Protocols: VE170.314(b)(1) – 3.02, TE170.314(b)(1) – 3.01, TE170.314(b)(1) – 3.02, TE170.314(b)(1) – 3.03, TE170.314(b)(1) – 3.04, IN170.314(b)(1) – 3.01 • Test Data • Conformance Test Tools • DTR170.314(b)(1) – 1: Receive Summary Care Record Using Direct removal of Figure 1 which represented the TTT workflow • DTR170.314(b)(1) – 3: Receive Summary Care Record Using SOAP Protocols removal of Figure 2 which represented the TTT workflow	January 27, 2017